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Living the national park: Formation of socio-ecological space in a protected area in Northeast Thailand

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INTRODUCTION

Conservation of the natural environment is now facing a turning point. So far, traditionally, it has been popular to enclose certain areas evaluated ecologically valuable and deny every kind of human-subsistence. However, strict application of this scheme suppresses the life of local people and destroys their cultural base that is closely related to the surrounding natural environment. From this viewpoint, harmonious ways of conservation of natural eco-systems while maintaining the livelihoods of the local people is being considered.

Recently, so-called political ecology has started to tackle this problem. Political ecology analyzes environmental issues in relation to political economy, and one of its important starting points involved casting doubt on the idea of the closed, small-scale model of cultural or human ecology. In reality, such small-scale communities have also been linked to the wider framework of political economy (Shimada, 1998: 3-5).

Studies on political ecology are diverse in subject, method, and perspective, but they share a common viewpoint: state power versus local people. An economic perspective suggests that local people who had once been living in a self-sufficient way were strangled by a modern cash economy, with customary resource usage suppressed by the state. As a result, marginalized people are forced to destroy their natural environments¹⁾. From a political viewpoint, the analysis of local people's resistance, by Peluso (1992), is remarkable. Vandergeest (1996a) reviews the historical process of forest management as 'territorialization of the forest' by the government and exclusion of the local people. These arguments, quite naturally, claim the rights of local people to access natural resources. The ability of the local people to manage natural resource is sometimes overestimated, regardless of the reality of local communities. Moreover, some scholars are proposing resource management by local people as a political and cultural movement based on the idea of democracy and anti-capitalism²⁾.

However, are "state" and "local people", or "modern" and "tradition" always in opposition to each other? State or various other modern institutions, and the local people's own ideas are mediated by plural social relations. In addition to complicated bureaucratic processes from headquarters to local scenes, politicians, NGOs, and other various actors play significant roles in forest conservation and utilization. Moreover, the behaviors or ideas of the local people are also diverse. The simple framework of local people versus outside worlds, such as the modern nation state or capitalist economy, is not always true.

This article considers the formation of "socio-ecological space", a space where certain subsistence patterns or human-nature relationship activities can be practiced, formed through interactions between such social factors as multiple actors, policies, or institutions, and the ecological situations. As a case study, a village inside a National Park in Northeastern Thailand will be examined. The formation of socio-ecological space through the establishment of a National Park will be examined. Finally, conservation of the natural environment based on the diversity of the socio-ecological space will be considered.

1) For example, Blaikie's famous study on soil erosion (Blaikie 1985) is the typical case. For case studies in Thailand, see (Hirsch, 1990; Tasaka, 1991).

2) For example, in Thailand, Chatthip (1993) suggests that Thai communities had a traditional culture of self-sufficiency and mutual help that is nowadays in a crisis because of the interventions of the state and capitalism. Prawese (1998) regards communal resource management as a measure to reconstruct the unity of the traditional community. These arguments of 'community culture' in Thailand, assuming an independent and closed model of community, have been criticized as ignoring actual characteristics of Thai rural society (Hirsch, 1998). Anan (1997; 1998) emphasizes the importance of the movement to acquire communal rights as a mechanism to adjust to the modern law system.

*) Edited by Ken-ichi ABE with two referees

RESEARCH SITE

The research site is Ngon Kham Village, Nam Thaeng Sub-district, Sri Muang Mai District, Ubon Ratchathani Province. The village is situated inside Pha Taem National Park (Figure 1). The National Park lies along the Mekong River, and can be divided into two parts: the southern part where ancient paintings are famous, and the northern part. In this northern part, in which the Ngon Kham village is situated, natural forest is the main target of protection. The village is surrounded by rich mountainous forests, mainly dry dipterocarp forests. The settlement and most paddy fields are in a small basin (Photo 1).

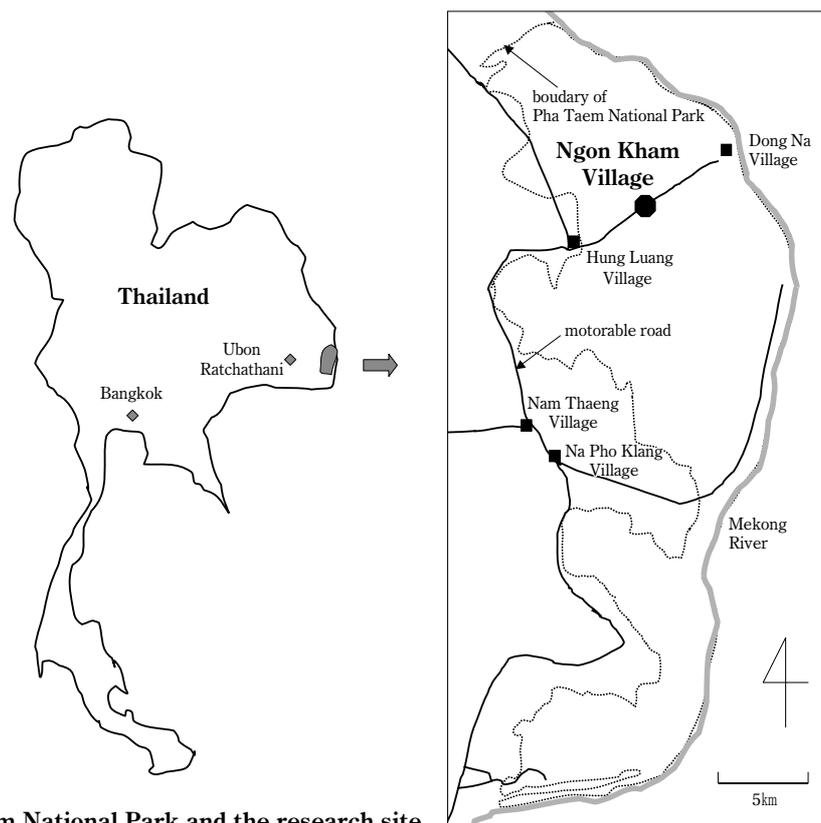


Fig. 1. Pha Taem National Park and the research site



There are 68 households in the village and 300 villagers living there³⁾. The main subsistence base is rice cultivation. Apart from that, cattle raising, fruit orchards, and such minor forest products as mushrooms or bamboo shoots are also sold. Although villagers' cash incomes are small, their desire to live a self-sufficient life is strong. Though the transportation to the village is not convenient, people come and go out of the village frequently.

