CHAPTER I

INTRODUCTION

1.1 Rationale of Study

In recent decades, local knowledge has been the subject of increasing attention not only by social scientists but also by development workers (Ellen 2000, Dove 1997, Chaperkie 1996, Barsh 1996, Agrawal 1995, Hobart 1993, and Chamber 1983). The work on local knowledge can broadly be divided into two main approaches, which I call the modernist approach and the anti-modernist approach. The modernist approach is based on the myth that modern scientific knowledge is superior to the local way of thinking. The modernist approach neglected the value of local knowledge and favored the use of scientific knowledge in order to become like modern world. This perspective sees local knowledge as an obstacle to development. Consequently, local knowledge was presented as "backward" and "irrational". In the absence of appropriate alternatives, the anti-modernist approach constructed local knowledge as a panacea for sustainable development. This perspective appreciated the role of local knowledge in dealing with the most pressing environmental problems. This perspective has strongly criticized the transfer of scientific knowledge to and modernization of third world farmers (Thrupp 1989, Thompson and Scoones 1996). These two biased approaches bot at the same time presented local knowledge using static characteristics, which were the opposite of scientific knowledge. In addition to that, local knowledge also was assumed as homogenous and lacking the will to change.

These two essentialist perceptions ignore social process involved in constructing knowledge. Through the creation of a dichotomy between local and scientific knowledge they prevent the real dynamic, fluid and flexible potential of

local knowledge being realized. In reality, each knowledge system always includes adopted elements of the other one. There is no clear-cut between local knowledge and scientific knowledge. In many places and times, local knowledge and scientific knowledge are not separate, contrasting entities. Instead local knowledge tends to be an articulating and mixing of scientific knowledge to adapt to social and natural environmental change. Local knowledge is dynamic and opened to receive the influences of other knowledge systems and environment. Local knowledge is also diverse in term of age, class, gender, and locality.

This research concentrates on the dynamism of local knowledge which is expressed in the way that this Muong community in Northern Vietnam synthesizes their practical experiences by combining both local knowledge and scientific knowledge in natural resources management. This research thus explores the power relations and effects of social and political conditions on the process of knowledge construction.

2.Research Problems

Human beings are uniquely distinct from animals because they are able to consciously accumulate their knowledge from practical experiences and pass it on from one generation to the next. For a long time, modernist in social sciences considered Western scientific knowledge as the only kind of knowledge and true all over the world. The emergence of post - modernism has revealed that many other kinds of knowledge besides scientific knowledge which are used by indigenous peoples (Foller 1996, Barsh 1996). Post - modernism has shown that all knowledge is socially and culturally constructed and no kind of knowledge is superior to any other. From early research, social scientists were aware of the specific indigenous knowledge. They raised questions about how local people perceive, know, believe, and relate to nature (Siskind 1975, Turnbull 1988, Foller 1996). In fact, different ethnic groups in different localities have their own way of defining nature and society. Muong peoples as well as many ethnic minority groups in the world possess

various store of complex local knowledge and a wide diversity of customary institutions concerning the conservation of biodiversity and the use of biological resources in agricultural practices. The nature of their local knowledge is reflected in all aspects of life, including their cosmology, behaviors, values, rituals and taboos, literature, and customary laws. The Muong's knowledge forms part of the rich and diverse of culture and knowledge of Vietnam.

Studies on local knowledge for a long time tended to make a distinction between local knowledge and scientific knowledge. Local knowledge has been seen as backward, irrational, practical, particular, and magic while scientific knowledge is modern, rational, theoretical, universal and logical (Agrawal 1995). The separation between local knowledge and scientific knowledge reflects the essentialist approach to studying knowledge. Opinion on local knowledge is always too extreme, viewing it as "a scapegoat for underdevelopment or as a panacea for sustainable development" (Nygren 1999:268). In reality, knowledge is a process of synthesizing experiences which combines people's theory and practice. Knowledge is not static but dynamic, and diverse. Local knowledge must be seen a primary representative of heterogeneous knowledge. Thus, there is a need to have an alternative perspective on viewing local knowledge.

In recent years, the process of development and nation-state building in Vietnam as well as in other countries of Southeast Asia and the world has created many negative impacts which are in need of research. In the practical situation of the Muong peoples, modern scientific knowledge and technology, based on the perspective seeing nature as outside forces or as the fields to be conquered, domesticated and exploited, were transferred to local communities. This discourse about the relationship between people and nature associated with the efforts of promoting economic development, introduction of cash crops, the Green Revolution and commercialization were the factors that caused local communities to have an agrarian transformation. As a result, many socio-economic and environmental problems rise at the same time with this process.

