



Natural resource conflict management in local communities of forested watershed areas of Northern Thailand

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Abstract

This research investigated conflict situations from the use of natural resources, including conflict management and related factors in local communities of forested watersheds in the north of Thailand. Data were derived from document analysis, in-depth interviews, focus groups, and participatory observation. The results indicated that conflict in these areas involves the rights of three opponents: (1) users and users, caused by different requirements of access to water, land and collecting forest products; (2) community leaders and users, who had different performances on the rights to access natural forest resources; and (3) government agencies and users, which expressed tension and disagreement between community livelihoods and land use rights under forest conservation law. The conflict resolution focused on multiple approaches according to the actual situations. However, common pool resource management allowed the sharing of authorized rights of access and management by local institutions and governance in a community and a common forested watershed. In addition, effective conflict management required input from local community leaders and encouragement from government and non-government agencies.

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Introduction

Social conflict involves interaction and relationship between people occurring when at least two people or groups have disagreement about ideas, interests, values, beliefs, requirements, goals, and performances (Proksch, 2106). Such conflict enables people to express their concerns differently such as rejection, withdrawal,

aggression, and persistence. In the sense of common-pool resources, conflict has been a major concern across nations and communities because the rights of using and managing common-pool resources are difficult to clarify (Ostrom & Hess, 2011); multiple users in common-pool resources may affect the needs of one another (Ostrom, 2002). For example, economic needs in forested areas of Southeast Asia have increased competition for land use and forest products between local communities, indigenous people, government agencies, and private companies (Yasmi, Kelley, & Enters 2011). In Sudan, water conflicts between countries sharing common river

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basins have caused international tension and has led to difficulty in the development of treaties and institutions to resolve such conflicts especially when some countries attempt to control power of water use over other countries (Petersen-Perlman, Veileux, & Wolf 2017). Therefore, the conflict over common-pool resources is an inevitable and complicated social phenomenon between stakeholders or actors, which includes resource users, policy makers, agencies, politicians, community members and others.

In Thailand, critical conflict issues over using and managing natural resources have occurred due to the change in the national economy, society, culture, and politics along with development (Makkarapirom, 2006). The causes of these conflicts include the competition for serving basic and economic needs from natural resources, unequal right to access natural resources, and different attitudes and values about using natural resources (Dhiravekin, 2010). Apipalakul Wirojangud, and Ngang (2015) indicated that water shortage at Ubonratana hydropower dam, Khon Kaen Province, has led to disagreements in several sectors in response to different demand for cultivation, fisheries, communities, and industries. The conflict also occurs when national conservation policy and law enforcement disagree with livelihood practices and local natural resource management (Roth, 2008). People in highland areas have frequently confronted problems about the right to live and use natural resources in protected areas like national park, preservation forest areas, and wildlife sanctuary, which are declared by the Royal Forestry Department (RFD) to allow forest to recover from degradation (Vandergeest, 2003; Phomma, Padgee, Popradit, Ishida, & Ishida, 2019). This has been especially true for ethnic minorities in Northern Thailand, who have had intense problems with authorities since they settled near protected areas (Hares, 2009).

In general, conflict management with creative steps, methods, practices, or techniques helps resolve a conflict between opponents about controversial issues (Gartner & Melin, 2009). Moore (2014) also presented conventional approaches in conflict management, competition, accommodation, compromise, and collaboration. The competition approach involves competing with or dominating the opponents while the accommodation approach aims to yield to the opponents to maintain a relationship with them. The compromise approach encourages fair solutions for each of the opponents and the collaborative approach aims to obtain mutual benefits or win-win solutions for each opponent. However, sustainable conflict management over common-pool resources is controversial. Carlsson and Berkes (2005) believed that common-pool resource management

(CPRM) allows stakeholders in communities to participate in sharing problems, decisions, solutions, exploitation, management, power, and accountability in natural resource management since CPRM involves decentralization focusing on authorized transmission from central government to local government and local institutions (Larson & Ribot, 2004). Ostrom (2010) also believed that local communities will demonstrate their ability to manage common-pool resource when governments have the recognition of community rights in using and maintaining common-pool resources. However, CPRM may provide terrible results when people disagree on beliefs, values, and interests (Adam, Brockington, Dyson, & Vira, 2003). Law and regulations about natural resources also tend to increase the political issues between preservation and economic development (Johnston, 2003). Therefore, how to appropriately manage conflict over common-pool resources requires more clarification in response to minimize environmental deterioration and competitive problems from using and governing resource system.

