A Thesis Submitted for the Degree of Doctor of Area Studies

Social Networks in Natural Resource Governance in a Multi-Ethnic Watershed of Northern Thailand

北部タイの多民族混住流域における 自然資源ガバナンスと社会ネットワーク

Nathan Augustus BADENOCH

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Note on Orthography

Hmong terms in the text are given in the standardized Roman Popular Alphabet (RPA), which is widely used by Hmong around the world. Because the fieldwork was conducted in a Green Hmong community, words have been spelled to reflect that dialects pronunciation. Karen terms are given in the Romanized script, called *Lix Romei*, which is widely used among Catholics. This script was chosen here because of ease in typing and printing. In both systems, consonants at the end of words are tone markers, and are therefore not pronounced as final consonants. There is no standardized system for romanization of Thai.

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CHAPTER ONE

Introduction

1. Problem statement

The challenge of sustainably managing the world's environment and natural resources is inextricably tied up with the governance processes by which decisions affecting those resources are made. Making decisions at various levels of ecological relevance – watersheds, for instance – and with full representation of the stakeholders involved are crucial to these processes. Indeed, the recent surge in concern for environmental governance signals a move beyond technical management of the natural world, bringing the focus on institutions for and processes of decision-making. As resource scarcity intensifies globally, the social aspects of management have come to the forefront.

Localized conflict over natural resources management in the mountains of northern Thailand has intensified in the years since opium eradication policies were implemented in earnest in the 1980s. Conflict occurs at several levels in the landscape. At the most local level, there is conflict within and between local communities competing for water, land and forest resources in daily livelihood activities. At broader scales, upstream and downstream communities are in competition for access to water, and the types of stakeholders involved become more complex. In the ethnically diverse upland landscape, these resource conflicts are frequently articulated in terms of culture and tradition. Indeed, growing resource scarcity has brought relations between ethnic groups to new levels of intensity. This tension has ecological and social implications, and is articulated as a question of watershed management.

At the same time, new modes of cooperation have emerged within this atmosphere of conflict. Again, efforts to develop new institutions for cooperation are observed at the village and larger landscape levels. Moreover, political and administrative reform in Thailand has opened up space for local populations to participate in many arenas of governance. This opportunity takes two forms. First, the strengthening of civil society has resulted in a proliferation of peoples' organizations and non-governmental groups, many of which take the form of networks. In the mountains of the northern region particularly, watershed management networks represent an important area of institutional innovation that aim to bridge gaps between government and community, facilitate inter-village

cooperation and link natural resources management at multiple levels of society. Second, decentralization has empowered local government to assume meaningful roles in development and conservation activities, while at the same time deepening the democratic processes upon which local governance operates.

But the question remains, how will these two spheres of governance evolve in relation to each other? The seeming complementarity of local government and watershed networks represent a major opportunity for establishing new systems of local governance. If these experiments are successful, local communities, in this case upland ethnic minority communities, will have powerful tools for articulating local visions, making contributions to policy and mediating complex relationships between groups at different levels of society. The potential of decentralization in deepening the processes of grass-roots governance depends largely upon the capacity of local non-governmental groups and local government to respond to these opportunities.

The experience of networks has already begun to provide insights on the capacity of local communities to participate in natural resource governance from two fundamental perspectives. First is the capacity to organize and create localized institutions that enable villages of diverse ethnicity and competing livelihood interests to produce collective action to address shared interests. Second is the capacity of these new institutions to interact with the formal processes of state governance. But the reality includes a long list of constraints, and there is a need to understand how new institutions of governance are created, function and are constantly redefined within the local social landscape.

2. Overarching research objectives and research questions

This research aims to explore social dynamics evolving in the ethnically diverse upland society in northern Thailand. Sato has stated that the essence of natural resource management problems lies not in the relationship between people and resources, but rather in the relationships between people (Sato, 2002). The current research shares this belief, and has thus endeavored to observe the complex systems of inter-group interactions in an ethnically diverse landscape, paying special attention to the delicate balance between conflict and cooperation in natural resources management. In the research objectives, questions and process that follows, primary attention is on role of the Hmong and their interactions with others in the watershed.

In order to achieve this, four broad research questions guided the research:

1. How have upland groups, especially the Hmong, responded to resource scarcity in the post-opium era?
2. How have inter-ethnic relations evolved in the context of sedentary villages?
3. What roles have networks begun to play in local resource conflicts?
4. How do networks interface with the administrative units of local governance?

3. Background to research interest

My interest in this set of issues was sparked during my experience of managing The Resources Policy Support Initiative, a collaborative policy research project in mainland Southeast Asia. Based on partnerships with local research institutions in Thailand, Laos, Vietnam, Cambodia and Yunnan Province of China, the project explored the current challenges of environmental governance at a range of levels, from sub-national to national and regional. The research found that across the region, the capacity of local government and networks were a crucial, but extremely uncertain, element of decentralization (Badenoch, 2001).

The research also highlighted the need to critically examine the concept of community, as the concept of community based natural resources management has come to occupy a central role in local development and conservation strategies being promoted by governments, international development agencies and non-governmental organizations. This examination requires consideration of: what constitutes a community, what functions does it perform, and what are the social boundaries of its membership and authority? One key limitation to community-based approaches is the assumption that equates community with village. Social networks often function across village boundaries, and centers of cohesion represented in these networks may reduce the relevance of the village as a unit of management. The experience of networks for natural resource management in Southeast Asia suggests that assumptions that the village functions as a corporate unit are suspect. Furthermore, resources such as water, particularly, may be best managed at levels higher than the village.

This line of questioning follows on from my Master's thesis[1], which focused on watershed management policy in Laos. Here I researched some of the challenges of implementing participatory development through the watershed management policy framework of the Lao government. A key constraint to realizing this policy goal is the fact that realigning institutions for resource management to the watershed unit does not mean that the groups located in that ecological system are bound together as a cohesive community, especially when ethnic diversity is high. Capacity, incentives and authority of local people and organizations may be insufficient to enable participation in watershed-level development activities.

4. Framework concepts: Social networks, natural resource governance and social space

Finding a set of analytical concepts to provide a framework for this study was a challenge. The tension between the need for a rigorous organizing framework and the risk of stifling the complexity and diversity that are the main focus of the study are not uncommon in area studies. It is more relevant, perhaps, to say that without any agreed-upon area studies analytical frameworks, tools or methodologies, the challenge is to find a concept that enables the simultaneous examination of multiple systems of interaction spanning a range of natural and social sciences. In this research, I have applied two main operational concepts, social networks and natural resources governance, in order to guide the main approach to the research questions. Finally, I have used the concept of social space to provide a flexible umbrella framework to bring together the analysis of social, political and natural systems within a spatial context.

4.1 Social Networks

Social networks can be defined as informal, horizontal and vertical linkages between actors sharing a common interest. Yasuda (2001) has suggested that the value of the social network approach is not simply in providing a tool to analyze networks, but to use networks in the analysis of social phenomena. Networks represent a space where economics, politics, culture and ecology come together in the articulation of the competition-cooperation balance. Barabási (2003:7) describes the dynamic nature of networks and the contribution they can make to understanding society: “They open up a novel perspective on the interconnected world around us, indicating that networks will

dominate the new century to a much greater degree than most people are yet ready to acknowledge. They will drive the fundamental questions that form our view of the world in the coming era."

Social networks provide a useful window because they allow us to examine the bonds that hold together individuals actors in social interaction. The ties of trust, reciprocity and collective decision-making that are embodied in networks are key to understanding how people cooperate. This implies a set of structural issues (who are the actors and where are the linkages?) and a set of practice issues (how do they interact and what holds them together?). Thus, networks represent specified trust among members of the group, and are one of Putnam's factors of social capital (Putnam, 1993). At the same time it is believed that networks create abstract trust in society as well (Newton, 2001). Nevertheless, it is worth returning to the underlying question, do social networks generate the trust necessary for civilized social and political life, or is it the existence of widespread trust that makes the development of social networks possible in the first place?

Creating networks that cross the boundaries of culture and administration is the key challenge. It is because the organizational structures of the state have been unsuccessful in dealing with environmental and natural resource management problems across these boundaries that networks have arisen as an alternative. Central government agencies have typically been insensitive to the details of local diversity. But networks, such as those established to enhance the management of watershed resources, face many of the same difficulties in establishing the trust necessary to enable cross-boundary cooperation. They must also develop capacity to deal with the technical and social issues of natural resource management. The small body of existing work on networks in northern Thailand has focused on the organizational structures, and the ecological outcomes to be expected. Research has looked less at the interactions between the network members and the processes of relationship that occur within those structures. There is a need to examine more closely the inner workings of the networks. Furthermore, this examination should be conducted within the underlying context of other informal social networks of daily interaction within and across communities.

This research applies the network concept in a broad sense. The analysis refers to local networks of informal interaction (such as Hmong kinship and affinal networks) and more institutionalized networks that function as organizations (such as watershed management

networks). As will be shown in the following analysis, these levels of human interaction are taken together as ‘networks’ because they embody relational spheres that overlap and intersect in the landscape.

4.2 Natural resource governance

Governance has become a common term in the language of development. In 1997, the United Nations Development Programme published *Governance and Sustainable Human Development*, in which governance was defined as “the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences” (UNDP, 1997) This policy paper stresses that governance is more than government, in that it encompasses civil society and refers to both the structures as well as processes of decision-making.

Governance has become a key element of the global debates on conservation and natural resources management, as well. *The World Resources Report 2002-2004* focused on environmental governance, and started with the simple questions, “Who decides the fate of ecosystems? Who manages nature?” (WRI, 2002:1). According to the World Resources Institute definition, environmental governance is “the exercise of authority over natural resources and the environment” (WRI, 2002:2). The report goes on to argue that the structures and practice of environmental governance affect not only the ecological impacts of decision-making, but also the social outcomes of that decision-making. This view on governance also moves the participation of civil society to the center of decision-making.

This concern for environmental decision-making builds upon a critical part of the 1992 Rio Declaration on Environment and Development. Principle 10 of the Declaration asserts that “Environmental issues are best handled with participation of all concerned citizens, at the relevant level.”[2] This call for multi-level governance implies that local, national, regional and global level issues should be addressed at levels of decision-making that best represent those environmental concerns and social stakeholders. The over-centralization of decision-making at high levels of government has been observed around the globe, and has been identified has a major constraint to enhancing the sustainability of development efforts. Subsidiarity in environmental governance entails a simultaneous realignment of authority

from the central government downward to local actors and upward to regional bodies (WRI, 2002).

Literature on the governance of common property resources (CPR), notably Ostrom (1990), has examined the conditions under which institutions have been able to manage shared resources. The commons research has been interested in self-organizing and self-governing institutions to respond to the failure of state and market-led resource management, often focusing on the economic aspects of institutional success and failure. This literature has made a large contribution to the understanding of institutional design requirements for natural resources management, particularly irrigation water (Ostrom, 1992; Wade, 1994; Lam, 1998). Collective action for management of CPRs must address four issue areas: creation of boundary and authority rules deciding acceptable levels of resource use; monitoring of rules; sanctions for violators; dispute settlement involving monitors, users and managers (Ostrom et al., 1994). Indeed, Ostrom's argument in support of the essential importance of organization in CPR management is highly relevant to the current research. "At the most general level, the problem facing CPR appropriators is one of organizing: how to change the situation from one in which appropriators act independently to one in which they adopt coordinated strategies to obtain higher joint benefits or reduce their joint harm" (Ostrom 1990: 39). This basic problem statement reflects the basic governance challenges faced by communities in the uplands of northern Thailand.

The current research is located within the search for institutions at appropriate levels of decision-making to address local conflict over natural resource management. Natural resource governance, as used in this research, entails the structures and processes by which actors engage in decision-making over the use and conservation of natural resources.

4.3 Social space

The formation of networks to deal with competition between resource users is occurring within systems of governance that place increasing importance on multi-stakeholder decision-making. Networks bring together villages within a specific geographic setting, in this case watersheds where conflicts between upstream and downstream villages intensify. This adds a spatial element of localized social interaction, between groups of different ethnicity. The market plays a role, as well, in determining livelihood strategies of groups living in the watershed and providing incentives for the use of natural resources. We see

here the convergence of several systems of interaction – political, economic, and ethnic. In his analysis of relationships between upland and lowland groups in mainland Southeast Asia, Marlowe (1967) concluded that each group should be considered as a part of a sub-system of relations with others. Marlowe further asserted that the sub-systems of interaction compose a "larger system of relationships that ties together a socio-economic as well as geographic area (Marlowe, 1967:65)." The growing role of non-governmental actors represents more than an expansion of political space.

George Condominas used the concept of "social space" to help describe these sub-systems of interaction and explain the differences in socio-political organization observed in multi-ethnic mainland Southeast Asia. Publication of a translation of two of his French articles in 1991 as *From Lawa to Mon, from Saa' to Thai: Historical and anthropological aspects of Southeast Asian social spaces*, brought to the English academic literature Southeast Asia-specific analytical applications of the social space concept. Condominas had elaborated his ideas on social space earlier in 1980 with *L'Espace social a propos de L'Asie du Sud-est*, which brought together the theoretical foundations and a range of applications in Southeast Asia (Condominas, 1980). His personal project was to understand the differences between groups with extended social space and those with restricted social space. Why were some groups such as the Tai and Kinh able to extend their influence over large spaces, while others, such as the Lawa and Mnong remained limited to smaller social spaces? Analysis of the traditional Tai unit of socio-political organization, the *muang*, was central to his thinking. The *muang* was organized basically as a network of alliances between political centers of unequal power. Although Condominas' use of the social space concept was heavily focused on explaining political structures and the extent of their influence (Condominas, 1990), the framework he proposed has further application. In addition to providing a useful framework for considering complex social relationships, his concept is attractive here because it has been picked up and further elaborated in the context of mainland Southeast Asia by French anthropologists.

But Condominas did not invent the term social space. He traces the history of the concept in the French literature to sources such as Durkeim and Lévi-Strauss[3]. Condominas also built upon the work of Paul-Henri Chombart de Lauwe[4], who believed that social space concerns the interaction of individuals, groups and society. In this articulation, it is apparent that social space provides for a multi-layered nuance to the relations between

systems of society. Chombart de Lauwe proposed social space as "the study of the relationships between behavior and space".

In Condominas' definition, social space is "the space determined by the collection of systems of relation characterized by the group under consideration" (*l'espace déterminé par l'ensemble des systèmes de relations, caractéristique du groupe considéré*) (Condominas, 1980:14). This simple definition in fact represents a potentially vast expanse of science. The collection of systems includes relations to time and space, relations to the environment, relations to change of goods, relations of communication and relations of kinship and residence. It implies relations within a certain group, but recognizes the importance of relationships of that group with others, in determining the extent of social space:

> "We wanted to formulate an entity that includes, more than the content of the terms, other systems of relation: those that imply the state, confederated, or other organization, those that take account of linkages with neighboring groups and, when they exist, those that are absorbed, those that translate, notably for imagined relations with supernatural beings, symbolic space (imaginary from our point of view). These remain inseparable, in their own eyes, from the environment (the only element that we perceive ourselves) and command their symbolic system and a large part of its value system; it guides the action of individuals and of the collectivity. This is the reason that we refuse to reduce social space (if we give to the first term the totality of its contents) to a geographic space." (Condominas, 1980:75; author's translation)

But Condominas also recognized that space is a problematic concept. In its social usage, space is not limited to a surface, trajectory or volume. Returning to the Latin root *spatium*, an extent of time, we revive the dynamic factor of change in space. Elaborating on the significance of the social space concept, Condominas explains:

> "In presenting social space as the space determined by the combination of systems of relations characteristic to a given group, we mean to gather in one concise expression the definition of a conceptual tool, the content of which does not coincide only with that of culture, and allows us to indicate, to the degree possible, the bounds of circulation and action of a group, all taking into account its conception and mode of spatial organization." (Condominas, 1980:76; author's translation)

Before Condominas presented his social space concept, however, Christian Taillard (1977) had applied a slightly different version of the concept. In Taillard's application, social space was given a somewhat more concrete nuance to the original definition, as it sought to

explain contemporary social organization and interactions as he observed them in Laos. Taillard's comparison of social space between the Lao and the Hmong was published in a special edition of the French journal *Asie du Sud-est et Monde Insulinalien*. In this work, the contrast between Lao village-oriented social space and the Hmong lineage-oriented social space showed how locally created social space does not heed the dictates of state administrative space. This fact also led him to suggest the importance of social relations above and beyond the village, which link people across political boundaries, but are not reflected in political organization. Here he proposed social space as:

> "a relational space that brings together socio-political units of the same nature within a unit of population which constitutes the domain of common reference for the assembled groups, space given its own social dynamic combining relations of competition and cooperation which allows each of these units to reproduce itself in relation to the others." (Taillard, 1977:93; author's translation)

Here we find a highly tangible point of entrance to the research of resource management in northern Thailand. The overlapping and intersecting social spaces of the mountains, which are not necessarily limited to or defined entirely by culture, are characterized by competition and cooperation. At first glance these may appear contradictory, but in fact, as Taillard goes on to say: "competition and cooperation, far from being opposites, appear as complementary and constitute a core of the social dynamic characteristic of this space of relation. It is around this cluster of interrelations among socio-political units that the different components of social space are ordered, ecological, cultural, economic and political, which were analyzed successively." (Taillard, 1977:94)

My research takes Condominas' definition as a broad guiding concept, but relies on Taillard for a more nuanced approach to understanding the local dynamics of resource management in the uplands. Although we may speak, for example, of Hmong social space, it should be stressed that this space is not determined by cultural factors alone. Responses to economic and political opportunities, relations with neighboring groups and ecological conditions all play a role in defining this space. This space necessarily involves the tension between competition and cooperation, and is seen as something that is created through the practice of everyday social interaction. Broadly speaking, Condominas' application looked at macro-level socio-political organization, while Taillard and others from ASEMI look at micro-level organization at the village level. My intention is to explore the space in the middle, scaling up from the village through a hierarchy of area-based networks.

Thus, the problem is how to create social space at the watershed level that is acceptable and legitimate to all users. Tanabe's (2003) ideas of 'communities of practice' are instructional here, because they point to the fact that that the membership, content and continuation of networks are dependent upon the people that act together on shared interests to create them. Tanabe asserted that practice is "the behavior and activities that are socially constructed and conducted customarily" (Tanabe, 2003:11). Tanabe draws on Wenger, who stated that practice also provides the common methods and standards that are the foundation for action, communication, problem solving, and accountability (in Tanabe, 2003). Thus, it can be argued that social space exists only as long as its occupants continue to recreate it. Indeed, Tanabe (2002) has described practice as the anthropology of participation. Without this community of practice participating in local governance processes and inter-village interactions, a watershed network fails to embody social space, and represents merely an ecological space.

Thus, a basic working assumption of this research is that the foundation of overlapping social networks gives meaning to social space that is created nominally by institutions such as watershed networks. Similar observations can be made about the sub-district government and its move to assume new roles in the landscape. The social networks that criss-cross the ridgetop and link the hills with the valley may represent the basis for a sub-district-level social space with new meaning. As will be explored more below, using the recent political developments of decentralization, local people have begun to alter the meaning of the political-administrative boundaries that was imposed on the area by the Thai nation state. Although it is too early to make conclusions, there are indications that the multi-ethnic population of the *tambon* has begun to use informal social networks to fill a space that in previous times was arguably little more than a unit on the Thai administrative map.

I consider both the watershed network and sub-district experiences to be exercises in defining and creating common social space. Both are trying to create something larger than the sum of their parts, to increase the voice of the groups involved, recreating the power of agency and re-establishing it in a specific locality. The interface between these two institutional developments, observable in everyday life on the mountain, is an exciting scenario for research. It is still too early to judge the success or failure of the emerging system for resource governance in the uplands. But the results of on-going efforts will

provide valuable lessons for the evolution of resource governance in Thailand, and will have a significant impact on how relations among ethnic groups play out in the mountains.

5. Methodology

The research was carried out in northern Thailand through fieldwork and deskwork components, which were conducted for the most part in tandem. The main approach of the research was to base the data collection and analysis of social interactions in the Mae Suk watershed from the point of view of the Hmong, one of the ethnic groups living in the upper area of the watershed.

5.1 Fieldwork and deskwork

Fieldwork included periods of residence in Chiang Mai and in the study area of Mae Chaem District between July 2003 and August 2005. The research was conducted as a part of the Northern Mountain Area Agroforestry Systems Research and Development Project, which is an on-going collaborative effort between the World Agroforestry Centre (ICRAF), the Royal Forestry Department, the Chiang Mai University Faculty of Agriculture and the Raks Thai Foundation (CARE). ICRAF provided me with an institutional home at their office in the Chiang Mai University Faculty of Agriculture and generous access to their research areas and data. In 2004 and 2005, I served as advisor to a team of five Master's students from Chiang Mai University jointly looking at resource competition and local institutions in Mae Chaem. I processed my field data at the ICRAF office, drawing on the expertise in land use change analysis housed there. Data collected in the course of my research was shared with ICRAF and its partners as well.

In the study site, I maintained a sub-base at the ICRAF office in Mae Chaem district. However, most of my field time was spent in the Mae Suk watershed. After a brief period of initial survey, I decided that although I was interested in general inter-community interaction at the watershed level, I would base my fieldwork and subsequent analysis in a Hmong village. The Headman of Ban Phui Nua provided me with living space and support in my research, as I collected in-depth data on resource management and social interactions in that village. From Ban Phui Nua, I also made extended visits to San Pu Loei, a neighboring Karen village. Resource competition between these two villages is intense, but at the same time villagers do maintain constructive and friendly relations. In San Pu Loei,

Mauf Tef, the *Tambon* Medic and leader of the Catholic Church, housed me and facilitated my data-gathering efforts. I also made data-collection trips to Ban Kong Kaan, the Northern Thai village at the bottom of the watershed. Finally, the ICRAF connection enabled me to interact with other watershed management networks in Mae Chaem, providing an important point of reference to the Mae Suk study.

5.2 Data and analytical methods

In the field, I focused on five main areas of data collection and analysis. Semi-structured and in-depth interviews, and participant observation were conducted regarding:

1. **Local oral history and personal narratives**: Information from village elders, village leaders and other key informants was gathered to provide a basic understanding the foundations for current social interactions, within and between villages, and the processes of landscape change as experienced by local people. Personal histories within these themes provided important detail to the historical recounts.
2. **Village social organization**: This information focused on the structures and processes of village governance, both formal and informal, kinship networks and relationships, and the management of relations with other villages. I also collected data for social network analysis in Ban Phui Nua.
3. **Natural resource management practices**: Data concerning the management of land, forest and water resources was collected to ascertain the nature, content and scope of conflict and approaches to cooperation.
4. **Participation in networks**: Villagers provided information, perceptions and experiences regarding their participation in networks at the village, watershed and regional levels. I also attended network, committee and village meetings when possible.
5. **Decentralization and local governance processes**: I conducted interviews with officials from local government, central government agencies and development projects to experience the range of perspectives on these challenges from the people working within the process and those working to support it from the outside.

The extreme institutional complexity and rich mix of ethnicities were two of the factors that drew me to Mae Chaem. In order to attain the data necessary to understand the social dynamics underpinning inter-community resource competition and network formation, I conducted fieldwork activities in the Hmong, Northern Thai, Karen and Central Thai languages. Language was certainly a key to my experience in the villages – a tool for not only gathering information, but also establishing the foundations of trust needed to follow the lines of inquiry defined by the research.

Deskwork, conducted in Chiang Mai and Kyoto, included a range of activities that provided background information for analysis of data obtained in the field:

1. **GIS analysis of aerial photos**: With the assistance of ICRAF, I analyzed changes in land use practices at the watershed level. The aerial photos were from 1964, 1976, 1984 and 1996, visually interpreted, digitalized and analyzed with ArcView GIS software.
2. **GPS and GIS analysis of current resource use**: I collected and analyzed new data on land and water use in Huai Sai Khao, where tension over water between Ban Phui Nua and San Pu Loei has intensified. This included thematic mapping and analysis of the emerging pipe-irrigation system used in the area in dry-season cropping.
3. **Review of literature**: Material reviewed included anthropological literature from northern Thailand, project documents from the 1980s development work in the study site, contemporary literature on decentralization and community based natural resources management, and the development of civil society. In the course of reviewing existing literature, I made use of materials written in English, Japanese, Thai, Hmong, Karen, French, and Chinese.
4. **Social Network Analysis**: This analysis was based on information collected in Ban Phui Nua and was done in Ucinet version 6 software[5].

The underlying approach to the research was to work with data from multiple perspectives – including anthropology, sociology, ecology, history and political science – to explore this complex set of nested interactions. All maps presented in this dissertation are my own creations, using ICRAF GIS data.

6. Flow of the dissertation

The dissertation is structured in the following way:

Chapter One set out the basic research questions and frameworks for the study, and introduced the research process. The chapter went on to introduce the concepts of social space, natural resource governance and social networks, setting the broad conceptual context for the study. It then presented the research process.

Chapter Two provides the background for the main analysis of the research. The context material consists of three parts, incorporating a review of relevant literature – the Karen, Hmong and upland society; landscape change and the rise of the watershed policy framework; and the sub-district decentralization framework. Finally, the chapter introduces the emergence of watershed networks in northern Thailand.

In **Chapter Three**, I examine the Hmong position in the upland landscape, beginning with the establishment of the sedentary village. The chapter then traces the tension between resource competition and cooperation, focusing on the role of kinship in Hmong social networks. After a discussion of the general context of village-level social interactions, the analysis turns to trends in land and water management. This chapter lays the foundations for examining inter-ethnic relationship more broadly through the landscape from a Hmong point of view.

Chapter Four shifting the analysis to an area of land and water conflict between Ban Phui and San Pu Loei, a neighboring Karen village. The analysis focuses on management of resources in a small valley farmed by members of both villages, presenting data on the relatively new upland pipe irrigation system that has intensified conflict among farmers. The relationship between informal networks, institution building and technology is explored to illustrate the dynamics of local-level conflict management.

Chapter Five analyzes the formation of networks to address resource management problems at the watershed scale. The chapter examines the formation of networks at two nested scales in the Mae Suk watershed in response to the inability of official institutions

of governance to manage growing tension between upstream and downstream communities. The discussion highlights village-level interactions in the watershed and the constraints to the networks' effectiveness.

Chapter Six relates the Mae Suk watershed management networks to developments in network formation at larger scales in northern Thailand. The analysis starts with an elaboration of how the water issue has come to dominate the upland-lowland relationship, in the process situating the conflict soundly within the concerns of lowland society. At the same time, there is a growing body of experience that highlights the opportunities and challenges to establishing functional networks. One key aspect of the network experience is the need for linkages between networks at different scales of management, as demonstrated in the emerging context of the Ping Basin initiative.

Chapter Seven provides a summary of the research findings and implications for broader social development challenges in Thailand. The chapter closes the dissertation with reflections on the importance of the study for broader global debates on natural resource management networks.

[1] "Watershed Management Policy in the Lao PDR", University of London School of Oriental and African Studies, 1999.

[2] http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=78&ArticleID=1163

[3] Émile Durkheim (1913) *Les formes élémentaires de la vie religieuse.* Paris: Librairie Félix Alcan.; and Claude Lévi-Strauss. (1953) "Social Structure", in Alfred L. Kroeber (ed.) *Anthropology Today*. Chicago: University of Chicago Press.

[4] Chombart de Lauwe, Paul-Henri. (1974) "Eth(n)ologie de l'espace humain", in François Bresson et al., *D'espace corporel à l'espace écologique.* Paris: Presses Universitaires de France.

[5] Borgatti, S.P., Everett, M.G. and Freeman, L.C. 2002. Ucinet for Windows: Software for Social Network Analysis. Harvard: Analytic Technologies.

CHAPTER TWO

The upland landscape: Ethnicity, livelihoods and local governance

This chapter provides the background for the main analysis of the research. The context material consists of three parts, incorporating a review of relevant literature – upland society and interethnic relations, landscape change and the rise of the watershed policy framework, and the sub-district decentralization framework of governance. Finally, the chapter introduces the emergence of watershed networks in northern Thailand.

The small Khon Muang-owned shop at Thung Ya, in Pang Hin Fon Sub-district (*tambon*), is a good place to gather information about the latest goings-on in the area. People from neighboring Karen, Hmong and Lawa villages pass through on their way to market, government offices, church, and cabbage fields. The Northern Thai dialect Kam Muang and Karen are the main languages used among local people of different groups, but Lawa and Hmong are commonly heard as well. On any given day the topics of discussion may include the price of shallots, the next sub-district government meeting agenda, national park expansion plans, the opening of a new church or an inter-village wedding. From this vantage point, it is clear that the networks of communication that criss-cross the ridgetop are dense and intense. The talk heard in Thung Ya reflects the growing degree of interconnection between villages of different ethnicity in the area. But this interconnectedness is not only experienced at the cross-road shop in Thung Ya. In the Hmong village of Ban Phui Nua, for example, villagers interact on a daily basis with their Karen, Lawa and Hmong neighbors, and maintain relationships with the Thai villages downstream as well.

Thung Ya lies at the intersection of several social spaces. Some of these spaces are defined by the customary cultural, economic, social and political systems of the Karen, Lawa and Hmong communities that live in the region. Other social spaces are being actively created. These multi-ethnic social spaces – the *tambon* as an upland community, and the watershed as a community spanning the highlands and lowlands – are being created to meet the needs of contemporary life in the watershed. Both are charged with political energy and a dynamic tension between conflict and cooperation. The following chapters illustrate how these social spaces are being articulated, that is, being created actively by formal and

informal networks. This chapter provides an introduction to the upland landscape in which the new social space is evolving.

1. Nested study sites: Mae Chaem and Mae Suk watershed

This section introduces the study site, locating it within the northern Thai ecological, political and ethnic landscapes.

1.1 Mae Chaem: District and watershed

Three hours drive from Chiang Mai city, at the western foot of Thailand's highest mountain Doi Inthanon, lies Mae Chaem District. Ten sub-districts (*tambon*) comprise the administrative units of Mae Chaem. The total District population is approximately 68,000, of which more than 70 percent is ethnic minorities – Karen, Lawa[1], Hmong and Lisu. The remainder of the population is northern Thai, known as Khon Muang, who are clustered primarily in the lowland areas around Mae Chaem District town. These people were historically called Yuan, and are one of the main ethnic Tai groups inhabiting the northern region of Thailand. At the watershed level, minorities represent just over 50 percent of the population. Figure 2-1 shows the distribution and ethnicity of Mae Chaem villages. *Tambon* borders are shown in yellow.

The Mae Chaem River gives the district its name. The Mae Chaem watershed, with an area of 3,927 square kilometers, is of national importance, considering that it contributes approximately 40 percent of the Ping River, and 16 percent of the Chao Praya River (Thomas et. al, n.d.). Thus, as a headwater area of Thailand's largest river, the upstream ecological conditions of Mae Chaem have implications for other sectors of Thai society. The Mae Chaem River flows from north to south, fed by tributary streams on both sides. There is a 90 percent overlap between the District and the watershed, which provides an interesting situation for considering the management of the watershed. Mountains dominate the area, and the dynamic mosaic of forest and agricultural land is under continuous pressure from people, projects and policy as the struggle between conservation, development and livelihood is played out.

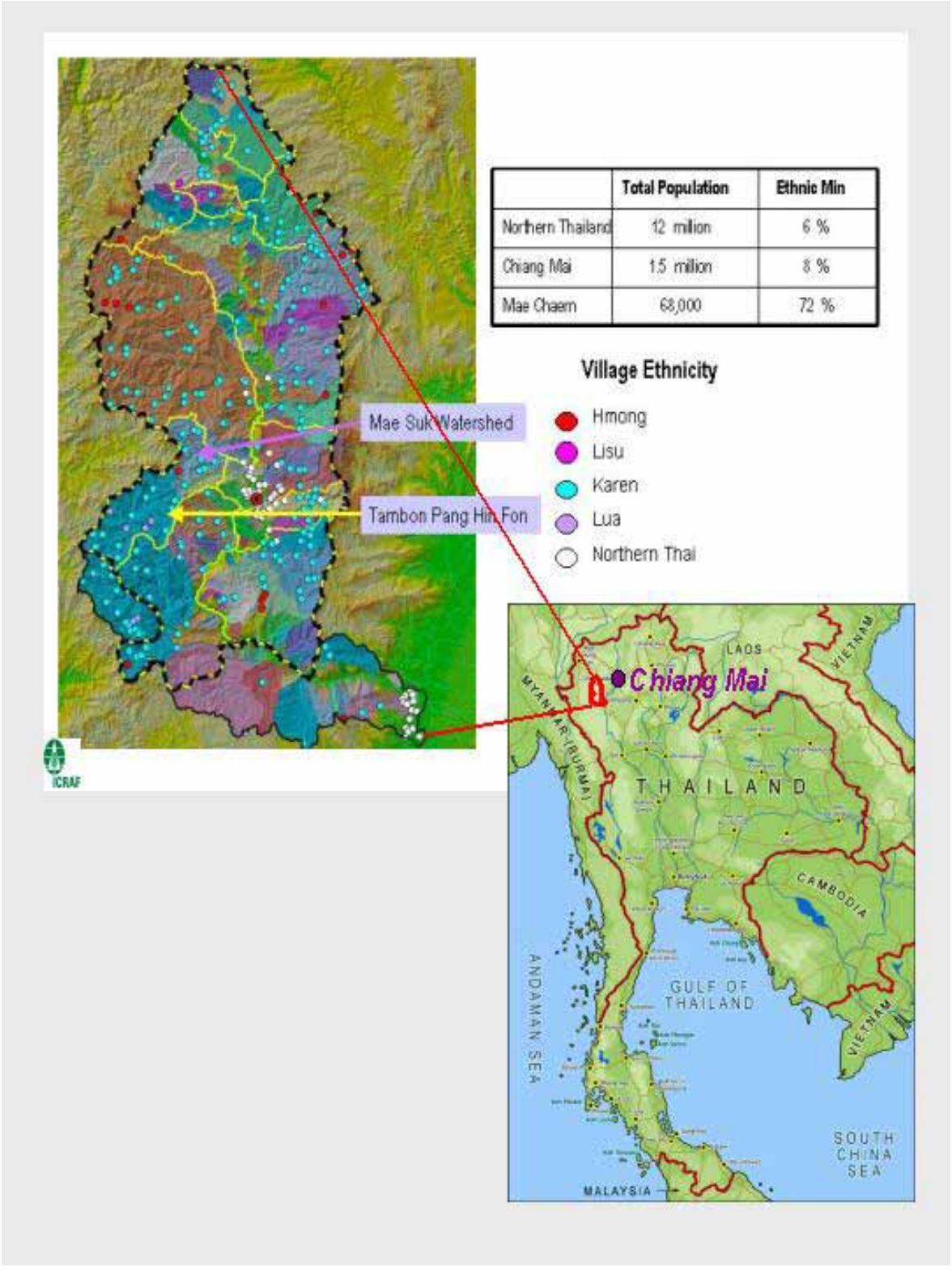


Figure 2-1: Study Site Location

1.2 Population groups

The population of Mae Chaem District is composed of five ethnic groups. The Khon Muang have typically inhabited the narrow valley areas of the mountains, practicing Buddhism and basing their livelihoods on wet-rice production. The original inhabitants of the area are the Lawa, a Mon-Khmer group that has lived both in the valleys and mountains. In addition to traditional animistic rituals, some Lawa have converted to Buddhism or Christianity. Traditionally, upland rice cultivation formed the basis of Lawa livelihoods, with non-timber forest products providing an important supplement in the form of items for consumption, such as food and medicine, as well as products for trade. In recent years Lawa have shown increasing interest in cash crops.

The Karen arrived in the area in the 1800s from Burma. Speaking a Tibeto-Burman language, the Karen are the largest minority group in the northern Thai mountains. Mae Chaem Karen are from the Sgaw subgroup and have experienced a substantial conversion to Christianity from traditional ancestor and animistic rituals. Karen livelihoods, based on upland rice production, were originally supported by a system of rotational forest fallow shifting cultivation, but now include paddy rice and increasingly, cash crops in permanent fields.

The Hmong migrated from China, passing through Laos and Burma, to settle finally in Thailand. The majority of Mae Chaem Hmong is of the Green Hmong dialect group, and practice shamanism and ancestor cult rituals. Hmong culture was deeply influenced by the Han Chinese before the Hmong left China in the 1800s, as reflected by language, social organization and ritual practice. The Hmong practiced shifting cultivation, following the ridge-tops south from China in search of land suitable for opium, rice and maize. The Hmong abandoned serious rice production shortly after arriving in Thailand, and are deeply involved in production of vegetables for the market.

The Lisu are speakers are members of the Tibeto-Burman language family. They generally inhabit the same ecological zones as the Hmong and practice shifting cultivation. There is only one Lisu village in Mae Chaem, and they are not a part of the following analysis.

1.3 Local context: Pang Hin Fon sub-district and Mae Suk sub-watershed

This study looks at two spatial units of analysis within this general eco-political context. First, *tambon* Pang Hin Fon, composed entirely of Karen, Lawa and Hmong villages, is located on in western mountains of Mae Chaem. The area of *tambon* Pang Hin Fon is approximately 242 square kilometers and abuts Mae Hong Son province to the west. Second, the Mae Suk[2] sub-watershed is a small tributary, covering approximately 96 square kilometers. The Mae Suk stream flows from its upper reaches in Pang Hin Fon down to the lowland areas inhabited by Khon Muang at its confluence with the Mae Chaem River. Seventy-four percent of the Mae Suk watershed lies within *tambon* Pang Hin Fon. The population of Mae Suk watershed is 3,088 people – 54 percent Karen, 27 percent Khon Muang and 19 percent Hmong.

The overlaps and interactions between the *tambon* and the watershed form a critical context for the following discussion of natural resource governance. In many ways, these two units are rapidly becoming important units of local social organization. Ethnicity, livelihoods and politics are all inextricably linked at the interface of these two units, and the management of natural resources is the common thread that draws them together in daily village life.

2. Karen, Hmong and the study of the Thai uplands

Research on the uplands of Thailand has been driven by a mixture of academic and policy interests. Some of the key issues have included shifting cultivation and forest loss, opium production and crop substitution, ethnic identity and nation-state building, and conservation/development and indigenous knowledge. The broad range of interests reflects recognition of the important position of the uplands in Thai society. For academics, the uplands have provided a rich source of experience for understanding human diversity, primarily in the context of periphery areas in a quickly maturing nation state. In the policy world, there has been a tendency to characterize the uplands and its people as a problem[3] area that needs to be addressed by integration, development, conservation or more often a mixture of the three.

A common approach of early anthropological research in the uplands was to conduct studies of single ethnic groups. This produced much valuable information, but tended to isolate these groups in ethnic pockets scattered across the mountains. Some researchers, however, have studied the interactions between upland and lowland peoples in a number of contexts. In response to perceptions that the uplands and its inhabitants were isolated, inaccessible and frozen in 'tradition', there was an effort to examine historical upland-lowland interactions in the political and economic structures of northern Thai kingdoms. Research focused on social exchanges between upland and lowland communities, as seen in ritual practice, cultural change and adaptations, intermarriage and population movements, as well.[4] The result of this work was a heightened awareness of the relative intensity of upland-lowland interactions and the dynamic role that upland groups played in these relationships.

Ethnographic research on the Thailand uplands has produced a large body of literature of the Karen. In many ways, this literature serves as a representative, or at least dominates representations, of upland society. Researchers such as Iijima (1971), Hamilton (1976) and Hinton (1979) presented the many complex facets of Karen ethnicity, livelihoods and ritual practice, for example. This work led into subsequent research that explored the ways in which the Karen were ‘a people in the middle’. With livelihood systems including upland fields and irrigated paddy, flexibility in relations with their Khon Muang neighbors, living in the foothills but able to migrate to urban areas, and showing high rates of conversion to Buddhism and Christianity, it was hard to classify the Karen definitively as uplanders. At the very least, it was clear that the Karen maintained relationships with the lowlands that were very different from other upland groups such as the Hmong and Lisu.

Part of the emerging definition of this ambiguous position in the landscape highlighted Karen traditional practices of forest management and rotational shifting cultivation (Kunstadter, Chapman and Sanga, 1978). As environmental discourse began to gain momentum in post-opium 1990s Thailand, the Karen were viewed “somewhat as a showcase of the environmental movement” (Hayami, 1997:576). Academic research, NGO activities and some Karen leaders themselves fostered this image. One of the results is what has been described as a ‘Karen consensus’ (Walker, 2001) among parts of Thai society, in which Karen rotational shifting cultivation is idealized as “a relatively sustainable, ecologically friendly and subsistence-oriented form of agriculture that is

threatened by the recent intrusion of the state and the market" (Walker, 2001: 145). Karen forest management has also been singled out as more sustainable than other upland groups practices, making it a dominant component of debate over whether ethnic communities should be allowed to live in watershed forest areas[5]. However, as Hayami (1997) argues, there has been very little consensus within the Karen community regarding what is traditionally Karen and what aspects of Karen life should form the pillars of Karen society in the future. Indeed, Walker's conclusion is that a Karen consensus tries to exclude the Karen from the state discourse of national environmental interests, in the process limiting the options open to the Karen with regards to livelihood strategies, resource management strategies and expressions of Karen identity. There is certainly no consensus among the ethnic groups of the uplands. The over-emphasis on Karen environmental practices has produced a skewed picture of the contemporary uplands and the groups that live there.

The association of opium, pioneer shifting cultivation, communist insurgents and refugees with the Hmong has been a major catalyst of research on the Hmong. This research reflected a perceived need to understand the ecological impacts and socio-economic effects of Hmong agriculture during and after the opium economy. At the time of the first serious ethnographic work of the 1960s, the Hmong had been present in the landscape of central Chiang Mai for only 15-30 years (Marlowe, 1967). In-depth research first sought to explain the Hmong role as major producers in the opium economy (Geddes, 1976; Cooper, 1984), with an eye towards identifying strategies to facilitate a shift to other cash crops. Tapp (1989) and Prasit L. (2001) brought valuable new anthropological attention to analysis of Hmong society and the changing Hmong position in Thai society. However, research on the Hmong seems to have lost momentum in the post-crop substitution era, although a new generation of Thai-language literature is emerging. Recent Master's theses from Chiang Mai University, for example, represent new approaches to Hmong research. These works have addressed the politics of representation in Hmong natural resources management (Drinya, 2002), Hmong land use in protected areas (Darika, 2002) and Hmong local knowledge in claiming rights over resources (Aphai, 2004). These efforts constitute the beginning of an academic response to the strong emphasis on Karen studies and the growth of activities by the Hmong to respond to stereotypes that paint them as environmental threats.

Ethnographic research has provided much information on upland society, but with the exception of a few important works, researchers have not directed their energies to examining relations between ethnic groups in the uplands. Early works by Marlowe (1967) and Kunstadter (1967) and later by Furuie (1993), for example, placed emphasis on the multi-faceted interactions between Karen, Lawa and Hmong. Of particular interest at this time was the balance between trends of cultural flexibility and the maintenance of ethnic boundaries. For example, Kunstadter presented his observations of the Karen and Lawa, who described themselves to be "almost like relatives", intermarrying, sharing in ritual aid, engaging in trade and social visiting (Kunstadter, 1967:79). At the same time they remained aware of basic cultural differences that distinguished them, such as structure of ritual practice, preferences for wage labor, attitudes towards opium and facility of language acquisition, to name a few. *Ethnic Adaptation and Identity* (Keyes, 1979) was a major contribution to not only an understanding of the Karen, but addressed the study of inter-ethnic relations and the cultural meanings attached to ethnicity as seen in Karen society, as well. Studies from this period also frequently touched upon Hmong-Karen wage labor relations in poppy fields, and to a lesser degree the differing land management practices of the two. Mischung's report on the differences between the two groups, in terms of social organization and livelihood strategies, as they moved into the post-opium era provided a valuable advance towards more constructive comparative research that tried to move beyond stereotypes. However, subsequent research did not follow on this lead.[6]

Table 2-1 shows the 2002 summary of population by ethnicity for the Thai 'hilltribes'. The Karen have a clear demographic majority, representing almost half of the total hilltribe population. The second largest group is the Hmong, at almost one-third the population of the Karen.

Table 2-1: 'Hilltribe' population of northern Thailand

Total	Karen	Hmong	Lahu	Akha	Iu-Mien	Htin	Lisu	Lawa	Khamu
914,755	438,450 (48%)	151,080 (17%)	102,371 (11%)	65,826 (7%)	44,017 (5%)	42,782 (5%)	37,916 (4%)	21,794 (2%)	10,519 (1%)

Source: Hilltribe Welfare and Development Center, 2002

Increasing competition for natural resources in the mountains since the 1980s has brought upland ethnic groups into contact in new ways, at new levels of intensity. The resulting rise

of inter-ethnic resource tension and conflict calls for renewed efforts to understand the interactions between these groups and the implications for natural resource governance in the uplands. According to Hayami, "[p]utting the Karen in a special role regarding environmental conservation may differentiate the Karen from other hill groups with different modes of ecological adaptation and historical background, reinforcing differences and exacerbating the potential for conflict among different hill groups" (Hayami, 1997:576). Indeed, the Hmong-Karen relationship is often characterized as a polarized confrontation between the environmental destroyers and the environmental saviors. Therefore, this study attempts to broaden the contemporary debate on upland society in Thailand by concentrating on the Hmong, at the same time basing the analysis on observation of Hmong interactions with other groups in the localized socio-economic and ecological setting of an upland tributary watershed. The intention is not to propose the Hmong as a new center of focus for the uplands, but to stress the need to consider the uplands in all of its diversity, highlighting the modes of interaction rather than an ideological clash of opposing systems.

3. Landscape change and the rise of the watershed policy framework

The Mae Suk area is representative of the socio-environmental conditions of Mae Chaem district, where significant amounts of mountain forestland have been converted to agricultural land over the past five decades. Land use change is often discussed in simplistic dichotomous terms of forest versus agriculture. Within the forested area, forest patches are managed in different ways, for different purposes by the people that live in or nearby them. Moreover, the upland landscape is better conceived as a dynamic mosaic of forest and agriculture, which undergoes constant reconfiguration in the interplay between local and external stimuli.

The Mae Suk catchment has undergone a remarkable agricultural transition. Over the course of 30 years, the local economy was drastically transformed, as farmers adopted cash crops as an economic alternative to the two dominant cropping systems of the area – opium poppy and subsistence upland rice. Of these two, the transition from opium poppy is complete, while upland rice-based livelihood systems are struggling to strike a locally acceptable balance between subsistence and market-oriented production. This section presents a view on the landscape changes that occurred in Mae Suk, combining a) a social

history of the landscape, as told by local people, b) time-series analysis of aerial photos and c) participatory land use mapping.

3.1 Transformation of the landscape: Oral history

The social landscape history of the Mae Suk catchment region can be divided roughly into five periods (Table 2-2).

Lawa and Karen Settlement: Mid-1800s to 1940s In the period between the mid-1800s to the 1940s, the upper Mae Suk area was predominantly a Karen landscape. The major settlements were Karen villages, occasionally moving within the immediate area. San Pu Loei was established around 1910, although villagers say they had already been living in the area for at least three generations. There may have been a certain degree of interaction with Lawa villages in adjacent areas in *tambon* Pang Hin Fon. Interactions with Khon Muang were less frequent, and focused mostly on small-scale trading and a popular Buddhist temple at the bottom of the Mae Suk stream. The local Karen sustained themselves on upland rice, grown in forest fallow rotational shifting cultivation systems. By the end of this period, the Karen had begun to see the impacts of logging concessions in the lowland areas, as forest around the Thai villages were cut for sale.

First Opium Landscape: 1940s to mid-1960s Beginning around the 1940s, opium poppy was introduced into the Mae Suk catchment. Although opium is commonly associated with the Hmong, the first cultivators in this region were Khon Muang. Farmers from downstream Khon Muang villages took advantage of the relatively sparsely populated upland areas to respond to the demand created by official opium purchasing policies. The Karen upland rice production system remained largely unchanged during this period. By now the Hmong had arrived in the region in larger numbers, although there were no Hmong settlements established in the immediate vicinity. Karen elders tell that there was a high awareness among the Karen of the new arrivals and their poppy cultivation.

Second Opium Landscape: Mid-1960s to mid-1980s It was not until the 1960s that the local opium economy began to reach its peak. As the Khon Muang poppy farmers abandoned their fields in response to the government policy shift outlawing opium and the drop in price, Hmong farmers moved in to settle the area just upstream from San Pu Loei,

taking over the cultivation of poppy fields. Lowland Thai middlemen provided access to markets. In the Hmong telling of their arrival in Ban Phui, they knew that this move would be permanent, ending the long journey from China that had started in the 1880s. Permanent fields were soon to become a central element of the Hmong landscape. With the Hmong now as settled neighbors, Karen interactions with the Hmong began to increase in frequency and intensity. Karen cultivated poppy on a small scale, and worked for wages in Hmong poppy fields. Karen elders report that the entrance of the Hmong meant the beginning of opium addiction. The Hmong had already abandonded rice self-sufficiency as a livelihood strategy, choosing rather to purchase rice from the Karen with cash from sale of opium.

Table 2-2: Historical Periods in Mae Chaem

Period	Population	Livelihoods	Drivers of Change
Karen Landscape mid-1800s to 1940s	Predominantly Karen with Lawa in adjacent areas, possible mixing of Lawa and Karen when Karen arrived in areas	Forest fallow rotational shifting cultivation, upland rice for consumption	Trading relations with lowland Thais, relationships with Lawa communities, gradual penetration of state administration, allocation of logging concessions to lowland Thai
First Opium Landscape 1940s to mid-1960s	Predominantly Karen with increasing presence of Thai from downstream villages, Hmong begin to arrive in adjacent areas but contact is minimal	Karen forest fallow systems with upland rice as central component, Thai poppy production in upper Mae Suk catchment area, including Huai Sai Khao	Opium market, official opium purchasing
Second Opium Landscape mid-1960s to mid-1980s	Establishment of permanent Hmong settlements in areas directly adjacent to Karen villages, Thai poppy fields abandoned	Hmong take over Khon Muang poppy fields, Karen livelihoods closely linked with opium economy through agricultural employment and small-scale production	Hmong opium production and demand for labor and land, lowland Thai opium merchants and traders
Crop Replacement mid-1970s to mid-1980s	Population growth in both Karen and Hmong villages, purchase of Karen lands by Hmong	Poppy eradicated, coffee and kidney beans introduced by external groups but unsuccessful	Government policies and programs, international donors, Royal Project, road construction, implementation of watershed classification scheme
Cash Crops mid-1980s to present	Population growth, arrival of Shan workers, education opportunities in lowland areas	Cabbage, carrots, lettuce, shallots, fruit crops introduced by local innovators in Hmong and Karen communities	Market price fluctuations, access to credit, development of dry-season irrigation technology, informal networks

Source: Author's field interviews

Opium Replacement and Watershed Management By the early 1980s, Ban Phui was the second largest producer of opium in Chiang Mai province, and the largest in Mae Chaem. The three main opium producing Hmong villages had more than 2,200 rai, approximately 363 hectares, under opium poppy production in 1986/87. The village became a target for opium replacement efforts focusing on assisting farmers to transition into vegetable and fruit crops for sale in local and regional markets. In fact, it was reported that as much as 60 percent of the crop in this season was destroyed by the police (DAI, 1987). Crop replacement programs promoted coffee and kidney beans, neither of which provided a viable livelihood option for the local farmers. Construction of the road from the Mae Chaem district town was finished at the end of this period, ushering a new era of commercial agriculture. These interventions, jointly carried out by the Thai government and the United Nations, were part of a larger response to the growth of a support base for the communist resistance in the late 1970s and 1980s. There was also a more general desire to bring development to the mountain people and foster a feeling of Thai-ness among uplanders[7] (Renard, 2001).

The Mae Chaem Watershed Development Project was a major international intervention in Mae Chaem during this period. This period would set in motion the economic trends that have shaped the landscape until now. With a budget of approximately US$20 million, 45 percent provided by the United States government and the rest by the Thai government, the project aimed to improve the quality of life of Mae Chaem inhabitants through agricultural development, marketing, infrastructure and social development activities. The project was unique among its peers in that it planned assistance evenly distributed between Khon Muang and upland villages. The project was also innovative in that pushed the Thai government to issue land title documents for upland farmers, although in the end this was not carried out (DAI, 1987).

Spread of Cash Crops By the turn of the 21st century, the landscape mosaic of Mae Suk catchment had become a mix of permanent field crops, fallow fields of varying age and various types of forest. The failure of the first generation of cash crops was quickly followed by a second wave of experimentation that would quickly take hold and stimulate the kind of land use transformation originally envisioned by government crop replacement programs. This period is characterized by local innovation, and the changes observed were driven by individual initiative to respond to market opportunities. The factors enabling this

include all-season roads, individual transport capacity, access to credit, and the flow of relevant information. Cabbages, carrots, lettuce and potatoes were the most popular crops, grown in the rainy season. Figure 2-2 is a common view of upland fields in the upper Mae Suk watershed.

Figure 2-2: Common view of upland fields, Ban Phui Nua, 2003

These land use patterns are not distributed evenly over the landscape. The extensive area of field crops centered on Ban Phui Nua is clear. Nevertheless, cash crops have penetrated into Karen villages in a substantial way. Across the landscape, the maintenance of intensive cropping of vegetables in permanent fields on steep slopes has required increasing high levels of fertilizers, herbicides and pesticides, which has meant higher costs for farmers and has raised suspicions about water pollution in the streams. Shan laborers from Myanmar began to arrive during this period, employed primarily by the Hmong. The advent of dry season irrigation placed new stresses on the water balance in the catchment, and became another source of tension between local communities, not to mention with lowlanders. Thus, successful opium replacement has ushered in a new era of

watershed concerns in which upland farmers find themselves blamed for environmental degradation.

3.2 Observed land use change: Analysis of aerial photos 1954-1996

Observation of land use change from aerial photographs provides another point of reference for understanding transformations in the upland landscape. A four-year time series of aerial photos – 1954, 1976, 1984 and 1996 – was analyzed as background to this study. Changes in land use over this period are shown in Table 2-3.

Table 2-3: Land Use Change in Mae Suk Watershed

	1954		*1976*		*1984*		*1996*	
Land Use Class	Area (ha)	% of WS	Area (ha)	% of WS	Area (ha)	% of WS	Area (ha)	% of WS
Forest	4,871	51%	5,248	55%	4,884	51%	4,187	44%
Disturbed forest	250	3%	0	-	0	-	7	-
Old fallow	2,476	26%	2,218	23%	2,307	24%	1,949	20%
Young fallow	1,224	13%	825	9%	1,290	13%	996	10%
Forest plantation	0	-	0	-	255	3%	0	-
Grass land	311	3%	606	6%	12	0%	204	2%
Field crop	359	4%	490	5%	645	7%	1,969	20%
Paddy field	103	1%	185	2%	166	2%	191	2%
Settlement	13	0%	32	0%	34	0%	74	1%

Source: ICRAF data from analysis of aerial photographs

In 1954, 51 percent of the watershed was covered by forest, while another 39 percent was young and old fallow. At this point field crops, consisting primarily of a mix of Karen upland rice and Khon Muang poppy fields, covered a mere 4 percent of the landscape. In 1976, there is little change in the overall area of land in each category. There was a slight decrease in both young and old fallow, both of which also underwent a process of fragmentation. In this period, grassland doubled, from three to six percent of the watershed. Regular fire events in this are prevented the regeneration of vegetation. The Hmong call this area *haav nqeej*, signaling that the area was dominated by *imperata*. It is interesting to observe that forest cover during this period actually increased four percent, likely as a result of old Karen fallow fields returning to forest. Figures 2-3 and 2-4 present land use change maps for the period of analysis.