First of all, we explore the role of the state. Since 1986, the Vietnamese government carried out a reform policy (*Doi Moi*) concentrating on democratic centralization, industrialization and modernization. Under the goal of improving socio-economic conditions in highlands, the state has involved in developing infrastructure, and introducing new technology, cultivation methods, and high yield varieties to highland farmers. *Doi Moi* brought both positive and negative impacts on Muong community. The positive impacts have remained. They are the infrastructure services such as roads, electricity, schools, and health care stations. However, the other environmental and social economic problems have became more complicated. Dam construction is a typical example. Muong peoples live mainly in Hoa Binh province where the biggest dam in Southeast Asia was build from1983 to 1991 with the assistance of the Soviet Union. Building the dam flooded large valleys where the Muong and other ethnic groups cultivate intensive wet rice. Many Muong villages had to resettle onto hillsides and they cleared much of the natural forest. This resettlement program also led to conflicts and competition over water, land and forest between new and old established communities (Hirsch 1998). The clearance of forest for cultivation made soil erosion and other environmental problems become more serious. Although state gave some compensation, the life of the Muong peoples is still very difficult. Other policies such as closing forest and allocating forest and forested land to households and communities has brought rapid changes in the habits, practices, and methods of cultivation and husbandry of the Muong.

The second factor affecting local communities is the so-called Green Revolution. The Green Revolution, along with the introduction of cash crops, new species and techniques for a while was seen by many as solving food-supply problems. However, new problems, both socio-economic and environmental, arose when these innovations come to Third World farmers in general and Muong farmers in particular. One of the most significant problems is that new strains require heavy inputs of fertilizers, pesticides, herbicides and machinery. For the Muong farmers, these can be very expensive investments. Cash crops, mostly sugar cane and high yield rice, introduced by both the state and private companies force Muong farmers

to turn from independent subsistence-producers to commodity-producers who had to rely heavily on outsiders and step by step lost their self-reliance. They had to buy these inputs from the companies and pay back loans for the companies by their products. They have to work harder for less gain. In some cases, particular small farmers, they have been in debt. Generally a process of increasing impoverishment of poor farmers has been the result, with increasing income inequalities. The introduction of cash crops into the Muong community has also led to soil erosion and other environmental problems. The reason are fertility depletion and overuse due to short-term thinking. The new introduced cash crops have exorbitant nutrient needs, which are supposed to be sated using artificial fertilizers. But artificial fertilizers are very expensive. If farmers buy too much fertilizer they will have little profit. So they always use only the barest minimum of fertilizer. The rest of the nutrient- needs of the new crop species are shucked out of the soil leaving it depleted and easily eroded. This and other bad practices such as land overuse are result of short - term thinking concentrated on producing agricultural products for cash and ignoring long-term benefits. The new species introduced by outside agents are not always suitable for the local natural and social context so in some years the Muong have terrible harvest. Again, the negative impacts are endured by local people. At the same time, monocropping has became dominant. Muong peoples no longer plant and raise native species. This causes a loss of bio-diversity and of local knowledge about these species. There is a need to consider that conserving the local knowledge of the Muong is a necessary part of conserving bio-diversity.

The third factor is market. Market intervention brings both economic and social impacts to the Muong community. In term of economic benefit, Muong farmers rely on middle businessmen who buy their agricultural products such as rice, maize, pig, chicken, and fruit and other non-timber forest products. Market prices are not stable and are usually a result of a competition process not always favor of the local farmers. Muong farmers have also suffered the deleterious consequences from corruption in the sugar company whose sugar cane they grow. In the social dimension, traditional social relations have changed because of new

market relations. Traditional Muong society with subsistence production and exchange of labor has now been replaced by commodity production and wage labor. Conflicts between households happen at the same time with competition and differentiation of economic benefit. In particular some traditional principles have been broken, and community consensus with customary rules is sometimes violated.

In recent decades, much research has been done throughout the region and around the world to discover the specific values that local knowledge can provide. If we view local knowledge as 'backward", if we think we have nothing to learn from it, we are wasting a precious resource; a resource for science, for development, and for benefit of human society. The value and validity of local knowledge emerging very clearly both in theory and in practice reveal the importance of the issue. It has been said that the cause of failure for environmental and resource management policies in the twentieth century was an unjustified devaluation of local knowledge (Chamber 1983, 1997; Hobart, 1993).

Following the current trends, this study aims to examine the dynamism of local ecological knowledge of the Muong people in Northern Vietnam and thus encourage the conservation and promotion of their knowledge because it is a valuable resource for sustainable development.

1.3 Research Questions

This thesis focus on following questions:

- Within the context of increasing intensification of land use and commercialization of cash crop production, how has the local ecological knowledge of the Muong people changed?

- In conditions of increasing demand for cash crop production for food security, how have the resource management systems changed at both the community and household level?

- How is local knowledge reordered, rearranged, and repositioned to provide new forms of practical knowledge, to articulate new historical realities and to meet the changing needs of modern times?

