

# **TRADITIONAL FOREST MANAGEMENT IN MAE THA COMMUNITY, NORTHERN THAILAND**

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## **1. Introduction**

This report is part of a long term international research program of the Participatory Forest Management Sub-Group, Forest Conservation Sub-Program of the International Global Environmental Strategies (IGES). The research in Thailand was conducted in cooperation with the Thailand Community Forestry Outreach Program (TOP) of the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC). RECOFTC, as collaborator, and its community forest network members, Department of Forest Resource Management, Chiang Mai University, and Northnet, a local non-governmental organization (NGO), conducted this field research.

The research program aims to promote participatory forest management. Therefore, in this research traditional forest management was examined to be familiarized with traditional systems and identify management issues. The immediate research objectives were three-fold : 1) to gain insight into the community's forest management and utilization of forests, 2) to find and develop research methodologies that are appropriate to document and analyze traditional forest management systems, and 3) to disseminate results of the study to other communities.

## **2. Methodology**

The action research was employed in the study with the aim to make use of the information and the research findings to benefit the community. Mae Tha forest at Tambon Tha Nue, Mae On district, Chiang Mai province was chosen as a site for a research on traditional management of fertile forests in the North of Thailand. The participatory approach was applied to create participation and cooperation among the community, local NGOs and academic institutions to re-examine their forest management systems. The process of the research comprises the selection of sample villages, selection of topics and method of study, data collection and analysis, and community workshop in order to incorporate the villagers' comments into a report.

The work started in late December 1998 with secondary data collection and review from different sources, such as geographical maps, local records, documents and publications and various recommendations of the community and related organizations. As for the primary source, the data were gathered using various methods such as participatory rural appraisal (PRA), and Questionnaire (RECOFTC, 1996). The research tools and techniques employed were sketch mapping, matrix ranking, and discussion with key informants. Group discussions and semi-structured interviews were also conducted. This field data collection process lasted for two weeks.

For the forest resource survey, the researchers made use of the 1995 and 1996 survey reports of the Northnet. The researchers, the representatives of NGOs and the community took part in data collection. The villagers were very cooperative, and they were pleased to give suggestions and recommendations.

## **3. Discussion of Research Findings**

### **Physical features and history of the community**

**Physical features:** Tambon Mae Tha covers an area of 47,208 rai or 128.3 sq km. Approximately 80% of the area is in a valley surrounded by the Phi Pun Nam Mountain Range, which rises to an altitude of 500 meters above sea level and is the origin of Mae Tha River. The north of Tambon Mae Tha borders Tambon Mae Tha Nua, Mae On sub-district. The south borders

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Tambon Tha Pladook, Mae Tha district, Lampun province. On the east it borders Jae Hom district, Lampang province and on the west Ban Thi district, Lampun province (see Figure 1).