The period from 1976 to 1984 saw an increase in field crops as opium replacement programs promoted other cash crops. The grasslands that previously dominated the

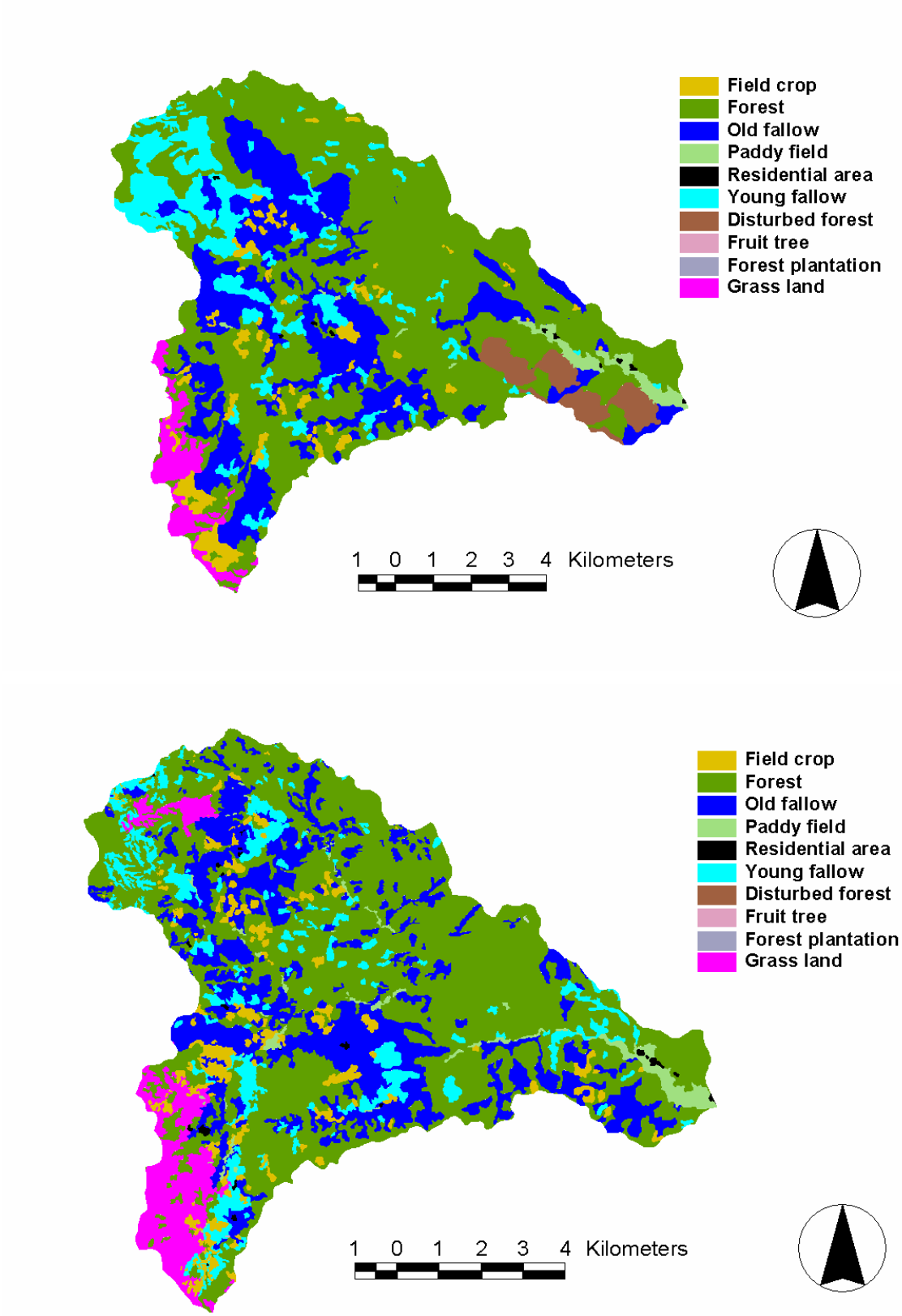


Figure 2-3: Mae Suk watershed land use, 1954 and 1976

Source: ICRAF Chiang Mai, GIS data

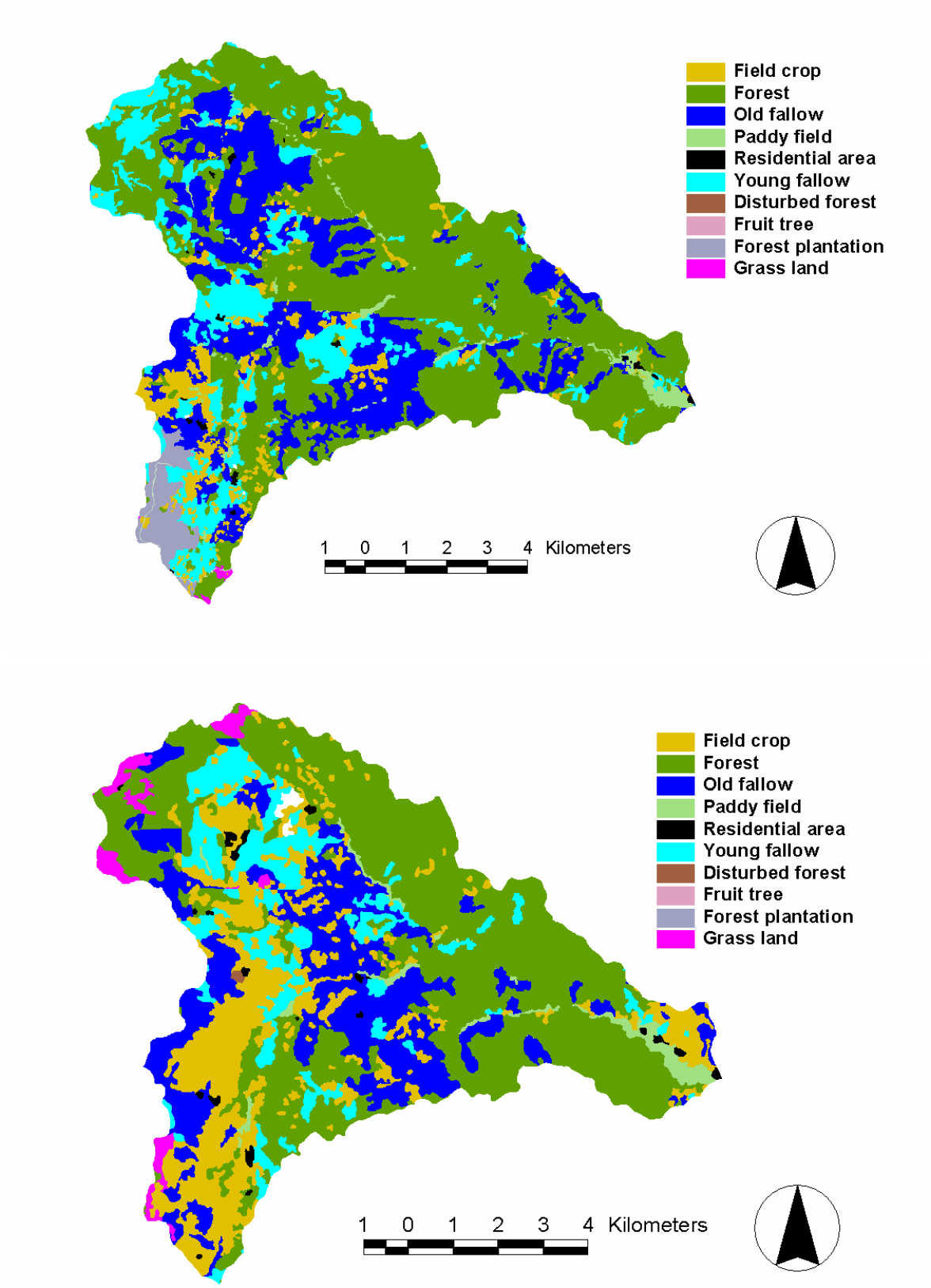


Figure 2-4: Mae Suk watershed land use, 1984 and 1996

Source: ICRAF-Chiang Mai, GIS data

ridgetop in the southern corner of the watershed were replaced by forest plantation (pine), young fallows and field crops. In this period, it seems that pressure on fallow systems began to mount, as some old fallow and forest was converted back to young fallow. As old fallows were returned to forest, the middle watershed area's forest cover was consolidated after the period of fragmentation seen in 1976.

The 1996 image shows a striking expansion of field crops, from seven percent to 20 percent, across the upper watershed area, A distinct strip of old fallow appeared along the top of the ridge in the upper watershed area, replacing the previous expanse of grassland. However, forest, young fallow and old fallow all showed declines, of four percent, four percent and three percent, respectively. Forest consolidation in the lower watershed area continued during this period, as well.

The land use change analysis supports the growth of field crops as explained by villagers, primarily in the area around the Hmong villages. The change trends also highlight the volatile condition of the rotational forest fallow system of the Karen. The loss of forest, between 1954 and 1996 was perhaps less than expected, based on the popular perceptions voiced by local people. During this period, approximately 700 hectares of forest, or seven percent of the watershed, was changed to different land uses. If considering the total forest mosaic (including forest, old and young fallow and plantation) the total area under tree forest cover decreased from 91 percent to 74 percent.[8] However, the shift to temperate vegetable crops continued after 1996, and it is expected that some degree of forest conversion was involved in this growth.

3.3 Current land use trends: 2001 community mapping

Current land use for the Mae Suk watershed is shown in Figure 2-5[9]. This data is from a participatory land use mapping exercise carried out by ICRAF-Chiang Mai, and represents watershed villagers' classification of actual land use in 2001.

First glance at the map shows an expansive area of cultivation at the top of the watershed, a concentration of paddy fields at the bottom of the watershed, and a broad area of forest in the middle. These zones correspond to three zones of ethnicity in the watershed, and

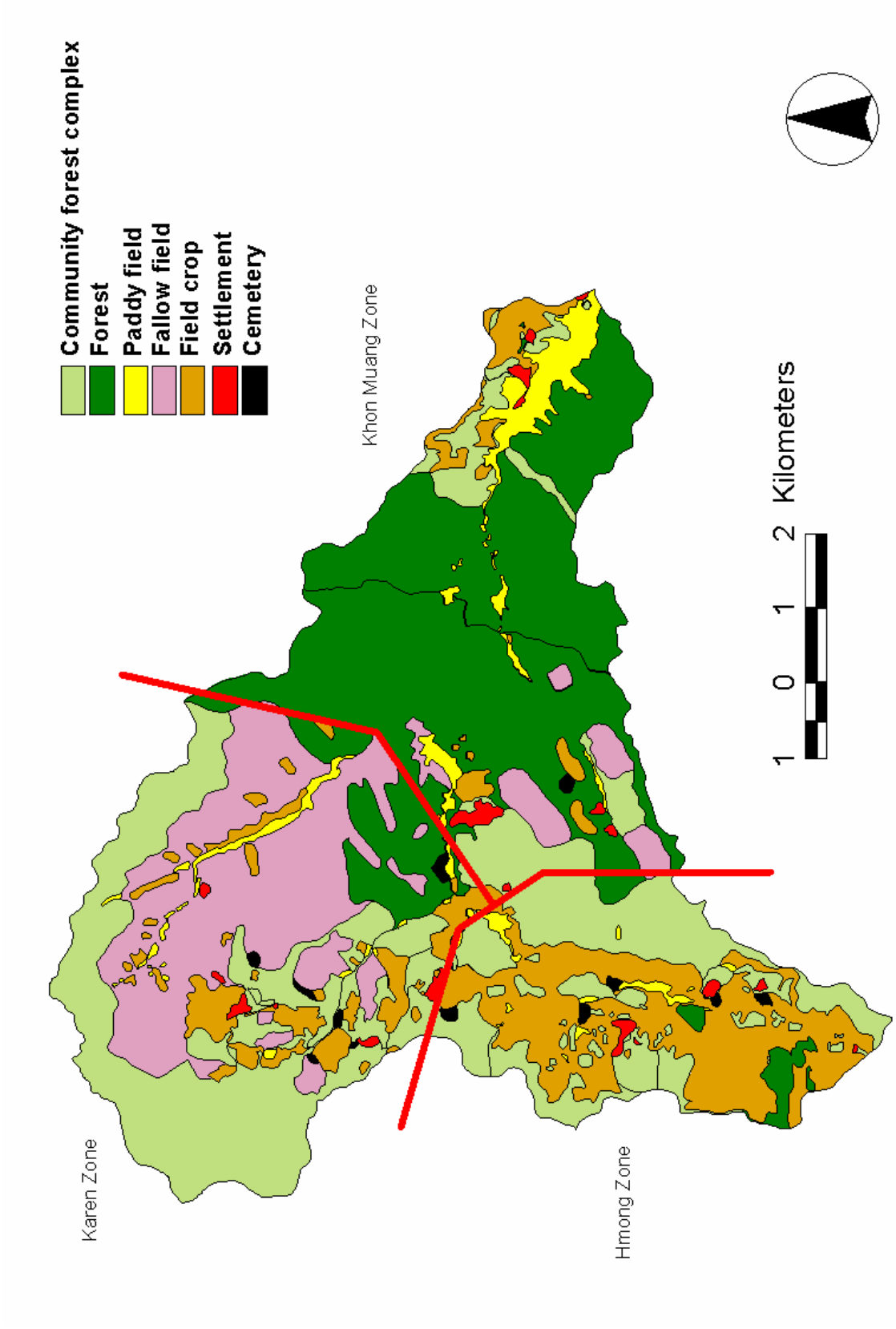


Figure 2-5: Mae Suk watershed land use, 2001

Source: ICRAF-Chiang Mai, Participatory mapping and GIS data

represent different strategies for land management in terms of the forest-agriculture balance. There is a discrepancy between the sub-total and total areas, because there is tract of mostly forested land in the middle watershed area that is not used by any particular village. Interviews with local people provided ambiguous answers regarding the ownership status of the area, although it seems that a village in the adjacent watershed to the north uses this area to some degree.

Table 2-4 summarizes the land use patterns for the Mae Suk watershed by zone of ethnicity. The majority of the watershed's forest category is located in the Khon Muang area. This forest land serves as an immediate area of water source forest for their irrigation system, and has also provided a social buffer zone between them and the upland population. Attempts to obtain more detailed information regarding the position of this forest in the Karen landscape were unsuccessful. It seems that this area is simply considered 'forest'. Until 2005, the Royal Forest Department (RFD) did not permit an upgrade of the footpath that goes through this forest because of fears that increased accessibility would mean further loss of forest to agricultural land.

Table 2-4: Mae Suk Watershed Land Use by Ethnicity

	Watershed Zone by Ethnicity				
Land Use Class (hectares)	*Hmong*	*Khon Muang*	*Karen*	*Sub-Total*	*WS TOTAL*
Forest	14	1,200	1,124	2,338	2,968
Community protected forest	210	35	1,779	2,024	2,063
Community rehabilitation forest	0	0	142	142	142
Forest plantation	61	0	0	61	61
Birth spirit forest	0	0	6	6	6
Fruit tree	41	22	14	78	78
subsistence forest	189	120	285	594	596
Cemetery	16	0	33	49	49
Fallow field	0	0	1,646	1,646	1,646
Field crop	855	130	538	1,523	1,539
Paddy field	26	197	137	360	366
Settlement	20	14	57	92	93
TOTAL	1,433	1,718	5,763	8,914	9,606

Source: ICRAF-Chiang Mai participatory mapping, 2001-2002

Of the three zones, the Khon Muang landscape has been slightly more simplified, with seven land use categories, compared to nine for the Hmong and eleven for the Karen. This is interesting in light of the fact that the Hmong are often characterized by popular knowledge as simplifying their landscape down to a small number of categories dominated

by permanent fields. It is true that the Hmong have a much higher ratio of field crop to total land than the other two. However, the total forest mosaic in the Hmong zone consists of five types of land use, including community protected forest, although it contributes only six percent of the watershed's total forest mosaic area. More than half of the field crop area in the watershed is located in the Hmong Zone.

The Karen landscape is the home to 53 percent of the watershed's total forest mosaic, and includes the widest range of forestland uses in the watershed. But the most notable feature of the Karen zone is the fallow field area of more than 1,600 hectares. This area represents the land in the rotational shifting cultivation system that produces the Karen's rice.[10] In this area, fallow periods face serious pressure, and according to local people have stabilized at four to six years. The Karen have also developed approximately 137 hectares of paddy area, which helps to take some of the pressure off of the forest-fallow system. In recent years, it has also given the opportunity to produce cash crops for dry-season income. The system practiced by the Karen today is a form of composite swiddening, in which upland rice production in rotational shifting cultivation fields is supplemented with paddy and cash crop production. Composite swidden systems are said to have higher sustainability and resilience in the face of pressures from population growth and policy regulation of fallow periods (Rambo, 1998).

The pressure of agricultural expansion in the upper areas is visible. This is driven by opportunities to produce for the market. These opportunities are not limited to any particular ethnic group, and part of the reality of upland agriculture is a function of access to land and water, investment capital, transportation and market information. The other part of this reality is clear from the difference in the Hmong and Karen landscapes. For the Karen, self-sufficiency in rice is an important aspect of their livelihood strategies and their cultural relationship with the landscape. But at the same time the Karen have made attempts to get into the world of market production, but they struggle with the balance of subsistence and market production in their landscape.

One advantage of the participatory mapping data is that it provides insights into the management practices of the local communities. In addition to the forest category, villagers identified areas of community protected forest, community rehabilitation forest and utilitarian forests, in addition to sacred groves such as birth spirit forests. So while there is

only a small amount of forestland in the Hmong zone, there is almost 210 hectares of community protected forest and another 189 hectares of utilization forest. The Karen have the largest area under community protected forest. Compared to the 1996 figure for total forest mosaic, 74 percent of the watershed, the 2001 results demonstrate only a minor decrease. The difference is apparent in the local peoples' management strategies and classification schemes. The data also suggest that the total area under field crops has in fact been reduced, and visual interpretations of the map give the appearance that the distribution of field crops in the landscape was concentrated during the period between 1996 and 2001.

From this analysis it seems that popular claims regarding changes in the watershed over the past five decades become problematic. There has been a significant amount of change between land use classes, and the distribution of patches in the forest-field mosaic has shifted. However, large-scale loss of forestland does not seem to be as pronounced as is popularly believed. The dynamics of change associated with the expansion of field crops seems to have been balanced by regrowth of forest in fallow and grassland areas. Further analysis is needed to explore the details of land use change and changes in the hydrological regime, and how these two might be related.

3.4 Watershed forests: Policy and response

There has been much popular and policy concern for the loss of forests in Thailand. The degradation of forest resources is often treated as a general indicator of environmental trends. In Thailand, despite the efforts of conversation policy starting in the 1950s, the total area of forest declined from 27.4 million hectares in 1961 (53 percent of the total area of the country) to 13 million hectares in 1998 (25 percent of total area). During the same period, forest land in the north dropped from 11.5 million hectares to 7.2 million hectares (RFD (2000) data, cited in Mingsarn (2005). Forest area in the north declined from 69 percent to 43 percent, a loss of 26 percent.[11]

Much of the environmental concern is based in the potential impacts of forest loss on the hydrological regimes of the nation's rivers. One of the by-products of the rapid economic growth Thailand demonstrated in the 1980s was an increase in conflicts over water allocation. The tension resulting from the rise in demand for water was exacerbated by

widespread institutional failures in both the public and private sector (TDRI and Queen's University, 1994). The watershed functions – including regulating the quantity, quality and timing of water flows – provided by upland forests thus became a high profile matter of national-level interest. Many assertions have been made regarding the relationship between forests and water, but the science is still inconclusive.

In response to the loss of forest land, the government implemented two national policies. These policies – the National Park System and the Watershed Classification – represent the government's effort to protect the integrity of the nation's ecosystems. However, it is clear that the costs of these policies are borne by local upland people who have had no voice or role in the decision-making and implementation process. This policy framework sets the basic constraints under which land can be utilized in Mae Chaem district.

First, the system of national parks has delineated areas in which land use is strictly regulated for the conservation of the nations biodiversity. In 1986, there was approximately 275,000 square kilometers of land under conservation status, but this figure grew to more than 320,000 square kilometers in 2000. (RFD data, cited in Mingsarn and Rutherford, n.d.) In Mae Chaem, Doi Inthanon National Park, Ob Luang National Park, Mae Khan National Park, Mae Surin National Park and Mae Tho National Park have been established, encompassing many upland communities. According to the law, human activities are not permitted in these areas, and the existence of many villages was shaken as national parks were gazetted.[12]

Second, a watershed classification system was developed and implemented for the purpose of maintaining watershed services upon which lowland areas rely, in 1977. Under this scheme, all land over 35 percent slope is designated as Class 1 Watershed Forest, which should be under permanent forest cover. Sixty-four percent of the total area of the Mae Chaem watershed falls in this category. If Class 2 Watershed Forest, which is designated as forest plantation, is included, the total area rises to 89 percent. In other words, residents of Mae Chaem are legally allowed to farm on only 12 percent of the land. This land is located in the valley bottom, where most land is already occupied and farmed by Khon Muang communities. The mounting awareness of upland environmental degradation was heightened by severe flooding events in 1989 in southern Thailand that were blamed on

loss of forest in the upper watersheds. In response, the government cancelled all logging concessions.

Thai environmental policy has articulated a vision for the uplands, in which sloping lands in watershed forests should be under a strict regime of protection. This 'conservation perspective' paints a green picture of Mae Chaem, an agreeable picture to people concerned for ecosystems and environmental quality. (See Figure 2-6) It could be argued that this represents a romanticized picture of an ideal natural environment in which humans and forests do not and cannot coexist. From the viewpoint of a farmer living in the uplands, this regime of protection takes on very different meaning. The 'livelihoods perspective' is a view from the Hmong, Karen or Lawa point of view. In this picture, virtually all options for livelihood in their current areas of residence are illegal. Khon Muang villages in the valley are basically unaffected, while the vast majority of minority villages find themselves in the red zone. This map shows clearly the imbalanced affect on local people.

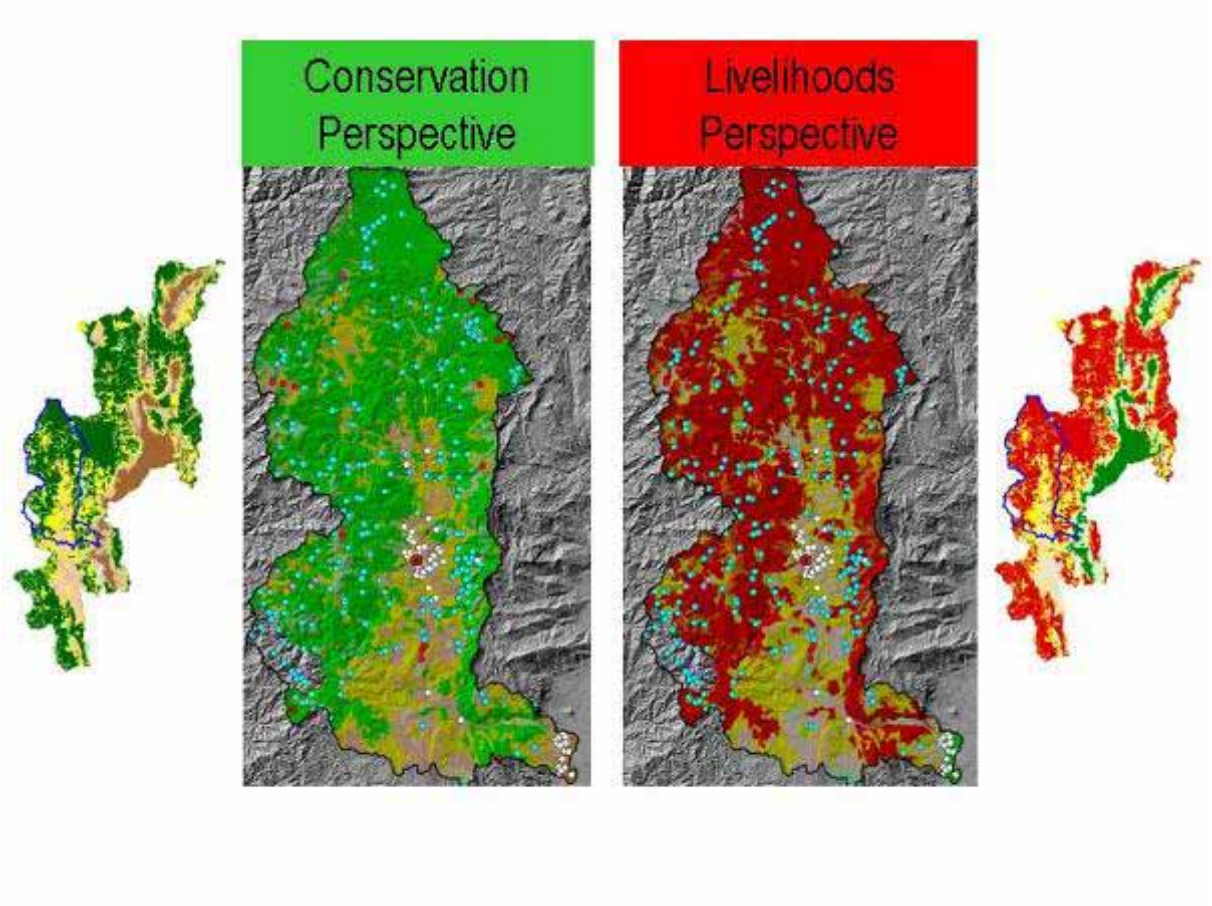


Figure 2-6: Perspectives on Environmental Policy in Mae Chaem

Source: Thomas et al., n.d.

And this is not a situation unique to Mae Chaem. The small side maps tell a similar situation in Chiang Mai province, where most all land outside of the Chiang Mai and Chiang Rai valleys are no-farm zones. For the northern region, 48 percent of all land is under Class 1and 2 restrictions, but the figure drops to 26 percent at the national level. From the 'livelihoods perspective' the amount of usable land is 52 and 73 percent for the north and Thailand overall, respectively (See Table 2-5), but only 11 percent for Mae Chaem (Thomas, Pornchai and Pornwilai, n.d). Accordingly, upland farmers possess no land documents. Without legal tenure, it is very difficult for upland farmers to settle land disputes if they cannot be dealt with by informal local mediation mechanisms. Lowland Mae Chaem farmers, however, have received *chanot*, the most secure form of legal tenure, for their paddy land.

Table 2-5: Land under protected status in Thailand

	Thailand Overall	*North Region*	*Mae Chaem*
Total Land ('000 sq km)	513.10	169.60	3.93
Forest land: WS Class 1 & 2	26 %	48 %	89 %
Forest land: WS Class 3,4,5	73 %	52 %	11 %

Source: Thomas, et al., (n.d.)

The community forestry movement has become a strong force struggling for the recognition of local communities' rights to manage the forests they live in and around. But there is no legal basis for community forestry in Thailand. A Community Forestry Bill has been under debate, but strong political interests against it have delayed its passage. Government and NGO versions of the Bill have been debated back and forth in the House and Senate. The NGO version, known popularly as the "Peoples' Version" was enabled by the 1997 Constitution, which allows for citizens to introduce legislation if 50,000 signatures are collected in support of the legislation. NGOs and academics started a movement and were successful in getting this version introduced in response to the government version of the legislation. The contentious issues include: who is able to apply for community forest, whether community forests will be allowed in protected forest areas, whether community forest areas can be expanded and what degree of utilization will be permitted (Sato, 2003). These questions are of particular concern for upland communities in northern Thailand, because if community forests are not allowed in protected forest areas, the basic constraints shown in the map above do not change. Passage of the Community Forestry Bill would provide a legal basis for the negotiation of community-

level management of official forest areas, but for now the legislation remains paralyzed by political processes and in any case the problem of agricultural land in the uplands remains.

Nonetheless, community forests do exist all over Thailand. In 1993, a large research project entitled “Community Forests in Thailand: Development Directions” inventoried community forests in Thailand. The report found 153 cases of community forests in the northern region, of which 95 were at least partially designated as watershed forest (Shalardchai et al., 1993). In the mountainous north, the watershed-related functions of community forest are given particular importance by local communities. If Mae Chaem is any indicator of larger trends, it can only be assumed that since the time of this report, with the growth of local peoples’ organizations and networks, the area under informal community forest status has risen substantially. The draft Community Forestry Bill currently under deliberation has a clause that can allow community forests in protected areas if the community is indigenous to the area and has demonstrated commitment to maintaining the community forest by managing the forest area continuously for five years prior to the application[13].

In Mae Chaem, community forests are being developed through an institutional innovation that bridges traditional livelihoods and contemporary challenges. Community forests are often based on customary resource management practices that are rooted in spiritual beliefs, such as the Karen birth spirit forest, Hmong local spirit tree, and Lawa local spirit forests. Khon Muang customary practices also maintain community forests, including water source forests that supply their paddy fields. A range of local institutions manages these forests. In Chiang Mai province, there are community forests managed by TAO councils, temples, irrigation groups, village committees, village conservation groups and elders’ groups (Shalardchai et al., 1993). It is not uncommon for these forests to be managed jointly by a number of these groups as well. In recent years, networks have been formed to facilitate inter-village collaboration on community forest management. The importance of management arrangements – who is involved and what roles do they play – is clear across the range of configurations.

But community forests, and particularly watershed forests, are contested among local groups as well. As will be discussed in the course of this document, one group's watershed forest may be another's cultivation area. Conflict is present in not only the physical

delineation of borders, but also in the meaning of these forest areas. Unraveling the complex string of cultural practice, immediate livelihood interests and historical relations is a challenge that underlies the conflicts that have arisen around the interlinked resources of these watersheds.

Land in the upper Mae Suk valley has been classified as 1A watershed forest, the most restricted land use classification, since 1976. Under this status, land should be under permanent forest cover and all settlements and economic activities are technically illegal. Further, this land is being prepared for transfer to national park status, which will increase the legal pressure on communities and their livelihood activities. If recent a recent legislative initiative is successful, community presence in 'special conservation zones' will be blocked, thereby establishing a legal basis for relocation and resettlement. These zones will be created directly by the Minister of Environment and Natural Resources with permission from the Cabinet, based on four main criteria: 1) undisturbed watershed forest, 2) high biodiversity areas, 3) physically and biologically fragile areas, 4) areas of unique natural value such as rare or endangered plant and animal species. Approximately 18 million rai of forests fall in this category, most of which is located in national parks, wildlife sanctuaries and no-hunting zones (Bangkok Post, September 16, 2005).

In general ecological terms, the watershed framework is a positive step towards managing human-environment relations in a holistic manner. However, the watershed policy places great constraints on the livelihood options of upland peoples and marginalizes them from the socio-political process through which the interests of the nation are determined. As the watershed framework continues to drive Thai state policy[14], it seems safe to conclude that conflict between upland communities and the state will continue. Indeed, in the wake of the 2005 severe flooding in northern Thailand, Prime Minister Thaksin prefaced his response by identifying upland minority communities, along with riverbank encroachment around Chiang Mai, as the main causes of this environmental disaster. At the same time, local communities struggle to deal with watershed issues at a much smaller, but equally complex, scale. The current research has opted to look at watersheds from the local level, maintaining a view on the watershed as not only an ecological unit, but also an increasingly important social unit in which decisions regarding competition and cooperation are made on a daily basis.

4. Decentralization and local governance

The study focuses primarily on areas that fall within the jurisdiction of the *tambon* Pang Hin Fon. Although the Mae Suk watershed spans three *tambons* Pang Hin Fon is the administrative home of the upland, upstream villages. Pang Hin Fon can be the site for an interesting study of governance because it is located entirely in the mountainous areas, and is composed exclusively of villages of upland ethnicity. This section presents the relevance of the *tambon* within the context of political change in Thailand, and illustrates the local evolution of the *tambon* as an increasingly important social space for upland society.

4.1 Empowering the tambon

The *tambon,* or sub-district, originally the lowest level of official administration in Thailand, and the sub-district headman was traditionally appointed by the central government. Previous to the initiation of decentralization policies in Thailand, the administration of *tambon* was a very top-down affair. During the 1990s, after a period of there was a feeling of release from an 'era of dictatorship', in which the military played a central role in politics, and high hopes for a coming 'era of democracy' (Arghiros, 2001). In 1997, a new Constitution set the stage for dramatic changes in local governance, which would focus on empowering and democratizing the *tambon* as a center of bottom-up development and administration. The Constitution stresses the rights of the public to participate in decision-making, and guarantees access to relevant information and legal recourse in the event of damage. The public's right to participation in environmental matters was addressed specifically by the Constitution as well.

The energy of political reform would focus on the Tambon Administration Organization (TAO), which was legally established in 1991 by the Decree on Tambons and Tambon Administration Organizations and implemented starting in 1992. The legislation was further revised in 1999 and 2003 to take into account provisions in the new Constitution. Under the new structure, the TAO consists of two branches – the TAO Council (*sapha ongkarn borihaan suan tambon*) and the TAO Committee (*kana kammakaan ongkarn borihaan suan tambon*). The Council is composed of directly elected representatives from the villages, and according to the intention of the decentralization reforms, is the immediate source of local accountability. The main Council responsibilities include:

approving the *tambon* development plan as a guide for administration of the *tambon*, consideration and approval of *tambon* regulations, drafting the budget and budget implantation plans, monitoring TAO Committee's implementation activities to ensure that they conform to the *tambon* development plan, laws, rules and regulations of the TAO and government administration. The TAO Committee, on the other hand, is composed of positions appointed by the District government, although the chairman and two sub-chairmen are elected by the people and then recommended to the District for appointment. The responsibilities of the TAO Committee are to administer development activities, propose development plans and budget to the TAO Council and to report on progress to the TAO Council at least twice a year. The *kamnan*, or *tambon* chief, is also elected by the people but appointed by the central government. The *kamnan* is responsible for coordination with official policy, and sits on the Committee as well.

The mandate of the TAO has been greatly expanded, and as a legal entity (*nitibukkhon*) it is legally responsible for a wide range of activities. Of note for this study is the mandate for managing, preserving and utilizing forest, land and environmental resources. But in areas such as Pang Hin Fon, budgets are extremely small, and capacity of the TAO to perform its duties is severely limited. Legally, TAOs are permitted to levy taxes on local activities to raise their own operating and development budgets. One of the key constraints in mountain TAOs is that the land is under the strict regulations of the watershed classification, preventing commercial use of local natural resources in areas that are deemed to be ecologically sensitive. These regulations do not permit private land ownership, and the TAO has no legal basis to collect taxes that might be directed towards *tambon* development activities. The TAO is therefore reliant on central budget allocations. Moreover, reportedly 50 percent of the *tambon* budget is allocated to staff salaries and office upkeep (Chanyuth, 2003). According to the decentralization policy, 35 percent of the central government budget will be transferred to local governments, including TAOs, by 2006 (Nagai, 2001).

The decentralization policy has articulated an ambitious vision of the TAO's role in local resource governance (Pornchai et al., 2005). Constraints abound, but at the same time opportunities are many. The challenge at the *tambon* level is to establish meaningful local government while avoiding the capture of local political processes by minority interests (Arghiros, 2001). The accountability of central appointed positions in the TAO Committee

is especially problematic, particularly with regard to corruption in the allocation of construction contracts and other budget disbursements. Mingsarn and Rutherford (n.d.) assert that the role of TAOs is still unclear and the situation is still evolving. Because the RFD and Department of National Parks, Wildlife and Plant Species maintain legal jurisdiction over land in mountainous areas, the degree to which TAOs will really be allowed to exercise their new mandate over environment and development remains to be seen. According to the RFD policy, transfer of authority over community forests and fire management to TAOs is to be finished by 2006 (Mingsarn and Rutherford, n.d.). For the time being, the struggle over authority over upland areas will continue within the process of decentralization.

Nevertheless, people in Pang Hin Fon are showing enthusiasm for the new processes, and despite the lack of immediately tangible benefits, seem to envision a much stronger TAO. The specific roles of the TAO in natural resources management will be explored at many levels in the following analysis.

4.2 Pang Hin Fon: Establishment of a new tambon

In 1976, Suav Yeeb, the nephew of the charismatic Hmong leader of the local Yaaj clan Vaam Suav, returned to the old site of Mae Suk, where he was joined by another small group of Hmong. In 1990, Suav Yeeb gathered the support of the Karen and Lawa villagers of the upper *tambon* Ban Thap and requested permission from the government to create a separate *tambon*. The central government budget allocation was insufficient for the size and population of the *tambon,* which had 20 administrative villages and approximately 8,000 people. To make things more difficult, the northern area was cut off from the southern area, so the *kamnan* had to travel to Mae Chaem and then up the road to Thung Ya. Table 2-6 shows 1986 demographic data for *tambon* Ban Thap and *tambon* Mae Suk. Demographic data for neighboring *tambon* Mae Suk is shown for comparative purposes. In 1986 Ban Thap, Karen and Lawa comprised approximately 90 percent of the *tambon* population. There is more balance between the Karen and other ethnic groups in Mae Suk.

Table 2-6: Demographic Data for *Tambon* Ban Thap and Mae Suk, 1986

	1986	
	Ban Thap	*Mae Suk*
Villages	60	39
Households	1,219	912
Population	7,723	5,910
ETHNICITY		
Khon Muang	4.9 %	31.3 %
Karen	71.6 %	58.3 %
Hmong	5.8 %	10.4 %
Lawa	17.8 %	0

Source: DAI (1987)

The government was happy to grant the request, and it seems that the lower area of Ban Thap was also pleased with the idea. The formation of Pang Hin Fon created an interesting situation – a tambon in which virtually the entire population was non-Khon Muang. Table 2-7 shows the distribution of population of Pang Hin Fon according to ethnicity. The *kamnan* of Ban Thap was traditionally a Khon Muang, even though the total Khon Muang population was only approximately five percent of the old Ban Thap. In Suav Yeeb's mind, it was time for the ridge-top communities to request authority to manage their own affairs. It may seem somewhat ironic that a Hmong would lead this effort, given the stereotypes about the Hmong lack of attachment to any physical location and history of small, unstable settlements. In any case, the founding of Pang Hin Fon complemented the growing economic power wielded by the Hmong with a newfound interest in local governance.

Table 2-7: Demographic data for Pang Hin Fon, 2005

Ethnic Group	*Total Pop*	*% of PHF*
Lawa	1,222	21%
Karen	3,962	67%
Hmong	697	12%

Source: Pang Hin Fon TAO Office, Mae Chaem

The government then appointed Suav Yeeb as *kamnan* of the new tambon Pang Hin Fon, understanding that he was in the best position to provide leadership. As *kamnan*, his duties were concerned mainly with coordination with official authorities, and providing a general channel of communication between the government and the people. The pressing issues of the day from an administrative point of view were basic forest protection, including limiting the expansion of agricultural land and hunting, and remnants of communist

resistance in some of the more remote Karen villages, particularly Se Do Sa. By this point, opium had been eradicated, and the villagers' main concern was with markets for their cash crops. At the time of Pang Hin Fon establishment, cabbage had established a strong foothold with the Ban Phui Hmong, and was expanding to neighboring Karen and Lawa villages. Shallots would follow and become the main dry-season cash crop, increasing incomes, but at the same time increasing farmers' risk to market fluctuations and creating water conflict with and between villages.

Culturally and economically, Pang Hin Fon is divided into two areas of orientation, roughly defined by the watershed boundaries of the two main streams in the *tambon*. (See Figure 2-7) The Mae Tum watershed has a cultural and economic center in the Karen village of Mae Hae Tai. In addition to being a local leader in crop adoption, Mae Hae Tai is a religious center linking the surrounding Christian Karen and Lawa. The Mae Suk watershed has its upland center of gravity in Ban Phui Nua, where the pace of the commercialized economy is fast and tensions over resource access are higher. This research focuses on the Mae Suk area, and Mae Hae Tai is not described in detail. It is important to note, however, that linkages between communities in the two watersheds are numerous and increasingly close, and in fact the *tambon* is starting to take on new meaning as a source of cohesion among communities.

4.3 Adapting to local pressures

The pressure for more manageable units of local governance was strong at the village level, as well. When tambon Pang Hin Fon was created, there were 11 villages. Some of these, such as Ban Phui, had large populations, some of which were multi-ethnic, and were composed of natural village settlements distant from each other. Over the course of three years, several villages were split, creating the current 12 administrative villages of the *tambon.*

An immediate problem faced by the new TAO was the declaration of the Mae Tho National Park, which was slated to engulf several Karen villages in the southwestern corner of the *tambon*. Preparations for the National Park began in 1994 with area surveys and the construction of a Park Protection Unit. Villagers in Se Do Sa, where the Unit was

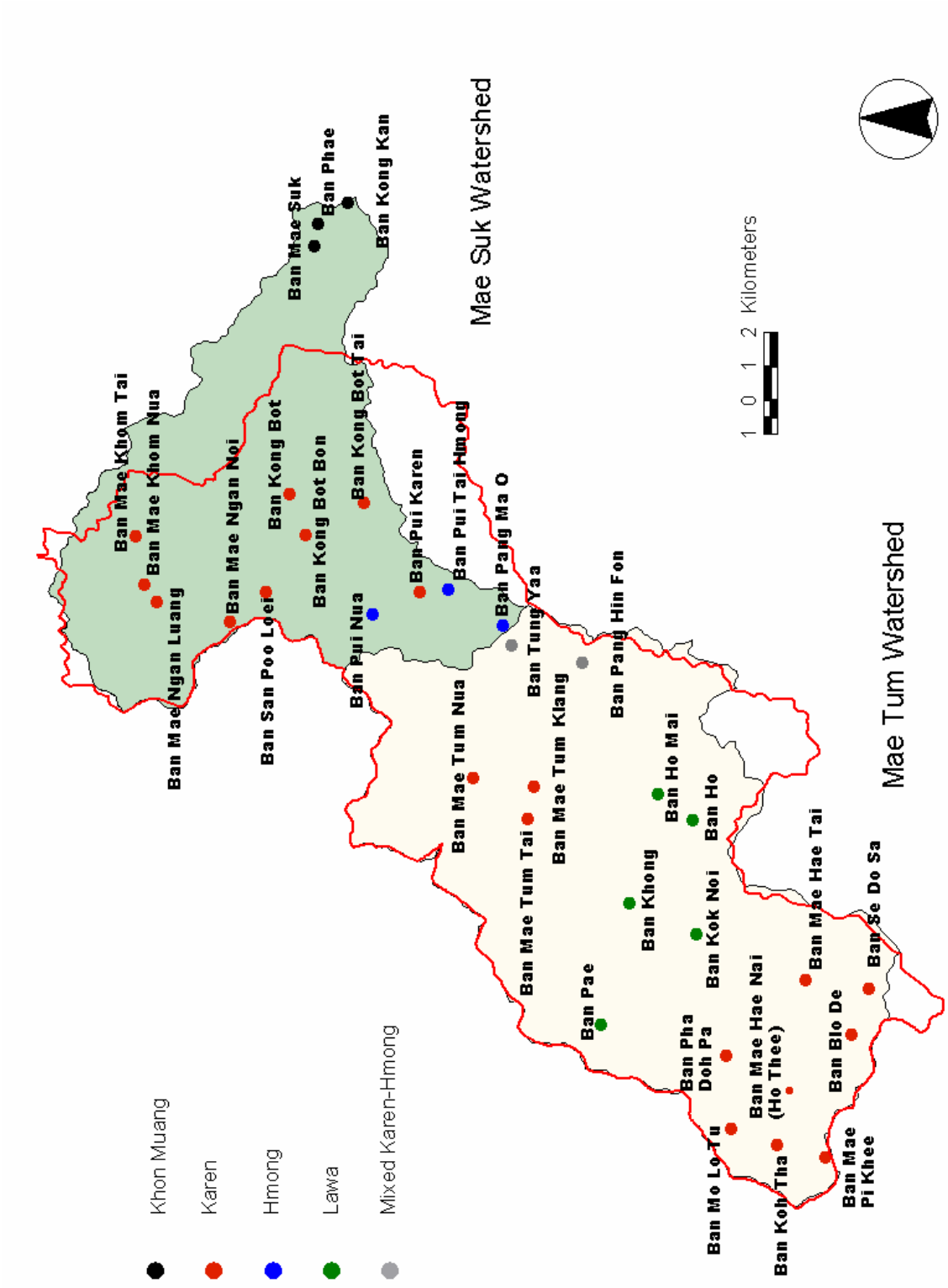


Figure 2-7: *Tambon* Pang Hin Fon watersheds and village ethnicity

Source: ICRAF-Chiang Mai, GIS data

to be located, protested the construction of the building. Community leaders in the village had been involved with NGO activities to promote community rights under the 1997 Constitution, and this small protest would grow into an organized movement that in the end resulted in the indefinite postponement of the park declaration.

Se Do Sa leaders gathered the local villages and the Mae Tum and Mae Long watershed networks to consider how to address the problem. Although they were successful in making a stand against the construction of the Unit, it was clear that by themselves they were ill prepared to influence the policy foundations upon which the park sat. At this point, they joined forces with external NGOs, development organizations, the Northern Farmers' Network and the Northern Farmers' Alliance, and were eventually linked to the Assembly of the Poor to lobby at the provincial level. In 2002, a Cabinet resolution ordered the gazetting of the park to be halted and the construction of the Park Protection Unit to be stopped. The resolution included orders to survey local land tenure systems and issue guarantees of community rights based on evidence presented by the communities. Resumption of Park plans was made contingent upon the resolution of these issues, and the situation has not progressed since then (Withoon, n.d.).

During this process, the Pang Hin Fon TAO played host to a meeting of local stakeholders to discuss the Park problem. Since the entire area is classified as 1A Watershed Forest, there is common concern that at some point in the future the Mae Tho National Park will be expanded to include the entire ridge. The TAO convened local village headmen, watershed management unit staff, district officials and officials of the park, in addition to groups active locally in natural resource management projects. As a result of this dialog, villages got 'reassurance' from park officials that any future park expansion would recognize the current extent of agricultural land of the local communities. Clearly, the position of local farmers in the face of the park threat is tentative at best, but this episode does demonstrate the type of convening role the TAO can play.

Elections have come to represent the tension between ethnicity and development in Pang Hin Fon. The first TAO election was held in 2001. Karen were elected to the posts of TAO Council Chairman and *kamnan*. In the 2005 *kamnan* election, candidates from each ethnic group ran, and although the Karen candidate won his second term, the Hmong candidate, Headman Yis of Ban Phui Nua, made a strong showing and gained support from a

significant proportion of the Karen and Lawa communities. Villagers re-elected the TAO president as well. In this election there was a broad understanding among candidates that all three ethnicities should be represented in the TAO leadership. So when Uthai, from Ban Phui Tai, was re-elected, he chose a Hmong from Ban Phui Nua and a Lawa from Ban Haw as his vice-chairmen. There is broad support among villagers for the idea that this is an important configuration for smooth management of the *tambon*.

The personal networks of these individuals are key in these elections. In *tambon* campaigning there is very little discussion of 'policy platforms' or specific development projects. The goodwill and dedication of the candidates, and other traditional leadership qualities are given more weight, and the promise of development is expressed in more indirect terms. As Headman Yis explained during the *kamnan* campaign, "I don't speak about any type of policy because we all know that the options are limited, and making promises will end up in disappointment." In fact, the 'leading by example' approach is one of the main attractions of Hmong candidates. Lawa and Karen villagers see the level of economic activity in Hmong villages daily, and are impressed with the Hmong ability to mobilize resources and direct them in profitable directions.[15]

The Tambon election process seemingly draws on the energy set in motion by Suav Yeeb. After the *kamnan* elections, a Karen informant stated that "development will not come to this tambon until we elect a Hmong *kamnan*." To hear such a strong comment, upon the background of general distrust of the Hmong and their land use practices, is striking. It does show that people have come to recognize the importance of administrative capacity demonstrated by the Hmong. The level of economic development reached in Ban Phui further emphasizes the possibilities. In the past TAO Council election, two Hmong candidates ran for Chairman, together receiving 25 percent of the total vote, which means that there was Karen and Lawa support for the Hmong candidates. Figure 2-8 shows a campaign poster from this election, in which a Hmong candidate ran for Council President, with Lawa and Karen running-mates for vice-president. This message, with each of the candidates appearing in the traditional clothes of their group, stresses collaboration among the groups. At the same time there is a clear appeal to the ethnic identity of individual voters. Informants from all three ethnicities agreed that this was an unwritten, but critical norm of collaboration in the local election process.

Figure: 2-8: Pang Hin Fon *tambon* election campaign poster, 2005

As the Hmong themselves concluded shortly after the votes were counted, "This is only the second election, and this *tambon* is not yet ready for a Hmong TAO chairman. But the next election is a different story". The Hmong have already begun to build a long-term base of support with the Karen and Lawa, and all signs indicate that the 2009 elections will be closely contested as well.

5. Networks: Proliferation of civil society

Civil society has grown rapidly in Thailand in the 1990s. Non-governmental organizations, both international and domestic, play a large role in a wide range of socio-economic, environmental and political arenas (Anuchat and Kritaya, 1998). In outlining the challenges of social reform under the new Constitution, Prawase Wasi referred to civil society – representing important new non-governmental actors in the new vision for governance in Thailand – as *krabuan karn prachakhom*. The word *prachakhom*[16] has

gained rapid acceptance in Thai society. Prawase's reference above connotes the on-going dynamic process (*krabuan karn*) that is required for non-governmental groups to assume a meaningful position in governance. Furthermore, the mere presence of these organizations is not sufficient; it is how they engage with and are engaged by the processes of governance that will define their role in the future. As civil *prachakhom* matures it is essential, argue Anuchat and Kritaya (1998), that researchers continue to build up a knowledge body of experience regarding the formation of groups, development of management arrangements, and resolution of conflicts.

At the national level, environmental movements have begun to make their presence felt in pressuring for social change. This reflects trends throughout the developing world, in which civil society groups struggle with and on behalf of local people against state-led development (Missingham, 2003). But not all civil society groups are engaged in confrontation with the state. The developments in civil society that are explored in the current research represent efforts to complement the state, filling gaps left by official governance. In Mae Chaem district, the Raks Thai Foundation and the World Agroforestry Center have been active in supporting natural resource research and development activities. Raks Thai (CARE)[17] was originally known as CARE-Thailand, but recently received legal recognition as a Thai organization. Raks Thai conducts a broad scope of work, but focuses on community-based natural resources management in its activities in the north of the country. In Mae Chaem, Raks Thai was key in supporting the development of watershed and other community-based networks for natural resources management. The World Agroforestry Centre, formerly known as the International Centre for Research in Agroforestry (ICRAF), is an international research institution that is part of the Consultative Group for International Agricultural Research. ICRAF's mandate of research and development on agroforestry-related issues has been applied flexibly in Thailand to include a range of socio-economic factors related to the role of trees in local landscapes. These institutions, in collaboration with local Thai partners – governmental, academic and community – and each other, have provided support to watershed networks in Mae Chaem, including the Mae Suk watersheds.

Mae Chaem has seen a rapid proliferation of networks since the 1990s. The 1997 Constitution was very clear in its intention to strengthen not only the rights of individuals, but also of civil society. Unlike the rise in urban civil society driven by middle class

interests, the rise of networks in Mae Chaem is a product of the efforts of local organizations and communities, with support from NGOs. The appeal of networks in Mae Chaem is potential for bridging the gaps of livelihood, culture and governance, on locally defined and implemented terms, particularly with regard to the urgency of the 'watershed framework'. Watershed networks are just one form of civil society groups that have arisen in northern Thailand. Other well-known groups such as the Northern Farmers Network, Northern Farmers Alliance, Hmong Environmental Network, and others, focus on raising awareness of environmental issues, community rights, traditional knowledge and local participation in development and conservation activities. The Inter Mountain People Education and Culture Association (IMPECT) has played a significant role in coordinating efforts among people of diverse ethnic groups in addressing land rights and citizenship issues.

The Mae Chaem watershed network experience grew out of a struggle between a group of Karen communities and the state forestry apparatus. In 1991, the Forest Industry Organization (FIO), an agency spun off from the Royal Forest Department, began to implement a project to establish a sawmill in Ban Wat Chan, in northern Mae Chaem district. The FIO was granted a concession of pine forest for logging, despite the fact that the whole area was classified as 1A watershed forest. The aim of the project was nominally to log and reforest 540 hectares of pine forest, providing local employment at the sawmill and eventually regenerating a more healthy pine forest (Hayami, 1997).

But the 15 local Karen communities protested the project strongly, and opposition quickly grew into a movement that would include stakeholders from all over Mae Chaem. In November 1992, Buddhist monks and novices from Wat Pa Daed in Mae Chaem traveled to Ban Wat Chan to learn about forest conditions in Mae Chaem watershed forests, collecting information from Wat Chan villagers about industrial forest cutting plans and possible impacts. The group presented this information to local *sangha* (Buddhist clergy) and the general populace. In December 1992 and January 1993, Mae Chaem monks and concerned people established the Hak Muang Chaem group to intensify the protest. In February, Hak Muang Chaem collaborated with Wat Chan villagers to perform a large *buat pa* (forest ordination) ceremony of 1000 trees around the sawmill. After continued collaboration between Hak Muang Chaem and other conservation groups in the area, the sawmill project was finally scrapped (Mae Chaem Watershed Network Committee, 2005).

Hak Muang Chaem continued its environmental activities, with support from CARE, Suan Pa Sirikit and other local non-governmental groups. One product of this collaboration was the establishment of watershed management networks, starting in 1993 with the Mae Khong Kha-Mong Luang Watershed Network and growing to the current total of 26. After 1995, local watershed conflict became the primary reason for establishing networks. Table 2-8 presents an illustrative example of the development of some of these networks.

In 2003, the Ministry of Environment and Natural Resources started the Upper Ping Basin Natural Resources and Environment Rehabilitation Program. This initiative provided boost to networking efforts in Mae Chaem, as awareness of the role of networks was taken to a new level. The program also initiated a new process of 'networking of networks', in which small-scale sub-watershed networks such as those outlined above were joined into networks representing watershed dynamics larger scales[18]. As a part of this process, the Mae Chaem Watershed Network Committee was established on October 22, 2003 to coordinate sub-watershed networks. The Committee consists of local Khon Muang, Karen, Hmong and Lawa representatives from throughout the Mae Chaem watershed. It is interesting to note that a former leader of the Hak Muang Chaem group currently heads the Committee (Mae Chaem Watershed Network Committee, 2005).

As the hierarchy of networks is developed in Mae Chaem, the future of *prachakhom* organizations in watershed governance continues to evolve. As the mandate of these networks shows, the vision includes a wide range of coordination, mediation, knowledge production, monitoring, enforcement and policy formulation. Throughout the list, the challenge of creating capacity and authority to enable these functions is paramount, and the strategic points of linkage and processes of interaction with other governmental and non-governmental institutions remains a major theme requiring further research and experimentation. The network movement has just begun to gain momentum.

Reflecting on the Wat Chan community's experience with the pine forest project, Hayami concluded that “even as the rise of environmental concern and community forestry allows them more voice in Thai society and assist them in rejecting specific projects, the problems, conflicts and disharmony within and outside the community with regard to land

cannot easily be solved by the externally oriented discourse of tradition or by the internally oriented ritual practices. Locally geared policies and coordinating with and among

Table 2-8: Illustrative chronology of network formation in Mae Chaem

Year	Network	Issues
1993	Mae Khong Kha-Mong Luang Watershed Network	first as organization of solidarity in face of possible protected forest establishment and overlap with cultivated areas
1994	Mae Ning-Mae Nai Watershed Network Mae Raek Watershed Network	Suan Pa Sirikit instrumental in helping Mae Ning Nok village initiate activities originally Natural Resources Conservation Group but took on watershed identity after they were blamed by lowlanders as forest encroachers
1996	Mae Suk Watershed Network Community Forest Protection Network Mae Kueng Watershed Network	sub-watershed stakeholders come together on NRM issues focusing on passing traditional knowledge of forest and water management, establishing forum to address upstream-downstream issue networks become ethnically more complex, as conflict between Khon Muang, Karen and Hmong intensifies
1997	Om Sung Watershed Network	
1999	Mae Yot Watershed Network	
2002	Mae Khi Muk Watershed Network Huai Hoi Watershed Network Mae La Up Watershed Network Mae Wak-Mae Malo Watershed Network Khun Mae Ruam Watershed Network	

Source: Mae Chaem Watershed Network Committee, 2005

villagers are the long-term necessary steps to the solution" (Hayami, 1997:576). It is within the social spaces of the watershed networks and *tambon* community that diverse local voices are gradually being translated into a collective voice that can shape, mediate and formulate locally appropriate policy. Moreover, these are the spaces in which inter-ethnic relationships are being negotiated, contested and re-defined.

6. Summary

The current research project examines social networks and natural resource management in a multi-ethnic watershed of northern Thailand. This section introduced the relevant contextual material for this enterprise: background of the study site, ethnic groups of upland society, landscape change, trends in local governance and the deepening of civil society roles in natural resources management.

The Mae Suk watershed, inhabited by Hmong, Karen and Khon Muang, represents both an ecological and social unit of analysis in this endeavor. The research highlights the position of the Hmong within this landscape, but uses analysis of the relationships between ethnic groups to describe the social spaces created by networks. The following data is organized and presented along three levels of analysis – the situation in a Hmong village (Chapter Three), relations between that village and neighboring Karen village (Chapter Four), and relations between villages at the watershed level (Chapter Five). Maintaining its focus on the social interactions that define the study area, the analysis does make reference to the larger policy efforts to empower local government and the constraints of the environmental policy framework.

Thus, decentralization will require the establishment of new relationships between communities and the various parts of the government. The largest question for the uplands is whether the RFD will yield authority over lands classified officially as watershed forest. Similarly, local people must establish new relationships with their local government. Here, there is a question regarding the capacity of *tambons* to assume new roles and provide services to their constituencies. But at the same time, local communities are finding the need to establish new relationships with each other in order to respond to the concurrent trends of decentralization and resource scarcity. It remains to be seen whether local communities can create the trust and shared vision needed for increasingly complex modes of cooperation.

[1] Lawa is also frequently spelled Lua, or Lua'. The Lawa in Mae Chaem call themselves Laveu.

[2] Thai แม่ศึก

[3] For more on 'the hilltribe problem' (*panhaa chao khao*) see, for example, Pinkaew (2001).

[4] See, for example, Kunstadter (1967), Marlowe (1967), Renard (1980), Kammerer (1988), Durrenberger and Tannenbaum (1989), Russel (1989), Kunstadter and Kunstadter (1993) and Jonsson (1996),.

[5] See especially Pinkaew (2001).

[6] Some researchers have sought to explain the differences between Hmong and Karen responses to the market. See for example, Delang (2003).

[7] Because of this policy, the residents of Mae Suk catchment have Thai citizenship, which is not necessarily the case for all upland minority groups in Thailand.