1.4 Research Objectives

This thesis aims

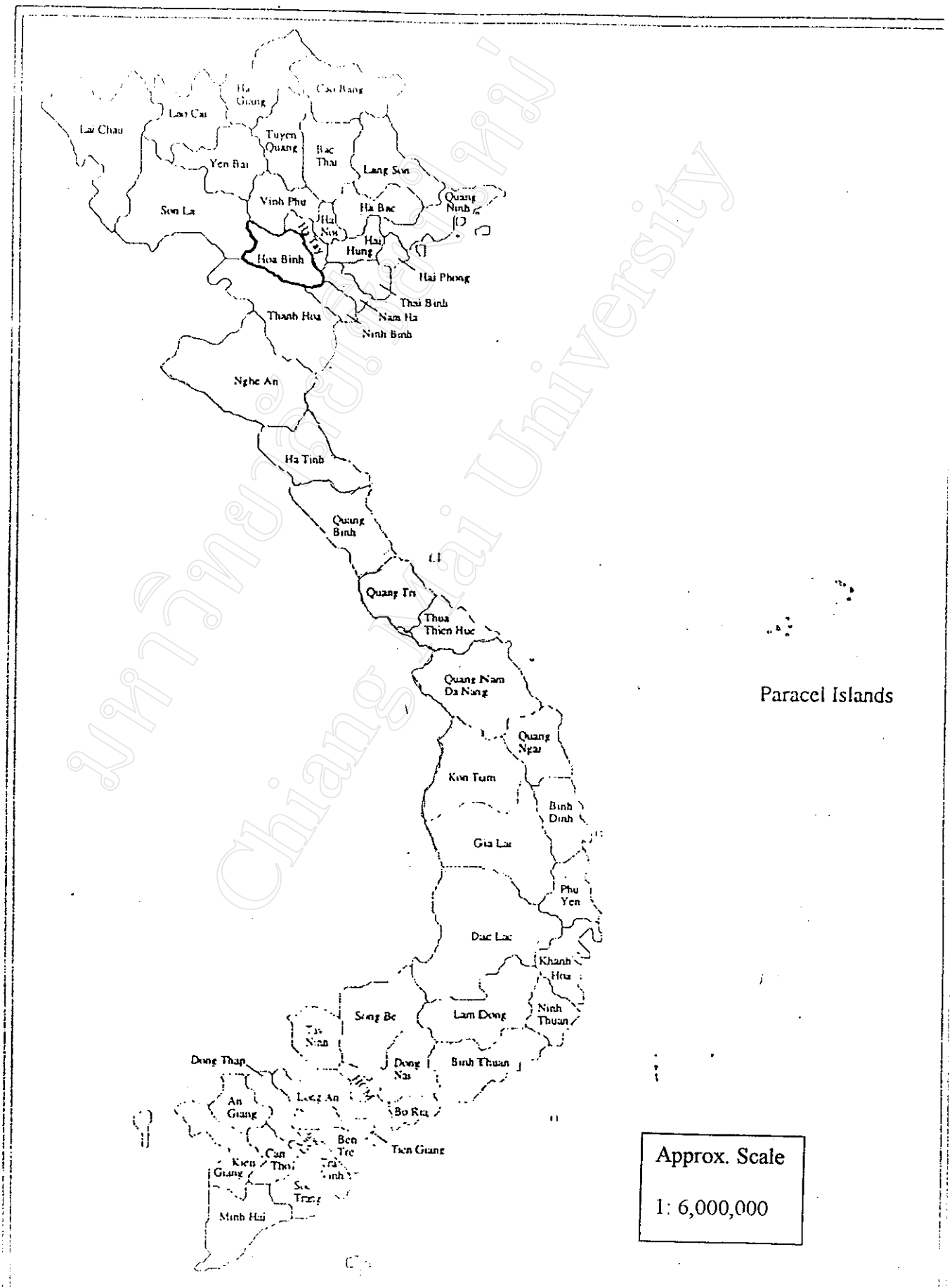
- To explore the dynamism of the local ecological knowledge of the Muong peoples.
- To identify and analyze the factors affecting the change of local knowledge in relation to household and community resource management.
- To describe the change of local knowledge in response to agricultural intensification to meet food demand.