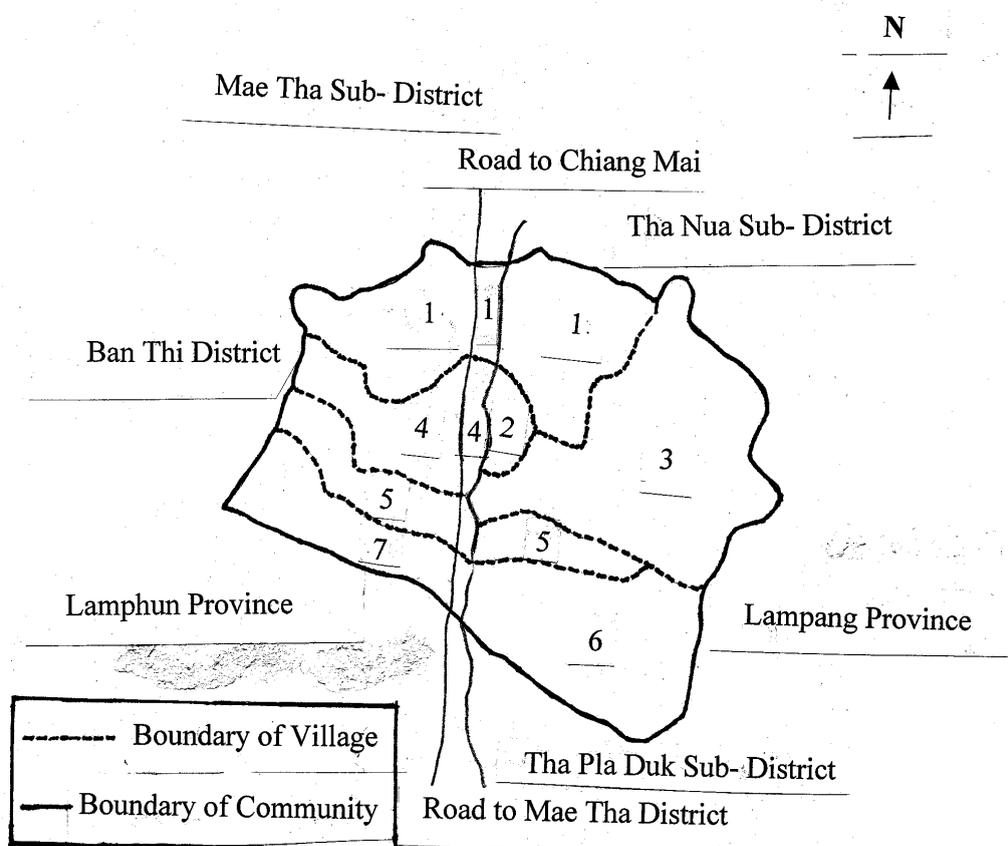


Figure 1. Map illustrating the location of and access to Mae Tha community

Mae Tha is on undulating land. There are three major kinds of rock: sedimentary rock of Devonian and Silurian period, sedimentary rock of Carboniferous period and igneous rock of Triassic period. The rock of Devonian and Silurian period is found at Mae Bon River basin while the one of Carboniferous period is found at Pongka River basin. The igneous rock of Triassic period is found at Nam Khun Creek, Mae Loh Creek and Sai Creek. The types of soil of the plain in the valley are loam, sandy loam and clay (Land Development Department, 1993)

The climate of Mae Tha is of tropical monsoon type. The rainy season starts in May and lasts until November, with the average daily temperature of 27 to 29 °C. The winter is from December until February, with the average temperature of 21 to 23 °C and the summer is from March until April, with the average daily temperature of 28 to 31 °C. The average rainfall is 1,100 to 1,200 mm per year. The chance of rainfall is 80 days or more per year (Meteorological Department, 1996).

**Chronological history:** In 1650, people fled from the Thai-Myanmar war to settle along the bank of a river in the Mae Tha Valley and later in 1790, with other groups of people migrating from Chiang Mai and Lampun, the community was expanded. At present, the community consists of seven villages.

The study found that although the community has made use of the forests around the villages for a long time, the forest management by the community began in 1955. During the time when the logging concession was granted to the private sector, the community requested that certain forest areas be reserved for its own use. The community took good care and made use of the forests until the areas were proclaimed forest reserves in 1964. In 1972-73, the sleeper concession was

granted and most of the trees were cut down. In 1993, according to the forest land zoning the government reserved certain parts of the forests in order to establish Mae Takrai National Park. Some areas were designated forest reserved areas or forest Zone C. The villagers disagreed with the boundaries of the proclaimed national park and established rules and regulations to maintain the protected forest areas and have observed them since then. The major chronological events of the community are described in Table 1.

