

## **CHAPTER 4**

### **Dynamics of Community Forest Management at Nam Kian Sub-District, Phupiang District, Nan Province**

In this chapter, the researcher studied the development of community forest management in two places; Pha Pae Bonna and Pha Huay Lom. The first one is located in the sub- district of Nam Kian. It is a forest community that residents can access and utilize under the shared terms and rules. The second one is the source of the Nam Kian River which is located at Faikaew Sub-District, Phu Piang District, Nan Province.

The researcher examined the development of the two areas from the beginning to present day to understand and explain the dynamic phenomena of forest management. The eight issues will be discussed as follows; ecological conditions of forest, land use, economic systems, production, a sense of community, utilization of the community forest, and management of community which correlates with the dimension of the period according to the context of the development process of the community. There are important conditions that occurred and will be presented as periods of settlement, expansion and present time. The historical foundation has been researched as well as the knowledge of the community in relation to development resulting in a dynamic management system of the community forest. The three periods of development are as follows;

1. Community establishing settlement, during 2463 B.E.- 2510 B.E.
2. Community expansion, during 2511 B.E.- 2536 B.E.
3. Community in the present time, during 2537 B.E.- present (2556 B.E.).

## **4.1 Community Forest Management in Community Establishing Settlement Period**

The settlement period lasted a long time until 2500 B.E. During that time, the lifestyle of the people had very little impact on the forest because the population was small and production systems in place for obtaining resources and NTFPs were the minimum needed for subsistence. Resources were plentiful.

### **4.1.1 The Ecological Condition of the Forest**

The forest was still plentiful. From interviews with elderly people about the ecological condition of the forest in the Nam Kian community during the settlement period, the villagers said that during such time, there were about 50 families. The natural resources of the forest, soil and water were most abundant. There were big trees and it was dense with a variety of flora and fauna. The words of the elderly people reflected the abundance of vegetation, or biodiversity, which was plentiful, "In the past, if you entered the forest and you fell down. Your hands would hold mushrooms and your mouth would be filled with bamboo shoots. When you looked for what caused you to fall, it was a large python".

Villagers occupied land and set up households along the two banks of the river. Next to a residential area was small scale farming. The rest was mostly extensive forest area. During that period there was limited expansion of the community. From the characteristics of the physical geography and an analysis of data in terms of spatiality together with the community, it was assumed that most of the forest was mixed deciduous forest. And there was a deciduous dipterocarp forest along the mountain ridges. Villagers took advantage of the forest by using trees to build houses and collecting NTFPs as food, and herbs for various uses. The population was small, so their utilization of the forest didn't affect it too much. However, after 2500 B.E. until 2510 B.E., development began and increased the use of forest resources, especially in the form of wood (which will be discussed further in the second period).



#### 4.1.2 Land Use

The Nam Kian community, villagers said in the past, was entitled to occupy the land freely. The areas near the community and river basin were suitable for cultivation and rice fields. At that time, the villagers could reclaim the land and fully occupy it because the forest area was big and the population was small. The area for agriculture was minimal because it depended on the number of workers in the household.

Model of settlement of Namkiaan Community

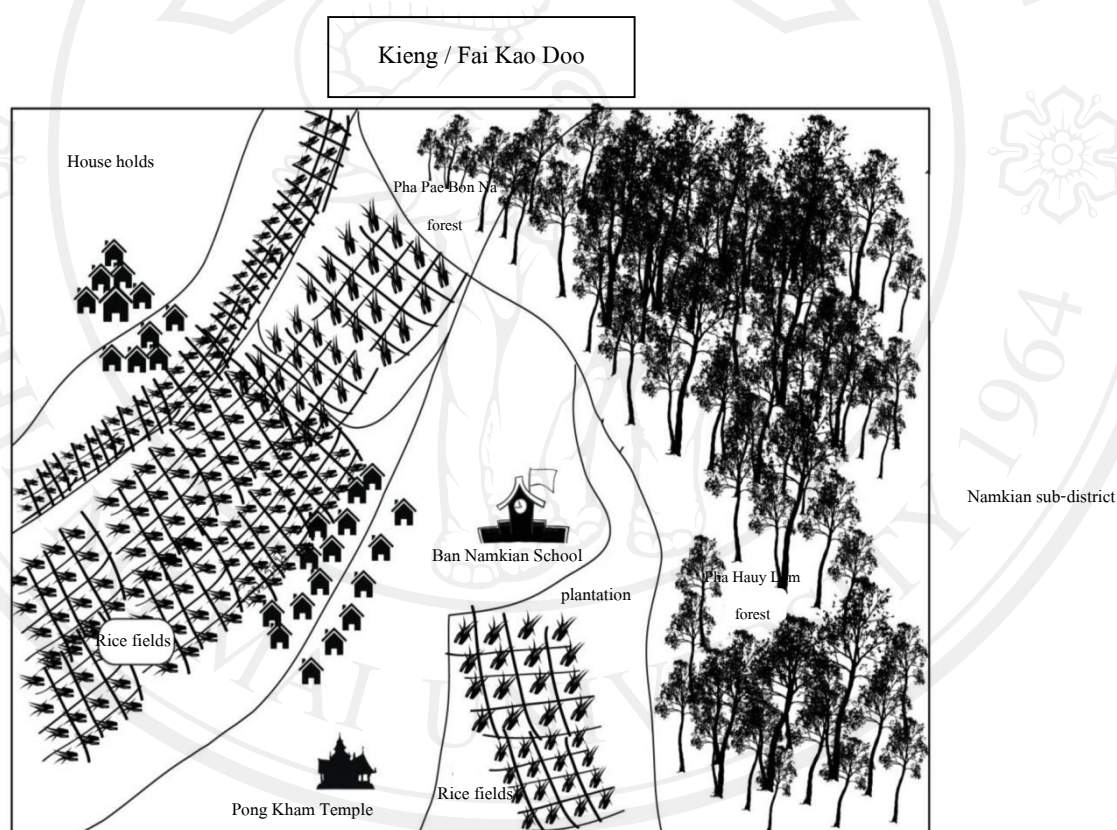


Figure 4.1 Model of settlement of Nam kian Community

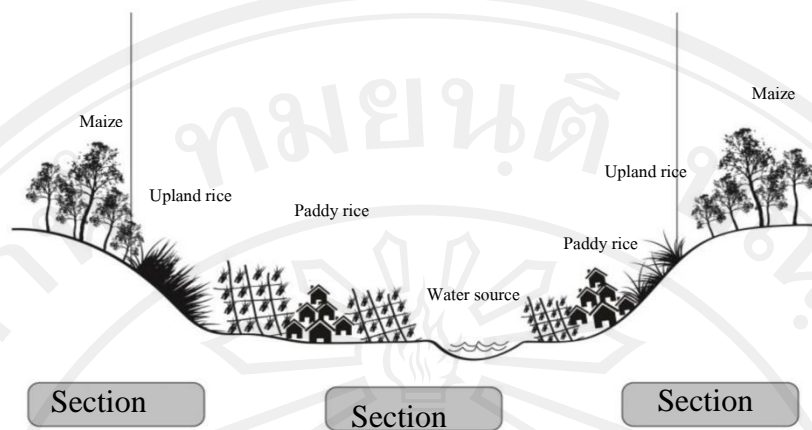
##### 1) Land Reclamation

In the past, people had many children. Some families had up to 14 children. Having many children was to compensate the loss of some children due to sickness

and it was important to have a large family to be the labor on their land. The more laborers meant the more land you would get. Land reclamations and preemption had no limitations or rules. Hence, the laborers had an important role in agriculture. There were no modern tools or equipment. They only had machetes, axes, knives, and spades so production was only for subsistence. Although the land reclamation had no regulations, resources such as soil, water, and forests were common rights, or community rights, which were mixed amongst and utilized by the households. For example, families with many children could clear more land. The land reclamation was known by community leaders and neighbors. In that period, people had a mutual recognition and generosity towards each other. Neighbors also used the forest area for planting and they accepted each other and worked alongside each other. Since the forest was so abundant, there was no impact from the amount carried out of the forest. They also considered the ecological dimensions. For example, villagers would do farming in their own areas and would not encroach or harmfully impact the common streams, etc.

Although the land reclamation of the villagers, at that time, had no title deeds over the land according to the law, the villagers accepted rules of coexistence and compromise. People marked the land they occupied by using natural boundaries such as rivers, creeks, mountain ridges, or neighbors' boundaries. Land reclamation and the land rights of each household were accepted between villagers. Those who started clearing the land had the right to occupy that piece of land. The right to occupy the land could pass from the parent to the children as well.

Later in 2505 B.E., the villagers gradually expanded and cultivated the area next to the rice field and up to the forest area, and therefore, that area was called, Pae Bon Na. The cultivation at that time was for subsistent living. People had also planted a few plants such as upland rice. Figure 4.2 shows a Tomography of land use for agriculture



**Figure 4.2 Cross-section of land use for agriculture**

In 2505 B.E. onwards, the transportation system consisted of wagon trails and walking trails used to commute to the city or town. Thus began a barter system of goods.

#### **4.1.3 Production System**

The production of the Nam Kian community was a subsistence production system which depended on natural resources. Every family had the same profession which was rice farming and it was done once a year. Rice paddy farming gives a better yield than upland rice. The main factors needed to be considered in rice farming were rice variety and water, coming from creeks and rainfall. Indigenous varieties that people have selected for several generations are appropriate for the local weather. The production system focused on the consumption needs of the household and the number of crucial laborers in the family. The production systems were as follows;

##### **1) Rice Farming**

The plain areas along Nam Kian river and streams were limited. Villagers who came first reclaimed first and made it as rice fields. They usually got certain amount of rice yield more than upland rice. Rice farming of Nam Kian community depended on the water from Nam Kian which originates from Khun Huay Ton Moon watershed

which is a big piece of land covered with trees. It is on the border line of Ban Bor Wah village, Mae Jarim and run through Ban Pha Dong Sak, Faikaew sub-district. Then it goes through the plain areas between hills and catchment areas which are Ang Nam Kian or Nam Kian reservoir in the present day.

#### The Allocation of Water for Rice Farming

Rice farming in the past required its water supply from rainwater. Villagers called this type of rice farming, Na Nam Fah, or rain fed rice farming which depended only on rainwater. The yields were uncertain. On the other hand, the rice farming which relied on the water supply from irrigation systems could get better yields because there was sufficient water.

When there were no reservoirs, villagers built dams to block the stream and then delivered the water to irrigation systems which were built by the users of the water. Then water was allocated to the rice fields through a network of irrigation systems.

In terms of indigenous technology to build dams, villagers used logs to make strong barriers to block water which flowed at high levels. It flowed gradually through the irrigation systems, or waterways, and was distributed to the catchment areas. Building dams and irrigation systems to supply water for farms were built with the cooperation of the villagers. A large irrigation system was constructed by a large number of villagers. They helped to move larger logs to block the big stream for a stronger and more durable dam.

Villagers would vote for a person who was moral, trustworthy, and respectful. The Kae Muang, or the head of irrigation systems, had the important role of distributing water to every farmland, maintaining the conditions of dams, making appointments with villagers to build or repair the dams, taking orders from the head of the dam, and resolving conflicts over water use and other problems.

The head of irrigation systems was responsible for the irrigation channels. He annually assigned duties to groups of water users to maintain the systems, such as cleaning the irrigation channels and repairing and maintaining the dams. These duties were agreed upon by the water users and were common practice, and there were penalties if they were not followed to completion.



Social organization in relation to water distribution was a basic structure in the community. The head of the dams, or Kae Fai, had responsibilities such as keeping a record of farmers' lists, maintaining dams, scheduling activities for villagers, setting up spiritual ceremonies before rainy season, and judging the conflicts over water use.

The villagers said that clearing the land for rice fields in the past started by cutting down trees, and clearing weeds using shovels. When it rained and water flooded the area, buffalos were used for plowing. Beginning around 2500 B.E. onwards, the steel plough was used for plowing. Human and animal labor was still used in the important production of rice farming in the Nam Kian community. Even in the early period, there were a few households where other crops were more dominant than their rice crops. However, rice farming gave better yields than crop farming.

The physical geography was mostly hills and highlands, so rice field areas were limited. Villagers made an effort to prepare the areas and draw the water from the stream to the rice fields. Hence, the rice fields of the Nam Kian community were divided into 11 patches as followings;

1. Na Hua Tong is a rice field close to the catchment area, or the water source, which is the first stop of flow from Khun Nam Kian.
2. Na Hong is a rice field which is flooded all the time and it is next to Na Hua Tong.
3. Na Luang, owned by Jao Pradit Na Nan (the royal family of Nan), had elephants and horses to carry its production to the city during the harvest season.
4. Na Klang is in the middle of all the rice fields.
5. Na Hang or Na Rang is an abandoned rice field in the highlands. The villagers said that the water was not sufficient in that area. In some years, if there was not enough rainwater, villagers could not farm there, and so they would leave that rice field abandoned.
6. Na Taeud is a rice field at the basin of the river and has sufficient water for rice farming. Therefore, villagers could get good yields.
7. Na Buok Luang is a rice field near swamps so there is no water problem for farming.
8. Na Ong Long is a rice field close to the community and it is a small space. Villagers called it that name because of its small space.



9. Na Lum is a rice field below the basin of the river and close to community.

10. Na Nong E-Rang is a rice field away from the village (it is next to village No. 4 today). In the past, if their pets died, villagers often left them in this area as food for vultures.

11. Na Kang Bok Fai or Tong Pong is a rice field which has water leaking to it all year long. The area is saline land, so it turns the leaking water red. In the past, the Sky Rocket ceremony was held in this area.

Each rice patch had an irrigation system which was a water distribution system consisting of dams. Dams were built according to the appearance of the area. Water naturally flowed downwards and so flowed down along the dams. They utilized the different levels in the physical landscape to draw water from higher areas to the lower areas. The irrigation system brought water through each patch of the rice field.

Villagers started the seedling process by using the many local varieties, some examples are; Kao Manam, Kao Sai Moon, Kao Khaen, Kao Maey Nong, etc. Sometime at the end of April or May begins rainy season. During this time, villagers begin plowing and making the earthen dykes around the rice fields for young rice plants. Rice plants are left to grow until late July or August and throughout this growing period, weeds are cleared. Villagers make sure that there is enough water for the rice fields. November is harvesting season. During this time there are many processes, such as piling up and tying rice straw, separating the rice from the straw, and storing it in rice storage. It requires hard work. If the laborers in the household are not sufficient, villagers will ask for help from relatives and nearby neighbors in order to finish it by the next rainy season.

## 2) Upland Rice Cultivation

The Nam Kian community has flat areas that are suitable for farming in limited numbers. Since most of the area is hills and mountains. Later, people began clearing the forest area around the foothills. Rice production for household consumption depended on the expansion and shifting of the rice cultivation area from the hillside to the highland area.

In choosing the area of upland rice cultivation, family members helped to decide on areas for rice by considering the appropriateness of the color and the

porosity of the soil. When the decision was made, villagers would clear the forest in that area and cut down the trees. This required patience and diligence because there was no technology available. When the logging was completed, they would leave the area to dry for about 2 months, and then they burned the weeds. Villagers would build a shack with materials that were easy to find on a farm, such as wood for poles, bamboo for flooring, and blades of grass for the roof. The shack was built as storage shed for equipment, such as knives, spades, hoes and baskets and it could be used as a rest area for lunch and food during the day, as well as a shelter from the rain and sun.

In May and June, which is the rainy season, farmers would prepare local varieties of rice, such as Kao Phrae Dor, Kao Klang, Kao Phee, Kao Mabid, and Kao Khon. The purpose of rice cultivation was for the villagers to be self-reliant and the rice production would create food security, especially providing enough rice for family consumption. Farmers would grow other food crops in the rice fields. For instance, cucumber, zucchini, peppers, eggplant, black sesame, sesame, sugarcane, pumpkin, gourds, calabash, etc. Some vegetables were collected before they harvested rice. Rice harvesting could be done in mid-October to November of each year.

Life was simple and villagers depended on their farms and forestry products such as bamboo shoots, mushrooms, vegetables, wildlife, insects, shellfish, and fish in the creek for food. After cultivating the rice villagers would harvest blades of grass to make new roofs and bamboo grass to make brooms, etc.

However, before clearing the land for the rice cultivation each year, villagers would estimate the potential of labor in the household first, in order to make a decision about the size of the area. If there were more children and old people in the household than workers, they would reduce the size of the upland rice cultivation area because of the hard work of weeding and mowing. If they could not clear the weeds, they would not get full yields. When the children grew up, they would be the laborers for the family. The size and area could then be expanded due to the increased number of laborers.

Both men and women helped each other with the division of labor in the rice fields. It seemed that the men were the decision makers in selecting the areas and rice varieties. Men also estimated the production capacity, harvested and transferred the rice into storage. Women selected the rice varieties and prepared enough rice

according to the size of the area of cultivation. Women also decided on supplemental crops and exchanged various crops in the rice fields, and cooked meals while they worked in the fields. Children were helpers in that they would go get water, take care of the cattle, and find insects and edible plants for food.

The yield of upland rice was not certain each year. It depended on the weather and the rice variety and whether it was suitable to the conditions of the area or not. This was one of the components to consider. For example, highland and lowland areas needed to use rice varieties which were suitable to the area. Rice cultivation in that period was insufficient for a full year of consumption. Generally, the yield would be fully consumed in households in only 8-10 months.

One villager said, “In one whole year, I would like to have enough rice to eat throughout the year. Other sources of food can be found all over in the woods and creeks like mushrooms, bamboo shoots, and ant eggs. Deep underground, there are moles, lizards, chipmunks, squirrels, rabbits, shrimp, shellfish, crabs, and fish everywhere. But what is lacking is rice. It is not sufficient for consumption. Villagers needed to find yams, wild yams, cassava roots and bananas to steam and eat as rice”.

### **(1) Labor**

The livelihoods of the rural communities are often associated with systems of labor exchanges. In the Nam Kian community exchanges occurred in both cultural and economic aspects of the household. The agricultural production depended on nature and correlated with the duration of the season each year. There were varieties of activities that they had to rush to finish according to the season. Rice production needed the following processes: pre seedling, tillage, plowing and harrowing, harvesting, and transferring rice to storage. The same processes were applied to upland rice cultivation. Each process of production required intensive labor. If there were more laborers in the household, the processes were expedited on time. If there were fewer laborers, the processes were slower and rice that was ready to harvest could be damaged. For this reason, there was a labor exchange system or labor barter system in the community to help in the rice cultivation. The host would only need to provide food which was available locally. Villagers would help and rotate from one family to another family until everything was completed.

The labor exchange system, in the past, played an important role, especially among relatives and close friends, because there were no machines or equipment to use in the rice growing process. The labor exchange would be reciprocated in the same manner. Male labor would be rewarded with male labor of the same age or close to it and he would return labor for the same type of work in order to avoid any advantages or disadvantages.

## **(2) Ritual and Beliefs of Cultivation**

In the past, villagers gave priority to natural systems and it was necessary to rely on nature, weather, and rainfall which were unreliable in some years. Cultivation of the villagers was tied to the dimension of faith by using the supernatural. Hence, rituals correlated with seasonal cultivation such as offering ceremonies for the rice fields' spirits and Mother Earth.

Rituals were meaningful to farmers. It aimed to ensure confidence that there would be sufficient water and high yields. It was an attempt to connect with the supernatural. Villagers believed that the supernatural could inspire the rainfall and good yields, so they could feed family members and have a better life.

When the harvest was completed, villagers would perform the rituals in order to show their gratitude toward the supernatural, such as offering ceremonies to Mother Earth, the rice fields' spirits, the guardian spirits of rice and buffalos. Villagers believed that there were guardian angels which helped them with cultivation. They had rituals to thank the cattle that help them on their farms. Rituals held by the community were customary practices and were linked to the lifestyles and daily routines of the villagers in order to show their appreciation and humility toward the spirits that villagers always relied on.

Meeting the rice production needs for consumption each year was important for the farmers and if there was some extra, it would be a guarantee of basic food security and they could allocate surplus to relatives and religious traditions and rituals in the village.

During the months of January – April, villagers would be free from working on their rice fields, so it was a rest time for them. During this break period, there are

many traditional ceremonies such as Songkran Festival, and offering ceremonies to grandparents, Mother Earth, and the guardian spirits of buffalos.

In addition to farming their rice and other crops, almost every household raised animals such as chickens, ducks, and pigs for consuming, for rituals or to be exchanged for rice or other necessities. When villagers had some spare time, they also spent time doing some other work as well. Men would hunt for meat, make furniture, cut and shape lumber, find firewood, weave ropes, make bamboo baskets, thresh baskets, cut bamboo sticks for baskets, make bamboo hand-nets, make fish traps and other equipment used for catching fish, and do blacksmithing. Meanwhile, women were responsible for cooking meals, finding vegetables, handcrafting, storing water, making tobacco rolls, weaving clothes for family members, making blankets, pillows, and mattresses for the household to use.

The production of the villagers, in that period of time, depended on nature. Villagers found food directly from nature by using human and animal labor. There were no new technologies to help them. The villagers were self-sufficient and self-reliant and they could sustain their lives due to the abundance of resources compared to the number of people at that time.

Later, the products from the forest such as Tao or *Anisoptera costata* balls were sold in the city. The commute to the city was big deal and they needed to prepare in advance. For example, food and water were needed. Knives and machetes were also needed to cut off the branches of trees. Moreover, the readiness of the family members was important, because they needed to carry the goods to the destination to sell. The families needed to sell the goods to make money to buy what they needed to sustain their families more than selling to make a profit.

#### **4.1.4 The Economy System**

The physical geography of Nam Kian was a wetland area and water was abundant throughout the year, especially in the rainy season. Villagers lived on sufficiency agriculture such as upland rice and wetland rice cultivation. The livelihoods of the Nam Kian community, in the beginning, were targeted at the survival of the family. The most important cultivation was the cultivation of rice.



The wetland rice and upland rice cultivation was mainly for household consumption.

In the processes of rice production, such as land preparation, pre seedling, tillage, plowing and harrowing, harvesting, and transferring rice to storage, often used the household labor prior to using the labor exchange system. However, if there was not enough labor in the household, the owners of the rice fields needed to ask for help from relatives and neighbors, especially in the processes of making the earthen dykes around rice fields (used for young rice plants and for keeping water), transplanting in the rice fields, and harvesting. These processes required a lot of labor within a limited time because cultivation was associated with the seasons. For instance, the harvesting period was often at the beginning of the rainy season. If they could not collect rice in time, it could damage the rice yields. Therefore, kinship relations and labor exchanges were important.

Currency, in the economic system during the period of settlement, had no important role because there was no trading or hiring. Villagers depended on themselves in terms of these following four factors as much as possible. They relied on the plentiful resources based in the community to obtain food needed for living, such as rice cultivation for consumption (more details can be found in the topic of forest utilization). They also produced crops to be used in the households such as cotton, which could be used to make material for clothes and blankets. They found herbs for health care and supplemental food from the forest such as insects and edible plants like mushrooms, bamboo shoots, Phak Wan or *Melientha suavis*, taro root, sweet potatoes, yams, and wild yams. They also caught fish along the river and creeks and went hunting for wild boar, deer, civets, jungle fowl, birds, squirrels, chipmunks which were plentiful. Hunting those wild animals depended on the techniques of the individual and the hunting gear used was a crossbow and flintlock that were made by craftsmen in the village.

In addition to finding food and material for clothing, which was fundamental, villagers had to rely on the community resources such as water for consumption and wood from the forest to use as firewood and household construction. Villagers used hardwood to make poles for houses. Bamboo was used for various purposes such as making wall panels and floors, weaving baskets, threshing baskets, and making

fishing equipment such as fishhooks, fish traps, fishing hand nets and equipment for trapping crabs, fish and frogs, etc. Villagers also planted vegetables and raised ducks, chickens, and pigs for household consumption and any extra would be shared share with relatives and neighbors.

The kinship and neighbor relationships, or relationships amongst the people from the same village, were associated with interdependence, support, and generosity. Some families had better locations of their rice fields, closer to the river or stream, and they could get better yields that were sufficient for their household consumption. If they had some extra, or surplus, the yields would be shared with relatives and neighbors, or distributed to social activities, rituals, wedding ceremonies, new house ceremonies, ordination ceremonies, etc. During ceremonies or rituals in the community, villagers in each household would participate and bring their products to join the hosts' of those ceremonies such as peppers, onion, garlic, salt, rice, fermented tea leaves, dried banana leaves for tobacco cigarettes, vegetables, etc. Groups of husbands and groups of housewives would work together willingly. The husbands and young men would help to set up the place, collect water to use, and chop the meat for cooking. Housewives and young women would help to make chili paste and cook the meals and desserts for the monks and guests. After the ceremony was finished, all of them would help to clean up the place without getting paid.

Some wealthy families in that period of time, like the families of former village headman, Mr. Punya Dee-Pinta,, former sub-district headman, Mr. Phong Dee-Promkul, former sub-district headman, Mr. Somboon Khamfaengfoo, former sub-district headman, Yoo Thanawong, former village headman, Mr. Sawai Dee-Seesai, former sub-district headman, Mr. Promma Dee-Phana, etc., were well known and respected. There were a number of people under their control and they had many rice and crop fields, so each year they would have good yields of rice and varieties of agricultural products. When they had sufficient yields and produce for their households' consumption, they would share the surplus with the poor and people under their control.

The villagers told of the importance of rice. In the past, rice was a very precious thing and it was not easy to buy. Poverty, in that period of time, meant there was no rice to eat.

Villagers had to work hard to get rice. They needed to clear the land over many days and do a lot of hard work in exchange for rice. With the value and importance of rice, people often mentioned rice in comparison with daily life expressions. For example, “rice, money, and gold” (important currency), “destroying a rice pot” (the intention to persecute and cause one to have poverty, difficulty, and famine), “pounding half-milled rice to fill up the rice pot” (referring to one who has an unstable life and trouble surviving from day to day), “rice and betel nuts are expensive” (famine and deficiency) and so on.

Helping, by sharing or lending rice in that period, was a big favor and the person who helped was well respected. It was considered an act of social welfare when people helped each other when community members were poor or faced famine. On the other hand, it was considered an act of support under the relationships in the patronage system.

From 2505 B.E. onwards, transportation systems were more convenient and there were wagon trails. Villagers could commute to nearby villages and start trading products. For example, villagers of Tha Lor, Ban Muang Taeud, and Ban Sri Boonraeung loaded products such as clay pots, clay vase-shaped pitchers, dried fish, and sugar cane to trade for rice and half milled rice.

There were no fixed rates for exchanging anything, but all were in agreement that most of the products for consumption should be fairly exchanged due to having children in the families. In the later stages, they started using small metal, similar to coins, and Thai baht as a medium of exchange more and more. The economics and livelihoods of the people were similar in each household. Cows and buffalos were used to work as farm labor. Families would have at least 2 -5 of them and they were the families’ assets.

#### **4.1.5 Sense of Community**

The Nam Kian community, in the past, was hidden behind mountains in a rural area. The community was surrounded by mountains and forests with no roads connecting it to other villages. There were only footpaths and paths for carts. Traveling was difficult during rainy season because the pathways were muddy.

In the past, most of the villagers built houses next to each other or in groups. Each house was built close to the other so they could help each other, especially from wild animal attacks. However, there was still anxiety and worry. For example; villagers were afraid that the rain would not come on time and their rice would not have a good yield. They were also afraid of epidemics of infectious diseases and other disasters that could not be predicted in advance. Before Buddhism, villagers respected and believed in the supernatural. They respected a sacred magic power which was believed to be in rivers, forests, mountains, trees, etc.