1.5 Methodology

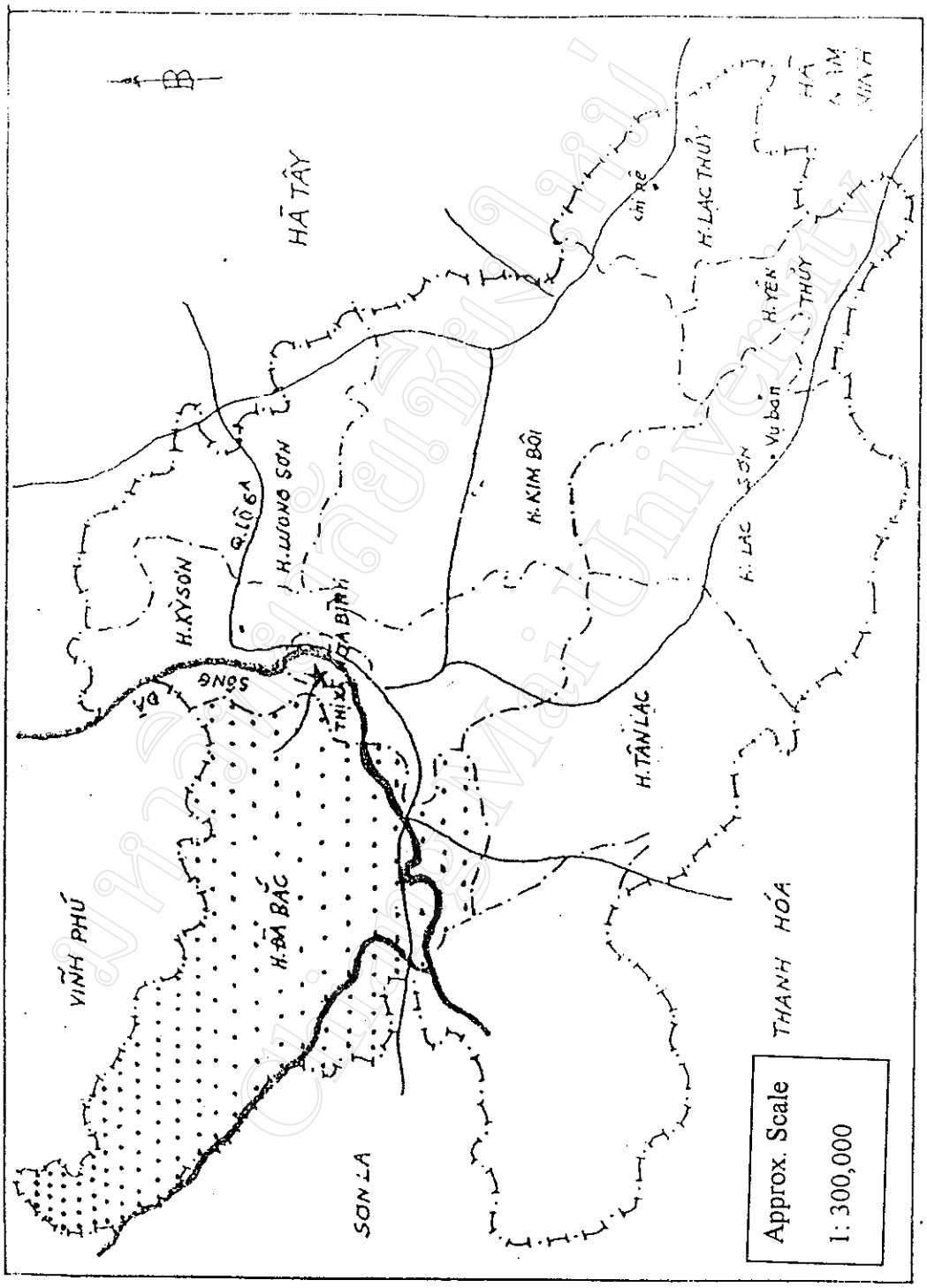
1.5.1 Study Site

Mai village is a Muong community in Hien Luong commune, Da Bac district, Hoa Binh province (Map 1-1 and Map 1-2). The village is selected after I spent two weeks visiting several Muong communities in Hoa Binh province looking for a Muong community as a site to do in depth research on local knowledge. Mai first caught my attention because of its traditional wooden houses and by its location on the high valley near forests. It is difficult to find a Muong village such as Mai. In other Muong villages, traditional wooden houses were replaced by modern brick houses a long time ago. Forest has been chased far from Muong villages and it is difficult to recognize a Muong village just by its appearance.