Table 1. Major chronological events of the community

Date	Events
1790s	A group of people escaped from Myanmar-Thai war and settle at Pok Khoklang and later expanded to Ban Tha Kham.
1897	Some families migrated from Chiang Mai and settled in Ban Huai Sai.
1901-08	Mae Tha forest logging concession was given to Bombay-Burma Company
1937-64	The forest logging concession was given to Kheng Thai Seng Company in Lampang province.
1947	Tobacco industry received concession to collect small trees as firewood for leaf fumigation
1957	A concession was granted to Thai Railway to make railway sleepers and collect firewood.
1975	Construction of reservoirs on Mae Tha, Nam Kun and Nam Bon streams to increase water supply for paddy fields.
1982	Floods on Mae Tha River forced many households to move their houses to higher land. Corn was introduced and planted in degraded forests.
1983	A large forest fire destroyed most of the forest vegetation. Leaders of Mae Tha started receiving baby corn quota production from the UFC Company.
1987	There was little water in the rivers for paddy field farming.
1989	Mae Tha sub-district was set up.
1990	More serious drought affected farming activities in Mae Tha.
1991	Villagers in Kho Klang blocked illegal logging truck.
1992	Tree planting was done in Huai Sai Village by villagers.
1993	Mai Ta Krai National Park was declared and cutting of trees was prohibited.
1994	Mae Tha sub-district leaders objected the extension of National Park boundaries.
1999	Village and village headman was arrested by the forest officer for tree cutting

### Socioeconomic condition

**Population:** Community of Mae Tha sub-district consists of seven villages: Ban Thamon Moo 1, Ban Tha Kham Moo 2, Ban Khor Klang Moo 3, Ban Huay Sai Moo 4, Ban Pa Nod Moo 5, Ban Tha Don Chai Moo 6, and Ban Mai Tha Don Chai Moo 7. There are 1,235 households with 4,618 inhabitants (2,332 males and 2,286). Sixty percent of the villagers are between the ages of 19 and 50 years old. The majority of them are Buddhists; temples serve as places for religious ceremonies and social functions (MaeTha Sub-District Council, 1997). Festival calendar is seen in Table 2).

In Mae Tha community, land is used for agriculture and for living. The land for both living and agriculture, which is 29% of the whole area of the community, covers the area of 21,475 rai while 71% of the area, 52,733 rai, are covered with forests. The forests are classified into three

types: pristine evergreen forest on top of the mountain, dipterocarp forest, and mixed deciduous forest where various kinds of bamboo are also found. Villagers go to collect forest products from this forest which covers 17,907 rai, 24% of the land. The area of 34,826 rai on top of the mountain, which is 47% of the total, is a protected watershed forest. A land use map is shown in Figure 2.

Table 2. Festival calendar

Festivals	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Harvest												
Songkran												
Paying respect to local spirits during the growing season												
Paying gratitude to spirits protecting watershed												
Commemorating of the deceased												
End of lent												
Loy Krathong												