According to elders in the village, the village began with the migration of two founders from Nam Thaeng village. It is not certain when the village was founded. But an elder of 85 years, born in the village, says his parents also did not see the founders. So the village has a history of at least 100 years. Once there had been villagers who could speak so-called Suai or Kha languages. Currently villagers' identity, language, and other aspects of daily life are similar to other Lao people in Northeast Thailand. However, Ngon Kham village has several unique features compared to other villages in Northeastern Thailand. First, Ngon Kham village is situated within the National Park. Following the National Park Act, not only residing and cultivating, but all activities that alter the natural surroundings are prohibited. The existence of Ngon Kham village is a symbol of the current contradiction concerning institutions for conserving the natural environment. Second, in contrast to the general trend in Northeast Thailand, the villagers are not really eager to go to work in Bangkok or other big cities. This trend reflects the orientation toward a self-sufficient way of life. In the following report, these points will be examined in order to determine the socio-ecological space around the village.

HOW THE VILLAGE HAS BEEN ENCLOSED BY THE NATIONAL PARK

The Institutions of Conservation of the Forest and Natural Environment in Thailand

Thailand has two main institutions for conservation of the natural environment: National Park, *uthayan haeng chat*, and Wildlife Sanctuary, *khet raksa phan sat pa*. National Parks and Wildlife Sanctuaries are based on the National Park Act, *phrarachabanyat uthayan haeng chat*, first legislated in 1961 (Royal Gazette, Vol. 78-80, 1961/10/3) and Wildlife Conservation and Protection Act, *phrarachabanyat sanguan lae khumkhong sat pa*, in 1960 (Royal Gazette, Vol. 77-62, 1960/7/25). Both principally prohibit any kind of activity that alters the natural surroundings in National Parks or Wildlife Sanctuaries. In National Parks, limited utilization for recreation is allowed, while in Wildlife Sanctuaries, only activities for the purpose of research or education are allowed. Both institutions can be established only on forestland following the Forest Act, *phrarachabanyat pamai*, first legislated in 1941 (Annual Collection of Laws and Ordinances, lem 54 phak 1: 1-23). Moreover, the Royal Forest Department is in charge of managing them both. Under the jurisdiction of the Royal Forest Department, these two institutions have been a part of forest conservation.

In Thailand, forest conservation, in the meaning that a certain area of land is spatially enclosed, was first institutionalized in 1938 by the Forest Protection and Conservation Act, *phrarachabanyat khumkhong lae sanguan pa*. Then in 1941, the first Forest Act was legislated, which provided a fundamental definition of forestland for later forest conservation institutions: forest, *pamai*, is the land without any right holders, following the land laws (Article 3).

The Forest Protection and Conservation Act in 1938 created two categories: Protected Forest, *pa khumkhong*, and Forest Reserve, *pa sanguan* (Annual Collection of Laws and Ordinances, lem 52 phak 1: 148-156). In a Protected Forest, occupation and clearing of the forest are prohibited, and logging or gathering forest products follow other existing laws. In a Forest Reserve, additionally, permission for any other utilization, as well as logging, was needed. However, the designation of both protected forests and forest reserves following this act was slow because of the strict rule of investigation and compensation for use by the local people.

In 1964, the National Forest Reserve Act, *phrarachabanyat pa sanguan haeng chat*, was legislated to replace the Forest Protection and Conservation Act (Royal Gazette, Vol. 81-38, 1964/8/28). The regulation of National Forest Reserves provided by this new act was almost the same as the previous one. However, an investigation on land use was omitted from necessary procedures for designation. The first National Economic Development Plan (1961-1966) set a target to reserve about 50% of the country as forest (Office of the National Economic Development Board, Thailand 1961: 37-40). As a result, designation of National Forest Reserves was accelerated. The National Forest Reserve Act provides that existing usufruct by the local people shall be respected. But in reality many settlements and farmlands were enclosed in the National Forest Reserve, which can be ascertained in the maps attached to the articles of the designation in the governmental gazette: in

3) According to my own census in Apr. 2001.

some cases, the maps show the villages inside National Forest Reserve without any excluded area⁴⁾. Thus it can be said that the Royal Forest Department designated National Forest Reserves even though they knew of the existence of villages or farmlands within it.

In addition to these administratively created squatters, invasion of farmers into abandoned logging areas resulted in rapid deforestation, and the gap between the institutional principle of National Forest Reserves and its reality widened.

Since the mid-1970s, a farmers movement to demand legal approval of cultivation within National Forest Reserves has become active. The government has also coped with it in flexible ways. The cabinet resolution in 1975 approved that farmers who had occupied forestland in National Forest Reserves before 1975 could continue to reside and cultivate. Following this policy, the Royal Forest Department introduced the scheme of Forest Villages, *muban pamai*, in 1975, which attempted to gather the scattered squatters into a planned settlement by giving user rights, providing infrastructure, and reforestation projects (RFD, 1980: 192). Furthermore, in 1982, the Cultivation Rights Project, *khrongkan sithi thamkin*, generally called the STK project, established a scheme to give cultivation rights on the land in National Forest Reserves where farmers had been residing and cultivating, up to a certain size (RFD, 1996: 156). Later on, in 1992, national forestland was re-classified into three categories: 1) protected forest (Zone C); 2) forest for economic production (Zone E); 3) land suitable for agriculture (Zone A). Protected forest contains National Parks, Wildlife Sanctuaries, first class water shed areas, and other important natural forests. Forest for economic production is mainly for plantation of eucalyptus or other timber trees. In land suitable for agriculture, it is assumed that cultivation rights are given to farmers (RFD, 1996: 246). In 1993, the jurisdiction over degraded forestland in National Forest Reserves, which had long been cultivated, was transferred to the Agricultural Land Reform Office⁵⁾. Then the Agricultural Land Reform Office was in charge of allocation of that land to landless farmers with user rights called So Po Ko 4-01 (RFD, 1992).

Meanwhile, in 1989, the government prohibited any kind of logging in natural forests, and stopped existing logging concessions (Royal Gazette, Vol. 106-8, 1989/1/14). Simultaneously, during the period from the end of the 1980s to the early 1990s, the number of National Parks and Wildlife Sanctuaries increased rapidly. Vandergeest (1996b) points out this increase reflects that the Royal Forest Department changed its own mandate from sustainable management of logging to conservation of natural environment. Attempts at managing forests with local people's participation, such as community forestry, also began in this period⁶⁾.

Enclosing Ngon Kham Village within a National Forest Reserve and National Park

In Ubon Ratchathani Province, no Protected Forest or Forest Reserve was designated under the Forest Protection and Conservation Act before 1964. It was in 1973 that the area around Ngon Kham village was designated as a National Forest Reserve. This National Forest Reserve is named 'Pa Dong Phu Lon,' covering 1,103 km², and is more extensive than Pha Taem National Park (Royal Gazette, Vol. 90-153, 1973/11/27). The map in this article from a governmental gazette shows several villages within the boundary of the National Forest Reserve as excluded areas. Regarding Ngon Kham village, the excluded area was no more than about 500 square meters, which means only the residential area was excluded, and most farmland remained in the National Forest Reserve.