Villagers described their beliefs as certain locations in nature being owned by something which was invisible. Ceremonies were created to show respect to what they believed such as an offering ceremony to Mother Earth, and the spirits and angels that guard the forests and dams. Their faith was the villagers' spiritual anchor and could protect villagers from dangers. As such, they believed that worshipping these spirits could ensure sufficient water for farming. It created confidence that they would have sufficient water throughout the year, crops would be protected and would yield enough for their consumption. For this reason, the way of life and the practices of the people in the village included their strict beliefs and respect for sacred things and spirits.

When Buddhism was introduced, it took on an important role and had an influence on the villagers' faith, creating an integrated culture. Temples and monks became the spiritual leaders which had the potential to bind all the people together. The Buddhist community had regular religious ceremonies together, including holidays and festivals. Every household would take children of all ages to make merit at the temple. It was a social activity and culturally molded people together in unity.

#### **4.1.5.1 Structure of the Community**

##### **The Relationship of Relatives and Family**

Lifestyles and the relationships of people in the community were closely bound by kinship. It was so obvious that the members of Nam Kian had last names which started with the word "Dee". There were 27 family lines such as Dee Pinta, Dee Kunla, Dee In-Kham, Dee Promkul, Dee Kaikham, Dee Suya, Dee Sulah, Dee Pana, Dee Tonna, Dee Pala, etc. There were also some last names which started with

the word “Kian” such as, Kian Kham, Kian Ya, Kian Saeub, and Kian Raeun. Using the name of the village in their last name suggests where they are from.

The characteristics of a family’s last name indicated their strong relationship with relatives and their network of non-immediate relatives and cousins. They also shared the same ancestor spirits which strengthened the relationship of the family members and linked them together. For example, family members would hold ritual ceremonies together for their ancestor spirits.

Besides the family relatives, there was the neighbor relationship between villagers who lived in the same village. Members of the village in the same generation had close relationships. They grew up, learning, sharing, assisting, and helping each other. There was a tight relationship between relatives and neighbors because they were needed for the labor exchange. They needed to rely on and help each other. The elders played an important role in enhancing solidarity and had the power to drive the community.

Families of the Nam Kian community were extended families. All family members lived under the same roof and had their own responsibilities. Children had to work in the rice fields, collect NTFPs, and raise cattle. They could help their parents and learn life skills and local wisdom of the production systems. It was a way to teach the children of the family.

Most men in the village would eventually become monks. Being ordained as a Buddhist monk was a great way to gain merit. The merit was meant for the ordained person himself and, more importantly, for his parents. Ordination was also practiced as a way to show gratitude to their parents. After leaving the monkhood, if they left as a boy, they would be called, Noi and if they left as a man, they would be called, Naan. Both were highly respected and trusted as a well- behaved model in both the real world and the Buddhist world.

Villagers regarded this custom as an essential step in preparing to be a man, or to be the head of a family. Therefore, most Thai males would enter the monkhood and be ordained before they decided to marry. Dating or courtship would always be in the parents’ eyesight in order for them to help their daughters to choose the right man. Then, parents would make the final decision of who could marry their daughters. The advice of parents was the decisive factor in the decision to choose partner.



Even though the community was in a rural area, everyone was in good spirits and had good mental health. There were no serious arguments, only compromises. Everyone joined in helping the families safely survive.

#### **4.1.5.2 Regime and the Selection of the Natural Leaders**

In this period, people were quite independent. The government did not intervene in the selection of leaders of the people and there was no decentralization. The villagers' mechanism of governance was electing natural leaders who had seniority. One who had been selected as a leader needed to be loyal, moral, trustworthy, proper, capable and able to make sacrifices. The leader also needed to have good leadership qualities and consistently work for the interests of the community.

For a person to be accepted by the community, he or she needed to be charismatic and have a good profile that could be openly seen, so he or she could gain the trust and respect of the community. When villagers could see the qualities of a leader in someone, they had to consult them without considering any kinship or family group, but if there was a kinship involved, the family group accepted that person because they felt he or she could be trusted.

Mr. Promma Dee Pana, a former village headman for many years and a former Nam Kian sub-district headman, explained the qualifications of village headmen and Nam Kian sub-district headmen in the past. A village headman and a sub-district headman would need to be accepted by the community and have leadership qualities and a moral conscience. The headmen also had to be reasonable and unbiased. Their most important role was to be a mediator resolving disputes between villagers, such as fights, dissensions, or harassments. The leaders ruling could stop the problem.

The forest is a source of biodiversity and plays an important part in supporting the livelihoods of community, especially the communities living around the forest. Villagers relied on the forest for non-timber forest products (NTFPs), not for the tropical timber trade. (Sidhinat Prabudhanitisarn 2545: 157). Forest played a role in food security. Forests also created a good environment for food production. For example; forests are a watershed source, they create moisture, prevent soil erosion, and therefore, create a sustainable food source. (Somsak Sukwong, 2550:147)

Nam Kian community is a rural community close to the forest. People had a subsistence lifestyle and they learned the ways of the ecosystem and adapted to their habitat very well. People experienced and gained knowledge in living for the survival of the species, in particular, the relationship between people and forests in various dimensions both direct and indirect. The transfer of knowledge from generation to generation differed because their relationships between the community and the forest developed and changed over the long period of time.

Dependency on and the utilization of the forest by the Nam Kian community had, in the past, been done without limits or controls. Villagers could utilize the forests next to their community, such as Pa Pae Bon Na and Pa Hauy Lom, without any boundaries or regulations. Villagers had relied on the forest fully for living (interdependence) and their usage covered many aspects (comprehensive) because the population was small compared to the resources, which were abundant and sufficient for every household. The livelihood of the community relied on and utilized the forest as an important factor for living.

#### **4.1.6 Forest Utilization during Community Establishing Settlement Period**

The biophysical characteristic of the Nam Kian community is a small low land, surrounded by mountains which are covered with dense forests. The community interaction with nearby villages was rather infrequent, due to the difficult means of transportation. Villagers had to walk or use carts to commute. They could subsist free from the outside world. Therefore, the community depended on natural resources as important factors for living.

Villagers could make use of the forest in many ways (multi-dimension) and for many purposes (multipurpose) which can be classified into 5 main areas; 1. Utilization in the form of wood and other building materials (timber forest products: TFPs), 2. Utilization in the form of food (non-timber forest products: NTFPs), 3. Utilization for collecting drinking water, 4. Utilization of land for agriculture and, 5. Utilization for their rituals and beliefs, as follows;

## **1. Utilization in the Form of Wood and Other Forest Types (Timber Forest Products: TFPs)**

1.1 The amount of wood used to build houses was in proportion to the number of family members. The houses were raised high for safety to avoid wild animal attacks. They were constructed from simple materials, such as bamboo, because bamboo was easily loaded and carried. Villagers would use hard wood to make poles and ladders, grass to make roofs, and bamboo to make wall panels and floors. Building a house back then took only 2-3 days to finish. If there was any damage to a house, relatives and neighbors would help to fix it.

Later building houses began to be more developed. People started using timber to build the entire house. For example, wood was cut into flat pieces to make roofs, walls, floors, and ladders which were, in turn, more durable. However, local wisdom and beliefs took part in the selection of wood to be used. For example, iron wood or Mai Ta Kian was not used to build houses because villagers believed there were spirits and nymphs living in those trees. A big tree with two big branches would not be used to build houses because it was believed it would bring trouble to the family. Villagers believed that if one of the two branches got hit by lightning, the other branch, which was used to build the house, would be impacted as well.

1.2 Utilizing wood for fuel. Firewood was used to cook food for the family and make fires for the livestock. Villagers would use soft wood, such as Heng (*Dipterocarpus obtusifolius* Teijsm) and Pao (*Croton oblongifolius* Roxb) because they were flammable and used less labor to cut.

1.3 Utilizing wood for construction. Wood was used to build public buildings and facilities such as bridges, schools, temples, spirit houses, check dams, as well as appliances in the household and agricultural tools. People would not cut down the trees in the forest that were protected by rituals or had ghosts in them to build buildings and facilities.

1.4 Tree bark was used to dye cotton. In the past there were no chemical colors or synthetic colors. Villagers took the composition of trees such as root, bark, and wood core. Pradu trees, or *Pterocarpus macrocarpus*, can dye cotton brown and red. The core wood of a Fang tree, or *Caesalpinia sappan* L., can turn cotton pink. The leaves of a Hom tree, or *Dichroa febrifuga* Lour., can dye cotton black or blue.

## **2. Utilization in the Form of Food and Herbs (Non-Timber Forest Products: NTFPs)**

### **2.1 Food**

Forests were an important food source for the community. People often went to find food in forests near and far from the rice fields. In the Pa Pae Bonna, and Pha Huay Lom forests, there were many varieties of food. Villagers could utilize the community forests to find NTFPs anytime. There were various types of food in season, such as Pak Wan or *Sauropus androgynus* (L.) Merr., mushrooms, bamboo shoots, fish, insects, etc. Small shellfish; shrimps, clams, and crabs, and edible plants could be found in the water sources and were caught and collected around Huay Kwang, Koi Phu, Wang Pha Dang, Huay Tong, Huay Bier, Huay Lom, and Tae (these were catchment areas before the water went to irrigation systems). Women were responsible for collecting food from the forest and they stored sufficient amounts of food for household consumption and sharing. Meanwhile, men would catch fish, shellfish, and hunt wild animals such as deer, wild boars, civets, lizards, squirrels, chipmunks, birds, mice, etc..

In the past, villagers depended on Pha Pae Bonna and Pha Huay Lom forests for collecting NTFPs because of their many varieties of food, especially during rainy season. In the rainy season, forests were abundant with food such as these varieties of bamboo shoots: Nor Rai, Nor Sang, and Nor Bong.

There were also mushrooms for villagers to collect and they could be found everywhere in the forests near the village. Mushrooms could be divided into 3 species;

- 1) Species grown from Saprophyte fungi feed on dead plants which often grow on timber or decayed branches such as Hed Lom, Hed Kaen, Hed Mon, Hed Hoo Noo, Hed Kon Kao, etc.

- 2) Species grown from Mycorrhizas fungi lives on the roots of trees. Some mushrooms grew from the ground called Hed Din, such as Hed Dang, Hed Kon, Hed Than, Hed Nam Kao, Hed Na Moi, Hed Phom Moo, Hed Daan, Hed Thob, Hed Ai, Hed Foi, Hed Kamin, Hed Had, Hed Kai Nok, and Hed Kra Dong. There were more than 23 species.

3) Species grown from White Rot fungi, from the family of Termitomyces, are interdependent with termites such as Hed Kon or Hed Bauk (Somsak Sukwong, 2550: 150).

Mushrooms, bamboo shoots and edible plants were collected for household consumption and sharing. There was no need for trading because those NTFPs were abundant and plentiful, so anyone could collect them freely.

NTFPs were abundant in the forests and, in the past, women grouped together to help each other find and collect them. They did not have to fight over food. There was so much food that everyone could collect ingredients such as mushrooms, edible plants, and insects all day long. Villagers would never be disappointed in their search for food in the nearby forests.

In addition, a female's role as a mother was seen as an important part of the family. Those women had to take care of and provide food for the family members. They knew how to find food from nature for the survival of the family. There were various kinds of food people could find all year round. They had the expertise and knowledge of the characteristics, types, locations, and seasons of the natural foods. Women were directly involved in cooking and the knowledge was handed down from one generation to another, from mother to daughter.

## 2.2 Herbs

In addition to collecting food, people depended on the forest to collect herbs. Herbs were used to maintain the body, and treat diseases. The knowledge of treating various diseases with herbs was inherited from generation to generation. They could access the mystery of herbs in terms of value and their benefits through trials. Villagers had accumulated a large body of knowledge of herbal formulations for treatments through experiences they had survived.

The village was located in the forest and had no medical service. Due to its location, transportation was inconvenient so the villagers relied on and got very good at using medicinal herbs. Herbal treatments were applied along with rituals, such as calling back one's guardian spirit. It was a representation of the generosity of kin relationships. This mental conditioning, together with the herbal treatment encouraged the patient to fight against the disease.



In the past, every household had an herbal medicine bag which was often referred to as Ya Kae Sa Pha Sa Pid, that contained herbs that were used similarly to nonprescription drugs. These herbs could treat diseases caused by eating foods that contained toxins, such as poisonous mushrooms, or from eating raw or undercooked food, etc.

In addition, every mother knew Ya Kae Kuang Ban, or medicinal remedies. When the children were sick, mothers would find medicinal herbs which could be easily obtained around the house. These medicinal herbs would be tied together and soaked in water to drink and could cure general diseases.

People believed that collecting herbs, which had effective medicinal properties, had to be collected from the forest. They believed that if the medicinal herbs were moved and were grown in a new place, the medicinal properties of the herbs would be decreased. Also, the medicinal properties would be at their highest concentration if the herbs were collected during the right season. For example, roots should be collected in the summer, in rainy season flowers should be collected, and bark should be collected in winter in order to get the best medicinal concentration. The village had medicine men specializing in herbal medicine to treat diseases, such as Mr. Ya who then passed on his knowledge to Mr. Punya Soi-Ngern.

### **3. Utilization in the Form of Water for Consumption**

The watershed area of the Nam Kian community was located far away from the community. It was a large piece of forest and originated at Khun Huay Moon. It was located at the boundaries of Mae Jarim District and Faikaeo Sub-District, Phupiang District, Nan Province and was about 26 kilometers from Nam Kian Sub-District. There were three important peaks; Doi Phu Phra Bat, Doi Phu Phra Jao, and Doi Phra Pok Tad. The physical landscape was mountainous and the forests were abundant with a diversity of plants and animals. The forests at those three peaks were important water sources for Nam Kian District. The streams flowed through Ban Dong Pha Sak to catchment areas at the Nam Kian Reservoir where the water could be utilized for consumption and rice cultivation.

The forest areas near the village which provided water for agriculture were Pa Huai Lom and Pa Bod. There was a small stream at the boundary area of Huay Pao

which could be used as a water source. It provided water for consumption and flowed to Ban Mai Santisuk Village No. 5 and No. 2. Then it flowed to rice fields at Na Ong Long.

#### **4. Utilization in the Form of Land for Agriculture**

##### **4.1 Land use for Cultivation, Crop Farming, and Rice Farming**

In the past, people had to clear the forest to prepare farmland for the family. The lowlands or areas near water sources could be reclaimed by the villagers where they could make sectional pieces of land for rice fields. Next to the lowland rice fields were the highlands and then there were the hills and mountains. Most villagers cleared the highland areas to use for upland rice cultivation.

In the past, farmers needed to be incredibly patient because they needed to cut big trees and clear the areas with only human labor using axes, knives, and machetes. The size of the cultivation area was suited to the number of workers in the family who could handle the rice fields properly. Villagers in that period of time had sufficient resources, especially land, which was plentiful compared to the population at that time.

##### **4.2 Space for Animals**

Cows and buffalos were important in this period of time. Each household had at least 1 or 2 cows and/or buffalos to be used in farming and for loading things. People always brought their cows and buffalos to the forests near the rice fields where they could eat grass.

#### **5. Utilization in the Form of Rituals**

The lifestyle of the community, in the past, was always associated with the supernatural. For example, villagers believed that there were spirits or angels in the forests, trees, mountains, and rivers. Even though they were invisible, villagers believed they needed to respect them through rituals when they went to the forests. For example, villagers would light incense sticks to inform spirits or angels what they planned to do in the forest and ask for permission. Sometimes, if villagers made mistakes such as making a mockery of them, spitting in certain places, etc., they would need to ask for forgiveness.

The community had relied on and utilized natural resources in such a way that it allowed new regrowth of each plant naturally and there was a good balance each year. The villagers used the resources with humility, gratitude, and with a thankful mind that the forest had given them shade, warmth, food, herbs, and timber to build their homes. Hence, villagers felt grateful and repaid the forests by having ritual ceremonies to show their respect to the supernatural.

Utilization of the forest, during the settlement period, had very little effect on the forest because the population was small. The people and forests generously coexisted. There was a creation of rules in order to sustain resources in accordance with the ecosystem, traditions, culture, and wisdom. These rules were created in response to the relationship between the people and the forests. They helped to ensure sustainable management of the resources which shaped the community. The community carried on their commitment to use the natural resources with respect. Creating and maintaining a monitoring system was of utmost importance since the villagers did not have a formal economic system.

#### **4.1.7 Forest Management**

The livelihoods of the Nam Kian community had a direct relationship with the forests for a long time. According to the physical geography, there were small flat areas where villagers lived in order to be surrounded with forests and nature. This created their interdependent relationship with the forests. The community also had a methodology to manage the forest in order to live with the forest sustainably.

The managing tools used for the forest, in that period, prevented the invasion and encroachment of the resources that were based in the community and were characterized in two ways; 1) Intangible; The villagers' beliefs in the supernatural and ghosts were reflected by the rituals they practiced in nature. 2) Tangible; Villagers used the traditional rules of the community and local knowledge to control, monitor, and create standards for villagers to follow. They appropriately practiced those regulations and they relied on the supernatural as a determinant.

#### **4.1.7.1 Beliefs in the Sacred and Supernatural**

In the past, traditional ways of maintaining forest resources were based upon faith and fear of the supernatural. It was believed that a tree was a house of spirits. With such beliefs, the villagers treated and respected nature humbly through ceremonies. For example, they had blessing ceremonies for Mother Earth, offering ceremonies for farmland spirits, and ceremonies to worship the god, Thep Jom Mok. Villagers believed Thep Jom Mok could bring rain in rainy season. Every year on the full moon of the ninth month, villagers would walk up Doi Jom Mok, or Jom Mok Mountain. Villagers would beat gongs to lead the parade and bring offerings, such as chickens, white whisky, food, and sweets. Then villagers would launch rockets to worship Thep Jom Mok. Villagers believed and had faith in the supernatural.

Along with their belief in angels and holy spirits, villagers built ghost houses or a ghost shacks in the watershed areas of the forest for the ghosts that resided there. Phee Huay Phra, Phee Huay Pong Jee, Phee Huay Pong Hed Lom, and Phee Phu Zo are the names of these ghosts and that lived in Pha Huay Taey in order to protect the forests. Phee Shiang Mieng was the chief of all ghosts and was very ferocious. It resided at the cemetery of the village and could control the destiny of each person, whether they lived or died. Villagers were so scared of this ghost that they did not dare get close to the cemetery. When community members passed away, villagers, family members, and relatives of the dead person would set up regular sacrificial ceremonies to offer food, desserts, and white whisky to the ghost.

The respectful relationship between the community and the forest was consistent due to their beliefs in the supernatural and their respect for nature thus creating controls for the use of the public wealth together. Villagers also took care of, maintained, and restored the forests by performing rituals and believing in their connection with nature. If one violated the regulations and controls, they would suffer disaster.

#### **4.1.7.2 Utilization of Traditional Regulations**

In managing the forest, soil and water, the villagers treated them as public property or common wealth. Each household could equally access the resources. However, while each household could access the resources freely, the community

upheld the practice called Hied, or tradition, which represented the power of the community to coexist using the traditional regulations of the community. For example, Hied showed the management of the forest of the Nam Kian community using two guidelines.

#### **4.1.7.3 Classification of the Forest Boundary Line**

Together, the villagers classified forest areas and clearly marked zoned and restricted areas. For example, they zoned the watershed areas and water sources both near and far from the village, and the holy forest (the forest where villagers held sacred rituals) where they believed guardian spirits lived. Community members would be informed and were expected to strictly follow the zoning and restricted areas even though there were no written agreements. If any violation was made, he or she broke the Hied and could bring disaster to both the individual and community.

The community had set the traditional regulations to ensure forest protection and maintenance. Villagers used resources without greed and they agreed to the regulations as follows;

1. Control of timber forest products (TFPs): villagers assigned regulations to strictly prohibit cutting down the trees around water sources of the watershed area, especially the forests with catchment areas which had water all year round and big trees. The water from these sources had a yellow to red color and villagers were so afraid to encroach on these areas because they believed the soil was a salt lick and very haunted with ghosts. They believed if any violation was made, ghosts could cause death or disablement.

Villagers believed that big trees had spirits and nymphs living in them so these were not used for building public buildings, houses or for firewood. Villagers' extended family lived together. If the family grew too large for the house and there was not enough space, some family members would move out and build a new house next door

2. Control of non-timber forest products (NTFPs): villagers utilized the forest in the form of food in many ways as follows;



### (1) Mushrooms, Bamboo Shoots, and Edible Plants

During the rainy season (May – August), the land stayed very moist and more than 10 species of mushrooms arose from the ground. Villagers collected and cooked them for food. They knew when Hed Din and Hed Lom were coming by observing the weather. They also knew how to classify the poisonous mushrooms by recognizing the source and location where they were found and checking for liquid when they ripped off the mushroom roots. If white liquid came out, it was a poisonous mushroom.

For collecting mushrooms which came out of the decaying timber, villagers would observe the sky and weather. At the end of September and November, if it was cloudy and windy, villagers believed that Hed Lom would be coming out. They would only pick the umbrella-like mushrooms and left the smaller mushrooms for other villagers to collect later on.

The collecting of bamboo shoots was very popular in the rainy season. Villagers often collected Nor Rai and Nor Sang bamboo shoots that were still underground because they tasted better. When they finished taking out the bamboo shoots, they would cover the hole so the ground would stay moist and more shoots would come out of the ground later.

Collecting edible plants depended on the different seasons. For example, Pak Wan, Pak Nam, Pak Ar-Kib, Pak Ar-Ka, Pak Aow, Pak Mon Moo, Pak Sengda, etc. typically bloomed during rainy season. The plants that grew around water could be found all year long. During the collection process of each edible plant, villagers would only pick the tips and left the rest to grow back. They also would only pick big edible plants that were in season. These edible plants were not taken to be grown at home because villagers believed that ghosts would come out to take them back.

Villagers believed that if they harvested NTFPs for food, without thought of the community, they would be punished. For example, if too many mushrooms were collected without being used or were left to rot, the ghosts of the forest would be mad and could harm them or make them sick without cause.

Because of this, beliefs about the supernatural, and respect and fear toward sacred things, called Saeub Hied-San Hoy, had been cultivated and passed on for a long time. These were the traditional regulations used to control the use of resources

by the community and to remind them not to be greedy. The system of thoughts, beliefs, and wisdom were controlled by their fear of the supernatural. Therefore, the forests were only used for survival and food was taken out for consumption and sharing only.

## (2) Insects, Red ant Eggs, Bees, and Small Bees

Red ant eggs were prevalent in summer, from late March through April. Villagers often used baskets attached to bamboo poles and poked into the red ant nests. Then the grubs and chrysalis of red ants would be put into containers. If they collected the eggs at noon, the containers would be heated up under the sun until hot. After the red ant eggs were put in those containers the villagers would shake them and the ants would escape and leave the eggs. However, if the red ant eggs were collected in the late afternoon, the red ant eggs were put in those containers and then they would burn rice straw to drive away the red ants.

The bees and small bees in the Nam Kian community, historically, were of 3 species: Pheung Mim (*Apis florea*), Pheung Khon (*Apis cerana*), and Pheung Luang (*Apis dorsata*). Pheung Mim were often found in the woods near the mountains and built nests the size of 1-2 palms on small branches very high from the ground. January through April was a time that Pheung Mim produced the most honey. Villagers would squeeze honey out of the hives and wrap the honeycomb with banana leaves and then grill or steam it.

Pheung Khon liked to make nests in the hollows of trees. These bees were bigger than Pheung Mim. They built nests next to each other. These bees produced honey during the blooming season. Villagers would cut only honeycombs that had honey and in order to collect the honey they would burn coconut husks to calm the bees.

Pheung Luang made large bee nests. They were harmful and when they stung, they would leave a more painful wound than any other bee. They liked to make nests in tall trees. During Buddhist Lent, villagers would take a break from bee collecting. For the highest quality honey, honey was collected in the 5<sup>th</sup> month of the year because the wild flowers were blooming and there was no rain contamination so the honey had a full sweet flavor.

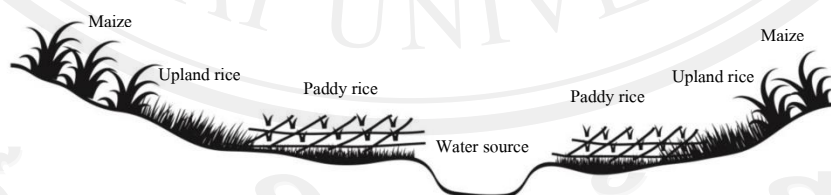
Treatment towards nature, which the community relied on, was fair and balanced and it was utilized without greed which allowed each plant to properly regenerate each year. Villagers utilized the forest with humility, collected NTFPs with respect for sacred things, asked permission from the spirits of the forest before entering, and were thankful to the forest for shade, warmth, food, medicinal herbs, and wood to build houses. Ritual ceremonies were held to show respect and appreciation to the supernatural.

### 3. The Control of Land Use

#### (1) Land for Cultivation

The physical ecology of the Nam Kian community was mostly highlands and lowlands which were suitable for rice cultivation and were small and scattered. Villagers selected the lowlands, which were clay, in the bare areas between the hills for their rice fields. These selected areas were close to the water sources and were on a sloped area in order to get water from the irrigation system easily.

The areas next to the rice fields were hilly or highland areas. The villagers reclaimed these areas to grow upland rice. In the past, in choosing the agricultural area, the elders played an important role because they would know if the soil had plenty of nutrients or not. Previously, people tended to have about 3-5 plots of land for growing upland rice which were shifted each year. However, yields of rice each year were not enough for household consumption.



**Figure 4.3 a cross-section of land use for agriculture**

## 2) Area Selection for Housing

During the settlement period, villagers carefully selected their housing locations. They especially liked the bare areas that had a river flowing through. Villagers often reclaimed these areas to build houses together and so the location of the village was an area in the middle of the mountains. The area was suitable for agriculture. However, there was an area forbidden for housing between channels of the valley or forest that local people called Kaew Lom. People would avoid building in this area as it was windy throughout the year. Villagers believed that it might be the path of evil, demons, and spirits. It was not an ideal area for living.

Social mechanisms of the village played a role in controlling the use of the land. However, the land was a common wealth of the community, the right of each household to use the land would be accepted and passed on to younger generations.

## 4. Water Management

The river that flows to nourish the Nam Kian community is Nam Kian River. It originates in Faikaew Sub-District which is next to the boundary line of Mae Jarim District. Then the river flows through Ban Pha Dong Sak and there is a catchment area for the river. An irrigation system was built to slow down the water flow and raise the water level. Then the water flows into the lower area and is used for cultivation. In that period of time, there were lowland areas which were small and villagers made them into rice fields. The irrigation channels were made to get the water from the check dam to the irrigation system for the rice fields.

The irrigation system, or Muang-Fai, was a basic infrastructure that used traditional technology to block the stream and was a major characteristic of the Lanna community. It was the backbone of social organization in order to thoroughly allocate water to villagers. The amount of water available was different from season to season. In the rainy season (May and June), there was a lot of water while sometimes the amount of water was limited. The head of irrigation systems, or Kae Muang, had to allocate water to community members thoroughly and fairly and had a responsibility to check the irrigation channels. If there was any damage, the water users would be asked to help to fix the damage. The head of irrigation also worked as a mediator over controversies between the water users over the matter of taking water into their fields.