This research aimed to examine interactions or expressions between opponents involved in conflict (see [Figure 1](#)) about using natural resources as common-pool resources in the context of forested watershed areas in the north of Thailand. The opponents referred to resource users, who used natural resources in the same watershed areas, community leaders, who emphasized natural resource conservation and management, and government agencies, who were the law enforcers of protected areas. In addition, the methods, practices, or approaches used in conflict management were examined including factors contributing to resolving conflict over natural resources as water, land, and forest products ([Figure 1](#)).

The focus of the research was on five different local communities: in Lampang (Sam Kha Village at Jang Watershed), in Lamphun (Huay Nong Luk village at Lee watershed), and in Chiang Mai Province (Mae Sa Mai village at Mae Sa watershed, Pang Jum Pee Village at Mae Lai Noi watershed, Huay Bong village at Ta watershed), where people were involved in conflict issues of water, land and forest products. These communities were selected due to remarkable experiences in conflict situation and related circumstances, which were essential to obtain details for elaborating description as the explanation of research method. They also had the geographic variations that allowed inclusion of more diversity of data and viewpoints into the description. In addition, familiarity with the leaders of the study areas was justified since it allowed the investigators to enter the study areas for data collection so as to be consistent with research methods.

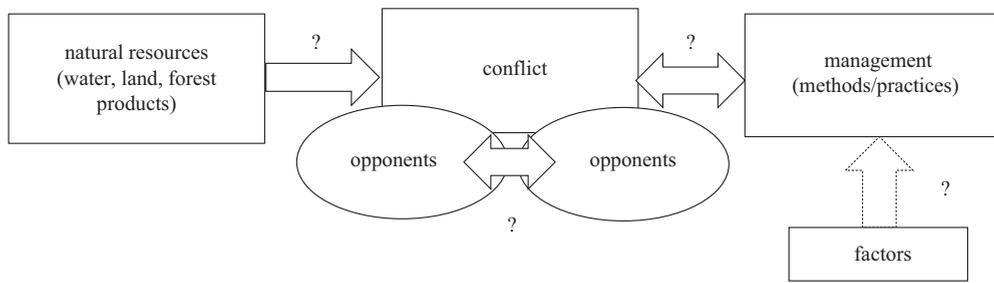


Figure 1 Research framework

Methodology

Four qualitative methods were used to collect data: in-depth interviews, focus groups, participatory observation, and document analysis. In-depth interviews provided direct conversation with participants, which allowed investigators to obtain details of ideas, thoughts, and experiences of participants (Liamputtong, 2013). The use of focus groups is also a flexible technique for obtaining data which allows assessment of similar and different data by discussion forums among homogenous groups of participants (Kloos, Thomas, Wandersman, Ellias, & Dalton, 2012).

In this research, a total of 30 participants for in-depth interviews and focus groups were purposively selected by snowball sampling technique, asking initial participants to introduce additional participants. They were from four backgrounds; these were: formal leaders, informal leaders, villagers, and agencies. The formal leaders consisted of an elected village leader (committee chair), who appointed an assistant village leader and a community committee (from the village) of 5–12 people to administer village affairs. The informal leaders were respected by villagers through historical links and had helped communities manage and protect common natural resources, and included teachers, academics, developers, and religious leaders. These included members of unofficial committees such as local water users' groups and natural resources networks. The villagers lived in and used natural resources in the study areas. Finally, agencies included representatives of government officials and non-government organizations that were involved in natural resource management within forested watershed areas.

Participatory observation was also used to understand and describe the contexts of the study areas: forest areas, agricultural areas, water sources, and livelihoods. This allowed the investigators to engage with the community

directly and combine observational notes with detailed information collected from using other techniques (Geilfus, 2008). Archival materials and documents such as maps, pictures, memos, and reports provided by participants were also examined. These were categorized, interpreted, and identified using the document analysis method by Mogalakwe (2006).