A former Village Headman, aged 63 in 2001, explained that at the time of designation, forest officers came to the village and just announced the existence of the National Forest Reserve without any inquiry in advance. The National Forest Reserve Act provides that those who are utilizing an area designated as a National Forest Reserve without any legal basis can apply for an exemption within 90 days of the notification of designation. Land with a legal basis can be excluded even after the 90 days (Article 12). But the former Village Headman had not been informed of this rule. It was quite natural that other villagers also understand nothing about the National Forest Reserve institutions and its relationship to their own lives.

In a National Forest Reserve, clearing the forest and logging without permission were legally prohibited (Article 14).

4) For example, in Ubon Ratchathani Province, excluding later Amnat Charoen, and Yasothon Provinces, which separated from Ubon Ratchathani Province in 1993 and 1972, respectively, 17 National Forest Reserves contain villages inside following the maps in the articles of Gazette.

5) In addition to Zone A, forestland classified as Zone E was partly transferred to the Agricultural Land Reform Office (Sato, 1999: 78). In the case of Ubon Ratchathani Province, most of the forestland transferred to Agricultural Land Reform Office belonged to Zone E (Ubon Ratchathani Provincial Forest Office, 2000).

6) The government officially began to consider introducing community forestry in 1989 (Matchima, 1996). Forest officers suggest that the turning point for the Royal Forest Department was the case of Huai Kaeo village in Chiang Mai Province. This was the first case where the Royal Forest Department approved the villagers' demand for their own management of natural forest resources surrounding the village, and withdrew the plan to replace the natural forest with timber plantation. The Huai Kaeo case was also the starting point of the network among local people, intellectuals, and NGOs in Northern Thailand (Pinkaw, 1998).

However, around the village almost no regulations were enforced. Villagers could occupy and cultivate the forest as usual, and log the timber for their own house construction. Thus designation as a National Forest Reserve did not bring about any substantial restrictions on villagers' customary daily life.

Then in 1991 Pha Taem National Park was established (Royal Gazette, Vol. 108-245, 1991/12/31). The National Park covers 340 km². The boundary was altered to avoid most villages, which had been patches of excluded areas within National Forest Reserve, but still Ngon Kham and one more village were enclosed within the National Park. However, the map attached to this article from a governmental gazette does not show these two villages. At a glance, there seems to have been no villages within the boundary of the National Park. The reason why these two villages were cut off from the map is not clear. It is certain, though, that the Royal Forest Department did know of the existence of the two villages.

Just after the establishment of Pha Taem National Park, a division of the Ministry of Interior proposed to Ngon Kham villagers the plan to resettle the villagers out of the National Park. Then the villagers made a direct appeal to Princess Sirindhorn to cancel the resettlement plan, when she visited the village in 1991. The Princess answered the villagers' appeal, stating that the people and forests can live together, and the resettlement plan was cancelled.

After the Kho Cho Ko project failed, *khrongkan chat thidin thamkin hai kap rasadon phu yakchon nai phuen thi pa sanguan sueam som*, in 1992, which tried countrywide resettlement of farmers dwelling in National Forest Reserves illegally by military power, the Royal Forest Department abandoned its resettlement policy as a way of forest conservation except for some hill people's cases in the North⁷. However, Ngon Kham villagers realized their own legal insecurity since the establishment of Pha Taem National Park, and continue to be anxious about the latent danger of resettlement.

The establishment of Pha Taem National Park had substantial impacts on Ngon Kham villagers' daily subsistence, different than that of the National Forest Reserve's impact. Legally, the existence of the settlement and dwellings as well as occupying and clearing the forest were prohibited in the National Park. Specifically, any kind of subsistence activity became illegal. Moreover, actual regulations with patrol and arrest were also practiced, though residing and cultivated existing farmland, and gathering forest products, like bamboo shoots and mushrooms, have been overlooked.

THE IMPACTS OF THE NATIONAL PARK REGULATIONS ON THE VILLAGERS' LIVES

Insufficiency of Farmland and Rice

As already shown, any kind of subsistence activity and residence within the National Park are legally prohibited. Moreover, after becoming residents of a National Park, Ngon Kham villagers have been facing actual restrictions and patrols. Then, what kinds of changes in the villagers' daily lives have been caused?

The villagers say the most serious problem is the prohibition on the expansion of farmland. I interviewed all 68 households living in the village in April 2001 on their land holdings, annual yields, consumption of rice, and cash income.

Most farmlands in the village are paddy fields. The total amount of paddy fields in the village is about 42 ha. Among the 68 households, 6 are landless. Land holding per household is normally not more than 1.6 ha (10 rai), however the largest holding is 5 ha. Total yield of rice from the paddy fields was 48,589 kg in 2000, 42,365 kg in 1999, and 35,472 kg in 1998 (unhulled rice). Apart from this, villagers also cultivate upland rice, however the size of upland rice fields is quite small. 15 households responded to inquiries about their yield in the year 2000, and their total was 2,886 kg. Nine other households were also engaged in upland rice cultivation, but they did not differentiate the yields of upland rice from paddy rice, so their yields are included in the total yields of paddy rice shown above. The amount of upland rice is quite small compared to paddy rice, though.

Among the 68 households, only six answered that they could usually harvest sufficient rice for their own consumption. In addition, three more households' yields from 1998 to 2000 exceeded the usual amount of consumption (shown below). The other households, a large portion of the village, could not produce a sufficient amount of rice. 48 of the 68 households estimated their usual amount of annual rice consumption. This totalled 82,366 kg (unhulled rice). Assuming the same ratio per capita, the amount of usual rice consumption of the remaining households is estimated at 33,557 kg. Thus the estimated usual amount of total rice consumption in the village is 115,923 kg. This means the proportion of self-sufficient households was 31 % in 1998 and 42 % in 2000 (Figure 2).

⁷ According to interviews with the forest officers.