[8] See Nipada (2004) for more on land use change in Mae Chaem.

[9] Land use categories have been simplified in this map to improve viewing. The community forest complex consists of community protected forest, community rehabilitation forest, birth spirit forest, subsistence forest and fruit trees. The forest category includes forest and forest plantation.

[10] See Prasit W. (2001) for more on Karen shifting cultivation in Mae Chaem.

[11] For the same period, forest losses were: northeast 30 percent, central/west 29 percent, south 25 percent and east 37 percent.

[12] See Roth (2004) for analysis of community mapping in the negotiation process of Mae Tho National Park.

[13] More information on the community forestry bill is available in Thai at www.pachumchom.com

[14] Pinkaew (2001) traces the development of the watershed policy framework in detail.

[15] A mountain form of *hua khanaen* (canvassers that play a central role in Central Thai politics) has emerged in the past elections, as well. These individuals are figures of influence within the local community, and it seems that the candidates maintain their network of *hua khanaen* at the level of *pok baan*, rather than at the level of *muu baan*. This allows candidates to play off social groupings within the administrative village units. For example, the Hmong *kamnan* candidate was able to benefit from rifts in the Lawa community, splitting the vote in two administrative villages. From direct observation of campaigning activities and discussion with candidates, money plays a role in these elections as well. Local election dynamics are emerging in real time, and warrant more detailed examination.

[16] *Prachasangkhom* is another commonly used word for civil society. *Prachasangkom* is frequently used to refer to civil society as a whole, while *prachakhom* tends to be used for civil society organizations.

[17] Both Raks Thai Foundation and the World Agroforestry Centre have changed names in recent years, but they are referred to here by their old acronyms, in order to avoid confusion.

[18] The duties of the Committee illustrate a broad and ambitious mandate that includes: choosing local representatives to higher levels; producing plans and regulations for the watershed; determining policy according to the Ping Rehabilitation Program; monitoring implementation; revising plans and structures; implementing Committee initiatives; collaborating in planning and implementation with neighboring watersheds; regulating and monitoring bank encroachment, mining, waste water release and forest encroachment; facilitating dialog around natural resource management conflict in Mae Chaem; distributing information; and monitoring project progress.

CHAPTER THREE

Villages in the landscape: Hmong social networks and resource management

This chapter examines the Hmong position in the upland landscape, beginning with the establishment of the village and tracing the development of resource competition and cooperation throughout the process of sedentarization. The analysis explores the implications of permanent villages for Hmong social networks, with particular attention to the management of land and water resources. The chapter sets the foundations for examining inter-ethnic relationships more broadly throughout the landscape from a Hmong point of view.

"If the Miao were to become a settled people, we would expect changes in their social structure. Its general form might remain because it is established by tradition, supported by religion, and because the young are educated to it, but there would probably be a different working out of the tendencies inherent in it." Geddes made this assertion in 1976, as the Hmong (Miao) were starting to limit their migration in response to political and economic pressures. It is still a key question for understanding contemporary Hmong village social dynamics, and is also important in understanding how the Hmong interact with other groups.

As Geddes suggested, settled villages have meant the alteration of both economic and social life, and the processes of accommodation associated have not always been smooth. Incorporation of Hmong settlements into the Thai administrative system has produced permanent Hmong administrative villages (*muu baan*). However, given the traditional lack of cohesion in the mobile Hmong settlements of the past, and the tension between unity and differentiation embodied in the Hmong clan system, an examination of the contemporary Hmong 'village' provides valuable insight on the social space created by social networks of daily interaction.

Another context for understanding changes in Hmong social organization and village interactions is the set of livelihood changes that have come about over the past 20 years, as the Hmong shifted from opium to other cash crops. The Hmong have been involved in regional and global markets since the first days of the opium economy, but with the recent adoption of cabbages and other temperate vegetables the Hmong have deepened their

integration into national, regional and global markets. One of the results of these transformations is a growing sense of resource scarcity, as agriculture has become extremely intensive and the capacity of land and water resources being pushed to its limits.

In light of this background, how do contemporary Hmong define social space through the practice of social networks, and how does this relate to modes of competition and cooperation evolving in Hmong livelihood systems? In answering these questions, this chapter describes two tensions coloring Hmong livelihoods: the first is the tension between relationships based on kinship (clan and affinal) and those based on locality (village territory); the second is the tension between communal (cooperative) and individual (household) management of resources.

1. Founding of Ban Phui Nua: 'The last move'

In 1974, ten households of the Yaaj clan[1] moved across the ridge that separates the provinces of Chiang Mai and Mae Hong Son to establish a village at the current site of Ban Phui Nua. Fertile land in the previous village had grown scarce, and villagers had already been planting opium poppy in the general area of the new village. The next year, eight households of the Tsaab and Kwm clans followed. This group of Hmong had reached their final destination after journeys from China, probably starting in the late 1890s. Their final move provides a window of observation on the establishment of permanent Hmong villages.

1.1 Permanent settlement and the meaning of 'village'

According to the Hmong dictionary *Lus Hmoob Txhais* (2003), the Hmong word for village, *zej zos*, means simply "*thaj chaw uas neeg nyob*", a place where people live. There is no connotation of permanence or particular spatial configuration. Hmong discuss their previous settlements as *zos*, and there is apparently no need to make a distinction between the previous mobile settlements and contemporary villages. In the past, a *zos* would not only move frequently, but the membership of the village would often change drastically. Cooper (1984) claimed that the word *zos*, referred to both a village and a lineage group, although my discussions with village elders failed to produce any support for this argument. His assertion does, however, point towards the possibility of single-lineage

villages in the past, even though all Hmong villages in Thailand are believed to be composed of multiple clans and lineages.

Hmong villages in Thailand are almost always referred to by their Thai or Kam Muang names, or in the case of Ban Phui, at times by the Karen term for the area in which they settled. Villages are frequently named for geographic attributes of the area. In describing the history of clan settlement movements, the Hmong refer to the mountain area (Kam Muang *khun*) or the nearest Thai town of significance. Figure 3-1 shows the movements of the three Ban Phui clans in Thailand as described by clan elders. Dates are tentative, and details of the earliest stops are unclear[2].

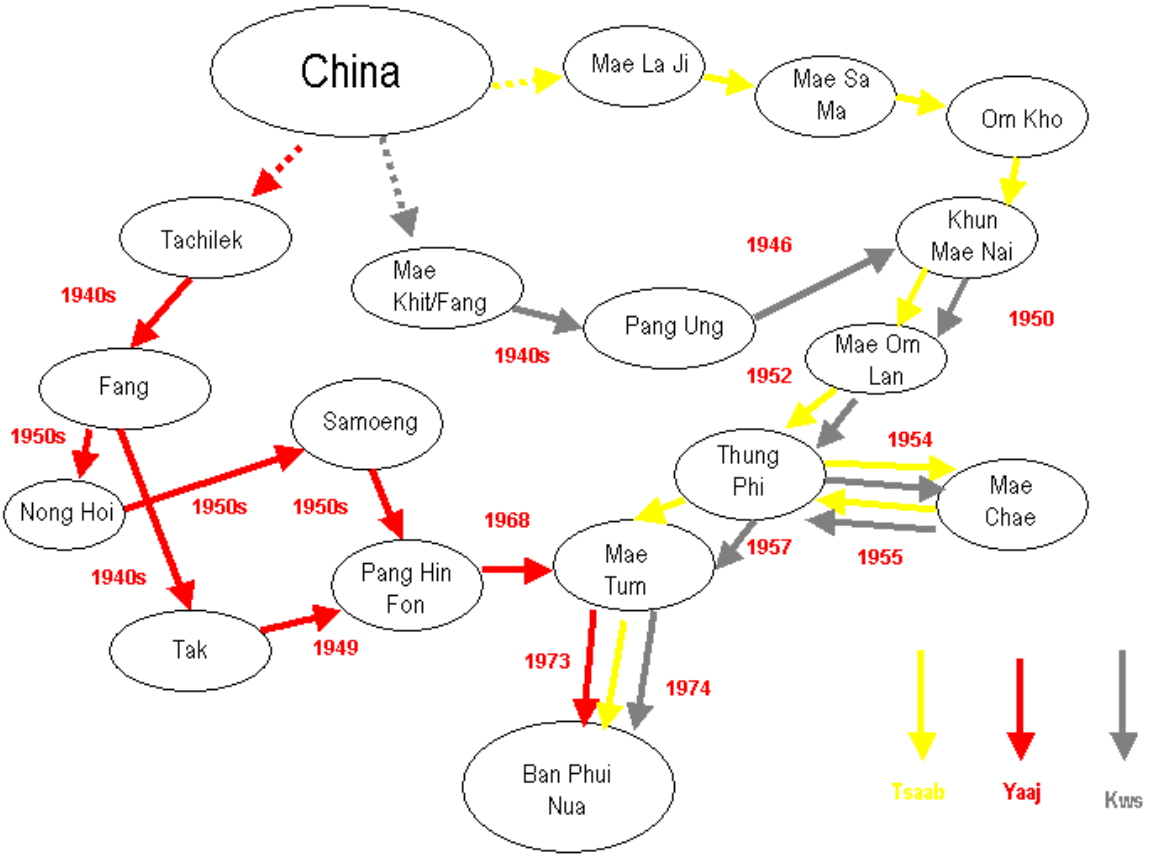


Figure 3-1: Movement of Ban Phui Nua Clans

Source: Author's field interviews

Geddes (1976) describes its function as an economic center as one of the most important roles of the Hmong village. Opium traders would come to the village, making this space crucial in villagers' securing of cash income. The village would come to play an important

role in the cabbage and shallot economies, as well, although the rise in individual ownership of pickup trucks has lessened the importance of the village space in cash crop incomes. From the research in Ban Phui Nua, it could be argued that some Hmong villages have now become important points for surrounding Karen, who purchase goods when passing through the village or engaging in wage labor.

With the stabilization of settlements, government and non-government interventions have often taken the cohesion of the 'village' for granted. Rambo and Vien (2001) have described how 'village' should not be equated with 'community' in the ethnically diverse mountains of northern Vietnam. The level of social cohesion at the village level influences local capacity to manage natural resources and plays a large role in determining the level of socio-economic development. This assertion would seem particularly relevant in an environment where villages have been permanent for only 20 years. In discussions about everyday life in a Hmong village, one is struck by the seeming tension between statements about the value of cohesion provided by clan and lineage ties, and a practical preference for individualized household activities. In the past, when small groups of Hmong migrated across the mountains in search of land suitable for opium poppy, the village was a highly unstable unit of settlement. Villages formed and fractured frequently when the productivity of the land dropped or if problems arose among the local residents. Cooper (1984) observed that cooperative productive activities at the village level did not exist in the Hmong swidden economy. This holds largely true in the cash-crop economy of today. In fact there are very few expressions of the village as a unit of social cohesion or cooperative activity, and institutional indicators of village-level solidarity are few. Nevertheless, there are signs that the years of permanent settlement have begun to produce the beginnings of common interest among villagers. These dynamics are important in the context of watershed level resource competition, because the institutional approaches to problem-solving take the village as the basic unit of governance, as discussed in the following chapters.

1.2 "Three dilemmas": Politics, economy and tradition

Tapp (1989) described three dilemmas faced by the Hmong as they were beginning to integrate into the modern Thai nation state. Similar dilemmas are articulated in contemporary Hmong society. Although the details of the dilemmas have changed, all

point to the difficulties of establishing permanent market-based livelihoods in the hills that are not at odds with the concerns of lowland Thai society.

The economic dilemma described by Tapp is the relatively well known (but not necessarily well understood) process of discarding opium poppy cultivation for temperate vegetable and fruit crops. For the Hmong this agricultural transition was not a matter of learning how to produce for the market, but rather a reorientation of their production toward mainstream markets. This dilemma was fueled by Thai government and international interventions to replace opium, promote cash crops and foster local development. Now, the transition to vegetable and fruit crops is complete, but the Hmong face new difficulties regarding their participation in the market. The boom-bust cycle of crop prices has run the full course for the first successful crop, cabbage. As alternative crops, such as shallots, potatoes and carrots, experience market-driven price fluctuations the Hmong express their frustration: "The price drops out of any crop we produce. We need the government to guarantee prices". But the days of subsidy are gone, and in fact the macro-economic trends are moving sharply in the opposite direction. The Thai government has signed a Free Trade Agreement with China, which will drastically affect the flow of goods from China into Thailand, intensifying the competition the Hmong face. Unlike the previous economic dilemma, where assistance was provided from a number of agencies, the current dilemma is a harsh challenge from the Thaksin government and 'the market', where those who cannot survive must vanish.

The political dilemma was a question of to what degree the Hmong should integrate with the apparatus of the Thai nation state. Since the mid-1960s some Hmong were involved in the Communist insurgency in Thailand. Until this point, the Hmong engaged with the Thai state as was necessary in daily life, including relationships with local administration, markets and development agencies. But the struggle of the Communist Party of Thailand (CPT) against the Thai state meant an active rejection of the government. Tapp argues that the Hmong were forced into this political dilemma by the pressures of the economic dilemma. Labeled as drug producers, the Hmong were confronted with a hostile state, and found it safer to move to areas controlled by the CPT.[3]

The political challenge faced by the Hmong today is a question of how the Hmong will respond to opportunities to participate in local politics. This is a two-pronged challenge.

On one hand, TAO governance and other opportunities to participate in initiatives of the state and NGOs require the Hmong to engage as a village. On the other hand, the Hmong have begun to translate the economic power they have accumulated into political power in the face of their more numerous Karen neighbors. As I will describe in later chapters, this is an opportunity for the Hmong to increase their voice in the governance of matters that affect their lives[4].

Finally, Tapp elaborated a religious dilemma, in which the forces of Buddhist and Christian missionary efforts brought pressure on the Hmong to change their ritual and spiritual practices. Both of these were a challenge to the core of Hmong identity. Buddhist conversion entailed assimilation to a Thai identity based on the ideology of the dominant cultural group. Christian conversion transcended Thai ideology, but represented perhaps a more dramatic rejection of some aspects of Hmong ethnic identity. Religion in Hmong society is still an area of tension. The identity cards of the vast majority of Ban Phui Nua state Buddhist as their religion, although there is no temple and Buddhism is not a part of everyday village life. Conversion to Christianity continues at differing rates in different places, causing rifts among families, lineages and clans, but at the same time creating a new sense of community that transcends these kinship groups as well. One Christian Ban Phui Nua informant described how Hmong customary ritual practice works against the development of solidarity at the village level because it stresses the household as the primary unit of activity, while it is easier for the Christian families to form new relationships that cross kinship boundaries. There are currently eight Christian households in Ban Phui Nua, all from the Tsaab and Kwm clans. Trends suggest that conversions will continue at a slow rate.

In customary Hmong society, ritual practice is inextricably wrapped up with other aspects of livelihood and social relations. The Hmong language identifies the sum of customary cultural practices – ritual, rules, regulations, daily practice – as *kev cai*. In this context, education and employment opportunities also represent a challenge to *kev cai* and Hmong identity. The younger generation is receiving less of the knowledge of *kev cai* as their standardized Thai education is improved and opportunities to continue studies in the lowlands increase. The potential economic benefits of these opportunities are an important

practical consideration for the Hmong, outweighing for the time being the potential cultural costs.[5]

Tapp described his 1981-1982 experience in a Mae Chaem Hmong village "whose remoteness from the state of which it was a part allowed its inhabitants to regard it as the outpost of a Chinese civilization long since dead and vanished" (1989:29). My experience, in a different village in the same District more than 20 years later, was of a village that is firmly rooted in the political and economic institutions of the Thai nation state, but continues to struggle with the process of adjusting their own social institutions to assume a new position within larger national institutions.

1.3 Transformation of agriculture

Government crop replacement programs in the 1970s and 1980s promoted cash crops, such as coffee and kidney beans, to replace opium poppy (Renard, 2001). Despite early efforts to adopt these crops in Ban Phui Nua, they did not provide the economic alternative to opium needed to bring about a large-scale shift. In 1989, three Ban Phui Nua farmers went to live with their wives' families in Mae Tho[6], a Hmong village enjoying encouraging success with cabbages since the mid-1980s. Using the social resources provided by these affinal relationships, the three obtained land and seed to learn the new cabbage technology. After a year of experimentation, they returned to Ban Phui Nua to begin their own production. Cabbages swept quickly across the Ban Phui Nua landscape, although the three returning farmers stress that they did not work together in any concerted way, nor did they make any specific efforts to spread their new knowledge. Villagers describe how information was spread through the lineages and permeated out to the entire village. That the major transition to cabbage was completed in three years highlights the strength of informal networks in spreading information and technology. Figure 3-2 shows land cover in Ban Phui Nua from 1954 to 1996.

The transformation depended upon other linkages, as well. Paving of the road from Mae Chaem to Ban Phui Nua was completed at the same time as the arrival of cabbage. With easy, year-round access to the village, lowland middlemen and merchants began to arrive in the village with offers to buy entire crops at a fixed price (*mao suan*). This gave

insurance to farmers as they decided to invest in the new crop. Merchants provided access to loans for seed and chemical inputs as well. The Hmong were familiar with this marketing arrangement, as the opium they had produced previously was purchased entirely by Khon Muang merchants at the village[7]. Until individual ownership of pickup trucks began to grow in the mid-1990s, farmers were largely dependent upon merchants to get harvest to market.

In the late 1980s, a large Chin Haw (Yunnanese) merchant began to establish the village of Long Pong as a regional hub for cabbages. Hmong remember him as a generous and trust worthy individual who would buy any amount of cabbage at good prices. With more and more pickup trucks in the village, Ban Phui Nua farmers relied less on merchants and more on their own personal linkages with the Long Pong market. It is now rare for Hmong to sell cabbages to middlemen in their village. Some Hmong have actually started to act as middlemen themselves, buying cabbages from surrounding Karen and Lawa villages. It is rare that Hmong sell to Hmong middlemen, because “Hmong ask for high prices”. Hmong have also provided transport service to Lawa and Karen, who have dramatically less access to pickup trucks, typically charging one baht per kilo for transportation from within the *tambon* to Long Pong. These entrepreneurial activities have been conducted in Ban Phui Nua on very small-scale.

Once the village had a secure basis for full-scale production of vegetables for the market, farmers began to experiment with other crops. Successful introductions include lettuce, potatoes and feed maize. Shallots are the most recent boom crop, an adaptation from shallot production that Hmong farmers observed in the lowland areas. Farmers found that shallots could be grown relatively easily in the upland areas, with the added bonus that they could be harvested after lowland shallots. The high prices obtained in the first years of production stimulated many farmers to supplement their rainy season cabbages with dry-season shallots. This diversification was made possible by a relatively inexpensive system of gravity-fed sprinkler irrigation that resembled the traditional split-bamboo pipes that Hmong had used for domestic water supply for generations, but was in fact borrowed from the Khon Muang in the 1980s.

Shallots are sold at the regional market in Ban Hong, across Doi Inthanon in Lamphun province. Because the Hmong had excellent access to transportation and crop information

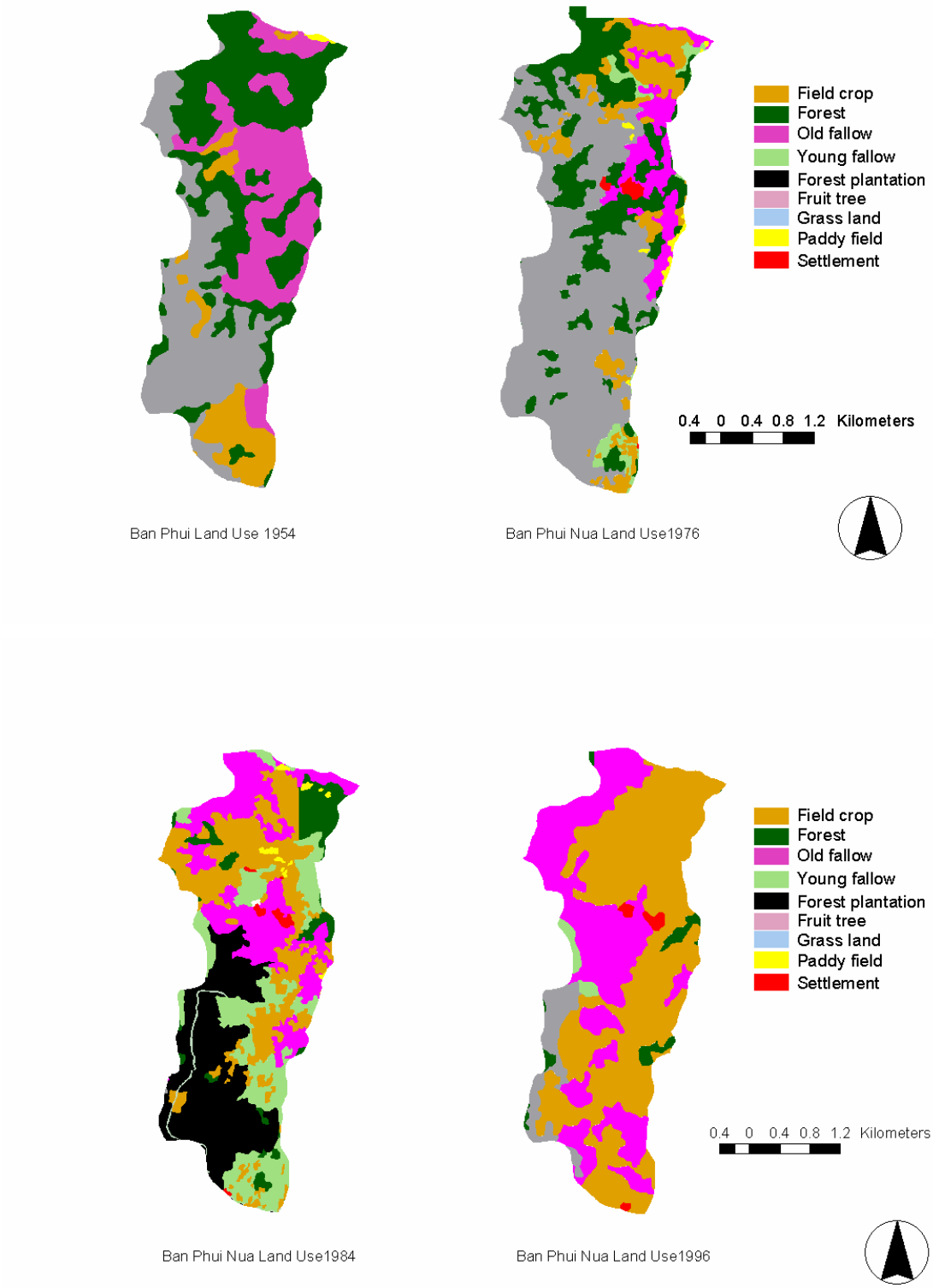


Figure 3-2: Ban Phui Nua land use, 1954-1996

Source: ICRAF Chiang Mai GIS data

networks, from the beginning they did not have to rely on middlemen. The marketing systems for shallots and cabbage are similar, based primarily on individual (household) transportation and sale at the regional market. Surrounding Karen communities have less capacity for transportation and must rely on lowland merchants to a much larger degree.

The result is a situation of resource scarcity within the village. Figure 3-3 shows land use change in Ban Phui Nua over the period of 1954-1996. The rise in field crops is marked. In 1954, field crops included maize and upland rice, in addition to some opium poppy. At this point, the village of Ban Phui Nua had not yet been established, although Hmong and Karen were living and farming in the area. Most opium poppy fields belonged to Northern Thai farmers from downstream. After the establishment of Ban Phui Nua in 1973, forest declined rapidly from 35 percent in 1954 to two percent in 1996, while field crops rose from 10 percent in 1954 to 53 percent in 1996 with the spread of cash crops.

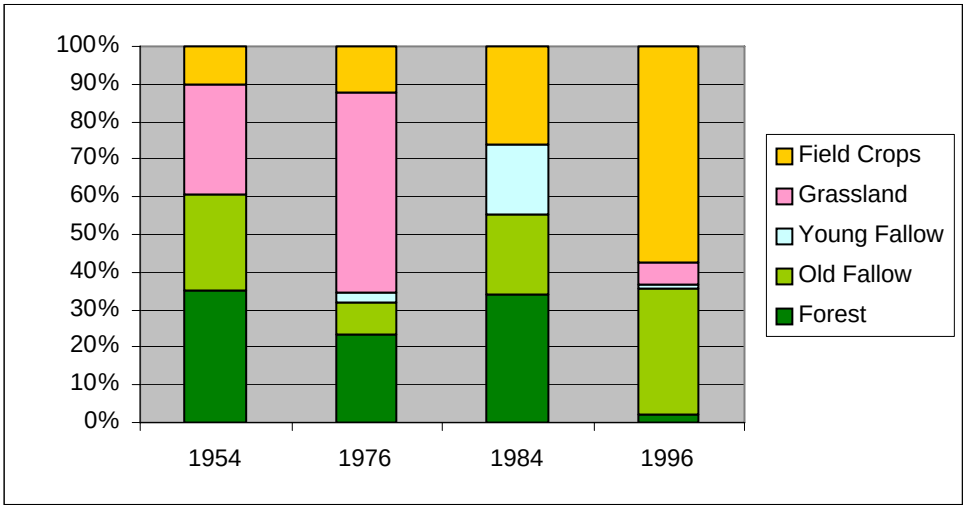


Figure 3-3: Ban Phui Nua land use change, 1954-1996

Source: ICRAF Chiang Mai GIS data

The decline in forest was accompanied by a decline in grassland and a constant growth in old fallow. Old fallow forest has replaced grasslands on the ridge above the village, covering 33 percent in 1996, a level similar to when the Ban Phui Nua Hmong arrived in the region. This forest is now designated as community protected forest and provides the domestic and agricultural water for the village. In 2002, mapping exercises conducted with the local communities by ICRAF-Chiang Mai found that approximately 34 percent of the total village land was under tree cover (including forest, community protected forest, forest

plantation, orchards and cemetery forest), as shown in Figure 3-4. The total area of field crops was just below 65 percent. Village leaders tell that there has been very little change in the relative proportion of forest and field crops since 2002. According to government regulations that have become loosely enforced village regulations, forest cannot be cleared for further expansion of cultivation area. Agricultural land area per capita is stable at just above ten hectares (Thomas et al., n.d).

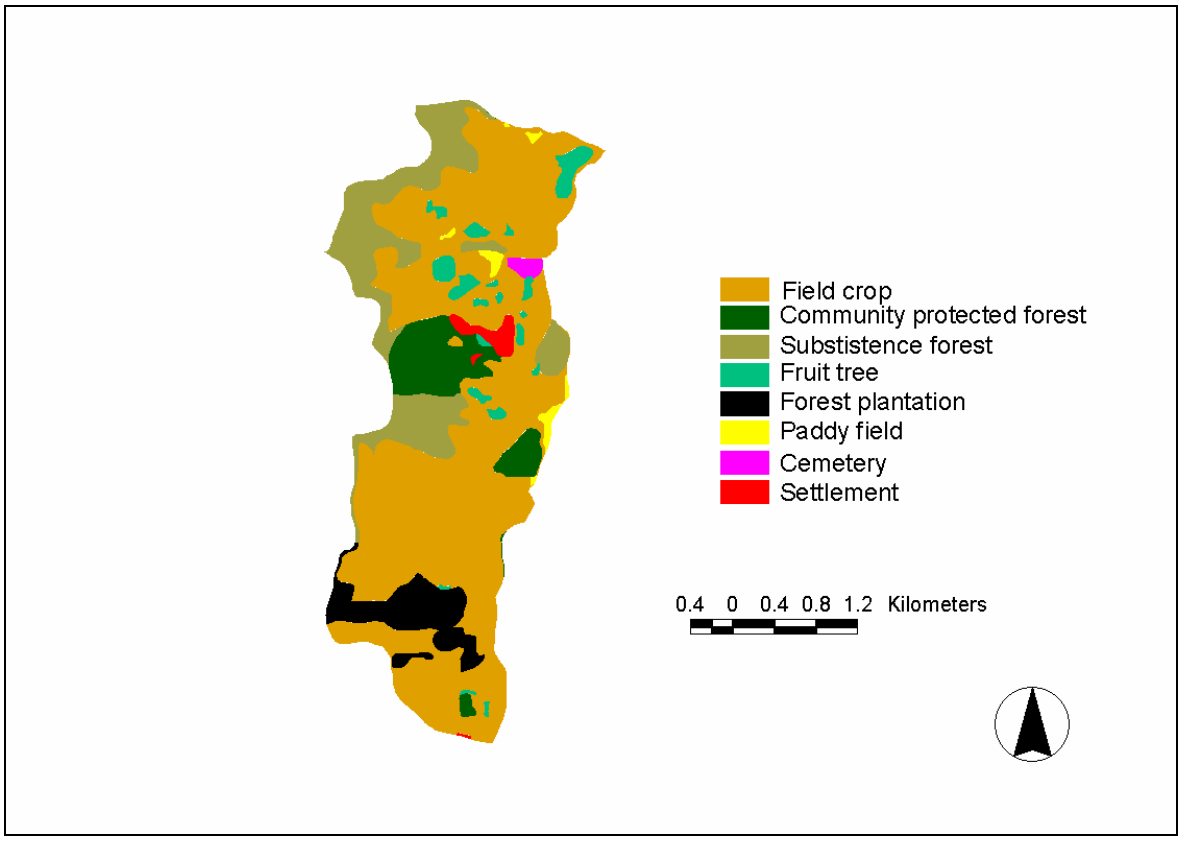


Figure 3-4: Ban Phui Nua land use, 2002

Source: ICRAF-Chiang Mai Participatory Mapping, 2001

The current landscape of Ban Phui Nua is dominated by permanent upland fields. However, as will be discussed below, the Ban Phui Nua Hmong have made concerted efforts to manage the forestland of their village to meet their livelihood needs. Figure 3-5 shows the landscape mosaic, consisting of forest on the ridgetop, above their permanent upland fields.

Figure 3-5: Ban Phui Nua field-forest landscape mosaic, 2004

1.4 Ntoo xeeb*: Local spirits and the creation a new symbol of community*

When they arrived in Ban Phui Nua, the elders of the three clans knew that they would not move from the site. The leader of the new village, Vaam Suav Yaaj, had a vision for establishing a sense of community among the residents of the village. One of the first priorities was to rehabilitate the forest above the village. The Hmong believe that forest above the village is essential for a good life (*noj qaab nyob zoo*), because without forest the village will be prone to disease (*muaj mob muaj nkeeg*). The Hmong propitiate the local spirits of the land (*xeeb teb xeeb chaw)* to ensure their livelihoods in their settlement. Particular importance is given to the *thwv tim*, the main territorial spirit that resides in the forest (IMPECT, n.d.) Some Hmong communities also establish a special tree, called *ntoo xeeb*, in which the *thwv tim* resides. Villagers make annual sacrifices and offerings in the *ntoo xeeb* ritual, usually in conjunction with Hmong New Year in December or January. The area around the *ntoo xeeb* is considered a sacred space, and trees are not cut. The practice of *ntoo xeeb* differs among Hmong communities in Thailand. Some communities have established *ntoo xeeb* immediately upon setting a new village, some have established

it only in response to problems, and some prefer not to designate any specific tree for the *thwv tim* (Prasit L., 2004).

In the previous settlement, the clans did not practice the *ntoo xeeb* ritual as a village. In fact, they did not designate any particular tree, but rather held the ritual at a tree or large rock deemed appropriate by the ritual leaders. The Yaaj held their ritual separately from the Kwm and Tsaab. After moving to Ban Phui Nua, the Yaaj clan leadership decided that the *ntoo xeeb* ritual should be used as a cultural tool to not only help villagers regenerate the forest but also to provide a symbol of the new village community. (See Figures 3-6 and 3-7) The leaders of the Tsaab and Kwm clans agreed with this plan, and it has been a solid source of symbolic unity for many of the villagers. But the designation of community protected forest did cause some conflict within the village, and particularly among the Yaaj clan.[8]

The Ban Phui Nua *ntoo xeeb* is now the spiritual anchor of an area of community protected forest covering the surrounding ridge top. This forested area is known as *ton nam* or *hau dlej* (Thai and Hmong, respectively, meaning 'water source').[9] Prasit L. (2004) has described how in the 1990s Hmong across Northern Thailand communities have taken up the *ntoo xeeb* as a statement of Hmong traditional knowledge and environmental awareness, both within Hmong society and in response to claims of Hmong environmental destruction from broader Thai society.

For Ban Phui Nua Hmong, the *ntoo xeeb* is an important symbol of village cohesion. The annual ritual is composed of two parts. First, the ritual leader responsible for the *ntoo xeeb* makes a sacrifice to the *thwv tim* at the *ntoo xeeb*, asking for good fortune, safety and prosperity for the entire village. Second, clan elders lead the villagers in a ritual statement of the importance of harmony between the village's three clans. Villagers request assistance from the *thwv tim*, because as explained by Assistant Headman Txaj Tsws, the

Figure 3-6: Entering forest for *ntoo xeeb* ritual

Figure 3-7: Ban Phui Nua clan elders at *ntoo xeeb*

thwv tim watches over the entire village[10]. The villagers then collectively pay respects to the elders of the three clans, and make a verbal commitment to live peacefully together and cooperate. In the words of Faib Ntaab, the leader of this part of the ceremony, the three clans undertake to live together as one group, loving and helping each other, without problems and conflicts[11] for the coming year.

This discussion is important because the Hmong are often characterized in Thai society as lacking any attachment to the land. This has implications for their attitudes towards the government and the environment. In Thailand, it seems that the local spirits (*xeeb teb xeeb chaw* and *thwv tim*) are taking on new meaning for the Hmong, in correspondence with the establishment of permanent village settlements, and are being used by Hmong communities to redefine parts of their identity vis a vis Thai society (Prasit L., 2004). The *ntoo xeeb* has thus come to represent these two important factors of contemporary Hmong society – the need to establish new relationships that are bound in a more fixed ecological context, and the need to establish new institutions of relationship that at the same time draw upon and transcend kinship.

This case also provides an important insight into Hmong village-level governance. The creation of process that created the forest, and the cultural institution established to protect it, are both products of the clan system. Clan elders led the movement, and the symbolism of the *ntoo xeeb* reflects the primary desire for the elders to provide unit to the three clans. The village administrative leadership, while supportive of the activities, plays only a small role. This issue is examined further below.

2. Hmong kinship and the foundations of social interaction

Hmong clan networks have typically been effective social structures providing generalized mutual support, and enabling the large-scale migration of the Hmong from China since the 1800s. Hmong culture has been substantially influenced by their interaction with Chinese, and indeed, much of Hmong identity has been articulated in terms of the tension between resistance to and adoption of components of Chinese culture. This topic has been explored in depth by Tapp (1989 and 2003), and is simply referenced here as context for the following discussion. Hmong kinship networks span the mountainous areas of Thailand,

China, Laos and Vietnam, despite the boundaries erected by nation states. Clan networks offer the linkages that facilitate marriage, funerals and livelihood activities, as well.

2.1 Household, lineage and clan: Nested levels of interaction

Kinship relationships – founded upon a system of clan affiliations and affinal alliances – are still paramount for the Hmong in most all facets of life. In the current era of permanent villages, Prasit L. (2001) asserts that the Hmong clan system has been eroded by external influences, primarily the intervention of the Thai nation state and missionary activities. But at the same time the Hmong are making continuous efforts to reconstruct and strengthen their kinship relationships. Now, after more than 30 years of settlement, the clan structure of the three clans of Ban Phui Nua – of a total 69 households, there are 40 Yaaj, 15 Tsaab and 13 Kwm households – still provides the foundation for and norms of interaction in the village. As will be discussed in more detail below, many daily activities are organized along clan and lineage lines. Kinship influences local decision-making processes as well. It seems that local marriage linkages play an important role as well. The web of relations between the three clans has begun to thicken, enabling cooperative activities that help deal with resource scarcity.

Hmong society is organized along nested levels of patrilineal kinship relations[12]. A Hmong individual possesses nested layers of affiliation within the clan system. Taken all together, Hmong speak of their kinship bonds as *kwv tij*, the relationship of younger and elder brothers. At the broadest level, each Hmong individual belongs to a clan (*xeem*), a surname group differentiated from other clans by ritual practice. Individuals can expect a certain level of hospitality and assistance from members of the same clan, regardless of their geographic location or kinship proximity. Hmong must marry outside of their clan, and upon marriage women become members of their husbands' clan. In addition to establishing social regulations for marriage, clan relationships have facilitated migration as well. The most common form of mutual support within the clan is in funerals and weddings. These are the most important times for renewing clan bonds and people frequently travel long distances to take part in these important events. Thus, in the broad sense, Hmong clan ties have not depended upon relationships between individuals (Geddes, 1976), as merely sharing the same surname provides the basic foundation for the obligation and practice of mutual support.

The next level of relationship is the lineage, or descent group (*ib cuab kwv tij*), which traces a group within a clan to a common remembered ancestor. Lineage relations are more binding than clan (Mischung, 1986), and are crucial in determining interactions on a daily basis in the village. Cooperative activities involving multiple households, such as labor exchange, are carried out most commonly within local lineage groups. Some of the annual rituals performed by the Hmong are organized along lineage lines, where common ancestors are known.

The lowest functional level of social organization is the household (*tsev*), which is the traditional unit of decision-making in the village. Decisions concerning the location of fields, crop choices, and migration were typically made by households. Fields are usually owned, managed and worked collectively by the household. It is not rare today, however, to find sons living with their father but farming land on their own, and even maintaining separate agricultural finances. This trend was started during the days of opium production, but observation of agricultural activities in Ban Phui Nua suggests that the rapid intensification of market-oriented production has contributed to the continuing fragmentation of household production activities. Most ritual practice is carried out within the household.

Freedman's (1966:90) description of Chinese lineage groups' roles in local governance, reflects much of the reality of contemporary Hmong society, where "... the local lineage, either on its own or in combination with others, managed its affairs by dint of placing them effectively in the hand of those of its members who, by virtue of their standing in the greater worlds and their resources of power within the lineage itself, were capable of formulating policy and acting in what they considered to be the interests of the community." In contemporary Hmong village life, there is, however, a continued tension between lineage group leaders' perceptions of 'interests of the community', village leader's priorities that give consideration to larger Thai social contexts, and the prevalence of livelihood strategies based on household decision making. These frequently conflicting interests echo Feedman's conclusion that harmony and conflict within lineage-based society "are not mutually exclusive, they imply each other."

Nusit (1976) has suggested that Hmong religious and ritual practice help create social unity in the village. Part of this conclusion was based on observance of Hmong New Year, which is a time for renewing and reconfirming relationships within and across clans in the village. However, as mentioned above, ritual practice provides the distinguishing markers among clans. Other than the *ntoo xeeb* ritual described above, I would argue that ritual practice actually reinforces the lineage-based divisions in village life. Within the basic ritual foundations that define each clan, sub-groups are further differentiated by details of practice in ancestor rituals (*ua dlaab qhua)*. A common way to describe the proximity of *kwv tij* relationships within a clan is whether or not they have the same rituals (*thooj dlaab thooj qhua*). The only ritual conducted at the clan-level in the village is the *lws tauj* ceremony, in which the bad events of the past year are symbolically gathered from each household with a bundle of branches (*tauj*), brought together by the clan ritual leader and then placed in a stream to be washed away from the village. The three clans perform the ritual separately, on different days. Ritual practice determines the scope of kinship cohesion, with the strongest of these found at the household and lineage level, and to a lesser extent at the local clan level.

2.2 Neej tsaa: Marriage networks

The norm in contemporary Hmong society is for patrilocal residence after marriage. While women shift clan identities upon marriage and perform ancestor rituals with the household and lineage of the husband, marriage networks create important bridges between clans and open up a different source of social resources. Affinal bonds formed in marriage (*neej tsaa*) link two households in obligations of mutual support, focused on relationship between the father-in-law (*yawm txwv*) and the son-in-law (*vauv*). In its simplest form this bond requires showing respect for the *yawm txwv*, but it can also imply access to resources and cooperative activities. Cooper (1979) stressed the importance of this relationship as critical to the future of Hmong society because it provided the means for gaining entry to other villages and alleviating tensions born of growing land scarcity. In the days of mobile Hmong villages, if a young couple experienced difficulty in accessing land, they could approach the wife's family for assistance and take up residence. However, as Cooper (1979) predicted, access to other villages in this way is increasingly difficult as land scarcity becomes more serious. In Ban Phui Nua there are four *vauv* presently living and farming in the village. In these cases, the *vauv* uses land belonging to his *yawm txwv*,

engaged either in cooperative activities with his *neej tsaa* or having received permission to use the land individually. The village headman describes these cases as temporary arrangements, in which the *vauv* and his wife will return to his village. The arrangement remains informal, and like the original decision to accept them into the village, is subject in the future to negotiation within the clan.

Figure 3-8 shows the area of origination of the 61 Ban Phui Nua Hmong wives not born in the village. The first concentric ring around Ban Phui Nua represents the Doi Phui area of villages in the immediate vicinity. The second concentric ring represents villages considered to be close by Ban Phui Nua residents, located within an approximate radius of three hours drive. Villages outside of the second circle are considered far. This data shows that the *neej tsaa* network of Ban Phui Nua is relatively broad, although the most intense of these linkages lie in an area considered to be relatively close to the village, and suggests a preference for marriage partners closer to the village.

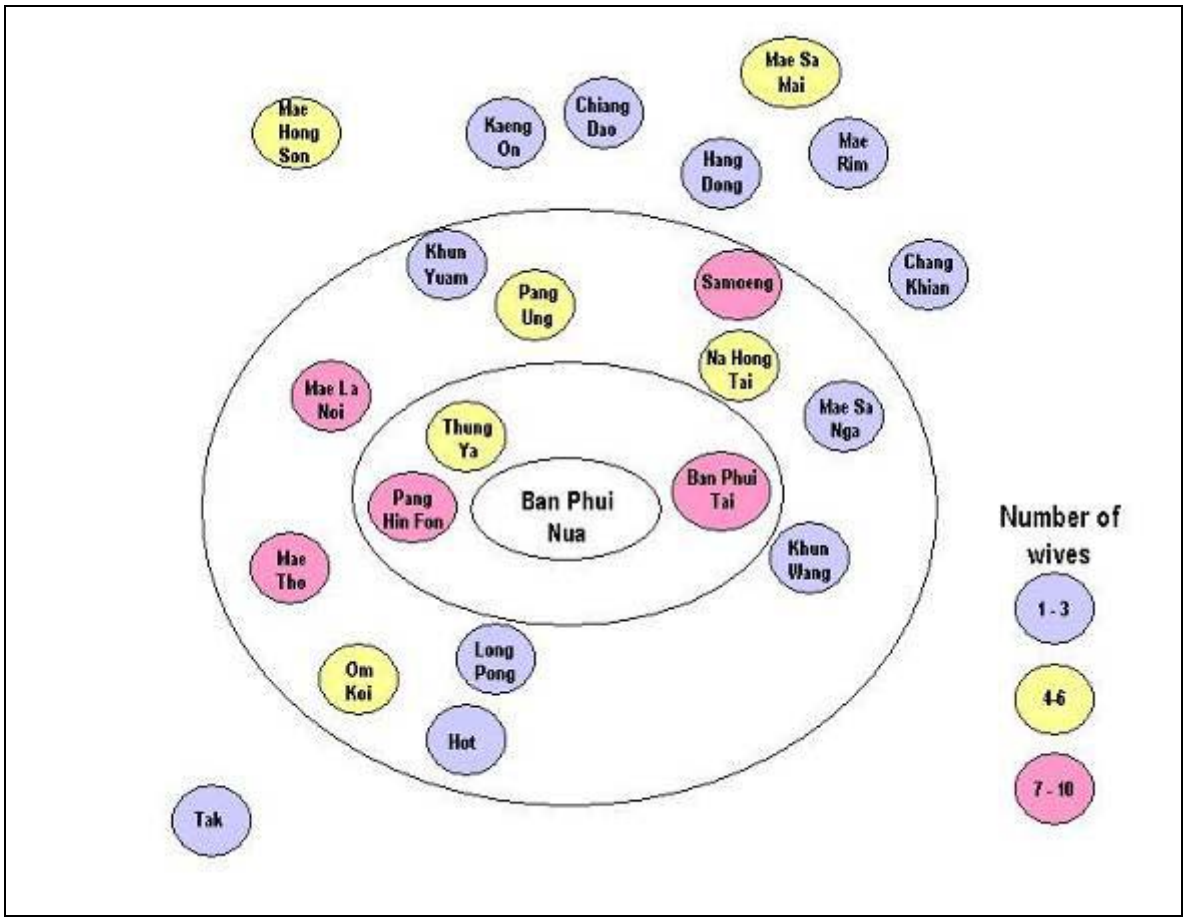


Figure 3-8: Origin of non-local Ban Phui Nua wives

Source: Author's fieldwork

Delang (2003), comparing the geographic extent of Hmong and Karen marriage networks, argues that the Hmong preference for a broader network of *neej tsaa* means that the Hmong have an exogenous outlook. The result of this outlook is that the Hmong look for solutions to resource scarcity and government intervention outside of the locality. These solutions are manifested in good access to information, enthusiastic and direct engagement with markets and reluctance to engage in birth control. The Ban Phui Nua research does not challenge these basic characteristics of Hmong livelihood strategies as presented by Delang. The research does, however, suggest that there are more subtle forces working within and close to the village with regards to dealing with resource scarcity and the potential for utilizing *neej tsaa* relationships.

Table 3-1 shows the birth clan of married women in Ban Phui Nua. Rows show the clan of the wife, while the columns are the Ban Phui husbands. The Yaaj have a dense network of *neej tsaa* relations with the Vaaj clan, which like the Yaaj is one of the largest Hmong clans in Thailand. The Vaaj are numerous in the villages surrounding Ban Phui Nua, and approximately half of the Vaaj women marrying in to Ban Phui Nua are originally from this area. The other half is concentrated primarily around previous village sites, centered on Samoeng, where this group of Yaaj lived in the 1960s. The Ban Phui Nua Yaaj maintain close linkages with the Vaaj in this area. For the Kwm and the Tsaab, linkages with the Yaaj are clearly the most important.

Taniguchi (2003) argues that although the *yawm txwv-vauv* relationship nominally includes expectations of cooperation in agricultural activities and financial assistance in times of hardship, it is actually not a significant element of contemporary Hmong social interactions. However, cases of cooperation based on this relationship were observed and reinforced by villagers' descriptions of the relationship in Ban Phui Nua. The fundamental relationship is extended to link the *vauv* and his wife's brothers (*yawm yij-yawm dlaab*). For example, cabbage and shallot production frequently involves cooperative activities and resource sharing arrangements between *yawm txwv* and *vauv*. Outside of agricultural activities, the *yawm txwv-vauv* relationship can be seen in ritual practices as well. For example, when a family member of their Kwm *yawm txwv* fell ill, two Yaaj *vauv* participated in the ritual healing ceremony despite the fact that one had a pressing TAO meeting to attend and the other was in the middle of planting tomatoes. The *vauv* explained

that it is important to provide this type of support, but that it is very difficult if the *yawm txwv* lives in a distant village. Thus, in Ban Phui Nua the *yawm txwv-vauv* relationship embodies an economically and ritually valuable mechanism of mutual support. This was attributed by several prominent community figures to the relatively high number of local marriages.

Table 3-1: Birth clan of Ban Phui Nua wives

	HUSBAND			
Wife Clan	*Yaaj*	*Tsaab*	*Kwm*	*Total Ban Phui Nua*
Vaaj	23	4	3	30
Yaaj	n/a	14	13	27
Kwm	13	4	n/a	17
Thoj	9	4	2	15
Haam	10	3	1	14
Tsaab	8	n/a	4	12
Hawj	3	3	3	9
Xyooj	2	7	0	9
Com	5	1	0	6
Lis	1	3	0	4
Muas	1	0	1	2
TOTAL	75	43	27	145

Source: Author's fieldwork

Local *neej tsaa* relationships formed through marriages within the village – 44 Ban Phui Nua wives were born in the village – are also important, as they provide linkages that can be used in daily social and economic life. In Ban Phui Nua, local *neej tsaa* networks facilitate labor exchange, money lending, land acquisition and access to transport for agricultural produce, in addition to helping strengthen the feeling of community within the village. The Kwm clan clearly has the largest network of local affinal relationships, while the Yaaj and Tsaab are both considerably smaller. In fact, the Kwm trend towards local marriages was initiated with the generation that first moved to Ban Phui Nua, three brothers who all took wives from the Doi Phui region. The leader of the Kwm clan in Ban Phui Nua explains that this was a conscious decision on the part of the clan. As the smallest group in the village, clan elders recognized the potential value in having close relationships with the two other clans.

The Kwm strategy becomes clearer when looking at the clan breakdown of local marriages, shown in Table 3-2. Reading across, the table shows the area of origin of the

women marrying into each of the Ban Phui Nua clans. The 'other Doi Phui' category includes three other Hmong villages within a 20-minute drive from Ban Phui Nua, well within a geographic range of frequent visitation.

Reading across, the table shows the birth clan of the wives of Ban Phui Nua husbands. The figures show the number of local women marrying in to each clan. There is a total of 21 marriages between the Kwm and Yaaj clans, with thirteen Kwm women marrying local Yaaj men, and eight Kwm men taking Yaaj wives. Almost half of the men in the current generation aged 18-45 years of age are married to local Yaaj and Tsaab women. The eldest member of the Kwm clan has five *vauv* in the village, four Yaaj and one Tsaab. In addition, his eldest son, who lives with him, is married to a local Tsaab woman. This son is also *yawm txwv* of the son of the Yaaj village headman. Geddes (1976) states that local marriage is looked down upon as a sign of poverty, but Kwm clan leaders assert the practical benefits of local alliances.

Table 3-2: Ban Phui Nua Local Marriages by Clan

BPN Husband	*Ban Phui Nua*			*BPN Wife other Doi Phui*		*total local*	
	couples	number	% of total	number	% of total	number	% of total
Tsaab	47	13	28%	3	6%	16	34%
Yaaj	78	19	24%	9	12%	28	36%
Kwm	26	12	46%	5	19%	17	65%
TOTAL	151	44	29%	17	11%	61	40%

Source: Author's fieldwork

The systematization of local marriage alliances has been observed widely across Hmong villages in Thailand as a response to permanent settlements (Tapp, 2003), despite frequently heard perceptions that the growth in pick-up truck ownership has made it easier for young men to visit distant villages in search of marriage partners. In fact, young men in Ban Phui Nua believe that they have even less chance to court women in distant villages because of the intensive workday required by the cash crop economy. These young men also mention the burden of the *yawm txwv-vauv* relationship. One young Yaaj man, whose *yawm-txwv* lives in a nearby village, mentioned that he only visited once a year, during Hmong New Year, saying that he was not able to offer, but subsequently made an arrangement to use the land of his *neej tsaa*. In Ban Phui Nua, there are also cases of a *yawm txwv* providing land to his *vauv* in order to build a new house after marriage, when

the father of the *vauv* does not have the resources to give his son land to establish a new household. In addition, polygamy is common among the Hmong, which means that while one man may form several *neej tsaa* linkages through multiple wives, he has *vauv* obligations to each of the fathers as well. In Ban Phui Nua, nine men – four Tsaab and five Yaaj – have taken multiple wives, ranging from two to five. As a proportion of total marriages, the Tsaab have a much higher trend towards polygamy than the Yaaj. Table 3-3 gives a break down of in-village marriages.

Table 3-3: Ban Phui Nua in-village marriages

BPN Husband	*BPN WIFE*		
	Yaaj	*Tsaab*	*Kwm*
Yaaj	n/a	6	13
Tsaab	9	n/a	4
Kwm	8	4	n/a

Source: Author's fieldwork

Thus, the evidence suggests that villagers do place high value on local *neej tsaa* networks. this importance includes expanded opportunities for cooperative activities. As described by one young man who had recently married a local woman, the thickening of *neej tsaa* ties within the village may encourage people to consider not only a broader range of options for cooperation, but perhaps more importantly these relationships may encourage households and local lineage groups to consider possible negative implications of disjointed, individualized decision-making.

2.3 Xeem Tsaab: Strengthening clan linkages across space

I argued above that, at the broadest scale, the Hmong clan system provided indirect benefits to its members, and that the local lineages and marriage linkages were more important in daily life. But clan-level cohesion may be growing, as described by Tsaab informants in Ban Phui Nua. The prominent leaders of the Tsaab clan have formed a loose group to discuss matters affecting the clan across northern Thailand. The group is known by its Thai name, *Ruam Yaat* (Relatives Group). The group arose out of elders' concern for the integrity of the Tsaab clan rituals, and was further strengthened by the next generation's desire to improve the standard of living of their Tsaab *kwv tij*. The group meets once a year, hosted by a different group of Tsaab each year.

At first, the group set up a fund to support funerals for Tsaab. The cost of funerals has become a burden on Hmong, especially as transportation has been made more convenient and distant relatives can easily attend. The funeral fund is replenished yearly by a flat-tax on each Tsaab adult. If a family needs assistance to cover funeral costs, they can apply to the group for funds. Apparently, this system has worked very well, and the *Ruam Yaat* has initiated an educational fund that will function upon similar principles, but will draw on other resources generated from within the clan as well.

Tsaab elders in Ban Phui have used this momentum to increase cohesion within the Tsaab at the village level, too. They have constructed a small meeting hall for the Tsaab, which is used on occasions when elders convene a meeting of the local Tsaab lineages. The sons of the previous Tsaab headman have discussed the possibility of using the space for supplementary education, including instruction in written Hmong, which would be open to all children in the village. The elders have also arranged for education of children in ritual songs and the Hmong pan-pipes. The clan also collected 10,000 baht to hire an expert in Chinese geomancy from Chiang Mai to find appropriate burial sites for the clan in the village.

But this may be an exceptional example of clan cohesion. It is more common for a local subgroup (such as clansmen living in Mae Chaem district) or ritual group to organize for some shared purpose. Indeed, larger clans, such as the Yaaj or Vaaj, have much more difficulty in organizing collective action than smaller clans. The Yaaj, for example, are much more closely bound in groups sharing previous settlement. So, the Ban Phui Nua Yaaj maintain close relationships with distant *kwv tij* in Tak province and Mae Rim District.

2.4 Hmong Phanit: Limitations to trust in kinship society

Hmong efforts to organize across clan boundaries have been frustrated by a lack of trust. By 1988, cabbage production had begun to catch on in many Hmong villages around northern Thailand, and in the following five years the crop would be the backbone of the Hmong economy. Geographically, production had reached impressive proportions, but investment and marketing have been done on a small-scale, according to *kwv tij* and *neej*

tsaa relations described above. Only a few large Hmong traders emerged, most of these in the areas north of Chiang Mai city.

It was at this time that nine Hmong individuals began to discuss the potential benefits to be had from accessing larger markets by creating an economy of scale. If these individuals could successfully draw on Hmong kinship ties, the investment resources available would be significant and supply of cabbages would be constant. The principles established a company, Hmong Phanit ("Hmong Enterprise"), which would organize agricultural production and marketing at a level never experienced before by Hmong farmers, gathering cabbages from all over northern Thailand. As shown in Table 3-4, the principles were distributed over a wide geographic area. Although there were no Ban Phui Nua people involved in the establishment, several did pledge support to the endeavor, primarily through communication with Sophot Vaaj in Mae Tho.

Table 3-4: Founders of Hmong Phanit

Name	Location
Txuj Tee Xyooj	Mae Rim
Sophot Vaaj	Mae Tho
Nruab Yaav Xyooj	Mae Rim
Xawv Lws Haam	Mae Rim
Ntxoo Foob Haam	America
Mov Xaab Haam	America
Nom Npis Lis	Petchabun
Nkiag Hu Vaj	Doi Pui
Nplia Tooj Lauj	Chiang Rai

Source: Author's fieldwork

The vision of the leaders was to create the transportation infrastructure for a marketing network. First, the enterprise would hire large trucks to transport Hmong cabbages to large markets in central Thailand, including Bangkok. The scope would then be expanded to include ownership of trucks and packaging services. The initial investors represented a broad network, spanning northern Thailand and reaching into the United States. Each of the Thai partners was responsible for stirring up interest in their own area. In the initial stage of development the company raised two million baht in commitment, collecting 200,000 baht of up-front payment from more than 100 villagers, including several farmers in Ban Phui Nua. However, the leaders were not able to collect the full commitment of funds from those who pledged support, and eventually the enterprise collapsed. Txuj Tee Xyooj attributes the failure to a lack of generalized trust among the people involved at the

village level, who were afraid that the other individuals would not produce the cash promised, and they would lose their investment.

This ambitious project failed at the scale envisioned by the founders, demonstrating limitations to generalized trust within Hmong society. This experience further reinforced the suspicion of efforts to organize at larger scales. In subsequent years, however, large Hmong villages such as Mae Tho and Pang Ung were able to mobilize investment resources at a smaller scale to organize transportation of their cabbages directly to larger markets. Success at this scale is a product of local kinship networks and ability of local leaders to create confidence among individuals that the benefits to the local community would outweigh the costs and risks to the individual. There have not been any such efforts in Ban Phui Nua, but this case is presented to highlight some of the constraints to large-scale organization faced by the Hmong.