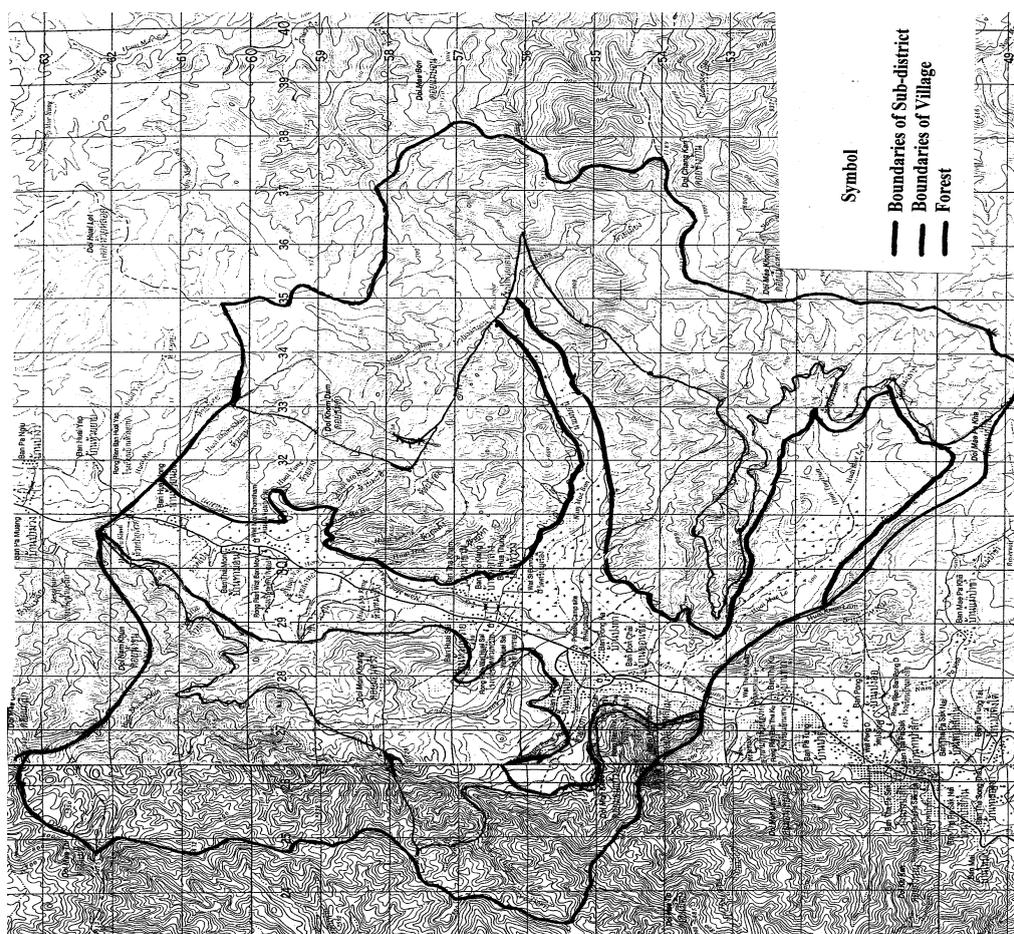


Figure 2. Land use map

**Occupations:** The majority of the villagers are farmers. The land occupied by each household is approximately 3 rai. Their main income is from baby corn growing. The villagers also grow longan, mango, banana, tamarind and jackfruit trees for their own consumption and sale (see seasonal calendar for cultivation and forest product collection in Table 3).

Table 3. Seasonal calendar for major crops and forest product collection

Activity	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Growing rice												
Growing baby corn												
Bamboo shoots												
Bamboo												
Honey												
Firewood												
Local vegetables												
Grass												
Ants'eggs												
Hunting												
Herbs												

The villagers, especially, those of Moo 3, are piloting fish farming after harvest. After the growing season, they produce baskets and fans from bamboo. Besides agricultural jobs, the villagers work in factories in Lampun and some became construction workers in the nearby districts.

Village organizations or groups are sub-district administrators who are responsible for the safety and infrastructure construction. Their offices are at Mae Tha sub-district. The administration is chaired by the headman of the community and the village headmen are members of the organizations.

Mae Tha community consists of 7 villages with 21 groups/organizations in the community. Each village has the same kinds of group/organization such as the village council, special interest groups, and organizations established for special purposes such as cooperative group, saving group, rice bank, cattle bank, poultry group, mixed cultivation, non-toxic vegetables grower group, products processing group, corn grower group, fertilizer group, woman group, youth group, water consumer group, and forest conservation group.

#### 4. Community resources

##### Forest and Wildlife

Traditionally, Mae Tha community has divided its forest into 3 categories i.e., Paa Khun Nam or headwater forest, Paa Chai Soi or Multiple use forest, and Paa Sua Ban or Sacred forest. Paa Khun Nam is located in the head of the watershed and is managed as source of water. Paa Chai Soi is managed for multi-use of people in a community while Paa Sua Ban is managed as a holy place for ritual. Community use Paa Sua Ban for ritual making every year.

In terms of biophysical feature, Mae Tha forests are classified into 4 types: 1) Mixed deciduous forest : The main species of trees are teak, *Bauhimia sp.*, *Xylia kerrii*, *Pterocarpus macrocarpus*, *Dillenia abovata*, *Lagerstroemia sp.*, *Vitex canescens*, *Gmelina arborea*. They grow among different kinds of bamboo.