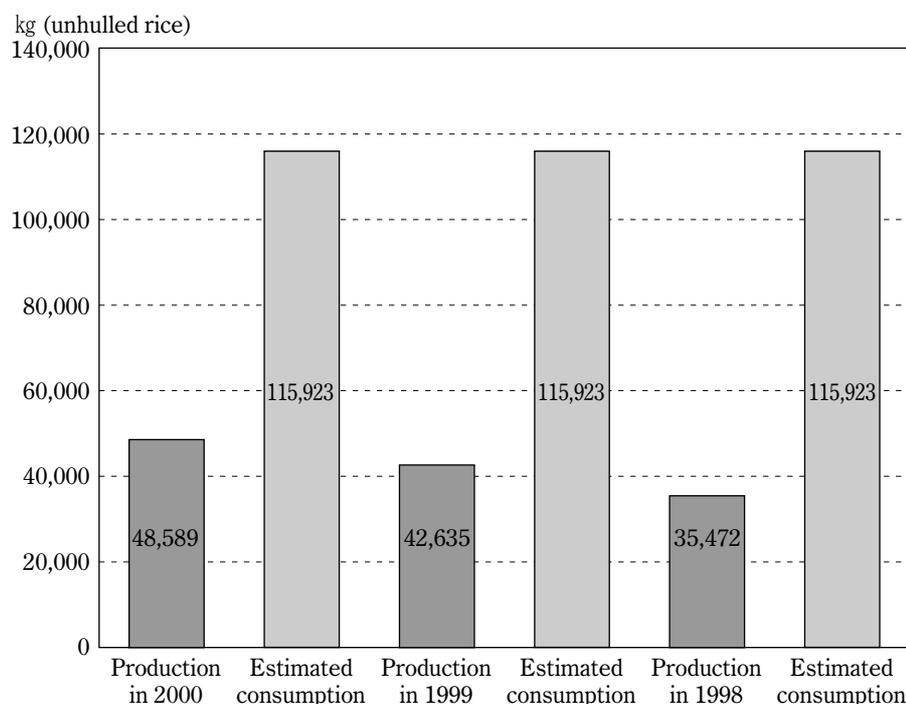


Fig. 2. Degree of self-sufficiency in rice

In addition, the villagers hold a total of about 103ha of uncultivated forest. A large portion of this customarily occupied forest is abandoned farmland. They cannot cultivate this forest because of National Park regulations. The total claimed forest, potential farmland, is about 2.5 times larger than the total existing paddy field area in the village. Then, how do the villagers cope with rice shortage?

The most popular way to cope with shortages is to exchange with other villages. 43 of the 68 households answered that they obtain rice by exchange. The villagers prepare brooms and mats made of natural materials, bark of *khun* tree (*Cassia fistula*), chewed with betelnuts, canned bamboo shoots, or bananas they plant or sometimes buy from other villagers. Then the villagers visit relatives or close friends in other villages to exchange the above products for rice. Villages they visit for exchange are sometimes in other districts, but sometimes as far as 50 km from Ngon Kham village. Most villagers who cannot produce a sufficient amount of rice are engaged in this type of exchange. It is also possible for the villagers to sell the above products in a market and buy rice. However they do not do this, because they can get more rice by exchange. The exchange rate is not fixed as; one broom does not equal a certain amount of rice. The villagers say 'that depends on how much rice they give', but at least the rate is better than the market. Some villagers say that this exchange is based on a kind of compassion of the rice-giver, and thus is somehow shameful.

The frequency of exchange and the amount of rice gained on each trip is not clear, and it is irregular, depending on whether the above products for exchange can be prepared or not. According to elders, the exchange of forest products for rice was also conducted in the old days when bad weather caused rice shortages. In former days, game, such as wild pigs or deer, were exchanged. Brooms and mat producers have recently received technical assistance from local NGOs, and production has increased. Changes in exchange produce like this and innovation in transportation have expanded the opportunities to acquire rice by exchange. The amount of rice gained from exchange has thus probably increased, considering both the difficulty of expanding farmland after the establishment of the National Park and low cash incomes as shown below.

Another way to deal with insufficiency of rice is, in fact, expansion of paddy fields. Though many villagers say they dare not expand their farmland for fear of being arrested, 13 households have expanded, even after the establishment of the National Park, and among these 13, eight households are still expanding, but slowly, step by step, around the existing paddy fields, so that officers do not notice.

Suppression on Upland Rice Cultivation

Upland rice cultivation was also changed by the establishment of the National Park. The villagers have historically cultivated upland rice. The upland rice cultivated in the village is a glutinous, black colored, local variety, while the paddy rice was completely replaced by a hybrid variety called 'Kho Ko 6'. Upland rice is seeded in May, and harvested in November (Photo 2). Formerly shifting cultivation of upland rice was popular. After one to three years of cultivation, the field is abandoned, and other forestlands are cleared. Apart from this, upland rice fields were also a way to clear land for a new paddy field: in the first year upland rice was cultivated, during which embankments were prepared, and in the second year the field was changed to a paddy field.



After the establishment of the National Park, forestland burning, in particular, has been strictly patrolled. Therefore even the rotating use of a limited area, for upland rice cultivation has become difficult.

In 2000, 24 households cultivated upland rice and 14 of them cultivated the field continuously. Only two households practiced shifting cultivation and six households cultivated upland rice as part of an expansion of paddy fields. One household practiced shifting cultivation, but after one to three years of cultivation, the farmland might have been abandoned or converted to a paddy field depending on the situation of the land. The remaining one household's cultivation style is unknown.

Many households answered that they were cultivating just a small area surrounding the paddy fields, and were not sure about the size of field. But the largest case by a single household was 0.32 ha (2 rai). As shown already, 15 of 24 households could estimate their upland rice yield in 2000, and the total was 2,886 kg in unhulled rice. Regarding the size of fields of these 15 households, the total of 12 households was 1.6ha (10rai) and the remaining three households answered 'just a little'. Supposing the size of these three households' fields to be zero, the average yield per rai (0.16 ha) of 15 households was 288.6 kg. Assuming the ratio of the size of field per household of the above 12 households, the total size of the fields of the 15 households was 2 ha (12.5 rai), and the average yield per rai was 230.9 kg. The average yield per rai of paddy rice of the village in 2000, calculated from the data shown in the previous section, is 184 kg. Thus, based on the data from 2000, the upland rice fields are more productive than the paddy field.

Among the above 24 households, six households experienced changes of style and/or place of upland rice cultivation. And aside from the 24 households, 17 other households cultivated upland rice previously though currently (in 2000) they have stopped. Thus in total, 23 households have experienced certain changes including abandonment of upland rice cultivation. The time of change or abandonment of each household is different, but in order to compare the current (in 2000) situation, the size of the field, style of cultivation, and the yield in the past of each of 23 households were calculated.

Of the 23 households engaged in shifting cultivation, two cultivated upland rice as a means of expanding paddy fields, and one cultivated continuously. The style of cultivation of the other two households is not certain. It is clear that in the past upland rice was mostly cultivated in swiddens. 20 of the 23 households remembered the size of their fields in the past. The total size of each household's fields ranged from 0.16 ha (1 rai) to 0.8 ha (5 rai), which was larger than the current site. And the total area of these fields was 7.04ha (44rai) to 9.12ha (57rai). Regarding the yield, nine households gave approximate numbers, totalling 5,907 kg to 6,152 kg in unhulled rice. The total cultivated area of these nine households was 3.68 ha (23 rai) to 4.32 ha (27 rai). So the average yield per rai in the past can be roughly estimated to be between 219 kg and 267 kg, smaller than the current amount as shown above. The average yield per household in the past was about 656 kg to 684 kg. The current total yield of the 15 households (in 2000) is 2,886kg. Thus the average yield per household in the past was three times larger than the current yield. This is because they cultivated larger fields in the past. Therefore, it can be said that regarding upland rice cultivation, land productivity was lower in the past, but productivity per capita was higher, and the contribution to each household's rice supply was more.