3. Village governance: parallel systems of decision-making

Strong social ties are a crucial part of community governance (Bowles and Gintis, 2001). The convergence of village social networks and community governance are important for the discussion of resource management. Looking at the basis for decision-making in a contemporary Hmong village, it is evident that village governance is a mosaic of old and new. Traditional leadership usually entailed mediating disputes between clans and dealing with the outside world, and was based on a process of 'discussion' (*sab laaj*) in which the village leader (*tug hau zog*) facilitated collective decisions. Village-level decision making in Ban Phui Nua has gone through several structural changes as the village's relations with Thai society evolved, but the main functions and processes persist. There are three strands of leadership in the village currently, the village headman and committee, clan elders and TAO representatives. At the same time, the informal leadership of each clan has evolved in different ways.

Before the integration of Hmong villages within the Thai administrative hierarchy, village-level leadership was provided by clan elders (Geddes, 1976, and similar to the description provided by Lemoine (1972) for Laos), and by the *tug hau zog*. This individual usually played a limited, mainly social, role in deciding village affairs. Characteristics of a traditional Hmong leader included leading by example, being kind and considerate,

controlled in speech and fair, gets along with all, and is familiar with Hmong customs[13] (Pao, 1997). These characteristics show the strong emphasis for social skills, which was most appropriate for the informal *sab laaj* style of decision making and problem solving that were the norm in Hmong villages.

The first *tug hau zog* of Ban Phui Nua was Vaam Suav Yaaj, who had played that role in the previous two settlements as well. Villagers recall that Vaam Suav was strong in all of the above leadership qualities. Increased interactions with the Thai state gave rise to new political leadership, in the office of the village headman (Kam Muang *po luang*; Thai *phu yai baan*), which Vaam Suav performed in the 1960s as well. Retiring from his position in 1976, Vaam Suav was replaced by the oldest resident brother of the dominant Tsaab lineage. From the outset, the new headman was in a difficult position. At that time, Ban Phui Nua was administratively grouped with Ban Phui Tai, a mixed Karen and Hmong village, and with the transition to alternative cash crops beginning shortly thereafter, the village was faced with a new set of land management challenges. A system of private ownership of permanent plots was being created, and a constant process of negotiation among villagers of both villages occupied much of the headman's time. In 1988, the Tsaab headman resigned and the current headman was elected from the Yaaj clan.

Within the village, the office of the village headman has not accumulated a large amount of political power. For example, the current headman faces difficulties in enforcing land use regulations required by the central government's environmental policies. Differences in opinion about the use of the village's forested areas have detracted from the headman's authority, as households consult rather with their clan and lineage leaders in determining where and how agricultural land can be expanded. The village headman's real power lies rather in direct dealings with the government bureaucracy, other external organizations and to a somewhat lesser extent, in dealing with neighboring villages. In this sense, his role is not significantly different from the past.

At the same time, the complexity and intensity of these affairs has grown substantially. The headman led a group of Ban Phui Nua farmers to Chiang Mai to negotiate the terms for registering foreign laborers. Similarly, if RFD staff comes to the village, the headman is the one to engage in discussions and negotiations. The headman represents the village at meetings of networks and local NGO activities, and these duties have been increasing

sharply over the past few years. The authority of the village headman has also grown with his role in mediating the ever more complicated relationships with Karen, Lua and Thai villages in the surrounding areas. The headman is supported by the village committee consisting of four assistant headmen, three Yaaj and one Kwm. There was originally one representative from the Tsaab clan, but after a dispute between his clan and the Yaaj, he resigned from the committee and the position has not been filled.

3.1 Clan leadership and decision-making

Although the authority of the village headman in Ban Phui Nua today should not be understated, clan leadership arguably plays a more important role in decision-making within the village. This has already been introduced with regards to the *ntoo xeeb* forest, but holds true more broadly as well. Discussion and consensus building are still the key processes for governance in the village, and they occur most frequently at the clan level. Elders provide mediation and facilitate consultation within the clan. In each clan, distinct patterns of leadership have been evolving. Although the village headman is sometimes included in Yaaj clan decision-making, leadership is mainly provided by a core group of elders (*cov laug*) that work together to maintain harmony within the clan. The Yaaj leadership includes respected individuals from three of the four main lineage groups. The Yaaj consensus says that since the clan has grown to large numbers, it is better to keep decision-making broadly representative and include the wisdom of several experienced elders. In contrast to this approach, the Kwm clan has decided to follow the lead of one individual, who confers regularly with individuals from the other Kwm lineages. This individual was previously an assistant headman, and is the most important individual in mediating disputes between the clans. The Kwm have collectively decided not to take more than one wife, in hopes of maintaining harmony within the clan by avoiding the potential difficulties that multiple marriages can present. The Tsaab clan follows the joint leadership of the previous village headman and one of his younger brothers. Tsaab population is growing quickly, taking multiple wives is relatively common and there are several large households, the largest having 49 people. Additionally, Tsaab have been involved in several land disputes in the village and with neighboring villages. As a result, the Tsaab have adopted a more centralized clan leadership approach to manage more contentious clan matters.

Villagers express general agreement on the norms for problem solving within the village. In the event of a dispute, the first step is to discuss the issue within the households directly concerned, perhaps involving a few close *kwv tij* as well. For instance, in late 2004 there was a case of Yaaj cattle trampling bags of fertilizer belonging to the Tsaab. A party of Tsaab, including the owner of the fertilizer, his father, and two cousins joined the Yaaj cattle owner, his brother and nephew, in the fields to discuss compensation. The matter did not involve the clan leaders or the village headman directly, but all were aware of the negotiations and supported the outcome as agreeable. If a decision cannot be reached in this way, a broader consultation within the clan (*sab laaj kwv tij*) is conducted, deferring to clan leadership to make the necessary judgment. In early 2005 there was a dispute between two cousins over irrigation pipes. Despite efforts to negotiate a solution with the help of a respected uncle, the issue was taken more formally to the clan leader and finally a resolution was reached. If clan leadership is unsuccessful the issue is then taken to the village headman and the committee. The village committee has handled only three disputes in 2004, all of them related to water.

But clan-based decision-making is not solely for dispute resolution. The fixing of village bride-price is an instructive example of collective decision-making by clan leaders. Arguments involving the agreement and fulfillment of bride price have always been common in Hmong society. Clan leaders, who had become weary of dealing with these disputes, proposed to the village committee that the bride price be set at a flat rate of 10,000 baht. After general *sab laaj* with the entire village, the proposal was accepted and the fixed rate has been in place for several years. This norm was then gradually spread through neighboring Hmong villages by the village headman and clan leadership, so that now the fixed rate is applied broadly in a number of Hmong villages in the area.

3.2 TAO representatives

The decentralization of authority over decision-making, as set out in the 1997 Constitution, has established the basis for increasing and enhancing local participation in governance processes. The sub-district administrative organization (TAO) is now the focus of local governance, with an expanded mandate over development and conservation activities and deepened democratic processes. In the eyes of villagers, the most important role of the

TAO is in allocating development budget resources for projects such as road construction, water supply and other infrastructure needs.

Each village elects representatives to the TAO, and in Ban Phui Nua the election of these representatives has been taken very seriously. The TAO representatives are an emerging third strain of leadership in the village. Although they do not wield any formal decision-making authority in the village, they are frequently included in matters of village governance. Their importance in the village is linked more directly, however, to their role in influencing the use of *tambon* resources. Each year the *tambon* formulates a development plan, which is submitted to the central government as an application for funding. The TAO representatives inject village interests into this planning process. Their source of influence, therefore, lies in this arena of accessing development funds for the village. TAO representatives are young, educated and comfortable with bureaucratic procedures. These individuals are often relatively successful in their agricultural endeavors, and villagers seem to demand a certain level of entrepreneurial vision in the TAO representatives.

In the first elections in 2001, two Yaaj men were selected, after several political alliances between the Tsaab and Kwm clans failed. The Yaaj clan's control of virtually all official positions in the village was highly unsatisfactory for the other two clans. They were successful in getting one Tsaab elected as TAO representative in 2005, and despite the lack of authority within village decision-making and only indirect influence over village development, Tsaab and Kwm informants expressed relief that the balance of power had been improved.

General understanding of the new roles and functioning of the TAO is still low among villagers. It could be argued that the potential importance of the TAO is not only in providing access to resources for development, but also creating an avenue for Hmong to participate in local governance. Although ethnic minorities living in mountainous areas have been marginalized from the decision-making processes of environmentalism at the national and international levels (Tomforde, 2003), the TAO may begin to give voice to Hmong and other ethnic interests at the tambon level.

3.3 Lack of meso-level village institutions

In villages across Northern Thailand it is common to find women's groups, conservation groups, rice banks and water or forest user groups, and other village level organizations. In addition, many villages have created written, publicly displayed regulations for use of village resources and participation in village-level activities, as well. It has been argued that such meso-level institutions are important for community cohesion, and in fact, these organizations represent a critical resource in mobilizing collective action (Putnam, 1994). The lack of meso-level institutions in Ban Phui Nua is striking. Aside from the kinship structures and mechanisms of official governance mentioned above, there is very little organization of community members for larger community goals. Aside from the village committee, the only functioning organization in Ban Phui Nua is the committee formed to manage the 1 Million Baht Village Development Fund.[14]

In fact, there is a marked hesitance on the part of villagers, and village leaders as well, to establish organizations to deal with problems of community-level interest. Collection of fees to maintain the village electricity generation, regulation of domestic water at the system level, and formulation of forest protection regulations are three examples of issues of community interest in Ban Phui Nua that arguably require organization of special groups. During the research, I had many discussions with individuals about the potential benefits of organizing. The general feeling was that such groups would be beneficial, but that no one was willing to take the lead because it would be too difficult to assert the primacy of village interests. Collection of electricity fees had been attempted, without sustained success.[15] Demand for electricity continued to grow, quickly passing the generator's capacity and resulting in frequent blackouts.

The Christians in the village, consisting of six Tsaab and two Kwm households, are organized into a loose group that revolves around religious activities at the church. The church group organizes a Christmas celebration yearly, but the main task of the group is to maintain linkages with larger Hmong Christian churches because the small Ban Phui Nua church has no ordained leadership. The church has very little interaction with Karen and Lawa Christians in the surrounding villages of Pang Hin Fon, although they are much more numerous than the Hmong. Ntsuag Tsaab, the informal church leader, mentioned that one of the reasons people have decided to convert is that the traditional ancestor rituals are too

individualized and do not provide the feelings of community that villagers have come to desire now that the village is settled.

In 2005, the village committee began to discuss the need to establish a conservation group responsible for coordinating a village response to forest and water problems after the District expressed concerns that no such group existed in Ban Phui Nua. Village conservation groups have been formed in other villages, at the very least to demonstrate that the villagers are aware of environmental problems. Conservation groups usually coordinate on issues involving government agencies and other villages, as well. But, it seems that the Hmong are most likely to organize when pressure from the outside rises, and prefer to rely on informal networks to deal with matters requiring cooperation among households.

4. Informal networks: Patterns of cooperation among households

While organization at the village level has not materialized, the Hmong frequently mention the benefits of mutual support and cooperative activity that the clan system provides. As suggested above, the Hmong village in the past has been a rather ephemeral phenomenon, and cooperation broader than the household has been limited primarily to lineage groups. However, it is helpful to examine the functioning of local networks in everyday activities to understand how kinship structures and cultural norms are reproduced or adapted. Especially in this time of economic development and landscape transformation, the practice of social interaction reflects the patterns of change in Hmong village life.

4.1 Cooperation and trust

There are several Hmong expressions for cooperation, all of which are encountered frequently in everyday life. Hmong often express a group's strength as its capacity to mobilize help among its members. For example, one of the most basic, but common, expressions of cooperation and cohesion in society is *sws hlub sws paab*, meaning 'loving and helping each other'. This phrase is used at the village level, but one can also hear it on the radio as a call for Hmong to work together more effectively in northern Thailand. A slightly more formal expression is *sws koom teg*, which means to 'share or bring together hands', and is comparable to the Northern Thai expression, *huam mu*. Villagers' opinions

about the level of generalized cooperation in village matters were divided. Approximately half of the Ban Phui Nua villagers surveyed responded that there is a medium-level of cooperation, which they generally find to be acceptable. Further questioning revealed that many considered this cooperation to mean matters directed by the village headman, rather than spontaneous cooperation among individuals or households. Discussions about cooperation at this level remained rather vague. Villagers were much more enthusiastic to provide information about cooperative activities within the clan, lineages or between households. Over the course of the fieldwork, it became clear that the younger generation had the most concrete ideas about village level cooperative activities.

At the same time, there is a preference for individualized activity, expressed in Hmong as *nyag ua nyag*, meaning 'each does his own'. This is the basic norm of agricultural production that emerges from observation of Hmong farming practices and is stressed repeatedly in the local account of the historical changes in agriculture in the village. For example, when asked whether they would prefer to cultivate a 7-rai plot together with someone else, or a 2-rai plot alone, approximately half of the Ban Phui Nua sample said that working alone on a small plot is preferable, because there is less scope for dispute. Some respondents expressed preference for the larger cooperative plot, but said that the first thing they would do is clearly divide the land and use it separately. This principle of individualized activity is likely a large source of land and water-related tension in the village. Nonetheless, further examination of *nyag ua nyag* shows that it functions upon a shared trust in the basic social institutions that maintain order in Hmong society as well. That is, if everyone does their own work, not interfering in the activities of others, personal conflicts will be minimized, while any conflicts that do arise will be dealt with according to tradition.

Exploring perceptions of trust, I found that approximately half of the people felt that there were sufficient levels of mutual trust in the village (*kev sis ntseeg sab huv zog*), although almost as many felt that there was only very little or no mutual trust. It is not clear if this perception of lack of trust is a new phenomenon, but some suggested that recent tensions among clans had contributed to lower levels of generalized trust among individuals. Yaaj and Tsaab respondents had the strongest feelings for a lack of village-level trust, which may reflect their history of disputes over land and water. Interestingly, several people

explained that cooperation did not necessarily require high levels of trust, suggesting again that cooperation is considered to be something that is elicited by a figure of authority.

The brief examination of Hmong conceptions of cooperation and trust above provides some useful insights into how villagers perceive their scope of social resources. There is clearly a tension between the ideal of a cooperative and mutually supportive community, and a preference for individualized household activities. In order to gain a broader understanding of interactions within the village, it is helpful to look at a sample of more specialized social interaction. To do this, three indicators of social interaction that involve trust and exchange were devised. The interactions that these indicators tried to capture are presented in visual form, using the methodology of social network analysis. Social network analysis is not only a way of observing and analyzing the networks that people create, but it provides a framework that conceptualizes society as complex system of inter-connected networks (Yasuda, 2001).

The intention of this exercise is to provide an illustration of the structure of informal networks formed around the exchange of information, mutual assistance and general socialization within the administrative village of Ban Phui Nua. A fourth indicator of general social relationships, called ‘getting along’ according to the Hmong term used to describe this bond that straddles the lines between kinship and friendship (*sws raug zoo*), is included as a point of reference for the other three more specific indicators. This indicator provides insights on the social boundaries of personal Hmong social networks, which, combined with other data from fieldwork, enhances understanding of the scope of trust among villagers. The main object of analysis is the domain of social linkages, with respect to clan affiliations – bonding ties, or those linkages within a clan that bind it together, and bridging ties that link clans together.

Box 1: Note on social network analysis methodology
The network analysis presented here is based on a sample of 34 individuals, all from different households. This sample represents approximately 50 percent of the households, and the composition reflects the relative populations of the three clans. Data from the first three networks was collected using a 'closed network' approach, in which the members of the sample network were determined ahead of time, and each individual answered questions about his relationship with each of the other individuals in that network. For the 'getting along' indicator, each individual was asked about the people he best got along with, but not limited to the members in the sample network. This provides a slightly broader perspective on relationships. Individuals at the periphery of this network appear to have only single linkages, but this is a relic of the methodology, in which only the original 34 respondents were asked to provide information. The network could be developed further by asking those individuals the same questions. The purpose here is to provide insights on the patterns of social interaction that can be observed, rather than explaining the network in its entirety.

In the network diagrams presented below, members of the Yaaj clan are shown in red, Kwm in grew, and Tsaab in yellow. Circles represent individuals, or nodes in the network. Lines show linkages between nodes, with arrows indicating which individuals 'chose' and which 'were chosen'. Linkages between nodes that have chosen each other suggest the strongest ties. Individuals shown in the network diagrams located towards the center have denser networks of interaction. The placement of individuals has been modified slightly to facilitate viewing. The results of this analysis for the three specific indicators are summarized in Table 3-5 as a point of reference for the following sections. The table, read across the columns, shows how many people from each clan were selected. The figures represent only a sample of the community, and should be taken as illustrative indicators of the patterns of social interaction observed.

Table 3-5: Summary of social network analysis

Exchange of Information									
	Yaaj		Tsaab		Kwm		ave/person	*Bonding*	*Bridging*
Yaaj	160	63%	56	22%	38	15%	13	63%	37%
Tsaab	34	37%	39	42%	19	21%	12	42%	58%
Kwm	19	35%	10	19%	25	46%	8	46%	54%
Work Assistance									
	Yaaj		Tsaab		Kwm		ave/person	*Bonding*	*Bridging*
Yaaj	56	82%	6	9%	6	9%	4	82%	18%
Tsaab	23	32%	38	52%	12	16%	9	52%	48%
Kwm	9	33%	3	11%	15	56%	4	56%	44%
Social Visiting									
	Yaaj		Tsaab		Kwm		ave/person	*Bonding*	*Bridging*
Yaaj	181	72%	40	16%	30	12%	13	72%	28%
Tsaab	33	36%	43	47%	15	16%	11	47%	53%
Kwm	22	38%	7	12%	29	50%	8	50%	50%

Source: Author's fieldwork

Recognizing that in actual practice, these social networks are probably not limited to members of the administrative village, defining the networks in terms of village members does provide a view on how the networks function within the village. The results are discussed in the following subsections.

4.2 Exchange of information

For the Hmong of Ban Phui Nua, crop price information is one of the most important tools in day-to-day agricultural decision-making. Farmers must be able to play daily price

fluctuations to maximize cash income. Agricultural produce is sold at regional markets, to middlemen and merchants in the district town, and to middlemen that come to buy at the village. Although many villagers own mobile phones, the village is located in a shadow of the mobile network, so alternative channels of information regarding the diverse range of crops grown is particularly important. Farmers make the 45-minute trip to the district town and more distant cabbage and shallots markets frequently, but the flow of information within the village is crucial. Networks for exchange of information among farmers are necessary in providing the basis for deciding which markets to send their produce, and when. Figure 3-9 represents the network for exchange of shallot price information.

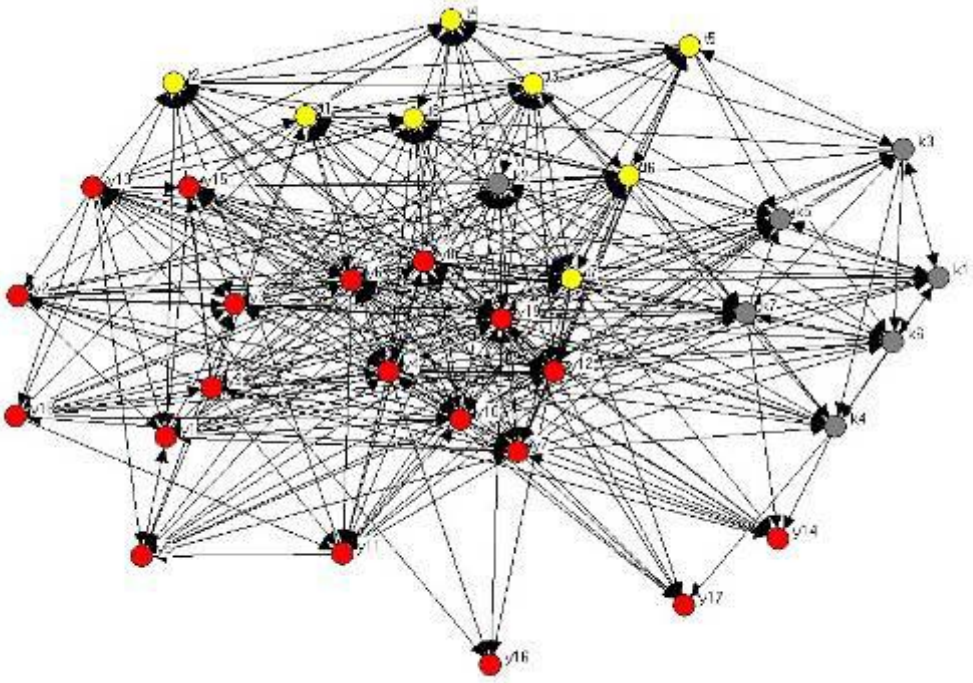


Figure 3-9: Information exchange network diagram

Respondents were asked about whom they exchanged information about shallot prices with in a three-month period. The network density is 0.47, which means that almost half (47 percent) of all the possible linkages between the individuals in this network are made. A high degree of inter-clan bridging linkages can be observed. However, these bridging ties are not evenly distributed across the three clans. Fifty-eight percent of Tsaab ties are with other clans, the majority of which are with Yaaj. The Kwm network has 54 percent cross-

clan ties, also heavily leaning towards Yaaj. The Yaaj network, however, has only 37 percent cross-clan ties, which are distributed evenly between the Tsaab and Kwm.

It is interesting to note the position of individuals within the network diagram. For example, T1 and K2 both play important bridging roles with the Yaaj. T1 is a young, successful Tsaab farmer married to a Yaaj woman from Ban Phui Nua. His house is located close to his Yaaj *neej tsaa*, and maintains close relations with the Yaaj, including the sons and nephews of his *yawm txwv*. K2 is a respected individual in the Kwm clan, whose wife is also a Yaaj woman from Ban Phui Nua. The high degree of linkages centered on the Yaaj speaks of their strong position with regard to the flow of information.

4.3 Work Assistance

'Going to help with work' (*moog paab xws*) is a more altruistic articulation of the mutual support network observed in Ban Phui Nua. Farmers provide assistance to certain others without the expectation of direct compensation. This differs from labor exchange (*pauv zug*), which is a more precisely calculated exchange of person-workdays. This indicator includes a broad range of activities related to farming – including planting, harvesting and transportation. Work assistance of this type suggests a general feeling of trust that providing assistance will help maintain individual social relationships that are important to the community. For the Hmong interviewed, a high level of work assistance is a sign that villagers are living together in harmony. Figure 3-10 shows the linkages of work assistance in Ban Phui Nua.

Respondents provided information about people they assisted in the fields over a six-month period. The density of this network is predictably less than that for exchange of information, at a density of 0.20 or 20 percent of total possible linkages, as work assistance requires a much more heavy investment of time and effort. As there is no immediate obligation for reciprocity, it also suggests closer bonds between the participants. Some people, such as Y1, Y14, T2 and K6, are notable recipients of work assistance. These people are all more senior, respected members of their clans, and it is interesting to note that they all receive some assistance from non-clansmen as well. K7 is positioned between the Yaaj and Tsaab networks. He is closely linked through *neej tsaa* relationships to both

the Yaaj, his daughter married Y6, and the Tsaab, as he himself is married to the sister of T3.

The position of T7 is also noteworthy. This Tsaab individual seems to spend an enormous amount of time assisting others. This individual has four wives and 18 sons, which means that he has a large labor force and does not go to work in his own fields every day. However, the burden of supporting such a large family requires him to maintain a broad network of assistance, although the diagram shows him as provider rather than a recipient. He asserts that maintaining good relationships with many people through labor assistance is an important investment in a generalized safety net for the future.

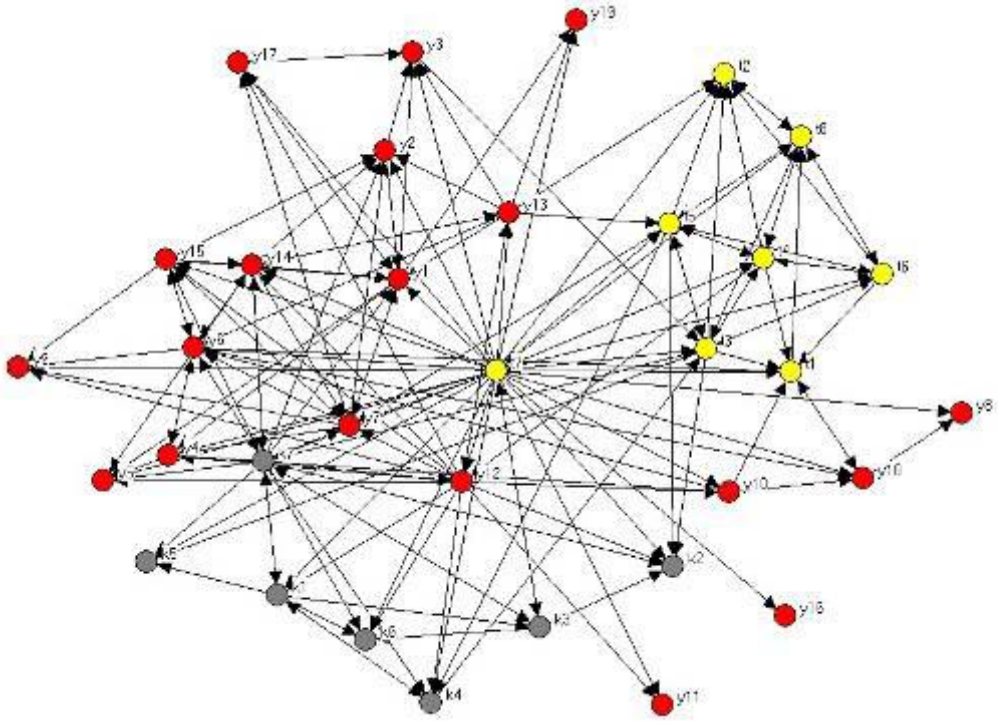


Figure 3-10: Work assistance network diagram

Similarly to the price information exchange network, the Tsaab and Kwm show the largest percentage of cross-clan ties, at 48 and 44 percent respectively, with the Yaaj showing only 18 percent. In many cases cross-clan linkages, such as T1-Y18, represent the obligations of the *neej tsaa* relationship. Of the three indicator networks, work exchange is the most

intensively focused on bonding linkages, although the significant level of bridging linkages attests to a relatively high level of cooperation among the clans at the level of individuals.

4.4 Social Visiting

The Hmong, like many other groups, place high value on informal socializing. These networks of eating and drinking are where much information is exchanged, plans and visions are discussed, and issues are dealt with in the comfort of relaxed atmosphere. Here, respondents provided information about whom they had visited for socializing (*moog tshaam*) in a three-month period. Figure 3-11 shows the social visiting network.

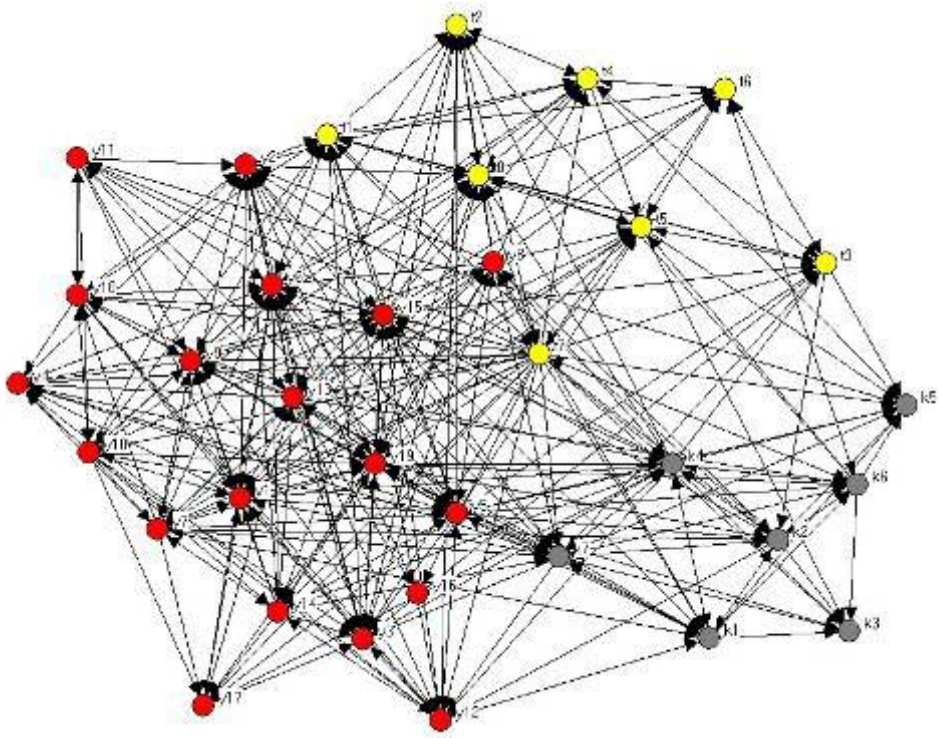


Figure 3-11: Social visiting network diagram

As expected, the network for social visiting is relatively dense. In this network 45 percent of all possible linkages are made. Proportions of bridging ties observed are similar to the other two networks: Tsaab 53 percent, Kwm 50 percent, and Yaaj 28 percent. For the Yaaj, social visiting is an important factor in maintaining the necessary level of coordination among the local lineages. The Yaaj individuals at the center of the diagram, such as Y1, Y5, Y13, Y15, and Y19 are senior members of their lineages, and it is clear that important

coordination between lineages is done through cross visiting with leaders of each lineage. Y5 is the son of the village headman, and plays an integral role in managing the village development fund. In contrast to this, T8, a successful young entrepreneurial farmer, is a hub for social visiting in the Tsaab clan. This individual is known for having many market contacts and linkages with other Hmong villages, and is an important source of information.

The above data also tells of the comparative density of these networks, and uncovers a different aspect of social ties. In the above analysis, the Yaaj networks are much more reliant on members of their own group. Table 3-6 shows the average number of ties per capita by clan reported for individuals in the network sample. For all three indicators, Tsaab and Kwm individuals consistently reported a higher average number of ties per person within their own group, suggesting that the network of bonding ties of these clans are denser than the Yaaj.

Table 3-6: Summary of network density

	Information Sharing			*Work Assistance*			*Social Visiting*		
	Yaaj	Tsaab	Kwm	Yaaj	Tsaab	Kwm	Yaaj	Tsaab	Kwm
Yaaj	0.5	0.4	0.3	0.2	0	0	0.5	0.3	0.2
Tsaab	0.2	0.7	0.3	0.2	0.7	0.2	0.2	0.8	0.3
Kwm	0.1	0.2	0.6	0.1	0.1	0.4	0.2	0.1	0.7

Source: Social network analysis, author's fieldwork

The most marked difference in this data is the high level of density in work sharing among the Tsaab, which is more than three times greater than for the Yaaj and almost double that of the Kwm. Social visiting within the Tsaab and Kwm is much denser, as well. Information sharing within the clan is high for all three, and while the Tsaab and Kwm report higher density there is less differentiation with the Yaaj.

Thus, it appears that the Yaaj create less cross-clan relationships, while the Tsaab and Kwm not only maintain a high level of cross-clan interaction, they have higher density of interactions within their own clan networks as well.

4.5 Sws raug zoo: Getting along well

The last network to be analyzed is the extent of a relationship *sws raug zoo* in Hmong. This relationship, translated simply as 'getting along well', captures the some of the essence of social capital, as it implies generalized trust, expectations of support and reciprocity, and frequent interaction. The network is noticeably less dense and more dispersed than the previous three. Figure 3-12 illustrates the 'getting along' network.

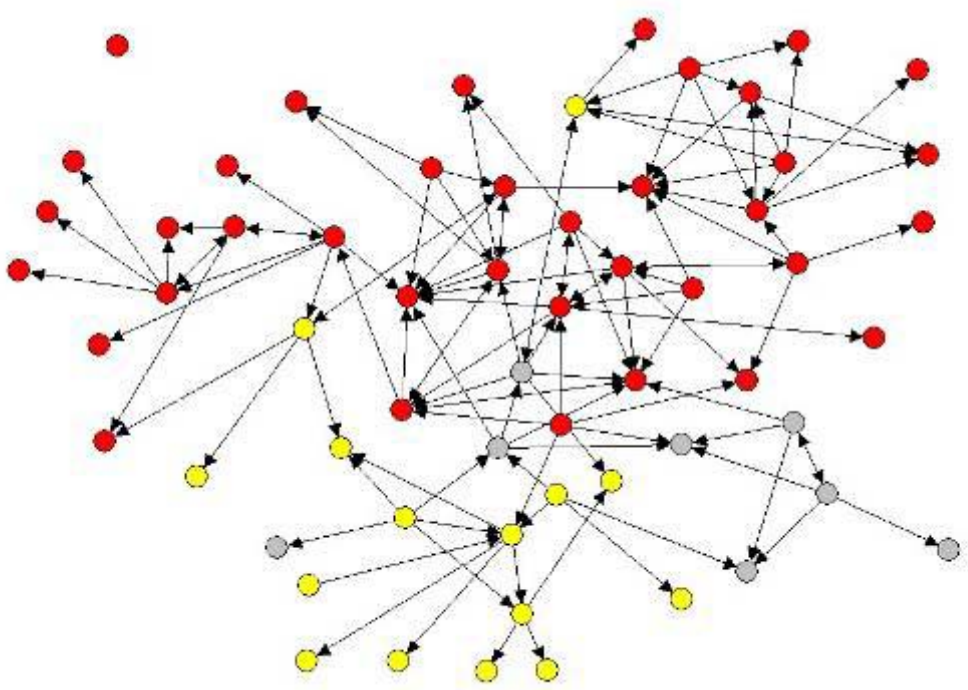


Figure 3-12: 'Getting along' network

This network illustrates the closest personal ties in the village. These relationships provide a sort of summary of what we have learned about the importance of kinship ties, the existence and special role of cross-clan ties and the social basis for village leadership. For example, the Yaaj individual to the center-left of the diagram is the village headman, clearly an important person for the Yaaj clan, but is not chosen by non-Yaaj. The individual most 'central' to the Tsaab clan seems to be the individual located at the center-bottom of the diagram. This individual is T5, the individual encountered as a central node

in the work assistance. The previous headman, the single Tsaab individual located at the top of the diagram, is linked to only Kwm and Yaaj. As a clan elder, he is still a central point of decision-making, but this disconnect suggests a fracture in the Tsaab clan.

The two Kwm individuals placed between the Yaaj and Tsaab are the clan leader and his brother, who play an important role in linking the Kwm and the Yaaj. Their position is also indicative of a role in providing indirect links between the Yaaj and Tsaab, a function that is based in their involvement in the previous village committee. The Kwm assistant headman was a mediator of issues among the three clans during the earlier years of village establishment. As shown in Table 3-7, the Kwm have the highest number of bridging ties, further attesting to their role as mediators in the village.

Table 3-7: Summary of 'getting along' network

	Yaaj		*Tsaab*		*Kwm*				
	number	% of total	number	% of total	number	% of total	Total	Bond	Bridge
Yaaj	69	91%	6	8%	1	1%	76	91%	9%
Tsaab	7	25%	18	64%	3	11%	28	64%	36%
Kwm	7	26%	6	22%	14	52%	27	52%	48%

Source: Social network analysis, author's fieldwork

This *sis raug zoo* network further emphasizes the trends in bridging ties seen in the first three networks. The Yaaj maintain only nine percent of their ties with other clans, while the Tsaab and Kwm are 36 and 48 percent respectively. In summary, the informal networks observed show the importance of the Yaaj clan as a source of information, and the Tsaab and Kwm seem to value relationships with the more dominant clan. The importance of the Kwm's role in bridging the Tsaab and Yaaj has grown with the increasing tension of the past years. The Kwm are also the smallest group in the village in terms of population, and place high value on linkages to the more dominant Yaaj, and the Tsaab, with whom they have lived closely for two generations. In other Hmong villages, as well, smaller clans have been observed creating and maintaining linkages with the dominant clan to secure their position within the village (Tapp 1989; Tapp 2003).

The Yaaj and Kwm clan leaders appear at the center of their own clan networks, illustrating the social foundations for their authority. The Kwm leaders show typically high number of bridging linkages reflected in the larger Kwm strategy of network maintenance.

Interestingly, the Tsaab leadership is not featured prominently in this diagram. The eldest Tsaab leader is the sole individual located between the Kwm and Yaaj on the right-hand side of the diagram. His younger brother, also a leader in the clan, was not chosen by any of the respondents. This may signal a gap in the network of social interactions and the clan leadership, and may explain some of the difficulties experienced by the clan in managing its affairs vis-a-vis the other clans in the village. The role of other Tsaab individuals in the diagram may offer further insight on this question. On the left hand side, several Tsaab are seen to have close relationships with both their fellow clansmen and other Yaaj and Kwm, as well. These younger individuals poised to assume positions of leadership in the community. The individual holding a central position at the left top, has increasingly come to be relied upon as a source of market information and financial advice.

The expected bonding ties – based on *kwv tij* relationships between households within descent groups and the clans – clearly provide the basic structure for these networks. However, a significant number of bridging bonds is observed, many of which are based on *neej tsaa* relationships. On the one hand, expanded networks of *neej tsaa*, based on the *yawm txwv-vauv* and *yawm yij-yawm dlaab* relationships, increase the generalized trust and reciprocity necessary to develop cooperative resource sharing arrangements that are not limited to direct kinship ties. Indeed, the strength of these close inter-personal relationships between clans has long been a key source of stability and harmony in villages where one clan is dominant (Geddes, 1976). On the other hand, as discussed below, bridging linkages that are not dependent upon *kwv tij* or *neej tsaa*, but are rather the product of practical convenience and strategic adaptation in resource management, are being formed as well.

5. Livelihoods: Competition and cooperation in resource management

Competition for resources among villagers is growing. The resulting tensions have been met with institutional and technological responses. Some of these draw on traditional Hmong social organization and resource management. Others are more innovative and signal a departure from customary practice. This section will selectively examine recent developments in the management of land, water and labor resources.

5.1 Land acquisition and management

"Tsw muaj teb ua, tsw muaj chaw nyob!" (We don't have enough fields to farm, we don't have enough land to live on!) As mentioned earlier, the Hmong have made major alterations to their livelihood systems, in response to a number of pressures. The result has been a steadily growing perception of resource scarcity, as government conservation policy and pressures from environmentalism place significant constraints on landuse options. The Hmong village as a community traditionally did not manage land, but rather left land use decisions to individual households (Vuong Duy Quang, 2004). Now the official village leadership is responsible to the central government for land use within the village boundaries, although in practice decisions over land use are still made by households or small groups.

The household is the primary unit of land management in Hmong society. Typically, all members of a household share the workload in the household lands. When a son reaches a suitable age, the father may divide some of the household land (*faib teb*) for him to use on his own, and with his own family. Informants told me that previously, the common practice was for the son to get married, then the father would *faib teb*. The new family would continue to live in the father's house until he could establish a new household (*faib tsev*) and embark on his own agricultural activities. Only after his family began to grow would the son begin to perform the ancestor rituals (*faib dlaab*). This was described as the ideal process, but as land has become scarce and the economic situation more harsh, *faib tsev* and *faib dlaab* are often postponed. It is not uncommon for a household to have several land holdings, which in many cases support separate parts of the household. Although they are held collectively by the household, these lands may be assigned to certain members of the family for management. These holdings are gradually split among sons, so that the already fragmented agricultural lands have become even more fragmented after three generations. This has caused tension, as the division of labor and costs has increased competition within the household.

The expansion of agricultural land within the village is only one aspect of Ban Phui Nua land strategies. The limits of productivity in the village are being approached, but Hmong

farmers have long cultivated fields in neighboring areas as well. Within and around the village, individuals secured agricultural plots, buying them from Khon Muang or Karen farmers, occupying unoccupied or unused fallow fields, or clearing forest for new fields. Headman Yis believes that the land tenure situation in the village was stabilized in approximately 1998. Sale of land in the village is now uncommon, although rental of land does occur.

Virtually all farmers in Ban Phui Nua have agricultural plots within and outside of the village. The land acquisition strategy of Looj Tsaab is instructive, if perhaps more focused on land outside of the village than the norm. Looj's father split with the original Tsaab group before they moved to Ban Phui Nua, and he rejoined his *kwv tij* after his father's death around 1985. Upon arriving in the village, he married a local Kwm woman, and his *yawm txwv* arranged for land to build a house. Looj now is the head of a large household, including four wives and more than twenty children. At 38 years old, he has long recognized the need to secure land to support his family. As his Kwm *yawm txwv* recounted, agricultural land in the village at that time was already scarce, and he relied largely on his clan's old holdings in Thung Pi. Once he established himself, he began to purchase land around the village, as shown in Figure 3-8.

Table 3-8: Land acquisition strategy of Looj Tsaab

No	Location	Year	Size	Seller
1	San Pu Loei	1991	7 rai	Karen
2	San Pu Loei	1991	4 rai	Karen
3	Ban Phui Nua	1992	2 rai	Kwm yawm txwv
4	San Pu Loei	1995	4 rai	Karen
5	Khun Mae La	1996	3 rai	Karen
6	San Pu Loei	1998	6 rai	Karen
7	San Pu Loei	2000	5 rai	Karen
8	San Pu Loei	2003	4 rai	Karen father-in-law
9	Ban Thuan	2004	16 rai	Karen

Source: Author's fieldwork

Over a period of approximately 15 years, he has purchased more than 50 rai of land, primarily in Karen villages. It could be argued that this is the land acquisition strategy that makes others wary of Hmong agricultural expansion. It is interesting to note, however, that some of these land deals have informal documents of sale that do have some weight with the Amphur office in the event of serious land dispute.

As noted above, Looj's case is an extreme example of land acquisition. Nevertheless, the importance of agricultural land outside the village to Hmong farmers was clear in the 2005 rainy season. With a fall in cabbage price in 2004, the 2005 spike in petroleum prices and widespread land exhaustion in the village, many Hmong opted not to plant cabbage in the village. These farmers are planting more in fields farther from the village. One implication of this development is that sleeping in the fields has become common again. In the past, when fertile land around the village was exhausted and poppy fields were far from the village, families would stay in field houses, sometimes for the entire season. In the past, when this became common, it was an indicator for villagers that the utility of the village settlement was declining and the village may be near fragmenting. Now too, many farmers, and sometimes entire families, are absent from the village during times of peak agricultural labor demand. People frequently mention how this disrupts the circulation of information in the village, although there is no sense of alarm that the village may be fragmenting.

It is possible for the Hmong to access land outside of the village partly because the neighboring Karen and Lawa farmers still practice shifting cultivation with relatively long fallow periods. This means that there are areas of young and old fallow that from the Hmong perspective are available. When faced with the need to search for new fields, the Hmong prefer to return to areas where they and their fathers lived previously, within a few hours from Ban Phui Nua by pickup. The households possess information about the land and climate, and more importantly, they maintain relationships with the Karen villages in which the land is located. Individual relationships have been the main means for acquiring access to Karen land. Indeed, most informants mentioned that negotiation with Karen village leadership is not a part of this process. Rental arrangements with the Lawa are also negotiated directly with the landowner, and do not involve village leadership. One of the underlying problems encountered is that these arrangements are made without the approval or, in many cases, even the knowledge of the community or village leadership in the Karen and Lawa villages. Indeed, Karen willingness to sell land to Hmong on an individual basis is perceived by lowland people to be one of the drivers of forest loss today. But these arrangements are numerous and change yearly, making it very difficult to ascertain the actual extent of Karen land utilized by the Hmong. Nonetheless, these arrangements are a crucial component of Karen-Hmong relationships, and must be considered as a central factor of Hmong agricultural strategies.

5.2 Water Management

Conflict over water resources has become more pronounced in the past five years, as dry season cropping opportunities have increased with the arrival of the shallot market. In this highland area, water is scarce in the dry season, and farmers are entirely reliant upon small streams flowing out of the protected forest located along the ridge above the village. The technology for exploiting these water resources is rather simple: a small weir is constructed from wood and stone, or concrete, a PVC pipe is placed in the small dam area and then connected to feeder pipes that run to the fields. The Hmong in this region have not had experience with managing irrigation water in the past, as they have not developed paddy land to significant degree.

Most water extraction was initially developed as an individual activity, but as water scarcity became more serious, farmers developed water infrastructure and sharing arrangements. Field tanks have enabled more complex water sharing arrangements. These tanks store water to enable a more reliable supply of water for irrigation, but they also allow farmers to allocate water among themselves, as it is possible to regulate usage within the small irrigation system. Most arrangements consisted of one medium to large sized storage tank, with separate pipes irrigating fields belonging to different households. In these cases it is common for the stream weir, pipes and the storage tank to be owned by one individual, who may then negotiate arrangements for sharing water with others.

When asked about the conditions for cooperation in water management, farmers generalize that it is most conveniently done among *kwv tij* in times of abundant water. However, the case of one Kwm farmer sheds interesting light on how the systems are often implemented across clan boundaries. As a relatively large-scale producer of shallots, this farmer has three water-sharing arrangements to meet his irrigation requirements. In the first arrangement, he and the Tsaab farmer with whom he shares water jointly constructed a storage tank, as their fields were located next to each other. This is mostly an arrangement of convenience. The second system is with two Yaaj farmers, one of which is his *neej tsaa*. The costs of tank construction were shared equally among the users as well. While the Kwm farmer maintains that the primary factor in this system is the convenience of fields bordering each other, he also offered that sharing arrangements with *neej tsaa* are easier to manage because there is a higher level of confidence that if a problem arises they will be

able to reach a solution by themselves. In both of these systems, water is allocated according to a day-on/day-off rotation. The third arrangement is a shared pipe drawing water from the stream, which is then split and lead to respective fields. This is a much more simple form of cooperation, without any structures for storage or allocation. The users irrigate as needed and will establish an allocation plan if the stream level drops to a level at which water is not sufficient to meet the needs of both. These small systems, typically composed of two to four users, are increasingly common. Disputes at this level can usually be deal with by informal mechanisms.

Cooperation in water sharing in small tanks has been successful, but in reality the problem of water scarcity has simply been bumped up to a higher level of complexity. The landscape is now dotted with small ponds shared by two or three users, but the systems that share a water source are not linked in any effective management arrangements at the stream level. The challenge moving into the future will be to establish a management system that incorporates all of the small-scale sharing arrangements on the same stream. This will require broad-based platform of cooperation, which may be based on *kwv tij* and *neej tsaa* relationships at first, but will likely evolve beyond these customary social networks because the scope of the management system will be defined by ecological boundaries of the hydrological system. Management of irrigation water is treated in more depth in Chapter Four.

Management of the domestic water supply has been problematic as well. The system originally consisted of two sources above the village. Water was led into two storage tanks and then delivered to households in the three village settlements (Figure 3-20). Ban Bon is the main original settlement inhabited primarily by the Yaaj. Ban Klang is the settlement established when the Tsaab and Kwm arrived in the village. Ban Mai is a new settlement, cut out of the village protected forest area, which was started by nine Yaaj and Tsaab households to ease some of the tension of land scarcity. Water shortage was a perennial problem, attributed by villagers to both poor storage and delivery and unregulated use by households. In 2003, a separate supply for Ban Mai was constructed, taking some pressure off the Ban Bon supply (dotted blue line). In 2005, the village made a proposal to the TAO for funds to expand storage capacity for Ban Klang. Another tank was constructed and connected directly to the Ban Klang delivery system, according to their request. This would increase the amount of water available in Ban Klang, while at the same time lessen

the pressure on the Ban Bon system. However, after the infrastructure upgrade was completed, several Tsaab individuals connected individual pipes above the storage tank and drew water directly for their own use (red dotted line). A few other households inserted their own pipes under the tank for non-household use. Tension over access to domestic water flared up again. The village TAO representatives are powerless to do anything, as the water system now lies within the jurisdiction of the village committee.

At a village meeting before the proposal of the project, discussion of the water problem was dominated by two points of view. The older villagers claimed an immediate need for increase in supply through infrastructure upgrade. Younger villagers tried to bring attention to the lack of any sort of management system, and stressed the need for installing water meters to monitor use, control demand and collect funds for maintenance. Chanchai, the TAO representative who took the lead in proposing the project, expressed extreme frustration in explaining the situation. “Management is now the problem. With individual and clan interests overriding the larger community interest, it is clear that the headman and the committee are the only ones who can mediate.” But the village leadership has not addressed the issue, and limitations to the local governance system are becoming clear.

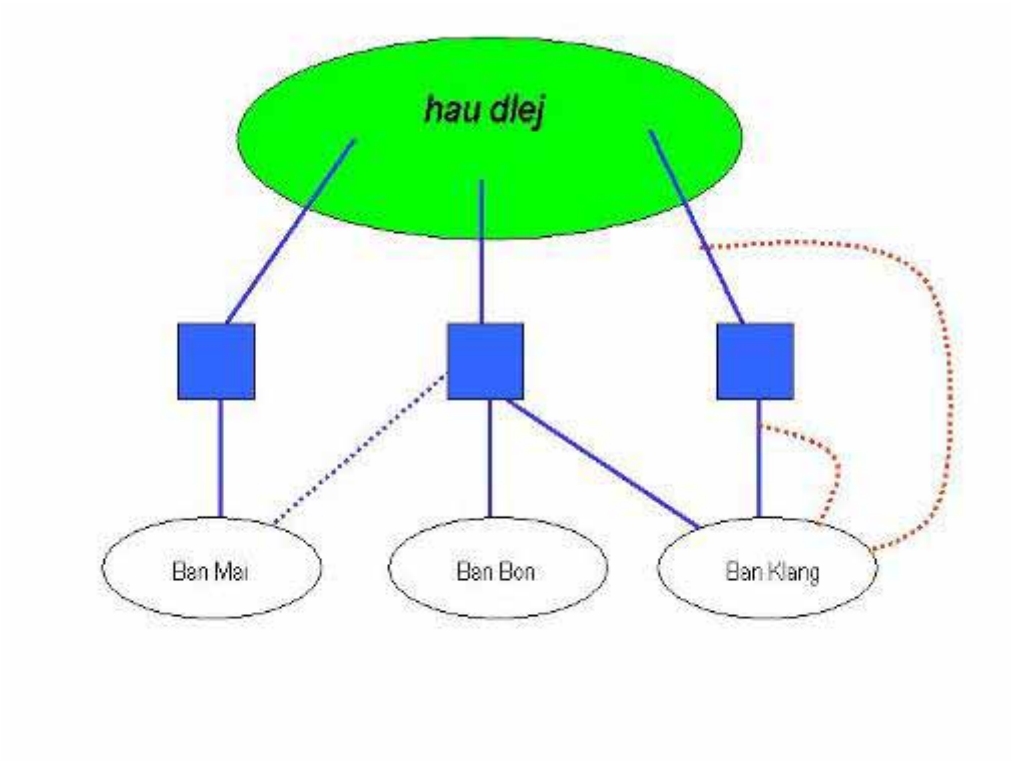


Figure 3-13: Ban Phui Nua domestic water supply

Thus, the Ban Phui Nua Hmong have made striking progress in improving the supply of water to their livelihood activities, in the form of both irrigation and also domestic water. Investments in technology have progressed, but deliberate investments in the 'social management' (Tamaki, 1979) aspects of water supply and demand are lagging behind, a theme that runs through the analysis of Chapter Five.

5.3 Labor exchange

Amidst these conditions of resource scarcity, the Hmong of Ban Phui Nua engage in labor exchange (*pauv zug*) throughout the annual cropping cycle. Cooper (1984) described *pauv zug* as an innovation in response to the introduction of irrigated paddy rice, claiming that the intensive demand for labor created the first example of productive cooperation that cut across the lines of kinship. As the primary means of direct cooperation above the household in production, *pauv zug* entails the creation of direct reciprocity obligations – a day of labor for a day of labor. Paddy land was not developed in Ban Phui Nua because of ecological constraints, but villagers explain that labor exchange did exist in the previous opium economy, and began to increase when cabbages caught on and the area under cultivation expanded.

In this process, transportation was a major constraint to households' ability to get involved in the new crop. At this time, there were just a few pickup trucks in the village. Owners of pickups began to lend their pickups in return for other assistance, a hybrid type of *pauv zug* in which labor was exchanged for a service. This allowed more and more households to establish themselves in cabbage production, and with the ensuing boom in cabbage prices these households were able to purchase their own pickup trucks. Currently there is more than one pickup truck per household in the village. But *pauv zug* involving pickup trucks is still an important part of production, for both cabbages and shallots. With limited land resources, fields are located in increasingly distant or inaccessible areas that can only be reached by 4-wheel drive trucks. During the rainy season, it is virtually impossible to get produce to market without these vehicles, and the practice of exchanging truck service for labor continues.

The practice of *pauv zug* varies throughout the village, with some people only exchanging labor within descent groups or more broadly within the clan. Others report that labor exchange with other clans is normal. It seems that there are two levels of *pauv zug*, in which exchange with close *kwv tij* is carried out loosely, but exchange with more distant *kwv tij* and *neej tsaa* is more precisely calculated. This anecdotal evidence supports the network analysis findings, illustrating a mosaic of *kwv tij* and *neej tsaa*-based relationships.

As their fields are increasingly dispersed across a wide area, the Hmong have also begun to hire permanent labor to care for fields. These Shan workers live in the fields and are responsible for the daily tasks in the fields. With reliable field workers in place, the Hmong are able to spread their own labor and management inputs around a wider area, planting a wide range of crops in areas of differing fertility, thereby reducing the risks to price fluctuation and crop failure. During peak periods of labor demand, it is common for the Hmong to hire Karen and sometimes Lawa laborers, who work with the Shan and their employers for short periods of time. Thus, Hmong agriculture has become a complex mix of management involving multiple field plots, drawing on labor from household members, permanent Shan field managers and temporary Karen workers.

6. Conclusions

Observing Hmong society in the 1970s, Cooper (1984:48) stated that "(A)lthough the Hmong village exists as a reality, *village* is not really a Hmong concept." In the Ban Phui Nua of previous generations, this was probably true. Takemura (1956) described the social organization of the Yao, with whom the Hmong share linguistic heritage and similar Chinese-influenced clan systems, as having a 'non-community characteristics.' [16] Communal property does not exist, and regulation of settlement and institutionalized governance of village affairs are extremely weak. Analysis of Hmong economic activities through the 1960s to 1980s in Thailand painted a similar picture. Contemporary livelihood strategies, resource management and village governance in Ban Phui Nua show strong tendencies towards 'non-community characteristics'. Most livelihood activities are conducted through networks of households in local clan lineages.

Indeed, customary social institutions, such as kinship and affinal relations, provide the overarching context for many patterns of interaction observed in Ban Phui Nua daily life.

But new forms of cooperation are arising in Ban Phui Nua. In addition to helping to ensure that the clans 'get along well' (*sws raug zoo*), strong affinal (*neej tsaa*) bonds can create valuable opportunities for mutual assistance in agricultural activities. The significant number of local marriages suggests that Hmong are looking for solutions to resource scarcity in affinal networks as well. Resource sharing agreements and agricultural cooperation between households linked by marriage are common. This thickening of the networks of interaction may provide a social balance to the preference for individualized activities (*nyag ua nyag*) that have often resulted in conflicts over resource use. Hmong marriage with Karen may be another expression of expanding networks to alleviate the pressure of resource scarcity.

Delang (2003) argues that the Hmong do not necessarily identify with the village, but continue to place their strongest sense of identity with the lineage or clan. While the importance of lineage and clan affiliations remains important, the growing village identity of Ban Phui Nua residents cannot be ignored as it is strengthened through the overlapping social networks that work to expand the village social space. In Freedman's words (1966:159), lineage society is based on the "dependence of kinship on a complex web of solidarities". Despite the sharp boundaries between households, lineages and clans still encountered in daily life in Ban Phui Nua, the web of solidarities is becoming more complex for the local Hmong, gradually strengthening the ties that hold the village together as a community. Furthermore, although village-level cooperative activities are modest, symbolic and ritual practice has been a constant part of villager leaders' attempts to increase the internal cohesion of the village community.

The challenge of the contemporary Hmong village in Thailand will be to reconcile the lingering contradictions between household, clan and village interests. The broadening of networks of cooperation in resource use will facilitate this process, as kinship boundaries are crossed in the search for increasingly complex arrangements for the management of land and water. But integrating the authority of the parallel strands of leadership – administrative and customary – will be important in increasing the village's capacity to function as a single unit.

[1] Pronunciation of three Ban Phui Nua clans: Yaaj=Yang, Tsaab=Jang, Kwm=Ku.

[2] For all three clans, memory of clan movement fades at the border of Thailand. The Tsaab have information about relatives in Xieng Khuang province of Laos. The Yaaj trace their local ancestry 10 generations, while the Kwm and Tsaab are somewhat shorter.

[3] Ban Phui Nua Hmong received Thai citizenship in several waves, starting in the early 1970s. The Headman of Ban Phui Nua, for example, got citizenship in about 1987. The largest wave was in the mid-1980s, when opium reduction efforts were at their strongest.

[4] The Hmong and Karen alike are learning from Karen political leaders in Mae Hong Son province as well. A Karen has been elected to the provincial parliament, a position that people believe can link to resources for local development.

[5] These dilemmas are increasingly taken up by Hmong leaders in fora such as the *Samakhom Mong* (The Hmong Association), a group of Hmong leaders from across northern Thailand. This signals a growing collective awareness that the Hmong need to consider their place within Thai society as a group.

[6] This is the village described by Geddes (1976).

