

TRADITIONAL FOREST MANAGEMENT IN BAN CHAD COMMUNITY, NORTHEASTERN THAILAND

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1. Introduction

This report on the Ban Chad Community, Ubon Ratchathani Province is a part of 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 (RECOFTC). RECOFTC, as a collaborator, and its community forest network member, Ubon Ratchathani Regional Forest Office of the Royal Forest Department (RFD), conducted this field research.

The research program aims to promote participatory forest management. Traditional forest management was examined in this research to become familiarized traditional systems and identify management issues. The immediate objectives were three-fold: 1) to gain insight into the community's forest management and utilization of the forests, 2) to find research methodologies to encourage and support sustainable forest management by the community, and 3) to disseminate the results of the study to other communities. The subject of the study was Ban Chad (Chad village), Si Muangmai District, Ubon Ratchathani Province.

2. Methodology

The action research approach was employed in this study with the hope to make use of the information and the research findings to benefit community forest management. Four main steps were identified in the study: 1) selecting the target village, 2) community mapping, 3) data collection and analysis and 4) a community workshop conducted to receive feedback from the villagers.

The gathering and analysis of data started with secondary data review which include records of local organizations, various documents, and recommendations of the community and related organizations. Topographical and other maps were consulted. As for the primary sources, the data were gathered using various research methods such as Participatory Rural Appraisal (PRA), Participatory Forest Resource Assessment (PFRA), and Questionnaire (RECOFTC, 1996; Satit, 1982). The research tools/techniques employed were Participatory Sketch Mapping, Matrix Ranking and Scoring, discussion with key informants (Orapin 1994). Group discussions and semi-structured interviews were also conducted. Questionnaires on families were also used randomly for 20% of the households. In addition, nine 10 x10 meter sample plots were used to assess forest resource conditions. Every step of the data collection was carried on in a participatory manner with the cooperation of the community's 16 representative villagers serving as local researchers. The key researchers were to pass on and exchange the methods of data collecting with the rest of the local researchers, after which data were analyzed, summarized and presented to the village seminar. The villagers were very interested and actively participated in the presentation and discussion of the research findings.

3. Discussion of Preliminary Findings

Village history and characteristics

Ban¹ Chad is a village located at Moo 3, Tambon Nam Taeng, Amphur Si Muang Mai, Ubon Ratchathani Province. It is 28 km from Amphur Si Muang Mai. Its neighboring town is Khong Jiam and it is 90 km away from Ubon Ratchathani Province. Ban Chad is accessible by road from

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¹ Ban is local name for a village; Tambon is local name for a sub-district; and Amphur is local name for district

Ubon Ratchathani to Ban Chad passes Amphur Piboon Mungsaharn, Amphur Si Muang Mai and Tombon Namtaeng.

Topography of Ban Chad is generally flat. The physical features of the soil here can be divided into two groups: 22 and 41/41b. Soil group 22 is in a flat area, sandy, infertile with pH 4.5 to 5.5, poorly drained, and is presently used for crops or vegetable cultivation. Group 41/41b is in an undulating area, sandy loam, pH. 4.5 to 5.5, approximately 50 cm in depth, erosive and is used for cultivation.

Ban Chad has a mild climate with an average temperature, in 1997, of 28.16°C. The average highest temperature is 39.5°C in May and the average minimum temperature is 13°C. The 10-year rainfall (1988-1997) average was 2,148.36 mm. The maximum amount of rainfall recorded was 3,240.50 mm in 1992. The minimal rainfall recorded was 1,483.50 mm in 1995. As for the seasons, summer is from February to May. During summer, it is very hot. Rainy season is from June to October. During this season, rain and storms frequently occur. Winter is from November to January. The weather is cold and dry.

Ban Chad is located in the Phu Lone National Forest Reserve (proclaimed in 1973). The area of the village covers 3,300 rai; 2,170 rai² is for cultivation and the rest is for residential areas, public land and forest land. The boundary of Ban Chad to the north and east is Ban Na Kor, to the south and west is Sae Stream.

The village location is in the plateau or undulating land, at an altitude of 150 meters and surrounded by plains for cultivation. To the north and the west of the village, next to the land for cultivation, are alternate plateaus and plain forests. The participatory village mapping shows the scattering of the houses and the geographical features of the community (Figures 1 and 2).