#### **4.1.7.4 Mechanism of Community: Common Wealth**

The belief in ghosts and its ability to control the management of the forest was powerful and meant that any action which violated the communities' prohibitions would be punished by ghosts that would cause sickness. During the settlement period, jungle fever and epidemic diseases had no medicine to cure them. When a family member got sick, they believed that ghosts had caused it. Villagers accepted all regulations and dared not violate the rules of forest utilization. Therefore, community participated in protecting the forest very well.

However, considering the existence of people during that period, the population was small, the ecological condition of the forest was abundant, there was a diversity of plants, animals, herbs, water, NTFPs, and other things that community regularly utilized and they were plentiful compared to the population size at that time. The production systems of the community were mainly for use in household. The land use was for cultivation for subsistent production. Villagers had similar economic statuses. The relationship between people and forest systems in terms of interdependence was a close attachment because the forest was the first necessity in living and the community could live thoroughly by depending on and using the forest. There were NTFPs such as food, herbs, and water that were important factors for living and were plentiful in every household. The sense of community was high. Support came from kinship and family in terms of productions and public activities. It was important that they felt the sense of community and they had freedom. There was no intervention from the government because contact with the outside was minimal. The mechanism of the community was powerful and efficient in controlling the use of the forest fully.

Close community relationships and the respectful treatment toward the natural resources and the environment along with humility rules in the care of the resources were customary in accordance with their way of life in the ecological system. Community culture shaped the members to treat the natural resources with respect, it was one of the important conditions enabling the community to care and maintain the forest together.



**4.2 Forest management during the expansion of the community** between 2511 B.E. - 2547 B.E. could be divided into 2 periods; **1<sup>st</sup> period** was between 2511 B.E.- 2530 B.E. the Nam Kian community began to expand both in terms of increased population and the expansion of power from outside, both government and capitalism. For example, the development of the infrastructure, the control and management of community resources by announcing a national forest area, the state policy promoting the new production system, and logging by the capitalists from the outside. The **2<sup>nd</sup> period** was between 2531 B.E.-2440 B.E. the community began the expansion of the state and capital system, including agricultural technology. They adjusted and accepted changes from the outside which dominated the community on every side. Rice cultivation systems for consumption were gradually disappearing and being replaced by cultivation for selling. The directions of such development affected and involved many factors as follows;

#### **4.2.1 Ecological Condition of the Forest**

In the beginning, the population increased along with the developments in the village. For example; roads connected to other communities, so that contact with the outside would be more convenient. During this period of time, the capitalists from the city started logging and contacted some loggers from the villages and in turn, logging expanded widely. Villagers tried to oppose, but they could not do anything much because the capitalists had a well-known and influential network of people. The forest area around the community had decreased rapidly. Logging gradually ended around 2520 B.E. when the forests started to decline. However, it did not mean that illegal logging had completely come to an end. It had only lowered in concentrations.

In addition to logging by the capitalists, the community was expanding and the villagers began to cut down the remaining trees for their own houses. They collected logs and timber for home improvements and to build bigger and more durable houses.

After capitalists moved out of the area, there was one noticeable point. Logging was not initiated by the local community directly, but the opposite, it showed that the community gradually lost their power of control over the forest resources to the outside powers which were the state, informal or illegal powers, and the influence of the market system. These powers affected forest encroachment.

Those activities changed the pattern of forest utilizations of the villagers, from interdependence to encroachment. The encroachment occurred even at the watershed area. There were only a few villagers in the beginning and then it extended to a network of people and several groups who were after profits. They all focused on making money from logging because they could access the forest resources easily and there were no rules or regulations. Everyone had rights to access to the resources equally.

Manit Thanawong, who is from the Nam Kian community, conducted a study about forest resources and indicated that around 2512-2513 B.E. the deforestation and logging was being done and the timber was transported passed his house every day. There were still trails leading into the forest for the second round of deforestation because there were roads and also the population had increased. Villagers lacked the knowledge about the impact of deforestation towards the forest ecology and they were drawn into consumerism. Villagers were persuaded by the capitalists and other influential people. Corruption of some civil servants assisted in logging for trade and borrowed the hands of villagers who knew nothing about the impact of hurting themselves by extensively cutting wood to sell for capitalists. They also changed the concept of subsistent farming to commercial production by the mainstream economy. It caused the destruction of the forest resources of the Nam Kian community and nearby communities (Manit Thanwong 2549: 107).

From interviews with former retail timber entrepreneurs in the Nam Kian community the reason they joined the deforestation system was because they didn't need to invest a lot into it. They needed only cows, laborers, and connections with the timber business network outside the community. It was convenient and easy. There was only enough agriculture for consumption and some for selling, but there was not a lot. The income from agricultural products was not enough for household expenses. Therefore, the group of husbands who had carts made more money by loading timber in the forest or cutting timber for the capitalists because there was no need for a cash investment. The deforestation had been done easily because there were no regulations. Eventually, there was national forest law enforcement in Pha Huay Lom and Pha Pae Bonna and it was effective in Nam Kian Sub-District in 2514B.E.

In 2515 B.E.-2530 B.E villagers cleared the forest areas which were left for cash crops, such as maize for animals, more and more. Some villagers utilized the forests, Pha Huay Lom and Pha Pae Bonna, to get firewood to make charcoal or firewood for selling, to build fences, to fix houses, to make animal stalls, and spirit houses (a small house for the spirit of dead people to live). In the summer, villagers would burn the forest to get rid of snakes, let the new grass grow back in the rainy season for cattle, and get the land ready to grow Hed Tob (*Astraeus hygrometricus* (Pers.) Morgan and Pak Wan (*Sauropus androgynus* (L.) Merr.) Such activities inevitably affected the state of the forest and its ecosystem.

#### **4.2.1.1 Impacts of Logging and Deforestation**

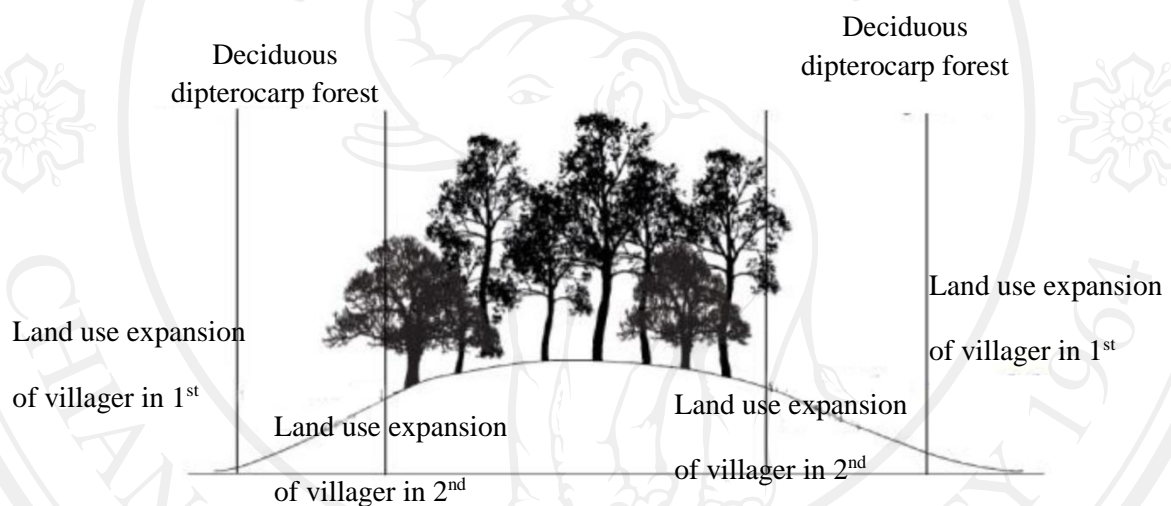
The forest of the Nam Kian community, which used to be abundant with big trees giving shade and moisture to the environment and was a source of biodiversity of both plants and animals that the community depended on, had been destroyed. It affected the structure of the forest which became sparse and wild animals were decreasing and hard to find. In 2533 B.E. the community was affected by a drought. They had water shortages because the rain was late. Villagers who got loans for maize farming lost their investment because the maize suffered from drought and could not grow properly. Some survived, but the villagers lost their yields. Many families were in debt, stressed, and had social problems in many aspects that will be mentioned in the community issues later on.

#### **4.2.2 Land Use**

A study on land use of Nam Kian community shows it can be divided into two periods of time: 1<sup>st</sup> period is between the 2508B.E.-2511B.E. and 2<sup>nd</sup> period is between 2512 B.E.-2540B.E. There were events that affected the use of land in the Nam Kian community. From the analysis of the physical data, using the map scale 1: 4000 and talking with the elderly and people who had lived during that period of time, it can be assumed that between 2508 B.E.-2511 B.E. there was an expansion of population and villagers needed more areas for cultivation.

The lowlands along the two sides of the Nam Kian River and the streams were suitable for farming and were already occupied by the first group of villagers. The 2<sup>nd</sup>

period of time villagers needed to clear and expand to the new areas for upland rice, green beans, peanuts, orchards consisting of mango and tamarind trees, and maize. The new areas were next to the rice fields on both left and right sides. Villagers kept expanding the farming areas until reaching Pha Pae Bonna and Pha Huay Lom. The structure of the soil was clay mixed with stones. If this ecological factor was considered, the two forest areas were not suitable for cultivation. Hence, villagers made Pha Pae Bonna a public forest to be used as a source of food for the community as it shown in the picture of a cross sectional area of the expansion of cultivation below.



**Figure 4.4 Cross-section of land use expansion of villagers**

In addition, the infrastructure development, under the support of government agencies, such as the construction of reservoirs, irrigation systems and channels were created to increase productivity and farmers could control water for agriculture. The road constructions in the village made the transportation more convenient. There was more and more communication and interaction between people in the community and outside the community in terms of trading land from outsiders and the intervention of the government. The important events were as follows;

In 2512 B.E.-2519 B.E., villagers began mono culture production such as cotton, corn, green beans and fruits due to the promotion policy of the government sector and they started expanding land, living on hillsides and plateaus. The motive for this was productivity with a good price that could make them earn lots of money.

In 2520 B.E., there was a change in the Nam Kian community. The policy of spreading prosperity to regional areas caused the development of infrastructure planning for public health systems including roads and electricity. It was a big change that brought advancement to the community. According to the guidelines of the National Economic and Social Development Plan it would be an economic base of development for better living in the community. This had impacts on land use as follows

In 2522 B.E., Department of Rural Development Acceleration allocated a budget to improve non-asphalt roads that connected Nong Tao and Baan Kod through Nam Kian.

In 2523 B.E., the first car used in village belonged to Father Bunrat. He drove one round per day transporting villagers and charging a fare of 3-5 baht/person. Having convenient roads and cars used in the community could facilitate commuting and the transporting of agricultural products such as cotton, Chinese mustard and corn for feeding animals to be sold in the city more easily.

In 2527 B.E., the Department of Irrigation surveyed and planned to build a reservoir as per the Royal Word of the King through Baan Ton Kok Moo 3 to Baan Dongpasak, Fai Kaew Sub-District for the benefit of irrigation, fishery and recreation. Building a reservoir affected land trade as land in such areas was low land with a higher price and it could be utilized for rice farming. Later, some families divided the land and sold it in order to send their children to study in the city for a higher



education. Their hope was that their education could build up their status and stabilize their livelihood with a regular income from other channels, apart from being a farmer. They intended to have life stability which was different from farmers that endured high risk.

In 2532 B.E., reservoir construction was finished and in 2534 B.E., the reservoir could fully store water. Building the reservoir in Nam Kian led farmers from 5 villages to gain benefit from the agricultural land expansion. In plains they could grow some plants in dry season such as soybean, red onion, and garlic causing intense land use.

In 2533 B.E., some farmers sold their land (plains, upland and highland) to people both inside and outside the community. In 2534 B.E., non-asphalt roads were improved upon becoming brick roads, so transportation was more convenient.

In 2537 B.E., the Land Reform Office in Nan began surveying the area to delimit the area of land reform with the Sub-District Administrative Organization at that time. Their intent was to revise the rights and land ownership of villagers who own the land or have land for agriculture and use soil resources to effectively improve production to be their own right.

To develop the community by government sector especially developing such infrastructures has changed land use in community including the decrease of public areas and agricultural land caused by land trade of villagers, reservoir construction, pond digging, transportation route development by building roads connecting Nan-Baan Kod with the Nam Kian community resulting in more convenient access. More changes included the waterway length expansion, public water source development by enhancing the public ponds of each village to be an essential base for agricultural use and to reduce problems of water shortages so that farmers could have water to use when it was not raining or in dry season.

#### **4.2.3 Production Systems**

A study about production systems in the Nan Kian community during the expansion period showed they can be separated into 3 periods, the 1<sup>st</sup> period was in 2511- 2520 , the 2<sup>nd</sup> period was in 2523-2530 and the 3<sup>rd</sup> period was in 2531-2547 as follows;

1<sup>st</sup> Period : 1968-1977, Production system of the community started to shift from production for only consumption to include a little commerce. People still grew and farmed rice mainly for consumption in family and among villagers, they gathered plant seeds such as beans, pumpkin, gourd, melon, chili, eggplant and sugar cane to be grown in rainy season around farms, raised animals, gathered forest products and there was trade etc.

2<sup>nd</sup> and 3<sup>rd</sup> Periods: Policies of increasing products in the agricultural sector by using science and modern technology led the Nam Kian community, whom originally pioneered and prepared land for agriculture by using man and animal labor and planting tools such as hoes, spades and harrow, to change into using trucks and tractors that could save labor. These policies promoted using chemicals such as pesticides, herbicides and scientific fertilizers including promotion from the government sector by giving out samples until they were accepted by villagers. Samples of both plants and animals were sent for farmers to try growing and raising as well as promoting how to increase productivity by agricultural specialists etc.

The promoted plant species from the government (especially rice) and other plants started spreading quickly to the Nam Kian community and villagers from many families had interest in growing plants for commerce by using the new and various promoted species such as growing rice and other commercial plants simultaneously with cotton, tobacco, Chinese mustard, fruits and corn respectively as follows;

#### 1) Growing Rice

Farmers who had land saw that it was the basis of life stability to have rice for consuming all year long and most farmers grew for only consumption in the household. Rice farming in Nam Kian Sub-District covered 11 areas such as Huatong Farm, Hong Farm, Luang Farm, Klang Farm, Hang Farm, Tued Farm, Buakluang Farm, Aonglong Farm, Kum Farm, Nong Erang Farm and Kangbongfai. They were well known and called “Old Farm”. Before reservoir construction, villagers had to mainly rely on rainwater and would grow varieties of rice such as light rice, middle rice and year rice for the main consumption in the household. The yearly household needs of rice and amount of rice left in the barn were important factors in making decisions for growing rice the next year.

At the end of 2530 B.E., there was an irrigation system. It was a reservoir built to be the area that supported water from the Kian River. For farmers who had upland near the reservoir, they changed from growing Chinese mustard and having orchards to growing rice. Such an area would be known by villagers as, “New Farm”. With the support of government institutes and the sub-district council, people who mutually used water built a dam for the benefit of draining water in farmland. It was made with concrete as it was durable. When the irrigation system was developed, the decision to select old and new seeds of the villagers changed and they started to grow rice with a shorter growth period so they could gather products quicker because they wanted to grow plants after rice season such as soy beans, black sesame, red onions, garlic, sweet corn and vegetables to sell as well as for consumption in the household. This caused growing middle and year rice to decrease and eventually it faded away.

#### (1) Modern Technology, Science and Labor

Since 2523 B.E., mechanisms of government, capital technology and modern science interfered and influenced the community in many ways and played a role in villagers needing to rely on outside things. For example, villagers started to be interested in and accept new production factors like technology, plant seeds, fertilizer, and chemicals used to control insects and pests more than the past.

Some farmers even consented to trade many cows and buffalos for cash as to buy a tractor to use on the farm or be hired to plough in the village. The incoming of modern technology and science especially tractors could accelerate farming in just only a couple of days. When they finished their own farm, they would be hired on a neighbor’s farm with wages of 700 baht/ Rai.

These modern technologies and sciences, although it helped farmers to finish farming faster, caused asking community members for help to diminish and it gave more precedence to hiring. Also, using promoted seeds led the custom of villagers gathering, preserving and exchanging seeds to fade and disappear.

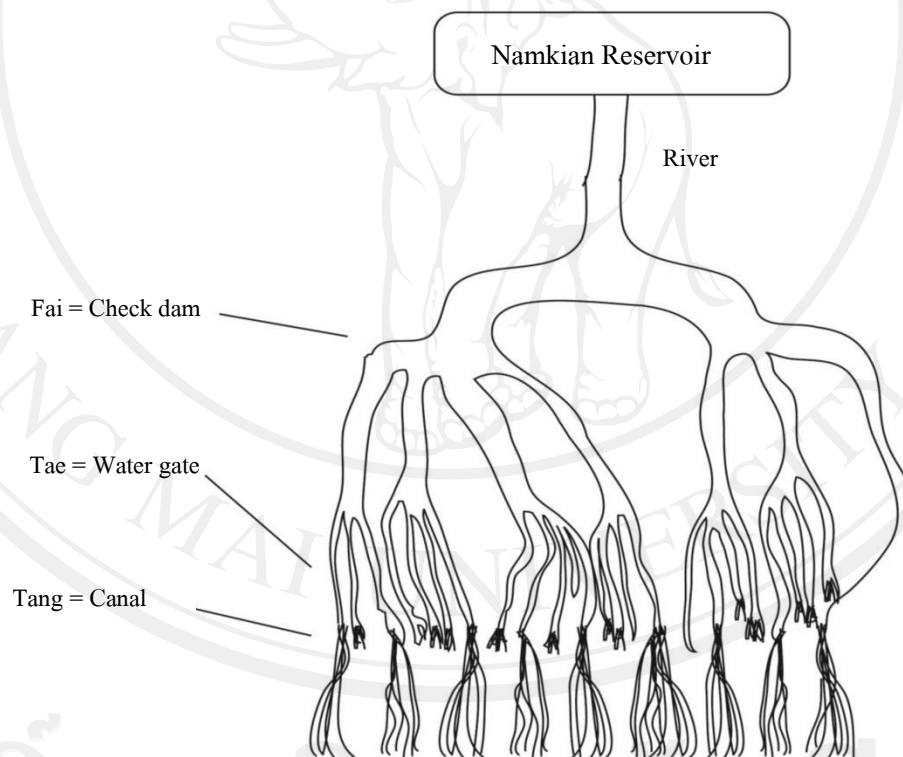
#### (2) Water Allocation into Farmland

After the reservoir was made, the village rice farmers needed a clear system such as in selecting a chief of the water users group to take the responsibility of controlling water distribution, and turning on and off the water for each rice farm. Before the rainy season, the group chief would arrange a meeting with farmers to

make a plan of water use and development like clearing weeds growing along the channels. But most were built of concrete which was more durable.

In the past, allocating water into farmlands was the responsibility of the Head of the Dam and an assistant. It was quite hard and troublesome to assemble people to take wood for constructing dams and for helping to keep them clean. Before construction, villagers would ask for permission from the spirits and building waterways would be finished with a pig's head as an offering.

But in this period, building dams and channels had changed to using concrete that was more durable and needed minimal maintenance each year. They only needed to assemble laborers that used the water to dig silt out of the channels before rainy



**Figure 4.5 Water management for rice fields network**

### (3) Labor for Rice Farming

To grow rice in this period, labor exchange was available in only some procedures such as plucking sprouts and gathering the rice. Some families still continued labor exchange, but for rice farming, there were two kinds of employment, daily hiring and hiring per rai. This became the norm and was popular amongst the women who had skills. They would gather and select those who were skillful in transplanting paddy sprouts fast, about 5-7 people, they would deal the price with the land owner and make an appointment to work at dawn. If growing Kor Khor 6 rice that had farther space between it than Kor Khor 10, wages were different. For example, Kor Khor 6 wages were 1200 baht/Rai but for Kor Khor 10, wages would be 1500 baht/rai a day. Women groups who transplanted sprouts would receive 1000-1500 baht/person.

In the past, there was a labor exchange to plough and lift and balance farm dikes because they required hard work and they were the responsibility of men. Currently, villagers hired tractors with a wage of 1000 baht and it could be finished in only one day. But, in growing rice, every procedure required money and the labor exchange was replaced by money causing higher capital.

### 2) Cotton Growing

Economic plant, promoted by the government in the Nam Kian Community, in first period was cotton. It was introduced with two species, kidney cotton and upland cotton, each with a different growing method. Upland cotton was grown with rice in June, during the rainy season and it had a six month duration period from planting until gathering cotton and it could be gathered along with the rice. Most upland cotton was grown for use in the household such as clothes in daily life. Villagers bought kidney cotton seeds from the market and grew it separately on particular land and they used pesticides on it. Kidney cotton was gathered during November-December. For maximum gain, villagers would divide the cotton into two parts which were 1) for household use, such as spinning cotton for making clothes, blankets, mattresses and beds and 2) for sale to earn income for their family. They would sell cotton at markets in the city at a cost of about 6-10 baht/ kg depending on the cotton's quality.



### 3. Tobacco Growing

Tobacco was grown after rice farming season. Villager would receive sprouts or some people would buy Virginia Sprouts and plant them in September and gather the tobacco around December to January. Some would chop tobacco into pieces and sell them at 3-5 baht/lump but for tobacco leaves that could be collected, they would sell them to the owner of the tobacco drying plant. The cost of the finished product was about 2.5-4 baht/kilogram depending on the type of tobacco. Currently, many drying plants have closed because of lack of fuel to dry tobacco leaves causing villagers stop growing tobacco.

### 4. Chinese Mustard

Chinese mustard is a short-age plant; villagers bought seeds in cans from the market and then sowed the seeds to grow sprouts. After that, they would move sprouts to plots. Chinese mustard grew well in upland near water sources and villagers grew it in September. While waiting for it to grow, they would get rid of weeds, watered plants, and enriched the soil by adding manure along with chemical fertilizers. They would gather the products in November. Chinese mustard is not popular to eat fresh. Primarily, villagers put Chinese mustard into jars to ferment for consumption in the household and for sale. Fermentation was not a complicated technique. Later, it started to become popular in the marketplace and could be sold at 2.50-3.00 baht/kilogram.

### 5. Orchard

Orchard growing was a new job for villagers who tried to grow many fruits such as longkan, mango and tamarind. Previously, mango was a fruit that could ensure a high income because, in that period, it was not popular to grow extensively. Mangoes were only available in small amounts in the markets causing a high price.

Growing mangoes and longkans would receive a good price in that time. When villagers saw others growing them and earning a high income, they started growing such trees and it led to lower prices. Also, people faced the problem of natural disasters, such as storms in some years causing damage to the trees and fruit. In some years, the produce was not of good quality because of pests and disease and this was a way for the middlemen to cut prices. Therefore, production costs haven't

broken even since 1984. Villagers stopped growing fruit trees and adjusted the area for corn growing.

#### 6. Corn Growing

Corn was an economic plant and it grew well in sloped areas. Primarily, villagers started growing in small amounts and used the local species. The traditional production process had many steps from preparing land, growing, weed cutting, harvesting, and transporting and it was a difficult product to manage. For example, farmers had to peel the corn and tie it up and keep it in a clear area. After that, it was nailed in rows and hung under or on the side of houses. When it was dry, villagers would tear seeds off and then dry them in the sun and sort out the molded seeds. Villagers would keep some parts of the finished product to feed to their chickens and the rest would be loaded and sold in the city at a price of 1.50-2.00 baht/kg.

Later, a government promoted species of corn spread to the community. The yields were high and they could be sold at a good price about 3-4 baht/ kilogram. So, villagers who invested in these sprouts could gain good income. Due to a better income, villagers turned the land used to grow rice into land to grow corn instead. Capitalists started playing a great role in controlling the production system by putting up the initial costs for the villagers and when the corn could be sold, the villagers had to pay the capitalists back for such things as preparing land for plowing, bringing corn seeds, chemical fertilizers, gathering, marketing and transportation. Farmers invested only their labor. Villagers also had a chance to access credit for agriculture and other things.

With their income paid in cash, this was the motive that made villagers wake up and claim land that was previously abandoned for long time. They cut down trees, let them dry out, and then burned them all.. Families would burn trees in many areas so they would have wide land for growing corn and the families that started growing first, would earn lots of money.

**In the 3<sup>rd</sup> period** , at the beginning of 2530 B.E., villagers in nearly all household stopped growing rice giving the reason that growing rice needed continual care, especially weeding which was a heavy labored job and production was not enough for consumption so it was not worth the dedication. Therefore, they stopped growing rice and started growing corn instead. Land started to be used intensely and

the abandoned land was used to grow corn that would make them money. The villagers would sell the corn to buy rice from rice merchants who transported rice from Phrae and Chiang Rai to sell in the community.

Furthermore, ceasing the growing of rice affected local plant seed gathering and collecting as they did in the past, women that used to play a role in the gathering and selecting of plant seeds were depreciated. Meanwhile, careers in raising animals like cattle were diminishing.

Since 2531 B.E., villagers had pioneered the forest area for a second generation which used to be rice farm and it was turned into a corn farm. Growing corn in this period, villagers were entering full capitalism by depending on production capital from merchants/capitalists and from BAAC so that they could have increased production such as capital, labor, dedicated time, land use and production factors of both corn seeds which were primarily promoted as Suvarn 1, Suvarn 2, Triple 111, CP KKK and CP 888 and also chemical fertilizers and chemicals.

For families that had lots of cultivating land with high investments, in some years, if the weather supported, they would have full yields and depending on the investment and they could earn a lot of money. However, corn prices in that period were 3-5 baht/kilogram and villagers had average income for 30000- 600000 baht/household. Incomes were paid in cash and after deducting capital and interest from the capitalists, farmers still had money left. Some used it to pay debts in the community. Some refurnished their house and bought facilities or used it for their family as necessary.

In some years, if the price of corn was low, whatever was invested throughout the year was for nothing and some people had to face problems of debt until they could sell again the following year. Some people didn't have money enough to pay back the debt of BAAC, so they had to borrow money from a new source to clear old debt. It was the way to maintain good credit in order for them to ask for a loan next time and they would be easily considered with channels of various loans. Therefore, farmers would have more and more debt and it became the norm for them.

In terms of corn marketing, there were merchants/capitalists who bought corn directly from the farmers and some farmers used merchant's money to cover initial

costs. Therefore, there was an obligation to them and farmers could not sell their products to other capitalists even though they offered higher prices.

Previously, farmers faced the problem of marketing and they petitioned for justice but there was no way out and from this management. The market was monopolized without negotiation so, there were disadvantages. When cost of production increased but products were sold at lower prices, there losses increased and they had the problem of debt. Growing corn made farmers a part of capitalism and they had to rely more on outside production such as fertilizers, chemicals and seeds along with the higher rate of deforestation. Then, villagers only grew single crops for sale instead of planting for consumption.

In period 3, villagers still produced in two ways, 1) production for consumption such as rice farming, animal husbandry and relying on nature simultaneously and 2) production for sale by using new plant seeds and animals with options in selecting plants and animals that were needed in the market.