[7] The opium merchants disappeared with the government interventions to eradicate opium. They did not appear later as cabbage merchants. Middle-men dealing in cabbage, shallots and other crops are a new group of people.

[8] One of the Yaaj lineage strongly disagreed, saying that the Village Committee needed to make more land available to the villagers as cash crop opportunities spiked in the mid-1990s. This dispute remains a point of tension between that lineage and the lineage of the Headman.

[9] In other areas, Hmong have a more concrete concept of the water source (*qhov dlej txhawv*, or "the place from which water springs forth") that has been incorporated into a watershed spirit ritual (*teev hau dlej*) practiced increasingly across the areas north of Chiang Mai City (Aphai, 2005).

[10] Hmong: *thwv tim saib ib lub zog taag nrho*

[11] Hmong: *nyob ua ib ke ua ib paab ib pawg, sws paab sws hlub, tsw muaj plaub tsw muaj ntug*

[12] Hmong social organization is heavily influenced by the principles of Chinese kinship relations (Tapp, 2001; Prasit L., 2001). For example, the Hmong word for clan (*xeem*) is borrowed from Chinese (xing性).

[13] Hmong: *noj taug has taug; sab luj, sab dlaav; coj lug taug, coj ncaaj; nyam kwv tij neej tsaa, nyam phooj nyam ywg; paub kev cai*.

[14] The government provides these funds to be disbursed and used by villagers, and requires that a committee be formed to manage the funds. The committee is responsible for accounting and ensuring repayment of money borrowed from the funds, but relies on the informal networks of the local lineage-groups to follow-up on outstanding debts.

[15] The electricity problem has another level of complexity. Ban Phui Nua and Ban Phui Tai share a hydro-electricity generator. In 2004, dry-season irrigation development upstream of the small reservoir reduced water levels, affecting the capacity of the generator. Since there was not enough electricity to supply all the users, the generator was shut off. But the problem was a matter of three Ban Phui Tai farmers who had opened new fields just above the reservoir. Members of the Ban Phui Tai village committee recognized the need for an agreement between the two villages, but no action was taken. In the end, two villages were deprived of electricity for the entire dry season because of three people. This situation continued in 2005, when the government installed solar cells in each household, further reducing the incentive to handle the water problem between the two villages. In summarizing the lack of action by saying, "It is unfair, but those three people have to make a living too", the Ban Phui Nua headman was recognizing the lack of options faced by individual farmers.

[16] Japanese: *hikyoudoutaiteki seikaku* 非共同体的性格

CHAPTER FOUR

Competition and cooperation in a micro-landscape

This chapter focuses on the social interactions between two upland villages, Ban Phui Nua and San Pu Loei. The analysis focuses on management of resources in a small valley farmed by members of both villages. The relationship between informal networks, institution building and technology is explored to illustrate the dynamics of inter-village social space.

In early 1997, before the dry season planting, representatives from Ban Phui Nua and San Pu Loei in the upper Mae Suk watershed agreed on a collaborative approach to alleviating the growing tensions around water use between the two villages. The Huai Sai Khao Committee was formed to deal with a localized situation of tension between a Karen and a Hmong village. But this institutional innovation was also situated within the broader context upstream-downstream conflict over land and water that is common in the mountains of northern Thailand. Dry-season irrigated agriculture in the uplands has become a particularly contentious issue since its start in the mid-1980s. The official governance channels, such as local village government, sub-district administration, district office and watershed management unit, have not been able to effectively deal with the tensions. These resource problems challenge the existing management structures, because they cross administrative boundaries. This chapter makes an ethnographic exploration of the local dynamics of landscape change and resource competition, examines the functioning of local social networks, and follows the development of a local institutional response to resource scarcity.

1. Huai Sai Khao valley: A microcosm of Hmong-Karen relations

The Huai Sai Khao valley, located at the top of the Mae Suk watershed near the borderline between the Ban Phui Nua and San Pu Loei, illustrates the dynamics of contemporary Hmong-Karen relations. The arrival of the Hmong in Ban Phui Nua in the mid-1970s meant that the relationship between the local Karen and the Hmong, previously much more distant, would become institutionalized in the interactions of everyday life. For the villagers of San Pu Loei, establishing a new relationship with the Hmong was a mix of threat and opportunity from the outset, and today this precarious mix colors the interactions between the two villages.

Observing the relatively nascent relationship between Hmong and Karen in the mountains of Chiang Mai province, Marlowe stated the “the Meo [Hmong] represent the most disturbing and forceful agents of change over to enter their environment. In consequence, the Meo as a symbol, have acquired a value that is disproportionate to either their numbers or their incidence of actual face to face contact with Karen” (Marlowe, 1967:62) Over the recent years, the daily contact between the Hmong and Karen has increased in places like the upper Mae Suk. In this locality the relationship is generally characterized by tension over access to land and water resources, but as will be discussed below the two groups are interlinked in many more ways than simple competition for the same livelihood resources. Furuie (1993) noted that at the time of her research in 1988, although there was a certain level of tension between the Hmong and the Karen in this area, cash transactions allowed the groups to establish economically complementary relationships of co-existence. She mentioned the mutually beneficial employment relationships between Ban Phui Nua and San Pu Loei as well. However, the current stage of intensification has brought the relationship to a new level of complexity, as land scarcity becomes a problem for both groups. A new trend of inter-marriage between Hmong men and Karen women has further raised the tension.

1.1 San Pu Loei and the local Karen social landscape

San Pu Loei is one of four *pok baan* of Mu 11, *tambon* Pang Hin Fon. It is the largest of the group, and has led politically and economically since its establishment. This chapter deals primarily with the *pok baan* of San Pu Loei, rather than the entire *muu thii*, as this is the level at which land and water use decisions in the Huai Sai Khao valley are made. It is also the geographic point of local contact between the Hmong and Karen.

Generally speaking, the Karen villages of the upper Mae Suk seem to form a fairly cohesive soci-cultural unit. The area is criss-crossed with kinship and affinal linkages, while social visiting and joint participation in Christian religious activities are common. However, San Pu Loei is pulled in many directions. Villagers follow three religions, and under the tentative balance that exists among them is a competition for authority that has existed since the founding of the village. As a site of advanced commercialization, the tension between cash crops and upland rice in San Pu Loei is palpable. Their own adoption of cash crops has compounded their competition with the Hmong, who have been a constant pressure on the village's fallow and forest resources. The village is located

between two zones of orientation within the local Karen world, actively maintaining relationships with both. Finally, San Pu Loei is the home of the most outspoken and articulate leaders with regards to resource competition within the Mae Suk watershed. Despite their shared position with the Hmong as upstream farmers, they do have close relations with the downstream Khon Muang villages, partially a result of the unpaved access road that allows Karen motorcycles to reach Mae Chaem through Mae Suk and Kong Kaan villages.

The story of San Pu Loei, as told by the elders, starts in the area known as Mai Su Hki, near the current site of Ban Phui Tai long before the Hmong arrived. It is believe that previous to that, the ancestors had come over the mountains from Mae Hong Son, and presumably from Burma shortly before that. The settlement subsequently made several moves in the area, fracturing in the process. The move was triggered by shortages of land, which coincided with the increase in population – Karen and Hmong – in the area at the top of the Mae Suk watershed. The splitting of the group created two lines of ritual leadership, which were a significant contribution to the weakening of the settlement's traditional system of governance which was based on the village ritual leader (*hif hkof*). Christian missionaries from Chom Thong arrived in the area in the early 1950s and conversion of Karen in San Pu Loei began in 1958 with Mauf Tef, the community leader who plays a large role in the following story of Huai Sai Khao. The strengthening of the position of the administrative village headman in the 1980s was a major factor, further confusing the lines of authority within the village. This is similar to the situation of dual systems of leadership, ritual and administrative described by Hayami (2004), where the rise of external sources of power contributed to the decline of the *hif hkof*. In San Pu Loei, it seems that the tension between the fragmented ritual leadership was an internal driving force that actually facilitated the conversion to Christianity and increased the authority of the administrative headman[1]. Currently there are 48 households in San Pu Loei, of which 10 practice the ancestor cult (*auf qai*), 21 are Catholic and 17 are Baptist. Each of the two Christian denominations has its own church. The current *hif hkof* does not perform rituals for the *auf qai* households, and villagers believe that the position will disappear within the next few years. Thus, the 'ritual' leadership of the village is divided among three groups of varying strength.

Until 2004, the administrative headman of Muu 11 (*sav pgaj*) was in Kong Bot, while the Assistant Headmen were from San Pu Loei and villages in the Kong Bot group. TAO

representatives have also been dispersed among San Pu Loei and the other *pok baan*. The current Headman, Kongdee, explains that this has been a chronic source of weakness in Muu 11. Cooperation between these various strands of administrative authority has been weak. The Kong Bot group is an entirely different lineage from San Pu Loei with its own tradition of ritual leadership including separate *hif khof*, and the sense of village community has always been weak. As Assistant Headman and a farmer in the Huai Sai Khao valley, Kongdee was involved directly in negotiations with the Hmong over land and water use. However, he was never able to bring the full authority of the administrative village to bear because the Headman was reluctant to take up the issue. The complexity and the intensity of the conflict, together with the economic clout of the Hmong, meant a very difficult negotiating position, and the villagers in his *pok baan* were not even directly involved.

As mentioned above, San Pu Loei originally consisted of one kin group. But the village has grown with in-migration, usually associated with marriage. Of the 56 couples currently in San Pu Loei, 17 are marriages within San Pu Loei. The majority of the remaining marriages are from the surrounding areas including Mae Ngan, Kong Bot and Khun Mae La. Of these, 20 men and 19 women have joined the village. With many of the current residents originating outside of the village, kinship and affinal relationships link San Pu Loei with its neighboring villages. Yoshimatsu (1996) observed that the Karen mobilize resources for agricultural activities both by calling in kin relations from within and outside the village. The same is true for this region, and San Pu Loei and Mae Ngan are hubs in this network because of the higher degree of commercialization in the village.

1.2 Perceptions of territory and the seeds of conflict

Perceptions of territory differ between the Karen and Hmong communities in Huai Sai Khao. For the Karen, the land around their village has been a central element of their cultivation system for generations, even as the Karen villages themselves have moved around the area on occasion. Upon arriving in the upper Mae Suk area, the Karen settlers established ritual relationships with the local spirits (*hti k'caj kauj k'caj*), a strong symbolic identification locating their communities in the landscape. Interactions between the Karen villages of the area created a continuous Karen landscape that supported Karen livelihood strategies, with 8-15 year forest fallow rotations. This was reinforced by their relationships with the local Lawa communities, with whom they shared many aspects of their forest

fallow rotational shifting cultivation systems. Hmong presence in the local Karen landscape was felt starting in the 1960s when Hmong fields expanded into grassland and forest areas on the ridge above San Pu Loei. In describing this process, Karen elders note two stages. In the first stage it was general awareness of their presence, without much direct contact. It was clear at this point that non-Karen forces were affecting the landscape, foreshadowing a period of increased resource competition. The second stage started when the Hmong settled in Ban Phui Nua, signaling the advent of direct relations and tangible tensions, and a clearer sense of village territory. Figure 4-1 shows the 2002 land use mosaic in Ban Phui Nua and San Pu Loei.

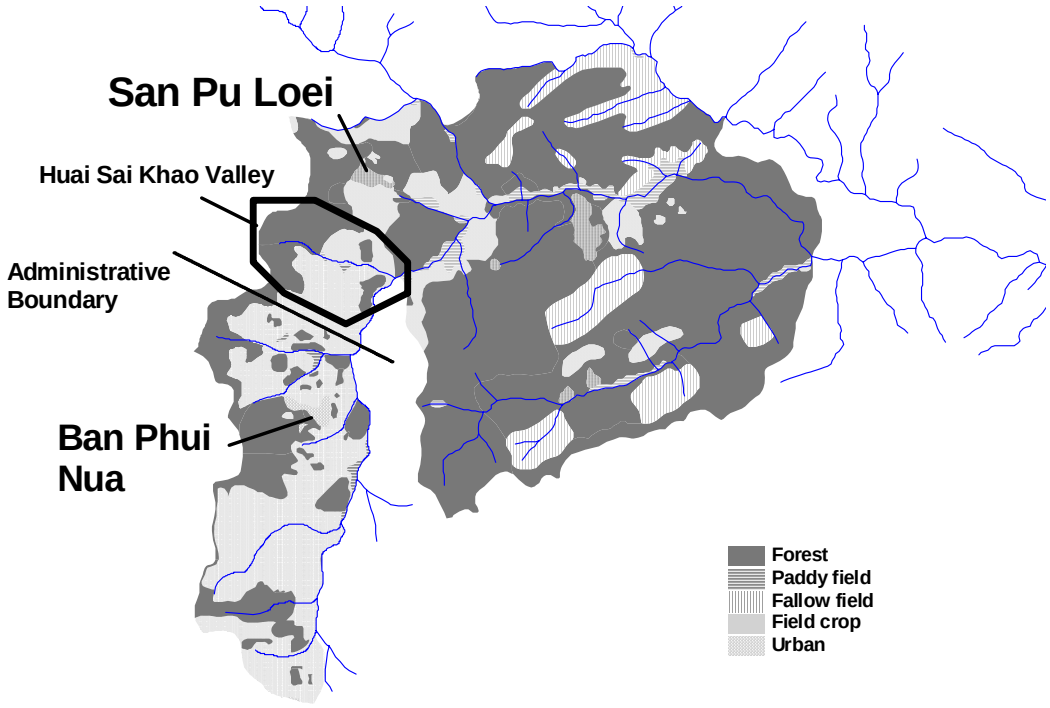


Figure 4-1: Land use Mosaic 2002 Ban Phui Nua and San Pu Loei

Source: ICRAF Chiang Mai GIS data

The Huai Sai Khao stream was the original 'boundary' between Ban Phui and San Pu Loei in the minds of villagers, which is why it appears as such on the 2002 land use map. Initial territorial disputes had involved Hmong encroachment on traditional watershed forests that have spiritual meaning for the San Pu Loei villagers, but were not considered as an infringement on a political boundary. The sale of land to Hmong for cabbage cultivation in the second half of the 1980s transformed the issue for the Karen, as the integrity of village

boundaries and administrative boundaries became a concern. Some Karen have expressed the desire to 'get back' this land, arguing that the opium addicts that sold the land had no right to sell San Pu Loei land. There is also resentment stemming from the feeling that the Hmong induced opium addiction intentionally. Nevertheless, currently there is a general acceptance of Hmong cultivation in the valley, even though the administrative village borders have been drawn officially, placing the entire valley within the territory of San Pu Loei. With the election of a new village headman in San Pu Loei in 2004, there has been more attention to the village territory, particularly in light of the recent water tensions and concurrent influx of Shan workers hired by Hmong farmers.

There has been a long-running conflict between San Pu Loei and a subset of Ban Phui farmers over an area of forest above San Pu Loei. (See Figure 4-2) This issue is explored in more detail in the following chapter, because of its relevance as a component of the larger watershed-level tensions. The problem is partially a clash of knowledge systems. The Karen identified the forest area as an important water source for the village and decided that it should be protected as community watershed forest. Because part of the area is in fact old forest fallow, the Hmong see it as unused land and thus available for cultivation.

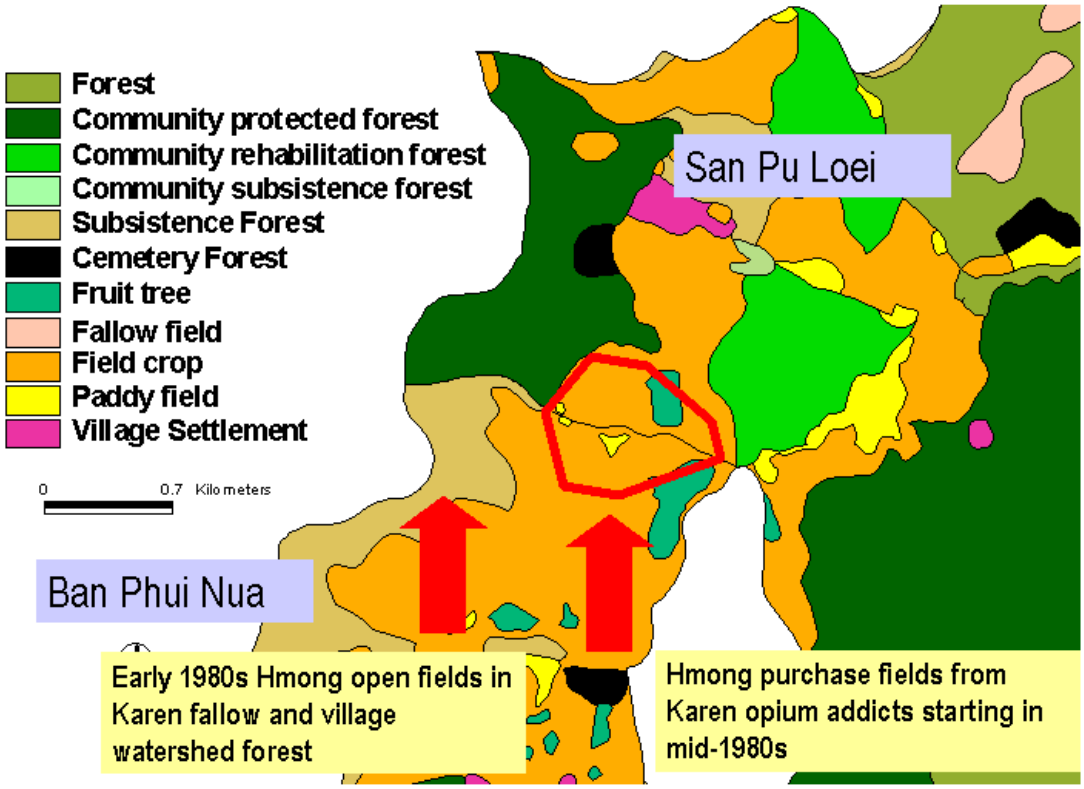


Figure 4-2: Land conflict on the Hmong-Karen frontier

Source: ICRAF-Chiang Mai GIS data

The Karen see this as an infringement on village territory and the integrity of Karen livelihood systems. The Hmong place value on the capacity and initiative to bring land into cultivation, and consider their actions as a logical extension of their previous livelihoods from the Thung Phi settlement. It suffices to mention here that overall relations between the two villages have been deeply influenced by the tension over this forest area. While the Hmong feel that land scarcity requires a more flexible interpretation of village boundaries and land ownership based on status of use, the Karen have taken to an acceptance, and indeed preference for, the rigid lines of administrative village boundaries.

1.3 Intermarriage: Exacerbating tension

The Hmong have not engaged frequently in marriage with other ethnic groups. Intermarriage of Karen with other ethnic groups, on the other hand, has been more common. Marrying across ethnic lines has been one of the adaptations the Karen have made in response to demographic and ecological change in the landscapes they inhabited. Karen have intermarried easily with Khon Muang, Lawa and Shan for long time. The matrilineal focus of the *auf qai* meant that in there has been resistance to women marrying out of Karen community. In all local cases of Hmong-Karen marriage Hmong men have married Karen women. With the exception of one couple, the children are being raised as Hmong in the husband's family. Cases of Karen woman marrying Khon Muang and Shan have been observed with increasing frequency, as well (Hayami, 2004). There are no cases of inter-marriage between Karen and Khon Muang or Lawa in San Pu Loei, although substantial numbers of Karen have married into the Lawa village of Ban Haw in central *tambon* Pan Hin Fon.

In the research area, there have been several marriages between Hmong men and Karen women over the past seven years. Six Hmong men have taken Karen wives (including one man who has married two Karen women), all as secondary wives. One of these wives is from San Pu Loei. Four of the six Karen wives are from Ban Pha Waai, located near a previous settlement of the Ban Phui Hmong. The Hmong still travel to this village to purchase rice, and in recent years have started farming in the area again, as well.

This is a notable development, because there has been a clear aversion in Karen society to marriage with Hmong. Furuie (1993), working in Ban Phui Nua in 1988, reported that Hmong looked down upon marriage with the Karen, as well. As center of Karen kinship

networks, the ancestor spirit resides with the woman, there is a fundamental incompatibility with the heavily male-oriented kinship networks of the Hmong. This makes intermarriage impossible from the Karen ritual point of view. The strong Karen taboo against polygamy should also be a deterrent. But, in fact, the Karen women married to Ban Phui Nua all entered Hmong households as secondary wives. This situation is unacceptable to the Karen community, and Karen elders expressed these feelings to me freely in discussions.

Another reason the Karen looked down upon marriage with the Hmong was reportedly the heavy workloads currently borne by Hmong women. It is somewhat ironic to note that local speculation as to the Karen womens' motive marrying Hmong men points to the increasing burden of farm work caused by Karen husbands who are frustrated with the difficulties of cash crop production and doing less work. This is just anecdotal evidence, and the phenomenon can most likely be attributed to a number of push-pull factors, one of which is the visibly high level of material affluence of Hmong villages. The first Hmong-Lawa marriage in the village is planned for late 2005, but this is between young Hmong man and Lawa woman who studied together in the lowlands and it is not clear if there will be more to follow. According to a Lawa informant, Hmong-Lawa marriages will probably not catch on because Lawa society does not permit polygamy. But the fact that Karen women have begun to accept secondary wife status in Ban Phui Nua suggests that deeper socio-economic dynamics are at work.

The Hmong do not explicitly describe these marriage alliances in terms of a land acquisition strategy, but Hmong men consistently acquire fields in the villages of their Karen wives. This practice may have origins in the norms of both Hmong and Karen affinal networks. As was discussed in Chapter Three, men may rely on their father-in-law for access to land. In Karen society, it is common for daughters to inherit land from their fathers and then farm the land with their husband. But the relationship between a Hmong husband and his Karen father-in-law does not seem to be based on obligations of mutual support or frequent social interaction. Indeed, local Karen responses reflect a growing concern that the Hmong are using their wives to gain access to agricultural lands in the wife's home village. Residents of one nearby Karen village blocked the road and drove away a Hmong man who intended to marry a local Karen woman.

In her analysis of inter-marriage and regional interethnic relations, Hayami (2004) states that these arrangements bring awareness and negotiation of boundaries between ethnic groups. In the case of Karen-Hmong marriages, the awareness of boundaries is clear. Opposition to these marriages in the Karen home community is often intensely emotional. The boundaries are clear in the Hmong village, too. Karen women continue to wear Karen clothes and speak Karen, and the children of these unions are growing up bilingual. There are cases of Karen wives living in the main household and in separate households. In either case, relationships with the Hmong wives seem to be minimal. It is interesting to note that two Hmong farming in the Huai Sai Khao valley (Suav Yeeb H2 and his nephew H11, below), have taken Karen wives and are considered by the Karen as 'understanding of the Karen perspective'. Nonetheless, these marriages are clearly a strain on the already tense relations between the Hmong and Karen, but neither family members nor community leaders have addressed the problems that arise in any coherent way.

2. Current land use practices in Huai Sai Khao

Huai Sai Khao has developed as an area of intensive shallot production. The area is a microcosm of the landuse changes that characterize the broader landscape. Since the Karen settled in the adjacent valley, Huai Sai Khao has moved through upland rice, opium poppy, coffee and beans, cabbages and shallots. The spread of cash crops has had two effects on the Hmong-Karen relationship in the upper Mae Suk. Information and technological exchange between the two groups has increased the scope of shared interest among farmers. In this regard, Hmong and Karen agriculture has been developing along the same trajectory. Despite existing broader differences in livelihood strategies, the trend is towards increasing similarity in cash cropping practices. At the same time, however, the cash crop economy places the Hmong and Karen in direct competition for the same markets, land and water.

2.1 Livelihood strategies and cash crops

In contrast to the Hmong's full embracement of market production, the Karen of San Pu Loei place a high value on their capacity to produce enough rice to sustain themselves. This is achieved through a mixture of irrigated paddy and upland fields, but upland fields are the main component. To maintain this system, farmers must be able to rotate their fields on a cycle of 4-6 years. There are both internal and external pressures on this system.

Externally, the Hmong have occupied and/or purchased old Karen fallows and forest. This is perceived of as more of a threat to the hydrological integrity of the Karen landscape than to the productive capacity of the rotational shifting cultivation system. The expansion of permanent fields for cash crops by the Karen themselves is another mounting pressure. In this process, young fallows (*hsgi*) are converted to permanent fields (*taj sooj lauz*) which means that crucial land is taken out of the fallow rotation. To make up for this, the fallow period is shortened, or old fallows and forest are cleared to compensate. In reality, it seems that the response is a combination of the two. It is very difficult to ascertain the extent and distribution of rotational and permanent fields, because in aerial photos the two look very similar. Nonetheless, San Pu Loei farmers report that they have been able so far to maintain the 3-6 year rotations, although everyone reports that pressure continues to mount.

Cash crops present an attractive option to many because they can provide income supplements to cover the rapidly growing need for cash to cover expenses associated with contemporary life, including education, transportation, and a wide range of consumer goods. But the high investment costs – including seed, fertilizer, pesticide, and irrigation infrastructure – and costs of transporting produce to market are proving to be substantial barriers to the sustainability of the cash crop experiment. In contrast to the situation in Ban Phui Nua, there are only eight pickup trucks in San Pu Loei, which means approximately one for every eight households.

The burden of debt has grown. In 2003, informants estimated that approximately half of all households were involved in shallots to some degree, but after the price fell in 2004, five farmers abandoned cultivation of this crop. In Kong Bot, half of the shallot producers gave up. These conditions cause open discussion in the village about the mix of market and consumption production, and opinions vary. Mauf Tef, for example, believes that there is no way to get around a certain degree of cash cropping. He says that the key is to be more responsive to market signals, which requires better information and more reliable transport. For the time being, the Karen rely to a large extent on lowland traders to provide inputs and transportation. While this does provide some security for that planting season, the Karen understand that part of the Hmong success has been their direct relationship with the regional markets.

2.2 Mapping shallots in Huai Sai Khao

Development of agriculture in the Huai Sai Khao valley can be considered in terms of four spaces – the left bank, the upper right bank, lower right bank and the right bank corner – and the individuals that shaped the landscape observed now. The coding system employed here aims to link data on land holdings, water use and kinship. Individuals are identified by a letter (H for Hmong and K for Karen), and a number to identify their social and resource relationships. When referencing fields, the individual code is prefixed with LB (left bank) or RB (right bank). Table 4-1 provides basic reference data used in each section of analysis to follow.

Previous to the adoption of cash crops, the left bank was used by Karen farmers for upland rice and maize cultivation. In 1984, two Hmong brothers (Neeb and Suav Yeeb) purchased land on the left bank, making payment in opium. They began to plant cabbages and carrots in the rainy season, and as market demand started to gain momentum, Neeb constructed an access road to his fields. The road allowed other Karen and Hmong farmers to start with cash crops, causing the area under cultivation to quickly spread. Some minor tensions between the two brothers' lineages meant that there was not a large degree of coordination or cooperation among the Hmong of the left bank. Karen farmers farmed mostly on an individual basis, with cooperation limited to small-scale labor exchange.

When opium replacement brought coffee to the Huai Sai Khao valley, the upper right bank was quickly converted from poppy fallow to plantation. The village leadership allocated land by lottery to interested Karen farmers in San Pu Loei. Village leaders saw that market production would continue to grow and believed that clarifying ownership of *taj soof lauz* would facilitate the process. In the following six years, the price of coffee dropped from 10 baht per kilo to 1 baht, and farmers abandoned the coffee trees. Two years later, the trees were cut and cabbage was planted. Mauf Laf (K1) played a key role in the adoption of cabbage in San Pu Loei, explaining that he obtained the necessary information from Khon Muang in Mae Chaem. He strengthened his position as a local leader by building a field house and shop along the road below his fields, which now provides a central meeting point for all farmers in the valley. The Karen farmers on the upper right bank, who were all linked through kinship and marriage, coordinated their agricultural development activities, starting with the land allocation lottery, leading to the joint irrigation infrastructure construction and water allocation rotation presented below in more detail. The farmers in

Table 4-1: Water Users in Huai Sai Khao Valley

	Hmong			Karen	
	No of plots	Area m2		No of plots	Area m2
H1	1	6,304.5	K1	2	7,909.5
H2	3	9,750.8	K2	1	4,100.8
H3	1	5,676.5	K3	3	15,654.7
H4	1	1,135.2	K4	1	1,450.5
H5	2	4,762.5	K5	2	12,045.5
H6	1	2,815.0	K6	K10	
H7	1	2,992.5	K7	2	7,381.0
H8	2	9,052.3	K8	2	7,159.9
H9	2	9,777.9	K9	K7	
H10	1	3,392.5	K10	2	11,238.10
H11	1	5,814.2	K11	1	5,566.9
H12	1	5,943.0	K12	1	4,265.5
H13	1	3,943.0	K13	1	5,080.0
H14	3	5,986.1	K15	K12	
H15	1	5,083.0	K15	K20	
H16	1	5,144.0	K16	1	4,300.7
H17	1	3,878.5	K17	1	5,529.5
H18	1	3,454.6	K18	2	6,842.1
H19	1	7,682.5	K19	1	2,887.5
H20	H19		K20	2	4,068.0
H21	H19		K21	1	3,585.0
H22	2	5,151.9	K22	1	6,174.0
H22	H27				
H23	1	9,918.7			
H25	1	2,120.6			
H26	1	2,357.5			
H27	1	2,004.0			
H28	1	5,323.2			

this section of the valley have emerged as the leaders of the local Karen community. Figure 4-3 shows the distribution of agricultural fields in the valley in the 2004-2005 dry season.

The lower right bank was developed simultaneously by Hmong and Karen farmers. H2 and his sons H12 and H13 purchased land, again paid to the Karen in opium, establishing the Hmong presence. Other Hmong purchased land paying in cash this time, but making additional payments at several points in time in response to Karen demands that the value had increased and the initial price was unfair. Initially, the key individuals of the upper right bank, K1 and K3, owned most of the Karen land here. Others began farming, mostly with assistance from the upper right bank group. Coordination was low among both the Karen and Hmong as the space between the stream and the road was occupied.

The right bank corner was initially not cultivated after the Thai abandoned their opium fields. Experiencing the beginnings of land shortage in Ban Phui Nua, other Hmong occupied these fallow lands and began to cultivate cabbages in 1987. Laj Tshaab (H3) had begun to assume a leadership role within his clan in Ban Phui Nua, and led a group of clansmen from several lineage groups to start planting in the area. Within this group were two young entrepreneurial farmers (H1 and H8) who were to enjoy the benefits of the cabbage boom in the following years. The leadership of H3, supplemented by the market connections and income of H1 and H8, were an important factor that enabled the Hmong of this area to develop a coherent grouping in the valley, eventually resulting in the construction of irrigation infrastructure to make this relatively distant site more productive.

As seen here, the adoption of cash crops, such as cabbage and carrot, was somewhat different in each of these areas. The latest development, and the factor that brought about the current atmosphere of water tension, was the introduction and spread of shallots. Because of climatic differences, hill shallots are planted and harvested approximately two months after lowland shallots, which means that upland farmers can get a good price for their produce. Middlemen from Mae Chaem played a large role in the introduction of shallots, providing credit for seed and other inputs, and also contracting with individual farmers to buy entire field crops. Middlemen still purchase in the villages in the shallot season, but Hmong and Karen farmers prefer to transport shallots directly to the main market in Ban Hong, near Lamphun, or to large middlemen in Mae Chaem when possible[2].

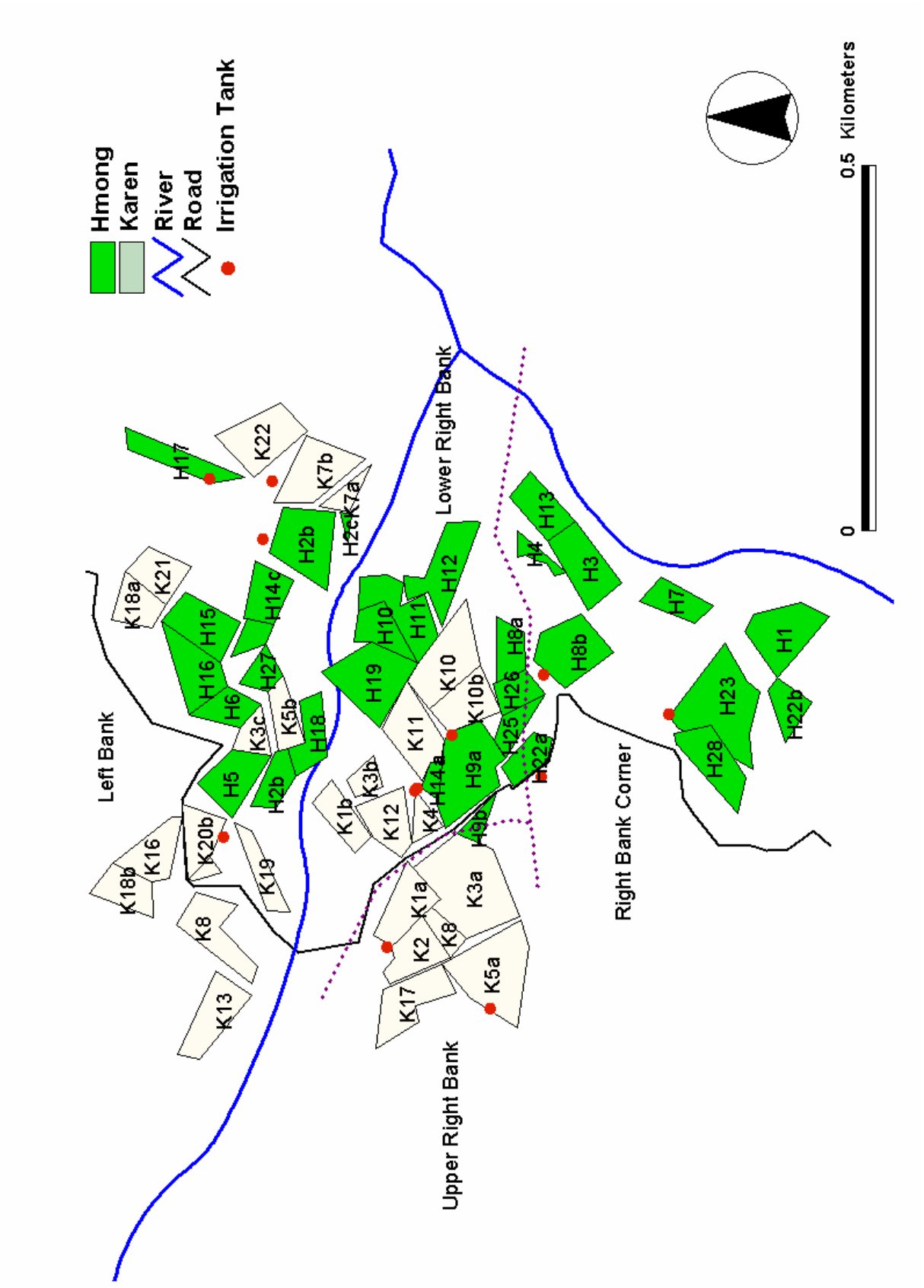


Figure 4-3: Shallot fields in Huai Sai Khao Valley
Source: GPS and interview data, author's fieldwork

The Huai Sai Khao valley is now a mosaic of Hmong and Karen fields, with rainy season cabbage and dry season shallots cultivated intensively. As shown above, fifty 'resource users', 28 Hmong and 22 Karen, currently utilize land and water in the Huai Sai Khao valley. Of this number, four (H22, K6, K15, K19) do not own land, but have gained access through social relationships. K15 and K12 are brothers who jointly own their land. Similarly, H19, H20 and H21 are brothers who own distinct plots but use the land and water jointly. The total cultivated area is approximately 153 rai or approximately 247,000 square meters as, shown in Table 4-2. In terms of number of plots and total area, the Hmong cultivate slightly more land than the Karen, although general perceptions on both sides are that the other group has much more land under cultivation. Farmers in the valley were surprised to learn that the overall land holdings and average plot size are not drastically different.

Table 4-2: Area under Shallot Cultivation, Huai Sai Khao 2004-2005

	Hmong	*Karen*	*Total*
Area m^2	129,465	117,970	247,435
% of total	53	47	
Plots	32	27	59
Ave plot size m^2	4,045	4,369	4,207

Source: Author's fieldwork

Land has become scarce in the valley, and the options for expansion of agricultural land is very limited. The options for opening new fields differ between the Karen and Hmong. For the Karen, it is relatively easy to decide to use other adjacent rainy season plots for dry season cultivation. Alternatively, a Karen farmer could clear a young fallow field (Karen *hsgi*)[3] for a new permanent field (Karen *taj soof lauj*). The Hmong, however, already use almost all of their land holdings for dry season cropping, and their only option is to cut lychee trees in their orchards. These orchards, relics of previous fruit-tree extension efforts, are not irrigated in the dry season, nor are they harvested seriously. RB-H8b, for example, was originally part of a lychee orchard that was cut several years ago by the Hmong owner (H8), and RB-H4 was cleared at the beginning of this year's dry season. Karen informants explained that the village has now 'closed the door' to the Hmong, and they will not rent or sell any more land to the Hmong.

3. Water management: The constraints and opportunities of dry season cultivation

The factor that enabled the evolution of the dry season cropping system was access to water resources. Water is the real constraint to the further growth of the dry season cash crop economy, and is probably the most important factor influencing relations between the two groups.

The development of dry-season irrigation infrastructure has at the same time provided access to markets and contributed to resource competition and exacerbated pre-existing ethnic tensions. The current irrigation technology has been highly effective in enabling farmers to expand their annual cropping calendar, and has seemingly made a contribution to raising incomes, although debt has become an inherent part of the market-oriented agricultural production system.[4] Investment costs, market fluctuations and the climatic risks contribute to the debt situation. Management arrangements among groups within the valley have evolved, but the capacity of these arrangements is being challenged by the rise in water demand as observed in the installation of new pipes and opening of new fields. There is a pervasive feeling among farmers that the valley's hydrological system is quickly approaching its limits, but no management regime linking all water users exists.

As mentioned above, the irrigation system began as an adaptation of technology from the Thai areas around Mae Chaem district town. As applied in the uplands, a small stone or wooden weir is constructed in the stream, and PVC pipes are inserted. (See Figures 4-4 and 4-5) The water pressure from gravity turns the sprinkler heads, and farmers manually rotate the sprinkler poles around their fields. From the point of extraction, most pipes are split and led into two to four fields, or flow into a farm pond. A small number of pipes flow directly into a single field, but most farmers view this as either inefficient use of the pipes or an unfair monopolization of scarce water. A farmer may operate as many as 12 sprinkler poles in a field of average size. In total there are 20 irrigation pipes in the Huai Sai Khao stream, 14 belonging to the Hmong and six owned by Karen.

Figure 4-6, a schematic view of the irrigation arrangements, shows a stark difference in water management styles between the left and right banks. The water source is at the top, meaning that the left bank appears on the right side of the diagram and vice versa. Coded squares on the edges represent shallot fields and correspond to fields in Figure 4-2, Karen

Figure 4-4: Sprinklers in Karen shallot fields during planting

Figure 4-5: Sprinklers in Hmong shallot fields after planting

fields in white and Hmong fields in green. Two major concrete farm ponds (T1 and T2) have been constructed on the right bank, together supplying 70 percent of the total irrigated area on that bank. The left bank, by contrast, is mainly a system of single pipes split and shared by up to four users. Farm ponds are constructed for two purposes. The first is to store water for delivery to places where the natural flow is not sufficient to enable irrigation. The second purpose is to facilitate allocation among users. The allocation function was a relatively new development brought about by a combination of perceived water scarcity, availability of investment capital and local leadership.

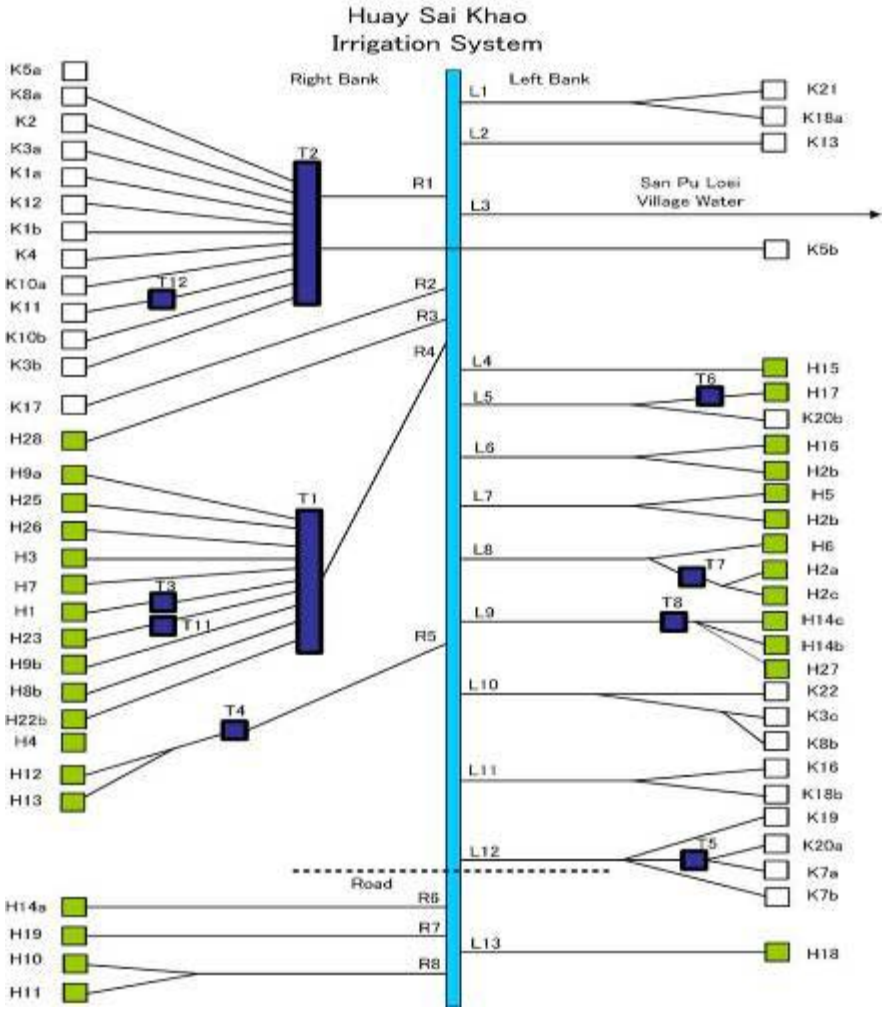


Figure 4-6: Huai Sai Khao irrigation

Source: Field survey and interviews

The total extractive capacity[5] of the Hmong pipes, calculated as total cross-section area of pipes, is 35.1 square inches, while the Karen pipes amount to 32.4 square inches. The Hmong have constructed seven farm ponds, compared to the three Karen farm ponds. The Hmong have invested heavily in irrigation in their own village, and have been known to

construct complex storage and delivery systems as described above even in situations where their access to the land is temporary, such as when farming in more distant Karen and Lawa villages. It is noteworthy that in Huai Sai Khao, Hmong and Karen do not share water from farm ponds, and in fact the only shared infrastructure is pipe L5.[6] Figure 4-7 shows irrigation pipes, and Figures 4-8 and 4-9 show farm ponds.

Coordinated water 'allocation' is done only in times of shortage. The common understanding is that individuals use water on a day-on/ day-off (Thai *wen wan*) rotation, but since there is no overall system monitoring or regulating water use, in reality farmers rotate their water usage within groups sharing a pipe or a farm pond. For example, the largest and most formalized rotation is T1, the common Hmong farm pond, where two sets of farmers use water every other day. This rotation is discussed by the entire group in Ban Phui Nua and adjusted as needed. Karen farmers using T2, the common Karen farm pond, discuss the order of water use on a daily basis. It is most common that farmers gather at K1's field house in the mornings and evenings to discuss the next rotation. This approach, however, does not function for downstream users because insufficient amounts of water reach their pipes. Downstream users frequently do all of their irrigation at night, opening the pipes to fill their farm ponds in the evening as upstream users return to the village. Night irrigation is a source of added tension between Karen and Hmong, because while Karen farmers have to rely on household labor to rotate their sprinklers throughout the night, Hmong farmers task their Shan laborers. Users of pipes L10, L11 and L12 particularly feel the effects of water shortage. During the peak times (lowest supply and highest demand) in January and February, these Karen farmers do virtually all of their irrigation at night.

Table 4-3 shows the chronology of irrigation development in Huai Sai Khao. Pipes are listed in the order of their physical placement in the stream, from upstream to downstream. Initially, there was a common understanding that farmers could not insert new pipes upstream of an existing pipe. The norm of 'develop downstream only' was upheld loosely until 2000, when the weaknesses of this informal 'understood' principle began to show. The density of pipes was rising, and water scarcity was becoming a problem.

Despite the only slight difference in total extractive capacity, it is clear that the balance of access to water resources has shifted dramatically by the addition of L1, L2 and L3 over the past two years. Before these pipes were installed, the Hmong had a much higher

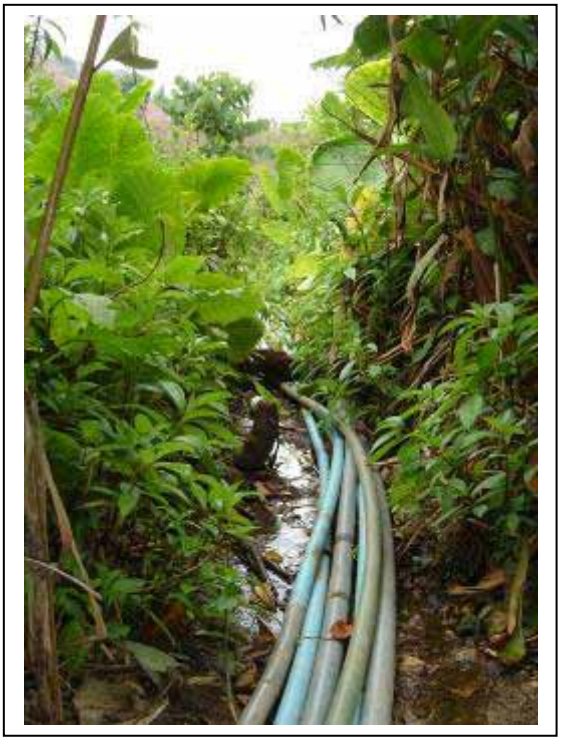


Figure 4-7: Irrigation water source Huai Sai Khao

Figure 4-8: Karen farm pond T-2

Figure 4-9: Water shortage in Karen farm pond T-5

proportion of extractive capacity, and had more pipes upstream from the Karen. These new pipes mean that 70 percent of the water used by Karen farmers is now extracted above the first Hmong pipe. In any case, the Hmong now find themselves in the position of downstream users. Last year, the owner of R5 moved his intake pipe upstream to ensure more regular flows. The Karen pipe owners explain that water shortages left them with no choices, and even though there were informal mechanisms through which discussion could have been conducted, the decisions were made individually without broader consultation. However, some of the most severe water shortage resulting from this dramatic increase in upstream extraction is being felt by L10, L11, and L12, all Karen pipes.

Table 4-3: Chronology of Water Extraction Development

Chronology of Pipes					
	Owner	Year	Diameter	No of Users	Ethnicity
L1	K18	2004	3”	2	Karen
L2	K13	2005	2”	1	Karen
R1	Karen Group	1986	3”	11	Karen
L3	Village Water	2004	2”, 1”		Karen
R2	K17	1992	1.5”	1	Karen
R3	H28	1992	1.5”	1	Hmong
R4	Hmong Group	1987	3”	10	Hmong
L4	H15	1986	2”	1	Hmong
L5	H17	2001	2”	2	Hmong
L6	H15	1986	2”	2	Hmong
L7	H11	1988	1.5”	2	Hmong
L8	H6	1988	1.5”	3	Hmong
L9	H14	1986	1.5”	2	Hmong
R5	H12	1990	2”	2	Hmong
L10	K20	1988	2”	2	Karen
L11	K3	1988	2”	3	Karen
L12	K19	2002	2”	4	Karen
R6	H2	1987	1.5”	1	Hmong
R7	H19	1987	1.5”	3	Hmong
L13	H18	1992	1.5”	1	Hmong
R8	H10	1987	2”	1	Hmong

Both groups agree that the construction of farm ponds is an important factor in improving water management. However, management of farm ponds has caused problems as well. The users of T2 shut the main intake valve each evening, as long as there is no night irrigation planned. This means that water is released downstream to other night irrigators and to other users further downstream. The intake valve of T1 is closed rarely, and there are frequent problems of overflow and damage to the road. Although the overflow results

from the Hmong users, San Pu Loei is responsible for the road. Small farm ponds have been constructed on the left bank in downstream areas to make up for water shortages, but the effectiveness of these farm ponds is limited as inflows are unreliable and the farm ponds are not lined with concrete. Users of the Karen common farm pond agree with the Hmong assertion that better results could be achieved, in terms of both storage and allocation, if a large farm pond were constructed on the left bank.

These problems suggest that there is only a very limited sense of community in the valley. The mounting tensions have resulted in cases of pipes being disconnected, rerouted and destroyed. Farmers who perceive that water shortages result from the activities of a specific individual may take matters into their own hands to rectify the situation. In 2004 and 2005 the situation almost resulted in physical violence between local farmers. Nonetheless, amidst the atmosphere of competition, new modes of cooperation have appeared. Tension in the valley has been met with both customary and new forms of social organization.

4. Social organization and the conflict-cooperation balance

Farmers are now interlinked hydrologically through the growth of irrigation infrastructure, bringing together a mix of management styles and placing local farmers in a far closer competition for scarce resources than in the past. However, the social linkages to manage these biophysical interactions are still evolving.

4.1 Resource sharing arrangements

Looking at the social dynamics behind land and water management in Huai Sai Khao can shed light on the tension between conflict and cooperation. First, although differentiation in plot size is not extreme at the individual level, when kinship and affinal networks are brought to bear on the analysis, definite clusters of land holdings become evident. Second, the construction of permanent infrastructure in the irrigation system has enabled farmers to create new networks for cooperation.

Both Karen and Hmong communities conduct livelihood activities based on the household as the basic unit of production. Land is owned by the household, but modes of inter-household interactions such as marriage and cooperation, also play an important role in

determining patterns of land holding. In Karen society, marriage relationships are critical in determining access to village resources. There is a high degree of in and out migration in Karen villages. Customarily, there has been a preference for matrilocal post-marriage residence because of ritual practice (*auf qai*) that emphasizes matrilineal relationships (Hayami, 2004). In San Pu Loei, examples of patrilocal residence are not uncommon, partially because 39 of the total 49 households have converted to Christianity. It is normal for men marrying into the village to use land passed from the father-in-law to the daughter. Among the Karen in Huai Sai Khao there are seven such cases, while approximately 35 percent of all marriages in San Pu Loei consist of in-migrating men.

The result is a horizontally dispersed network of kinship and affinal relationships, depicted in Figure 4-10, within which people carry out labor exchange and other forms of mutual support. The family of the village headman (K3) is a case in point. He and his brother (K2) are landowners in the valley, and two men from outside the village (K4 and K5) have moved into the village to marry their sisters. The headman has given land to his recently married daughter, and the son-in-law (K11), who is from a neighboring village, has started to farm this land. The sister of K1, who recently gave land to his daughter and her husband (K10), is married to the older brother of the headman (K2). Taken all together, this group controls just under half of the Karen land in Huai Sai Khao, and almost 25 percent of the whole valley. The majority, including the Mauf Tef and Kongdee, are members of the Catholic church. Although the grouping does not wield special authority as a result of the clustering, it does serve as a major source of information and influence among the local Karen community. This group forms the core of the Karen farm pond water users as well. The Hmong also recognize this group as the main center of energy within the Karen community. The mixing of people from different villages that results from in and out migrating marriage partners opens up broad opportunities to mobilize labor exchange with the local Karen domain. For example, during the 2004 shallot harvest the movement of labor between San Pu Loei and the neighboring villages of Mae Ngaan Luang and Khun Mae La reflect the personal networks that link those villages. There is also a relatively high degree of overlap between land and water sharing agreements. This means that a combination of relationships derived from kinship and locality are constantly formed and reformed among members of the community.

Decision-making among this community has been plagued with difficulties, and it appears that despite the complex interlinkages, cohesion among the Huai Sai Khao Karen is fragile.

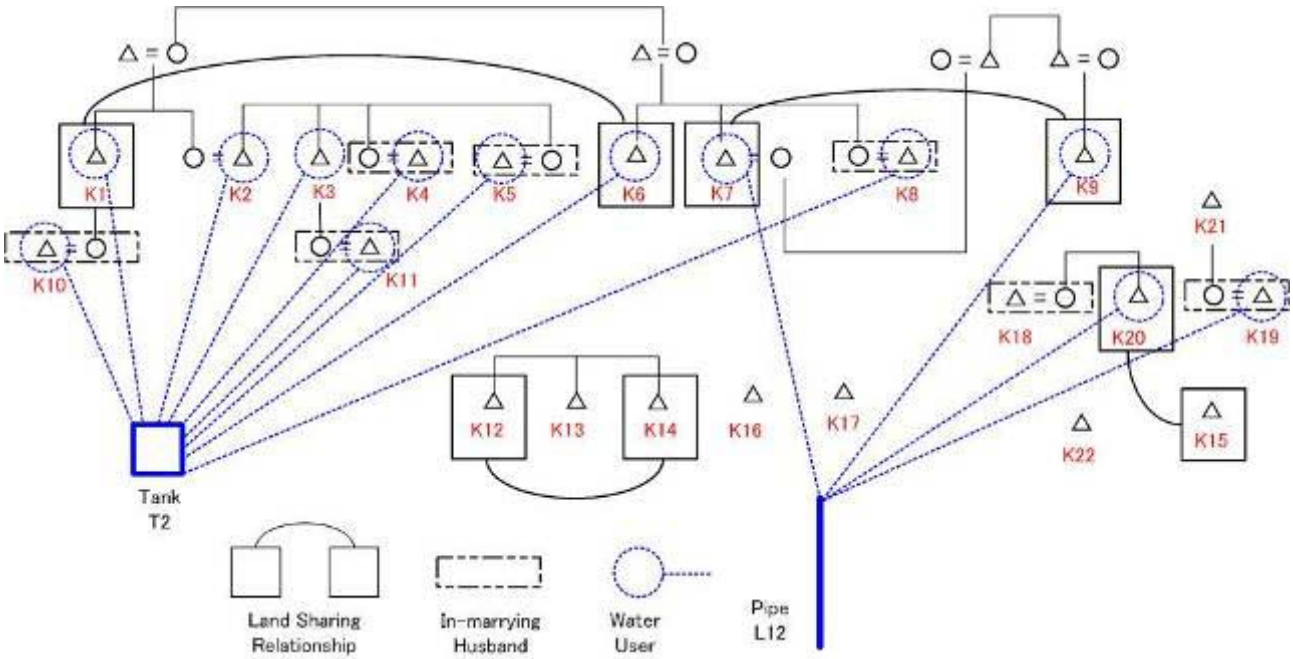


Figure 4-10: Karen kinship and resource relationships

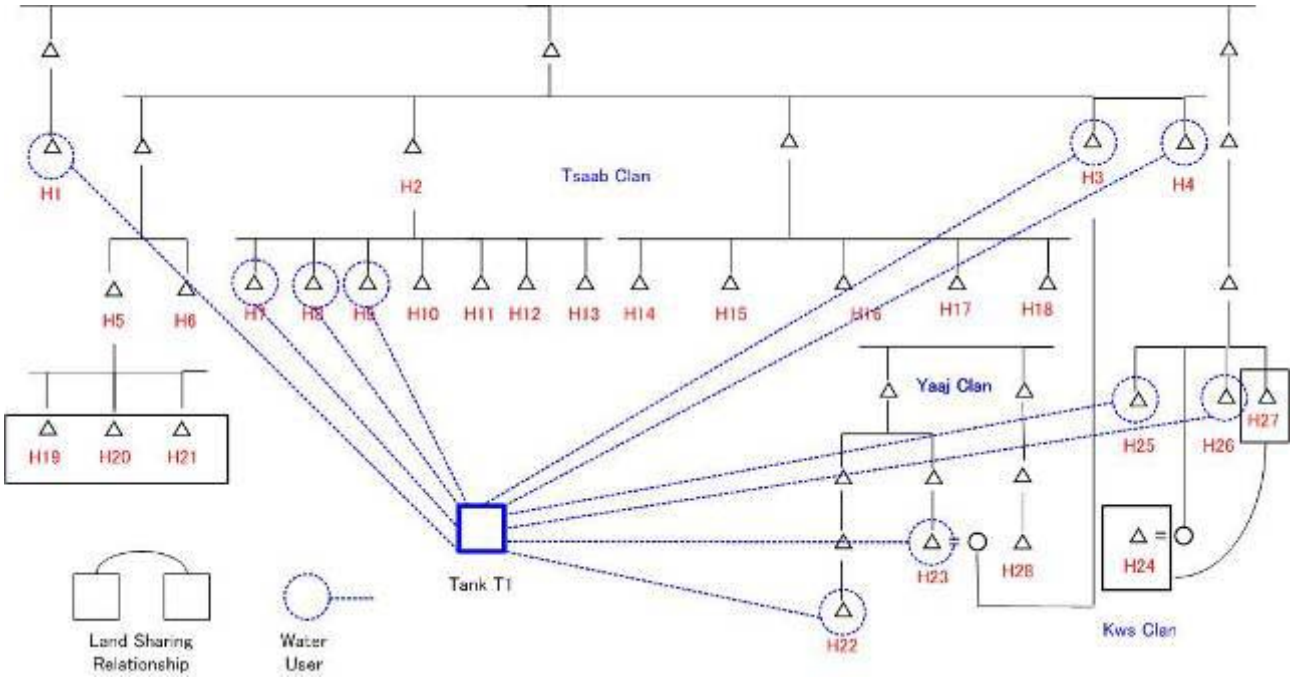


Figure 4-11: Hmong kinship and resource relationships

For example, in 2003, K5 drew a pipe from T1 across the valley to a new field without the consent of the T1 user group. Despite general agreement that this should not have happened, the pipe remains connected and K5 continues to use water. The internal governance processes of the local Karen remain unclear, and there is need for further study of how Karen are internalizing the sprinkler technology within their own socio-political organization.