From interviews, Ban Chad community was founded more than 90 years ago. At that time Nai Sanade, a hunter, came with his companions -- all were residents of Ban Na Poe -- to hunt in the area which is today Ban Chad. They discovered that this plateau was full of forest products, wildlife and Ton Chad (*Dipterocarpus obtusifolius*) and was suitable for settlement. Thus 5 families decided to settle at Ban Don Chad. Nai Sanade, as the pioneer and a medium, who claimed to be able to communicate with the ancestral spirits, became the protector of the Don Poo Ta ancestral spirit house and was named Kuan Sanade or Moh Kuan Sanade. The following period was still a pioneer period. The villagers started to move their families, from Ban Na Po Klang, Ban Nam Taeng, and Ban Na Kor to settle at Ban Chad. At this time there were altogether 30 to 40 villagers. The villagers elected Nai Row Taemwong the leader of the village. He was replaced by Nai Daeng Khanthivat. Nai Daeng was in power for only a short period of time and when he quit, Nai Thao Uppatham became the leader. Later Nai Row returned and resumed the position again. When Ban Chad was proclaimed a national forest reserve, the villagers cooperated to keep the forest for community use. The chronicle of Ban Chad is described in Box 1.

Socioeconomic

Population: There are 155 households with 791 persons (366 males and 425 females). There is an average of 6 persons in each family. Age structures of the population are described in Figure 3.

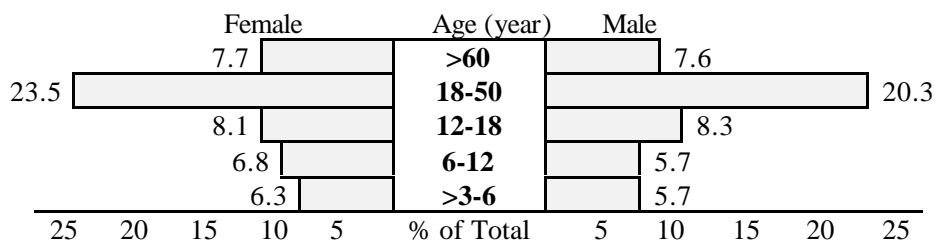


Figure 3. Population structure of Ban Chad classified by ages and sex.