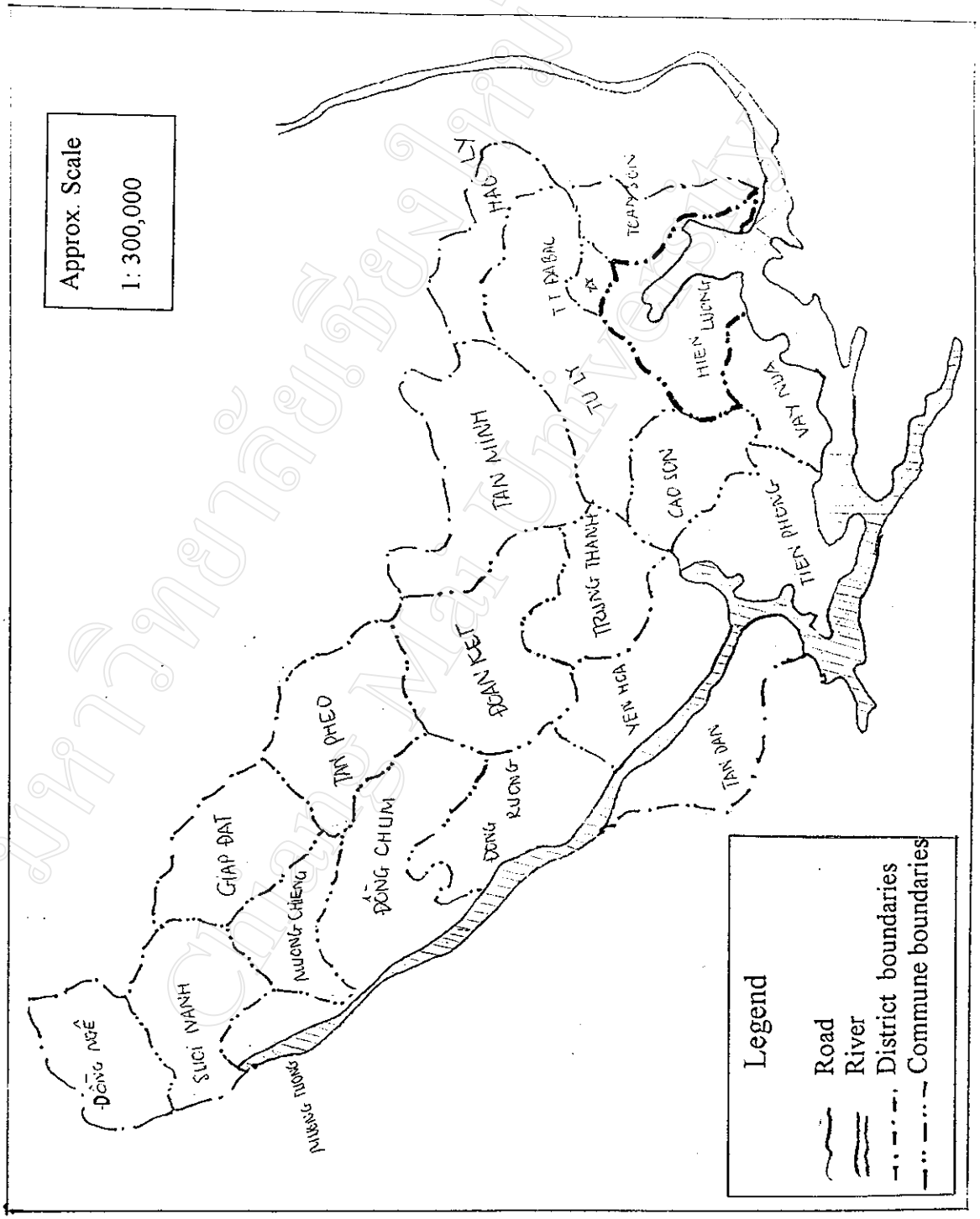
Map 1-1: Location of Hoa Binh in Vietnam



Map 1-2: Research Site: Da Bac District Hoa Binh Province



Map 1-3 : Research Site: Hien Luong Commune in Da Bac District



Mai is chose as my research site because in recent years Mai is effected strongly by development process. Mai villagers have to suffer the impacts of dam construction. At the same time the introduction of sugar cane as the cash crop also brings the change in local people live. This is the context caused the change of local ecological knowledge. Moreover Mai is an old Muong village. It was set up about one hundred years ago. Although it is not large and not in the center of the former "*Xu Muong*" (Muong region) such as *Muong Bi, Muong Vang, Muong Thang*, and *Muong Dong* but it is typical of a traditional Muong villages in its cultivating wet rice and dry plants. Forest surrounding Mai village is well protected. Mai villagers still keep their traditional customs. Thus Mai is selected for my study on dynamism of local knowledge.

1.5.1.1 Natural Conditions

Mai is located at the elevation of 500m above the sea level, close to both the Da river and watershed forest. It is about 30 km from Hoa Binh town. Crossing the 15km trail mountainous road from Tu Ly sub-district we reach Mai village on the small high valley near Da reservoir. At closer ramge, the traditional wooden houses with their leaf roofs are expressed its primitive beauty under the many big trees.

To the North, Mai village area has borders with Da river; in the South with Tra Ang village (Vay Nua commune); in the West with Ngu, the Yao village, Bieu mountain and Luong Phong villages; in the East with Mo village(Map 1-4). Ngoi Hoa stream passes through Mai village. Along the banks of Ngoi Hoa stream are paddy fields. The irrigation systems from Ngoi Hoa provide water to those fields through the whole seasonal cycle. On the hillsides there are sugar cane and maize fields. Forests surround the village. At present, the total natural land area in Mai village is 250.79 ha, 27 ha out of which is agricultural land and the remainder of which is 191.75 ha forestry land. Because of Hoa Binh dam construction the main wet rice area of Hien Luong was flooded by the Da reservoir. There is a total 9.4 ha of wet rice in Hien Luong commune at present of which Mai village possess 7 ha

wet rice field and it is the village that has the largest area of wet rice in Hien Luong commune. Mai also possesses 20 ha dry field, mostly sugar cane, cassava and maize fields. Mai has 107.39 ha natural forest and 84.36 ha plantation in total 191.75 ha forest. The forest surounding Mai mostly is bamboo. Ever green forest makes up 13% of the whole and the remainder is mixture of wood and bamboo.

The major soil type here is reddish and yellowish ferralit developing on a limestone base. In general, the land is still rather fertile and high porosity, which are favorable for cultivating fruit trees, industrial crops and forest trees (Long 1995). However, the steep and strongly dissected topography together with the hot humid climate characterized by seasonal rain concentration and outdated farming practices have caused land to erode and run off quickly. Climate is characterized by monsoon humidity. There are two main seasons each year. One season, lasting from April to September, is hot and humid. The other, from November to March, is cold and dry. Over a year, the daily average temperatures range between 22 and 24^{0}C. Lowest temperatures of about 5^{0}C usually come in December. Highest temperatures, at about 38^0 C, usually come in July. The average annual rainfall is between 1500 and 1900 mm, mainly between June and September.