All data collected from individuals and group conversations, along with observational notes and documentary data, were transcribed and analyzed on an on-going basis. Data collection and analysis continued concurrently and shaped each other until a description was completed (Bryant & Charmaz, 2010). There were three steps in data process: data reduction, data display and conclusion drawing and verification. Data reduction involved selection, clarification, conceptualization, and transcription of all data collected. Data display referred to organizing and presenting data in a descriptive table. In the final step, data were interpreted and verified to draw a conclusion. However, the final conclusions appeared when data collection was completed.

Results

Conflict Issues and Opponents

Data analysis indicated that the use of water, land and forest products were common conflict issues of the communities sampled in the forest watersheds. These conflicts could be categorized into three core components: users against users, community committees against users, and government agencies against users. The users referred to gatherers, agriculturalists, and people inside and outside a village who required water, land and forest products to serve their different purposes based on unlimited needs. The leaders (community committees) in each community were responsible for protecting and

controlling the use of natural resources, with different concepts from users. The government agencies (Forestry Department, Departments of National Parks, and Wildlife and Plant Conservation) were the law enforcers of natural resource utilization in preservation forests, national parks, and national wildlife conservation areas, which contrasted with the livelihood and needs of communities living in these areas. A summary of the conclusions of the core opponents, conflict issues, and examples of expressions occurring at each community is provided in Table 1.

Conflict Management

Building participation with users and protectors

Building participation was conducted to reduce conflict issues and protect natural resources. Meetings were organized as a tool to share information, discuss problems, make decisions, determine agreements, and seek solutions among the opponents. The meetings were divided into community meetings and network meetings which provided different purposes and participants. The community meetings led by the community committee in each village were conducted within a village to mitigate conflict among opponents inside a village, users, leaders or natural protector, the community committee, and the forest committee. These opponents were invited to participate in the meetings and could share and discuss problems of natural resource use which led to a greater understanding about the importance of natural resource conservation and more cooperation in conservation. They also formed collective agreements such as rules and

regulations of natural resource use, forest conservation. However, the network meeting included opponents and participants from more than one village and was organized by the natural resource network committees such as the Jang Watershed Committee connecting with Sam Kha village and the Ta Neua Sub-District Natural Resource Network Committee connecting with Huay Bong village. Participants in this meeting consisted of users inside and outside a village, the representatives of the community committees and the forest community committees of each village, the representatives of the natural resource network committees, and the representatives of local government officials. They were obliged to: (1) share information about conservation activities and rules and regulations of natural resource use; (2) determine rules and regulations of natural resource use within a district or watershed area; (3) discuss problems and disputes among each village; and (4) consider appropriate solutions to problems and disputes.

Protection of land rights against government authorities

1. Challenging the law. This method was used to force government agencies to accept community land rights for ensuring the security of community livelihoods within conservation areas of national preservation forests (under the 1964 National Forest Reserve Act), national parks (under the 1961 National Park Act), and wildlife conservation areas (under the 1960 Wildlife Preservation and Protection Act). For example, in 2006, the community committee at Mae Sa Mai village worked with the Ethnic Network and Upper Northern People's Network (including the community committee at Lee watershed),

Table 1 The core opponents, conflict issues, and examples of expressions of the local communities in the forested watershed areas

Opponents	Conflict Issues	Examples of Expressions
1. Users and users	<ul style="list-style-type: none"> - water use - collecting forest products 	<ul style="list-style-type: none"> - The villagers at Mae Sa Mai complained about other villagers when they had insufficient water. - The villagers at Sam Kha argued with neighboring villages about burning forest for collecting mushrooms. - The villagers at Pang Jum Pee expressed dissatisfaction with others who gathered more bamboo shoots.
2. Community committee and users	<ul style="list-style-type: none"> - community regulations for forest use and conservation zone 	<ul style="list-style-type: none"> - The villagers disobeyed the regulations and ridiculed the conservation action of community committees. - The community leaders at Sam Kha and Pang Jum Pee village argued with neighboring villages about collecting forest products, and felling trees in conservation zone.
3. Government agencies and users	<ul style="list-style-type: none"> - land rights and law enforcement in protected area 	<ul style="list-style-type: none"> - Law and violent events caused the villagers at Mae Sa Mai and Huay Bong anxiety and discomfort about livelihoods and activities around the area of the national preservation forest. - The leaders and villagers at Huay Nong Luk participated in national protests to reclaim community legal right to live around the area of the wildlife species conservation.

to approach the cabinet minister to accept a re-draft of The Community Forestry Act. They lobbied for the right to participate in forest management and a re-draft of the Community Forest Act allowing this was approved. Ultimately, the cabinet minister allowed the communities to live and earn a living in the conservation areas as usual, however, the Community Forestry Act has not been approved and is still under consideration.