² 1 rai = 0.16 hectare

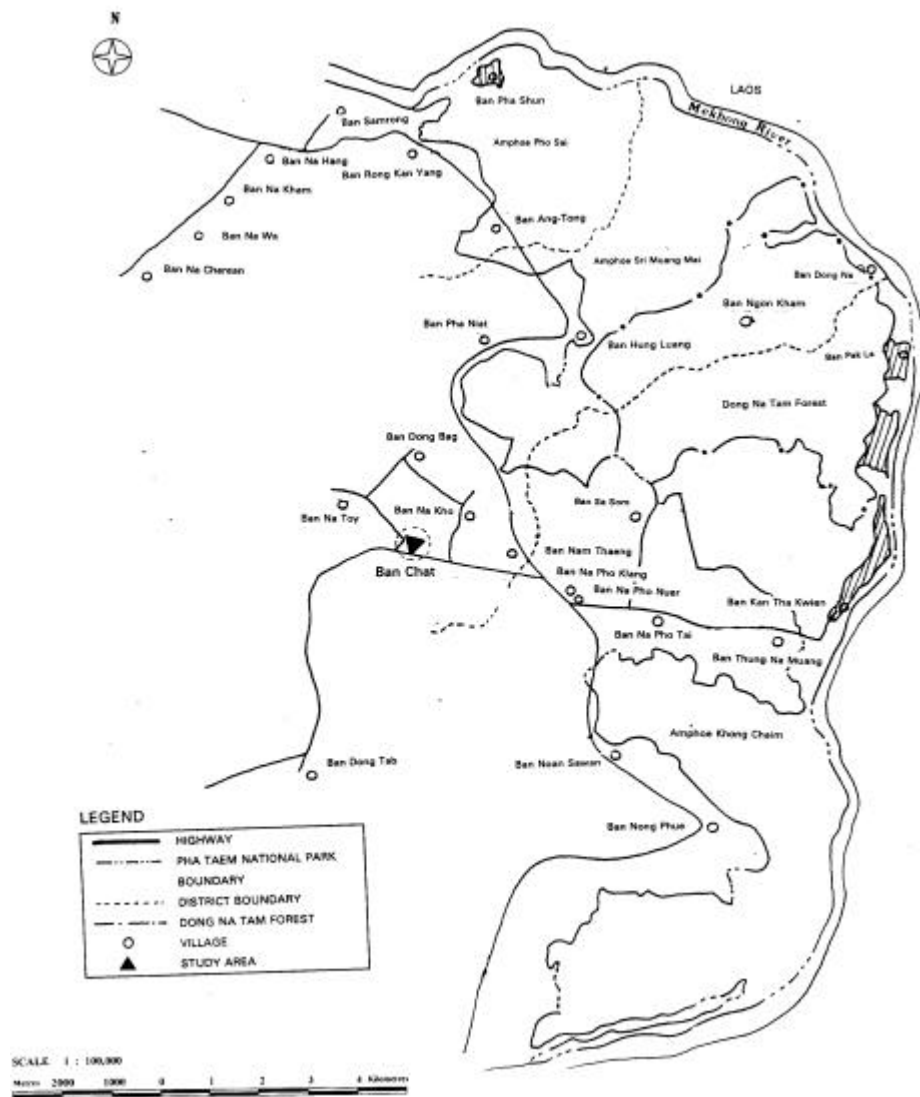


Figure 1. Location of the study area



Figure 2 : The Sketch Map of Chat Village
 Source : Field work 1998, modified from village map drawn by a group of villagers

Figure 2. Sketch map of Ban Chad Community

Box 1 Village history

Time (year)	Events
1906	Nai Sanade, a hunter from Ban Na Poe Klang came to hunt in the area which is now Ban Chad. He and his companions settled in the area and called the area Ban Don Chad. Later more villagers migrated from Ban Na Po Klang, Ban Nam Thaeng and Ban Ka Kor to Ban Chad.
1936	Ban Chad School was established. First, it was situated at the former town hall. Then moved to a Wat's preaching hall and finally moved to where it is today.
1953	Ban Chad, Moo 3 became a formal village. Nai Tao was formally appointed headman.
1955	The first Wat (temple)—Wat Ban Chad or Wat Chotikaram was instituted
1957	The first forest concession was granted.
After 1957	Villagers began growing jute instead of rice. The forest area was drastically decreased. Cars were introduced into the village.
1965	The second forest concession caused the scarcity of big trees.
1973	The proclamation of Phu Lone National Forest Reserve
1974	Epidemic of animal disease
1977	Construction of laterite road in the village
1981	Construction of irrigation canal
1982	Introduction of electricity
1983	The villagers ceased to grow jute because the price went down. The villagers started job seeking in Bangkok.
1984	Nai Oros Chuaysook was appointed headman
1998	Ban Chad community was surveyed and planned to develop forest management plan.

All of the villagers in the community are Buddhists. Monks are leaders of religious rites. The villagers are also animists who practice certain forms of ancestor worship. Ancestor worship is performed twice a year, the period before the ploughing season, and the period after the harvest time. It is the ritual leader, Tao Jam or Mor Kuan, who communicates with the ancestors who are believed to look after the well-being of the villagers and to bless the prosperity of their agricultural products (see Table 1).

Livelihood: Agriculture is mainstay of the livelihood of the villagers. They grow rice, crop, raise cattle, hunting and work as employees.

Rice cultivation is the main occupation of the villagers of Ban Chad. The rice yield per rai is 250 kg each year. Each household possesses an average of 15 rai of rice field. As for crop plantation, they grow short-life cycle crops such as beans, maize, tapioca and water melons. After harvesting season they also grow vegetables like peppers and eggplants. Most of the products are for household consumption. Some are sold within the community or to traders.

The villagers raise cattle. Cattle are used for farm labor and sometimes sold. On the average, each household raises 7 of them. They leave the cattle to graze in the forest during summer and after the cultivation season, which is approximately in October-May. Most cattle keepers are males. They take the cattle out in the morning and come back in late afternoon. The distance from their houses to the grazing place is approximately 3 to 10 km. During the rainy season, they feed the cattle with cut and carry system from the rice fields. The villagers often go hunting and gather forest products because their village is located next to a fertile forest. They do it either for household use or for sale.