The water regime in Hien Luong commune is effected by three rivers in the Hoa Binh province: the Da river (Black river), the Ma river and the Buoi river. The total length of rivers and streams is 430 km, an average of 1.2km/km2.

1.5.1.2 Demography

At the time of building the village in first few years of this century, there were 4 founding households with a population of 20 persons in Mai village. The number of households has increased slowly over a period of time. In 1950, 20 years later, there were 7 households with a population of 40 persons and now 34 households with a population of 163 persons (77 persons out of which are women and other 86 men). There are four family names in Mai village. Those are Ha,

Nguyen, Xa[1] (or Sa), and Dinh. There are also some Kinh peoples as for intermarrying between Muong and Kinh peoples. Xa (Sa) is the family name of *Lang* class and can only found in Da Bac. Nguyen is the family name of *Dan* class according to the traditional Muong social structure. The ancestors of those family names are also the first people who set up Mai village at the time of village settlement.

A Muong family in Mai village normally includes parents and their children. The eldest son's family also includes grandparents however this is not obligatory. All villagers including elders can fluently speak Vietnamese. They communicate with each other using Muong language and with the outsiders using Vietnamese. There is a primary school near Mai village so that most villagers finish their primary school education. The number of students from Mai going to study at high school is limited. No one in the village gets higher level education such as bachelor, master or doctor degree. In recent years, social differentiation has happened among Mai villagers. Villagers get income mostly from sugar cane and other cash crops such as maize, and fruit trees. In recent years, they got good price from those products. Those families that own a larger area of land area and have a large labor force can get more income and become rich. The rich in Mai village can afford to buy motorcycles for transport. They own large houses with color televisions and several buffaloes. The poor are the people who cannot afford these luxuries. They live in bamboo houses, and hence no television and no buffalo. There is one landless family and they are considered the poorest in the village. This family gains their livelihood by doing wage labor for other households in the village.

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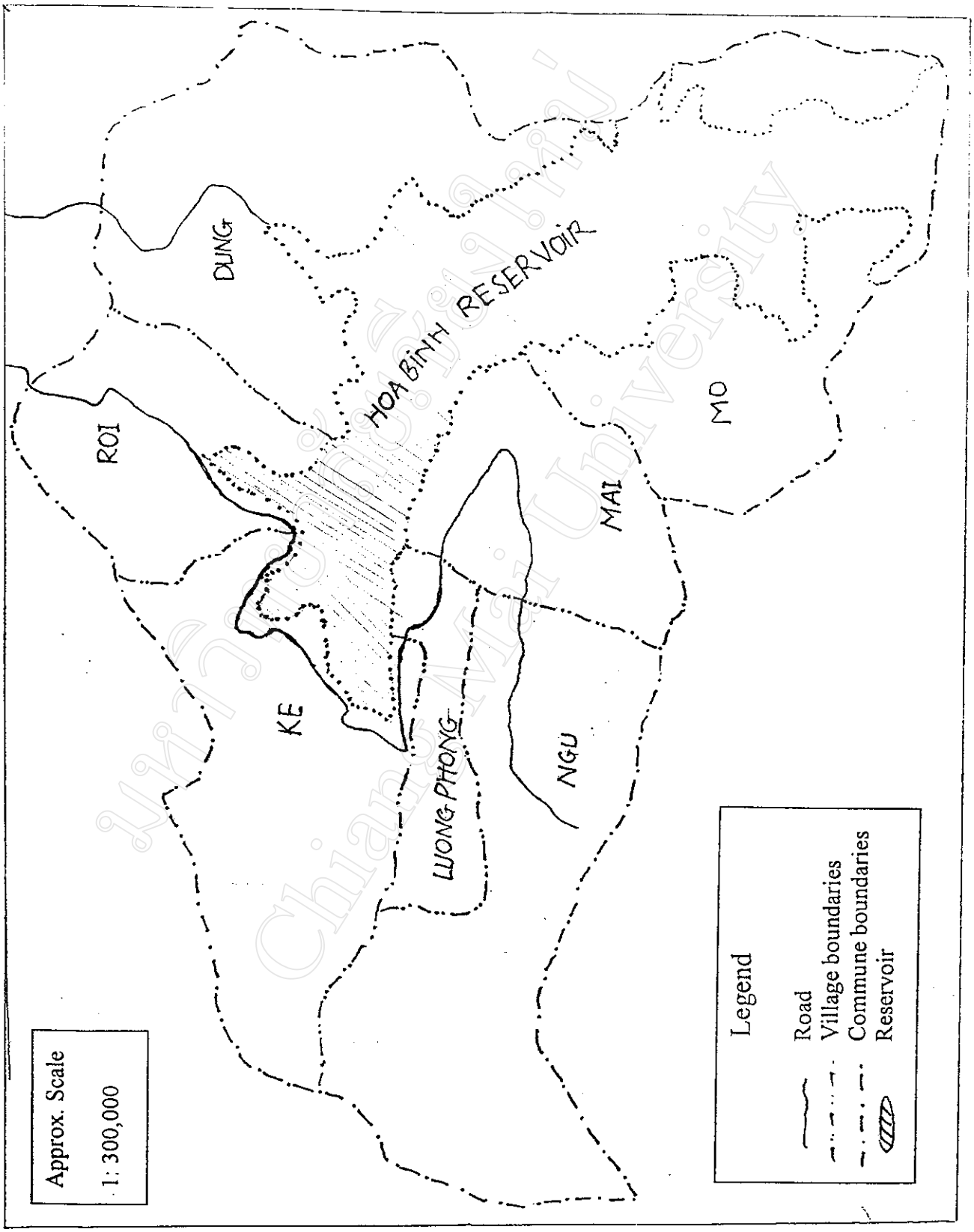
[1] Muong people do not have a written language, *Xa* or *Sa* is a Muong word transliterated into Vietnamese.