In Hmong society, patrilineal descent dominates social relationships, as seen in Figure 4-11. Typically, land is divided among sons, who may carry out agricultural activities separate from their father, even if they are still living in the same household. There is traditionally no village level cooperation in agriculture (Cooper, 1986), and recent livelihoods changes have not altered this situation. All the Hmong in Huai Sai Khao are from Ban Phui Nua, and all but three are from the Tsaab clan. As discussed in Chapter Three, the Tsaab are a minority in the village, having migrated a year after the Yaaj. When they arrived in Ban Phui Nua, most of the land near the village had already been claimed by the Yaaj, forcing them to look in areas closer to San Pu Loei. In Huai Sai Khao, two main Tsaab sub-lineages (H2, together with his sons and nephews H14, H15, H16, H17 and H18) control almost 30 percent of the valley, and more than half of all Hmong land. Disputes between the two sub-lineages are not uncommon, although leadership within the dominant clan is clear and dispute resolution mechanisms function effectively. For example, in the past planting season, two cousins (H5 and H14) from different lineage groups had a dispute over their pipes. At first there was a discussion in the valley among the cousins and a small group of relatives led by H3, but when a decision could not be reached, the issue was taken to the clan leadership in the village, who instructed the cousins to return the pipes to the original conditions.

There is marked difference in land sharing arrangements as well. In the Karen community, farmers commonly lend land among themselves. Of the cases observed this year, the main reason for lending land involved limitations in capital to invest in shallots. After prices dropped sharply last year, many farmers have scaled down the size of their investment. At the same time, other farmers in need of additional land appear, and lending arrangements are possible. A fixed rent is not usually paid, but rather a small fee may or may not be paid, depending upon the harvest and price. Among the Hmong, land sharing arrangements in Huai Sai Khao are much more infrequent. In one case (RB-H19), three brothers have jointly worked three plots since they were passed to them from their father in 2002. The

other example is LB-H27, an arrangement between father-in-law and son-in-law (*yawm txiv-vauv*). [7] This type of land sharing is done on a season-by-season basis. In Ban Phui Nua itself, there are many examples of land sharing agreements. The most common types are a) rental arrangements with cash payment per harvest, and b) non-rental use agreements, in which no set payment is made but some sort of compensation is made if the harvest is profitable. Rental arrangements are more common in the rainy season, when profitability of cabbages is the highest, and can be struck among any members in the community. Non-rental use is arranged mostly among cousins or closely related in-laws in the dry season.

New modes of cooperation in water management have emerged as well. When the Hmong first installed their pipes, they were used on an individual basis or shared by brothers. But as demand grew, farmers made agreements with the owner of existing pipes to share water. These first sharing arrangements were often based on kinship relationships for the Hmong. The main common farm pond is used by farmers from six local lineages of the Tsaab clan, and one individual each of the Kwm and Yaaj clans. This situation is even more meaningful in the Hmong context, as one farmer is from a different clan than the rest of the group. For the Karen, location of fields was a more salient criteria for water sharing arrangements. The original Karen pipes were installed by an individual and shared among groups of three to four people. There is only one case of direct water sharing between Hmong and Karen. An enterprising young Hmong farmer has been using land (LB-H17) belonging to the father-in-law of K15, in return for which he shares the water from his pipe with K15. More commonly, however, with the advent of storage facilities, farmers have been able to broaden the scope of their cooperation within their own ethnic group.

Disputes between users of the same farm pond are not unheard of, but these systems have in fact evolved into coherent groups, that conduct maintenance activities jointly, and divide costs equally among the users. Additionally, the users of farm pond T1 decided that H22 should leave one of his fields (RB-H22b) fallow this year, in the interest of avoiding water shortages in common farm pond system, considering that he owns two plots in the valley. This development is important because it illustrates one form of land use planning that is necessary for demand-side management of scarce water resources.

4.2 Organization of labor

Labor relations between the Hmong and the Karen have been a topic of interest in the Thai uplands, and have tended to dominate the basic conceptualization of Hmong-Karen relations. Early research on the Hmong frequently pointed out the reliance of the poppy economy on Karen labor. The importance of Karen laborers to the current cabbage-shallot economy has only increased. It is common for Hmong to travel to a Karen village in the evening and make a general announcement that labor is needed for the following day, and then to pick up available workers the next morning. In many cases, the actual procurement of laborers is done by the Karen contact, so a diversified network of acquaintances in surrounding Karen villages is important for securing labor supply, especially as the demand for labor has risen with the spread of cash crops in both Hmong and Karen villages.

Organization of labor is still a key factor that affects the resource management practices of Karen and the Hmong farmers. Figure 4-12 shows Karen preparing shallot seed material for planting, conducted here by members from two households of an extended family. Figure 4-13 is shows Hmong cross-clan (Yaaj-Kwm) cooperation in loading shallots for transport to the market.

Planting, cutting the shallot flower and harvest all require 10-20 people for 2-3 days in an average-sized family plot. The Hmong have diversified sources of labor and do not face serious problems in mobilizing the resource to carry out these functions. Labor exchange (Hmong *pauv zug*) among Hmong farmers within Ban Phui is common during these peak times. But the Hmong are also able to hire wage labor on larger scales. It is typical for a Hmong household to hire one or two Shan[8] laborers on year contracts (Hmong *ndlav qheb*), and then hire Karen from neighboring villages to meet peak labor demand (Hmong *ndlav tus zug*). The Hmong are known for disliking wage-labor themselves (Cooper, 1984), and even now it is very rare to find Hmong villagers participating in agricultural wage labor.

The Karen have an extensive system of labor exchange (Karen *maz dau lox sav*) (Chumpol, 2004), including people from other neighboring Karen villages, but now often find themselves in direct competition with the Hmong for labor. In San Pu Loei, there are the beginnings of a shift from labor exchange to wage labor (Northern Thai *hap jaang*) for

Figure 4-12: Karen farmers preparing shallot seed material for planting

Figure 4-13: Hmong farmers loading shallots for transport to market

cash crops within the village. Laborers prefer to have disposable cash income, and the employers prefer to avoid the requirement of reciprocity that labor exchange entails. Villagers provided a diverse range of opinions about labor in both villages, mentioning the concurrent importance of labor exchange, wage labor and non-reciprocal assistance. The rather marked variation in labor strategies suggests that the system is in flux, and villagers are trying to arrive at a new balance between customary and market-led mechanisms.

Despite the broadly held differences in natural resource management styles – in which Karen are characterized as being community oriented, while the Hmong seem to prefer individualized management – similar developments in water management are observed. In both large-scale sharing agreements, figures of customary leadership have played a large role in coordinating joint investment in infrastructure and monitoring water sharing.

5. Huai Sai Khao Committee: Institutional innovation and local resource governance

New forms of cooperation are evolving within the atmosphere of resource scarcity, but their capacity for dealing with conflict at the stream system level is low. When tensions peaked in 1997, a small group of community leaders decided to gather the local farmers to discuss the problems. New pipes had been inserted in the upstream areas, both Hmong and Karen. There was no external support for this effort. Two Hmong and two Karen were chosen to represent the stakeholders and facilitate the negotiation. The group decided that an informal committee should be established to provide a forum to deal with water management issues in the future. Both sides agreed that an informal institution was preferable, because neither wanted to raise the issue to the level of village-to-village conflict. The first decision of the committee was to remove the new pipes from the year before. The committee then prohibited new extractions from the stream and limited the size of pipes allowed in the stream. The committee would also continue to be the contact point for any further negotiations. As it turned out, over the following years, several new pipes were inserted in violation of the agreement, as described above, signaling problems with monitoring and enforcing this type of informal agreement.

Usually the committee meets just once a year, so it does not provide a readily accessible forum for exchange of information and ideas. In the case of serious conflict, the four committee members come together to negotiate. Committee meetings, like most

communication in the valley, are conducted in Karen, as all the Hmong farmers in Huai Sai Khao speak fluent Karen. The channels of communication are illustrated in Figure 4-x. There is a high degree of sharing of market price information within the Karen and Hmong groups, and a more limited level of exchange regarding minor management and maintenance issues. Such communication is done based on personal networks, some of which are dense, and some of which are very loose. Communication with the Hmong is further constrained by the fact that much of the agricultural work is done by Shan workers, which means that they are not present in the valley as frequently as the Karen.

The four individuals making up the core of the committee are key to negotiation processes, and each derive their influence in the valley from a combination of their position in their home village and their role in the agricultural transition in the valley. For example, Mauf Tef (K1) is the leader of the Catholic church, and has had a role in organizing San Pu Loei villagers in this context. He is also the *tambon* medic (*phaet pracham tambon*) and has been involved with various extension projects since the days of opium eradication. Until 2005, Kongdee (K2) was the Assistant Headman, but because of the governance rift in Muu 11, was the de facto negotiator in matters concerning conflict with Ban Phui Nua. He was also one of the original crop innovators with Mauf Tef. On the Hmong side, Suav Yeeb (H2) is the oldest brother in his lineage, and has had close relationships with his Karen neighbors since their previous settlement in Thung Pi. He has hired Karen to assist with work in fields for many years as well. Laj Tshaab (H3), the second-youngest of his lineage (and brother of Suav Yeeb) was an alternative source of authority in the Tsaab clan. As part of the younger generation, he was known for being outspoken but willing to engage in negotiations with the Karen. Suav Yeeb and Laj Tshaab are both located in central positions within the Ban Phui Nua social network for getting along (*sws raug zoo*) discussed in Chapter Three. In addition to being a central node in the Tsaab clan network, Suav Yeeb provides an important link with the Yaaj clan leadership. The structure and communication channels of the Committee are illustrated in Figure 4-14.

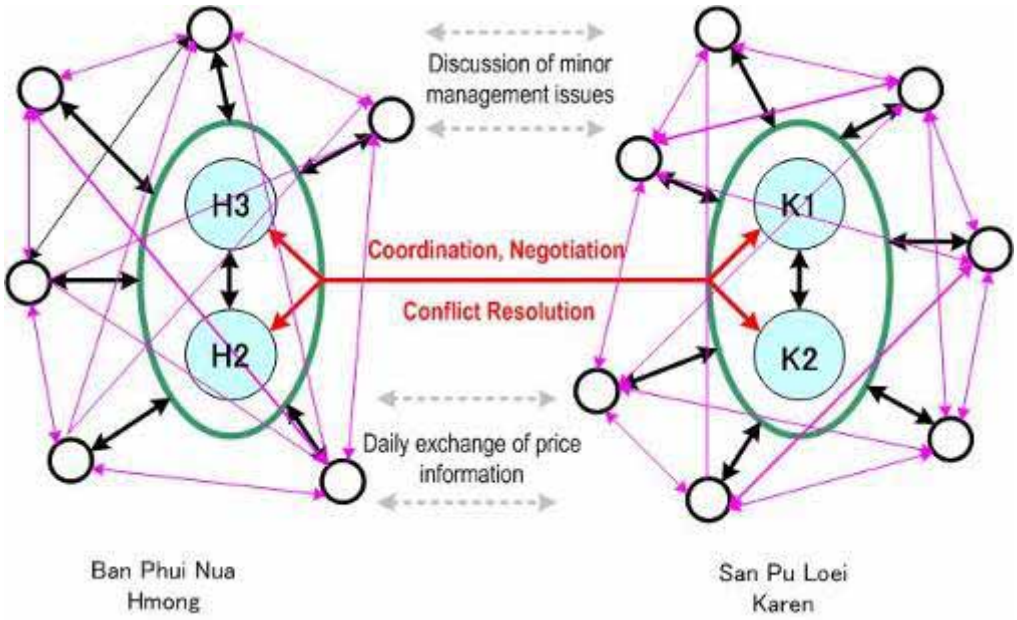


Figure 4-14: Huai Sai Khao Committee

In general, farmers from both villages agree on three basic principles that guide the committee. First, negotiations between the Karen and Hmong should be conducted through the committee, specifically under the guidance of the four committee leaders. These individuals are centers of trust and within each group. Between the groups, farmers also confirm that these four are the best individuals to carry out negotiations. Coordination, negotiation and dispute resolution are virtually the exclusive purview of the committee elders. Moreover, discussions with Huai Sai Khao farmers revealed that they do not consider themselves to be members of the committee, and are hesitant to engage each other on meaningful discussion of their water problems, preferring rather to follow the lead of the committee members. The basic mode of cooperation within the group is similar between the two, with the elders playing an important role in holding the group together.

Secondly, both sides believe that each side must be responsible for ensuring compliance within their own community. This hinders the committee's ability to raise water management problems to a level in which all users feel a common interest. For example, in 2005 the Hmong refused to join the Karen in a discussion of how to resolve the problem of the new Karen upstream pipes. They argued that this was a Karen problem, which should be solved by the Karen before the broader issue of system-level water management could be raised.

Third, there is also a clear desire on the part of all to keep the water problems of Huai Sai Khao from being elevated to an inter-village conflict. From the Hmong perspective, the style of decision-making practiced by the clan is preferable to official mechanisms. Clan-based problem solving focuses on the role of elders as facilitators of discussion (*sab laaj*) among the disputants. This process implements a bottom-up hierarchy of mediation in which problems are addressed at the lowest level within kinship circles, and subsequently bumped up to a higher level within the lineage, and finally to the clan leaders, if an agreement cannot be reached. The dispute between H5 and H14 is an illustrative example, as the dispute was taken to the Tsaab clan elders rather than discussed as a local issue in the valley. For the most part, the Hmong prefer to keep negotiations with the Karen informal, as well, because formalization places more constraints on individual decision-making. From the Karen perspective, official village-to-village negotiations are undesirable because there is a history of tension between the villages over access to forest resources, and San Pu Loei has not fared well in negotiations with Ban Phui Nua. Moreover, some Karen informants have mentioned that the Hmong village headman exerts only limited influence over the lineage groups.

6. Discussion: Legitimacy and informal institutions

Clearly, farmer participation in the efforts to handle problem solving at the Huai Sai Khao valley level is insufficient to enable the Committee to play a major role. This basic fact is illustrated well by the inconsistent answers given by farmers when asked if they were members in the Committee. Some envisioned themselves as members, while the majority considered membership to be composed of the four elders only. The basic question of stakeholder participation in collaborative watershed management arrangements can be considered in terms of perception of legitimacy (Trachtenberg and Fucht, 2005). Stakeholders perceptions of legitimacy influence their participation through two factors: procedural legitimacy and substantive legitimacy. Procedural legitimacy is stakeholders' belief that the processes by which the watershed management collaboration is established and operated. This belief, or lack of belief, may be based on perceptions of how representative the institution is of the stakeholders, how much consideration will be given to different perspectives and visions, and whether parties involved are willing to consent to decisions made. Substantive legitimacy consists of stakeholders' perceptions of the potential benefits to the local ecosystem and livelihoods. Stakeholders may be concerned

with improvement of livelihood stability, respect of stakeholder rights and equitable distribution of costs and benefits of collaborative activities. These factors of legitimacy are linked in a circle of mutual influence. If stakeholders have confidence in the procedures of the collaboration, they are likely to participate, if they participate the collaboration is more likely to produce the desired results. If the collaboration successfully delivers the desired outcomes, their confidence in the process will be reinforced. This argument is a statement of theoretical legitimacy and there are many factors of uncertainty that figure into real life. However, it is used here because it provides a useful framework for considering the technical and organizational difficulties experienced as the Committee tries to institutionalize a relations between the Hmong and Karen.

Table 4-4 shows the perceptions of Hmong and Karen farmers in the Huai Sai Khao valley regarding the legitimacy of the Committee. This information is synthesized from discussions with farmers in the valley throughout the process of gathering data on water use problems.

Table 4-4: Huai Sai Khao Committee legitimacy perceptions

	Hmong	Karen
Procedural Legitimacy	LOW	MEDIUM
Substantive Legitimacy	MEDIUM	LOW
PARTICIPATION	LOW	LOW

Low perception of procedural legitimacy on the part of the Hmong results from their preference for clan-based decision-making and individual discussions. In the event of a conflict between the Hmong and Karen, Hmong farmers prefer to make a decision among themselves and then rely on the two Committee elders to try to reach an agreement. The Hmong are also aware of the fact that they are farming in San Pu Loei land, and would like to avoid being pulled too far into negotiation process outside of their village. In terms of substantive legitimacy, the Hmong recognize the benefit that could be achieved by more coordinated technical management of water. This is largely because the Hmong have already seen, in Ban Phui Nua, the potential for expanding the scale of cash crop production that improving water management through shared water storage facilities can bring. Furthermore, the Karen inability to regulate new water extraction within their own group has lowered Hmong confidence in Committee as a whole.

For the Karen, procedural legitimacy seems to be higher because their village leadership is more intimately involved in the water problems through Kongdee. The Karen farmers have more confidence in the process because of the threat they feel from the Hmong in terms of

both forest protection and water management. In general the Karen seem to have a somewhat lower level of confidence in the substantive element of the Committee, because they are skeptical of the technical capacity to create and enforce regulations within the two groups. But as more and more people are serious about expanding capacity for cash crop production, the desire for a reliable water supply may drive Karen farmers to participate more actively in collective efforts.

The Committee thus faces steep challenges in achieving greater participation on the part of local farmers. It would seem that institutional and technical innovation should go hand in hand, to increase perceptions of the legitimacy of the Committee. For the time being, the objective of the Committee might be to create a sense of membership among all the farmers by initiating basic dialog among the farmers, for example a discussion of individual land use plans and water requirements before the dry season planting. The Committee could then begin to focus on other outcome-based activities, such as monitoring water use and devising water allocation standards.

7. Conclusions

The Hmong-Karen relationship has historically rested upon a labor supply and demand dynamic in which the Hmong were the employer and the Karen the employed. Access to land resources has also been a major influence in the relationship. In the economy of today's Thai uplands, the Hmong and Karen are still joined in a mutually dependent labor relationship. However, with the introduction of cabbages, shallots and other crops, the relationship has begun to take on a different character. The Hmong and Karen are competing in the same markets, more as peers than ever before. Because of the unequal levels of integration into the market and significantly differing capacity for investment and risk-taking, it would be difficult to say that the two are competing on level ground. In San Pu Loei, the direct dependence of the Karen on the Hmong has been reduced, and the two are now linked in more horizontally oriented networks of information and technology sharing. Conflict over access to land was introduced in this chapter as a key element of the Ban Phui Nua-San Pu Loei relationship, and this dynamic is explored further in the following Chapter.

Despite the differences between Hmong and Karen social organization and resource management style, similar developments in irrigation have appeared in both groups. There

are subgroups within both communities that have been able to come together to form larger land and water management groups. Similarly, there are groups of individuals who have not been able to mobilize the social resources to organize even in the face of scarcity. The Huai Sai Khao water conflict, at first glance an inter-ethnic problem, actually includes much more complex elements of conflict within both groups. Cohesion within each group is lower than perhaps might be expected in a situation where each considers the other to be a threat.

Approaches to addressing the tension over water management in upland landscapes, requires a combination of both institutional and technical innovations. The Huai Sai Khao case has instructive elements of both. The construction of water storage facilities has resulted in water management groups that solidified around shared infrastructure. This shared infrastructure created shared interest in management issues such as operation and maintenance, water allocation and conflict management. The initial development of irrigation infrastructure relied upon the social resources provided by kinship relationships in both the Hmong and Karen communities, but new management arrangements are successfully overcoming the limitations of kinship-based cooperation. Direct collaborative arrangements in water management between the Karen and Hmong remain elusive, but the two groups have demonstrated some capacity to work together to address conflict once it arises.

One problem is that users are not physically linked in a shared infrastructure system. Where the physical structures of water management have been developed, institutional arrangements have followed closely. The Huai Sai Khao Committee, created in response to the rising tensions in the valley, has tried to provide institutional innovation to make up for the lack of physical linkages. However, the informal nature of the committee, and its foundations in local sources of authority and traditional forms of problem solving, has not been sufficient to create the conditions required for collective action among the internally diverse population.

The problems presented by the lack of authority in the Committee are clear to the local farmers as well. This is reflected also in insufficient participation stemming partly from the low perception of legitimacy of the Committee on both sides. And although several institutions do exist at higher levels – including networks and local elected government – linkages with these external sources of authority have not been made. While farmers

hesitate to engage with the processes of official village governance, traditional decision-making has proved to be insufficient. The challenge is to find a locally acceptable configuration of formal and informal institutions to provide the incentives and authority to facilitate the negotiation of diverse interests and perspectives.

The social space created by the Huai Sai Khao Committee draws upon a single network, that of the local elders. Unless the Committee can align the evolving small-scale water sharing networks and link into an acceptable source of authority, it is likely that competition will continue to dominate daily life in Huai Sai Khao.

[1] See also Hayami (2003) for analysis of the transformation of customary leadership in Karen society.

[2] Because ownership of pickup trucks is low in San Pu Loei, direct access to the shallot market in Ban Hong is much more costly.

[3] Karen terms are presented in the standard romanization system used by Catholic Karen, who are the majority in San Pu Loei. Hmong terms are written in the standard Hmong RPA script. In both systems, final consonants represent tones, and thus are not pronounced separately.

[4] Farmers regularly purchase seed and other inputs on credit from middlemen. Additionally, financing for pick-up trucks is increasingly common, not to mention cash available from the government's 1 million baht village development fund. The debt situation has worsened in Ban Phui Nua, for example, since the price of cabbage began to drop in 2000.

[5] This number does not reflect actual water usage, but is a useful indicator because it drives the perceptions of access to water resources.

[6] One farmer from Ban Phui Nua has invested 12,000 baht in a farm pond and pipe system used to grow shallots in a Lawa village, and he shares water from this farm pond with the adjacent Lawa farmers.

[7] This is one way in which cooperative arrangements are forged between clans in Ban Phui Nua. It appears that this phenomenon is the result of increasing resource scarcity and changing preferences for finding marriage partners within the village. Hmong land sharing arrangements in the dry season do not carry strict rental fees. Rainy-season land lending, however, is considered more seriously as farmer incomes depend more heavily on rainy season cropping.

[8] Northern Thailand has seen an influx of Shan immigrants from Burma in recent years, many of which have now been registered by their employers with the government.

CHAPTER FIVE

Natural resource tension and the formation of watershed networks

Administrative and central government agencies have not been able to meet the challenges resource competition and institutional responses at the watershed level. This chapter analyses the formation of networks to handle resource management problems across administrative boundaries. The discussion highlights the interaction between groups in the watershed and constraints to the network's effectiveness.

Tension and conflict have been important catalysts of institutional innovation in Thailand. In the northern mountains, new forms of social organization are being developed to deal with the institutional failures resulting from socio-economic and ecological challenges that transcend administrative boundaries. These institutions, mostly in the form of networks of villages and communities linked ecologically by water and land management issues, are experimenting to achieve the complex balance of formal and informal authority, multiple local perspectives on traditional or customary practice, and the demands for resource security within changing livelihoods. This evolving local articulation of networks is highly relevant for Thai society because it pushes the frontier of understanding about how *prachakhom* (civil society) organizations may come to occupy the political space provided for them by the 1997 Constitution.

A general concern for the impact of upland agricultural activities on forested areas in the upper Mae Suk watershed came to be perceived as a direct threat to lowland water security as the intensification of land use in the uplands progressed. However, demand for water in lowland areas has increased concurrently, particularly with the growth of irrigated dry-season cropping. There is also a concern for water quality, as lowlanders have observed the rise in chemical inputs required by the intensive upland farming systems practiced by the Hmong, and increasingly the Karen as well. Today, the overlapping issues of forest loss, and the quantity, quality and timing of water supplies are main components of tension among upstream and downstream villages in the Mae Suk watershed. The fact that the lowland villages are ethnic Thai, while the upstream villages are Karen and Hmong only serves to exacerbate the feelings of mistrust.

Local communities in Northern Thailand, with varying degrees of support and intervention from external groups, have worked to establish networks to deal with these issues that

cross village and *tambon* boundaries, and are at least partially founded in the different knowledge systems and livelihood strategies of the groups involved. In the Mae Chaem sub-basin, there are currently 26 networks active in watershed-related issues, most of which are concerned with negotiating upstream-downstream clashes of interest over water, forest and land management. This chapter looks at the dynamics of competition and cooperation at various nested levels of watershed management, exploring ethnicity, livelihoods and the interface between village, networks and administration in the local governance landscape.

1. Institutional Mismatch: Official governance and ecosystems

Administrative units created in the process of establishing nation states were generally not developed with ecological management in mind. The basic mismatch between government administrative units and watersheds is pervasive at all levels from the most local (Dupar and Badenoch, 2001) to the international (Badenoch, 2001). Governments have opted instead to create line agencies – departments for forests, water, land and others – that often segregated conservation and development, sometimes within the same agency. It is only recently that a discussion of environmental governance has tried to advance a view on resource management that examines the basic mismatch between government administration and management of resources at the ecosystem level (World Resources Institute, 2002). This chapter focuses on the structures for governance of resources at the sub-watershed level.

Figure 5-1 shows the parallel levels of nested administrative and ecosystem hierarchies in the study area. The interface of biophysical and human systems are linked in the hierarchy of watersheds. Land use practices at the individual level have implications for resource scarcity at the village level (Chapter Four), while at the same time setting the stage for resource competition between adjacent villages in the same micro-landscape (Chapter Five). The sum of these human-environment interactions at the same time has influence on and is influenced by livelihood strategies and land use practices downstream.

Levels of administration do not necessarily reflect these interactions, but are nonetheless extremely important for mediating them. Several small villages (*yom baan*, called *pok baan* in Kam Muang) may constitute administrative villages (*muu baan*), which are linked to the national administrative bureaucracy from the *tambon* through the District to the

Province to the central government in Bangkok. The *tambon* is an important interface point, as this is where the top-down administrative system of the central government meets the bottom-up democratic system of local government. With a strengthened mandate for local development and conservation activities, the *tambon* is an important decision-making arena for local communities.

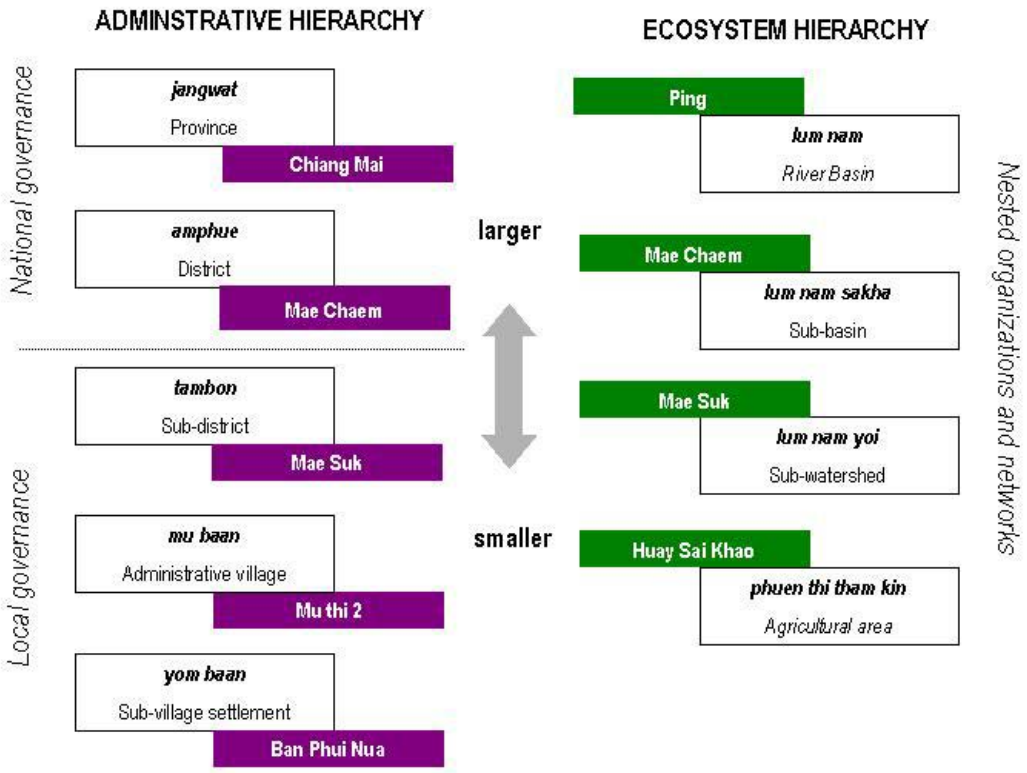


Figure 5-1: Nested Systems of Watershed Governance

Source: Author

1.1 TAO: Struggling to assume new roles

As described in Chapter Two, the role of the *tambon* is being strengthened in the decentralization process. Table 5-1, shows the administrative hierarchy for Mae Suk watershed at the *tambon* level. Of the three *tambons*, Pang Hin Fon has the largest population for the watershed. For a watershed the size of Mae Suk, the ethnic diversity is also high. However, closer examination shows that ethnicity is increasingly homogeneous within administrative units at the lower levels. Except for Pang Hin Fon Administrative Village 12, all administrative villages are composed of one ethnic group. Village 12 is clearly divided at the *pok baan* level.

Thus, the watershed can be divided into two general zones composed of the upstream *tambon* Pang Hin Fon, which is ethnically Karen and Hmong, and the downstream *tambons* Mae Suk and Chang Khoeng, inhabited by Khon Muang. These two zones do correspond roughly to different livelihood systems (upland versus lowland, sprinkler irrigation versus canal irrigation) and accordingly, interests within the context of resource management. However, it is clear that the upland communities do not form a unified grouping of interests, and different oppositions and alliances come to the fore in different situations.

Table 5-1: Administrative hierarchy in Mae Suk watershed

Tambon	Admin Village	Village (*pok baan*)	Ethnicity	Population	Households
Pang Hin Fon	1	Mae Khom Tai	Karen	111	19
		Mae Khom Nua	Karen		
		Mae Ngaan Noi	Karen		
		Mae Ngaan Luang	Karen		
	2	Phui Nua	Hmong	450	65
	10	Pang Ma-O	n/a	n/a	n/a
	11	Kong Pot	Karen	539	121
		Kong Pot Tai	Karen		
		Kong Pot Bon	Karen		
		San Pu Loei	Karen		
	12	Phui Karieng	Karen	261	52
		Phui Tai Hmong	Hmong	147	14
Mae Suk	6	Phae	Khon Muang	495	117
		Mae Suk	Khon Muang		
	7	Kong Kaan	Khon Muang	325	95
Chang Khoeng	5	Ton Taan	Khon Muang	698	167
	6	Phrao Num	Khon Muang	329	80

Source: Author's fieldwork and ICRAF-Chiang Mai data

With the recent efforts to deepen local democratic processes, village and *tambon* leadership has become much more accountable to local constituencies than in the past. Now villagers elect *tambon* leaders, who are then appointed by the District. Ethnicity has been a large factor in the past two elections. The current Pang Hin Fon *tambon* headman (*kamnan*) is Karen, as is the chairman of the Tambon Administration Organization. The TAO chairman is supported by two vice-chairman, currently one Hmong and one Lawa. Interviews conducted during the 2005 elections showed that local people are happy with the authority to elect their leaders.

However, the structure of the *tambon* government creates confusing lines of accountability. The largest problem is that the central government has retained several positions within the TAO government structure. The *kamnan* position is located within the Ministry of Interior

administrative hierarchy, which means that he has a dual accountability to both his constituency and also the central government. In Pang Hin Fon, villagers are generally pleased with the position of the *kamnan*, and consider him to be an important voice of local interest. The central government also retains two positions at the TAO, the permanent secretary (*palat*) and the engineer (*chang*). Neither of these positions are elected, and they are often not local people. Their accountability therefore lies with the center rather than the people. This arrangement has meant that the appointed officials have been able to misuse their access to resources, creating a significant constraint to the empowerment of locally elected officials. Regardless of the structural problems that misalign accountability relationships, villagers are aware of their power to create accountability. For example, in 2004 villagers of *tambon* Mae Suk expelled the *palat* and *chang*, pressuring the District to reassign them to a different *tambon*, after it became clear that they were involved in the misappropriation of *tambon* funds.

Villages elect representatives to the TAO, and the role of these representatives within village governance is highly varied across villages. TAO representatives are key contributors to the formation of the *tambon* development plan, and thus provide an important link between local needs and budget allocations. In Administrative Village 12 (Ban Phui Nua), for example, the TAO representatives are included in all major decisions taken by the village, largely due to Headman Yis' vision. In early 2005 there was an important discussion about upgrading the village water supply, which positioned the Yaaj clan against the Tsaab and Kwm clans with regards to upgrading water storage facilities. The TAO representatives participated in the negotiation, partly because they would be taking the lead in requesting TAO funds to support the construction. The TAO representatives have also been assisting in external affairs of the village, participating in NGO, research and other activities with organizations from the District. This has meant that the TAO representatives are increasing their capacity to play a role as advocate for their village's interests at the *tambon* level.

In contrast, however, is Administrative Village 11 (which includes San Pu Loei), where Headman Kongdee has lamented at the difficulty in getting the village committee and TAO representatives to cooperate, particularly with regard to relations with external agencies. This difficulty is partially due to the fact that the village committee and TAO representatives are located in two different *pok baan* (San Pu Loei and Kong Bot Nua) within the administrative village. Common interest among the two has been low for some

time, and the village leadership has made several unsuccessful requests to split the two into separate administrative villages. The resulting disconnect means that the capacity of San Pu Loei to participate in issues of larger concern is diminished. It was with some difficulty that San Pu Loei was able to get their proposal to upgrade the water supply system accepted by the TAO. The system supplies San Pu Loei but not Kong Bot Nua, and this example illustrates the potential for competition for TAO resources even within administrative villages.

Figure 5-2: Mae Suk watershed and *tambon* boundaries

Source: ICRAF-Chiang Mai GIS data

With a new mandate for environmental matters and a geographic scope relevant to a watershed the size of Mae Suk, the potential for TAO roles in managing upstream-downstream tensions appears promising. This is certainly the direction that NGOs, the government and other external actors are pushing. The financial and human resources available to *tambons* are scarce, though, and the focus of the *tambon* tends to stay on basic infrastructure development plans. This is especially true in upland *tambons* like Pang Hin Fon, but should not be attributed solely to the capacity of the *tambon* leaders. Indeed, many villagers see the *tambon* simply as an organization for distributing development funds. *Tambons* in the mountains, such as Pang Hin Fon, have serious budgetary constraints. Since all the land within its jurisdiction is legally under strict conservation regulation, the

tambon has no power to collect taxes. It relies therefore on central allocations for its entire budget.

As the recipients of new roles and responsibilities under decentralization, there are a number of local governance issues that require TAOs to coordinate and cooperate. The upstream-downstream issues related to watershed management, which cross *tambon* boundaries, are particularly challenging. Currently, there is no mechanism within the TAO structure for *tambons* to work together, and in many cases, other actors, such as networks and NGOs act as facilitators. In Chiang Dao District, however, *tambons* have made progress in working together to formulate environmental management plans. The Wildlife Fund Thailand, a local NGO, was instrumental at the early stages, but now functional linkages between the *tambons* have been established. In places like Mae Chaem, where inter-*tambon* coordination has been slower to evolve, the *kamnan* may also play an important role in facilitating coordination among *tambons*, often through an external agency or District office.

TAOs are also searching for ways to institutionalize their interactions with other local actors. The fundamental issue of interface between TAOs and *prachakhom* organizations is a priority throughout Thailand, and in a mountainous area such as Mae Chaem, the key most pressing need is for TAO-network collaboration. CARE-Thailand, for example, has made specific efforts to address this gap in governance in their work on collaborative resource management. In *tambon* Mae Na Jorn, to the north of *tambon* Mae Suk, the TAO has collaborated with three networks, all overlapping with *tambon* jurisdiction in different ways. First, the local Community Forest Protection Network was established to improve popular perceptions of uplanders' forest management practices, while protecting against forest fires. The TAO and network have worked together to create linkages between Karen and Khon Muang farmers, in addition to points of contact with *tambons* Chang Khoeng and Mae Suk. Second, the TAO has worked with the Mae Sa Nga watershed network that includes Hmong and Karen villages facing similar problems from the gazetting of Khun Khaan National Park. Finally, the Mae Na Jorn TAO has collaborated with the Mae Waak Watershed Network, which seeks to reduce tension over water use between upstream Karen and Hmong and downstream Khon Muang, in a situation that is similar to that of Mae Suk presented here (Raks Thai Foundation, n.d).

The TAO-network interface in Mae Chaem, like other places in the mountains of northern Thailand, is not yet well developed. While there are constraints in TAO vision and capacity, the ability of networks to draw on the TAO as a resource is weak. Networks generally are not familiar with the process of making written proposals to the TAO, and in many cases network leaders are not aware of the opportunities that exist to request support. For example, according to TAO regulations, ten percent of the annual TAO budget is allocated for environment-related activities, and five percent is designated as support for community activities. Given the demands for basic infrastructure development projects, TAOs have been reluctant to release funds to support networks, as well. Nonetheless, this basic framework exists for the construction of closer collaboration between TAOs and networks.

1.2 District: Source of external authority

The District is the lowest source of official administrative authority, making the *Nai Amphur* (District Governor) an important individual wielding the power of policy. Because of this, the District Office is held by many local people as a key resource in mediation and enforcement. The District has historically been the final resort of conflict resolution in cases involving more than one village, and this continues today. In the past, the weakness of the *tambon*, and perhaps perceived lack of legitimacy during the period when the Ministry of the Interior appointed *tambon* officials, has meant that local problems were often brought to the District for mediation.

Uplanders still state a preference for District intervention, as it can take the issue out of the context of local politics. For the Hmong, recourse to the District enables disputants to extract themselves from the clan politics that dominate decision-making within the village. For instance, a major land dispute between the Yaaj and Tsaab clans was taken to the District so as to avoid the politics of the village committee. As for the Karen, they perceive their bargaining position to have been weakened locally by the growing economic power of the Hmong. This means that direct village-to-village negotiations and decision-making by a coalition of villages holds less promise to them. They, too, have brought complaints against the Hmong for expanding fields into community protected forest areas to the District.

At the same time, however, Mae Chaem district officers are very much aware of the demographics of their constituency. When plans to expand the Mae Tho national park were initially leaked, raising fears of resettlement, eviction, and loss of livelihood among upland communities, the District governor delivered a letter to the government in Bangkok saying that unless the plans were made in a more transparent and participatory way, he could not guarantee the stability of Mae Chaem district. It is clearly in the interests of the District office to have a role in buffering potential conflicts between national policy and local communities. When asked about the possible options for enforcing locally derived land use regulations, of the sort one could envision in the Mae Suk watershed, some villagers offered that the District would be an appropriate final authority to support monitoring.

The importance of the relationship with the District to the Hmong was clearly demonstrated when a new *Nai Amphur* arrived in Mae Chaem early in 2005. This coincided with the Hmong New Year celebrations, and the Hmong made a specific effort to invite the new *Nai Amphur* to the festivities. In his address to Ban Phui Nua, the Governor stressed the common heritage of Chinese origin shared between his family and the Hmong, an introductory message that was very well received by the Hmong. He also participated fully in the regional Hmong New Years celebration held by the Southern Hmong network. People present at these events generally agreed that a close relationship with the *Nai Amphur* helped the Hmong deal with pressures from the lowlands and tensions within the uplands. Karen impressions of the arrival of the new *Nai Amphur* were not as strong.

Other agencies of the central government operate to implement sectoral policies, but these agencies tend to confuse the decision-making and roles at the lower levels of administration. For example, Watershed Management Units, Fire Protection Units, National Parks, Forest Protection Units, and Water Allocation Units, wield significant influence over the daily lives of local people, but are accountable to Departments and Ministries in Bangkok (Pornchai, et al., 2005). The implications of conflicting policy objectives among government agencies, difficulties of multi-agency coordination, and the rigid constraints centrally determined policy places on local communities have been problems for countries around the world (WRI, 2002).

As watershed tension and conflict have become a pervasive aspect of the uplands of northern Thailand, it is increasingly evident that the present institutional landscape has not

been able to meet the complex governance demands of mediating the multiple interests that compete for resources at many levels of society. It is this context of institutional failure that gave birth to the rise of networks.

2. Upper Mae Suk Watershed Network: Addressing Hmong-Karen conflict

The tension between upstream and downstream villages over water use in the Mae Suk watershed, in its current articulation, was catalyzed by land use problems in the upper watershed, primarily between Ban Phui Nua and San Pu Loei. In 1982, San Pu Loei villagers had experienced periods of dry season water shortage in the streams that flow through their village area, and recognizing that this may have been the result of their own agricultural fields that had been opened in the watershed forest above the village, the village committee issued a village regulation establishing the areas as village protected forest, prohibiting cultivation in the area.

By this time, some Ban Phui Nua farmers had expanded their cultivated area into the areas adjacent to the San Pu Loei watershed forests, as well. The Hmong claimed that they had already been farming in this area and were not ready to recognize the San Pu Loei village regulation prohibiting cultivation. This situation continued, with the expansion of fields progressing in both San Pu Loei and Ban Phui Nua, until 1992, when San Pu Loei tried to open negotiations with Ban Phui Nua leaders. The Karen complained that in addition to the opening of new fields that they believed were affecting the availability of water, the Hmong farmers did not construct firebreaks during the burning season, and surrounding agricultural and forestlands were damaged by out of control fires every year. The Karen then tried to open a village-to-village dialog. Even though these first efforts were not successful, the Karen tried to negotiate again in the following year.

At this time, the government watershed management units were the most accessible source of mediation. Unhappy with the Hmong response, the San Pu Loei leadership appealed to the neighboring Mae Ning Watershed Management Unit, which also hosts the Mae Suk Watershed Management Unit and had been hiring Karen villagers to plant trees in areas adjacent to Mae Ngaan Luang (Pinkaew, 2001). The Karen communities of the northern Mae Suk watershed have close social relationships with the Karen of the adjacent upper Mae Ning watershed, and were aware of the Unit's activities and felt most comfortable contacting the Mae Ning Unit. The Unit provided San Pu Loei with saplings, which they

planted in the watershed area. This led to an outburst of protest by the Hmong, who ripped out the saplings and temporarily shut the road leading from San Pu Loei through Ban Phui Nua down to Mae Chaem. This episode damaged the confidence of San Pu Loei villagers in engaging in discussions with Ban Phui Nua.

The problems between San Pu Loei and Ban Phui Nua remained at a standstill until support from an external actor arrived. In 1994, CARE established the Integrated Natural Resources Conservation Project in Mae Chaem, with one of the main objectives of supporting the formation of watershed management networks, at the sub-watershed scale, to deal with the increasing localized tension between upstream and downstream communities. The main tasks of the networks, as envisioned originally by CARE and their collaborators, was to:

- Establish boundary demarcation between agricultural land and watershed or protected forests within each village
- Increase forest area in the watershed by stopping cultivation or allowing fallow land to regenerate naturally
- Set rules and regulations for forest protection, including making fire breaks

These networks were to consist of a core of one or two representatives from each village. But even at this early stage, CARE recognized that a network of village representatives would face difficulties in dealing with the contentious negotiations that would be required to handle upstream-downstream tension. So the initial network model assured that the village headmen, other local leaders and *tambon* officials would be included in the governance structures of the networks. Regular meetings of the networks would also include representatives of relevant government agencies, such as the local watershed management units and the District office. Thus there was early recognition of the limitations to purely village-to-village negotiations, and importantly, the role of the *tambon* was identified as an important facilitator in dealing with inter-village matters. Although the TAO was not created until 1997 and the first elections in *tambon* Pang Hin Fon would not be held until 2001, it was hoped that the *tambon* would come to be perceived as a legitimate representation of local authority to balance the central state authority of the watershed management unit, RFD and District. As the process of decentralizing to the *tambon* progressed, creating linkages with networks became an important theme in

strategies to increase local institutions' roles in natural resources management (Raks Thai Foundation, n.d.).

It was within this context that the CARE project initiated its activities in *tambon* Pang Hin Fon with a meeting to establish the Mae Suk Watershed Network (which I refer to using as the Upper Network, a short name used by local people) in 1996. The network included the villages (and associated village settlements) of Ban Phui Nua, Ban Phui Tai, San Pu Loei, Kong Bot, and Mae Ngaan Luang, which represent the entire Mae Suk upstream area. Until this point, Ban Phui Nua Headman Yis had been the main mediator of conflict in the area. His jurisdiction covered the territory of the administrative village including Ban Phui Nua, Ban Phui Tai and Ban Phui Karieng, which has since been divided into two. This meant that he was directly involved in negotiating virtually all the conflicts over land that had occurred. Although the Hmong had generally proven themselves to be uninterested in negotiating with the Karen, Yis was respected as a reasonable leader who was genuinely interested in dealing with the area's problems. There was also a lack of leadership on the part of the Karen villages, particularly San Pu Loei. Given that the conflict between San Pu Loei and Ban Phui Nua was the driving force for the establishment of the network, it was a logical decision to make the Ban Phui Nua headman the president of the network, while the headman of San Pu Loei would serve as the vice-president.

In practical operation, the Upper Network made initial efforts to delineate boundaries between agricultural land and forestland in conflicting villages, and in 1997 the network was successful in facilitating a solution to encroachment of a Hmong farmer on San Pu Loei village protected forestland. The verbal agreement, made between village leaders, provided a solution to this immediate problem, but the pressures of land scarcity felt by the Hmong in Ban Phui Nua made it clear that the network would still face considerable challenges in controlling the expansion of agricultural land. But there was no regular system of monitoring land use, and although it seemed that small conflicts could be negotiated successfully on a case-by-case basis, it was still difficult to bring about broad changes in farmers' behavior based simply upon the networks' establishment of ill-defined land use regulations. Clan politics, as described in Chapter Three, continued to hinder village level collective action in Ban Phui Nua, and the tension with San Pu Loei over water use continued.

Moreover, tensions between Hmong farmers in Ban Phui Tai and the Karen village of Ban Phui Karieng started to mount in 2000 over access to upland fields. Ban Phui Karieng villagers had decided to increase their village conservation forest by taking fallow fields permanently out of production, but the Hmong of Ban Phui Tai claimed that they had rights to use this fallow land. However negotiations were conducted primarily between the leadership of the two villages, without a significant role for the network. After the tension, it was more convenient for the leaders to gather to make a decision without involving the disputants directly and generating more public conflict among the disputants.

In 2004, there was another investigation trip to the upper areas. This time, the members of the team included the Forest Protection Units from Nang Lae and Na Hong (located in another watershed), Mae Tho park officials, the *kamnans* of Mae Suk, Chang Khoeng and Pang Hin Fon, the TAO chairman, and representatives of the Mae Suk Network. During this trip, the delegation brought the foreign labor issue to the table, further complicating the dialogue process. The Karen *kamnan* of Pang Hin Fon explained that the more than 200 foreign laborers hired by the Hmong were used for cultivation activities, but not for clearance of forest to expand cultivated area. Although his position was supportive of the Hmong, the local Karen are very keen to have this problem solved. Since the Hmong cultivate fields located within Karen village boundaries, the presence of foreign labor is a potential legal problem for the Karen.

The network currently meets once a year, a meeting of village leaders, and its main activity has become the construction of firebreaks before the burning season in December. Firebreaks are recognized as important by all villages and are relatively uncontroversial, which makes this activity the most conducive to collective action among villages in the network. Currently, there is only limited participation of government representatives, and CARE support to the network ended in 2004. Generalized awareness of the Upper Network and its activities is low among villagers, but the leaders consider it to be an important resource. For the Hmong, this type of loose coalition of village leaders that deals with problems arising between ridge-top villages is agreeable because it fits with customary role of village leaders as facilitators of interaction with outsiders. The Karen have had more indirect exposure to ideas of participatory processes, through the experience of Karen networks in Mae Chaem and beyond[1]. But the Mae Suk Karen's basic preference is still for negotiations led by village leaders.

It is interesting to note that the Upper Network was limited to villages in the upper watershed. Although the primary objective of the network was to address conflict among upland resource users, the focus on the upland also reflects popular lowland perceptions that watershed problems are concerned primarily with addressing a problem of 'encroachment' upstream and conducting reforestation activities. In other words, in the formation of the Upper Network, watershed management was conceptualized as an upland problem, to be addressed in the uplands, rather than a matter of interests that are inter-linked throughout a natural system.

3. Linking upstream and downstream villages: Mae Suk Watershed Management Network

Of course, the resource management problems between Karen and Hmong villages in the upper areas of the Mae Suk watershed did not go unnoticed, and downstream farmers have complained of increasingly less reliable water supplies since the Hmong moved into the upper watershed. But in order to understand the local political ecology of the Mae Suk networks, it is necessary to extend the scope of analysis to include the downstream Khon Muang communities.

These villages – Ban Mae Suk, Ban Kong Kaan, Ban Phrao Num and Ban Ton Taan – have lived side-by-side for several generations, creating linkages through intermarriage, sharing water in the *muang fai* systems and deepening their participation in diversified market production. The area is also an important Buddhist site for people in Mae Chaem and further. Allowing for a minimum level of tension and competition between the four villages, they currently form a relatively cohesive social unit with regards to water tension with upstream villages. This, and the simple fact of their geographic, economic and cultural proximity to the centers of official authority in Mae Chaem have meant that they have easily dominated the efforts to establish new upstream-downstream relationships. Nevertheless, the 2003 founding of the Mae Chaem Watershed Management Network was the first formal attempt to bring the varying interests in the watershed together, and provides many useful lessons.

3.1 Ethnic interactions in the founding of downstream settlements

Local oral tradition from the lower Mae Suk watershed reflects the widely heard story of how the Lawa of the 15th and 16th centuries helped spread Buddhism across Northern Thailand. It is believed that most of the Mae Chaem valley population was originally Lawa, but lived in close proximity to the Yuan (the Tai group who are now known as Khon Muang), who have been present in small numbers in the area from the 13th century. Ban Phrao Num is known as an old Yuan village in the Mae Chaem valley, but local people believe that the Lawa had established a settlement in the area of Ban Kong Kaan, clearing fields out of the forest in the foothills around the mouth of the Mae Suk stream. The Kong Kaan oral tradition tells of the construction of the Phra Jao Ton Luang Buddha image by the Lawa, sometime during the 15th and 16th centuries. In a joint effort led by these Lawa, including "*jao muang, chao baan, chao pa* and *chao doi*" ("district officials, people from the village, people from the forest and people from the hills"), it is likely that the Lawa, Yuan and Karen worked together to construct the Wat Sri Muang Ma temple to house the image (Wat Kong Kaan, 2004).[2]

The story of Kong Kaan resumes around 1840, when Karen and Lawa settlers re-entered the lower Mae Suk area, clearing forest for upland fields and establishing a settlement. At this time, which corresponds with a general period of revitalization of the Mae Chaem valley population (Foithong, 2003), the Phra Jao Ton Luang image was rediscovered amidst the forest regrowth hiding Wat Sri Muang Ma. The image became an object of devotion among Karen and Lawa in the western Mae Chaem hills, who are reported to have come from all directions to pay their respects, as well as the local Yuan population of the Mae Chaem valley. The temple was rebuilt and named Wat Kong Kaan (Wat Kong Kaan, 2004).

Shortly after, Khon Muang from the village of Phrao Num came to Kong Kaan, settling in the village and constructing an irrigation canal from present-day Mae Suk to Kong Kaan (Wat Kong Kaan, 2004). In line with a common historical motif in Mae Chaem, local Karen elders believe that many of the Karen and Lawa living in the area moved to land higher up in the Mae Suk watershed to avoid direct conflict with the Khon Muang. This development laid the technological and social foundations for the irrigation system that currently supports the Khon Muang villages of the lower Mae Suk watershed. Much of this area was forested with teak, and allocation of land for logging concessions resulted in the

loss of much of the lower watershed's forest. British teak logging firms entered the Mae Chaem valley sometime around 1880 (Renard, n.d.). The Mae Suk watershed area was logged with some intensity by Thai firms until the mid-1900s (Pinkaew, 2003), resulting in the loss or alteration of downstream forests.

3.2 First signs of tension: Khon Muang, Hmong and policy interventions

The early 1900s saw the arrival of the Hmong in Mae Chaem. At the outset, the Hmong and their Karen and Lawa neighbors established relations based on employment and a small amount of trading. Small-scale conflicts over upland fields and forests were not uncommon. The downstream Khon Muang were also aware of this new group in the ridge-top landscape. The Hmong were quickly incorporated into the local economy through opium production activities. At this time opium was legal, encouraged by the government, and was carried out through Khon Muang middlemen who were in control of marketing. In Ban Phui Nua, the Chinese (Jin Haw) middlemen who were a common part of the Hmong opium marketing system across northern Thailand did not play a large role. By the time the Hmong settled in the upper Mae Suk watershed, Khon Muang middlemen, coming to purchase at the village, were the main source of market access. But increasing interaction with Khon Muang would bring an intensification of tensions in the Mae Suk watershed.

The downstream Mae Suk Khon Muang themselves had started cultivating opium in 1958 as well. As described in Chapter Four, the Hmong occupied opium fields and fallows around Ban Phui Nua and San Pu Loei as the original Khon Muang owners left the production side of the opium economy in response to policy pressure and price drops. The Karen were involved with both Khon Muang and Hmong producers as laborers throughout this time.

Hmong and Khon Muang accounts of the opium economy at this time show the ambiguous position occupied by the Hmong. On one hand, they were engaging in trade with Khon Muang, contributing to the Mae Chaem economy. On the other hand, they were increasingly being accused of conducting illegal and ecologically destructive activities. Opium was banned in Thailand in 1959. The *kamnan* of Ban Thap (which at that time included the present *tambon* Pang Hin Fon), a Khon Muang, owned a wide expanse of land on which he had paid the Hmong to grow opium since the mid-1950s. It is well known that the Hmong have avoided doing wage labor for other people, but these arrangements with

the *kamnan* were an early form of *mao suan*, an arrangement commonly found in the mountains in which a middleman buys the entire field crop at a fixed price.

Not everyone was pleased with the system of opium production that was developing. In 1959, headmen from Ban Kong Kaan, Ban Mae Suk and Ban Ton Taan, led by Headman Singthorn, traveled to the upper watershed area with the police reportedly to arrest Hmong farmers for opium cultivation. It is not clear what catalyzed this action, although some people remember that the Khon Muang village leaders had observed water shortages that they attributed to Hmong expansion of opium fields. This ended in an exchange of gunfire, and the Khon Muang escaped by using the captured Hmong as human shields. While the details of this incident remain somewhat dubious, it clearly had an impact in shaping the relations between these Hmong and Khon Muang villages, and foreshadowed the current conflict.

During the 1960s to the 1980s, government interventions started to intensify, but direct conflict between the Hmong and the Khon Muang villages was not major. In response to the influx of national and international attention to the watersheds of Northern Thailand, the Thai government created Watershed Conservation Units in 1976 in Mae Chaem, to promote conservation and development of upper watershed areas as opium eradication policies were being implemented. Subsequently, government Watershed Management Units were established to facilitate government interventions in areas that had been declared 1A Watershed Forest, the most restricted class of forest in which human activities are technically illegal, through the 1982 Cabinet resolution on watershed classification. The focus on forest planting, which has often been at odds with local peoples' ecological knowledge and livelihood priorities (Pinkaew, 2001), has rendered Watershed Management Units largely irrelevant as an actor in the solution of watershed tensions in the eyes of many upland people. The most noteworthy activity of the Mae Suk Watershed Management Unit was to plant pine trees in the grassland area above Ban Phui Nua. The Mae Suk Watershed Management Unit has played only a minor role in the watershed tensions described in this chapter.

The presence of the military, government development workers and international advisors during this period seems to have defused the tensions between local people for the time being. Conflict between the state and local communities was intensified, however, as policy brought increasingly strict constraints on land use. In the 1980s, the situation started

to change with the end of the communist insurgency, signs of success in crop replacement and improved basic social infrastructure. Upstream-downstream tension involving Hmong and Khon Muang became more visible at this time.

3.3 Establishment of the Mae Suk Watershed Management Network

In 1997, when the Upper Network was experiencing problems in dealing with forest encroachment, the downstream farmers encouraged Ban Mae Suk Headman Thongsuk to lead a team of investigators to initiate a dialog with the upstream villages, primarily Ban Phui Nua and San Pu Loei. Media reporting had raised public concerns over the safety of upland vegetables because of the high level of chemical inputs being used. Conflict over Hmong pesticide use had been seen since the mid 1980s, when cash crops started to boom (Paiboon, 2003). These concerns reached from the Mae Chaem District town all the way to Bangkok. In that year a medical research project from Chiang Mai University discovered high levels of toxins in the blood of the villagers living downstream of the Hmong and Karen. Villagers also reported that livestock had contracted disease and some had died mysteriously. The Mae Suk upstream-downstream conflict was becoming increasingly complex, and now included not only forest encroachment and seasonal water shortages, but water quality as well.