The villagers take employment after the rice cultivation season, between January and May. The local minimum wage is 100 baht a day. The teenagers and the young like to seek employment in Bangkok. Six 6 households earn their living by selling groceries in the village. Most villagers' incomes are from agriculture and most of them have more than one job. Each household's income is 12,000 baht per year. The income breakdown is cultivation 35%, forest products 2%, employee 29%, selling 1%, and livestock raising 33% (Kor Chor Chor Song Cor, 1996).

Community organizations: There are both formal and informal community groups and organizations. Some organizations are supported by the government in order to develop the villagers' way of living, occupational organizations set up to promote the income, and other social organizations which take an important part in the society such as a youth organization and a women's association. These organizations have many new generation members who help with these worthwhile activities. There is also a "Community Forest Group" which was initiated by community leaders. The relationship between each organization is shown in Figure 4.

Table 1. Calendar of annual traditions and rituals

Traditions	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
New year												
Boon Khao Ji												
Boon Phravet												
Water-throwing festival												
Firework festival												
House blessing festival												
Buddhist's lent												
Earth decorated with rice												
Boon Khao Sak												
End of Buddhist's lent												
Robe presenting												
Boon Sangkathan Yai												
Boon Sangkathan Noi												
Congregation of Monks' day												
Enlightenment day												
Asarahabucha day												
Loy Krathong Festival												
Boon Khao Kam												

Forest resources

Forest Profile

Two forest areas are used by villagers: one is 3 km west of the village, covering 6,000 rai and the other 5 km south of the village, covering 2,500 rai. These two areas are secondary forests and only a few large trees remain. Most are Dipterocarp forest. The forests are rocky and spacious. The trees are small. The main species of trees are *Shorea obtusa*, *Shorea siamensis* and *Pterocarpus macrocarpus*. The lower quality species are Pai Chod (*Arundinaria ciliata*), Koi Hin (*Drynaria quercifolia*) and many kinds of grasses. During the end of the rainy season and the beginning of winter, there are wild flowers, such as Kadumguen (*Eriocaulon henryanam*), growing in the stony or sandy ground where the soil is shallow. On the plain along the stream, there is a barren forest where various species of trees grow. The dominant species are Krabak (*Anisoptera costata*), Daeng (*Xylia kerrii*), Tabak (*Largerstroemia sp.*), and Yang (*Dipterocarp sp.*) associated with various types of creepers. The forest is beautifully decorated with stone pillars created from erosion. On top of the pillars are layers of stone slabs. These look like mushrooms. In many areas, there are many crevices where the streams, called *bok* by local people, flow. There are also big natural springs which local people call *nam bun*.

In order to study the forest structure, nine 10 x10 meter sample plots of land were set up to represent different forest conditions: very fertile, moderately fertile and deteriorating forests. The study showed that in the degraded area the forest was in the process of recovering after forest concessions terminated. The average number of forest cover was less than 20%. The density of trees

was approximately 27 trees per rai. The forest consisted of many *Arundinaria ciliata*, *Phaseolus lathyroider* and various grasses. There was evidence showing that once the villagers had raised cattle and hunted wild animals here.