Map 1-4 Mai Village in Hien Luong Commune



1.5.1.3 Agricultural Practice

In the past, these Muong villagers practiced both rotational cultivation and intensive wet rice cultivation. They planted dry rice, maize and others plants on the hillsides; wet rice in the valleys and along side of the streams; and vegetable and fruit trees in their gardens. They raised cattle, pigs and poultry for their own consumption. The species that they planted and raised were mostly local varieties. At that time, they knew nothing about chemical fertilizers and pesticides. Hunting and gathering forest products are part of the everyday routine in this Muong community. Wild products fit their needs in daily life and especially in shortage time.

About ten years beforenow, they stoped practicing rotational cultivation and planting dry rice because forest boundaries were demarcated and they were prohibited from cuting the forest. In the dry fields, they plant mostly maize, cassava, and other cereals. In 1996, sugar- cane was introduced to the villagers in a poverty eradication program. The villagers learned the methods as well as the technology to plant sugar cane from a state sugar company. Most input for this crop had to be brought from company at the beginning of crop planting. They pay back the credit at the harvest. The profit that they make from sugar - cane each year depends on market prices, household labor as well as the amount of land they used to plant sugar cane. They still plant wet rice but use high yield varieties instead of local ones. They keep only one sticky rice variety as a local variety. The rice yield is low comparing to that in lowland. Due to the small area of cultivation and low productivity, rice for this village just fits the household demand in only three or four months of the year. Maize and income from sugar - cane and other plants is exchanged for rice to fit the family consumption in the other month in the year. Villagers do the saving by raising livestock such as buffaloes and pigs. These savings are then used on marriages, funerals or on other big events such as building a house with the financial and labor support of their neighbors.

1.5.2. Scope of the Study

Local knowledge is situated in and based upon an intimate understanding and appreciation of local ecological systems. It is developed and passed on from one generation to another in the process within which people adapted themselves to a particular set of ecosystem. Local knowledge involves many aspects some of which are related to medical plants, healing practices, and food habit and taboo. This research only focuses on the local ecological knowledge which pertains to the way Muong people manage their land, forest and water both at a community and at a household level to meet their livelihood needs. Local knowledge involves two main aspects in terms of technique and belief. In this research both aspects have been combined. Muong cosmology, belief and value are presented in combination with the techniques that the Muong peoplesuse. The dynamism of the local ecological knowledge of the Muong peoples are examined especially in the sense of joining together and interrelating local knowledge and new knowledge from outsider for example new technology, methods, varieties, and new ways of thinking in a context of the agrarian transformation that has taken place in this Muong community.

1.5.3. Method of Study

In this research I have collected two kinds of data:

-*Quantitative data*: General data about the community and the household. It includes the time of settlement of the village; the times of changes in cultivation and husbandry methods; the number of households and the population of the village according to gender and age; the area of land and forest worked by community and by each household; the area, number and investment of varieties; and the daily income of each household.

-*Qualitative data*: Information on beliefs, customs, awareness and way of life of the villagers relating to agriculture. I concentrate on investigating their methods,

techniques and experiences concerning soil selection, water management, the agricultural calendar, and seed selection and storage.

The following methods were selected to gather data:

-*Document research*: This method was used to collect information relating to the history and culture of the Muong people, the socio-economic statistical data and to find out government policies on agriculture and Muong people.

-*Participation, observation, and informal interviews:* This method was used to understand the Muong people's beliefs, way of life, customs, traditional ritual practices, behaviors, and desire. From direct observation of crop patterns, farms, forests, agricultural activities, and ritual events along with interviews with villagers I investigate the practical agricultural experiences and knowledge of Muong farmers.

-*Semi-structured interviews:* I used a simple questionnaire with open-ended questions to gather information on the issued of policy and the influence of market forces on villagers. This method was applied to both local authorities and villagers. This method was aimed at getting general information about community and households.

-*Key informant interviews:* This method has been very important to my study because local knowledge is heterogeneous. Each person, depending on their age, social status and education background has a different type of knowledge. So in this study I have differentiated between different types of people according to their age, social status, and education background because these factors determine what type of knowledge they have. Some forms of knowledge are known only by specific people so I have spent more time with these people to get information from them.