It was at this time that lowland village leaders began to assert themselves in the upper watershed area. Between 1998 and 2005, leaders from lowland villages, often accompanied by government officials, made seven trips to investigate claims of forest cutting in the upland villages. According to downstream villagers, the water shortages in the dry season of 2001 were more severe than usual. An investigation team from the downstream villages visited the upper watershed and reported encroachment on forest land and an increase in pipe irrigation. This team discussed the forest clearing in the field with the Hmong farmers and village leaders and reached a tentative verbal agreement on limiting the opening of new fields (Ban Phui Nua was the site of the investigation visit). From this time on, upstream pipe irrigation assumed a more prominent position in Khon Muang perceptions of the water problems, although efforts to manage the system continually focused on preventing the expansion of agricultural land.

When forest encroachment problems continued between San Pu Loei and Ban Phui Nua in 2002, Headman Thongsuk led another investigation team consisting of headmen from the

five downstream villages to see if the previous years agreement on opening of new fields was being respected. When they found new forest cutting, they made a report to the Nang Lae Forest Protection Unit. The downstream headmen made another trip, this time accompanied by TAO representatives and a delegation from the irrigation group. Concerned with whether the Hmong-Karen land use agreement brokered by the Upper Network had been violated, the investigation team contacted the Pang Hin Fon TAO Chairman Pridi and *kamnan* Uthai, both Karen from Ban Phui Tai, to convene the disputants. The investigation group was unable to gather the involved parties, despite three attempts. The individuals involved were hesitant at the prospects of facing this investigation team, and unsure of the intentions of the team, the Ban Phui Nua leadership was reluctant at this point to intervene against members of the village. The downstream headmen, led by Headman Vin, obtained CARE's support in establishing preliminary agreement at the District office, and planned to go delineate boundaries around the encroachment area.

After this initiative by Headman Vin, the Hmong could not avoid responding to the Khon Muang-led momentum building against them. Finally, when all disputants were assembled during another investigation trip on March 27, 2003, in the middle of the shallot planting season when sprinkler irrigation reaches peak demand. The investigation group had found three new cultivation areas in the upper reaches of the watershed, estimated at a total of 60 rai, and it was clear that the informal regulation of the Upper Network was not functioning sufficiently. The investigation team and village leaders, with the encouragement of Headman Yis, agreed that a more formalized meeting was necessary. Village leaders agreed to send representatives to discuss options for resolving tension in the watershed, and local officials from the District and relevant line agencies would join.

On May 7, 2003, a meeting was convened with the assistance of ICRAF, who were involved in a project to support the development of land use negotiation systems that involved mapping local land use zoning and facilitating the collection of water data. In addition to representatives from nine upstream (Hmong and Karen) villages and four downstream (Khon Muang) villages, the meeting was attended by a wide range of agencies active in the area, including: the *palat* (centrally-appointed permanent secretary) of Mae Chaem District, Mae Suk Watershed Management Unit, Nang Lae Forest Protection Unit, Mae Suk Extension officer, CARE-Thailand Mae Chaem staff, ICRAF, Mae Suk TAO, Pang Hin Fon TAO, Chang Khoeng TAO, Hak Muang Chaem[3], and Mae Tho National

Park staff. The participants, numbering 27 in all, identified key issue areas requiring attention at the watershed level: forest management, including expansion of agricultural land and fire control; increased water demand in the uplands driven directly by market opportunities and middle-man promotion of new crops, but little water management infrastructure or allocation system; low organizational capacity of villages; influx of foreign (and often illegal) labor; and increasing reliance on chemical inputs to maintain extremely intensive cultivation systems. Representatives from Khon Muang villages led the discussions, and the upstream position was represented primarily by Ban Phui Nua's Headman Yis. ICRAF and CARE staff provided facilitation of the discussions.

In response to this considerably comprehensive problem statement, the participants identified a range of approaches to problem solving in the watershed as well. For example, there was a commonly perceived need for (Mae Suk Watershed Management Network, n.d.):

- *Regulation*: delineation of agriculture and forest land use, regulations to control dry season cultivation, establishment of a water allocation system
- *Coordination*: improving the flow of information between villages
- *Capacity building*: strengthening management organizations at village level, such as village committee to manage cultivation lands, instruction on handling of agricultural chemicals
- *Institution building*: creation of a network committee and governance structure
- *Technology and infrastructure development*: construction of water storage facilities

The complexity of the problem statement and the range of approaches proposed show a nuanced understanding of the challenges. It was also striking to notice how much common ground was established among the diverse range of interests at this stage of consultation and dialog. The meeting to establish the network and set out the objectives, points of agreement and regulations of the network was held on May 23, 2003. As set out in the minutes of the meeting, the responsibilities of the network committee are to: manage and conserve the watershed to prevent encroachment on protected and watershed forest, monitor progress, work together for peaceful problem solving, and survey cultivation, forest and residential areas. More specifically, five basic points of agreement were reached. First, clearing of old forest for new fields would not be permitted. Second, each village would be responsible for making clear delineation between cultivation and forest area.

Third, fallow rotation periods would be set, to limit the cycle of cultivation and allow old fallow areas to regenerate to forest. Fourth, water in the streams would be allocated and utilized appropriately. Finally, any violation of these points would be referred to and considered by the committee.

Headman Vin, a Khon Muang from Ban Phrao Num, was chosen to be the president of the Network. In addition to being a village leader, he was the *kamnan* of *tambon* Mae Suk, as well, and active in local Mae Chaem politics. As *kamnan*, he was an employee of the Ministry of the Interior, and therefore a clear symbol of national administrative authority in the eyes of upper watershed Hmong and Karen farmers. However, he had no direct political or administrative influence over the upstream villages, because his *tambon* is Mae Suk, not Pang Hin Fon. He was also known for strongly voicing displeasure at the agricultural systems of the upland farmers. Headman Yis, from Ban Phui Nua, was elected vice-president, as he is the most articulate representative of upland Mae Suk interests. For the Network, it was logical for him to be involved as an officer, because there was no doubt that much of the negotiations would involve Ban Phui Nua as a central participant. The fact that he is the leader of the upper network made the decision all the more logical in the eyes of many. Headman Yis reluctantly agreed to the position, because he had long realized that there will have to be some sort of institutionalized dialog process between upland and lowland farmers, if the situation is to be handled before outright violent conflict broke out. The difficulty of representing upstream interests in the Network would come as no surprise to him.

San Pu Loei occupies an interesting position between the Hmong and Khon Muang. The Karen face a dilemma in strategically thinking about how to align themselves within the watershed. Automobile road access to San Pu Loei is only through Ban Phui, a 90-minute drive from Mae Chaem. Motorcycles, however, can reach Mae Chaem in a much shorter time along the dirt road through Ban Mae Suk and Ban Kong Kaan. This road has been the major route for San Pu Loei Karen, meaning that they are in frequent contact with downstream Khon Muang. San Pu Loei Headman Kongdee is acutely aware of his village's problems with Ban Phui Nua, and the potential political benefits of a close relationship with the downstream villages are clear. Kongdee, having assumed the headman position only in 2005, sees has expressed much more interest than the previous headman in aligning San Pu Loei with the Khon Muang villages to deal with his Hmong

neighbors. For him, the Hmong encroachment on San Pu Loei watershed forests provides a convenient way of linking with the downstream interests.

The network defined for itself a role in providing information, training and facilitation. The biggest success of the network has been its effort to educate farmers about the health and environmental dangers of agricultural chemicals. Farmers were provided with information about the threats to them and their families, while instruction and encouragement regarding proper disposal of chemical containers resulted in less unnecessary pollution. Hmong farmers mention this achievement as a positive contribution from the network, and hint that more activities such as these could enable uplanders and lowlanders to establish a basis of trust.

Such a network, as a coalition of villages, must rely on village-level governance for much of its daily functioning. According to the vision set out in the Network's founding, the role of the village representatives in disseminating information, communicating decisions, facilitating monitoring, and representing village interests are key elements contributing to the Network. Similarly, the village committee and the village conservation committee play a role in bridging Network and individuals. If an individual wants to make use of timber in the village forests, to build a house, for example, the permission is given by the village committee. The Network committee provides regular monitoring of these activities to ensure compliance with the basic agreement. If forest clearing for new fields is detected, the problem will be turned over to the authorities for consideration according to national laws. Here we can see a basic vision of subsidiarity, in which problems are addressed at the lowest appropriate level, and then 'bumped up' to a higher level when the geographic scale or scope of authority becomes problematic. However, a recent survey[4] has indicated that local awareness of the Mae Suk Network is very low among villagers throughout the watershed, particularly in the upstream villages. There is still a dominant feeling that these problems should be dealt with by village leadership, meaning that there is very little sense of what role individuals might play within a network.

The network agreement also states that any other problems involving land, forest or water resources in the villages should first be handled by the village conservation committee, and referred to the network for facilitation in the event that a local solution is not reachable. The water problems between Ban Phui Nua and San Pu Loei would be a logical candidate for network attention – not only is the problem situated in the grey area between informal

and formal village governance, it is an issue of concern to downstream villages. However, given that the network is dominated by downstream voices, neither the Hmong nor the Karen see any possible benefit in calling in the network. In fact, network involvement would probably be detrimental to both villages, as the representatives from the downstream villages would no doubt demand that irrigation be halted or drastically reduced.

Linkages with government officials are another key area of institutional innovation needed in the Mae Suk watershed. Establishing institutional relationships with various levels of official authority can be important tools for managing the limitations to accountability and enforcement encountered in networks. Upstream villagers have described how the presence of official authority is often unpredictable, and to date has not been managed in a constructive way. For the Khon Muang, involving government officials is the only way to get the uplanders to pay necessary attention to their concerns. Thus, the problem of when, how and which government officials should be involved is important for all stakeholders. In the eyes of one upstream informant, the Mae Suk network has been a way for Khon Muang to legitimately get official support for the local interests.

4. Discussion: Practical constraints to network activity

On paper, the Mae Suk Network looked like a promising institutional innovation. In practice, it has been plagued with problems that threaten its effectiveness. The network has never met on a regular basis. Network action has typically been ‘reactive’, in that network leaders call a meeting when there is a problem. This means that gatherings of the network often take place amidst the tension of dry season water shortages. In the past year, uplanders have made statements such as “The network did not come up this year”, illustrating their perception of the Mae Suk Network as a lowland response mechanism. Thus, it is difficult to describe the Network as a real multi-stakeholder institution.

In the Mae Suk watershed networks, there is a basic problem of stakeholder participation. Villagers’ interest in the networks is low and awareness of the networks’ objectives is low. As described above, the networks survive because of the efforts of a handful of village leaders. However, as an analytical model the legitimacy framework has some relevance for the Mae Suk Network, where the desired outcome of the network at this stage is a fundamental platform for dialog among stakeholders. Procedural legitimacy concerns the founding of the network and the way its activities have been conducted. Substantive

legitimacy refers in the short term to the establishment of a functioning institution. A longer view would be concerned with actually influencing the management of forest, water and land in a way that reduces conflict. Perceptions of legitimacy, synthesized from discussions with farmers and village leaders on the history and activities of the network, vary throughout the watershed. Figure 5-4 presents these perceptions.

Table 5-2: Legitimacy perceptions for Mae Suk Network

	Hmong	Karen	Khon Muang
Procedural Legitimacy	LOW	MEDIUM	HIGH
Substantive Legitimacy	MEDIUM	HIGH	HIGH
PARTICIPATION	LOW	MEDIUM	HIGH

For the Khon Muang, the drivers of the network, perceptions of both procedural and substantive legitimacy are high. As currently configured, the network is based on their organizational principles (largely derived from *muang faai* organization) and prioritizes their interests in water allocation. Khon Muang farmers have participated enthusiastically in activities of the Mae Suk Network. Karen stakeholders, as upstream water users, are somewhat more reserved in their perceptions of procedural legitimacy. They express concerns at the way in which the Khon Muang have used their political influence with government agencies in an unpredictable way to leverage pressure on upstream farmers. At the same time, the Karen recognize the basic arguments of the Khon Muang, and to a certain degree perceive a common threat from the Hmong. Karen have participated in the Network in a passive way, and have not taken the initiative to articulate strongly their position. The Hmong perceive the Network to have low procedural legitimacy. Khon Muang initiatives have appeared antagonistic and threatening to them. Although it is not clear what type of process would be agreeable to them, if any, it is clear that the Network has not been able to instill a sense of confidence among the Hmong. In terms of substantive legitimacy, the Hmong have only medium confidence. This is partially because they have not been convinced that the water shortages exist as claimed by downstream users; neither are they sure that changing their use patterns will solve the water problems. The Hmong feel as well that they are being asked to make drastic changes that may threaten their livelihoods, while lowlanders are free to pursue whatever sort of resource management they like. Moreover, there is a sense that the water issue is only one manifestation of lowland society's distrust of the Hmong. Not surprisingly, the Hmong have participated to the minimal degree possible. In terms of substantive legitimacy, all

three groups have some confidence in the theoretical benefits that could be had from a functioning network.

Based on this analysis, the Mae Suk Watershed has demonstrated two shortcomings. First, the Khon Muang domination of the formation and operation of the network has alienated the Hmong, and to a slightly lesser degree, Karen. At the same time, the network vision has not convinced stakeholders upstream that it can improve livelihoods and ecological conditions in the watershed. An approach that emphasized the process of confidence building among the groups, focusing on dialog and exchange of information and views, could potentially increase the perception of procedural legitimacy. With greater confidence in the functioning of the network, there would arguably be more potential for devising activities to address the conflict issues in the watershed in a collaborative way. These are particularly pertinent at the Mae Suk level because there is no shared infrastructure to provide a basis for negotiation. In the absence of the physical linkages of water allocation technology, the need for an institution that satisfies stakeholders' requirements of legitimacy becomes all the more important. The Committee leaders will have to take the initiative in organizing the first efforts to build confidence in the Committee. Without a strong lead, it is highly unlikely that farmers will seriously consider the compromises in individual and group behavior that a negotiation process will require.

4. Conclusion

Within the rising atmosphere of tension surrounding land use in the uplands and perceived impacts on downstream communities, two networks have been created in the Mae Suk watershed. Both were catalyzed by external actors, but have relied primarily on their own initiatives to guide their activities. Membership in the networks is achieved primarily through village representatives. Neither network has been successful in creating a sense of shared interest among its members, which is intimately related to the fact that network activities have generally been 'reactive' rather than 'proactive'. The discussion has been either too micro ("farmers in Valley X from Village A must stop irrigating") or too macro ("uplanders are the source of Mae Chaem water problems").

The Upper Network provided a shared platform which village leaders fall back onto when inter-village tension proved too much for informal problem-solving. The negotiation function was backed up by cooperative activities to construct fire-breaks, which also

helped to deepen the relationship between members. However, there has been no effort to discuss rights to water extraction. Moreover, the network has conspicuously opted to leave the San Pu Loei-Ban Phui Nua water conflict to informal channels, partially at least, because the leadership feels that the complexity of this conflict and its inevitable linkages to on-going forest management problems, can not be dealt with by the Upper Network and Mae Suk Networks in their current form.

The Mae Suk Network has contributed to the polarization of upstream-downstream interests in the Mae Suk watershed. Khon Muang inclusion of official authorities has appeared to uplanders as an unpredictable factor in their relations with downstream villages. At the outset of the Network's construction, it appeared that Hmong and Karen interests were being pushed into alignment against the common downstream threat. But the San Pu Loei-Ban Phui Nua conflict continues to stress the relationship between these two villages. This conflict sets the basic tone for Hmong and Karen relations in the area. The Karen find themselves in a precarious position, divided between interests shared with both the Hmong and the Khon Muang. All sides are frustrated by differing perceptions of the needs for voluntary participation and some sort of external regulation. In terms of institutional development, the Network has not addressed the confidence building steps needed to get past the differing perceptions of network legitimacy.

[1] Karen were relatively quick to organize to pressure for recognition of collective land rights. Local leaders such as Po Luang Joni Odochao of the Mae Wang watershed, were instrumental in calling for and institutionalizing collaboration among Karen villages, often drawing upon Karen customary practices of forest management in response to the publicly held image of environmentally destructive uplanders. IMPECT was also instrumental in assisting in the formation of the networks such as the Karen Network for Culture and Environment (http:/karenpeople.com). The Christian Karen have been successful in organizing individuals and villages for collective action as well.

[2] Even though most of the Mae Suk river is in *tambon* Pang Hin Fon (as opposed to *tambon* Mae Suk, adjacent to the north), the historical and cultural importance of the two Khon Muang villages at the confluence of the Mae Suk and the Mae Chaem rivers, Ban Mae Suk and Ban Kong Kaan, resulted in the somewhat confusing name. According to Kong Kaan elders, the Yuan drove the Lawa out of Lamphun into Mae Chaem, where they regrouped and reorganized their army. They put up a major resistance to the Yuan forces at Mae Suk, and the leader of the Lawa was reported to have fled up to the area outside of Thung Ya. The Lawa villages along the western ridge of Pang Hin Fon and the Mae Hong Son-Chiang Mai border area are said to be the descendants of this Lawa army. It is also likely that the Mae Suk area was a point of entry for invading Burmese armies in the 16-18th centuries, which resulted in a drastic depopulation of the Mae Chaem valley. Apparently some local people resisted Burmese rule. Mae Suk means 'the river of battle', and local tradition remembers the construction of trenches in this area (Renard, n.d). It would make sense that invading Burmese armies would come over the mountains through the area around the Mae Suk river. According to both legends, "The River of Battle" (Mae Suk) played an important role in local history.

[3] Hak Muang Chaem was introduced in Chapter Two as a key actor in the establishment of the watershed management network movement of Mae Chaem.

[4] This is based on fieldwork by Thitthikorn Yawicha , conducted for her thesis at Chiang Mai University and in conjunction with the ICRAF REPSI project.

CHAPTER SIX

Networks and water at the intersection of upland-lowland relations

This chapter relates the Mae Suk watershed management networks to the broader context of networks and resource governance in northern Thailand. Water has come to dominate the upland-lowland relationship in the area, but there is a body of emerging experience that highlights the challenges of dealing with high institutional complexity. The government is providing a larger institutional context for watershed management institutions, and local networks have begun to respond to opportunities they perceive.

The experience with watershed networks in Mae Chaem has done two things. First, networks have helped focus the attention away from the general and contentious discussion of forest loss and its impacts on hydrology towards more tangible concern for water use. Second, upstream-downstream water conflict has been located more clearly within the political economy of larger upland-lowland tensions. Third, the difficulties that watershed networks face in dealing with resource conflict have raised awareness of the needs for continued institutional innovation, including linkages with other levels of resource governance. This chapter places the upstream-downstream conflict examined in the previous chapter into the broader context of upland-lowland relationships in northern Thailand.

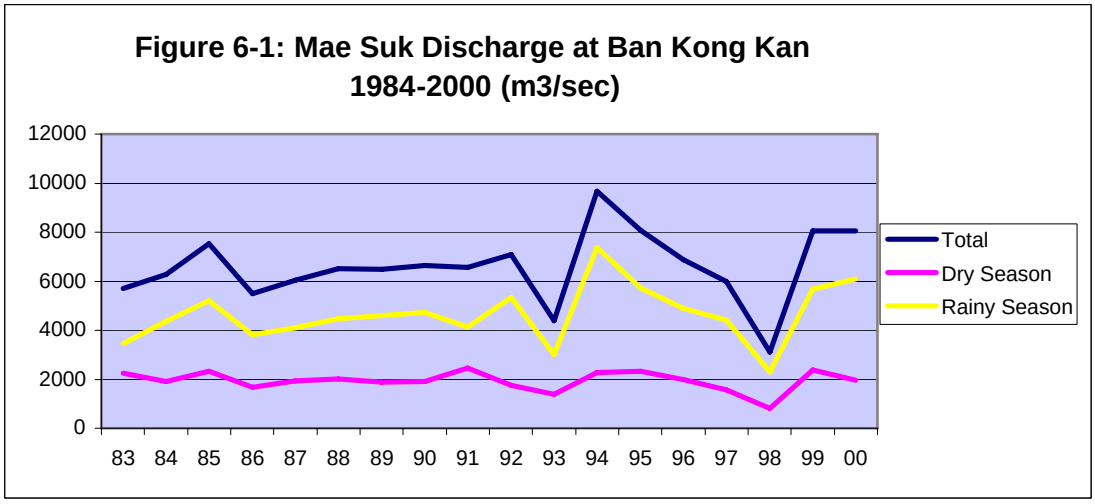
The complexity involved in merging the nested relationships of social and ecological systems is captured by the Agenda 21 statement (Chapter 18.21)[1] on managing river basins that "(A)lthough water is managed at various levels in the socio-political system, demand-driven management requires the development of water-related institutions at appropriate levels, taking into account the need for integration with land-use management." Linkages between these systems, in the form of competition for resources among stakeholders, are numerous and complex, but the structures and mechanisms to provide effective and equitable solutions to resource conflict are in the process of being developed, and networks of communities, villages and watersheds have begun to play a role. In northern Thailand, a large challenge is to bridge the upland-lowland divide.

1. Land use change and water use: The ambiguity of supply and demand

Despite its shortcomings as an institution of resource governance, the formation of the Mae Suk Network represents a significant shift in perceptions. Over the past five years, there has been a shift in attention in the Mae Suk watershed from forest loss and its impacts on water supply to the growth of water demand from the expansion of sprinkler irrigation. While this may be a more constructive view, with more tangible options for management, downstream demand dynamics have not yet been recognized as a factor of equal importance nor analyzed in any depth.

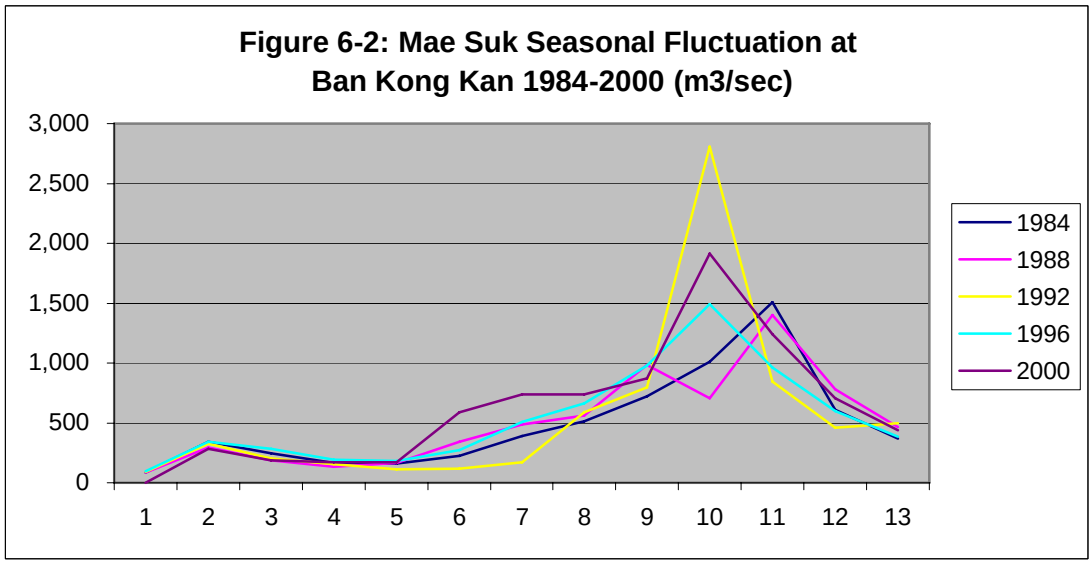
Headman Singthorn's first trip to arrest the Hmong was driven by villagers' complaints about water shortage. Today, farmers claim that over the past ten years, in addition to dry season water shortages, flooding has become more frequent and severe, and sediment load has increased drastically. All of these are attributed to changes in the upstream landscape. Despite these perceptions, however, the relationships between forest and water are still debated in the scientific community[2]. Walker (2002) argues that the focus on water supply and its claimed linkages to the extent and type of forest cover has shifted focus away from the reality of increasing water demand in both upland and lowland areas. This reflects a discourse in which mainstream positions, both official and unofficial, create a situation where upland forest cover and water supply are linked in a poorly documented, but ideologically definite relationship. The uplanders' roles are thus constrained to being protectors of the forest, and their rights as legitimate users of water are denied. He concludes that a focus on demand requires regulation of demand throughout the system, in recognition that dry season demand has increased in both upland and lowland areas.

In Mae Suk, there is very little information on water use or availability. What does exist has not been used in dialog with or by the local communities. Unfortunately, the data set ends in 2000, just as sprinkler irrigation began to expand. Nevertheless, this data is interesting because it shows that there was no significant change in discharge at Kong Kaan, at the convergence of the Mae Suk and Mae Chaem rivers. While it is possible that the growth in upstream irrigation since 2000 has had some impact, this data suggests that clearing of forest, which progressed most rapidly in the period between 1985-1995, did not have a significant impact on downstream water availability. There was a marked decline in 1994-1998, but total discharge levels recovered in 1999 and 2000 (Figure 6-1).



Source: Department of Water Resources, Ministry of Natural Resources and Environment

The strongest complaint from downstream farmers is that dry season flows have decreased. In fact, dry season discharge has remained virtually constant between 1984 and 2000, with the largest fluctuation appearing consistently at the end of the rainy season (Figure 6-2).



Source: Department of Water Resources, Ministry of Natural Resources and Environment

This suggests that perceived water shortages may be at least partially a question of growing downstream demand. Analysis of aerial photographs from 1954-1996 show several clear trends in land use that are relevant to the Mae Suk watershed problems. Because of data limitations, the information presented here is for land use *within* the Mae Suk watershed

boundaries. Therefore, it can be assumed that if one includes the Ton Taan and Phrao Num land located outside the watershed, the actual figures are significantly higher, and the extent of water use is much broader.

According to the analysis of land use change based on interpretation of aerial photos, the lowland areas of the Mae Suk watershed have experienced forest encroachment, expansion of upland fields and increased demand for irrigation. First, upland fields in the Khon Muang villages increased dramatically in the period between 1984-1996, coinciding with the period of upstream expansion of fields in reaction to the diversification of opportunities to produce for the market. These fields are utilized only in the rainy season, but they represent a substantial source of income for these villages. More importantly, paddy land has expanded slightly from 106 ha in 1954 to 200 ha in 1996, a marked increase of 93ha or almost 90 percent. Between 1984 and 2001, the irrigation infrastructure was overhauled, increasing the reliability of water supply. The boom in cash crops during this period encouraged farmers to expand cultivated area and extend water use throughout the dry season.

One activity that has enjoyed success in other watershed networks is the gathering of information on stream flows to build a data platform for discussion among villages in the watershed. Shortly after the establishment of the network, ICRAF supported villagers to collect water data in Kong Kaan and Ban Phui Nua, but neither site was able to produce a usable dataset.

In fact, a prominent Khon Muang leader of the network has rejected outright the need for any data collection because according to his words, “I can see what the problem is when looking at the canals and river, all of which flow from upland to lowland. The water comes from upstream, the problems come from upstream”. From this extreme point of view, there is very little space for dialog and negotiation; the problem is rather one of establishing rules and enforcing them. Upstream informants frequently report that they don’t believe the problem is as bad as the lowlanders claim. The Khon Muang have not done anything to prove their assertions of water shortage, but have consistently made a show of physical force in conducting inspection trips, often bearing arms. Regardless, uplanders, especially the Hmong, are wary of data collection of this type, as they fear that such information will be used against them. Ban Phui Nua has already had bad experiences with data regarding chemical inputs in their agriculture system.

The basic questions remain unanswered. Who is using water? How much are they using? When and where are they using it? The lack of clarity about downstream demand trends is just one issue. In the uplands, the level and distribution of water use is not known. For example, there has been intensive development of upper Mae Suk water sources, but the Mae Ngaan and Mae Khom streams, both of which have more upper forest cover and are thought locally to provide more water to the Mae Suk river than the upper Mae Suk area in any case, have less dry season extraction. Thus, the broad-brush criticism of 'upstream water' use is not helpful in addressing the problem.

There is also discussion about whether paddy flooding or sprinkler irrigation is more costly in terms of the dry season water budget. Considering the upstream reliance on sprinklers and the downstream dependence on flood irrigation, this is a highly relevant point at the watershed level. In the Ban Phui Nua-Ban Phui Tai area, the same tension is often articulated in terms of ethnicity, as the Karen have constructed more paddy fields and prefer these fields for dry season cropping to upland fields. Without a more concrete understanding of the relative contribution to perceived water shortages, it is difficult to imagine how a constructive dialogue can be established. To be sure, the downstream Khon Muang have historically established rights to water, one key factor of many irrigation management arrangements, but the over simplification of the problem ignores the Hmong and Karen communities' right to livelihood. This alienation prevents the creation of a sense of shared social space at the watershed level, and hinders the development of a watershed community.

2. *Muang faai* and the Mae Suk Network

The *muang faai* groups, or customary weir management institutions that are common across the mountains of Southeast Asia, have been a major source of cohesion among Khon Muang communities in northern Thailand. In Mae Suk, the *muang faai* system links the paddy fields of the four downstream villages in an interdependent network of water delivery infrastructure. Of the downstream villages, two – Phrao Num and Ton Taan – have only a very small area of land located within the watershed, but use water from the Mae Suk stream through the irrigation system. Figure 6-3 shows land use for the lower Mae Suk watershed and surrounding downstream area. The extent of paddy land, shown in yellow, reflects the extent of Mae Suk water utilized by downstream farmers. It is common

for *muang faai* systems to deliver water to land from several adjacent villages, and this is the case in the Mae Suk area. In Mae Suk, the *muang faai* group has been one of several actors exerting pressure in matters of upstream-downstream conflict.

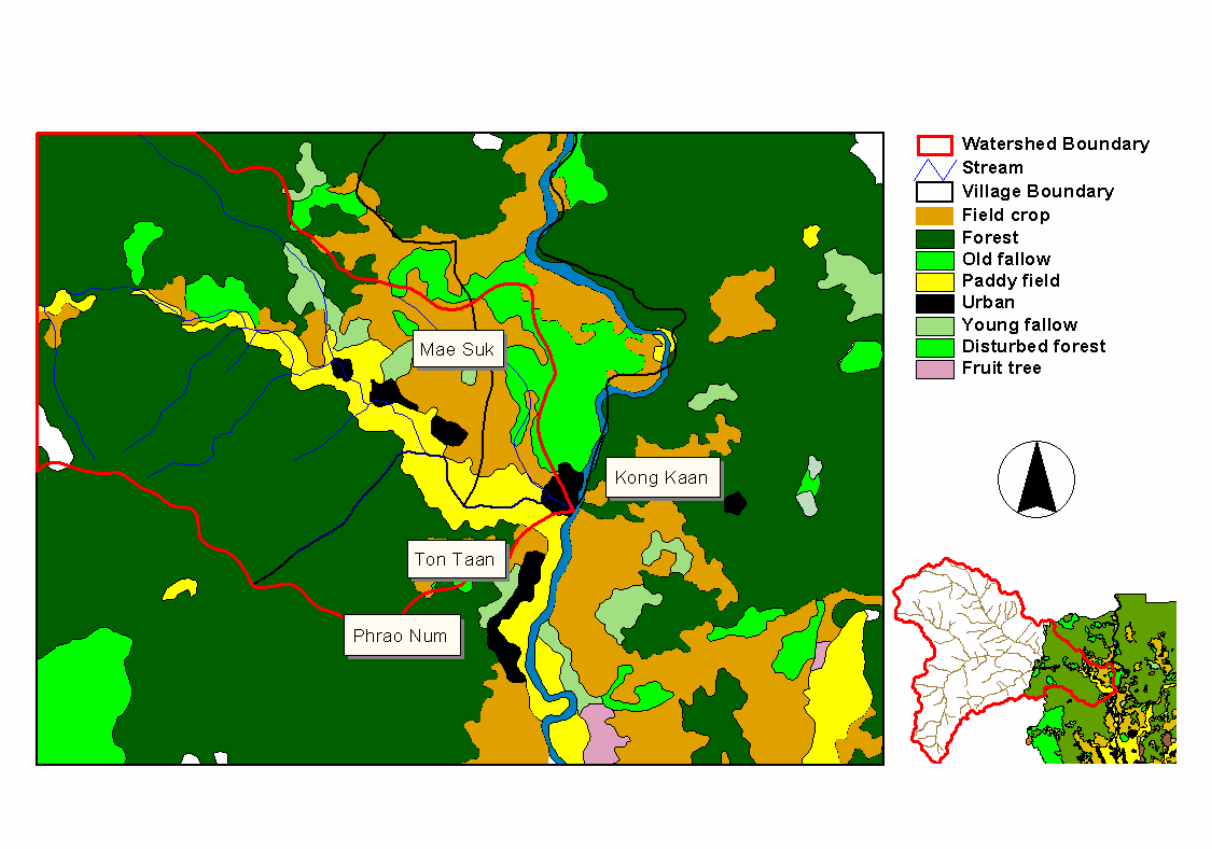


Figure 6-3: Mae Suk Watershed downstream land use, 2001

Source: ICRAF-Chiang Mai Participatory Mapping, 2001

2.1 Customary governance of water in Khon Muang communities

As effective institutions of common property management and community-based resource management, *muang faai* systems have been well-researched (See, for example Vanpen (1986), Uraiwan (1983), Tanabe (1994)). The *muang faai* system, as well as the members of the user group (*muu faai*), is managed by the *kae muang*, an elected position that is responsible for coordination and allocation of water among the *luuk muu faai* (water users), resolution of dispute, and management of repairs and maintenance to the weirs and canals. In practice, the *kae muang* is assisted by the *po faai*, a hereditary position that monitors water diversions and is in charge of the *liang phi faai* (weir spirit) ritual. The *laam naam* (or *laam muang*) provides vital assistance to the coordination function of the *kae muang* by disseminating information regarding water allocation, infrastructure maintenance, and

other activities among the *muu faai*. The *muu faai* is composed of individual water users, and membership is derived from water use rights, not land tenure. Thus, the membership of the *muu faai* is in frequent flux.

Although the *kae muang* is vested with a high degree of discretionary authority in managing the operations of the *muu faai*, the basic principles upon which the system works were commonly recorded in the *sanyaa muang faai* (weir management agreement), which was developed and agreed upon by the entire *muu faai*. The *sanyaa muang faai* typically specified such matters as the yearly workplan, fines for failing to fulfill duties or uphold the agreement, fines for water theft, and fines for failing to participate in meetings, among others. The *kae muang* and other irrigation administrators were held accountable by fines for misconduct that were much higher than those for normal *luuk muu faai* (Vanpen, 1998).

Still, small *muang faai* systems, such as those managed in the tributaries of Mae Chaem, have typically been fairly autonomous institutions, with very little linkage to formal government authorities. Indeed, the management structure of these systems has typically not been formally associated with village administration (Tanabe, 1994). It has historically been a common occurrence for *muang faai* management to break down when the expanding systems began to encounter upstream-downstream conflict over water. In this case, infrastructure upgrades often meant that management of the system would come at least partially under the jurisdiction of the Royal Irrigation Department (Tanabe, 1994).

2.2 Muang faai: Shared infrastructure, knowledge and interests

Water users in the downstream Mae Suk area are linked by the common irrigation infrastructure, knowledge systems and norms, and livelihood interests. There are four concrete weirs that feed the paddy land of the four Khon Muang villages. The first and largest of these, *Faai* Kong Kaan, was constructed in 1980 by the Land Development Department. Each of the *faai* has its own *muang faai* governance structure, and the *luuk muu faai* (called *luuk faai* or *dam faai* in this area) take care of all management, operation and maintenance. The *kae muang* (called *kae faai* in this area) performs most administrative tasks in the system, including the *phi faai* ritual, which is performed once every three years. *Kae faai* are elected by the farmers, and hold their position until he retires or the *dam faai* decide that he should be replaced.

Three of the four have membership that crosses village boundaries. In the *Faai* Kong Kaan group, there are 12 positions in the *muang faai* management group. Representatives from each village are responsible for the small issues within the territory of each village, but larger-scale problems within the system are brought to the attention of the *kae faai*. This dual level of management has replaced the customary system, subsuming the tasks of the *po faai* and the *laam naam* within the management group.

Figure 6-4 shows basic data of the downstream, permanent *faai*. The legal status of these *faai* is somewhat complex, with the Royal Irrigation Department (RID) constructing two and the Department of Land Development (DLD) constructing two. Although management of the *faai* and its water is left completely to the user groups, it is interesting to note that the RID provided funds for the repair of the *Faai* Khiaw after it was damaged by heavy stream flow in 2005.

Table 6-1: Mae Suk Weirs, Basic Data, 2005

Name	Year of Concrete Upgrade	Admin Affiliation	Villages served	Number of users (approx)	Area served (approx rai)	User Regs
Faai Nang Lae	1981-1982	RID	Ban Ton Taan Ban Kong Kaan	200	1000	Yes
Faai Kong Kaan	1980-1981	DLD	Ban Kong Kaan Ban Mae Suk Ban Phrao Num	70	450	Yes
Faai Khiaw	2001-2002	DLD	Ban Mae Suk Ban Ton Taan	100	400	No
Faai Mae Suk	1977-1978	RID	Ban Mae Suk	35	700	Yes

Source: Author's fieldwork

The upstream *faai* are less complex with regards to their membership, and their position at the top of the system means that water allocation is not a problem. Po Pan, the *kae faai* of *Faai Khiaw* explained that written regulations were not necessary. Further down in the system, the village membership situation is more complex and *muang faai* regulations are extremely important. Water allocation problems occur within each system, and are experienced only infrequently between systems.

Although exact figures are difficult to obtain, estimates of area receiving water from each *faai* were obtained from the *kae faai*. Farmers grow rice in the paddy land supplied by these weirs in the rainy season, when there is no problem with water shortage. Problems experienced in the rainy season are products of the internal allocation processes, not of a lack of supply from outside of the system. In the dry season, farmers grow beans, garlic and shallots. This is the time of lowest water levels in the stream, and is also the time of

peak demand from upstream sprinkler irrigation water users. Crops are flooded at intervals of six to 12 days, depending upon water availability. According to the *kae faai* of *Faai* Kong Kaan, all the water available in the stream, and the Mae Suk river is reduced to a small stream at its confluence with the Mae Chaem River at this time. Water is allocated among all users, although the volume is not sufficient to support the level of cropping they would like to maintain.

Above these weirs, there are numerous small-scale wood and stone weirs managed by Khon Muang and Karen, and to a much lesser degree, Hmong. Figure 6-4 shows the location of weirs for the entire Mae Suk watershed.

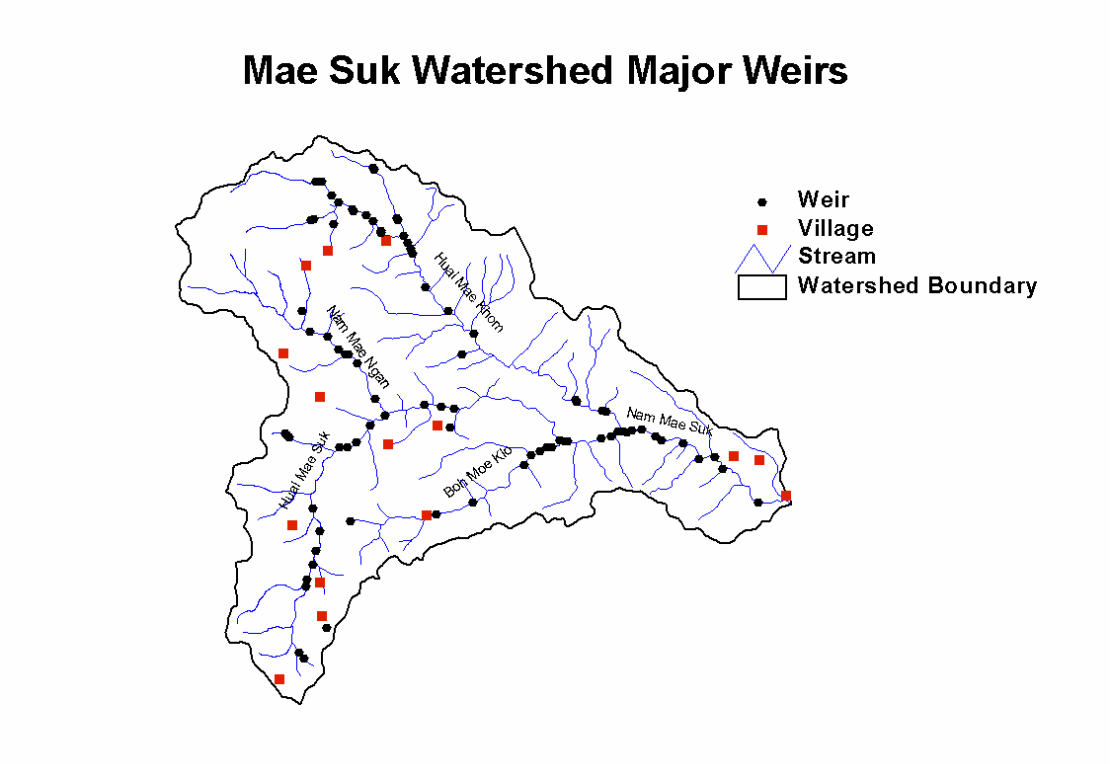


Figure 6-4: Mae Suk major weirs

Source: Author's fieldwork; ICRAF-Chiang Mai GIS data

Nineteen of these are located in the downstream zone, managed by Karen and Khon Muang. This does not include the small-scale PVC irrigation pipes seen in Huai Sai Khao, as they are numerous and often located high up on the tributary streams. The construction of weirs shown here varies, but above the concrete weirs mentioned above, all are less permanent structures. Of the total 83 weirs, 43 are a combination of bamboo and rock or sandbags. The rest are wood or stone. Thus, even with the *muang faai* irrigation

infrastructure, the watershed can be divided into two sections – the upper areas with small-scale, impermanent weirs, and the lower areas with large-scale, permanent weirs.

2.3 Watershed demographics and the mobilization of power

This cursory view on upstream extractive capacity highlights the core of downstream fears for water security. In the context of this threat, a brief examination of the demographics of the watershed shows the importance of the downstream village membership for the network. It can be argued that because of the inclusion of Ban Phrao Num and Ton Taan in the network, the local *muang faai* group has been able to mobilize a significant amount of power in driving the network formation. Table 6-2 shows selected comparative demographic and land use data.

Table 6-2: Mae Suk Comparative Demographic and Land Use Data

Village	Households	Population	Ag Land	Forest Land
Mae Suk	117	495		
Kong Kaan	95	325		
Phrao Num	*167*	*698*		
Ton Taan	*80*	*329*		
Total Downstream	459	1,847	330 ha 1,787 m^2/person	6,574 ha 35,593 m^2/person
Total Upstream	391	2,268	1,580 6,967 m^2/person	7,930 ha 34,965 m^2/person
Total	850	4,115	7,910 ha 19,000 m^2/person	14,504 ha 33,000 m^2/person

Source: Author's fieldwork; ICRAF-Chiang Mai GIS data

The total population of people living in the watershed is 3,088. Although the vast majority of Ton Taan and all of Phrao Num land, and all of their population, are located outside the watershed, they do depend on Mae Suk water for irrigated fields both within and outside of the actual watershed boundaries. The Nam Kueng stream, the other source of irrigation water for these two villages, has become unreliable as the demands placed on it exceed its natural capacity, and the access to Mae Suk water helps make up for shortages in what amounts to a small scale inter-basin transfer of water.

Inclusion of these two villages in the network increases the Khon Muang constituency by more than double, and balances the upstream-downstream population distribution in the watershed. Without these villages, the Khon Muang population is only 26 percent, but in the current network membership with a represented population of 4,115 people, the percentage is increased to approximately 45. With the demographic adjustment made by

the inclusion of Phrao Num and Ton Taan, the Khon Muang were able to justify an equal number of representatives (16) to the Network committee between the upstream and downstream villages. Thus, the current village membership ensured that the Khon Muang voice in the network would be stronger, and securely located the interests of the downstream villages within the larger context of Khon Muang livelihoods in the Mae Chaem district town, separating them further from the livelihood conditions and needs of the upstream villagers.

The downstream area comprises approximately 40 percent of the watershed's total area, and contains 45 percent of the total forested area in the watershed. It is interesting to note that the uplands and lowlands have similar areas of forested land per capita at approximately 3.5 hectares. The forested area category includes fallow fields, either still in an active rotational cultivation system or already out of production returning to forest. In terms of agricultural land, which includes paddy land, permanent field crops, and active rotational plots, the upstream area has almost 0.7 hectares per person, compared to less than 0.2 hectares downstream. It is extremely difficult to calculate the actual extent of dry season cultivated area because at the watershed level it is not clear what portion of agricultural areas are being irrigated. It is clear, however, from interviews throughout the watershed that dry season irrigation has been increasing rapidly over the past five years

2.4 Leveraging political support: Muang faai versus 'khon ton naam'

As a tool of conservation policy in Thailand, the 'watershed' concept has been used in a simplistic discourse that equates lowland water problems with destructive upland activities. Pinkaew asserts that the government's application of the watershed management is "the most controversial notion of how a certain landscape should be defined and controlled" (Pinkaew, 2001:141). Here, the role of *khon ton naam* (inhabitants of the upper watershed) has been defined as a protector of the water supply, making them responsible anywhere water problems are experienced. This view was reconfirmed in August 2005, when Prime Minister Taksin explained that one of the two causes of the historical flooding events of this year was upland minorities' destruction of watershed forest (Bangkok Post, August 18, 2005). Regardless of the holistic view of social-ecological system interactions that watersheds offer, the discourse has been dominated by popular perceptions of water problems, drawn on ethnic stereotypes and generally driven more by emotion than by analysis.

This discourse is deeply rooted among government officials, lowland communities and many local NGOs. The local *muang faai* group played a central role in the high-profile Chom Thong conflict of 1997, leveraging local and external pressure against the upstream Karen and Hmong villages. The downstream Khon Muang farmers blamed the Hmong fruit orchards upstream for water shortages and held protests demanding that the government remove the Hmong from the upper watershed area. The protests intensified, with the Khon Muang blocking the road and cutting Hmong lychee trees on two occasions (Paiboon, 2003). The *muang faai* group had helped establish the Chom Thong Watershed and Environment Conservation Club and received support from a radical Thai NGO, the Dhammanat Foundation for Conservation and Rural Development to press for relocation of the upstream villages (Poffenberger, n.d.). The Conservation Club brought together *muang faai*, the *kamnan*, the village head association, District middle-class and a local Khon Muang politician and directed to focus attention on the Hmong (Thanet, 1994). In the end, this increasingly violent situation was mediated by the Northern Farmers' Network. The upper villages, willing to negotiate and compromise once the threat of physical violence was neutralized by the NRN's mediation, formed a network to establish and carry out a new set of forest management regulations (Paiboon, 2003). The Chom Thong case was raised to a symbolic level of conflict of ideologies and transcended the reality of local resource management issues. The final resolution was in fact enabled by the flexibility of the upland communities that accepted the demand for institutionalized forest management regulations and used this to emphasize their environmental awareness in a world where they were increasingly characterized as destroyers of nature.

The culture of paddy cultivation and the institution of *muang faai* have been identified as one bridge between the Khon Muang and upland groups. Researchers have observed that Karen (Yoshimatsu, 1996) and Lawa (Uraiwan, 1986) communities that adopted paddy production technology also organize themselves according to *muang faai* principles with adaptations according to their own customary practices and social organization. The basic shared core of norms has helped these communities to deal with managing water between villages in the same watershed, despite other cultural or socio-economic differences. For example, in the Mae Wang Watershed *muang faai* management provided a common framework for Karen and Khon Muang communities to establish the Mae Wang Watershed Network that was to set the stage for broader cooperation among upstream and downstream users (Pratuang, 1996). In Mae Suk, however, because of the small scale of

these upland *muang faai* irrigation systems, there is no institutionalized *muang faai* management. Karen farmers in Kong Pot report that water allocation problems encountered within each weir system can be handled directly among the users. Most of these weirs supply the small areas of upstream paddy in the rainy season, but dry season irrigation is increasingly common, especially in the larger upstream tributaries of the Mae Ngaan and Mae Khom streams, and along the main branches of the Mae Suk river. Since the actual reliance of Karen livelihoods in the upper Mae Suk on irrigated paddy is small compared to upland rice, the existence of *muang faai* irrigation should not be over-emphasized as a source of common thinking concerning water management.

The Mae Suk articulation of the watershed discourse has pitted the downstream *muang faai* against upstream sprinkler irrigators. The situation in Mae Suk has not reached the level of conflict experienced in Chom Thong, partially because the external support provided by NGOs such as Care-Thailand and ICRAF was rooted in the belief that watershed problems should be addressed by the watershed villages on a peer-to-peer basis, upon the fundamental recognition of each village's position in the watershed. Neither did downstream villages in Mae Suk ever demand the relocation of the upstream communities, even if the position taken by the Khon Muang has been somewhat violent at times. The downstream tactic in the Chom Thong case was to separate the uplanders and lowlanders, while the Mae Chaem case saw a more constructive effort to create a common space, in the form of the watershed network. Upstream villagers that have been involved in the network confirm the importance of such an approach, but have been discouraged by the attempts to use the network to dominate the social space it was trying to create.

While the *muang faai* has been a symbol of downstream concerns over water, its leadership has not been the strongest voice in driving downstream efforts. As water scarcity has become more of a problem in the past ten years, *kae faai* have coordinated among themselves to lobby the village committee and village conservation group (*klum anurak*) to raise this issue to the watershed level by involving the upstream Karen and Hmong. Although detailed analysis of social linkages in the downstream villages was not conducted, from observation of the daily operation of the *muang faai* system and the local response to the perceived watershed problems, it is evident that they are able to mobilize a significant level of collective action. In effect, Khon Muang farmers have been able to mobilize the social and political resources to 'export' their water allocation problems to the

upland areas. In doing this, they have been able to avoid discussion of water use and demand trends in the downstream areas.

The overlap between membership in *muang faai*, *klum anurak* and village committee has helped to align interests and political power, which were translated into a source of pressure that could be directed at upstream groups. *Kamnan* Vin's positions in the network and the *tambon* have been powerful, as well, and he has been successful in lobbying for Mae Suk TAO support to the network. It is interesting to note that after the 2003-2004 dry season, the lowland villages made a request to the Mae Suk TAO for funding for a water storage project that they hope would provide relief from dry season shortages. Two TAOs will be supporting infrastructure projects in different areas of the watershed, without coordination or assessment of possible impacts. This situation underscores a common hope – shared by both uplanders and lowlanders – for the TAO to provide funds to address water tension in Mae Suk.

3. Trust, tension and institution building

The creation of the Mae Suk Network has created a channel for a few select individuals in the upstream and downstream villages to exchange ideas on the problems they face, and has been successful in addressing problems with less contentious causes, such as the disposal of chemical containers. The general levels of trust among upstream and downstream villages do not appear to have increased significantly as a result of the network, and awareness of and confidence in the network are low. In fact, one of the largest consequences of the network's formation may have been to instill an increased sense of solidarity among the upstream villages as they have been antagonized by *muu faai*-led actions.

3.1 Trust in inter-ethnic relations

Cooperative activity requires a basic level of mutual trust between actors that each will act in good faith. Cooperation does not necessarily require the 'thick trust' of individual belief (Williams, 1988). It is, however, predicated on confidence that individuals will act in a predictable way. Focht and Trachtenberg (2005) have argued that trust is the most important aspect of decision-making in watershed management. This trust consists of two elements: social trust, or judgments of trustworthiness between stakeholders, and official

trust, or stakeholders' judgments of trustworthiness of government decision-makers. Prathuang and Ross (1998) have discussed the tension between villagers and government officials that results from differing visions for watershed management in Mae Chaem. In their anlaysis, village leaders are not able to ensure that villagers respect agreements, while government officials lose villagers' trust by taking antagonistic approaches to policy implementation. In Mae Suk, more than any specific decision-making structure or resource management regulation, these points of distrust – encompassing both social and official trust – have constrained the operation of the network.

In the course of conducting fieldwork, the lack of trust was a constant element of discussions about resource management tensions at all levels – trust between individuals, between villages, between uplanders and lowlanders and between farmers and government agencies. For example, the following illustrate the basic trust problem underlying the institution-building process:

- The history of Khon Muang displays of physical force and unpredictability in involving government agencies has created a feeling of distrust towards lowland initiatives, among both Karen and Hmong.
- Hmong practices of land acquisition, whether the result of Hmong perceptions of usufruct rights or their manipulation of the opium economy have created distrust among the Karen.
- The Karen practice of selling land under ambiguous terms that confuse the authority of individuals and the community over land have reduced the Hmong trust in engaging in agreements with the Karen.
- The difficulty faced by Hmong and Karen leaders in enforcing land use agreements reached at the village level has lowered trust in negotiated agreements in both groups, and among the Khon Muang as well.
- The hesitance of Hmong to respond to Khon Muang during inspection missions caused Khon Muang to doubt the Hmong interest in genuine participation in network activities.
- The Khon Muang blatant rejection of the importance of information regarding water use means that the Hmong and Karen lose confidence in the network as a place to negotiate with Khon Muang.

There is clearly a significant body of experience contributing to the lack of individual trust between farmers in the watershed. It is apparent here that there is also an issue of trust vis a vis the Mae Suk network as a legitimate forum of dispute resolution, as well. Thus, confidence building is critical for the development of networks as an institution of governance. Without a jointly recognized source of authority, the power of the network to make and enforce decisions is only as strong as the bonds of trust that link the members. The role of leaders is key in the process of raising levels of trust, as villagers are clear about their preference for following the lead of people in a position of power, such as the village headman.

The boundaries forming the distinctions between the groups in the watershed are not impermeable, and the perception of upstream and downstream are subject to some fluctuation. The Karen are well known for their flexible position as living 'between hills and plains' (Hayami, 2004) and 'living on the edge' between the Thai and other worlds (Delang, 2003). In Mae Suk, the Karen villages of San Pu Loei and Kong Bot occupy such a geographic position, located between the Khong Muang and Hmong. Having developed irrigated paddy land, all the Karen villages share a basic core of ideas about water management with the Khon Muang. But they have also developed sprinkler irrigation side-by-side with the Hmong. This puts them in an ambiguous position within the watershed. Their livelihoods are increasingly reliant on upland agricultural strategies, and for this reason they share more with their Hmong neighbors. But their conflicts with the Hmong and historical relations with Khon Muang mean that although they are located clearly in the upper watershed zone, they do not identify completely with the Hmong or Khon Muang in their position on resource management in the watershed.

3.2 Multi-stakeholder processes: Experience from Mae Ta Chang Watershed

Watershed management should be viewed as a multi-actor process that brings together a multitude of actors to work towards the common goal of enhanced socio-economic and ecological outcomes. As such, management should focus on building, managing and maintaining collaborative relationships to facilitate the necessary collective action (Imperial and Hennessey, 2000). Experience from other areas in Thailand helps to shine some light on the difficulty of balancing stakeholders in collaborative relationships.

In the Mae Ta Chang watershed, which covers eight *tambons*, competing claims over rights to water between agricultural, domestic, urban and industrial interests resulted in the formation of a watershed management network in 1998 that has demonstrated some of the key principles necessary in multi-stakeholder watershed management. With 60 villages and 40,000 people, the scale of this challenge is clear.

However, Mae Ta Chang is considered a success story in participatory watershed management (Heyd and Neef, 2004). The Mae Ta Chang Water Committee was established in 2001 to bring conflicting water users into dialog. The principles upon which the Mae Ta Chang process was based provide two instructional points of reference for the Mae Suk experience. First, the Mae Ta Chang network structured its functions to work at two levels – a general committee with full representation from each village and tourist resorts (as many as 280 people), and a working committee with two representatives from each *tambon* and two individuals to represent all resorts. This dual-level arrangement allows for broad-based participation stakeholders, while at the same time providing necessary space for leaders to focus on priority issues. Secondly, the network articulated two stages of strategic planning. The first stage focused on information and opinion exchange thereby strengthening capacity and confidence to engage in dialog. The second stage aimed to develop a concrete plan for the management of watershed resources, including a fund raising strategy (Chaiphan, 2002). In Mae Suk, balance between general participation of villagers and the need for strong leaders has been elusive. In effect, the Mae Ta Chang arrangement has recognized the need to structure network activities in a strategic way that addresses both broad confidence building and also trust among local decision-makers. Once the network had established a sufficient level of confidence in the process and trust among the members, the discussion was focused on the tangible issue of allocation of water among users (*Krungthep Turakit*, 26 May 2003). The specific attention to the processes of stakeholder interaction at the early stages, rather than a rush to establish water use regulations, meant that the legitimacy of the Committee was high across the board of actors (Supaporn and Lebel, n.d.).