From surveying data about production of the Nam Kian community during 1993-1996 concerning agricultural production for consumption in household as in table 4.1, it shows product for consumption in community as follows

**Table 4.1 product for consumption in community**

| <b>Product For Consumption</b> | <b>Percentage<br/>(household)</b> |
|--------------------------------|-----------------------------------|
| 1. Rice                        | 61.20                             |
| 2. Soybean                     | 19.41                             |
| 3. Black Sesame                | 21.00                             |
| 4. Vegetable                   | 22.73                             |
| 5. Fruit                       | 23.21                             |
| 6. Pet                         |                                   |
| 6.1 Poultry and Pig            | 36.63                             |
| 6.2 Cattle                     | 14.47                             |

Agricultural products for sale in Nam Kian District in this period, it was found that in a household, there were various productions such as corn (which was economic

plant that could make income for the community), black sesame, and soybean were grown after rice but products that make high income for Nam Kian District were corn, animal husbandry and orchard as in table 4.2 showing products for sale as follows

**Table 4.2 products for sale**

| <b>Product for sale</b> | <b>Percentage<br/>(Household)</b> |
|-------------------------|-----------------------------------|
| 1. Corn                 | 86.68                             |
| 2. Soybean              | 42.50                             |
| 3. Black Sesame         | 37.00                             |
| 4. Vegetables           | 37.50                             |
| 5. Fruits               | 41.21                             |
| 6. Pet                  |                                   |
| 6.1 Poultry and Pig     | 56.54                             |
| 6.2 Cattle              | 34.63                             |

For villagers who had capital and knowledge had a chance to find other options for a career apart from agricultural production such as trading (selling community's product out in city markets), handicrafts, appliance fixing, barber, transporting students to study in the morning and in evening. Some people abandoned agricultural production and turned to do such careers, they had to seek stability for themselves and their families as a priority.

Becoming an intense commercial production system under the support and promotion of the government and market mechanisms, made the community bound to relations with capitalists. This affected the community and its resources because such production stimulated the community to change their way of production and become the same as others in terms of extensive deforestation. Production for sale needs wide land with intense land use relying on chemical fertilizers and pesticides in order to accelerate a great amount of products. Farmers had to rely on outside production factors and were in a cycle of competition with time and used laborers, particularly people in their family. People began living separately and had to earn more money for living. Farmers in each household had the same way of life. They were forced to



drive to work day and night, work as a machine and spend nearly their whole time focused on production to earn the highest income.

Spending time with family members, relatives and doing activities within the community was not possible because people had to hurry to work in the morning, go home in the evening, then find and cook food. After all daily activities were done they had to rest at night so they could continue working again in the morning repeating this over and over this became their cycle of life.

#### **4.2.4 Economic Systems**

##### **4.2.4.1 Lifestyles and Occupations of the Community**

From 2520 B.E., the promotion and development of the state's policies lead the community to a capitalist economic system. The state's mechanisms, economic system, technologies, new values and new ways of consumption have influenced the community in many ways and, in part, pushed villagers to become interested in and accept the modern production process factors from external sources, such as the use of agricultural technology like tractors, fertilizers and chemical substances to control insects. The products are for consumption and selling. Their lifestyles and production systems had changed from producing for livelihood and trade, which made the community self-sufficient, to the "money" system and the villagers started to be in debt. At the same time, the villagers are still continuing to farm and find wild products for household consumption and selling. They also have a ranch with pigs, cows and buffalos, as well as, commercial plants like, cotton, tobacco, cabbages and corn, which they sell as their main source of income.

In 2522 B. E. there were two rice mills which used fuel and opened for villagers in order to help them with pounding half-milled rice.

In 2528 B.E., the community had access to electricity, by the provincial electricity authority, for the first time. The service covered all 5 villages and living in the community became more convenient. Starting from using lamps, several households, having good economic status, were able to buy other facilitators like water generators, televisions, refrigerators, fans, disc players, irons and electric washers. The material growth had quickly spread throughout the village from the

influence of advertising. The villagers accepted the products and paid in cash to look equal to others.

#### 4.2.4.2 The occupation of the community

From a survey of occupations amongst the Nam Kian community in 2536 B.E.-2540 B.E., it was found during that time, villagers had to work many jobs in order to find ways to earn money while at the same time or same week, month or year continued farming. They were hired for corn farming, running orchards and ranches with cows and buffalos, selling and working for the government, as seen in table 4.3 showing the community's occupational proportions as follows:

**Table 4.3 Occupation**

| <b>Occupation</b>         | <b>Percentage</b> |
|---------------------------|-------------------|
| 2.Rice Farming            | 81.51             |
| 1. Rice Field             | 61.20             |
| 2Corn farming             | 72.68             |
| 3. Employee               | 51.40             |
| 4. Running orchard        | 36.61             |
| 5.Ranch                   | 39.33             |
| 5. Selling                | 12.20             |
| 6 laboring (Sla)          | 11.47             |
| 7. Working for government | 8.64              |

#### (1) Agricultural Sector Income

Previously, capitalism, under the support of the state, had expanded and dominated the community in almost every aspect. The stream of development had come into the community following the state policy that rushed economic development and increased income. The community gradually changed its approach from producing for their own livelihoods, which allowed villagers to be self-sufficient, to producing for trade by planting many types of plants because farming for household consumption and earning cash was becoming more important. From a

survey of production within Nam Kian in 2536 B.E. -2540 B.E., it was found that in the community, the income from agriculture was 83.21%, consisting of farming corn, soybeans, sesame, various vegetables, fruit trees, ranches and collecting wild plants and herbs.

#### (2) Income Outside Agriculture

In addition to the agricultural sector, the villagers had occupations in the non-agricultural sector making up about 53.33%. Examples are self-employment, services, trading handicrafts, general employment, baby nursery workers, selling lottery tickets, selling illegal liquor, school bus drivers, being the middle man bringing the community's vegetables to sell in town, selling some products from the forest like broom grass, which is used to make brooms and Yaka grass which is used for roofs, and some households gain income from selling their animals.

In addition, there are some families who work outside the village while they wait for the harvest period. Some go as far as Songkhla Province, Trang and Bangkok to be laborers and construction and rubber employees in order to earn money to support their families. The money earned is divided in proportion to the investment in farming, buying equipment, agricultural tools, and some use it to buy essentials such as clothes and other necessities for family members or accessories, kitchenware and appliances.

#### (3) Expenditure

The life of the water community began to change and began to see more external demand for money due to the increasing consumption in their daily lives. From survey data of the expenditures of the community history it was discovered that villagers spending on essential goods were 89.33% including fresh rice, charges for education, installment debts, manufacturing costs, utilities, food seasoning, and medical care, respectively. Spending of 76.53% was more extravagant such as gambling, drinking, socializing as well as the cost of tourism and recreation, etc.

#### (4) Debts

As farmers headed into the single crop production, they needed to rely on and use modern technology to help with labor. Therefore, the production cost was higher but they were able to access credit, both in and outside the system. In addition, the villagers had to depend on outside capital from the capitalist system and can get loans

from the Bank of Agriculture and Agricultural Cooperatives and this started the debt circle.

In 2546 B.E. survey of Nam Kian sub-district debt, in particular loans for agriculture from BCC (Bank of Agriculture and Agricultural Cooperatives), it found that in Nam Kian, the total debt was 33,501,097 baht.

With each round of the production season, most farmers ask for loans according to their objective of farming. But in reality, some of the loans are taken to pay their debts, their daily expenses and school fees of their children, which are a high expense. During the waiting period before harvest season, they have no income. They can borrow money from their relatives and siblings and ask for loans from savings groups both inside and outside the community. These are short time loans that they will pay back after selling their products.

Most of the community members are honest and disciplined and are concerned how they look to the community, particularly on their self-credibility like what they say. For example saying that ‘I do not have food to eat, no one would know. But if I have no nice clothes to wear, relatives will look down on them.’ It means that you can eat any food because no one would know about it, but their look and clothes are something credible which is more important. Villagers would focus more on their commitment to pay on time.

The problem with debt amongst farmers has been around for a long time and it seems to be endless. Analyzing the data on income, expense and debt, found that debt is an economic investment. But these investments involve two factors: 1) the prices of farmers’ products are fixed by a middle man which is a big disadvantage to the producers 2) debt on the education of children is also invested. These costs of education are high for the farmers and there is no return to the family in the form of income. These are the reasons that farmers accumulate debt as they have former debt too.

#### (5) Savings

A survey of the savings of the Nam Kian community showed that there are 2 types of savings. The first type of savings is inside the community. Members have 37.55% of their savings in the community. In 2539 B.E., the Hug Muang Nan Foundation brought a committee and the community leaders, including the savings

group network of Nan to study the work of the savings group of Jana District in Songkla Province. Headman, Wiboon Khemchalem in Chacherngsao, worked with the savings groups and Pra Ajarn Subin in Trad to come up with ideas for Nam Kian. After a study trip, the leaders who joined the study trip took the ideas of the savings groups in the South and applied them and raised funds. The savings started from small groups doing activities together, for example, the timber transformation group, housewife group and occupational groups, focusing on saving and helping each other. Members can borrow money for emergencies with interest rates of .50 -1.00%.

The second type of savings is outside the community. 11.67 % of the community's savings are with different banks and in deposited money in the form of banks' lotteries.

#### **4.2.5 The Sense of Community**

Changes that occurred within the Nam Kian community after the development of infrastructure were of great significance. The effect of modern development on the community changed the community's infrastructure.

Examples of this are the structural changes in the temples, determining the areas of land use for community changes, such as building roads as well as, generating irrigation systems, municipalities, and the telecommunications market that come with the new science plans and the implementation of technologies. It is a key mechanism in pushing and accelerating the restructuring of the professional community. New, commercial production systems for sustenance in semi-rural, semi-urban societies, became more and more a necessity. Most of the new generation workforce was employed outside the community making a decline in potential successors and a lack of their society's production, as well as a decline in passing on their knowledge in various fields.

There were also structural changes in the ecology and land use of the community, for example, building roads, irrigation systems, fresh markets, the TAO building, hospital, communication systems which come with modern technology pushing the community to change its infrastructure from being independent to producing for trade and leading the society to become half urban and half rural. When the people become an employable age, they go out to get employed outside the



community leaving a lack in the old production and continuation of old wisdom being handed down.

A lifestyle changes included leaving their jobs. The villagers went from the ranch to the park since each household had a motorcycle or car. Women quit weaving because merchants brought clothes to sell in the village. Villagers stopped gathering food from nature, as it could be purchased in the market. They stopped pounding rice mills due to the reduction in need.

They terminated the need to retrieve water due to the water supply systems in the homes. Men were not needed to produce firewood, because they had gas and electricity. Production of shear nylon ropes was decreased because there was other good selection of nylon rope for purchasing. They stopped plowing with a rake due to technologies such as tillers and tractors with facilities to help relieve efforts in the workplace. Meanwhile, the community was struggling and working harder to earn more in response to consumerism.

Going to a capitalistic system, the Nam Kian community became more of race track where only the strongest would survive while the inferior would become extinct. The community and its moral were affected by money and benefits are not shared properly. This brought great losses. From 2528 B.E. -2532 B.E., there were 5 cases where people were shot to death.

The expansion of the community and capitalism in 2536 B.E., became the hot sensation and influence throughout the community. The image of strong community, independent capability, self-sufficiency, simple living and the belief of helping each other had been devalued.

The power and influence of the capitalist economy and new production systems that come with new science and technology overshadowed the paradigm, or way of thinking of the people, particularly among the younger generation. More attitudes changed from the previous patterns of life, community and culture. There were always new things to speed up the economic competition and the upward trend of people competing to earn money to spend on a daily basis. It did not give importance to the social dimensions, the other side of their lives. The community had been projected. The solidarity, the respect for elders, leaders, and nature of which used to be an important mechanism had faded and been replaced by the struggle for

survival. For example, you can get chilies from the house in the north and salt from the house in the south. A system of interdependent communities began to wane from the exchange system with money and their communities were strengthened. Ties to powerful people in the community that had strong solidarity began to loosen and weaken. People's lack of commitment to the community caused social problems and the decline of natural resources in the environment.

Structural changes in each part of the community changed the community in many aspects and levels, from the smallest unit like family to the community as a whole as follows.

A decline of morality and change in life skills in the younger generations has occurred bringing with it, to the community, divorce and violence. Young couples or young people not being able to be responsible in their life became the norm and was accepted. Thus, grandparents in this generation have become younger. The time to spend with family members, relatives and friends became less and less. Their lives had become rushed and they needed to compete with time, aiming to earn money for consumption. People became more materialistic. People of every class had to struggle for a living.

The relationship structure changes in the community have caused many to have decreased roles in the aspect of leadership and governance. For example, the local irrigation system structure was a group of water user organizations that used to be strong and functioned within the society organizing things relating to water management in rice farming. There were leaders selected by the villagers who were called 'Kae Muang' and 'Kae Fai'. These types of old respected leaders were forced to decrease their roles as the permanent irrigation officials came to replace them. In addition, the system of natural leaders who had dependable charisma was broken and they had to evolve themselves to politics which was more competitive and used a relative system as their own base and then began to focus more on individualism.

In governance, its structure in the community had changed from natural leaders who were regarded as leaders because villagers paid respect and had faith in them to local administration which was directed by the Ministry of Interior, which conducts legal conditions and issues and acts to supervise and control the local administration organizations. As a result, local power systems and relationships in the

community, such as the charismatic leaders had changed, becoming a new management system with formal leaders like Village Headman, District Headman and TAO Minister. The state had intervened and taken the community as part of the state. Thus, authority or community conditions that villagers could manage and take care of in the past, had become a mechanism that depended more on the state.

Institutions in the community such as temples, schools, respecting elders which had bound people's relationships in the community, had been affected by the development which focused on income earning and competition to serve consumerism. The community had lost its strength in seizing its people. The community which used to help and could depend on each other, in the past, with a labor exchange system was fading. The local knowledge was rarely related to by new kids. Ideas of beliefs and local wisdom were ignored or not followed.

Being a community under the visual process of development that focused on the value of money had pushed the community to face their current inevitable fate. The community had become individuals, with the lack of mutual responsibility. There was no one who could warn them. Morality had declined. There were many bad things in general, including conflicts and quarrels. Institutions in the community no longer had much of a role in solving problems of the community.

However, the process of the capitalism system is still being carried on and it does not seem likely to end. The community is facing power from external sources beyond its control and which cannot be blocked or stopped. Now, the community has realized the disadvantages, but now has no other choice but to struggle for a living to survive.

#### **4.2.5.1 Chronology Situation Regarding the Change of the Community.**

During 2531 B.E.-2533 B.E., the Nam Kian community entered a state of exhaustion due to the social disorder. Critical issues, such as the problem of natural resource decline, drought, production problems, debts, health, mental and social problems like drugs, gambling, gangsters, conflicts and fistfights frequently occurred in the district. Villagers in each village had conflicts and always took the side of their own relatives without having reason which led to problems governing. In local

traditional events in the sub-district, teens tended fight and caused trouble to the events until it could no longer continue.

Competitive lifestyles, burglary and crime became normal. Villagers were in trouble and lived feeling unsafe and paranoid. They feared for themselves and their property. They need to care for each other. Village headmen received reports and complaints daily. These can be summarized as follows:

In 2533 B.E., the Nam Kian community suffered from drought. While they were waiting for the year of production, villagers were unemployed. They set up gambling for fun and expected to earn extra income from gambling on cards, dice the chickens. A funeral was even conducive to gambling all day and all night. They started to use drugs in order to stay up all night. The proceeds from gambling would be spent without planning. Some villagers became addicted to drugs, some were in debt, and some had arguments and conflicts within their families.

In 2533 B.E.-2534 B.E., there was a problem in the community with 3 main issues; 1) drought occurred in Nam Kian branch river and in community ponds. Villagers had to line up to get water. This event had not happened before. The district council, at the time, needed to ask municipal trucks to distribute water to the residents. Due to the drought, villagers could not plant crops after rice farming which resulted in not having enough income to pay debts, 2) Drug problems had expanded from laborers to the youth, 3) Theft and fighting in the community and bullying outside the village at different local events.

When problems occurred, people felt vulnerable in life because they did not have someone to turn to for advice. The ultimate crisis led to stress, so people were trying to seek peer groups. In 2534 B.E., there was an idea of setting up Xiao groups. A Xiao group is a group of people who were born in the same year, grew up and learned in the same schools, and shared relationships as classmates. With friends, they could tell and warn each other when others' conduct was not good and to persuade friends to do good activities and help each other amongst the members of the group resulting in stronger relationships.

In late 2535 B.E., some villagers started to migrate out to work as laborers in other provinces. Working outside the village showed the lack of self-sufficiency of the community at the time. The community leaders had a meeting to discuss and

attempt to resolve this issue, but after working on the solution for a period of time, collaboration between organizations in the community was not clear. The community could not group together even though most of the members were relatives. The plan in the beginning was to ask for help from monks to spark the collaboration through activities on major religious and Dharma. The solution was implemented incrementally.

In 2536 B.E., drug problems spread severely. There were many amphetamine users. Students who finished Grade 9 in Nam Kian could not enroll in schools in town as they were seen as youth from a community which had a drug problem. The youth were expelled from schools in town because they used amphetamines or Ya Ba.

#### **4.2.5.2 A Major Turning Point of Nam Kian Community**

In the same year, there was a development concept and participated solution started by the Nam Kian public health station staff for the community. Leaders were the district council committee, community leaders and religious leaders. If they left the problem alone, the community would face more crisis, so the committees had a group discussion and concluded they needed a participatory development approach embraced by homes, temples, schools and health stations. (HTSH)

H- Home consisted of district council committee, community leaders and representatives of different groups to participate in community activities.

T- Temple consisted of monks and Christianity leaders. They played important roles in the community development.

S- School: Staffs in schools and the executives of the schools implemented policies of active teaching development to promote students as a medium between school and parents. The school allowed villagers to use the place for playing sports and gave a chance to students who were expelled from other schools to enroll in their school.

H- Health stations increased their role in running an all-inclusive therapy, in particular on drug therapy which included healing, recovering and giving advice on life skills to help villagers the ability to keep working and moving forward.

In 2537 B.E.-2538 B.E., HIV / AIDS was first seen in the community. There were some villagers who were infected with HIV and affected by the disease. Most of



those infected were those who migrated or labor workers who worked in other regions, but its impact had spread widely to family, community and society.

Due to the confusing lives of the villagers since 2537 B.E., the Hug Muang Nan Foundation, which is a non-government organization (NGO) in the local area, came to promote and support the establishment of the youth conservation folk music group and savings groups to create discipline amongst the community. They also supported the forest conservation group, coordinated through the World Environment Fund (UNDP / GEF), and the group for people affected by HIV / AIDS, and was a coordinator of five menu budget funds SIF which supported the activities of those patients infected with HIV and people affected by it. The coming of the Hug Muang Nan foundation had created wider networks and collaborations.

In 2539 B.E., the Hug Muang Nan Foundation had brought a committee and the community leaders on educational trip to the savings group of Jana District, Songkla Province. The integrated farming of Headman Wibun Khemchalem, Chacherngsao Province, the savings group of Pra Ajarn Subin, Tak Province was the guideline for the Nam Kian community. After returning from the trip, saving and fund raising were established and had extended its network.

In 2541 B.E., the Quality of Life Development Organization was established with the objective to develop the work of the Nam Kian people to get better life quality in economics, social life, occupation, education, culture and health. Coordinators worked to achieve collaboration between different organizations in both government and private sectors, and help develop the vision of Nam Kian District under the quote saying “Eat well. Sleep warm. Good dream.”

Eat well means having a sufficient economy with independence

Sleep warm means having good health and being independent

Good dream means having your life and property safe and secure, having no drug problem and decreasing debt problems.

The operations of the organization worked at the local level by selecting community representatives from five villages to make up a committee to work along with the community leaders and TAO members. These 42 people were committee overseeing five sections; 1) The section of education, society and culture which work on running activities to hand down local knowledge to the youth, 2) The section of

health working toward development of health in the community, 3) The section of economics focusing on promoting the activity of job distribution projects which are set up in four places: the community rice mill, the livestock food factory, drinking water factory and the brick factory, 4) The section of drug control working on controlling, preventing and watching over the drug use in collaboration with village policemen, and 5) The section of community forest which work on natural resource management, and forest conservation of water shed resources by patrolling the forests, setting up checkpoints and assigning duties to block tree cutting.

The 42 warriors is the name which they are known in the Nam Kian community. The villagers accepted and appreciated their participation and teamwork consisting of their sacrifice, dedication, discipline and being good role models of work for the community. The name ‘warrior’ was appointed to boost their will and remind them of their power just like the warriors who fought for the motherland.

In 2544 B.E., the Hug Muang Nan Foundation, in cooperation with The Community Organization Development Institutes (CODI) and the community, made a community plan to let people participate in reviewing the community’s past to find its weak points and determine which direction the community should be headed. They reviewed and prioritized problems and analyzed the causes and together they planned solutions.

#### **4.2.5.3 Learning through Nam Kian Community Planning Process**

“When there was no community plan, we worked with no direction and just followed the orders. After the making of a community plan, I can analyze myself and know the direction of what I’m doing. If there is a project and or budget coming from external sites, we would have a talk together about how we can arrange for them and what plan we would do.” Sub-district Headman Kammoon Deepromkun said about the process results from community planning.

Professor Chusin Sarnrattana, the president of Life Quality Development Organization, reflects a clear picture, “We didn’t have a real community analysis and just made a living along with the main stream and we just realized eventually that the more we earned, the poorer we became and the remaining natural resources also declined. After we analyzed together, we then found that the problems of our

community related to each other or among themselves. The main problem of Nam Kian related to drought, drugs and gambling started from deforesting. Planning for the community started from the Hug Muang Nan Foundation which came to provide support in 2544 B.E. and the Nam Kian children were the coordinators making plans, talking, data collecting, problem analysis, finding potential and bringing good things like applying local knowledge. We also take crisis as a chance to solve problems together. Several groups were set up to analyze and research, starting from family to village and all related to the Life Quality Development Organization which is the core group working in the community.

Professor Sanit Sairawkam, the former president of Nam Kian Tambon Administrative Organization (TAO), said “During that time, Nam Kian had a focus point on occupational development, boosting income in households and developing the life quality of the members, because seeing the life of people in the community, there are limited agriculture areas so we need to give significance to growing from the household to be able to have enough for living and the rest can be sold for earning.

Phrabaidika Kukiet Jitmatee, the former Abbot of Pongkam temple, Nam Kian Sub-District, has talked about the effect of the community plan making the community “become aware” of themselves, their roots and history, and to see the big picture of them working together in every section and participating in problem solving. They can coordinate with outsiders and the activities can have a good effect in many ways.

Eventually, the community plan, that villagers participated in making, was contained in the development plan of the Nam Kian Sub-District Administration Organization and it was taken at a practical level respectively.

#### **4.2.5.4 Work Together in the Community Process**

The disorder and suffering of the community was what rushed the community to search for a leader who had unique qualifications, who could relate to and connect people’s thoughts through communication, and who could persuade them to build and expand while working together. There was an effort to recover the relationships of people and an aim to solve the problem of the community through meetings, training,

educational trips and practical tests. This led to the enthusiasm of the community to learn about and solve the problems to a point.

When the effort to solve the problems gradually unraveled, the community had faith and joined in the process with all their will. In the beginning, the solution process had been done by learning about and solving problems simultaneously. There was constant planning of activities. One obstacle for the community was it is a small community. The work of the 42 warriors, who were outstanding in teamwork and had the mutual ideals of self-reliance and survival, was discussed and the outcome of their performance was reviewed. The results were shared and when the community saw the good results, it pushed and drove the community in a clear direction and they could see a positive future for the community..

Since 2540 B.E.-2547 B.E, with effort, the community had woken up and lively learned to adapt itself. There was positive change seen in many ways, for example, the community was awarded as a savings group for production at the national level and it had started to be known as and became a model village of development.

Community development in the five villages had improved its level of work as well as its regulations. The community leaders consulted about setting up a community forest committee and made plans to scope out the Khunkian watershed forest area as a source of water to patrol the area to prevent invasions which would decrease deforestation.

In 2544 B.E., the Nam Kian community accepted an invitation to host the Community Forest Festival: The Solution of People and Forest. 700 people from 4 parts of the country participated. The community committee had brainstormed to assign work to staff according to their skills in order to be good hosts in welcoming guests.

From the middle of 2544 B.E., Nam Kian's name started to be generally known by people both in the province and in other provinces. It was a place studied by government and non-government units. The community leaders were invited to be lecturers across the country and the community was named, "Nam Kian: The Community of Learning Together" and became a resource for learning in the province and other provinces nationwide.

#### 4.2.6 The Forest Use

The forest use at that time was divided into two periods: 1<sup>st</sup> period was from 2511 B.E. – 2514 B.E. and 2<sup>nd</sup> period was from 2515 B.E.-2547 B.E. as follows:

The forest use in the beginning was when the community was expanding and its population was increasing with both the local people and of people moving in from the outside. The use of the forest during this period by the villagers was multi-dimensional and for multiple purposes.

A survey back from 30 years ago on the forest use of the community, showed the proportion of the community using the forest.

**Table 4.4 The proportion of the community using the forest**

| Utilization           | The Percentage of Households |
|-----------------------|------------------------------|
| 1. Collecting NTFPs   | 82.11                        |
| 2. Wood Productions   | 83.76                        |
| 3. Agricultural Areas | 56.67                        |
| 4. Hunting            | 53.69                        |
| 5. Rituals            | 44.33                        |
| 6. Relaxing           | -                            |
| 7. Watershed          | 36.67                        |

In this period, the villagers still utilized the forest in many dimensions and for many purposes, but the form of forest use had changed from interdependent to dependent. They were utilizing the forest too severely and freely withdrawing too many products from the forest due to the fact that there were no regulations or rules to control them. The villagers could take many things from forest, which can be divided in to four groups, which are 1) timber forest products: TFPs, 2) Non-timber forest products: NTFPS, 3) land use for agriculture, and 4) water. Another use of the forest is based on rituals and beliefs which could be done freely and no one could be blamed.



1) Wood (Timber forest products: TFPs) people used for many aspects such as

(1) Housing

After the capitalists had cut down trees in the areas of Nam Kian Sub-District and Namkaen Sub-District, the trees were nearly extinct. Villagers, from several families, began to collect and accumulate logs and lumber to build houses with the hardwood and changed their roofs from grass to zinc or thatch. They also added on to their one-story house making it a two-story house. Wood was taken to build houses and residences. The larger the wood, the bigger the house and this was as indication of the look and status of the owner as well.

(2) Energy

Wood was also used to cook in households and light fires for pets and livestock. The wood was brought from the grove forest, near the rice field, Pha Pae Bonna Forest and Pha Huay Lom Forest. In the past, villagers did not dare cut down large trees to make firewood but during this period, villagers were able to cut big trees located at the end or beginning of their rice fields. The trees would be cut down and left for 10-20 days and then dragged by cart or wagon wheel. The wood was used in household and for trade. Some wood was cut to build houses and orchard fences and some for trading with outsiders. Some wood was cut to make charcoal for trade.

(3) Wood was utilized in front of public buildings as well as in structures such as, bridges, schools, temples, the Ghost Tower, dams and was used to make furniture and agricultural tools.

2) Forest Products (Non-Timber Forest Products: NTFPs)

Purposes of the products taken from the forest changed including the use of its herbs and plants used for apparel. Also, the timing of removing plants and food sources changed as well as the amount taken each trip. The forest ecosystem changed mainly to an area for agriculture and various wild food plants had decreased and had become rare. It also took more time to catch fish. Fishing became more violent because people would catch fish by chemicals and the power of the battery current affected the food chain and so food security decreased. The villagers were increasingly oppressing nature. For example, villagers would harvest red ant eggs

from fallen trees instead of, as previously done, climbing the tree. Also, the villagers are harvesting mushrooms more and more often.