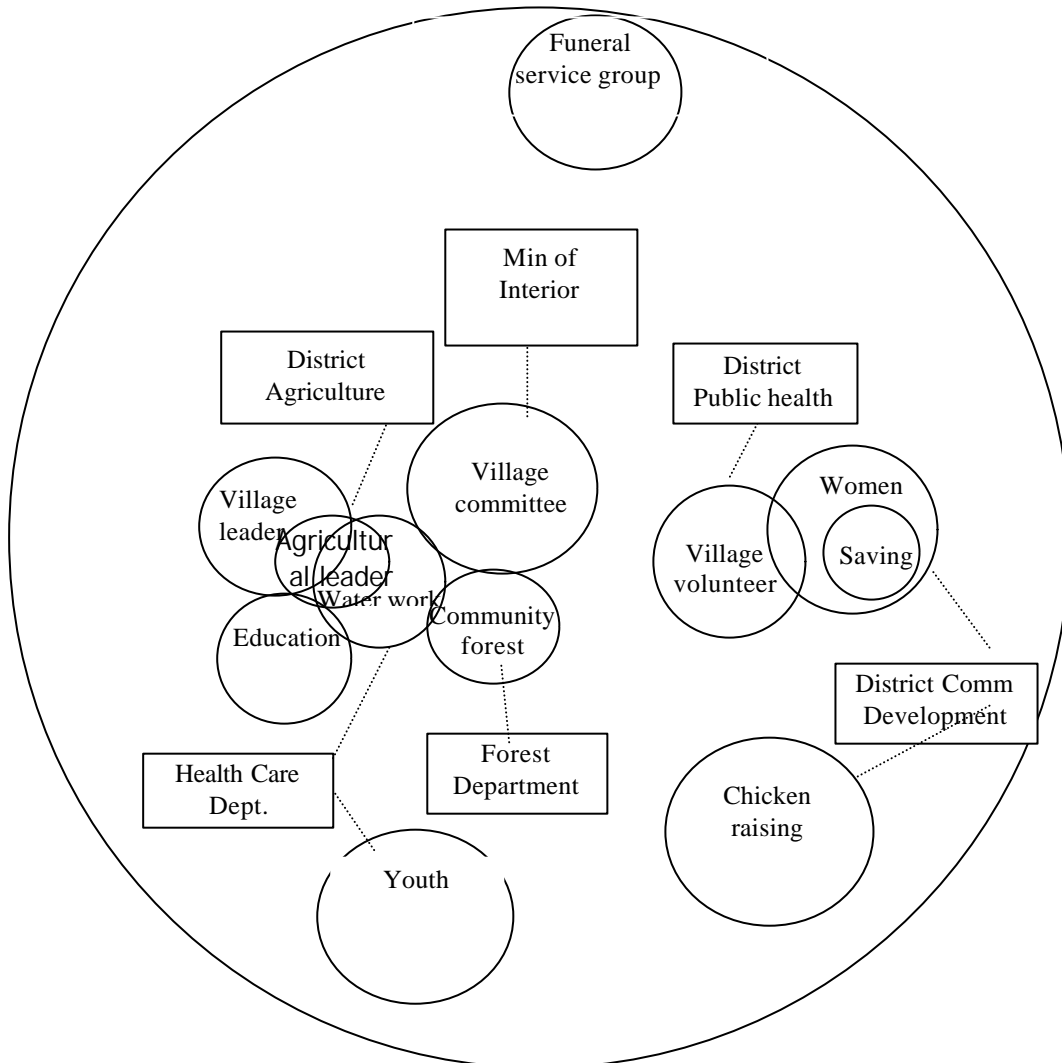


Figure 4. Relationship of village's social group/organization

In the moderately fertile forest, approximate crown cover is 40-60%. The density of forest was about 101 trees per rai. The important species of tree found here were *Shorea siamensis*, *Pterocarpus macrocarpus*, *Shorea talura*, and *Shorea obtusa*. In this forest, there was diversity of life forms and many fruit trees. In the plot representing a fertile forest, the density of trees is 267 per rai. The prevalent trees are *Shorea obtusa*, *Shorea siamensis*, *Irvingia malayana*, Makokkleun (*Canarium kerrii*), *Largerstroemia sp.*, and *Quercus sp.* The ground cover was estimated to have 87 kinds of plants including seedlings of dominant trees, creepers and various herbal plants.

The study revealed that the remaining species of trees are not significant economically since all the valuable trees were cut during the forest concession period. Only the trees of less economic importance were left. The study also showed that in some areas the reproduction process of trees was still effective. As there was a density of tree seedlings, the natural tendency of the forests would recover again if they were properly protected, managed, and used.

Forest products and their use

Forest products are divided into 4 groups: wood for general use, firewood and charcoal, forest food, and herbs.

Wood for general use: The villagers go to collect wood in the forest areas around Ban Chad. The kinds of wood mostly used by the villagers are *Dipterocarpus obtusifolius*, *Pterocarpus macrocarpus*, *Xylia kerrii*, and *Dipterocarpus intricatus*.

The other area for collecting wood is in the Hua Rai Plai Na Forest, which is privately owned. According to the survey, other kinds of wood gathered by villagers are Hard (*Artocarpus lakoocha*), Sakram (*Indigofera uncinata*), Krabak (*Anisoptera costata*). These are woods of a lower quality and not suitable for construction. There is a lack of good quality wood for construction work.