Then, when and why has each household changed its cultivation style or abandoned upland cultivation? The answers from the above 23 households were shown in the Table 1. First, changes of the cultivation style began in the early 1980's. The abandonment of cultivation did not occur until 1991, and in most cases occurred in 1991. As the villagers said, the establishment of the National Park was the cause.

Table 1. Year and the reason for change of mode or abandonment of upland rice cultivation in 23 households.

Year	Number of Households	Change/Abandonment	Reason
1981	2	Change: 2	1: increase of paddy field 1: labor shortage
1983	1	Change	
1991	12	Change: 2 Abandonment: 10	Change 1: conservation of timberland for future 1: conversion to paddy field Abandonment 8: regulation of the national park
1993	2	Abandonment: 2	1: establishment of patrol unit of the national park in the nearby village
1995/6	2	Abandonment: 2	
1996	1	Abandonment	
1997/8	1	Abandonment	regulation of the national park
1998	1	Change	conversion to paddy field
1998/9	1	Abandonment	

*Reason: only in cases of specific answers

In short, the strict regulation on burning diminished opportunities for upland rice cultivation, which was one of the causes of rice shortages. After the establishment of the National Park, upland rice cultivation, except for several 'brave' practices, has been limited to continuous cultivation surrounding the paddy fields, which is done with just small scale burning of grassland. As a result, the yield, as well as the size of the field, decreased.

Suppression on Upland Rice Cultivation

As shown so far, the problem of rice shortage is closely related to the establishment of the National Park, in particular the

limits it places villagers' land use, specifically paddy and upland rice cultivation. The process of change and the villagers' reactions are summarized below.

Before the establishment of the National Park, shifting cultivation of upland rice was common in parallel with gradual expansion of paddy fields. Paddy fields are typically cultivated on flatlands around a stream called 'hong' as the fields can be easily irrigated by damming the stream. In the first year of newly cleared land, upland rice was cultivated, and then, if suitable, the land was converted to a paddy field. The villagers divided the cleared land between paddy fields and upland rice swiddens according to hydrological conditions.

The establishment of the National Park prevented this pattern by suppressing burning. Shifting cultivation of upland rice, which requires large scale burning of the forest, was replaced by continuous cultivation surrounding the paddy field. Gradual expansion of the paddy fields with surrounding upland rice as the first year crop is still being practiced surreptitiously. The two cases shown in Table 1 indicating that all shifting fields of upland rice were converted to paddy fields at the same time seem somehow irregular. The fields of both cases were situated in a typical 'hong', suitable for a paddy field by damming the stream. They probably converted upland rice fields to paddy fields when the field expanded to a certain size. Though not witnessed by the villagers, the same kind of process might have occurred before 1980. In both cases cultivated upland rice continuously surrounded the paddy field after its conversion to paddy field.

The interesting point is that upland rice cultivation yields are higher than paddy cultivation as far as average yield per rai (0.16 ha). Upland rice cultivation is simpler than paddy cultivation, as one does not need to plow or use fertilizer. Thus, at a glance, it seems strange that villagers seek to expand paddy fields instead of upland rice. A possible reason for higher yields of upland rice is due to the irregularity of cultivation; even though upland rice is continuously in the fields, fields are not necessarily cultivated every year. Fallow times of one year or two years might enable this high yield. Another hypothesis is that the regulation of the National Park has disabled the division of land into paddy fields and upland rice shifting cultivation fields, based on land suitability. Relatively higher land that is not really suitable may have been converted to paddy fields, reducing average yields per rai.

ORIENTATION TO SELF-SUSTAINING LIFE

Negative Attitude to Migrant Work

The regulation of the National Park also restricts the development of infrastructure. The villagers must put up with numerous inconveniences such as lack of electricity, city water, telephone, and roads compared to other villagers surrounding the National Park. But the villagers emphasize the problem of rice shortage rather than these inconveniences. Of course, food is the most fundamental thing for survival. However, there is some evidence to show that the villagers regard self-sufficiency in food as the most important thing, rather than income generation or conveniences of life. Their negative attitude to migrant work highlights this. Here, the term migrant work means 'wage labor in an urban area in agricultural off season, keeping a base of life in the village'. So complete migration of a whole household out of the village is not included.

All existing 68 households in the village were questioned about the experiences with migrant work. 64 people have experienced migrant work, mostly in Bangkok. 53 (27 males; 26 females) of them were married, and 11 (7 males; 4 females) were not, at the time of the interview. In Table 2, the period of migrant work of married persons is classified into three categories: before marriage, before and after marriage (currently non-active), and currently active, and also classified by sex and home village (born and raised in Ngon Kham village or not). Only three males and one female who are married are still actively engaged in migrant work. On the other hand, 11 males and 21 females were engaged only before marriage. Then, 12 males and four females have experience with migrant work both before and after marriage, but currently have stopped.

The purpose of migrant work is, first of all, to earn cash income, since there are few opportunities to do this in the village. But in addition, the attraction of a big city like Bangkok is also an important factor, especially for younger generations. In fact, many villagers report that they did not bring money back home, but spent almost all of it in Bangkok. Moreover, in many cases, they could not put up with working in Bangkok for long. In an extreme case the person returned in just a week. Migrant work comes to an end in the process of family formation, which begins at marriage. Regarding females, it is apparent that they mostly cease migrant work at marriage. A portion of males might continue migrant work for a certain period after marriage, but they also cease when they have children. They say that they do not go because they must support their family. Even those who have vast experience and skills in construction or transportation cease migrant work in the

same way. They do not agree with the concept of supporting a family with migrant work.

The villagers say that in Bangkok, if they are sick or injured one day, they cannot eat since they must buy everything in Bangkok, but in the village they can eat without money. So they recognize it is more stable and secure to stay in the village to support their family.

Furthermore, there is a frequent flow of men and information between the village and the outside. Particularly migration by marriage across villages form personal networks of relatives, which plays a role in the transfer of information. As mentioned above, securing rice by exchange utilizes this network. Table 2 also shows that the pattern of migrant work is not different between those who are born in Ngon Kham and those who are born in other villages and have migrated mostly by marriage. This means that the negative attitude to migrant work of those who are married is not enforced by the socio-economic or cultural environment, but rather is their own choice from several possible options.