2. Negotiating with empirical data. The community committee at Huay Bong village used this method to protect forest and agriculture areas of villagers which overlapped with territorial areas of forest preservation and was being considered for gazetting as a national park. They cooperated with the Ta Neua Sub-District Natural Resource Network Committee, which was composed of the leaders of each village in Ta Neua Sub-District, to collect data of community contexts, natural resource maps, land use, and household agriculture areas for presentation to the Juridical Council. During this process, the Community Organizations Development Institute, the Thailand Research Fund, the Northern Development Foundation, and the Ta Neua Sub-District administrative organization were also involved in assisting the community committee. The data were presented to the Juridical Council to negotiate community land use boundaries and subsequently the National Park Department eventually returned approximately 1,977 acres to the Ta Neua community.

3. Accommodating policy and law. The community committees of each village were required to implement policy and law of natural resource utilization as government authorities regulated access to the land on which the communities live. The community committee's actions aimed to: (1) display their competencies of sustainable natural resource management to government agencies; and (2) increase negotiating power over community rights for the utilization of resources within conservation areas. Noticeably, natural resource use in the forests was more rigidly controlled by the rules and regulations established by each community, especially regarding forest clearing for agricultural expansion. An important component of the implementation of the community regulations included forest zoning determined by community members. Forest areas were usually divided into: utilization zones, non-use zones, and sacred zones. Utilization zones were areas where villagers could use natural resources independently in contrast to non-use zones, where no access to resources was allowed. Sacred zones were believed to accommodate supernatural beings that protect the area from disturbance; people who disturbed such areas will be punished by supernatural beings.

4. Connecting networks. The leaders of each community connected with natural resource networks to increase efficiency of conflict management between government agencies and communities. The purposes of connecting networks were to connect natural resource management and conservation, and to strengthen relationships with government agencies. The natural resource networks consisted of the representatives of the formal leaders (the community committee of each village), the informal leaders (the water user group and community forestry group), and government agencies (Forestry Department, National Park Department, and local authorities). For example, the Lee watershed Community Forestry Network connected with Huay Nong Luk village, Ta Kien Pom Sub-District, the Thung Hua Chang District, Lamphun Province.

Factors contributing to conflict management

The leaders of each community endeavored to mitigate conflict with several methods and these strategies were similar across communities, for example, sharing problems and seeking solutions with community members, enforcing rules and regulations for natural resource use, and performing natural resource conservation. Their management mainly depended on the community committee, which was an existing formal administrative structure in each village. This committee attempted to enforce rules and regulations equally to control the use of natural resources, negotiate solutions with government agencies, organize natural resource conservation activities, and engage with social networks within the region, district and province. The village leaders also acted as mediators to resolve disputes among villagers within an area.

In addition, government and non-government agencies responded to their missions and authority to encourage natural resource conservation and management in communities which helped resolve conflict in the use of natural resources. They provided resources which included knowledge, information, staff, materials, and budget. For example, local authorities at Ta Neua Sub-District and Ta Kien Pom Sub-district promoted participation in conservation activities, and the Siam Cement Group (SCG) company assisted in building bamboo weirs in the Jang forest watershed. They also offered direct help in solving problems consistent with the need of communities, for example, survey and measurement of forest, residential areas, and agriculture areas at Ta Neua Sub-District by Community Organizations Development Institute (CODI).