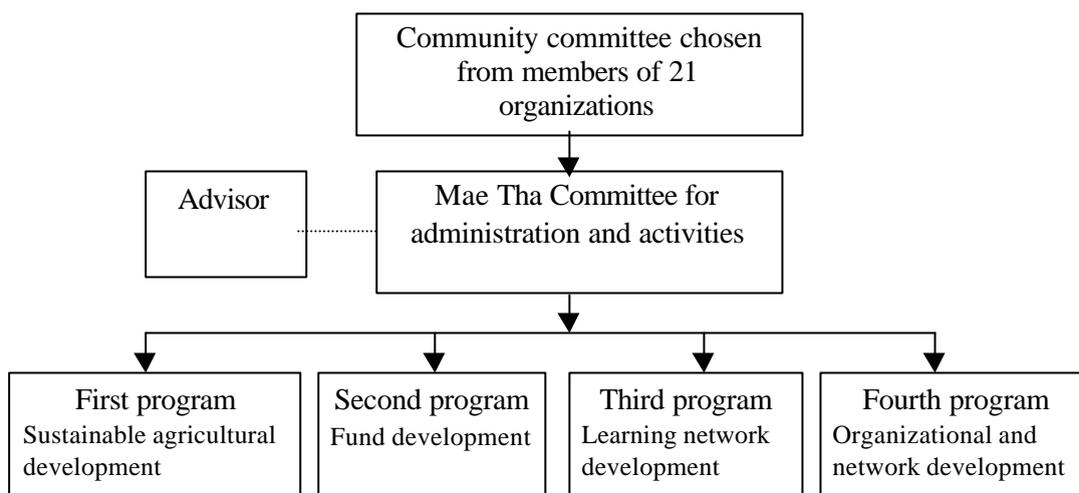


Figure 3. Organization and network structure

2) Dry dipterocarp forest : The main species of trees found in this type of forest are *Dipterocarpus obtusifolius*, *Dipterocarpus tuberculatus*, *Irvingia oliveri*, *Shorea obtusa*, *Shorea siamensis*, *Melanorhoea glaba*, *Pterocarpus macrocarpus*, *Dillenia obovata*. 3) Hill evergreen forest : This type of forest is at the altitude of 1,000 msl. The main species of trees is *Quercus sp.* 4) Pine forest : This type of forest is at the altitude of 700-1,000 msl. The main species of trees is local pine namely *Pinus merkusii*.

Most of the wildlife are common wild pigs, barking deer, rabbits, squirrels, wild fowls, snakes and birds.

## Forest utilization

### Collecting forest products

**Bamboo shoots:** In the areas of Huay Nam Khun, Huay Mae Bon and Huay Mae Lao which are approximately 1-6 km from the community, bamboo shoots of different kinds are collected during the rainy season from July to September, for sale as well as for household consumption. Fresh bamboo shoots cost 5-10 baht per kilogram while the preserved ones cost 2-3 baht per kilogram. According to the forest council's regulations, each of Ban Tha Kham's households is permitted to collect approximately 10 kg of bamboo shoots per season, but there is no restriction imposed on the villagers of Ban Khor Kla, Moo 4 during the first 15 days of August and September.

**Bamboo:** Bamboo is collected from the multiple-use forest and protected forests. In the mixed deciduous and dry dipterocarp forests, the villagers collect not more than 30 bamboo trees. The bamboo is used for making brooms, mats and baskets.

**Herbs:** Herbs are collected from both mixed deciduous and dry dipterocarp forests, which are production and protected forests, and some time from the vicinity of Ban Moo 2. There are four medicine men in Mae Tha sub-district---one from Moo 2, two from Moo 3 and another one from Moo 4. There are approximately 40 patients a month. Not more than 20 kinds of herbs are collected and they are sold at 5 baht a pack.

**Honey:** During summer (February-April) honey is collected from *Dipterocarpus obtusifolius* and *Dipterocarpus tuberculatus* in the production and protected forests. Beehives are smoked and the sections where honey is stored are sliced off while the rest of the hive is left to store the forthcoming honey. Honey costs 100 baht per litre. The villagers sell beehives and honey to traders and local people.

**Logging:** Trees in both mixed deciduous forest and dry dipterocarp forests are cut for timber which will be used for construction work, furniture making and cart building.

**Firewood:** Dead wood in production and protection forests is collected for firewood in the households.

**Ant eggs:** Ant eggs are collected from 8-10 ant nests (1 kg) during summer (January-May) in both mixed deciduous forest and dry dipterocarp forests for household consumption and/or for sale.