Table 2. Villagers' experiences with migrant work. (Unit: person)

	Married			Single			Total
		Born in the village	Immigrated (mostly in-marriage)		Born in the village	Immigrated (mostly in-marriage)	
Male	Total	16	11	Total	7		34
	Currently active	2	1	Currently active	4	—	
	Abandoned	8	4	Abandoned	3	—	
	Before and after marriage						
Only before marriage	6	5					
Female	Total	21	5	Total	4		30
	Currently active	1	0	Currently active	1	—	
	Abandoned	3	1	Abandoned	3	—	
	Before and after marriage						
Only before marriage	17	4					

Low Cash Income

As the natural result of the negative attitude to migrant work mentioned above, the villagers' cash income is very low. The biggest income source is wage labor within and nearby the village, in which 26 of the 68 households were engaged in 2000. 23 of the 26 knew the annual amount, totalling 292,475 Baht (1 USD equals to about 40 Baht). Six households sold cows or buffaloes, totalling 45,500 Baht. 10 households had income from migrant work or received money from their children living in Bangkok. Eight of them knew the amount, totally 62,500 Baht. There are seven governmental officers. The annual salary of the Village Headman is 18,000 Baht (1 position), and Headman's Associates (3 positions), and Members of Sub-district Council (2 positions) 12,000 Baht. The officer at the Public Health Care Station (1 position) receives 60,000 Baht a year.

Besides them, many villagers sell forest products such as mushrooms, bamboo shoots, or wild animals, however the amount received is not clear. According to my own observations, it is not more than 5,000 Baht a year.

Figure 3 shows each household's total annual income in 2000, excluding the sales of forest products, in relationship to rice yield. Most household's annual income is less than around 10,000 Baht, and there is no significant relationship to rice yield.

Comparison to data from other areas in Northeast Thailand clearly shows that the income of Ngon Kham villagers is low. According to the statistics, the average monthly income of farmers' households in Ubon Ratchathani Province in 1998 was 8,427 Baht per household, and the average expense was 7,097 Baht (National Statistical Office, Thailand 2000: 248-249).

Furthermore, the provincial lowest average monthly income of farmers' households in Northeast Thailand in 1998 was 4,210 Baht per household in Nakhon Phanom Province, and average expenses were 4,371 Baht in Chaiyaphum Province (National Statistical Office, Thailand, 2000: 248-249). For village level data, there are research data gathered when the master plan of Pha Taem National Park was drafted (Number One Consultant Co. Ltd, 1999). This report says that the average income of the villages surrounding the National Park is about 6,400 Baht, while of the villages inside the park, it is about 3,000 Baht (*ibid.* Chapter 3: 18), and that of Ngon Kham village is just 2,623 Baht (*ibid.* Chapter 3: 22)⁸.

As shown above, the villagers' income is quite low and the livelihood is one of subsistence in Ngon Kham village. This characteristic is also reflected in self-sufficiency in foods other than rice.

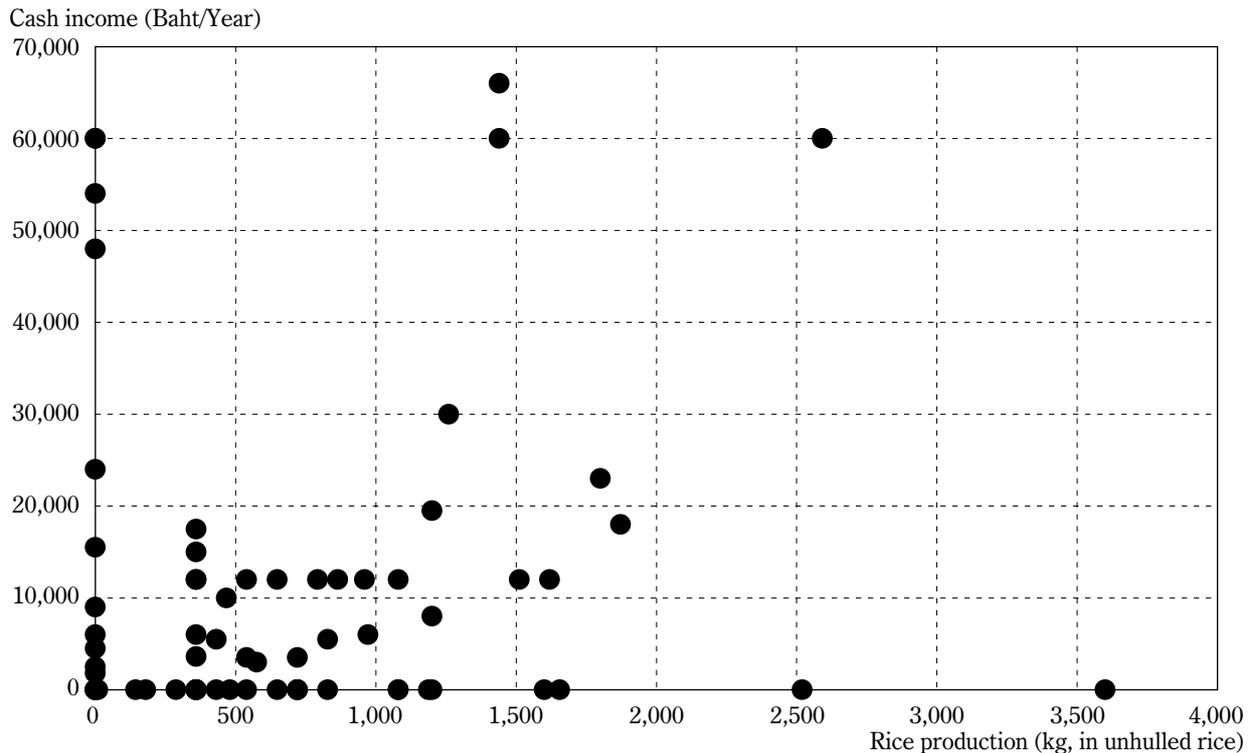


Fig. 3. Cash income and rice production in 2000 for all 68 households in the village

*Cash income includes wages (both in the village and migrant work), salary, remittance, and sales of cattle.

Self-support of Foods Other than Rice

A large portion of the materials used for villagers' daily dishes are hand made, even though some materials, such as fish source, salt, garlic, and onion, must be purchased.

I have recorded the dishes cooked in my host family in the village between 1998 and 1999. Details have already been provided (Fujita, 2000), but some important features can be summarized as follows. First, more wild plants and/or animals are used than planted or raised ones. Secondly, there is a seasonal difference between the rainy season and the dry season. In the rainy season, villagers can regularly obtain bamboo shoots at any time, while, in the dry season, there are no such stable food sources. But the villagers do not store the abundant bamboo shoots collected in the rainy season. The villagers also sell wild foods to outside merchants, though the amount is not much.

Following these features, the diets of 15 households in the village were surveyed in the rainy season (from July 20 to August 30, 2000) and in the dry season (from February 10 to March 20). The number of cooked items was counted and classified based on the main material of each dish into wild, planted/raised, homemade, given by neighbors, and bought. The

⁸ These figures are supposed to be per capita. However, there are no remarks on units. In any case, it shows the relatively low income of Ngon Kham compared to surrounding villages.

results are shown in Figure 4 (rainy season) and Figure 5 (dry season). All 15 households share some features: 1) Wild materials account for the largest portion, while a small portion is bought, both in the rainy and dry seasons, 2) In the rainy season, the portion of wild materials is slightly larger than in the dry season.