Villagers have changed from finding their own food to buying food from neighbors. They buy eggs, ants, mushrooms, bamboo shoots, and local vegetables. In the later period, there were only a few people that could be counted who lived near the forest and would go collect food. Collecting food from the forest used to be done at certain times, for example, the Lom mushroom is usually harvested in the morning or the evening, at a certain time, but during this period, villagers would wake up as early as 4 or 5am and they would collect all of mushrooms, both the small and the big ones. They would use battery powered light to find it if they were good or not as the mushroom would become light green if it was exposed to the light. These were traded at a good price. So villagers took advantage of the forest more intensively and they started to ignore or simply not follow the local wisdom and beliefs. The role of community regulations for controlling forest use that they used to follow started to diminish.

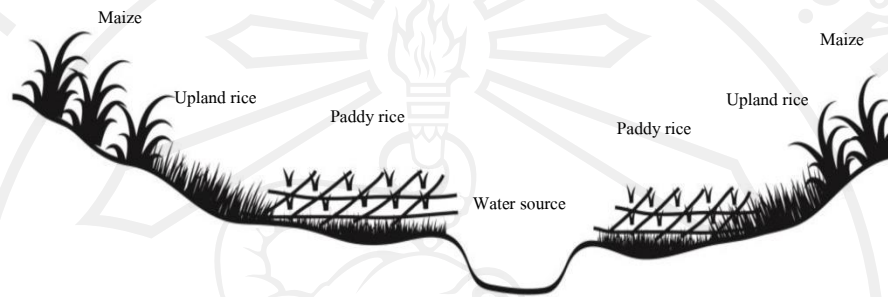
The role of herbs had changed with the change of society. There are many ways of healing and treating with the modern medical services in the community, such as the health station and the hospital is not far from the community. Each household had the most common medicines and they were more convenient to use than herbs. Therefore, the herbs role as medicine was reduced.

Using the forest for clothing, a local skill handed down from ancestors which was now becoming lost, was no longer needed since families had their own transportation which made shopping more convenient. Technology and science had taken a role in changing the community's lifestyle. Plants that provided natural color were decreasing and becoming rare. Most people did not have enough time to weave cloth and the skill of transform plants to fiber was lost with the elders. Thus, the current generation did not continue this tradition.

### 3) Land Use for Agriculture

Heading into commercial production, under the support of the government and the market mechanism that links relationships relying on capital, had affected the community and natural resources. The production system in such a manner urged the

community to modify its method of production. This meant they needed to invade the forest in order to expand and in doing so, the intensive production changed the forest area rapidly. The villagers had cut down the trees and left the area as a corn field. In drought season, prosperous forest had changed to a bald area which caused soil erosion in rainy season.



**Figure 4.6 land use for agriculture**

#### 4) Water

The major sources of water for farming and consumption in the community are the Nam Kian stream which is in the Nam Kian watershed area. There are two reservoirs: Nam Kian Reservoir and Huayrin Reservoir. Both reservoirs are located in the North of Nam Kian Sub-District. In the East is the Namkaen Reservoir, which is on the border of Nam Kian and Namkaen Sub-District, under the support of the irrigation department which is aiming to reduce the water flow velocity in rainy season, and it is the source of water for drinking and farming.

##### (1) Water Resource for Consumption in the Household

In each village, there is a pond to keep water for household consumption. The villagers pump the water up from the pond to a large bucket and then water is sent by a tube system to each house. Most villagers use the tube system, as only a few have water pumps and can pump their own water out of the pond. There are both public ponds and personal ponds. For drinking water, villagers mostly buy bottled water from the community which has its stake in producing it. It is named Nam Kian Water and it is used in almost every household. But after some time, there was a problem

with the administration and the water company was sold to the community members who run the business still today.

#### Water use

The quantity of water for consumption and agriculture depends on rainfall each year, and in some years between March – April, there has been water shortages.

#### (2) Water Resource for Agriculture

The main water resources used for agriculture are from the Nam Kian Reservoir, the Huayrin Reservoir and other natural water sources. These water sources are used for rice farming and cropping after rice season.

#### 5) The Use of Beliefs and Rituals

Data from a survey on the deaths in the population of Nam Kian District, found that in the course of one year, an average of 23 members of the community die. The tradition that the community has passed down for a long time is building a Ruentan, or a model house, for dead people so their spirit can live in it during their afterlife. For building the Ruentan, the relatives of dead people would cut down trees from the forest areas of Pae Bonna, Huay lom and Hua Rai Playna ,and each model house uses the wood from approximately 15-25 trees.

The Nam Kian community forest, during that period, was forested freely by each household without any rules to control them. The villagers then fully exploited the forest. Therefore the biodiversity of both the plants and wildlife had decreased in type and quantity. It caused a loss of food security and drought occurred. The changes of forest affected the community, because it used to be a food resource that villagers depended on humbly, but was now destroyed. Villagers we no longer using the forest based on the indigenous beliefs and wisdom. The forest, which used to be fertile, had started to degrade quickly. The forest density, which used to provide shade and moisture, had declined. Though its use for food is still carrying on its food resources had started to be hard to find. It was taking more time find them and villagers had to go a longer way to get them.

To analyze the situation, the change of forest use in the Nam Kian community forest during this period was the result of economic and the modern production

processes. As a result, the purpose of villagers' use of the forest had changed from food to timber. The villagers have expanded their living area in forest more and used the forest more, in particularly for corn planting to the point there was a saying, "Any area the corn reaches, the mountain would be cleared there."

In addition, local wisdom for the management of forest use has been ignored by villagers, so the passing down of the local wisdom on forest use and management has been broken. After evaluating the situation it was clear local wisdom was starting to have its limitations and it was not enough to manage the forest under the capitalist society and so there has been a decline of the community following or acknowledging the beliefs which had ruled and controlled them for a long time.

#### **4.2.7 The Management of Forest Management**

In the past, maintaining the community forest resources was done in the traditional way. From the villagers' perception, they believed and feared superstitious things and spirits. They believed that big trees were where forest spirits stayed. Having this belief would control and regulate villagers' behaviors and actions. For example, the big trees in the watershed area were prohibited to be cut. For this reason, the community treated their environment and nature in a humble manner through different rituals. Their relationship with the forest, as a supernatural system, and their cultural rules, controlled villagers into living and acting within the modest framework of which none of them would disregard the rules.

In B.E. 2511-2523, the population in Nam Kian had expanded and the state came to take a role in promoting commercial plants, so the needs of the land for living had increased. It affected the lifestyles and relationships of the people in the community as well as the natural resources. The supernatural beliefs had become inconsistent with the traditional beliefs handed down from the past. The belief in spirits had decreased significantly when some villagers invaded and cut down big trees in the watershed area and nothing dangerous happened to punish them. Thus, more villagers went to clear the forest area to make a living without any blame, as there were no regulations to control them.



#### **4.2.7.1 The Decline and Crisis of Resource Management**

During B.E. 2530, most of the community forest ecology in Nam Kian became sparse forest. The water quantity in the brook continued to decrease until, in B.E. 2533-2534, the community faced a drought problem in their own brook and pool. They did not have enough water for consumption and needed to line up to take water which had never happened before. The district administrative organization, at that time, asked for trucks carrying water to come from the town to Nam Kian as an urgent solution.

In B.E. 2535, there was a deforestation of the Nam Kian upstream forest area which expands from the Nam Kian watershed to Huay Krue Kao, Huay Tonyang, Huay Palard and Huay Pasead. A forest protection group had emerged from the Nam Kian Council, led by Sawad Wongwien, Nam Kian District Headman, Kammoob D-Promkul, Moo 1 Village Headman, Somboon Tanoosarn, Moo 2 Village Headman, Suwit Dpintha, Moo 4 Village Headman, Somboon Mahayotsanan, Moo 5 Village Headman and Nam Kian council members. The community, 700 in total, headmen and villagers, at least one of each household, confiscated illegal wood.

One day, there was a fight between two groups of people claiming themselves to be government authorities. The first group claimed to be veterans of Troop 32 of Nan and the second group claimed to be forestry authorities. Through negotiation with the Nam Kian council, it was decided that the law was not upheld by the second group, so the Nam Kian council fined them 15,000 baht, which was paid by a politician. The wood was kept in Wat Pongkam (Nam Kian) and was later used. (Manit Thanawong: 122)

#### **4.2.7.2 Starting Point of Management**

The degradation of natural resources affected the well-being of the community. They suffered because the river was used by the people in the community for consumption, farming, and gardening. Villagers needed rain and water from the creek. This breakdown of resources caused an acceleration of extensive talks among the people in the community.

The change of the natural ecology affected the villagers and they started to realize the problems and limits of nature in serving the community. In B.E. 2535-

2536, there was a push from community leaders and members of the community to promote awareness of the importance of forest conservation of the three forests. They started in the neighboring forests which were Huay Lom Forest, Pae Bonna Forest and Namoo Forest. The villagers used these forests for a long time and they were invaded and deforested constantly until they could not be invaded anymore as the area had become gravel. So the villagers cooperated to make the Pae Bonna Forest a public forest and food resource for the community.

In addition to making the forest area, the community leaders were trying to seek ways to adjust their impact on it and were starting to see a form of adjustment that could work. Accelerating the conservation strategy for the remaining forests upstream would allow them to continue to be a resource. This would need to be enacted by forest regulations.

The concept of resource conservation started to expand widely, covering members in communities that had their own observations of the ecology change affecting their lives. The community started to realize that the participation in natural resource recovery and conservation, by raising the regulations in order to control the use of resources, was the basic strategy in maintaining the sustainability of the resources.

From those principles, it was the beginning of the districts and villages meeting to find ways of forest management and making community regulations to enforce. The community resource management and the community life quality organizations in Nam Kian became the representatives of the community to solve the problems in these aspects: economical, societal, health and natural resources, by putting them under the charge of a forest committee. The committee's objectives were to protect and recover the forest's fertility in order to be the watershed and be used as a food source, and to build community participation in natural resource protection.

In the first phase of the operation, coming off of drought problems in the community, there was a startup of forest recovery and conservation. The feedback was good in regards to the overall principle, but there was no concrete regulation coming out.

In B.E. 2537 to 2538, they asked for the cooperation of the Hug Muang Nan Foundation which had a role in strengthening the community in forest conservation group management. There were connections and networks in community forestry at a provincial level, such as the forum of network leaders meeting to exchange their work experience. They brought up their own problems in each area and brainstormed to find solutions.

After community leaders participated in the Hug Muang Nan Foundation, there was a meeting to review the problems and they started to adjust and seek ways of forest management together by setting up regulations for forest conservation of the watershed. The regulations for Nam Kian were designed to protect the local resources which were decreasing every day. The concept of resource conservation started to expand widely, reaching more community members.

#### **4.2.7.3 The strategy and tools in forest management**

The strategy and tools used in management and control are divided into two dimensions:

1) Intangible management and 2) Tangible management as follows:

1. The intangible dimension of management is the belief in spirits and forest ordination. Although the supernatural and traditional beliefs, which used to be holy and had the power to control and manage the resources, have declined during this period, they could still be used to manage the senior members of the community.

2. The tangible dimension of management consists of the operations of the community on resource management in different aspects, for example:

2.1 Forest invasion prevention in the grove forests of Pae Bonna and Huay Lom by the community. Tools which have been effective are (1) Clearly marking the borders of the forest areas by using the natural borders, such as around Pae Bonna Forest, the surrounding roadway is used as its border. It is not complicated like in the past as the area is like an egg yolk. Likewise, in Huay Lom, the surrounding roadway and the Banrai's graveyard are used to indicate its borders. (2) Inclusion of information sights on forest conservation which are supported by Hug Muang Nan Foundation (3) Holding forums in the levels of village and sub-district to inform

people thoroughly about the rules or regulations of the community in both Pae Bonna and Pha Huay Lom.

Forest committees have expanded the scope and rules of use of the two forests. The villagers can use them for food and to get timber for building a pavilion for dead members of their families and the public pavilions like temples, schools, and bridges. For these uses, the village committee should be informed every time so they can inform the district committee, which controls the use of the forests. The written regulations of forest use for prevention of deforestation are as follows:

- 1) If any villager needs to use timber to fix his house or build a pavilion for dead family members, he has to ask permission from the village headman and village committee first. Then the village committee will coordinate to inform the district.

- 2) Bringing a chainsaw to cut wood in the forest is strictly prohibited. If they received notice from the committee, they will be arrested and prosecuted immediately.

- 3) Community members can go up to find food as usual, but cutting trees is forbidden absolutely.

- 4) No outsiders are allowed to cut wood of any kind. Any violation will be fined 1,000 baht per piece of timber or fined an amount according to the diameter of the wood.

- 5) It is prohibited to let people, whether from the village or not, to invade and clear the land in the forest conservation area. Anyone who is in violation of the regulation will be handled according to the law.

- 6) In order to burn the forest to prepare an area for farming, the farmers/owners have to make a firebreak to prevent the fire spreading into the forest.

- 6.1) Do not burn the forest for any reason. If there is a fire found in the public forest area, it is necessary to extinguish the fire immediately every time. If the fire has expanded and is in crisis, inform the community forest committee or the community leaders, who will then broadcast it to be heard throughout the village.

From then on, there was a measure of forest conservation and it was protected by the community by the mechanisms of control of the usage of resources under mutual agreement. There was also the punishment of those, both inside and outside of

the community, who went against the law. This showed the community that they must accept the regulations of the community and that they were to be held as tradition

#### 2.1.1 The Forest Fire Prevention

After the community forest area had been established for public use, especially for the requirement of water, an issue in drought season, the villagers were then aware and cooperated in looking out for forest fires. Every year, the committee would make a fire break. Also, if they found a fire, the villagers would inform the village leaders and have it broadcast throughout the village asking for help to extinguish the fire.

#### 2.1.2 Forest Conservation and Recovery

In the beginning of forest conservation and recovery, the community held the forest ordinations and forest plantation on significant days like Buddhist Lent Day or Mother's Day, which occur during the rainy season. There was also a field study which was successful and participation in the meetings with the community forest networks, like the Hug Muang Nan Foundation, for instance.

#### 2.2 The Land Invasion for Agriculture Prevention and Control Management

The right of the land of each household has traditionally risen from the land utilization. From the beginning, it had been accepted that land is handed down to grandchildren as heritage. As such, each household knew which land belonged to whom. The villagers who owned land nearby would know the background of the land and how their neighbors received it. Most villagers would not invade their neighbors' land.

#### 2.3 The Watershed Control, Protection and Management.

In the beginning, the belief in spirits had influenced the villagers. They believed they still had enough power and control over the use or resources in the watershed forest. Even in recent times, after the committee made the announcement of the two community forest areas, the villagers still dared not cut down the trees as they feared the power and the community's mechanisms.



### 2.3.1 The Community Water Resource Management

Community water resources are managed in different ways such as dams or reservoirs. These are public resources, especially used by the farmers who own rice fields, who would have more of a role in developing the rivers and would cooperate to dredge, clear up the land, cut the grass in the spring way area and water releasing point, and check and fix the drainage. If any damage of the water switching on or off is found, they would coordinate with the irrigation management to find a solution together.

### 2.4 The Timber Forest Products, TFPs Control and Management

If a villager wants to use timber for house repairs or a pavilion for dead members of their family, especially in the case of the poor or people in need including, widows, old women and handicapped people who are dependent, it is the consideration of the village headman and committee. There needs to be a tight plan first so the village committee can inform the district committee. In general, people are strictly prohibited from bringing any chainsaws into the forest to cut wood. If the committee is informed of the chainsaw, they would arrest the person and take further action according to the law.

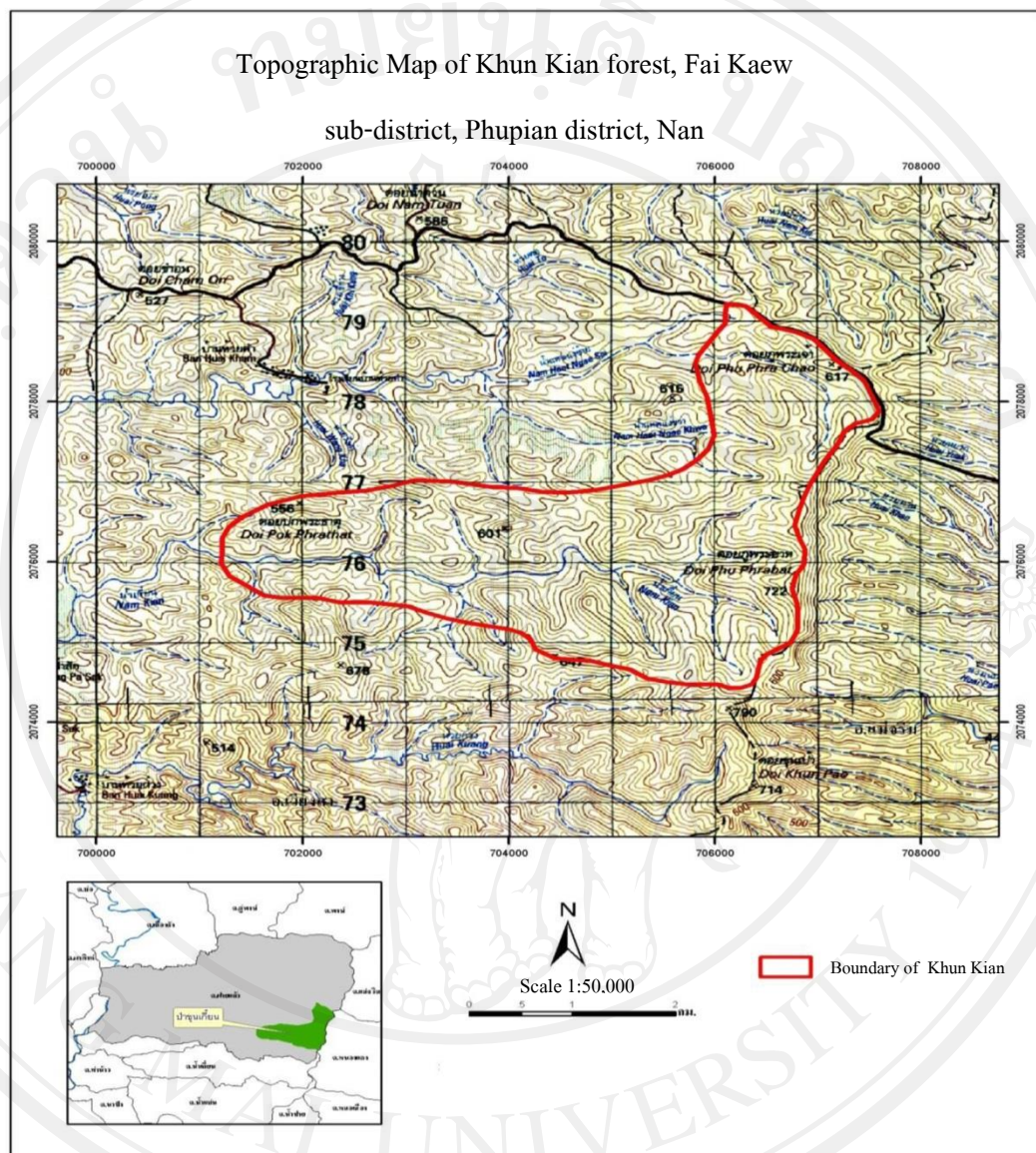
### 2.5 The Non-Timber Forest Products, NTFPs Management.

There are no regulations or rules regarding NTFPs, especially for bringing them out for food,. The villagers can take as many NTFPs as often as they can, including mushrooms, Pakwans, insects and wildlife, but as the forest area is limited and the population in the village has been increasing, the products in the jungle are becoming rare.

### 4.2.7.4 Kun Kian watershed forest management

In B.E. 2538-2539, community leaders consulted and made a plans for water management for the community and domestic consumption and how to manage it without repeating the drought crisis that the community had previously faced. During this time, the community leaders and committee focused on water management as their top priority.

The board and community leaders had held a planning meeting and went to survey the direction and the watershed of the Kian River. With an expert on directions, they went in to find food products and hunt wildlife. The leaders, led by Kamoon Dpromkul, Chusin Sararattana with 42 warriors, went out to survey the forest and the water source of the Kian River, the main river, which had nurtured the community for a long time. It is now located in the area of Faikaew District, Amphoe Pupieng at the 26<sup>th</sup> kilometer of Nan-Maejarim Road. Next to the 26<sup>th</sup> kilometer marker and up to the right, there is a small walking path to Doi Puprajao. Follow it to the top of Doi Puprabat and around to Doi Pokpratat, the area there is prosperous with an area of 8, 082 rai or 12.93 square kilometers and a height of 360 – 722 meters above sea level, as seen in the picture 4-7 the area of Khunkiean Forest, Faikaew Sub-District.



**Figure 4.7 Kun Kian Forest area, Faikaew Sub-District, Pupieng, Nan**

The ecological structure of the Kun Kian Forest is a prosperous, mixed, deciduous forest and evergreen forest located in the watershed class 1 A and watershed class 2. The water source has nurtured agriculture and been a source of water consumption for the community for a long time.

After the survey of Khun Kian Forest, the community leaders had a meeting regarding the management of the area and announced the setting up of the Khun Kian Community Forest for the community members to own together. They tried to convey a mutual understanding of the advantages they gain together, most of which was water.

Although most of the villagers may not see the forest, the promotion by the committee and the community leaders throughout the meeting stages has brought forth knowledge throughout the community and, in turn, full support by them. The 42 warriors have taken turns to watching over Rajchadumri Reservoir and set up a check point to prevent illegal smuggling of timber in cooperation with the police border patrol unit 324 of Nan.

#### **4.2.7.5 The Community Forest Management Processes**

In order to announce the guidelines for the management of the forests for the villagers to fully understand, the sub-district has promoted its activities in the community on the Nam Kian community forest management processes, starting with the drought situation, a problematic issue of the community. The start of forest conservation and recovery has gained good feedback and the agreement of community members. They have participated and followed the regulations. The process involved preparing information in an orderly manner.

Studying the situations, problems and causes as well as surveying the physical state of the area and taking the received information and discussing and exchanging opinions together to find resolutions was done by an appointed community forest committee. They watched over and controlled the use of the forest by the community members within the scope the forest management and conservation together. Drafting the regulations and guidelines of conservation and promoting them to the community members through meetings at village and sub-district levels were also within their duties.

##### **(1) Regulations**

1. Do not cut down any trees in the conservation area.
2. Violators of the regulations will be prosecuted by the committee.



3. Those who attain the clues leading to an arrest will be rewarded or receive money.

4. The regulations are enforced as of the 9<sup>th</sup> September 2000.

#### (2) Khun Kian Forest Management Activities

In order to prevent timber smuggling and deforesting in the Khun Kain area, the community leaders went to monitor the forest. All of the 42 warriors always went together wearing the same colored outfits and prepared their own food in the woods. With their unity and sacrifice, it is well known among the neighbors of their strictness for the conservation of the forest.

In addition to the community joining together in forest conservation, the community has also set up activities to be done together through the meeting agreements of the village. The forest resource management activities that the community has participated in are:

1. Walking and surveying the forest to check for illegal tree cutting and during dry season, they can also be on the lookout for forest fires. Each time, the community leaders have coordinated and asked for the cooperation from involved government units to go with them to the forest.

2. Putting signs around the community forest area to promote it and allow the villagers to see the borders clearly.

3. Setting up a discussion forum to exchange opinions and plan activities for forest conservation at the village level or in the same water basin area to find ways of conservation and prevention together.

4. Holding a Khun Kian youth camp once a year to train and teach the youth about types of plants and herbs, and to take them surveying through the watershed forest thus implanting in them a sense of ownership in the forest.

5. Ordaining the forest, both the community forest and Khun Kian Forest. This is one of the villagers' strategies for forest conservation.

6. Coordinating with agencies, organizations and various parties involved both public and private.



7. Making a yearly firebreak in the beginning of March and training the volunteers to prevent wildfires. This is supported by the District Forest Office and Provincial Forestry Office of Nan Province.

8. Setting up a checkpoint in the entrance of Khun Kian Forest, with the committee taking turns being on duty throughout a 24 hour period

### **(3) Mechanism of Nam Kian Community Forest Management**

In the past the variable degradation of natural resources and environment has become an important current issue which each public and private organization at various levels gave great concern toward global warming. It was what various parties were recognized the situation and it was the issues that challenged the participation of all sectors that saw the importance of establishing a cooperative network and a connection of operating community. A search of cooperative stakeholders and civil networking in Namkian formed a civil society which had become an important phenomenon and received a diversity of cooperation and gained supports both within the community's mechanism and external mechanism as follows:

#### **(3.1) The Mechanism within the Community**

The formation of the Nam Kian forest conservation group developed at the sub-district level with the driving mechanism within the community including the community leaders. They specify the community rules to be enforced regarding resource management in the community. Nam Kian established a quality of life development organization. The members will be the representatives of the community solving problems. The committee has the role to follow the village's regulations on forest, water and earth resources.

The operation of the organization, the administrative structure, has a clear role and mission which they follow seriously and they have constant activities. There are 42 committees, the warriors, consisting of two groups of leaders : 1) Members from the sub-district administrative organization, TAO, which consists of the prime minister, vice president and secretary. 2) Members from the sub-district administrative organization from each village and the government group consists of sub-district headman, headman assistant, a sub-district doctor, a village headman from each village, 2 village headmen assistants in the government sector from each Moo, 1-

2 village headmen assistants in the prevention sector or the peace keeping sector from each Moo.

The community expects leaders from both groups to show their sacrifice, unity, willingness and attention to the work with mutual goals and ideals. They start with brainstorming the opinions of the committee and the leaders first. They gradually expand the ideas to various groups. The work in the beginning needs more effort, and thus they constantly and seriously discuss it. Sometimes the meetings are over at midnight or 1 am. In the beginning, they would argue and would not give in. They tried to solve problems individually sometimes or in small groups. They started to think of resolutions which still remain. It is somewhat like learning, doing and solving the problems all at the same time.

After working together for a period of time, they started to adapt and make solutions. They understood the causes and found the solutions with more systematic strategy by using the wisdom and knowledge from their experience and trying it to solve the problems. There are many ways of trying to solve a problem so it was a learning process. Although some outcomes did not solve the problems perfectly, there were some aspects that were a success and some were failures. But the group continued to learn and kept trying.

Local government (LGS), especially the administration of Nam Kian (TAO), plays an important role in planning the management of resources, including soil, water, and forests. Forestry has served in connecting several hundreds of people. Groups of all ages are participating in activities of conservation of natural resources. Many people are also helping with budget allocation for the welfare of the board, such as the preparation of life insurance for the joint forest survey group and the 42 sub-district committees who sacrifice and dedicate themselves for the public and as representatives reconciling conflicts occurring from rule breaking both in the community and outside the community.

### (3.2) The Mechanism Outside the Community

The effort in the management of natural resource management of the Nam Kian community is supported strongly by a civilian social network both at local and national levels. These are the external mechanisms that have a part in supporting and encouraging the formation of villagers' groups for community conservation. The

support is from the UNDP/GEF which supports government units such as Nan Provincial Forestry Office, police border patrol of troop 32, Nan and the police relations working with the community with the assistance of the Hug Muang Nan Foundation. These groups are coordinating to build a learning exchange forum at provincial, regional and national levels, supporting the budget and coordinating to get activities of increasing the community's participation. For example, coordinating the holding the community forest forums and forest ordinations.