**Mushrooms:** Mushrooms are for household consumption and for sale to traders. Ninety percent of the villagers of Moo 4 collect mushrooms. Mushroom collecting is mostly done by women. The villagers think that the mushrooms grow well in the burnt area, thus, they burn the forests to give way to mushroom growing. Mushrooms of different kinds being collected are *Lentils polychrous* (Hed Lom), *Termitomyces fuliginosus* (Hed Kon), Hed Moi, Hed Hard, *Cantharellus minor* (Hed Kamin Lek), *Russula delica* (Hed Lom Hhao or Hed Ta Krai), Hed Pae, *Amanita sp* (Hed Kaiharn or Hed Ra Ngog) and Hed Hang (see Table 4).

Table 4. Mushroom collecting

Kind of Mushroom	Reaping time	Price per kg (baht) <sup>1</sup>
Hed Lom ( <i>Lentinus polychrous</i> )	Aug, Sept, Oct, Nov	-150
Hed Tob ( <i>Astreaus hygrometricus</i> )	Aug, Sept, Oct, Nov	-100
Hed Kai Harn ( <i>Amanita sp</i> )	Aug, Sept, Oct, Nov	-60
Hed Kamin Lek ( <i>Cantharellus minor</i> )	Aug, Sept, Oct, Nov	-
Hed Na Moi ( <i>Russula cyanoxantha</i> )	Aug, Sept, Oct, Nov	5-10

**Rattans and Vegetables:** Rattans are collected to make baskets. Grass is collected to make broom. Leafs of *Dipterocarpus tuberculatus* are collected to make roof. The villagers in Moo 2 and Moo 3 collect vegetables and fruits from the mixed deciduous and dry dipterocarp forests such as Calabash cucumber (*Lagenaria siceraria*), Toon (*Colocacia gigantea*), White gourd (*Benincasa cerifera*), Tufted fern (*Pteridium aulinum*), Pak Ki Sied (*Glinus herniarioides*), Pak Sa Rae (*Broussonetia kurzii*), Neem (*Azadirachta indica*), Pak Hued (*Ficus lacor*), Puk Houn MU (*Dregea volubilis*), Cha-Om (*Acacia pennata*), Keelek (*Cassia siamea*) etc.

**Cattle raising:** During the rainy season (May-November), cattle graze in the forests while during December –April, they graze within the boundary of household compounds or in the fields. There are 100 oxen in Ban Tha Mon, 120 in Ban Khor Klang, 200 in Ban Huay Sai and 450 in Ban Don Chai.

**Hunting:** After harvest, the villagers, for example, of Ban Tha Kham and Ban Kor Klang hunt birds, common wild pig (*Sus scrofa*), squirrels (*Callosciurus sp.*), wild rabbits (*Lepus penguensis*) and barking deers (*Muntiacus muntjak*) for household consumption or for sale.

## 5. Forest Management

### Traditions and beliefs

The study found that forests around the villages have been the villagers' source of food and wood supplies. There are traditions and beliefs which are related to forests such as: Offering tribute to the watershed spirit: On the 9<sup>th</sup> day of the waning moon in the ninth month of the year, the villagers of Ban Mai Ta Krai, Ban Pa Ngew, Ban Kor Kland and Ban Tha Kham offer food to watershed spirits to ask for abundant water and to express their appreciation to the spirits for bringing prosperity to them. There are also rules and regulations the villagers have to observe in order to maintain the natural surrounding of the watershed.

Offering tribute to dike spirits: The offering is held on the day when irrigation ditches and dikes are repaired – before the water flows into the irrigation ditches. The villagers pray that the spirits take good care of the irrigation ditches and dikes for good rice yield.

<sup>1</sup> The price is not fixed , depending on the production period

### **Principle and criteria for forest use**

Three principles of using forest resources can be described as follows: 1) use as necessary to meet felt needs, 2) efficient and wise use, and 3) use and manage the inferior wood and forest.

With the three principles of forest use, the criteria for forest use and management are 1) having common rules and regulations for everyone in the community, 2) everyone is responsible for the protection of forest, 3) collect and use forest products according to their seasons, and 4) be aware of harvesting methods.