The high dependency on wild foods is no doubt related to the low income. However, it is not true that the villagers are forced to do so because they are poor. As mentioned already, abundant wild foods secure the stability of villagers' lives so that they can choose to live without money.

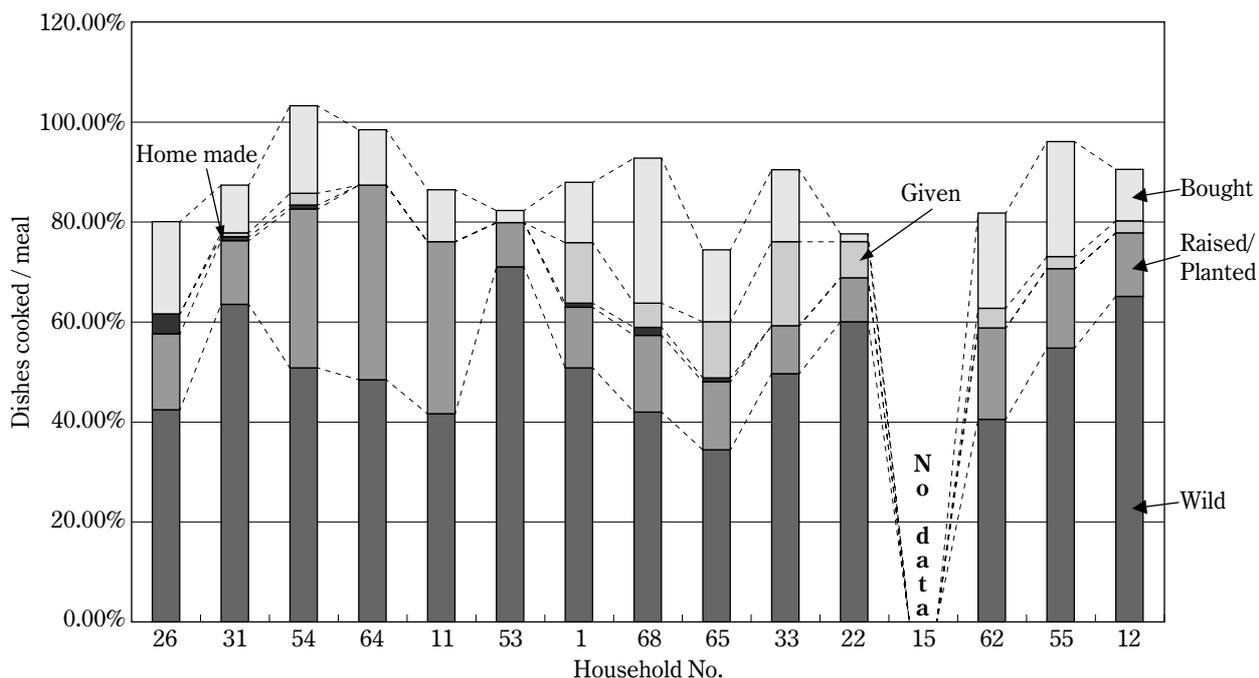


Fig. 4. Source of main food materials of dishes of 15 households in the rainy season.

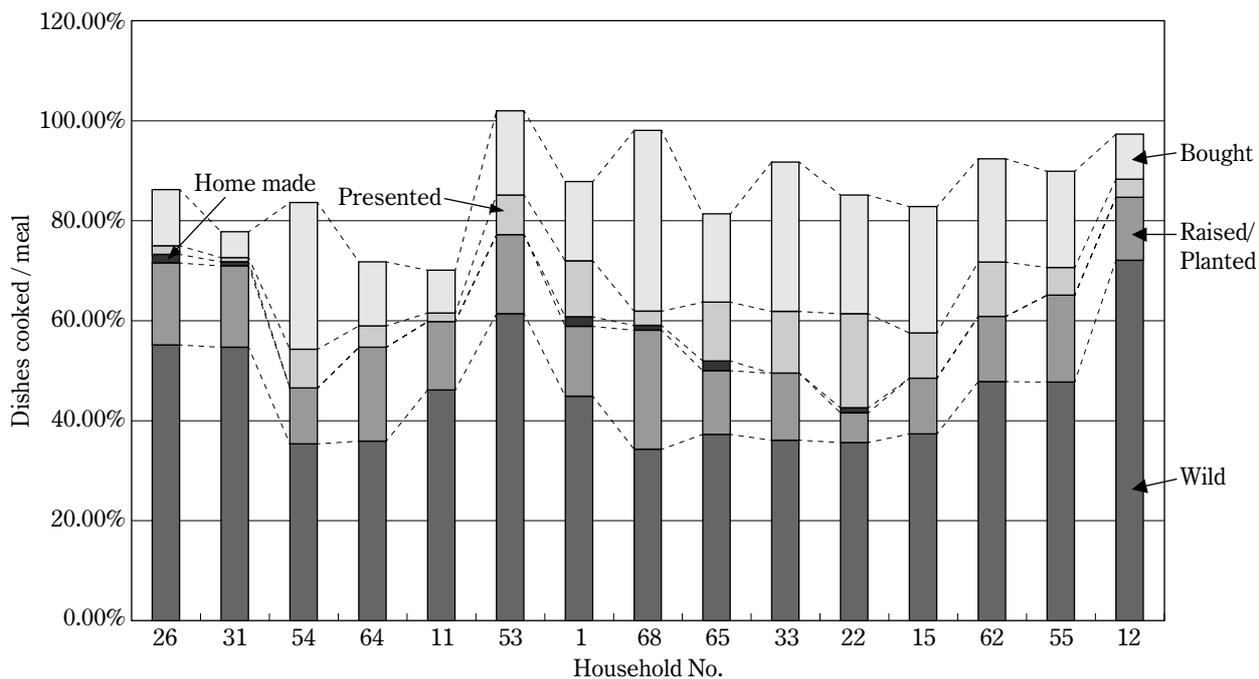


Fig. 5. Source of main food materials of dishes of 15 households in the dry season.

Self-sufficient Life as a Choice

The villagers' orientation to a self-sufficient life, which, as shown so far, is reflected in their negative attitude to migrant work, low income, and daily diets, can be summarized as follows. The villagers' daily life depends highly upon the surrounding natural environment. Meals during rice shortage are also supplemented by the exchange of forest products. The villagers' cash incomes are low. But it is a point of pride among villagers that life in the village is not dependent on money and is therefore more secure than 'modernized' life. The villagers tend to cease migrant work when they need to support the family.