Forest ordination is a form of forest protection in the community. When there was a forest invasion, the villagers turned to the power of the spirits. Their religious beliefs stem from the word of Pra Kru Pitak Nantakhun, the founder of the Hug Muang Nan Foundation. Pra Kru Pitak Nantakhun said that setting up a spirit house and bringing a Buddha image, to act as the chairman of the forest, should be the new application. His reasoning for this was because in past, when Lord Buddha was alive, monks lived in the forest. Villagers respected and had faith in the monks yet still feared some of their power. Nothing could be as powerful as a Buddha image so a Buddha image was placed under a tree and the forest was ordained. The villagers who still believed in spirits could bring the spirit's house and while setting it up they could say "Good monks and awful ghosts will continue to help protect forest." With these two things, no one would dare cut down the trees.

To cope with the competition for resources, the community upheld their culture by recovering the local traditions and giving new meaning to a forest which has been ordained. It is appointed as a holy area with Buddhist symbols connecting the ideals of their nation, religion and the king. Thus the forest ordination had different objectives, for example; to establish the righteousness of a forest, to counter the pressures from both inside and outside community to build support of the community members, to show the public so they know their vitality, and to build the harmony of community members by them participating in the protection of their community's property.

#### (4) The Role the Committee of the Natural Resource Management Sector

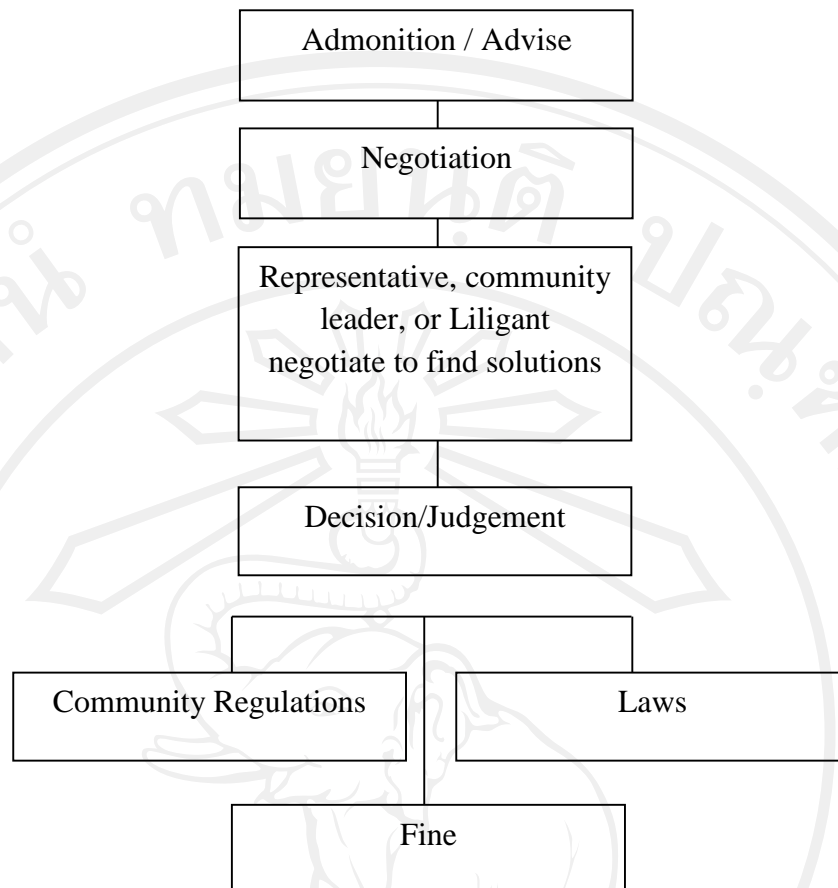
Nam Kian Forest Committee plays a role in planning forest management activities, such as controlling the invasion of the watershed forest and conserved forest, surveying the living and forest areas, making campaigns for wildfire

prevention, making firebreaks, putting up signs indicating forest areas, forestation and returning wild orchids to the forest, forest ordination, setting up checkpoints, arranging camp studies about environmental and natural resource management, holding meetings to follow up and review the work, and being representatives in the reconciliation of conflicts occurring from the community's regulations on the use of the forest by villagers in the area and outside.

#### (5) The Mechanism of Conflict Management

In B.E. 2539-2540, the Nam Kian community members who worked in other provinces started to return to their hometown. In the area of Pae Bonna Forest and Huay Lom Forest, some of them went to cut trees to use like they could in the old days as they did not know the new regulations had been established by the community.

In such cases, it was challenging work for the community leaders as they were the first cases and the people who went against the rules had good economic status. The committee consulted amongst one another and negotiated with them. In the end, the invaders were fined 5,000 baht. The case was known among the villagers and they then realized that the committee took the forest management as a serious and strict issue.



**Figure 4.8 Conflict management in violation of regulations of the community**

#### (6) The Management Outcome

In the end of B.E. 2541, the natural resource problem in the community has declined. The forest had been recovered.

In 2001, the Nam Kian community, in cooperation with the Hug Muang Nan Foundation, hosted the Community Forest Festival: The Survival of Man and Forest, 700 people from four regions participated. The community committee made the plans and assigned work to villagers according to their skills so they could be good hosts in welcoming guests. Being the host of the Community Forest Festival increased the awareness of the Nam Kian community. They became well known among the networks at sub-district, provincial and national levels. It showed the power of the community forest network throughout the country. It also publicized the community



image of forest management through public media, like newspapers, radio and television.

By the middle of 2001, the reputation of Nam Kian started to be known among people both inside the province and in other provinces. It had become a place to study and learn from and a place to visit for both state and private organizations. The community leaders were invited to be speakers across the country and the community was named as, *Nam Kian, The Community of Mutual Learning*. During that time, the forest management of the Nam Kian community was at its most effective.

#### **4.3 The community forest management in the present. (2005-2013)**

It is during the community has adapted in several aspects. For example, the change of committee to maintain it by forming the community to be an organization with activities to solve problem of environment, economic, society and culture in a concrete way that have positive effect to the community widely. It is also the time that the community has been accepted as a strong community where locals come to learn together.

Having been continuing from 2<sup>nd</sup> period, there are significant incidents in the community, like the changing of the leader according to the term of office which lead to the different target of activities based on the current needy development context.

##### **4.3.1 Forest Ecological Condition**

The three community forests; grove forest or Pae Bonna forest, Huay Lom forest and Khun Kian forest has been taken care of by the committee with constant joint activities. For example, the firebreak activity, the patrol, forest inspection with the mutual regulation. The activities are main measure of the community on protecting the forest and gradually recover it.

However, the forest condition in each spot has been possessed, inherited and constantly grown corn farms with partly deserted for quite a long time. From 2005, the 2<sup>nd</sup> generation deserted forest is to be cut for planting new type of plants as now rubber tree is a trendy economic plant that the villagers are interested in.

From 2011, when the deserted forest is owned, the trees have been cut more in every spot according to the rubber tree farming expansion and this affect to the diversity of the forest around the community forest as it is decreasing. Also, the monoculture in large area generating more chemical use of fertilizer and pesticide and this then generates polluted water and soil.

The environmental decadence out of rubber tree and corn farm expansion affect to the richness of forest, soil and water. The resource where villagers used to depend on as their usual food source like forest and river are all reduced. It leads to the less usage of forest water. The use of severe chemical substance annually has caused the river being contaminated and the water in the forest and the river are not drinkable anymore.

#### **4.3.2 Land use**

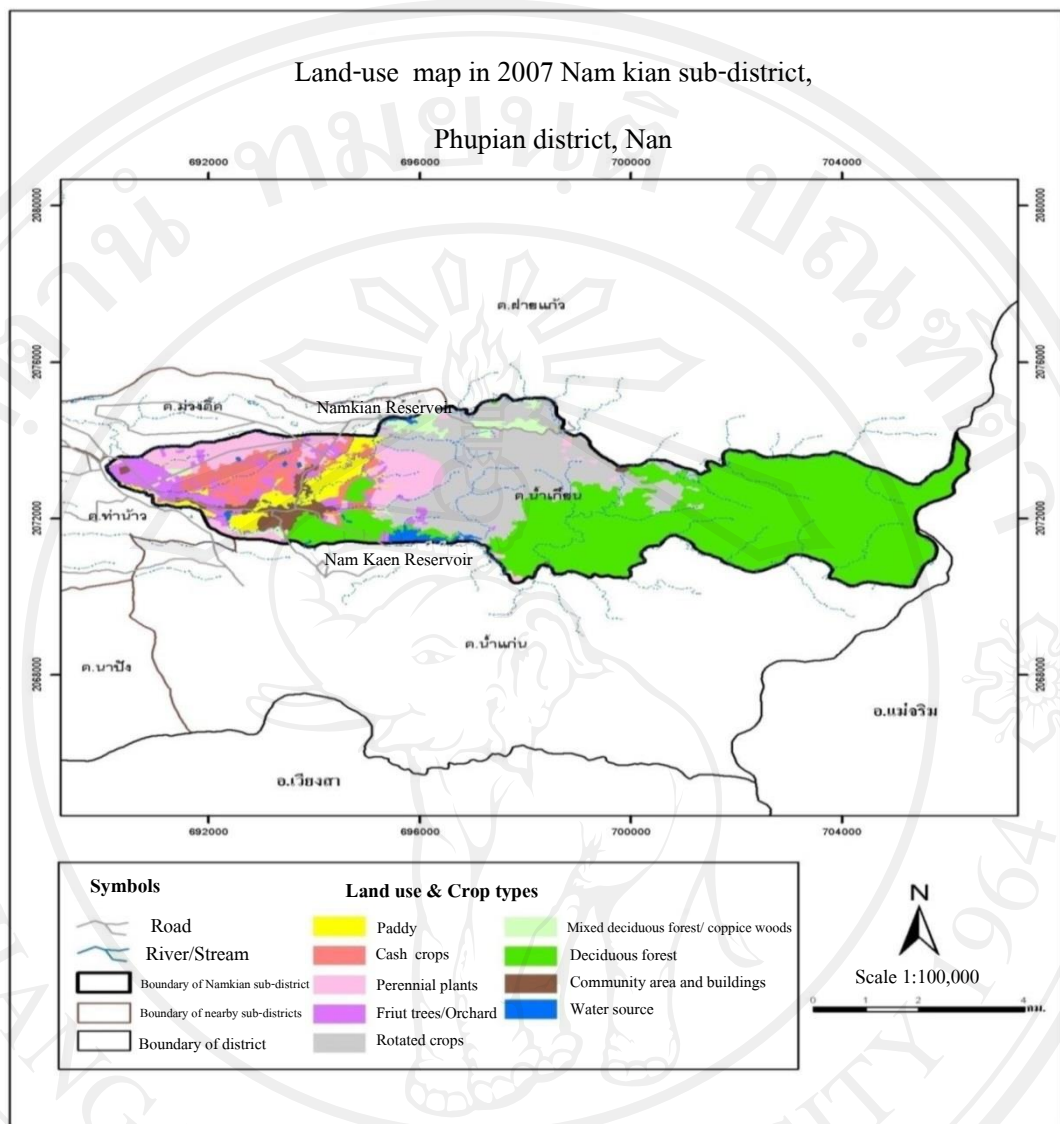
Land use in the scope of non-expansion area. The land use of each family is inherited and the villagers do not know where the lands of each person are and to whom it is attached with, cannot be expanded anymore. They use the land continuously without any follow up.

According to the information from the aerial photograph on land use in Nam Kian watershed in 2007, the land use detail is as follows:

In the community, the forest's main part is 49.95% of the whole area. It is located near the crop field in the hill and high areas. Most of the forests are deciduous forest and these forests are waiting for recovering.

The second largest area after the forest is agriculture, with an area of 46.07%. Most of the agriculture is crop rotation, followed by the perennial plant, fruit tree, dry crop and paddy field respectively.

The third largest area is the buildings & house area which covers 3.98% grouping together along the Kian River. They are the permanent buildings located nearby the paddy field and mostly are the community area, and then these are the water resources, and the other area as seen in the picture 4.9 displaying the land use in 2007.

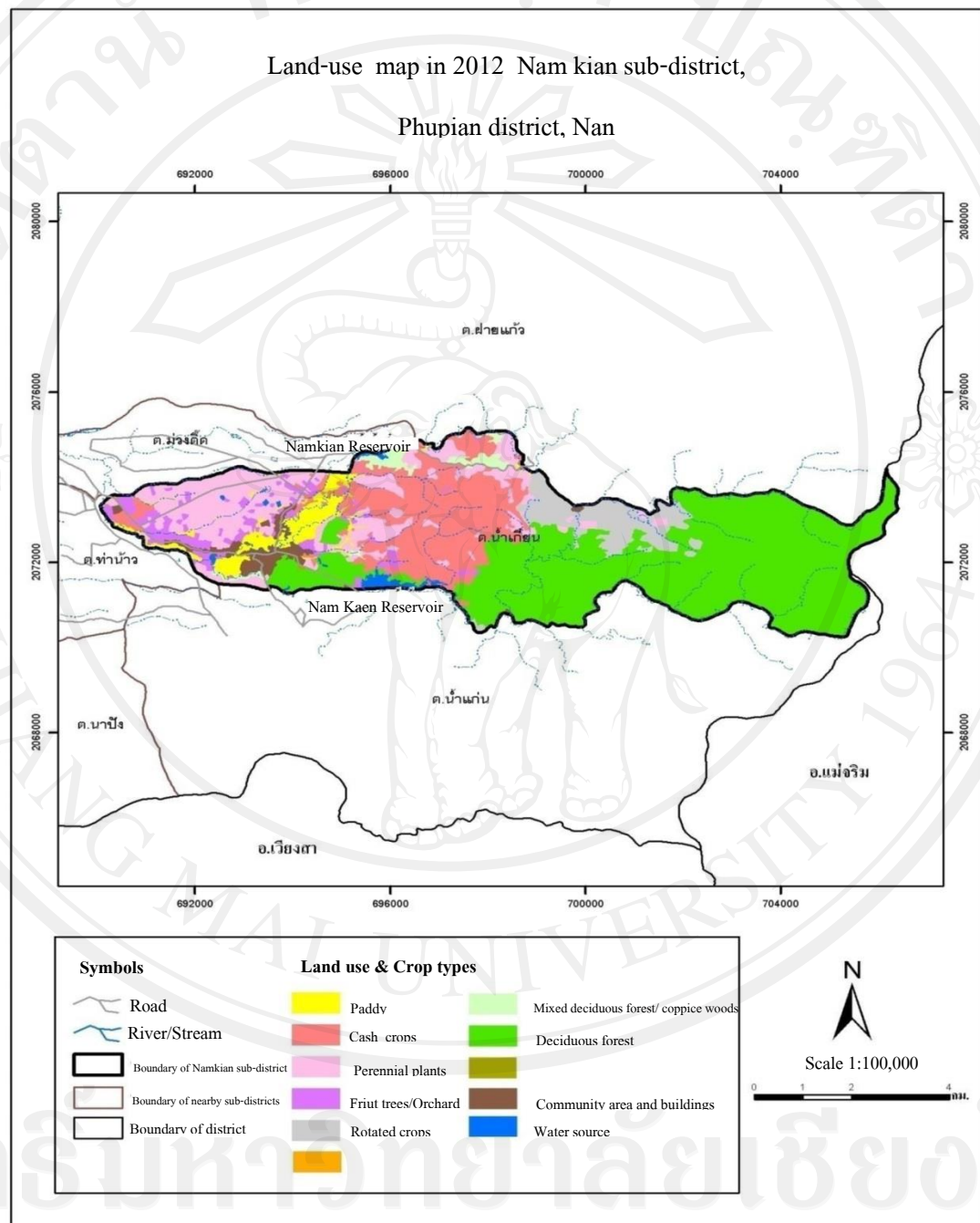


**Figure 4.9 Land-use map in 2007 Nam kian sub-district, Phupian district, Nan**

On the land use in Nam Kian watershed, as per analyzed from the aerial photograph of the land use in 2012 and its details are as follows.

Within the community, the largest area is 49.18% in total and mostly the field crop consists of plants and then perennial tree, rotate farm, fruit tree and paddy field respectively. Forest area is after the agricultural areas and it is 47.19 % in total which can be found near the area of field crops in upland and high land. Most of the area is the deciduous forest and the deciduous.

The household area is 3.63 % in total along Nam Kian River. Most of the households are single and permanent houses which are close to rice fields, water sources, buildings for livestock respectively (See Table 4.1).



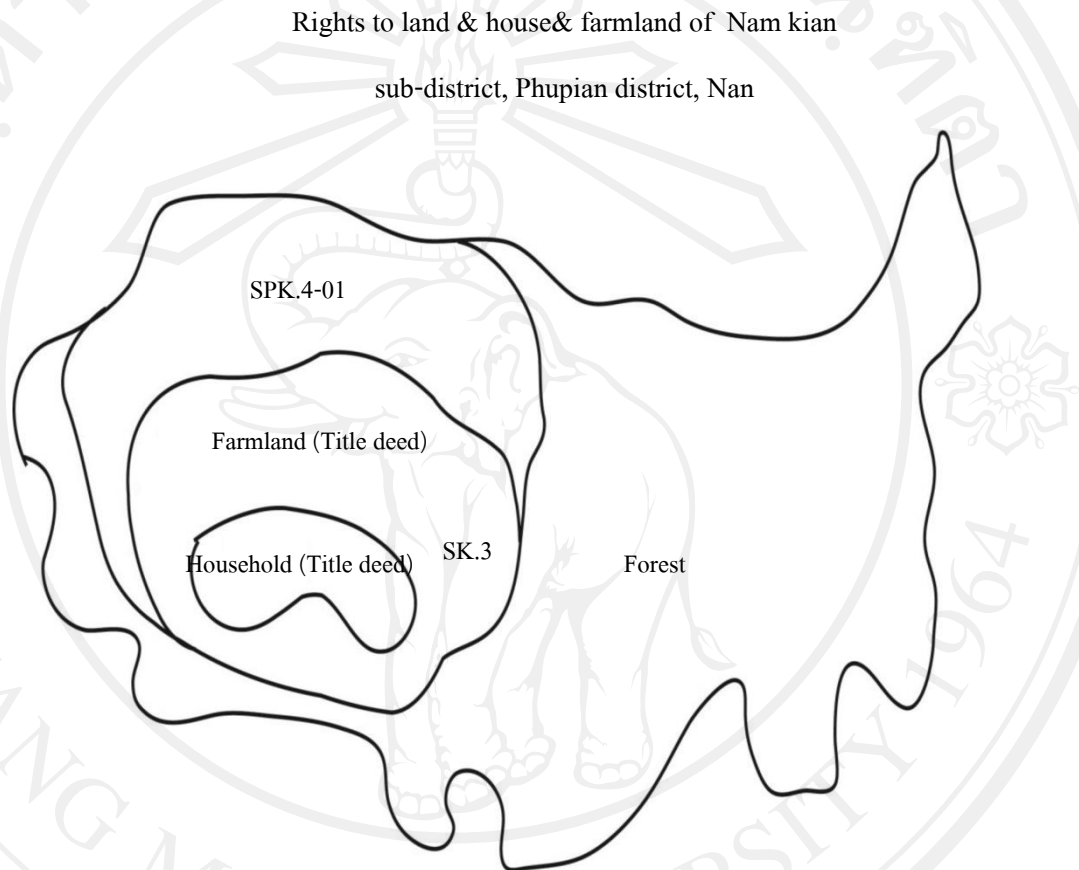
**Figure 4.10 Land-use map in 2012 Nam kian sub-district,  
Phupian district, Nan**

**Table 4.5 The comparisons of land use in Nam Kian watershed during 2007 and 2012**

| Land use type  | 2007          |               | 2012          |               |
|--|---------------|---------------|---------------|---------------|
|  | Rai           | %             | Rai           | %             |
| <b>Agriculture Area</b>  |               |               |               |               |
| - Paddy field  | 1,158         | 4.24          | 1,208         | 4.43          |
| - Crop (Corn)  | 1,408         | 5.16          | 4,896         | 17.95         |
| - Perennial Tree (Teak, Bamboo, Eucalyptus, Rubber tree)           | 2,408         | 8.83          | 4,285         | 15.71         |
| - Fruit tree (orange, mango, Tamarind, Longan, Cashew nut, Santol) | 1,425         | 5.22          | 1,216         | 4.46          |
| - Rotate Crop (Corn)   | 6,169         | 22.61         | 1,812         | 6.64          |
| <b>Total agriculture area</b>                                      | <b>12,568</b> | <b>46.07</b>  | <b>13,417</b> | <b>49.18</b>  |
| <b>Forest Area</b>   |               |               |               |               |
| - Deciduous forest waiting for refreshing                          | 505           | 1.85          | 538           | 1.97          |
| - Deciduous forest   | 13,122        | 48.10         | 12,337        | 45.22         |
| <b>Total forest area</b>   | <b>13,627</b> | <b>49.95</b>  | <b>12,875</b> | <b>47.19</b>  |
| <b>Tenements</b>   |               |               |               |               |
| - Community area & tenements                                       | 676           | 2.48          | 710           | 2.60          |
| - Cattles  | -             | -             | 3             | 0.01          |
| - Other areas (groove woods & mud puddle)                          | 148           | 0.54          | 8             | 0.03          |
| - Water resource (pond & reservoir)                                | 263           | 0.96          | 269           | 0.99          |
| <b>Total tenement</b>  | <b>1,087</b>  | <b>3.98</b>   | <b>990</b>    | <b>3.63</b>   |
| <b>Total area</b>  | <b>27,282</b> | <b>100.00</b> | <b>27,282</b> | <b>100.00</b> |



In the present, there are more single and individual ownership on the land use. The agriculture lands are mostly inheritance; like some families with many children or siblings, the land would be divided or distributed among them. However, the land has been changed to be in the hands of people outside the community after the flooding in 2011; more people from other provinces bought land in the village.



**Figure 4.11 Rights to land & house& farmland of Nam kian sub-district, Phupian district, Nan**

#### **4.3.3 Production process**

Now, the villagers in Nam Kian has different jobs like farming, employee, selling, civil servants which they do at the same time with one job as a main career. For the production, more farmers are pushed in to commercial production in the form of contract farming. The power of production control and labor management has been changed by the farmer or the producer and one person has many different career like

farming, selling, doing ranch, finding wood stuffs, being village headman, Sub-district Administrative Organization (SAO) and employee for instance.

On the labor management in agricultural section, more of the young people turn to get employment out of the village and most villagers would send their children to get higher education, so it lead to the decrease of labor in agriculture section. Even though almost half of all households in the community still do farming but in each household, there may be only one member who work in agriculture section. For example, a husband may be a farmer, doing rubber tree farming, growing corn and driving students in downtown every morning and evening and he is a SAO staff and his wife gets hired to make shampoo for Sheewawitee group and the president of housewife group, their daughter is studying and the son is working in town.

The production in the present is mainly for selling and to serve the market. It has been changed much as villagers need to work hard all day long so their daily life has been changed as well.

From the survey on working hour ratio, it is found that most villagers of 72.14% have to get up at 05.00-06.00 am. And 51.51% have to go out to work in farm at 08.00-09.00 and 72.69% come back from farming at 17.00-18.00 when 47.67% have to go out to rubber tree orchard since 01.00-05.00 am.

The working time is increased and they have to work faster than the usual. Each member in the family has to work and use labor jobs. In a household, a couple of husband and wife is main labor. Each family within the village has every level mainly strive for money. Their living has become more difficult as in every activity needs expense.

However, in Nam Kian, there are 2 production systems which are production for consumption and production for selling as following detail:

(1) Production for consumption

The villagers' production is for household consumption with the less rate than the production for selling. During this period, the villagers have few productions such as paddy rice farming for 61.20% and growing home grown vegetable or backyard gardening as following detail:

1. Rice farming: In the present, the process and soil preparation for planting like seeding and plough is not much different from the 2<sup>nd</sup> generation. In the process

of rice growing has been developed by using modern technology, so the farming is complete quickly but have a higher cost. Every process needs expense, from hiring to plough, hiring labor and the expense on agricultural chemical product. There is the use of pesticide which caused clearer problem towards environment and producer's health.

The current rice line used for growing is the supporting line like Korkhor 6 and Korkhor 10 and Khoahomtung or fragrant rice. On the labor exchange system, it is still exists in some steps of the process like seed withdrawal and during harvesting which occur among a few relatives. Apart from high cost, there is a limit of labor which is rare in the community. It is noticed that Nam Kian villagers who are still growing rice are limited in middle-aged people ages from 40-50 years old. They can grow rice with good skill. There are 2 types of hiring labor which are day by day hiring and turnkey contract per Rai. The new generations are not interested in farming or agriculture and they are more focused on finding jobs in town.

On the harvesting process, since 2006, the coming in of technology and modern innovation especially tractor and rice thrasher to replace thrashing rice by hand helps to finish harvesting rice quicker. The payment is also the rice. If the owner of the rice field get 15 sacks of rice, and the owner of rice thrasher will get a sack of rice. In a day, there are many queues lining up for the thrasher so they will earn many sacks of rice for rice thrashing in one day.

The coming in of technology and new innovation and developed transportation especially the way to agriculture area decreased, the exchange labor and the day by day labor that get wages in cash have been increased. Subsequently, rice farming in the present has less group work and it becomes an activity that almost entirely depend external production. With this reason, present farmer are more exhausted and struggle to make ends meet.

In the present many farmers who owns rice field stop doing the rice farm, due to the reason provided is that the production cost is too high to handle. Some families decide to let their close neighbors who do not own rice field do the farming instead and share the products 3:1, the farmer earns 3 and the owner earn 1 and the rice field owner does not invest on production directly but the farmer will pay for all of the cost and handle all of the risk out of the products. Besides, if the villagers do not own any

field and require to farm, they can get hired to farm outside the village with the agreement on rice as a turnkey agreement. For example no matter how much they can produce but they need to pay back to the owner for 20 sacks of rice.

Apart from farming, the villagers also growing plant after the rice farm. Some parts of the products are for consumption and they production are fruit trees, soy bean and vegetable. There is a livestock of duck, chicken, pig and cow and buffalo as well. But the rate of livestock has been decreased as there is no place for it and villagers have no spare time to take care of it.

## (2) Agriculture production for commerce

In the present, the farmers in Namkian are aiming to the new production system fully and the villagers give significance on growing 2 kinds of plants for commercial which are corn and rubber tree.

Corn is an economic plant that villagers have been producing as their main career for a longest time and throughout the production process, the villagers struggle along with the inconsistent price of the products of which have been invested labor to grow and the soil that used to grow every year repeatedly would be decayed plus inconsistent weather and in some years, the price of the plant is good, it's fortunate but it can be opposite in some years too.

If drought or insect problems occur and cause the decrease of products, in that year many farmers would be in debt more and their life would change to the downward. The solution for these problems is to ask for a loan from other source to compensate some part of the problem and it has become a cycle. In addition, the loan is not limited in just agricultural investing but it is also for their daily expense which has increased. The inconsistent price of vegetable and products and the investment cost cause insecurity to farmers. Some of them are in debt and it has become like what they have invested for the whole year is in vain.

On growing corn, even the farmers know well that they are in disadvantage state but they have no other choice so they have to work harder to expand the growing by using their own land and some would rent it to their neighbors' land to get more products and hope to earn more wages.