Indicators for forest management set up to monitor the forest are as follows:

<b>Quantity:</b>	richness of trees, water, and good soil
<b>Size:</b>	various sizes of forest resources such as big and small trees
<b>Kind:</b>	various kinds of plant and animal species
<b>Character:</b>	clear water, black soil, and green forest
<b>Timing:</b>	long-term richness of forest resources
<b>Man:</b>	not cutting trees illegally, help regenerating forest, protecting forest and suppressing fire

### **Practices:**

Eight forest practices are being implemented i.e., not accumulating wood; not destroying forests; replanting trees to substitute the used; cutting appropriate size trees; cutting one tree out of three and leaving 2 trees for regeneration; protecting from forest fire; reusing wood and efficiently using cut trees; and teaching children about forest conservation.

## **6. Organization management**

The forest management by community organizations started when the government gave logging concessions to private sectors in 1955. The villagers asked the government to reserve certain parts of forests for their common use. Since then the community has shared their responsibility in maintaining the forests, no matter whether the forests were declared national forest reserves in 1964 or they were declared protected forests in 1993. In 1971 when there was illegal logging, the villagers cooperated with the army in taking care of the forests. During 1972-73 when a railway sleeper concession was granted, many trees were cut down and the forests became degraded. The villagers helped recover the forests and in 1993, they established rules and regulations to maintain the prosperity of the forests. However, their activities have not been approved by the authority. In January 1999, the forest community council permitted the villagers to cut trees, but the latter were arrested by the authorities. This led to a conflict between the villagers and the authorities.

Northnet, an NGO, since 1995 has trained the villagers to survey forest resource and plan to manage forests. The forests are divided into four zones according to the boundaries of tributary rivers flowing into Mae Tha River. They are Huay Mae Loh, Huay Mae Bon, Huay Name Khun and Huay Mae Pong Ka. The main activities in forest management are to build barriers to prevent fires in January to March, to extinguish forest fires, grow supplement trees June to August, to establish rules and regulations on the making use of the forests, on collecting forest products, and on wildlife, and to establish a forest upkeep fund. Details of the forest management plan are described in Table 5.

The Mae Tha Forest Conservation group plays an important role in protecting and managing community forests. It was set up in 1993 with the purpose to protect the forests where the villagers make a living. Every village in Mae Tha community has their own forest conservation group and a representative from each group is a member of the Mae Tha Forest Conservation group. All members of the forest conservation group are volunteers receiving no remuneration. Their main responsibilities are 1) considering whether to permit the villagers to cut trees in multiple use forest for house construction 2) preventing forest fires, and 3) establishing rules and regulations in relation to forest protection.

To take care of the forest, the Mae Tha Conservation group has to cooperate with the village headmen and has to raise funds from the members of the community and others.

Furthermore, the community coordinates with organizations and people networks to negotiate with the government in rectifying boundaries between the National Park and the community and supporting the formulation of Community Forest Bill.

## 7. Rules and regulations of the community forests

Rules and regulations on the community forests were set up and acknowledged by the members of the community. Those who violate them will be boycotted. These rules and regulations are different from the former practice of the villagers in that the villagers no longer save wood for the latter generations as they used to do. If they keep wood for a long time, it will decay.

The villagers used to have a conflict with investors who wanted to make use of forests, but they received no support from the authorities. Under the strong leadership of the community headmen, problems on forests in the community can be efficiently solved. However, as there are no laws underlying their activities, the problems concerning community forests cannot be managed efficiently.

If there is any forest fire, the villagers volunteer will suppress the fire. Those who cannot join the team have to give financial support unless the forest community council considers otherwise. Examples of the community's rules and regulations are shown in the box.