A remarkable point is that the villagers have chosen this self-sufficient life from potential alternatives. There is frequent contact with life outside the village. According to the villagers, there were no remarkable differences in daily life 20 to 30 years ago between Ngon Kham village and other villages surrounding the National Park. After 1991 when the National Park was established, outside villages were provided with infrastructure and a cash economy slowly penetrated. For example, in Nam Thaeng village, the mother village of Ngon Kham, a large portion of food materials, other than rice, is purchased. Various kinds of electric appliances and cars or motorcycles are commonly possessed. A woman who has recently married into Ngon Kham village from Nam Thaeng village does not know how to gather wild bamboo shoots or mushrooms. Nam Thaeng villagers say migrant work in Bangkok is also popular. Ngon Kham villagers know in detail about these situations. Especially, those who have married in from outside villages, 23 males and 13 females, could not only choose where to live after marriage, but also could select their mates in 'more developed' villages, rather than dare to be married into Ngon Kham village.

INSTITUTION, OFFICERS, NGOs, AND THE VILLAGERS

So far I have described the development of Thai forest institutions and their influences on Ngon Kham villagers' subsistence. In this section, this whole process will be discussed from the viewpoint of interaction between forest officers and the villagers.

The national level institution of forest spatial conservation was first established in 1938, and then, since 1964, actual conservation has been accelerated. The area around Ngon Kham village has been designated a National Forest Reserve since 1973, regulations were not really followed by the villagers nor the officers. The forest conservation institution did not substantially restrict the villagers' subsistence until 1991 when the National Park was established. The National Park prohibits expanding or burning farmland. However, still these regulations do not satisfy all of National Park Act requirements. Pha Taem National Park office allows the villagers to stay and cultivate previously cultivated lands, gather forest products, and get the timber for house construction. The head of the National Park explains that these silent approvals are needed, because the villagers are poor and their livelihood depends on the natural environment. Moreover, he is afraid of the villagers' possible reactions if the rules of the Act are strictly practiced. In short, he tries to keep a balance between the reality of the villagers' life and the necessity to prevent obvious destruction of the natural environment.

Then, how did the villagers cope with these institutions? The villagers did not protest against the establishment of the National Park or the designation of the National Forest Reserve. Instead, they made a direct appeal to Princess Sirindhorn for the withdrawal of the plan to resettle the villagers out of the National Park when she visited the village just after its establishment in 1991. The villagers' main strategy is to slowly expand the farmlands and daily hunting activities that are practically prohibited and regulated. However, they are not engaged in illegal logging in an explicit way, partly because they are afraid of resettlement.

NGOs also mediate between forest officials and the villagers. They often organize village meetings to understand the villagers' needs and try to introduce various development projects. The villagers emphasize the demand to expand farmlands for self-sufficiency of rice and secure land tenure excluded from the National Park area. The villagers, with the assistance of NGO officers, once submitted a petition for exclusion from the National Park, including with it a map of detailing the requested area changes to the Royal Forest Department. They did not receive any reply⁹⁾.

9) Apart from the villagers' individual petition, there is a nationwide project to legalize the existing cultivation or residence on the land within National Parks or Wildlife Sanctuaries, that has been used since before the establishment of National parks or wildlife sanctuaries. This project is based on the cabinet resolution on September 16, 1997 (The Secretariat of the Cabinet, Thailand, 1997). According to the responsible forest officer in Ubon Ratchathani Province, forest officials have ongoing surveys of the land. Ngon Kham village is also included in the project, but the area, which will be permitted by the forest officials, is a fraction of the area the villagers are demanding.

Besides them, 'Dong Na Tham Forest Network', *khureakhai pa dong na tham*, a network of villagers around the National Park, including Ngon Kham village, is encouraging each village to establish a community forest of its own, and it is making progress to coordinate the villagers' community forests¹⁰. This network is also working in close contact with forest offices and NGOs. However, the same kind of governmental project by Ubon Ratchathani Regional Forest Office cannot carry out any substantial activities in Ngon Kham village, as it is situated in the midst of the National Park.

CONCLUSIVE DISCUSSION: FOR THE CONSERVATION OF DIVERSITY OF SOCIO-ECOLOGICAL SPACES

Formation of Socio-ecological Space by the National Park

As shown so far, the establishment of the National Park not only legally made villagers criminals and actually caused changes in the villagers' subsistence but also differentiated them from surrounding villages and retained their subsistence-based life space. This is an unintended result of the Park officers' realistic actions. On the other hand, the villagers have also chosen this self-sufficient life, a life that does not need cash. And it is true that the rich natural environment that enables such a self-sufficient life is preserved by the National Park.

The interaction of all these factors forms a unique socio-ecological space, which is quite rare in current Thai society. Since the late 1980's Thailand achieved rapid economic growth. As a result, commodities like electric appliances or motorcycles and simultaneously a cash economy has proliferated even in the rural areas. Development policy has been carried out with the assumption that everyone values economic wealth firstly. However this is not true for Ngon Kham villagers, though they do not reject modern convenience or financial success. The National Park has kept a space for the villagers that is separate from conventional development.

Conservation System for the Diversity of Socio-ecological Space

So far, the conservation system for the natural environment and development have been two sides of the same coin. Development absorbs all of the people regardless of whether they want it or not. The border of the protected area has been a bulwark against development. The idea of sustainable use of natural resources by management with local people's participation is a kind of mediation between the two, which shares the assumption that everyone is seeking economic development. The only one exception is the argument on "native people": native people are recognized to have another culture that is harmonious with nature, totally different from "us", who will destroy the natural environment for development¹¹.

However, this demarcation is not necessarily by ethnic group. There can be a diversity of values within a nation, an ethnic group, a region, a village, or a family. The respect for cultural diversity is, in the aspect of the human-nature relationship, to secure socio-ecological spaces that enable each value, or culture, to survive. This does not always mean just giving rights to the local people. In some cases, the government must be in charge to understand the diverse livelihood needs and design a plan for the co-existence of them all.

In the case of Ngon Kham village, it is necessary to reconsider some policies to improve the socio-ecological space need for a self-sufficient life, for example, a reasonable mixture of paddy fields and upland rice swiddens so as to address the rice shortage. If rice yields cannot be maintained even after any improving farming techniques, a certain amount of expansion of farmland might have to be permitted. However, on the other hand, the villagers still hold a traditional idea that the problem of rice shortages can be resolved only by the expansion of farmland. Therefore it is necessary for the villagers to understand that unlimited expansion of farmland, too much hunting, or over-herding will destroy the natural environment that secures "the life that does not need money". This gap in perception between the officers and the villagers is the most significant problem. Especially, the local officers who mediate between the institution and local reality should play a critical role. The formation of socio-ecological spaces must be based on the mutual understanding between local officers and the villagers.

10) Mr. Chok, a villager of Na Pho Klang village, is the chairman. Currently the network has more than 20 villages as members.

11) This kind of argument has been developed in international organizations and been reflected in the actual management of protected areas. For details, see (Stevens ed., 1997).

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