Firewood and charcoal: Every household in Ban Chad uses firewood and charcoal to cook. The popular firewoods are *Irvingia malayana*, *Dipterocarpus obtusifolius*, *Shorea siamensis*, *Quercus sp.*, *Xylia kerrii*. Species of *Xylia kerrii*, *Quercus sp.*, and *Irvingia malayana* are also used to produce charcoals. The amount of charcoal used in each household is approximately 7 sacks per year. Both male and female villagers do the job of collecting wood and producing charcoals for sale.

Forest food: The forests around Ban Chad are the source of food for household consumption throughout the year. According to the survey, there are 42 kinds of mushrooms, 21 edible vegetables, 21 kinds of wild fruits, 30 kinds of animals and birds and 14 kinds of edible insects. The villagers gather some of these forest products to sell in the community, and sometimes to traders. These forest products are another source of income for them. The times when villagers gather forest products are shown in Table 2.

Table 2. Calendar of annual wild food product collection

Products	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Edible insects												
Frogs and toads												
Lizards												
Ant eggs												
Mushrooms												
Bamboo shoot												
Edible plant and fishes												
Edible fruits												

Herbs: About 80% of the villagers' sample group made use of different parts of herbs such as roots, leaves, hearts and trunks of the trees as medicine. Such parts of the herbs are mixed with other kinds of ingredients to make medicine to cure and relieve many sicknesses and pain such as muscle ache, headache, stomachache, cough and parturition. If the villagers suffer from other sicknesses, they consult doctors at a local medical center, or at the district or provincial hospitals (see name list of herbs in Table 3).

Cemetery Forest: It is located on the south side of the village, covering an area of 30 rai. Such forest is a burial place and is also used for cremation. The forest is fertile with small trees which are used as firewood to burn the bodies of the dead. The villagers can gather forest products for their diet, medicine and other purposes.

Hua Rai Plaina Forest: In order to maintain soil fertility and water source in the cultivated land, a part of the cultivation area is reserved as the Hua Rai Plai Na Forest. Such forest is also a place where owners of specific areas can find forest products for their own use and where they can keep their cattle. Other villagers can make use of this forest if they receive permission from its owner.

Table 3. Herbs used by the villagers

No	Local Name	Scientific Name	No	Local Name	Scientific Name
1	Yang Dam	<i>Mucuna collettii</i>	12	<i>Pang Di</i>	<i>Croton tomentosus</i>
2	Kaen Mak Mo	<i>Randia witti</i>	13	<i>Kamlang Sua Khrong</i>	<i>Carpinus viminea</i>
3	Pla Lai Puek	<i>Eurycoma longifolia</i>	14	<i>Kamin Ton</i>	<i>Mahonia siamensis</i>
4	Nang Wan	<i>Phyllathus columnaris</i>	15	<i>Kamlang Chang San</i>	<i>Ochna wallichii</i>
5	Bok Kai	<i>Unidentified</i>	16	<i>Malinmai</i>	<i>Oroxylum indicum</i>
6	Toomka	<i>Strychnos nux-vomica</i>	17	<i>Slade Pungporn</i>	<i>Barleria lupulina</i>
7	Pradong Lueng	<i>Dalbergia foliacea</i>	18	<i>Ya Hua</i>	<i>Smilax glabra</i>
7	Yang Daeng	<i>Dipterocarpus turbinatus</i>	19	<i>Daeng</i>	<i>Xylia xylocarpa</i>
8	Ta Klai Ta Kluang	<i>Salacia verrucosa</i>	20	<i>Wa</i>	<i>Eugenia cumini</i>
9	Juang Hom	<i>Neocinnamomum caudatum</i>	21	<i>Sadao</i>	<i>Azadirachta indica</i>
10	Kaen Nakorn	<i>Unidentified</i>	22	<i>Chang Nao</i>	<i>Gomphia serrata</i>
11	Samad	<i>Murraya koenigii</i>			

Cattle Raising Forest: Ban Chad community has reserved a dipterocarp forest where cattle is raised because it is rich with *Arundinaria ciliata* or Pek (*Arundinaria pusilla*) and water resources. Prior to the rainy season, the villagers burn the area to let the grass grow. As a result, a forest fire always occurs because the villagers can not control the burning area.