Table 5. A summary of Forest Management Plan, Mae Tha Community

Zone	Community Forest			Activities
	Protected forest	Multiple use forest area	Total	
Huay Mae Loh	6556	3306	9862	<ul style="list-style-type: none"> <li>- Taking care of the degraded forests</li> <li>- Building barriers to prevent fire</li> <li>- Creating better understanding with the villagers</li> <li>- Decreasing the production of preserved bamboo shoots</li> <li>- Growing edible trees in old forest fallows</li> </ul>
Huay Mae Bon	13494	5319	18813	<ul style="list-style-type: none"> <li>- Growing supplementary fruit trees</li> <li>- Constructing barriers to prevent fire every month from January to June</li> <li>- Controlling tree cutting and forest product collecting</li> <li>- Giving training in bamboo strip weaving and giving knowledge about herbs</li> <li>- Raising fund for various traditional occasions</li> </ul>
Huay Nam Khun	5150	3470	8625	<ul style="list-style-type: none"> <li>- Growing supplementary trees</li> <li>- Extinguishing forest fire and constructing barriers to prevent fire</li> <li>- Establishing rules and regulations on collecting forest products</li> <li>- Discussing forest management with other villages</li> <li>- Marketing forest products</li> <li>- Forest fund raising</li> </ul>
Huay Mae Pong Ka	7013	3625	10278	<ul style="list-style-type: none"> <li>- Constructing firelines</li> <li>- Forming fire prevention volunteer group</li> <li>- Encouraging weavers who make use of the forest products and do marketing</li> <li>- Producing preserved bamboo shoots</li> <li>- Growing edible trees in old forest fallows</li> </ul>

Box 2 Examples of Mae Tha's rules and regulations on community forests

**Moo2 and Moo 3**

*Protected forest:* Tree cutting is strictly prohibited.

**Regulations on a request for wood**

1. In building a new house, the number of trees are permitted as follows:
  - The number of trees for posts must not exceed 20
  - The number of trees for building structural timber must not exceed 5
  - The number of trees for floor must not exceed 5.
2. In repairing and renovating a house, the number of trees permitted are:
  - The number of trees for posts must not exceed 12.
  - The number of trees for building structural timber must not exceed 2
  - The number of trees for floor must not exceed 2.
3. In building a barn, the number of trees permitted are:
  - The number of trees for posts must not exceed 6.
  - The number of trees for building structural timber must not exceed 2.
  - The number of trees for floor must not exceed 2.
4. Others: depends on the agreement between the two villages

**Steps of wood cutting**

- Inform the community forest committee or the village headman
- Describe use objectives, size and quantity of timber tree in the given form
- The committee inspect the forest and the trees requested
- Submit the request to the monthly meeting of the committee
- Six members (at least) of the committee inspect the wood request
- Put red mark on requested trees
- Give permission document for wood use with signatures of the inspecting committee's members
- Submit the permission document to the sub-district council for endorsement
- Tree cutting will be allowed after the above steps are considered.
- Inform the committee or the village headman before transporting wood

**Ban Pa Nod , Moo 5**

- The number of trees for posts must not exceed 20.
- The number of trees for structural wood must not exceed 3.
- Only dead trees can be cut for firewood. The villagers are not permitted to cut down trees for firewood. Tree girdling is prohibited. A penalty imposed on an offender is 200 baht fine for each tree.

**Ban Moo 6**

- The number of trees for posts must not exceed 20.
- Firewood can only be made from dry wood or wood from the villagers' own land.
- Tree girdling is prohibited.
- A penalty imposed on an offender is 200 baht for each tree.

## 8. Conclusion

The Mae Tha community was founded more than 200 years ago. Traditionally, the villagers rely on forests for their food supply, firewood and wood for other purposes. Forests are places where water originates. Water is indispensable for agriculture and people in the community. After the government gave logging and firewood concessions of many forests to the private sector, and declared many of them as national forest reserves, national parks and protected forests, the villagers were unable to make use of them in compliance with their traditions. As a result, there have been conflicts of interest between the government and the villagers. In 1995 when the government gave a logging concession to a private company, the villagers deliberately took part of the forests and turned them to community forests. They established rules and regulations to take care of the

community forest. With the strong leadership of the community and the assistance from NGOs, the community had the opportunity to survey forest resources and to plan their own forest management. However, as there are no laws underlying such rules and regulations, the traditional forest management by the villagers has encountered problems and the villagers cannot make use of the forest in the way they want. Management issues identified by the community are forest fires, illegal tree cutting, collecting of non-timber forest products, and unclear boundary of the national park.

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