1.6 Organization of Thesis

This thesis is divided into seven chapters.

Chapter 1 begins by introducing the dynamism of local ecological knowledge as an important research variable. I raise the necessity of seeing local knowledge in a fluid interrelationship with scientific knowledge and in a natural and social context. Local knowledge must be seen as a dynamic, fluid and flexible process of learning by doing. It is diverse in term of age, gender, class and locality. This chapter verifies research problems and objectives. Research problems derive from both theory and practice. In theory, approaches presenting local knowledge as homogenous, static and opposite to scientific knowledge ignore the dynamism and diversity of local knowledge. In the practical situation, many social-economical and environmental problems started with the transferance of scientific knowledge and technology to the local community associated with the governmental efforts to promote economic development by introducing cash crops, the Green Revolution and commercialization. Research questions and objectives focus on three interrelated aspects: First is the change in local ecological knowledge and resource management systems at both the community and household level. Second is, which factors and conditions affect changes in local knowledge. Third is the ways local knowledge rearranges ideas to provide new forms of practical knowledge, to articulate new historical realities and to meet the changing needs of modern times. Chapter 1 also describes the methodology and scope of the study.

Chapter 2 reviews research on local knowledge, agrarian transformation and natural resources management which are the three main concepts that are used in this thesis. The previous researches on local knowledge can be summarized from three perspectives: First, as a discussion on the characteristics of local knowledge and the process of construction local knowledge. Second, as a discourse on the relationship between local knowledge and scientific knowledge. Third as a discussion on the roles of local knowledge in the development process. I also give my own understanding of what the dynamism of local knowledge is. I consider that

at any given period of time and place, under the influences of socio-political and natural conditions, and the affect of other systems of knowledge, local knowledge is open to receive the affect from outside. Local knowledge has the potential to coexists with scientific knowledge or in so far as it is a process of responding, negotiating, contesting and modifying, to adapt to the needs of life. Social and natural environmental change in agrarian transformation is considered as the decided factors that rise the change of local knowledge. The dynamism of local ecological knowledge goes along with changing forms of natural resources management under both internal and external affects. Local ecological knowledge exists and develops in close relation to the capacities of the local community and household to manage productive resources to meet their livelihood needs. Chapter 2 also provides the content and the framework of concepts that are used in this research.

Chapter 3 presents the historical development of Mai village from the time of village settlement up to now. It briefly reviews the Muong historical background from general point of view. It divides the agrarian transformation of Mai village into three main periods for comparison. From the time of village settlement to 1954 is the period of the traditional ecological system with the *Nha Lang* regime of property relations. From 1954 to 1980 is the collective period. From 1980 to now is the decollective and open country period. In each period, three main issues closely relating to ecological knowledge are emphasized. They are ecological value, social organization and natural resource management. This chapter provides the context for change in natural and social conditions to recognize their influences on local knowledge.

Chapter 4 presents social and cultural aspects of Muong ecological knowledge though the way Muong people in Mai village give meaning to land and forest, the two resources on which this study focussed. As the agricultural residents, the Muong people, whose livelihood rely on nature, evaluate natural resources in not only the use value but also cultural value. The concepts of the Muong people on ecological resources are derived from social practice. Local-derived and understood

meaning attached to land, forest and ecological resources carry with them sets of ecological values, principles, obligations, responsibilities, and rights that are applied differentially according to social and natural contexts. This chapter also focuses on the moral principles in defining land and forest to understand the ecological concepts of Muong peoples and compares the local and scientific definition of land and forest.

Chapter 5 presents the changing context of local ecological knowledge of Muong peoples in Mai village. This chapter focuses on three interrelated issues. First is the demographic change through the natural population increase in Mai village and the migrational population increase because of Hoa Binh dam construction. Second is the changing local resource management under state intervention. Third is the changing local economy under market intervention. This chapter indicates that the population pressure, the change in property regime and resource tenure, the penetration of scientific knowledge by introduction of cash crops and new technology, and commercialization are the factors that strongly affect on the change of local ecological knowledge.

Chapter 6 discusses the practical dimensions of local ecological knowledge by analyses the household production strategies as changing practices of local ecological knowledge. This chapter focuses on three different strategies that households in Mai village choose to apply their knowledge in land- use, crop pattern and forest management. The presentation of different strategies that different households in Mai village practice to cope with the social, economic and natural changing condition proves that the local ecological knowledge is dynamic and diverse. Local people based on their practical experiences and their livelihood-derived purposes to construct their knowledge in the ways that suitable for their conditions.

Chapter 7 contains the conclusion and the recommendations of this thesis. This chapter discusses the dynamism of local ecological knowledge under the

context of natural, social and economical change in agrarian transformation process. It concentrates on the dynamism of the adapted strategies of local people. It emphasizes the complexity and the flexible of knowledge systems that local people apply in their farming practice. In pursuing the main objectives of study this chapter focuses on four interrelated aspects. First it points out the major findings of the thesis. Second it raises some theoretical discussions. Third it suggests the political recommendations which derived from the findings of the study. Fourth it shows the limitations and suggestions for further study.