From the data study on corn expansion of cultivated area in Nam Kian from 2009-2012, it is found that villagers have expanded the cultivated area as seen in table 4.6

**Table 4.6 Corn cultivated area in Nam Kian sub-district**

| Corn cultivated area in Nam Kian sub-district (Rai) |              |              |
|---|--------------|--------------|
| 2010  | 2011         | 2012         |
| 18949.25 Rai  | 28549.25 Rai | 35730.00 Rai |

The change that has been happened in the community during these 20 years has deteriorated resource and villagers' mentality. Some farmers are in debt despite of their hard work and full endurance. When they meet to the same problems and these farmers then exchange opinions and discuss. Each of them has questions where they should go and wait to develop themselves to the better life when chances come.

From the sub groups meeting and interviewing on their living in the present, many villagers have reflects the cycle of working for money to pay for debt as follows:

*"I wake up, washing my face and brushing my teeth and haven't had any breakfast, there's the announcement of our village warn the member who get loan to prepare their money to pay for this and that loan fund. When we don't have any left or we can't find money on time, we need the loan again."*

*"The living condition is not happy. I face palm in bed when it's close to the deadline of payment. If I'm not ready to pay, I'd lose my credit and my friends because we ask the loan in the group."*

*"My living is just the same, in the morning I wash my face, brush my teeth, eat breakfast and go to the bank. It's redundant. If I don't borrow money, I wouldn't have any money to pay and live."*

*"get the loan for the living"*

*"Work hard every day without any break."*

*"I know these foods are not nutritious but we need to eat up to be full meal for meal."*



*“Money I have earned will be left not much after being deducted for expense.”*

*“Unearned income out of planting after rice farming like soy bean, sesame and the income from self-employed is kept for children’s study and daily expense as I have to pay for stuffs in market every morning, the gasoline and I need to pay off stuffs.”*

*“Everything is needed to use money to pay. I have to do everything even to get hired to clean up others’ house even my children see it as a low career.”*

*“I get hired for unwrap cashew nut by getting them to do at home. A bag of cashew nut contains 5 kg and I take 3-4 days to do it. I earn 24 baht for a bag and the price keeps on increasing. It’s now 40 baht for a bag. I save this income for electrical and water bill, and the village funeral expense.”*

*“We need to eat and it needs to be paid every day.”*

*“Don’t know for how long we have to struggle like this.”*

*“I’m envious to Uncle Peng who has died first so he doesn’t need to know any problem now.”*

Uncle Peng Udai is well-known among people in Nam Kian as the president of holism credit organization under the Community Organization Development Institute (CODI). He has a significant role in promoting on how to establish an association or group of alternative occupation development and establish the saving group in the community.

The way of life of people in the community is like machine. Villagers just work functionally. They rush for work since in the early morning, when the sunset, they just come back home and some of them just sleep to wait for tomorrow for the work. Their life is just life in schedule.

However, what can be the farmers’ hope are their children in study age. They hope after their children have graduated with high education, they will not need to work hard like what they are doing in the present.

Therefore, Nam Kian children would have been told repeatedly since they start school to study hard and gain high education so they will have degree and knowledge and good work and that they will not have to do the same job as their parents. This fixed attitude has been emphasized so much that it has become a culture. They sell

their own cow, buffalo, land and paddy field to send their children to school. The new generation can have a chance to further in higher education. These children are the parents hope. The children can just work and be responsible to their own and pay back to education loan by themselves just that makes them proud of already. On their own debt, they do not even hope their children to help paying for it.

From the economic problem state, Nam Kian sub-district Administration Organization (Nam Kian SAO) has tried to coordinate with the involved government units to support the grouping of villagers in different forms; like promoting the new farming approach, and the living on sufficient economic theory like promoting the integrated agriculture, the grouping for biological fertilizer production, organic vegetable growing and transformed food group. They will need to pass the training, seminar, study trip and experimenting on demonstrated vegetable plot to be the way for the new alternative occupation for the villagers.

However, the adaptation of the community and the activity grouping is processing slowly because most villagers are still under debt condition. With this reason, several projects are terminated and die down in the end.

There are not many alternatives for villagers; they may need to accept what they are facing, having part-time job or self-employed, for those who have leadership, they may be the candidates for village headman or a member of SAO and gain secure monthly income, or they may find the way to change on growing plants that are likely to bring worth and secure income for example try growing rubber tree which is a new economic plant in Nam Kian.

Rubber tree is a popular economic plant in the present. Since 2000 to now in 2013, villagers have turn to grow rubber tree more. In the beginning, Nam Kian sub-district administration organization promoted on distributing knowledge and support the rubber tree sprouts to the farmers who are interested in it. In the beginning, the villagers are still hesitant about on how suitable is the environment and the quality of the products, if it has the same quality as the rubber in the south or not. Some of them still wait to see the outcome of their neighbors first.

When the first group had tried growing first as a pilot project, in 6-7 years, they started to trap the rubber in the form of cup lump which is a simple and easy process. In the beginning, the villagers could sell the rubber for 50, 48 and 38 baht per

a kilogram respectively. Those farmers who grow more of rubber tree can earn from selling rubber for approximately 20,000-30,000 baht and they can sell twice a month. There is a market to serve it and Capitalist come to buy it. The selling points are in Ban Ton Kok village, Moo3 on Tuesday and Wednesday. At the time, this earns a lot of money for the villagers. Those who grow it first would have a big bunch of money before anyone.

Seeing and hearing on the earning of rubber trapping that it can help to rescue the farmers' life. In the next year, 2007, Nam Kian villagers are awakened and start to adapt and improve their production to be more various. It is the adaptation from insecure market. The farmers start to cut off the mango, tamarind and many other plants that are promoted but always get failed. Then they turn to be interested in growing rubber tree. Those who have deserted field begin to clear up the land to grow rubber tree. For those who have more funds also buy more land and decide to grow the rubber tree without any hesitation. They dump their money and labor to investing and growing it and hope that

With hope and expectation of rubber tree, villagers strive to take care of their rubber tree field very well, put fertilizer, and watch out the weed according to the academic criteria that they have been trained and always watch out the wildfire. If there is any storm and it caused damage to the rubber tree, the farmers would have got compensation from Nam Kian SAO 12 baht per a tree.

For some farmers who are interested in the training and having knowledge and skill of rubber trapping but have no land and fund, they would become employers and would get some products from the land owner. In the first year, the ration of getting is 40% for employer and 60% for the owner and it satisfies both sides.

The best current period is when they sell rubber. The market/ selling spot is located at Ban Nongpattana village, T. Faikaew, next to Ban Tonkok village, Moo3, T. Namkian. During the time of rubber boom, there are sellers brought different products like food, cloth and agriculture equipment to sell at the unit.

The awakening of high earnings from Para rubber production leads to the fast expansion of the growing as in table 4.7 showing the Para rubber growing area.

**Table 4.7 The Para rubber growing area, Data in May, 2013**

| Rubber plantation area(Rai) |           |           |
|-----------------------------|-----------|-----------|
| 2010                        | 2011      | 2012      |
| 1,824 Rai                   | 1,978 Rai | 2,500 Rai |

In the present, the farmers have hope and expectation on Para rubber. Some of them have invest so much and dump their money and labor so much. The rubbers also have grown well and they see a good sign of success in the front. Many of them have planed that after they can sell the rubber, they would sell mango and longan trees that have been in their orchard and would clear all of the land to grow rubber tree or they may find more area to grow more trees to be their children's heritage because rubber have cultivation period for 20-25 years. The stem of the old rubber tree can be sold. The villagers then expected that growing rubber can be a good alternative that can lift up their children's life and they will not struggle like their parents.

From the higher earnings from rubber selling, it has an effect on the decision on rice farming. For the farmers who own land of Para rubber and rice field, have started to unable to do two farms at the same time. So eventually, the villagers who own rice farm would share some land to their neighbors who do not own any rice field to produce the rice instead. However, most objective of rice farming is to consume in their household. Only sometimes in recent days that they sell the rice products. For the families that do not own any rice field, they would get hired to do rice farm and share the outcome of the producing half and a half with the owner of the rice field.

In some situation, the change of economic and community production system generate changes in Nam Kian community in different aspects : the way of living has been changed, labor exchange system is decreased, relatives system and sociality among relatives are less, the participation of the members and committee in development of each village is decreased and is often replaced by payment which is the same as the 42 warlords committee and most community leaders who have more burden of works and some of them have to work in and out agriculture sector at the same time. At this time the community leaders do not have time on community management efficiently. Each of them strives to earn for family's feeding. On

vegetable growing for selling beside corn and Para rubber, there are also other plants as seen in table 4.4 showing plants for sell.

In addition, the production system in this form has affect to the livestock job like cow and buffalo to disappear as the farmers have not much time to take care of them and former public area where used to be the area for cows and buffalo have been changed to be buildings instead. Personal area would be fenced showing their possessiveness. However, some villagers can turn to do livestock with a company who invest for them first.

#### **4.3.4 Economic system**

##### **4.3.4.1 The way of life and occupation of the community**

In the present, the trendy influence from outside has influx to Nam Kian community so fast. The state control, capitalism, technology and the modernism have infiltrate in Nam Kian community and leading to complete capitalism system, including the new development approach through the populism policy of government which are in the form of village community fund, assets capitalization, 1 Tambon 1 Product scholarship, and many different funds that are efficient to rush and provoke people to compete on earning money and serve the consumption and the new value, to be more materialism and the community has been to marketing system.

The interference of marketing system provoke consumption need, the need of extreme facilities, the making of purchasable thing system, being individualism is more valuable than public, focusing on personal benefit which enable the personal benefit gaining before helping each other and it also weaken labor exchange system in community.

The production changes in the new form have urged the community to adapt and accept production technology and have required for market products and cash. This changes system by 'money' and 'employment' to replace the community's joint power, the labor exchange. Money has more roles. The need to consume has increased. Villagers are in debt and live individually more. The relatives system which is the basement to hold each other has now become a relationship that has benefits involved more than before.



The economic growth based on production system has occurred among the problems of environment and natural resource including the deforestation of the forest around Nam Kian community and it has been transformed to corn farm very fast. The heading to the new production system make the way of living has been constantly provoked to the increasing of consumption need and expense for external products. There is not only the production materials but the there is the increasing need to purchase rice from sellers, fresh food, electricity equipments, motorcycle and cars. The difference of economic status has occurred. The poverty and in debt problem has become normal in living, more new generation give significance to occupation outside agriculture sector.

The way of living in the community has related to external factors and urban more in the modern way; as traditions, the workplaces are changed. The youngsters or new generations have good education. Both men and women go out to work outside the village more than before, for example civil servants, company staffs, convenient store cashier, sellers, supplementary food salesman, insurers, etc. The education enhances their opportunity and occupation alternatives to be more diverse and this started the difference of economic status.

#### 4.3.4.2 The occupation in the community

From the survey on the occupation of Nam Kian community people, it is found that villagers have different works at the same time, farmer, corn farming, employer, orchard, livestock, civil servant and sale man as seen in table 4.8

**Table 4.8 The occupation in the community**

| occupation          | %     |
|---------------------|-------|
| 1. farmer           | 61.20 |
| 2.corn farming      | 82.68 |
| 3.self-employed     | 77.40 |
| 4.rubber plantation | 63.61 |
| 5.livestock         | 11.33 |

**Table 4.8 The occupation in the community (continued)**

| occupation      | %     |
|-----------------|-------|
| 5.seller        | 22.20 |
| 6 mechanic      | 11.47 |
| 7.civil servant | 9.64  |

(1) income

On the income, it is from 2 production sectors which are the income from agriculture sector and out of agriculture sector

Nam Kian community in the overall has earn income from agriculture sector for 86.67% from corn and vegetable growing after rice farming such as black sesame and soybean. Moreover, they also gain income from selling livestock.

Among the anxiety and concern on the way of living of villagers in Nam Kian that they have imbalance of the income and expense, from 2012 there is a group of villagers who have their own land and invest in rubber trees since 2007. They have earned good income comparing to the whole products price they used to earn. From the survey of Para rubber selling income in Nam Kian from 2010 -2012, the villagers have income from Para rubber selling as seen in the table 4.9

**Table 4.9 rubber tree selling income**

| rubber tree selling income (baht) |           |            |
|-----------------------------------|-----------|------------|
| 2010                              | 2011      | 2012       |
| 2,690,308                         | 6,407,288 | 12,875,533 |

In addition, there is the income from outside agriculture sector for 67.00% out of general self-employment, motorcycle fixing, building, teacher assisting, selling, lottery selling, handcrafting and civil servant.

## (2) The expense

On the expense, there are 2 types of it which are 1) the expense for the need factors for the living 90.33%: food, paying off expense, production, children education and medical expense and 2) the expense for luxuries 86.67 % which are social expense, taking a chance expense and the expense for travelling and relaxing, respectively.

## (3) Saving

From 2005, Nam Kian community has established the saving group which has run different activities. For example, the corporation of assistance network in Tabon level and village level, the group of relatives' line and group of people who were born in the same year (Seo group) and this also related its network to the saving network outside the community in the provincial level coordinated by Hug Muang Nan foundation.

Nam Kian community has several saving groups with 84.55% members who have the savings. Mostly it is 2 baht a day saving or Nam Kian Community Welfare Fund. The fund's theory is to arrange the welfare to help one another in sub-district/Tambon level and does not focus on loaning but focus on saving 1 baht a day to discipline villagers' saving habit. *"1 baht in our hand can rarely buy anything, its value is lesser. But when we bring 1 baht of people in the village to gather together every day, it can be a big sum of money that can benefit to villagers in the community"* Ajarn Chusilp Sararattana, the president of the community welfare fund said.

In addition, there is a saving group of each village which has its own domestic administration. But in the present, many of the groups have started to face the illiquidity of saving and splitting as some members are not honest to the group, some lack of saving habit, some do not pay back on time, some withdraw their shares and saving money. They cannot survive and collapse in the end.

## (4) Debts

During that period, Nam Kian community has completely developed and headed to the modern production system. This makes a chance to be into economic progress and the convenient living, having technologies to facilitate. Most families can access to funds and loans for investment, both in and out of system such as

agriculture bank, agriculture cooperatives in funds under the trust promoting project of the Community Organization Development Institute (CODI). When they can access various source of loans, they also have debt which cause stress following.

From the data of debt state in Nam Kian sub-district, it covers 5 villages in 2003, only the debt from Bank for Agriculture and Agricultural Co-Operatives has total amount of loan of 33,501,097 baht. (Hug Muang Nan foundation,2003:51).

On the data, the debt of Nam Kian community in 2013, it is found that 89.11% villagers are in-debt, it is classified as the in system debt for 85.30% and out of system debt for 87.10%. Most in system debt is the debt from Bank for Agriculture and Agricultural Co-operatives.

From the survey of debt, only debt from Bank for Agriculture and Agricultural Co-operatives have debtors in 5 villagers and have made 1,420 loaning contracts in total, both in short term and long term contract. The candidates for the loan are from 656 households with 656 borrowers and the loan amount of 130,105,085.54 baht. Besides this, there are 1,904,354,.43 baht that has not been paid back and still in following time. When the owed balance plus with the loaning balance, it is 132,009,439.86 baht in total. (source : Bank for Agriculture and Agricultural Co-operatives.Phupiang branch, Nan. January 27<sup>th</sup>, 2013)

Moreover, the villagers also have out of system debt for 87.10%, mostly from local merchants and capitalists in the area that they have invested on production for the villagers first, for example the cost of tracting, the corn seeds, fertilizers, chemical substance. The cost will be deducted after products are cultivated. There is also loaning from saving fund of each village, Community Organizations Development Institute, the funds under the supports of state sector for example the money from the Village Poverty Elimination project (VPE), the village fund (1) and village fund (2), the housewife fund, Sub-district Occupation Development Fund, etc.

In overall, Nam Kian community seems to be able to survive in economic state in some extent. But in reality, it is found that each household has been in-debt from many other sources. It depends on the capability in money management and they are in the debt cycle in each year without the end. Coming in to economic system that focus on money along with consumerism which focus only on external image lead them to more complicated living and decrease their self-dependent state.

In recent days, although many villagers have left agriculture job and turn to work mainly non-agriculture occupation, several works and the hard work does not help decreasing their debt and they need to get more loan. It is the same as one of villagers' saying which reflects that their living has been more difficult and complicated. It is in the form of "loaning for living and for eating". Some families have to work out of the community and have to depart their families. Each house struggles for money. Each of them struggle and dump their time for hard work so much that they do not have time to share with their families and communities.

#### **4.3.5 Sense of Community**

The community in the present has been changed fast both on the population increase and the external influence in which interfere more from state control and capitalism coming along with modern technology. Its production is in the new form focusing on producing to sell, aiming to earn money and it is absorbed to be a part of globalization and full modernism. This provokes the need of consuming, the extreme convenience and everything becoming purchasable thing, the becoming of individualism which seen as more valuable than public, the concentrating on personal benefits, the personal advantage awareness replacing public mind.

Being pushed in to this circumstance has made the community state changed in many aspects: 1) the community's self-dependent has been terminated. The living philosophy has changed to be the commercial production process. The promoting of new plant lines for farming has come with other production factors in contracting form and use large area in growing plant in a mass amount. It has become a significant cause of deforestation to expand cultivated area to gain the most yields. Villagers cannot cultivate and growing on their free will. The decision power in production and household labor management has been obviously decreased. The community is pressured by external commerce.

2) The economic gap is occurred and the community is dominated culturally by rush lifestyle and competitiveness. This has caused the change of indigenous lifestyle and traditional production process. For example; the labor exchanges system that the mutual/joint production process of the community is replaced by exchange by using "money". Seeds selection and exchange, traditional ritual and indigenous



wisdom that have been inherited and done to the nature since in the past like venerating Pee Khun Nam (Watershed spirit), venerating the earth queen and Sukwan Kwai ritual ( food offering to buffalos ritual) have been faded. However, some important ritual like Sukwan (welcome back ritual), Paying respect to parents and Sueb Chata (Age renewal ritual) still exist, but in some ritual process, some step of the ritual process has been cut off. Plus, there are now only a few ritual runners who have knowledge on these ad hoc rituals and most of them are old people starting to have health problems. In the community, there is not much inheritance system. The current inheritor is the person who has been ordained and work as civil servant that have become the son-in-law of the ritual runner and he is having the role on the rituals in the present.

3 ) On economic status, in the past, villagers were not different much on economic status as all of them were living on agriculture. Eventually, there are various kinds of occupation and some people who have big fund and own large land can have different alternatives of career so the economic status of the villagers have become more different. Villagers aim to their personal advantages more than public benefits. The dependable way of life, the value, ethics and belief including social relationship have become abased. The new things and value start to replace the old value. Economic competitiveness is getting higher and villagers are competing one another to earn the income to pay for their daily expense and ignore other social dimension on living together.

Nowadays, being community is appended with globalization as it is a fast trend and fully dominates Nam Kian community which makes the community change and move following the trend with evolution and following the certain context and condition. The interaction and practice way of villagers in the communication have changed both among the villagers and among family's members which is the smallest unit and also between villagers and supernatural. The participation of the community has changed following to the context. Nam Kian community in the present is in the state of change (expansion period of community) in many aspects, in structure, household and community level as following details.

1) The changes in the family level. In the past, people live together as big family as they are important labor base of the family. In the present, the attitude on

big family has become invaluable quickly because most families are single family consisting of father, mother and children. The lifestyle is more modern with more facilities to save their labor. With the economic change, the village's economic system mainly depends on money.

The houses in the community are mostly in modern style, two-stories, half-wooden and half cement building, with beautiful fence and well cut lawn, decorated by flowers and a garage with at least 1-2 cars. Almost every house has averagely 2 personal cars; one to the field and another one with better state for running in the village. Every house has all kinds of facilities. The house portrays its owner's status.

On relationship, the youngsters in the village mostly get married to people out of the village. On the relatives system which used to play an important role on housing arrangement after the marriage and men would move in to women's house have been changed and it's not following the old norm. In the present, women move in to men's houses as many as men moving in women's house. In the community, there are more 'in-law' from outside community with population expansion and diversity. Some elders cannot remember the youngsters, who is who or whose children are. There are different people with variety of occupation.

Moreover, structural changes in small units like the household level have decreased its roles in many aspects. For example, the relationship between children/youth and parents have wider gap. The process of disciplining, preaching and warming young family's members have a wider gap on different generations' value among family members. When young generations have been advanced on technology and online world becomes a part of youth's daily life. It has stolen the time spending with parents and even replaces the parents. Family members become estranged; the time of meeting up between family's members has been decreased.

With media influence, various types of advertisements, morality has faded and youngsters' life skill has been changed. In the community, there are problems on couple living way of the youngsters in the young age that they are not yet self-responsible. This has become a normal life that is widely acceptable in the village. So grandparents are now having younger age than in the past.

The time to meet up with family, relatives and friends becomes less. The life is living with rush and compete with times aiming to earn money for serving consumption and materialism. Every life needs to struggle to survive.

2) On structural change in the relationship in community level, there are many aspects of the change as following summary.

(1) Being community and the community leaders

Being Nam Kian community is in the changing state and has been variable. The community has decrease its role comparing to previous period that community institutes like temple, school and seniority system used to be dependable and unify villagers. It has been affected by the development that aim to compete to earn money to serve consumption and the community that used to be unified, dependable with labor exchange system and dependable relationship in the past has gradually vanished and been replaced by hiring by money.

In the past, community could manage the events and circumstance within it completely. The leaders are strong and have clear joint work with different management dimensions on society, living together, meeting up, sharing and depending. But in the present, the livings of villagers are complicated and depend on external factors in most part of their life. Every family in every level has to earn for their livings. Both the community members and leaders are having duty in their jobs and have debt to pay for. Thus, they do not have time and cannot join the community's activity fully like in the past. Each of them have to take care of their own production and at the same time they have a duty to watch out for the community's peacefulness. Likewise, the existing of groups in the community like housewife group, youth group and even the Seo group are still the same but their time, idea and the time to spend together is limited. Each person in each group has his own aim and focus more on economic.

Every family in every level only aims to earn money. Each of them works and struggle. Families from different status are all in difficult life. The community which used to be unified, dependable and its labor exchange system does not work anymore because it does not get along with labor hiring and contract system. The groupings and organization that are dependable in the past have been vanished.

The economic and production process changes in the present have caused changes in Nam Kian community on many aspects such as lifestyle that rush and compete with time, the decrease of labor exchange system, the decrease of meeting up and kinfolk relations, the participation of members, including the 42 warriors who rarely have time to meet and consult. Some villagers work hard for the whole day and get tired so they cannot join the village activity fully. For the villagers who cannot join the development activity of the village, most of them would compensate their labor by paying money.

However, in activities like merit event, Poy event, wedding, new house ceremony and funeral, being neighbors and community are still the root of the community that still get villagers to meet up and help each other. Villagers would record the amount of money their neighbors pay to help them out on any event and will return to those neighbors on their event with the same amount or more than that. Besides, the well-off community members give more significance of donating money to support public activities like temple reconstruction, traditional boat race, Phapa merit event. After the donating, in the morning the community leaders would make a public announcement on the donors name list through

(1) The community leader

The 42 warriors are mostly appointed consisted of Kamnan (sub- district headman), Sub -district police, village headman, village headman assistant, president and vice president of SAO. Each person has his own duty and his main career both in agriculture sector and out of agriculture sector. For example, they do rice farm, corn field, selling, making rubber farm, drive students school and home, do hair cut, arrange food for events. So sometimes, they would not have time to meet up their relatives and would meet them up only in ceremonies and merit events in community.

Every family in every level and every career is all striving for earning money. Each of them work hard and struggle, so families in different levels are all facing difficult lives, more or less. The community that used to be unified, depend on labor exchange system no longer works as it does not get along well with labor hiring system and contract system. This has weakened the community.

Living with risk, confuse, stress and frustration is the consequence of the threat from external influence that keeps more severe each day. The changes phenomenon has spread out in the community very fast. The community is fighting and encountering the power of capitalism that tears off the community and dictates villagers to the evil cycle which seems to endless, but it is getting worse. It is beyond the control of the community and the power of 42 warriors. The villagers need adapt themselves in to the society and struggle to keep on living.

The changes that occur to the community have pressure on the villagers' living and their mentality. Those villagers have exhorted themselves to work hard and try every way to get "money". Community and social control is just a part of marketing system. The living is more difficult and complicated. The self-dependence is decreased. The living in every level needs to struggle for survival.

#### **4.3.6 Forest exploitation in the present**

From the changes of the complex factors as previously mentioned, on forest ecology, land use, economy and community, the use and management has affected in the form of relationship in forest use. The supernatural belief used to control and regulate in the past has been decrease its role and this strategy does not work anymore nowadays. Positive factors of having natural resource have been ended. The forest use of Nam Kian community ever since 1998 has changed the objective the use to be "water" need (Mono Dimension) and the use form is changed as there is a control regulation; especially the requirement of timber forest products (TFPs) has been totally end. However, there is an exception that is negotiable in the case of community members who are poor or in need have a necessary reason to use woods, or in the case that members in the family die and they need to use woods or timber to build a house for the pass away person, the committee would give permission for each case.

On the use of the non-timber forest products (NTFPs) of food and herbs, the villagers can find them in general but it is harder to find and the finding approach has been changed from the past. For example in the past 5-10 years, seeking food in the forest of women is in group but in the present many of them say if many people go to find it, they would find less. They would go to collect it alone only the one who



knows the source as seen in the picture which shows the source of food from forest both 2 source.