Three main lessons from the Mae Ta Chang experience are highly relevant for the situation in Mae Suk. First of all, there need to be specific actions to establish a shared forum for exchange of ideas and perspectives. This forum must be linked to a longer-term process of negotiating a plan for water allocation among all users. Second, this process of confidence building and collaborative planning must be accompanied by the creation of a data

platform to support dialog and negotiations. Without concrete and credible information about water use, it is highly unlikely that any discussions between upstream and downstream users will be able to move beyond impassioned accusations and defenses. Moreover, the practical realities of multi-stakeholder decision-making suggest that while full representation in the network is an important condition, there is also a need for a core group of committed individuals who establish strong working bonds among themselves, and take responsibility for advancing the work of the network. Finally, the linkages with *tambon* and government line agencies are clear and predictable (Chaiphan, 2002). In fact, the Committee has drafted guidelines for water use in the watershed, which have been presented to the local *tambon*s and will be adopted as the local water policy. Here we see a mutually reinforcing process, in which the *tambon* lent legitimacy to the process, while the network of local actors jointly created a detailed framework for water management. This agreement will in turn be fed back into the official governance processes of the *tambon* (Supaporn and Lebel, n.d.). The combination of these factors allowed the Mae Ta Chang network to demonstrate how an institution can create the capacity to resolve local conflict.

3.3 Culture and science: Balanced approach to establishing common ground in Mae Khong Kha watershed

In the Mae Khong Kha watershed, located on the eastern bank of the Mae Chaem River at the foot of Doi Inthanon National Park, a multi-village network has addressed water problems simultaneously from two perspectives – science and culture. The Mae Khong Kha watershed is comprised of 11 villages (*pok baan*), of which one is Khon Muang and the rest Karen.

The Mae Khong Kha Watershed Network collects data on water quality, quantity, rainfall, temperature and air pressure from several points in the watershed. Villagers collect data, based on scientific and locally-derived indicators – such as the presence of non-vertebrate species in the stream – to create a shared platform for dialogue concerning water-related issues in the watershed. It is important that the data and indicators are based on a combination of local and scientific knowledge understood and respected by both Karen and Khon Muang. Moreover, there is widespread agreement that in the near future increased competition for water, driven largely by the continued expansion of commercial cropping, will require tools for managing inter-village tension in their watershed. The watershed has long experienced illegal logging by external interests, but a key constraint to the villagers'

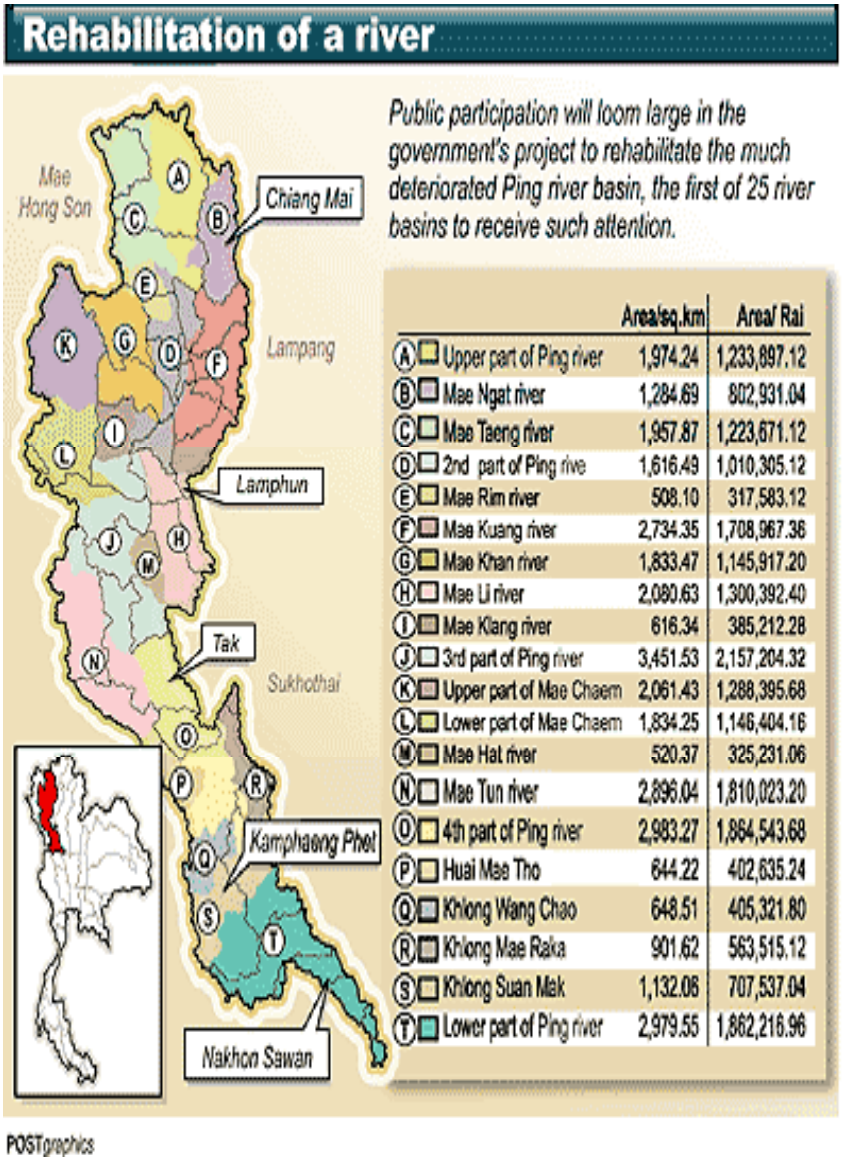
capacity to assert their rights with government authorities has been the lack of credible data concerning their forest resources and traditional management practices. Based on this lesson, the interest in water data is seen as a necessary preparation to deal with future problems.

At the same time, the villages in the watershed have agreed that the network should be a vehicle for strengthening cultural and traditional practices associated with forest management. Po Luang Somkit, the president of the network, sees clear linkages between the cultural strength of the Karen villagers and their capacity to manage their forests. The network has adapted the Karen practice of birth spirit trees (*seif dei pauz*) – in which the umbilical cord of a newborn is tied to a tree, which thereafter cannot be cut – as a cultural tool for resource management at the watershed level. Through *hpa kai seif dei pauz* (setting out spirit-tree areas) ceremonies in which all the watershed villages participate, the network has expanded the community protected forest area.

The network officers stress the importance of these shared activities, both data collection and also forest-related rituals, in building trust among villages. In this case, neither the ethnic complexity nor level of perceived resource scarcity are comparable to the Mae Suk watershed, but the basic principle of confidence building as an objective of the network is relevant. McKinnon (2003: 81) has written of Karen strategies that enable them to "change the forms and images of their beliefs, aspects of culture that mean something to them: find expression in the language and symbols of the past to speak to the present". The Mae Khong Kha network has been able to work with the existing Karen practice of *dei pauz* to give it new meaning and geographic scope. In Mae Suk, however, the challenge with three ethnic groups would be to create new, shared practices or institutions acceptable to all.

3.4 Mae Ping Initiative: Representing ethnic voices at higher levels of decision making

The Mae Suk situation demonstrates that even at this level, there is a considerable level of conflicting interests over the use of land, forest and water. It has also shown that the upland-lowland divide is still clearly defined in terms of ethnic differences, with power relations leaning in the favor of lowland Khon Muang. With ethnic minorities constituting more than 50 percent of Mae Chaem's population, a key concern here must be with creating institutional mechanisms to ensure adequate representation of upland concerns with regards to both upstream-downstream and also minority-Khon Muang interactions.



		Area/sq.km	Area/ Rai
A	Upper part of Ping river	1,974.24	1,233,897.12
B	Mae Ngat river	1,284.69	802,931.04
C	Mae Taeng river	1,957.87	1,223,671.12
D	2nd part of Ping rive	1,616.49	1,010,305.12
E	Mae Rim river	508.10	317,583.12
F	Mae Kuang river	2,734.35	1,708,967.36
G	Mae Khan river	1,833.47	1,145,917.20
H	Mae Li river	2,080.63	1,300,392.40
I	Mae Klang river	616.34	385,212.28
J	3rd part of Ping river	3,451.53	2,157,204.32
K	Upper part of Mae Chaem	2,061.43	1,288,395.68
L	Lower part of Mae Chaem	1,834.25	1,146,404.16
M	Mae Hat river	520.37	325,231.06
N	Mae Tun river	2,896.04	1,810,023.20
O	4th part of Ping river	2,983.27	1,864,543.68
P	Huai Mae Tho	644.22	402,635.24
Q	Khlong Wang Chao	648.51	405,321.80
R	Khlong Mae Raka	901.62	563,515.12
S	Khlong Suan Mak	1,132.06	707,537.04
T	Lower part of Ping river	2,979.55	1,862,216.96

Figure 6-5: Ping Basin initiative

Source: Bangkok Post, September 16, 2005.

Problems concerning the management of water, land and forest in small watersheds such as Mae Suk have received attention from broader (downstream) society for some time in the media, but a concrete institutional structure for incorporating local and national interests at the watershed scale have started in earnest in 2003 with the Ping River Basin Rehabilitation Program of the Ministry of Natural Resources and Environment (Figure 6-5). Part of this effort, the Upper Ping Resources and Environment Rehabilitation Program, aims to establish a network of nested watershed organizations that allow analysis, planning and feedback processes building up from small sub-watersheds to the sub-basins and basins, and on to the Chao Praya basin. The initial budget was approved at a funding level of 50 million baht, but the Ministry had already formulated activities requiring more than a billion baht (Bangkok Post, December 20, 2003).

The intention is not to create another layer of bureaucracy, but rather to provide a complementary set of interlinked fora based on the biophysical and social interactions underlying upstream-downstream tensions. This has begun to enable points of contact among networks and organizations working at the same scale, and facilitates dialog and exchange between networks at different levels. In Mae Chaem, watershed management networks, including the Mae Suk Watershed Management Network, have been participating in the Mae Ping initiative's activities.

The Upper Network is also participating in Mae Ping initiative activities, separately from the Mae Suk Network. This demonstrates the type of institutional design flexibility that is needed at higher levels of management, particularly with regard to empowering upland groups. In effect, this institutional structure has enabled the leadership of the Upper Network to 'bump up' its interests to a more appropriate level, that is, to the level of the Mae Ping Initiative dialog. There is more political space here for Hmong and Karen concerns to be voiced, because at this level the issues have been extracted from their immediate context of locally specific, emotionally charged conflict.

Sub-basin and sub-watershed networks are central to the planning and budget allocation process of the Program. The Mae Chaem Watershed Network Committee, which is coordinating sub-watershed networks in the lower section of the Mae Chaem sub-basin, has proposed a work plan and budget of almost three million baht to the Upper Ping Program. Of the 25 sub-watershed networks included in this group, the Mae Suk Network has requested 144,000 baht, while the Upper Network made a proposal for 191,000 baht,

for activities in 2006. The upper network budget covers activities to construct fire breaks and other environmental projects in each village, in addition to supporting the participation of network representatives in activities of the program. Similar levels of funding have been proposed in follow-up five-year period (Mae Chaem Watershed Network Committee, 2005).

Although the funds have not been allocated, these proposals do give a sense of the role that the Program envisions for networks. In addition to strengthening networks own capacity, government support of the networks may benefit other local organizations. For example, it is interesting to note that in the Mae Kuang watershed near Chiang Mai city, the network has applied for funds to support the creation of a water database at the *tambon* level (Upper Ping Basin Coordinating Office, 2005). In this way, local people can influence the development of capacity building at the TAO through their networks. There is a deep-rooted thinking that local government should distribute development funds to villages, and perhaps in the near future increasingly to networks. But in low capacity TAOs such as Pang Hin Fon, it may be that networks have more access to external resources, including budgets, expertise, technology and political momentum. It is possible that support for institution building may become more of a two-way flow, in which TAOs and networks play complementary roles in mutually strengthening capacities to engage in watershed-level activities.

4. Discussion: Finding an appropriate level

It could be argued that there is overlap and redundancy in having both Mae Suk networks present in the Program. But Headman Yis has insisted from the outset of the Mae Suk Network formation that overlap is not a problem, because the upper network facilitates interaction between the upstream villages as a whole and the downstream villages. By participating in the Mae Ping Initiative, Headman Yis is demonstrating that a) there is a need for a more cohesive front that coordinates and represents upstream perspectives and concerns at multiple levels, and b) the power dynamics in the Mae Suk network mean Khon Muang domination of the local dialog reduces the viability of the network in representing the watershed's interests to external actors.

The legitimacy framework helps shine some light on the motivations for participation of the two networks, in the context of the Ping Initiative as well. One challenge of the

initiative is achieving meaningful participation of the local watershed networks. Participation of the Mae Suk networks has been relatively good. To explain the dynamics driving this participation, examining procedural and substantive legitimacy of the Mae Chaem Watershed Committee is helpful. Figure 6-7 represents a comparative view on the perspective of both networks, based on observation of the local networks' participation in activities at the Ping level and discussions with network leaders.

Table 6-3: Mae Suk Watershed Networks Perceptions of Ping Basin Initiative Legitimacy

	Mae Suk Network	Upper Network
Procedural Legitimacy	HIGH	HIGH
Substantive Legitimacy	MEDIUM	MEDIUM
PARTICIPATION	HIGH	HIGH

For the Mae Suk Network, in this forum representing primarily the downstream Khon Muang villages, the perception of procedural legitimacy is high, as the Ping Initiative arose out of mainstream Thai watershed concerns and a policy framework that is agreeable to lowland villages. Substantive legitimacy is medium, because the hopes for tangible outcomes are rather modest. Together the two have produced good participation from Khon Muang villages; Khon Muang villages appear to value the process and objectives of the Initiative. The Upper Network shows similar perceptions, but with different backgrounds. As mentioned above, because the Mae Suk Network has not provided a space for uplanders to engage with lowlanders on a peer-to-peer basis, they have placed high value on the activities of the Mae Chaem Watershed Committee. Procedural legitimacy at this level seems high, because it recognizes the upland interests in a way that the Mae Suk Network does not. For the Upper Network, substantive legitimacy is less important, because they do not seem to think that the Initiative will produce direct solutions to their problems, much in the same way as the Mae Suk Network. Substantive legitimacy exists insofar as the Initiative may produce budgets to support network activities. But more important is the way in which the processes have given voice to upland communities, particularly from the Hmong point of view. It is also interesting that this forum provides a place for the Karen and Hmong to develop and express ideas jointly.

Thus, there are shared perceptions of substantive legitimacy, but slightly different nuances to the perceptions of procedural legitimacy. The Upper Network's identification of this forum, at a higher level than the emotionally charged Mae Suk watershed, is a notable

statement of what level is most ‘appropriate’ for addressing watershed problems under the current conditions.

5. Conclusion

Water has come to dominate local articulations of the ‘conflict’ between upstream and downstream communities. Tension at the tributary watershed level reflects the same basic problems being experienced in the upper watershed. Much of the discussion is based on perceptions of landscape change and assertions of impacts on water supply. But water extraction, allocation and management have risen to the surface as a set of tangible issues that could be addressed directly by watershed networks. But networks at this level have been hesitant to initiate activities to build a shared base of data and understanding.

The Mae Suk Network, which covers the entire watershed, has translated the localized conflict more directly into lowland terms. Lowland interests, represented by the concern for water security of the *muang faai*, have been strengthened as a result of the overlap between the *muang faai*, conservation group and village committee. In the Mae Suk case, Khon Muang village leaders have further linkages to the *tambon*. Because the network’s center of gravity lies so firmly within lowland Thai social context, there is very little space for upland villages to participate in network activities.

The central government has provided a new framework for the nested layers of watershed tension that exist, starting at the Ping River Basin and reaching into the mountains of the Mae Suk watershed. The Upper Network has recognized this opportunity for the Hmong to participate directly in efforts to create an institutional structure for negotiation of watershed management, thereby bypassing the uncomfortable environment of the Mae Suk Network. At the same time, the Upper Network has enabled the Hmong and Karen to jointly articulate their interests and concerns. Certainly the budget resources available through the Ping Basin initiative are an important motivation for the networks to participate. Discussions with network members from both Ban Phui Nua and San Pu Loei stress the need for concrete activities in the networks, which require budgetary resources that do not exist in the village or at the TAO.

[1] Agenda 21 was a product of the UN Conference on Environment in Development convened in 2001 in Rio de Janeiro. The full text of Agenda 21 is available at:
http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm

[2] See, for example, Bruijnzeel, L.A. 2004. "Hydrological functions of tropical forests: Not seeing the soil for the trees", in *Agriculture, Ecosystems and Environment*, 104, 185-228 for a comprehensive review of the scientific literature on forest-water interrelationships. Here Bruijnzeel argues that according to previous research, there is no clear evidence that "although reforestation and soil conservation measures can reduce enhanced peak flows and stormflows associated with soil degradation, there is no well-documented case of a corresponding increase in low flows" (p. 217). Although flooding has become an interest of concern for downstream farmers in Mae Suk, the bulk of the water tension with the upstream farmers centers on low flows. This paper is available at:
http://www.asb.cgiar.org/pdfwebdocs/AGEE_special_Bruijnzeel_Hydrological_functions.pdf

CHAPTER SEVEN

CONCLUSIONS

In the preceding chapters I have explored the intensifying conflict over use of natural resources in the uplands of northern Thailand. The watershed framework, which is used by a broad range of actors spanning central policy to local people, stresses the inter-relations not only between water, land and forest, but more importantly perhaps, the linkages between different resource users throughout the natural system. Existing institutions of governance, official and local, have typically not been effective in dealing with conflict that crosses borders – for example, resource competition between ethnic groups, management of water that crosses administrative boundaries and negotiations between resource managers at local and regional levels. In recognition of these multiple overlays of conflict, there have been a number of institutional responses that provide valuable insight on the challenges and opportunities of local resource governance. Of these, the formation of networks for multi-stakeholder resource management at the watershed level is of particular relevance in northern Thailand.

The problem of resource conflict in northern Thailand has become a key concern for Thai society at large, because resource use trends in the upstream mountains are believed to affect environmental quality and availability of vital water resources in downstream agricultural, industrial and urban areas. For these reasons, the ethnic minorities living in the uplands of northern Thailand are being forced to shoulder the costs of environmental conservation. Among these upland groups, the Hmong have been characterized as a source of social and environmental problems since the 1950s. From the early days, fears of a communist threat, opium production, and forest destruction were central elements of the public image of the Hmong. The proclaimed adverse affects of agricultural chemical use and expansion of dry season irrigation that have currently been pinned on the Hmong need to be further examined from multiple perspectives.

Perhaps the most important of these is the perspective of the Hmong themselves, located at the top of the watershed, facing strict land use constraints, constantly developing relationships with the market, and responding to pressures from their downstream neighbors. This research is an attempt to examine the natural resource competition and

institutional responses from a perspective that originates in the upland social landscape. The fieldwork was based primarily in a Hmong village, but the objective was to maintain a view on how the villagers of this contemporary Hmong village interacted with others in the watershed. In doing this, the research has attempted to move between the local and the regional, the village and the watershed, relating developments in the Hmong village to the efforts to establish watershed networks. Natural resource competition in watersheds should be viewed as a multi-layered social problem, where the perception, negotiation and management of resource scarcity by local actors clash with conflicting processes of perception, negotiation and management by actors at the regional level. It is this balance, of a firm rooting in the rich detail of locality and a broad understanding of the regional forces at play, that institutional innovations must draw upon in the search for effective and equitable governance of resources in mountainous areas.

1. Reflections on the research problem

The preceding story has helped illuminate the current situation of resource conflict in an increasingly decentralized governance landscape of northern Thailand. Institutional efforts to manage tension between upstream and downstream communities have begun to recognize the nested nature of contemporary water management challenges. Indeed, as the northern Thai watershed is transformed from an ecological unit to a multi-ethnic social space, the multiple interlinkages between upland-upland relationships and upland-lowland interactions form the basis for an understanding of the contemporary political economy of local natural resources management. Innovations in local governance must be able to handle this complexity if they are to be effective in managing watersheds as a common property resource.

Reflecting on the commons, Ostrom noted that,

> "What one can observe in the world, however, is that neither the state nor the market is uniformly successful in enabling individuals to sustain long-term, productive use of natural resource systems. Further, communities of individuals have relied on institutions resembling neither the state nor the market to govern some resource systems with reasonable degrees of success of long periods of time." (Ostrom, 1990:1)

Resource scarcity, and perhaps more importantly the perception of resource scarcity, has driven a number of governance responses at various levels in the landscape. These institutions, networks, are different from government agencies and the private sector actors of the market. They differ as well from the customary institutions of resource management that exist within Hmong, Karen and Khon Muang society.

Revisiting the large trends in resource competition among individuals and groups in the Mae Suk watershed, this dissertation's problem statement can be summarized as a progression of interlinked processes: resource competition, negotiation process, local institutional response and official intervention. These should not be interpreted as a uni-linear progression, but rather as a set of interactions that are constantly being re-iterated in the daily processes of competition and cooperation, as summarized in Table 7-1 below.

Table 7-1: Summary of multi-level resource governance

	Village	Inter-village	Watershed
Resource Competition	direct	direct	indirect
Negotiation Process	strong	weak	weak
Local Institutional Response	informal	informal semi-formal	formal
Official Intervention	weak	weak	medium

Resource competition at the village and inter-village level is manifested as direct struggle between individuals for resources in a certain locality, for example between the Hmong and Karen farmers using water from the Huai Sai Khao stream. This competition to secure access to limited resources is often seen as a zero-sum game and the tension exists on a daily basis. At the watershed level, competition is indirect, in the sense that the location and quantity of the resources are variable and not well understood. Although the downstream Khon Muang are confident in their observations of change in water flows, they cannot demonstrate the direct linkages between Hmong irrigation and decreases in dry season water availability at the watershed level. Furthermore, much of this tension has arisen from the ill-defined relationship between forest and water relationship, which is too abstract and unquantifiable to provide a platform for discussion.

The negotiation processes to mediate this tension differ at each scale. At the village level, customary governance mechanisms, such as the role of clan elders in dispute resolution, function effectively. In inter-village disputes, these customary mechanisms may be effective to a certain degree. We have seen how small scale disputes can be managed by the local Karen and Hmong community leaders. But because they are often based in the specific cultural contexts of each group, there are limitations to their broad application in inter-group resource competition. This is why the Huai Sai Khao committee has not evolved into an effective mechanism for negotiation and planning. At the scale of the watershed, negotiation processes are weak. Stereotypes and emotion tend to dominate the interaction, and there is very little common ground for discussion between Hmong, Karen and Khon Muang farmers. No group is prepared to compromise based on the current level of dialog.

There have been institutional responses that attempt to complement the customary or existing negotiation processes at each level. In the Hmong village, localized resource-sharing arrangements that transcend the narrow scope of traditional kinship-based cooperation have allowed farmers to address the growing competition for water. But these informal arrangements are still supported by the customary negotiation processes of the clan system. In the case of inter-village competition, informal and semi-formal responses have been most common. Individual resource-sharing arrangements have developed among both the Hmong and Karen, although they have not yet crossed the boundaries of ethnicity. The committee established is semi-formal, and is a mix of customary and new forms of governance. The effectiveness of this institutional response is reaching its limits. At the watershed, formalized networks have been established because foundations for informal or customary governance that encompass Hmong, Karen and Khon Muang society do not exist. Although the general thrust of the networks is to establish multi-stakeholder dialog, they have struggled to achieve meaningful participation of members. The Mae Suk Upper Network has been able to foster cooperation betwen Karen and Hmong on non-contentious issues such as constructing fire-breaks, but it has balked at the opportunity to play a role in conflicts between villages. The Mae Suk Network has created an organizational structure that represents the watershed stakeholders in form, but the substance of the network has not provided a forum in which Hmong and Karen feel they can engage with the Khon Muang as peers.

Official agencies of central and local government have a significant presence in the watershed as well. While the line agencies responsible for forest and water resources have long been active in the Mae Suk landscape, the TAO has recently begun to assume new roles in local governance. These official agencies have been a part of the institutional response to resource competition. At the village level, official interventions are weak although villagers are beginning to recognize the TAO as a source of development activities. At the inter-village level, at first glance it would seem that the TAO should play a role in mediation of tension over resource use because the village-to-village negotiation processes have proven to be insufficient. But in reality village leaders are hesitant to draw in the TAO, and the TAO itself has low capacity to convene the villages. Official roles at the watershed level, most commonly the District and the Royal Forestry Department, are stronger but often seen by uplanders as the threat of coercive state force. The Khon Muang mobilization of official authority in times of particularly tense resource conflict has only served to reinforce the Hmong suspicion of Khon Muang negotiation processes. But the Hmong do share in the feeling that external authority, seen in their efforts to establish close relations with the new District Governor, is important in negotiation of issues that transcend village boundaries.

The four inter-linked factors of this evolving governance process – resource competition, negotiation process, local institutional response and official intervention – cannot be examined in isolation. Each is tied up with the others, highlighting the concurrent challenges of creating trust between communities, facilitating inter-village discussion, building institutions and coordinating with official authority.

2. Reflections on the research findings

Having reflected on the basic framework of resource competition and institutional response, this section explores the research finding in more detail. This material is presented as answers to the research questions posed in Chapter One.

1.1 How have upland groups, especially the Hmong, responded to resource scarcity in the post-crop substitution era?

Over the past 40 years, the Hmong have made substantial compromises in response to social, economic and political pressures mounting from lowland society. During this period the Hmong have settled permanently in villages that were incorporated into the central government bureaucracy, followed government leads to substitute opium production with temperate vegetable and fruit crops, and began to participate in a number of social institutions such as the TAO and *prachakhom* organizations. In Mae Chaem District, the Hmong have begun to assume a leadership role in the uplands based on their economic success and an emerging interest in local governance. Yet, the Hmong are still viewed with mistrust and suspicion by many of their upland neighbors and much of lowland society, because of the continuously heightening profile of environmental problems resulting from intensified upland agricultural production.

Throughout these changes, contemporary Hmong society has remained firmly rooted in the institutions of kinship. Geographically broad networks of kinship have always helped the Hmong to adjust to the demands of life in the mountains. But the pressures of resource scarcity are challenging the Hmong to look beyond the ties of kinship for solutions to problems of resource scarcity. Most notably, the Hmong are broadening their networks in the village to establish new modes cooperation that include non-kin. Marriage within Ban Phui Nua and the surrounding Hmong villages provides a resource for mutual support in agricultural and other activities that is firmly nested in the locality. Villagers also give importance to the contribution these affinal networks make in strengthening the bonds of generalized trust within the village. While the Hmong retain geographically broad kinship and marriage networks that have characterized their clan system, villagers are currently creating increasingly dense networks focused on the village. Thus, Hmong social networks are founded upon a combination of blood and locality bonds.

The Hmong of Ban Phui Nua have begun to make necessary investments in physical and institutional infrastructure. The ecological conditions of the village did not allow them to develop irrigated paddy to a significant degree, and management of water did not become an issue until farmers began to develop PVC pipe irrigation in the early 1990s. This technology has driven up dry-season water demand, increasing competition between

farmers. It has also forced farmers to develop cooperative modes of water management based on shared storage tanks and pipes. These water-sharing arrangements are frequently made across the customary boundaries of kinship. However, most of these arrangements remain small in scale, and while the technology of field storage ponds has been successful in linking several users in more effective water management, there is no system to deal with larger problems of water competition along the main streams of the village. As the younger generation of the Yaaj clan frequently says, the water problems of the village are not about technology, they are about management. The challenge, as they see it, is not so much a problem of human-nature interaction, but rather a problem of human-human interactions in the context of their local environment.

The tension between informal and formal village governance will continue to be an important theme for villagers. Villagers retain a strong preference for clan-based mediation of conflicts. But as these conflicts become increasingly complex, involving neighboring Karen and Khon Muang villages, village leaders must play a central role in problem solving. But the points of intersection between the formal, administrative lines of authority and the informal, clan-based lines of authority in the village are few and weak. The official village administration, elected by the people, is responsible for dealings with the external world. But villagers prefer to handle internal matters informally with the facilitation of clan leaders. This reduces the capacity of Ban Phui Nua to engage in negotiations as a cohesive social unit with other villages, because the village headman and his committee are responsible for negotiation, while the clan elders represent the authority of enforcement. Indeed, the experience has shown that village representatives to network meetings experience difficulty in enforcing decisions made at the watershed level. Not only does this reduce the capacity of the village to act as a corporate unit, it also gives the impression that the Hmong are unwilling to cooperate with their neighbors. Despite high individual awareness of the need to build new relationships with surrounding villages, Ban Phui Nua still struggles to act as a political unit in the landscape.

The changes in social organization under way in Ban Phui Nua are by means complete. It is likely that tension will continue to characterize the processes of reshaping local networks of cooperation. But that tension will also stimulate villagers to give new meaning to the village and establish new modes of managing competition over increasingly scarce resources. For example, village leaders' use of the *ntoo xeeb* ritual to create a shared basis

for forest protection suggests that the symbolic and practical importance of the Hmong village as a unit for managing social relations is growing. Pressures for village action will only increase with the strengthening of networks and the TAO, and it is likely that a combination of customary and administrative leadership will be necessary in responding to those demands for village cohesion.

1.2. How have inter-ethnic relations evolved in the context of intensifying resource competition?

The Hmong's relationships with their neighbors are evolving in pace with the socio-economic changes associated with deepening market involvement, resource competition and political opportunities. Relationships that were previously based on employment and other forms of unbalanced exchange are gradually yielding to a new set of interactions based on a more equal balance of power. For example, Hmong, Karen and Lawa farmers are now competing for share of the same agricultural markets. They are also forging new political alliances across ethnic boundaries as they compete for positions in the TAO government. There are signs that these groups are also establishing new modes of cooperation for the management of land and water resources. Nevertheless, tension between the Hmong and their neighbors remains a central factor of daily life.

These relationships are evolving on two levels. First, there is a struggle for a workable balance between competition and cooperation among upland groups. With regards to natural resource management, this balance is influenced by both technical and institutional developments. In the case of water management, the Hmong and Karen have made similar advances in the irrigation infrastructure. Increasingly sophisticated management arrangements involving as many as ten farmers have been developed within both the Hmong and Karen communities in the Huai Sai Khao valley. But the informal institution created to help mediate conflict among users has not yet been able to successfully bridge these two groups, or to bring the small user groups together as one management system. The expressed preference, articulated by both Hmong and Karen farmers, for informal dispute resolution is at odds with the broadening recognition that something more formalized is needed as competition intensifies. There is also a perception on each side that the other is plagued by low cohesion, which discourages farmers from placing their trust in a negotiation processes.

At the same time, upland-lowland relations are evolving in new directions. Although there are clear trends of intensifying conflict over water, the groups of the watershed maintain relationships that are larger than the water issue. Because of the multiple overlays of conflict in the watershed, it is difficult to simplify the problem into a simple matter of upstream-downstream tension. Indeed, it is becoming increasingly clear that upstream-downstream conflict at the watershed level cannot be addressed without consideration of the dynamics of cooperation and competition emerging between the Hmong and Karen in the uplands. While the Hmong and Karen find themselves in a position of competition in daily livelihoods, they are at times united by the common threat of action by downstream Khon Muang. At the same time for the Karen, there is a certain degree of identification with Khon Muang interests in the face of a perceived threat from the Hmong. There is also a small but important point of commonality in the Karen and Khon Muang livelihoods, which both combine paddy and upland fields. For the Hmong, maintaining fluid relationships with both the Karen and Khon Muang enable them to strengthen their position in the negotiations at different levels. A predictable and structured framework for relationships with Khon Muang that are focused on specific issues would make it easier for the Hmong to engage. There is a strong sense within the Hmong that there is a need to increase the level of generalized cooperation with the Karen and Lawa in the *tambon* because this forum is one vehicle for amplifying upland voices in larger political debates. Upland farmers share concerns for the issues that effect upland development, such as access to markets and inputs, transportation costs, price fluctuations and the limitations of the policy environment. With the possibility the area becoming a National Park in the future threatening upland livelihoods, for example, a clear and unified *tambon* voice could be a key factor in any future negotiations with the central government.

1.3. What roles have networks begun to play in local resource conflicts?

Networks have emerged in northern Thailand as a way to address the growing conflict between upstream and downstream communities over water use. The organs of the central government are not well equipped to deal with these localized issues. Line agencies such as the Royal Forestry Department and the Royal Irrigation Department have maintained their sectoral perspective on natural resources management, and the tendency for top-down management based on regulations has only served to exacerbate the pressure on local

communities. The rise of networks is largely a response to these governance failures. The network approach is also recognition of the failure of informal inter-village coordination and negotiation in the face of conflict among their members. But the networks have been given an additional boost of support by the larger trends of decentralization, which provide a strong legal basis for civil society organizations to play a larger role in the management of local affairs.

In this research, four networks, all operating at different scales of watershed management were investigated. At the smallest scale, the Huai Sai Khao Committee was formed to mediate increasingly intensive water extraction in a small stream valley where Karen and Hmong farmers plant shallots. The Mae Suk Upper Watershed Network (Upper Network in the preceding chapters) includes Karen and Hmong villages at the top of the watershed. This network was formed to deal with land management issues, and has focused efforts on building fire breaks. The larger Mae Suk Watershed Management Network (referred to as the Mae Suk Network in the previous discussion) has a broader geographic scope, including all the villages of the watershed. This network also deals with water, land and forest issues and is composed of representatives from each village, including both community leaders and farmers. At the largest scale, there is the Mae Chaem Watershed Network Committee, which is a coordinating/facilitating body for the Ping Basin initiative. This network is composed of representatives from the sub-watershed networks of Mae Chaem, including both Mae Suk watersheds. The smaller the ecological scale of the network the more informal the network tends to be. These networks represent the nested levels of watershed management that are linked through biophysical and human interactions, but until they are integrated coherently into a system of multi-layered governance, the disconnect between local and regional decision-making will continue to exacerbate resource competition.

Because lowland interests have tended to dominate, tributary watershed networks, such as the Mae Suk Network, have frequently focused on the issues of conflict and regulatory approaches to problem-solving. The Mae Suk network has not achieved a high level of participation, and has thus not been successful in establishing a forum for inter-village negotiation. The problem of legitimacy – procedural and substantive – appears to influence upland peoples' inclination to participate in activities of the watershed networks at all levels. From the analysis of the Mae Suk watershed experience, procedural legitimacy is

given more importance by local people. The Hmong do not have confidence in the way the network has functioned, particularly because of the unpredictable way in which the Khon Muang leaders have opted to involve government authorities. The Khon Muang approach has been to a fast-paced process of institutionalization in which the network becomes more formalized as an organization.

On a more abstract level, the Hmong are also wary of the way in which the network has been formed on a Khon Muang perception of a water problem. This problem is an extension of the upland-lowland conflict over the use of forestland, in which the Hmong have been blamed for environmental problems resulting from upland agricultural development. A common activity of the network has been to make site visits to identify 'sources of the problem' in the upland areas. But there has been no recognition of the growth of demand for in lowland areas. Instead, the network reflects the perception commonly heard in Thai society that the problems of downstream water scarcity have their origins in the uplands. This conception of the problem is the basis for the Khon Muang efforts to direct the network towards a more formalized organization. The Hmong are doubtful of this simplified problem statement, and perceiving low levels of legitimacy in the network, are wary to be involved in the institutional development trajectory of the network.

One valuable lesson from the Mae Chaem experience demonstrates the value of vertical linkages between networks at different levels in the landscape. In the Mae Suk example, the Upper Network and the Mae Suk Network have functioned separately of each other. This may be a missed opportunity for the uplanders because more strategic use of the Upland Network could arguable strengthen their position in dialogs with the Khon Muang. Although the scope of the Upper Network initially was limited to forest management problems among upland villages, the network began to assume the important role of representing upland perspectives at a higher level of discussion through the Ping Basin initiative. Not only was this an opportunity for Karen and Hmong community leaders to dislodge the water issues from the emotional political economy of the Mae Suk watershed, it does provide access to budgetary resources and political legitimacy that are not available through the Mae Suk Network. Thus, the nested hierarchy of watershed networks has allowed the weaker upland groups to find a voice in an external forum and return some balance to the local power relations.

The first task of watershed networks should be to build a contemporary sense of Marlowe's (1967) "people of one place" that includes Khon Muang, Karen, Hmong and Lawa – a local identity based on shared visions for shared resources. At the very least, 'people of one place' should be able to negotiate differences on a peer-to-peer basis, drawing on outside resources when necessary. In Condominas' language, the potential of watershed networks is in creating a new social space that harnesses the energies of the economic, political and social systems of the peoples of the watershed. For example, the customary water governance of Bali (Geertz, 1980) was based on a complex set of ritual relationships between water users at different levels of the irrigation system. These relationships are built upon common systems of belief and practice that create the shared norms through which regional coordination among sub-groups within the irrigation system could be conducted. Groups of water managers adjusted, or compromised, within this framework, and the coercive authority of the state was not normally needed. In these relationships, village governance, popular religion and water management were all tied up in a cohesive social space. In Mae Suk, where shared norms are lacking, internal mechanisms to regulate regional coordination among diverse water users have not developed. The Mae Suk networks maintain an overwhelming focus on the issues of conflict, ignoring the need for more time-consuming confidence building and establishment of a shared understanding of the interlinked issues that create the perceptions of resource scarcity. A network of leaders will not be successful in aligning the incentives for farmers to make compensations by changing their behavior. Rather, the establishment of more broad relationships – directly between farmers – will help to build the common understanding and confidence in the network that is necessary to make it function as a shared social space.

Networks represent an important experiment in the development of institutions for local governance. In the past, there has been a pervasive preference for informal institutions that operate on the principles of customary decision-making in dealing with resource competition. This has been true at all levels. But the weakness of informal institutions in a multi-ethnic setting has led local leaders to favor increasingly formalized organizations. Indeed, the rise of watershed networks has brought a new challenge to traditional forms of governance, but the experience to date shows that the emerging transition from informal to more formalized institutions will not be a smooth one. In a situation of high social diversity, differing livelihood priorities and uneven access to the official institutions of

governance, it is unlikely that a shared understanding of the processes and objectives of watershed management networks will emerge on its own. If networks can provide, either through their own processes or through linkages with external institutions, a credible and legitimate source of authority that addresses a set of agreed-upon problems, the incentives for the people of the watershed to participate will be raised.

1.4 How do networks interface with the administrative units of local governance?

The tension surrounding natural resources in the Mae Suk watershed provides a window on the potentials and constraints for local management of the commons. The experiences of network formation at the watershed level demonstrate the challenge to local governance institutions, where a cohesive 'community' does not necessarily exist. This poses a problem for the community-based approach to resources management as a part of regional resource governance. Despite the modest level of success in terms of reducing conflict among local stakeholders, watershed management networks have attempted to create a community at the ecosystem level. An ideal institutional representation of this community would bridge cultural differences, link administrative units, mediate market forces and assume roles played ineffectively by the state.

Analysis of resource competition dynamics suggests that the village is a critical actor in the local institutional responses. But at all levels, the village has proven to be a weak unit of social organization. At the smallest scale, for example, the administrative leadership of Ban Phui and San Pu Loei have opted not to intervene in the water problems of the Huai Sai Khao valley. The Huai Sai Khao committee operates below the village level, relying on the informal channels it has created locally, and when these are insufficient, the kinship-based channels of each group. Similarly, land conflicts between the Karen and Hmong have been left to the individuals involved and their informal networks of negotiation. Larger-scale networks, such as the Mae Suk Network, have also been limited by the weakness of the village. Because villagers are happy to delegate the management of external relations to their leaders, they are also hesitant to participate in the tense activities of networks. And because participation in the decisions of the network is low, their incentives and motivation to abide by those decisions is low.

At the same time, my interactions with Hmong, Karen and Khon Muang in the watershed suggest that the personal linkages between these conflicting communities are weak. Local people place high value on the individuals who are able to bridge the different groups. And given the weakness of the village mentioned above, a strategy of increasing contact between individual members of the communities in network activities would make a large contribution to creating common understanding of the resource problems. Increasing the density of social networks that exist within the watershed would arguably give more meaning to that social space for the people involved.

The interface between watershed networks and the newly empowered TAO is a potential source of local authority for strengthening local resource governance. The mandate of the TAOs has been adequately modified to include local environment and development matters, and the election of *tambon* leaders is increasing the legitimacy of local government among people at this level, above the village. But the points of contact between the two are unclear, and there are many constraints to the realization of collaboration between local government and local peoples' groups. Lack of resources, on both sides, is one key issue. Resources, taken in the broad sense, includes not only budget, but also the expertise and vision to mold new institutional roles.

TAOs have participated in network activities at the local and regional levels, gradually familiarizing themselves with the issues and the processes of multi-stakeholder dialog. But the TAOs have not yet taken a lead in facilitation or proposed a central role in dispute resolution. Rather, TAOs such as Pang Hin Fon, have focused on increasing their effectiveness as an engine of local development. This has meant that the TAO representatives from each village have begun to assume more prominent roles in the village, while peoples' awareness of the TAO as an actor in the local landscape has been raised. But this has not yet led to a strong awareness of the TAO as a mediator. In the future, however, one could imagine a situation in which the TAO convenes villages involved in a dispute over water to devise a joint solution. But many of the most serious conflicts, such as the Mae Suk watershed level conflict, involve more than one *tambon*. Coordination among TAOs has proven difficult as well. In fact there have been no direct negotiations between Pang Hin Fon and Mae Suk *tambon*s. Nonetheless, anecdotal evidence from other parts of northern Thailand suggests that inter-TAO collaboration to

create joint environmental management plans, for example, are well within the scope of upland TAO capacity.

It seems for the time being that the hopes for the TAO are higher than the actual capacity of the institution. But local people have started to take *tambon* level governance seriously. From the Hmong perspective, the TAO is currently a much more attractive option for participating in local governance than the networks, and they have taken recent TAO elections very seriously. This is partly because these democratic processes are perceived to be more legitimate than the network formation. But it is also because the *tambon*, being an elected institution, recognizes the practical challenges of balancing development and environment in upland livelihoods that are under an increasingly constrained policy environment. The Hmong, like their Karen and Lawa neighbors in this area, also recognize the potential for increasing cooperation among themselves working for development of upland livelihoods. This common understanding enables them to work around the competition that exists among them for larger goals.

Networks and TAO each have their strengths and weaknesses. With the evolution of a more open and inclusive political environment, the real opportunity lies not with one or the other, but in constructing modes of interaction between the two, creating complementary channels of participation and authority.

3. Policy implications: Strengthening the local governance framework

This research has identified the challenges posed to a promising set of developments in the local governance landscape of the uplands of northern Thailand. Indeed, the appearance of networks and their experience as actors in local resource conflicts have highlighted a number of important governance gaps.

Figure 7-1 summarizes the basic arrangements between actors in the local governance landscape explored in this research. Two main streams of governance, networks and administrative organizations, have been empowered by decentralization reforms. Red arrows indicate the strongest linkages between these actors. Within the network strand, the ties between households, local kinship networks and the smaller scale resource networks are the strongest. These linkages, shown in the Huai Sai Khao case, provide the strongest

relationships within the evolving network hierarchy. At the same time, however, there is an important gap between the small-scale resource networks (Huai Sai Khao Committee and Upper Network) and the larger-scale Mae Suk Network.

Within the administration strand, the village-*tambon* linkage provides the main source of administrative coherence. This linkage lies in the relationship between village headmen and the *kamnan*. There is a notable lack of direct linkages between households and the village administration. This represents the divergence between informal village leadership (such as the Hmong clan governance processes) and the formal village leaders. Village administrative leaders represent their villages in the Upper Network and Mae Suk Network activities, providing the main linkage between these two strands of governance. But it was shown above that this link is tenuous and has not produced the desired outcomes.

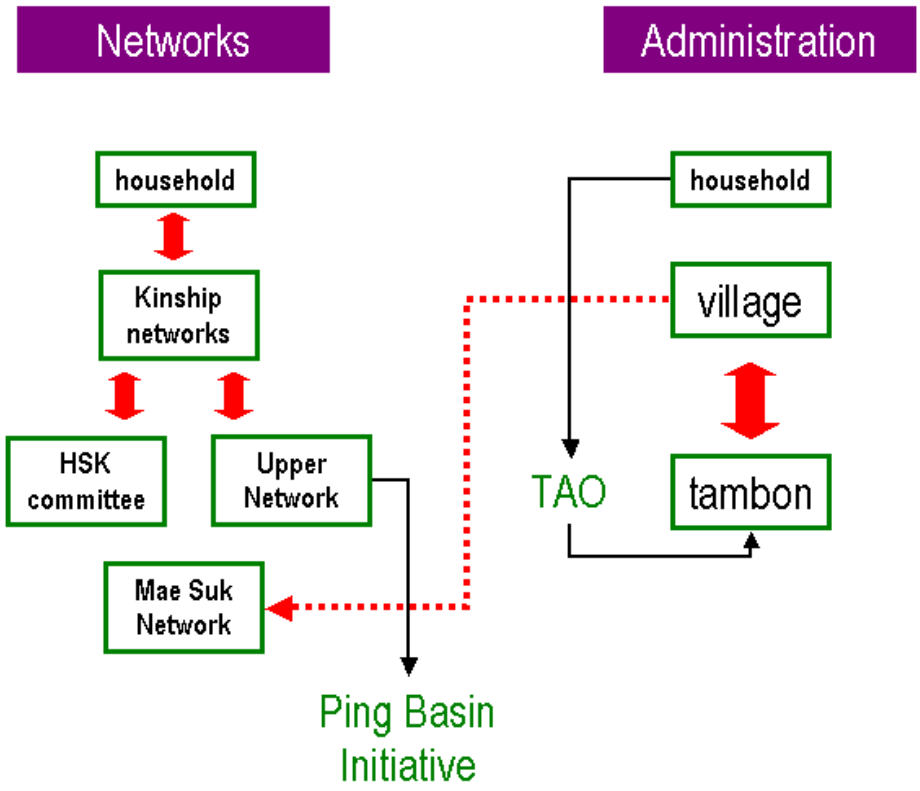


Figure 7-1: Current governance linkages

With decentralization reforms, there is a new relationship being forged, in which households engage more directly with the *tambon*, through the directly elected representatives of the TAO. The Ping Basin Initiative has likewise provided a channel for

the Upper Network to engage in larger processes of governance, when the limits to capacity in their local activities are reached. In fact, the central government sees the Ping Basin Initiative as a convenient way to provide support to localized networking efforts, while at the same time coordinating them to meet the needs of broader Thai society.

The research has also provided views on how the strength of this governance framework could be increased by closing these gaps. These proposed linkages are illustrated in Figure 7-2.

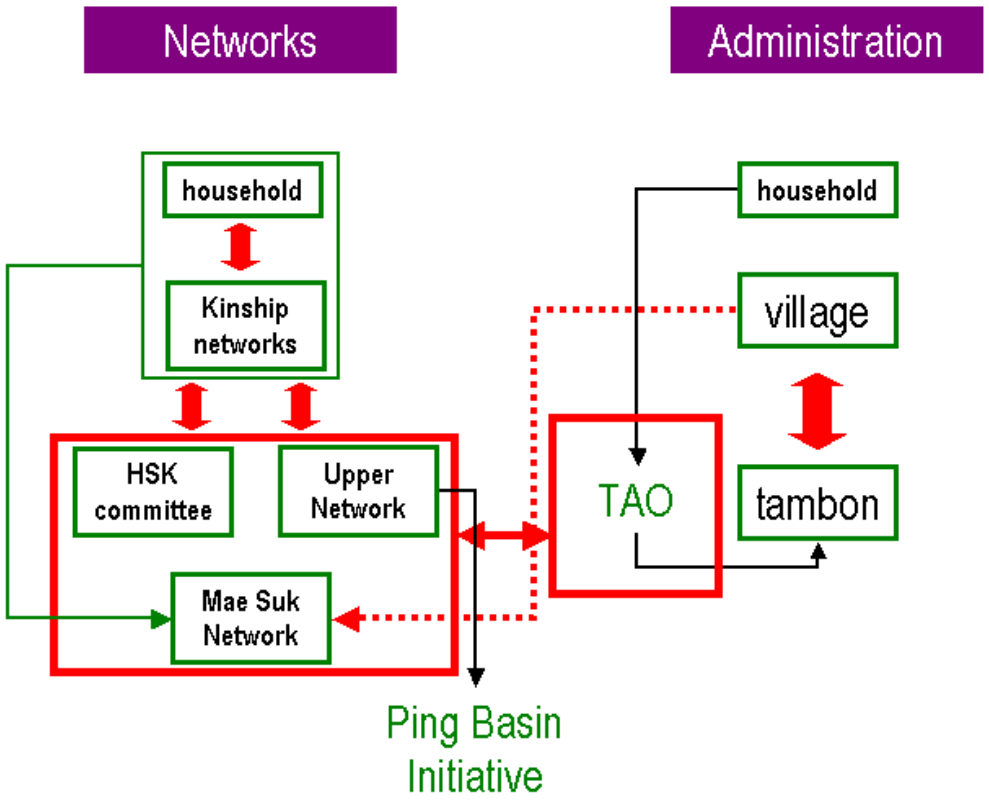


Figure 7-2: Bridging governance gaps

In the upland areas, there is clearly a lost opportunity in the failure to create 'nested' linkages between the Huai Sai Khao Committee and the Upper Network. Given that the local people are hesitant to turn the conflict into a village-village negotiation, using the broader mandate of the Upper Network would enable the local people to address the principles and practice of water sharing as an common issue of concern to all communities across the upper reaches of the Mae Suk Watershed. If the Upper Network were more firmly engaged in the issues of water management in the upper areas, the Hmong and

Karen would be able to present a more coherent front in negotiations with the Khon Muang, as well. In order for this to happen, customary leadership of upland villages, such as the Hmong clan leadership, must be drawn into the negotiations. This would require the establishment of a new norm of governance, in which the Hmong recognize the dual system of governance, but work to blur the distinctions between internal and external issues. It would also require a change in the fundamental mindset that networks must be comprised of village leaders. In the case of the Hmong, the participation of the clan leadership would increase the legitimacy of any negotiations or agreements made between villages.

In the wake of the Mae Suk Network's failure to provide an arena for negotiation of dry-season water shortages in 2004, the leadership of both the Huai Sai Khao Committee and the downstream Khon Muang Villages have approached their respective TAOs for funds to support the construction of water storage facilities. This development shows local recognition for the importance of the TAO. In this case, two TAOs – Pang Hin Fon in the upstream areas and Mae Suk in the downstream areas – are in fact being drawn actively into the Mae Suk conflict. There has been, to date, no coordination between the two TAOs.

As it stands, government and non-government support is being channeled into the parallel strengthening of the TAO, on one hand, and to network coordination, on the other hand. The findings of this research strongly suggest that there is a need to build the linkages between networks and TAOs. A coordinated approach to strengthening the capacity of both would create a significantly stronger foundation for localized solutions to localized problems. In this scenario, TAOs would play much more than a funding role, drawing on the strength of gradually emerging democratic forces, and addressing the transboundary reality of contemporary resource conflict. At the very least, it would be appropriate for TAOs to play a convening and facilitating role in responding to on-going tension.

Networks, too, require a shift in mindset. Although networks arose out of the need for an alternative source of governance to deal with the tension and conflict that the government was not addressing, the limits to ad-hoc negotiation are being reached. It is time for networks to focus their attention on the TAOs, not only as a source of budgetary resources, but also for a source of legitimacy in their negotiation and decision-making processes. External support, including both central government and non-governmental, should give

special attention to forging the linkages and supporting the development of capacity necessary to realize the mutually-supportive potential of these two sets of governance actors. For example, creating a TAO position dedicated to coordination between TAOs and with networks, could be a first step towards strengthening these relationships. Such a staff member could be responsible for facilitating dialog and exchange of information, but could also lead efforts to build a shared information base on land and water use.

The resource conflicts that have evolved in places like the Mae Suk watershed clearly demonstrate the need for decentralized governance to deal with complex, localized issues. These nested resource conflicts also call for governance processes that enable dialog and negotiation across multiple scales of resource management. To enable the decentralization experiment to run its full course, governmental support should recognize the basic constraints of the upland regions. With access to budgetary resources limited by the area's status under the watershed classification, upland TAOs require special support to enable them to assume the roles envisioned for them in the vision of decentralization that is being elaborated in Thailand.

However, the future of decentralized governance in upland areas is constrained by a clash between the broad policy of decentralization and environmental policy. Legal constraints on land use in the mountains not only limits the livelihood options of local people, but greatly narrows the range of possibilities for local government and civil society. As downstream, lowland communities make increasingly sharp demands on upland communities to protect the environment to ensure a reliable supply of resources to mainstream Thai society, it seems only fitting that downstream society assist in the establishment of a viable system of governance in the uplands. Government and non-government agencies should think creatively to design support to the uplands that assists in the strengthening of not only civil society networks and local elected government, but that fosters substantive linkages between the two. Environmental policy should be revised to better accommodate and support the objectives of decentralization, including the roles of local communities in protecting the environment that are guaranteed in the Constitution. In the short term, effective local governance depends upon strong local institutions. But in the long run, it will be strong collaborative linkages between institutions that sustain successful governance.

4. Broader implications for research: A new landscape perspective on resource governance

The various overlays of resource competition provide a rich, but challenging environment for studying the institutional experiments that have been initiated. It is not an exaggeration to say that the watershed framework has brought a landscape perspective to many of the problems encountered among communities competing for resources in ecosystems. This landscape view includes multiple villages and multiple resources, and undertakes to consider them as inter-related systems.

But these perspectives on watershed continue to be dominated by downstream views, visions and vulnerabilities. The focus has been on identifying the sources and implications of resource degradation. But the present research has shown that to understand the resource competition and the related institutional responses it is necessary to maneuver between different scales in the watershed. That is, to navigate the details of local culture and livelihood while keeping the larger setting of interactions between ethnic groups, villages and political units clearly in sight.

In this research, I have placed the emphasis on experiencing the watershed through the practices of natural resource management of the Hmong. Understanding how Hmong parallel systems of clan-based and official governance affect the Hmong strategies for engaging with their neighbors provides valuable insights on the difficulties experienced by the watershed network. At the same time, the history of Hmong-Karen conflict and the birth of new forms of cooperation between the two are essential in understanding the upland response to lowland pressures. A single village study would not uncover the networks of individual and institutional relationships that link people throughout landscape of the watershed. Nor would pure institutional analysis of the watershed network highlight the overlapping layers of competition that exist between the Hmong and Karen in the uplands and how this affects the way they engage with the Khon Muang.

Many studies of natural resource management problems start with the macro-policy context, often fixated on the effects of state and market interventions, to analyze the impacts on local and regional communities. The fundamental question addressed in the present research is not ‘how does policy affect local people’, but rather ‘how do local

people manage their own affairs in the face of internal and external pressures'. This approach recognizes the influence of outside forces and larger frameworks, but deals with them as factors within the processes of innovation, experimentation and assertion articulated at the level of everyday practice in the locality. In the case of natural resources, this is a useful approach because it allows us to start with a local problem and work up and through the nested levels of decision making and management to find an appropriate level of governance that produces outcomes that are balanced between local, regional and national interests.

The challenge of operationalizing such a view on landscape level research entails embracing a number of academic risks – risks that are seldom taken, even in the world of area studies. In addition to forsaking the safety of a disciplinary home, this multi-level landscape perspective requires the flexibility to move through the layers of society, from the household through the village to the ecological, economic and political expressions of region. But the potential benefits of this type of research out-weigh these risks by a large margin. The complexity associated with this approach makes available a wealth of nuanced detail about the interaction of human and natural systems, and is a valuable complement to the real-life, real-time efforts being made by local people to improve the governance of resources upon which depend. The challenges faced by Hmong community leaders in balancing the needs of their kinsmen and the demands of Thai society encompass the full range of these dynamics. The watershed networks that have struggled to prevent further intensification of tension and competition cannot limit themselves to narrow roles in the local governance landscape. Pursuit of this complexity requires the researcher be comfortable in the overlapping social networks that create the social space of the watershed.

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Local Terms Frequently Used in the Text

auf qai	Karen	perform ancestor rituals
chang	Thai	sub-district engineer
hif hkof	Karen	village ritual leader
hsgi	Karen	upland fallow field
kamnan	Thai	Sub-district chief
kae muang, kae faai	Thai	leader of water user group
klum anurak	Thai	village conservation group
khon ton nam	Thai	people of the upper watershed
kwv tij	Hmong	relatives
mao suan	Thai	agreement to purchase entire crop from a field
muu baan, muu thii	Thai	administrative village
muang faai	Thai	customary irrigation system and management group
muu faai	Thai	group of water users affiliated with certain weir
neej tsaa	Hmong	affinal relations
Nai Amphur	Thai	District governor
ntoo xeeb	Hmong	village spirit tree
nyag us nyag	Hmong	each does his or her own
palat	Thai	sub-district secretary
pauv zug	Hmong	labor exchange
po faai	Thai	irrigation group ritual leader
pok baan	Kam Muang	village settlment
prachakhom	Thai	civil society organization
sab laaj	Hmong	discussion process
seif deif pau	Karen	birth spirit forest
sws koom teg	Hmong	cooperate
sws raug zoo	Hmong	to get along well
taj soof lauz	Karen	upland field (non-rice)
tambon	Thai	Sub-district
thwv tim	Hmong	village spirit
tug hau zog	Hmong	customary village headman
vauv	Hmong	son-in-law
xeeb teb xeeb chaw	Hmong	local landscape spirits
xeem	Hmong	clan
yawm txwv	Hmong	father-in-law
yawm yij yawm dlaab	Hmong	brothers-in-law
zos, zog	Hmong	village