Discussion

Literature suggests the use of common-pool resources relating to property right has been problematic. The ownership of common-pool resource is difficult to determine (Barnes, 2009), which leads to competition among users in common-pool resource and the problematic management of common-pool resources (Ostrom, 2008). For example, the tensions between Sudan and neighboring countries caused by the difficulty of sharing and managing water in common river basin (Petersen-Perlman, Veileux, & Wolf 2017). Economic need in forested areas of Southeast Asia has also caused conflict between local communities, indigenous people, government agencies, and private companies (Yasmi et al., 2011). This research indicated that natural resource management at national and local level enabled individual, leader, community, and agency to produce conflict issues of rights in using natural resources. The conflict between users and users implied the problem of individual rights to access water and forest products. The forest and watershed management of community leaders also led to conflict in the rights of two opponents. The first opponent was leaders against users of natural resources in a community after they declared community regulations for forest use and conservation zones to restrict the individual rights to access common resources. Another opponent was users against users of natural resource between communities occurring when a person in a community was deprived of the individual right to access common resources by regulation of neighboring communities. Users in local communities at forested watershed areas also argued with government agencies about land right of individual and community for survive in protected areas, which commonly occurs in the north of Thailand, especially in highland areas (Vandergeest, 2003; Phromma et al., 2015).

In response to a conflict situation, the community leaders in this research had managed to divide the community right from the state right on forest and land in protected areas using multiple approaches, which depended upon actual situations. They used competition approach to win the opponents over by reclaiming the community right against government authorities to manage protected areas for sustaining livelihoods. Accommodation approach also occurred when the community leaders agreed to manage natural resources in forested watershed areas to follow conservation policy and law rather than repel government authorities. In addition, the community leaders used compromise

approach by the methods of negotiation to reclaim legal community right on forest and land in protected areas; empirical data about community land use boundaries were presented to negotiate with government institutions.

However, this research highlighted the collaborative approach as the dominant contribution to share rights in natural resource management since this approach leads to more sustainable conflict management under the principle of mutual benefits or win-win solutions for all stakeholders (Moore, 2014). The community and network meetings were used as collaborative tools for organizing institutions and mitigating the conflict between opponents.

The community meeting helped enhance better understanding about community agreements and regulations among users and leaders including community institutions of natural resource management within a community. The network meeting purposed to mitigate conflict between the users inside a community, the users in neighboring communities, community leaders, and government agencies within a network community. Such meetings implied the application of the concept of common pool resource management (CPRM) in conflict management, which allows stakeholders in communities to participate in sharing problems, decisions, solutions, exploitation, management, power, and accountability in natural resource management (Carlsson & Berkes, 2005). In this research, the stakeholders included users, community leaders, government officials, and networks of natural resource management.

The findings here also indicated that the internal and external agencies were pivotal to control conflict over natural resources in forested watershed areas. The internal agency included community leaders and their strategies, and the external agency involves the mandatory role of external agencies. The community leaders had the efforts to govern natural resources and control conflict situation, which require intelligent strategies to develop mission, encourage values, inspire followers, manage resources, communicate with people, and engage in any concerns (Gill, 2011). Palmer (2007) indicated that leadership helped stimulate collective action for sharing community property rights in the forest areas at East Kalimantan, Indonesia. The local leaders in fringe communities of the Kogyae Strict Nature Preserve, Ghana is another example of key influence of cooperation in water management between ethnic people and early settlers (Ofori, Nukpezah, Ayivor, Lawson, & Gordon, 2014). Without the community leaders, the conflict management will not be possible and the conflict situation in local communities will be exacerbated. However, the achievements of community leaders in conflict management required the

encouragement of the external agencies, which included grants, materials, staff, counsellors, knowledge, and collective learning process.

Conclusion and Recommendation

The conflict over natural resources in local communities involved three opponents, users and users, community leaders and users, and government agencies and users, in the context of watershed forest areas since natural resources are common property relating to the rights of access. However, the conflict management led by community leaders suggested multiple approaches relating to actual situations. Importantly, collaborative approach by participatory meetings directed to more sustainable conflict resolution than other approaches. The performance of community leaders also indicated the internal competency of local communities in response to conflict over natural resources. Therefore, conflict management over natural resources in local communities of forested watershed areas should focus on strengthening the competency of community leaders in appropriate conflict management and common-pool resource management relating to sharing right between stakeholders in common access and management sustainably. In addition, to alleviate conflict over natural resources, the government should continue to encourage natural resource management of local communities and lessen the legal provision according to community livelihoods depending upon water, land and forest products, especially in protected areas.

Conflict of Interest

There is no conflict of interest.

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