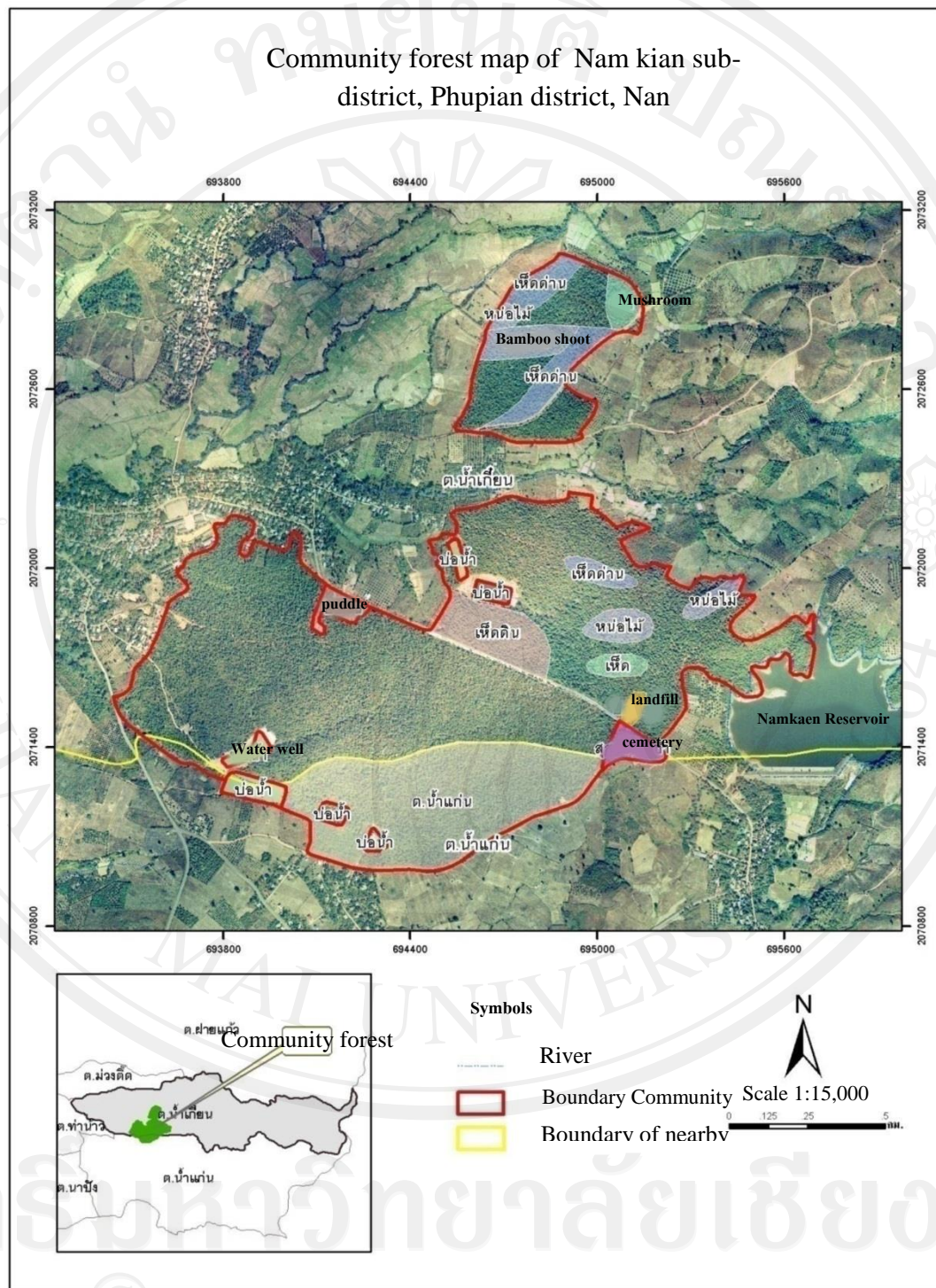


Figure 4.12 Food sources from two forests

On food finding, in the past it is the women's work but in the present, men would go to collect Lom mushroom (a type of wild mushroom) at night because the mushroom has expensive price and popular among villagers. Also, the mushroom has a specific character when it got light at night; having a little green neon color. Collecting the mushroom at night is the act that no one pay attention to you even the Pee Pa Huay Lom( a kind of forest ghost) which is a fierce ghost and now villagers are no longer scared of it. They are now doing everything and every way to survive. Despite of the ghost, spirit, boding and locals wisdom they used to believe, villagers do not believe anymore and the belief has decrease its role nowadays. Many villagers said that 'Now, we are not scared of ghost that much as lights are bright everywhere, unlike in the past that there was no electricity, it was very dark at night so people are scared. However, if there is one ghost, it wouldn't carry a knife to kill us anyway.'

From the changed thought and belief, along with the changed lifestyle, most villagers cannot find time to find stuffs in forest. They give less significance to forest on food dependent. But they bring food from forest to sell more. The main objective of the forest use has been changed to be as the source of water to use in production process as seen in table 4.10 which show the use of forest in different aspects as follows:

**Table 4.10 the comparison of NTFPs utilization of forest community of Nam Kian in the past and present time.**

| The Usage                          | In past 20 years |         | Now   |         |
|------------------------------------|------------------|---------|-------|---------|
|                                    | Use              | Not use | Use   | Not use |
| 1.Collecting forest stuffs (NTFPs) | 97.22            | 3.78    | 36.67 | 63.33   |
| 2.Timber ( TFPs )                  | 96.67            | 3.33    | 11.67 | 88.33   |
| 3.Cultivated area                  | 56.67            | 43.33   | 3.33  | 96.67   |
| 4.Wildlife hunting                 | 60.00            | 40.00   | 3.33  | 96.67   |
| 5.Ritual                           | 33.33            | 66.67   | 14.10 | 85.9    |
| 6.Relax                            | -                | 100.00  | 10.33 | 89.67   |
| 7.Water resource                   | 26.67            | 73.33   | 96.67 | 3.33    |

To consider the cause of forest use decrease, it is found that the important factors of the changes are the increase of population, the change of forest product collecting, the severe use which relates to the use of non timber product forest and the deforestation. This causes the decrease of forest biological diversity both of timber and food as seen in table 4.11 which shows the forest ratio in different aspect.

**Table 4.11 The proportion and the amount of NTFPs in issues**

| Detail                             | Past 10 years comparing to now |                 |                 | Reason                          |
|------------------------------------|--------------------------------|-----------------|-----------------|---------------------------------|
|                                    | Increase<br>(%)                | The same<br>(%) | Decrease<br>(%) |                                 |
| <b>1. Food/ Herbs (NTFP)</b>       | <b>0.83</b>                    | <b>30.00</b>    | <b>69.17</b>    |                                 |
| - Mushroom                         | 3.33                           | 43.33           | 53.33           | More people collect it to sell. |
| - Bamboo sprout                    | -                              | 40.00           | 60.00           | More people collect it to sell. |
| - Wild vegetable/plant             | -                              | 20.00           | 80.00           | More people collect it to sell. |
| - Herb                             | -                              | 16.67           | 83.33           | Forest decrease                 |
| <b>2. Animals/ants eggs (NTFP)</b> | <b>2.50</b>                    | <b>33.33</b>    | <b>64.17</b>    |                                 |
| - cicada                           | -                              | 46.67           | 53.33           | More people collect it to sell. |
| - Squirrel/tree shrew              | -                              | 10.00           | 90.00           |                                 |
| - mole                             | 10.00                          | 66.67           | 23.33           |                                 |
| - birds                            | -                              | 10.00           | 90.00           |                                 |
| <b>3. Timber (TFP)</b>             | <b>-</b>                       | <b>24.45</b>    | <b>75.56</b>    |                                 |
| - Bamboo                           | -                              | 90.00           | 10.00           |                                 |
| - Timber for fixing a house        | -                              | 6.67            | 93.33           | Regulation                      |

**Table 4.11 The proportion and the amount of NTFPs in issues (Continued)**

| Detail  | Past 10 years comparing to now |                 |                 | Reason                        |
|---|--------------------------------|-----------------|-----------------|-------------------------------|
|   | Increase<br>(%)                | The same<br>(%) | Decrease<br>(%) |                               |
| - Timber for building a merit house               | -                              | 6.67            | 93.33           | Regulation                    |
| - Wood for public use                             | -                              | 33.33           | 66.67           |                               |
| - Firewood  | -                              | 3.33            | 96.67           | Regulation                    |
| - Timber for fence                                | -                              | 6.67            | 93.33           | Regulation                    |
| <b>4. Indirect benefit(a source of watershed)</b> | <b>96.67</b>                   | <b>3.33</b>     | <b>-</b>        | There is a reservation forest |

The economic change has become an important condition of forest use change which is decreased as the young generation has various alternatives of occupation. With the chaotic living that is in rush all the time, most villagers do not think they are depending on forest directly and the forest may not be the first priority but just a supplementary factors that they can depend on or relieve in their living in basic level only. The income of each family makes them prefer to wait buying food stuffs to get in to the forest to collect wild vegetable because it is more convenient and faster. With the hype of villagers who strive to get in to intense manufacture system that they need to dump their time to look after the products so they do not have much time to look for NTFs. Plus, they are not sure if they get in the forest, they may not get anything out with them and this is a time wasting.

In addition, it is also about knowledge distribution on types of NTFPs which can be used for consumption. Most villagers aged from 50 up would know where the food and herbs source are and how to select it including how to get it cooked. But at the present, villagers are focusing more on work and the youth aims to study, some are working in other province, these old people would be too far away from children



or youngster to teach them on it. Also, youngsters are not preferred instant food and fast foods to foods from forest.

From the decadence of forest plus with the changed weather, it is affected to biological diversity decrease, both on types and quantity. This decrease make villagers have changing attitude towards forest, in the past they have the thought of consuming foods from forest and share it with relatives, also sell the rest of their household consuming foods. They consider of the value of NTFP more if the ones they collect have high price at that time like mushrooms, Phak Wan (a kind of wild star gooseberry), bamboo sprouts. They would take these forest products to sell first and eat only the not good ones. The product sharing has been much decreased.

In the present, forest is taken care and recovered and there are food products growing up but despite of knowing it, villagers choose to buy vegetable from market more. The youngsters with age lower 25 years old do not pay attention on these wild vegetable, they do not know how to cook it and do not know the source of it and some of them do not know 3 community forests.

#### **4.3.7 Forest Management**

Forest management in the present is divided in to 2 periods; 1st period during 1997 – 2006 and 2<sup>nd</sup> period, during 2006- 2013.

1<sup>st</sup> period (1997 – 2006) Forest management at this time is still in the scope of the attempt of continue to work from phase 2 which village committee and sub-district committee have planed management of the 3 community forest which are Huay Lom forest, Pae Bonna forest and Khun Kian forest to be an approach of forest management using 2 dimension tools continuing from previous period which are tangible dimension and intangible dimension on cooperation among community members.

##### **4.3.7.1 Forest management of Huay Lom forest and Pae Bonna forest**

The approach which works is to manage in tangible form which is still under the same regulation as in previous period and it is the consequence of 2<sup>nd</sup> period (forest management during expansion time) with the joint operation issues as followings.



1. Prevention of forest invasion in the area of Pae Bonna and Huay Lom forest. The village committee also made 1) clear scope of forest area by using natural boundary as a symbol or the edge of roads to be boundary which is known among villagers thoroughly and 2) advertisement sign along the forest boundary. Besides, if problem of invasion or bringing in garbage, it will be reported by villagers. 3) there is a meeting in village and sub district level to inform villagers and take the problems to get solution.

#### 2. Forest reservation and recovery

In forest reservation and recovery activities at the first period the community cooperate are 1) forest ordain 2) forestation on special day like Buddhist lent day and Mother's day which are during rainy season 3) field study which has been success 4) participating the community forest network meeting with Hug Muang Nan Foundation 5) forest fire prevention

However in recent days, the activities are not run constantly and the forest fire prevention which is operated by committees has been done less due to the lack of budget.

#### 3. Land invasion for cultivation control and prevention management

The right of land use for cultivation of villagers in each household has occurred from the use of that land from the past or inherited to grandchildren generation. In the present, the land use of villagers is still in a certain scope without any expansion as they cannot invade more. The villagers who have the land attaché to others would know how their neighbors get the land and most of the villagers do not invade their neighbors' area or public area.

4. The water source management, protection and control on the Pae Bonna and Huay Lom forest is still the same as there is a mutual regulation on using forest.

5 .The control of Timber forest products (TFPs): In 2002, Nam Kian community members who go to work out of the village start to return their home. Some of them cut trees to use like in the past on the area of Pae Bonna and Huay Lom forest as they do not know about the regulation. From this case, it is challenges for the community leaders as they are the first cases who are a middle-class people. So the committee and community leaders consult each other to find negotiating approach and finally the problem ends with fining the group of people for 5,000 baht to show to

other villagers as a case study. From the case, it is then realized among villagers that the committees are strict and take serious action on community forest regulation. It has become a talk of the town and spread the news quickly.

About the fine from those who breaks the rules, it is kept by the committee as the community forest preservation fund to spend in activities relating the forest management.

On the Non-Timber forest products (NTFPs) management, especially the food products, in the community have neither rule nor regulation. Villagers still bring the NTFPs fully as much as they can both mushroom, bamboo sprouts, Phak wan, insects and wildlife. But as the forest has limited area and the population is increased, the products are hard to find.

#### **4.3.7.2 Khun Kian watershed forest Management**

Khun Kian forest is watershed forest which is like the main blood vessel which has nurtured the community for a long time. From 1997 to 2005, it has been taken care of well by 42 warriors committee constantly and activities have been operated together.

##### **1. Khun Kian forest management in tangible aspect**

On the invasion preventing in this forest, 42 warriors have made monthly. Activities which are forest surveying to check the invasion or deforestation. During dry season, they look out on forest fire so they can solve on time when they see the forest fire start. On each field surveying, every leader needs to be prepared together with the same outfit color and food. For the forest survey, the leaders would coordinate with involved government units to get the cooperation survey with unity and the operation is well-known among neighbor communities and it can decrease deforestation.

On publicizing, there are signs in the forest area to inform and promote forest conservation. Along the border line of conservation, villagers would see the signs clearly. Besides, they also hold a discussion forum to talk on forest conservation in village and sub-district level so they can find the approach of forest reservation together.

To contribute knowledge on this to the youth, the committee arranges Khun Kian forest reservation youth camp annually. In the camp, there are content to wild plants lineage and herbs and watershed forest survey to embed reservation mind in the youth so they feel of being the owners of the forest. In the beginning of the camping, it is supported by Hug Muang Nan Foundation and UNDP/GEF.

On forest fire prevention, there is training on forest fire prevention in the beginning of March every year which is supported by the district forestry office and Nan forestry office. There is also the checkpoint in the exit way of Khun Kian forest, with 42 warriors committees to take turn to be on duty there for the whole 24 hours.

Besides, the committees have enacted a regulation of Khun Kian forest resource using control to be practiced and organized which is informed to the community's members and the Paikaew SAO as follows:

## **2. Regulation to control Khun Kian forest invasion**

1. Do not cut any tree in the reservation area.
2. The person who is against the regulation will be taken in to legal process.
3. Those who point out the clue will be rewarded.
4. This regulation starts from September 9<sup>th</sup>, 2000.

On the intangible management, the committees have got the forest ordained which is taken place on Huay Lom forest in 2001, on the 3<sup>rd</sup> of Northern Community Forest Assembly, at Ban Nam Kian School, Phupiang, Nan. It is a forest conservation strategy of the villagers which is supported and cooperated with involved organizations both the government and non-government ones. Later in 2007, the committee cooperates with the community members to build a shelter and set up the Buddha image on and a ghost house at Huay Lom forest area to emphasize and show the power of Buddha and fierce ghost on protecting forest. It is a relax place as well as it is not far away from the community much.

For the Khun Kian forest, there is forest ordain ceremony in 2003 by binding yellow cloth around the big tree as a strategy that the trees in the forest has been ordained to convey its magical and to frighten people. However, the supernatural and ghost stories that used to manage forest and worked well in the past has decreased its

magical nowadays. So the villagers' action will not be based on indigenous belief like in the past but most of them now more fear of the community's regulation/rule.

On the water resource management in the community like the dam and reservoir which belongs to the public/community. Mostly the group that plays an important role on water management is still he 'water user', with selected president to be in charge on managing and control water distributing to farmers and holding a meeting for water use, development, dredging up for better draining.

On the forest management on the Non-Timber forest products (NTFPs), as in Khun Kian forest, it is integral forest full of foods, vegetable, wildlife and diverse insects but the community villagers do not use NTFPs for food directly. Most users are neighbor villagers such as villagers of Ban Huay Kham, Faikaew and Ban Nong Dang in Mae Jarim district. On collecting NTFPs for food, there is no rule or regulation.

### **3. The management result**

In the end of 1998, the problem of natural resource decadence in the community started to decline. The forest has been recovered and started to set up regulation of forest usage.

In 2001, Nam Kian community cooperates with Hug Muang Nan to host the Community Forest Festival: Man & Forest Survival which participated by 700 people from 4 regions. The community committees then plan, brainstorm, assign and divide works based on each person's skill so they could be a good host and impress the guess. Being the host for the festival, Nam Kian community has started to be well-known among the network group both in the level of sub-district, province and country. The festival shows the power of community forest network nationwide to be manifest.

The festival of community forest network and being a good host make Nam Kian community widely known and accepted more. Also, it was publicized through media and press like newspaper, radio and television which presented the picture of forest management of the community widely.

Since the middle of 2001, the name 'Nam Kian' has started to be well known both in and out of the province. The community becomes a place to educate of both

government and private sector. The community leaders had been invited to be a lecturer nationwide and are named as 'Nam Kian, the community of joint learning'

From 2001 until 2006, the committees had devoted to work and were serious on it until they see what they had done became concrete outcome; villagers accepted and honored the 42 warriors and admired them on their works.

Nam Kian forest management in the 2<sup>nd</sup> period (2006 – present 2013). After working for a period, the appointed leaders had been expired from term of office and the new leaders who replace has tried to continue the work to be consistent and prove their works to villagers on community problem solution based on the former vision of 'full eat, warm sleep and good dream'

But after working for a while, the problems become more complicated. For example in the beginning, the community has problem on forest decadence and lacking water, as well as the spreading out of drugs and the community leaders join to find solution together and the problem is relieved. After this period, there are new problems coming in like garbage littering as the garbage bins are full. The leaders have tried to solve the problems by finding place to litter the garbage and it is solved a bit now. But then the problem of drugs spreading becomes severe again. Plus the problem on thief from other sites coming in as the new problem in the year round as during the day, most villagers gathered in their farm or orchards and out to work, most single house would left their house closed, it then becomes the target of general thief.

#### **4. Nam Kian forest management strategy**

##### **4.1 The system inside the community: community forest committee**

The management of community forest in Nam Kian in all 3 places has been run mainly by 42 warriors cooperated with the community members. In the process, there is a clear administrative structure playing the role of community peace keeper. From the role of the leaders, the leaders are expected by the community villagers of their devoting, harmony, caring and ideal.

But with current development way which emphasize on competing to earn much income and provoking consumerism and image focusing which has been increased more and more, especially economic condition and debt problems, the



community's way of living is affected and the 42 warriors are not exceptional. They have their own burden and duty on their career both in agriculture sector and out of agriculture sector like farming, corn farming, selling, rubber farming, driving students school, being barber, cooking and making lunch box or service in events. They do these works at the same time until they have not much time to talk and meet up their own relatives or friends and will have a chance to meet them in ceremonies and merit events in the community.

Besides, the administrative approach in the organization started to be split on the ideas and there is the difference of knowledge and understanding on the community administration. Knowledge gap occurs, the community image which has been strong with different ways of management may be decreased and its strength has been declined depending on each leader of the Tambon or sub district.

On the forest management process, especially in Khun Kian forest, in the first period, the community leaders, 42 warriors are keen on running activities together constantly. But eventually, the activities' intensity has been declined on Tangible aspect. For example the meetings frequency is reduced; the forest surveying, coordinating with other networks and holding youth camp are declined. Because of the lacking of budget and perhaps in the community, there are other rush problems, also the villagers are focus more on working, the forest depending has been decreased, the youngsters have less interest in the forest, the forest management of the villagers becomes less intense.

The inheritance of community forest knowledge is not sustained. Present generation does not continue to distribute the knowledge to the youth and there is not channel to communicate with the forest conservation leader group. The community forest issue is talked and discussed among only the leaders and stakeholders who use the forest directly, for example collecting forest products or herding in the forest. Furthermore, the youngsters start to leave the community to further higher education and aim to work outside the community and this cause power lacking in the community which affect to the forest management and use continuously.

More youngsters go out for work and study. The way of living which is tied with the forest and natural resource less than before and farmers need to do intens

cultivation so they need to devote themselves and spend most of their time in the field so much that they do not have some time left to collect forest products in the forest.

The role of the community and the committee has become weaken. Activities in the past like the meetings and budget for activities are less than before. Plus, there is no serious conflict occurs too.

On the intangible aspect, the traditional events and ritual that the community used to do together strictly like spirit venerating and some important symbol activities to conserve forest has been declined. But Thai society is not staying still. For decades, many changes floods in to the community in every aspect. Belief, norm and indigenous tradition which used to be magical and powerful to control and manage the natural resource have declined.

After the time passed for a period, the participation and the enthusiasm in designing activities on forest management has been less and knowledge teaching on community forest to the younger generation and youth group is less. Most youngsters leave their home land as seen in table 4-12

**Table 4.12 Activities on forest management**

| Work Detail                        | Past (1997-2006) |        | Present (2007-2013) |        |
|------------------------------------|------------------|--------|---------------------|--------|
|                                    | mean             | result | mean                | result |
| <b>1. Leader</b>                   |                  |        |                     |        |
| 1.1 Teamwork                       | 2.54             | high   | 2.37                | medium |
| 1.2 Having clear joint target      | 2.45             | medium | 2.38                | medium |
| 1.3 Devoting for work              | 2.67             | high   | 2.39                | medium |
| 1.4 Effort on learning new things  | 2.50             | high   | 2.44                | medium |
| 1.5 Continuing on community forest | 2.54             | high   | 2.40                | medium |

**Table 4.12** (Continued)

| Work Detail   | Past (1997-2006) |        | Present (2007-2013) |        |
|---|------------------|--------|---------------------|--------|
|   | mean             | result | mean                | result |
| <b>2. Community forest management</b>                                   |                  |        |                     |        |
| 2.1 meeting/planning to work together                                   | 2.56             | high   | 2.20                | medium |
| 2.2 Constantly patrol   | 2.58             | high   | 2.29                | medium |
| 2.3 Knowledge conveying to the youth (forest loving kids camp)          | 2.45             | medium | 2.27                | medium |
| 2.4 Making fire break   | 2.50             | high   | 2.38                | medium |
| 2.5 Publicizing sign  | 2.44             | medium | 2.20                | medium |
| 2.6 Budget allocating for community forest activity                     | 2.58             | high   | 2.37                | medium |
| 2.7 Expansion the network of community forest learning                  | 2.62             | high   | 2.22                | medium |
| 2.8 Coordinating with government units and other involved organizations | 2.61             | high   | 2.39                | medium |
| 2.9 Forest ordain   | 2.40             | medium | 2.40                | medium |
| 2.10 Ghost belief and indigenous wisdom on forest management            | 2.28             | medium | 2.09                | medium |

However, in the recent years, the role of 42 warriors and forest committees has started to decline its intensity as the lifestyles of villagers have changed. Most leaders need to do their works and they have their main responsibility on taking care of their family. The way of living and producing process has been changed. For example they

do Para rubber tree farming as it provides better products and price than corns. So the leaders focus more on the plants in their own field first. Plus the problem of the community has been changed.

At the period, the forest management and forest use has been changed. 'Water' is mostly preferred for consuming.

From the result of the development that focuses on competing, especially to set up economic condition, it has affected the way of living of community. The 42 warriors are not the exceptional. They all have their own responsibility on their career both in agriculture sector and out of agriculture sector that they need to rush the household production along with working for public. Also the problems occurring in the community becomes more complicated. The community is encountering the power and influence of capitalism which does not seem to end simply and it is out of the control of them.

On analyzing the cause of the community forest management, it is found that the cause is from factors affecting to the forest management which moved in each period has 3 main conditions as follows:

1. The factor which is from out of the community, especially the interference of government and capitalism which affected to the lifestyle and the local community structure and it caused the evolved change.

2. The factor from inside the community in the end of 2<sup>nd</sup> period and 3<sup>rd</sup> period, the villagers have turned themselves to the work out of agriculture sector more and do not pay attention nor use the forest like in the past. The leaders also focus on other rush issue than the forest as some of them see the forest issue has been on track so the forest management activities has been decreased and transformed to serve the need of 'water' more.

3. Economic factors: In the past, economic factor does not have severe effect as there was not many population and natural resource is fertile, the way of living and production process focusing mainly for the living, not for selling and the community was self-dependent. It is different from the 2<sup>nd</sup> and 3<sup>rd</sup> period that the external factors like government, capitalism and marketing comes to interfere and invade the community very fast. The living focus more on working and earning money more and people needs to depend on external factors more. More people have economic

problems more to serve the consumerism that affect to the image, face too much. From the economic conditions, it has affected to the community forest management which becomes the evolution of forest management in 3 periods as follows:

**1<sup>st</sup> Period:** The villagers' way of living in settling era was when there were less people; the forest ecology was still fertile with diverse plants, wildlife, herbs and water. There are forest products which villagers can use for the living lavishly. The community had production process to live mainly in household and villagers had economic class in the same level. There was a land use for planting to live. The relationship between man and forest is interdependent form because forest was the first priority in living and the community lived by depend on and use forest in comprehensive living. What the community used are foods, herbs and water which are necessary factors in living for every household and they had no economic problem. Being a community as the time was a community in high level; there were helping through relatives and families system on production process and public activities. Above all, the community was independent and there was hardly external interference as there was less contact with external society so the control and power of the community was powerful enough on using forest.

With the relationship, the community respect and was humble to natural resource and environment. There was a regulation to take care of natural resource which was consistent with the lifestyle and ecology and there was a norm and culture training the community members to pay respect to nature. This was an important condition affecting the community to have strong forest conservation system.

**2<sup>nd</sup> period** It was a period that the community had been changed very fast both on population increase, state power, capitalism and technology including modern which had had interfere and occupied the community like the infrastructure system and the promoting commercial plants.

After the infrastructure system development occurred in the community, Namkien community's structure. For example the coming in from capitalist of downtown who came to cut trees in the community unlimited and destroy ecology system and natural resource. This affects to the biological diversity and led to ecological decadence. The land was used intensively and it came along with the new technology. It was an important strategy pushing and rushing the community to adjust



and change its structure on career; from production for living to commercial production and enter to the society of half urban and half rural.

Meanwhile, the youngsters in labor age mostly went out to get employed out of the community so the potential of production process in the form of labor exchange and sharing is not consistent and the exchange with 'money' replace it.

The community that has strength and power of unify villagers had been declined and weaken. People were irresponsible to their homeland; there were social problems and the decline of environment. These inclinations of natural resource and ecological system had sending a difficult sign that the community were encountering the power and influence of capitalism that small community could fight alone. The problem does not seem to end easily and it was beyond the power of the community.

From the weary state of the community in this period, it rushes the community to select 'leaders' who can bring the community to survive. The solution in the beginning started with the leaders had the same thought and expand it to members. Solution was learned and solved together at the same time. But with the process of 42 leaders who had joint approach is 'self-dependence and survive', they start to solve social problem and water lacking, especially the lack of water. From the phenomenon, the community leaders and villagers had an adaptation and tried to make condition based on participating in natural resource and also the management system to control the use by mutual rules and regulation aiming to recover forest, especially on 'water' dimension.

In the period, Nam Kian forest management was efficient and fruitful most as the leaders and the members saw that in the condition which natural resource was lacking with ecology crisis and having a difficult sign, they had tried to make a new management and condition based on the participation in natural resource management to control it by setting up regulation. From the end of this period, the community was awakening powerfully which generate many positive changes.

**3<sup>rd</sup> period.** The present period had been changed from the 2<sup>nd</sup> period in many aspects. The situation had become more complicated and variable. For example on production process, villagers dump most of their time to rush the production process and depend on external factor, on economy, most villagers focus mainly on earning money. On using forest, it is also changed despite of the recovery of natural resource.

It is found that villagers use and depend on forest less than the 2<sup>nd</sup> period. It is the result of the villagers' way of living. They focus on earning money, working to compete with time and turning to do out agriculture sector career more. Also, forest is no longer their first priority in living but just additional factor which is not help to increase their income. Forest dependence way has been changed. For example, they would rather wait to buy food from forest than go to collect it themselves. The knowledge conveying on finding food, the type of forest products both food and herbs has been decreased. The youth's value does not know and are not interested in forest food.

**Being community** has been changed. For example, the change of 42 warriors according to the term of office with the new committees at the same time of the problems in the communication has been more complicated. The community is fighting and encountering the power of capitalism and it seems to not easily end which is beyond the power of the community and the leaders to insist it. This has weakened the community again following to the context. On the management, it has been changed from decrease the intensity of the process on community forest, especially on the Khun Kian area such as the meeting, the forest survey, the coordinating with other networks, the youth camp are decreased. There is a lack of budget for activity running and the community has other problems to manage first. Youngsters are not interested in forest much.