Family or Personal Forests: Villagers deliberately took possession of these areas in the past, but now many of them are deserted and become fertile again. Although, according to the law, these places are forests, the villagers think that whoever used these areas in the past is still entitled to possess them. They used natural landmarks in the forests such as big rocks or trees to demarcate their land. Whoever makes use of these areas without the permission of the said owners will be prosecuted. Either the village headman or Kamnan³ will decide the case.

Community forest management: a transitional period

Community leaders realized the importance of community forest management for a number of reasons: forest areas became depleted; there was a shortage of the forest products; the government sectors encouraged community management; and other communities wanted to share the forest resources. They set up a community forest management committee. The key persons of the committee were chosen from the community's committee. The rules and regulations of the community forest management are developed as shown in Box 2.

However, there was conflict because other 13 villages were affected by the establishment of the Ban Chad community forest. They were Ban Noi Hua Krua, Ban Sang Thor, Ban Dong Taeb, Ban Mai Dongsamrong, Ban Kamteoy, Ban Fa Huan, Ban Known Kung, Ban Known Sawang, Ban Nong Tae, Ban Na Toy, Ban Pa Kung Yai, Ban Na Pong Pone, and Ban Nalern. The people of these villages had limited access to the use of the Ban Chad community forest. They were unhappy about it. Thus they, and others who encroached upon the area, did not acknowledge Ban Chad community forest.

³ head of the sub-district office

Box 2 Regulations of the Forest Management

1. Do not enter the community forest for any personal purposes. 500-5,000 baht fine will be imposed on offenders.
2. Any wood cutting can be done with the permission of the community forest committee. The trees to be cut must be at least 50 cm in circumference. The following are the fees to be charged:
 - Tree with the circumference of 50 cm. Fee 20 baht
 - Tree with the circumference of 70 cm. Fee 25 baht
 - Tree with the circumference of 100 cm. Fee 40 baht
3. Firewood must be from dead trees only. (Those who cut trees on purpose will be punished.
4. Do not build a kiln for burning wood to make charcoal
5. If the person who wants to cut trees gives the committee untrue information, such person will be liable for a penalty of 2,000-10,000 baht.
6. Fifty of the fine will be given as a reward to an informant who leads to the arrest of an offender and has a fine imposed on him.
7. Any member of the committee shall pay half of the fee if he wants to cut trees.
8. If any member of the committee offends the rules and regulations, the fine to be imposed on him is double.
9. Tenure of a member of the committee is one year.
10. Children under the age of 10 are pardoned if they commit such an offense, or the fine shall be reduced.

Dealing with community forest offenders

1. The first offense – The offender shall be reprimanded (and a material object shall be confiscated.)
2. The second offense- The committee shall impose a penalty on the offenders.
3. The third offense- The offender shall be arrested according to the law

Maintain and rehabilitate the forests

1. Clean the fire protection area at least twice a year.
2. Whoever start a forest fire in a community forest shall be fined 50-5,000 baht
Any member of the community who does not cooperate with the community forest activities for 2 consecutive years with unreasonable cause shall be revoked of its membership and he has no right to enter the community forest area anymore.

4. Conclusion

Ban Chad villagers depend on the forest resources to make their living. The change of the Ban Chad and its nearby villages are due to the growth of the community, the development of people's quality of lives, the changes of the production system and communication with organizations outside the community. The decrease of forest resources affects forest management and the ability to make sustainable use of the forest. There has been a change from management based on old beliefs and local traditions with unwritten rules and regulations, to management supported by groups and organizations. There has been a demarcation of areas and rules and regulations concerning the use of the forests have been established. But this is only the beginning of needed change. The community needs various support groups to promote the villagers' knowledge, to create proper community understanding about forest management, to strengthen the capacity and stability of the organizations, and to solve the conflicts arising among the forest resource users. If there is management which provides access to every concerned party, it will be a good example of participatory forest resource management. Many factors support this kind of management, such as the community's ability in their own development, and the willingness of the villagers to conserve the forests. It is important that there be a combination of traditional practice and the innovations in order that proper and acceptable management can develop, in which local and concerned people can be fully involved in a participatory manner,.

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