

# Cabbages, Roads and Metropolitan Areas: Towards Sustainable Development of a Highlander Village in Northwestern Thailand

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## 1. Introduction

The ethnic highlanders in Northern Thailand have been experiencing agricultural transformation for more than four decades in the sense that they have had to continuously search for the optimum trade-off point for each of their villages *between* the "modern competitive market-economy agriculture" *and* "traditional local self-sufficiency agriculture" *under* a given set of constraints. In this context, this paper focuses on the effects of mountain roads upon modernized farming options, especially upon cabbage cultivation, by the highland farmers traditionally living in the swidden communities in the Northern Thai highland region. For this purpose, the present study selects Ban Mae Chang as its research site which is a Pwo Karen village in Mae Sariang district of Mae Hong Son province. In the following, the basic characteristics of Ban Mae Chang is briefly described in Section 2, followed by the discussion of the national land-use policies on the management of natural resources and environments in Section 3. In Section 4, the cabbage production activities in the highland region are examined in conjunction with the

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local agricultural constraints and possibilities. The effects of the mountain roads upon the sustainable socio-economic development of the village of Ban Mae Chang is investigated in Section 5, followed by the concluding remarks in Section 6.

## 2. Ban Mae Chang: Geography, History, Culture and Socio-economic Characteristics

As can be seen in Figure 1, Ban Mae Chang is located in the mountain district (*amphur*) of Mae Sariang in Mae Hong Son province (*chanwat*). In its vicinity, there are at present one Skaw Karen and five Pwo Karen villages<sup>1</sup> as administrative divisions under the Mae Ho sub-district (*tambon*) government office. The village settlement of Ban Mae Chang whose residential-area map<sup>2</sup> is given by Figure 2, was established more than 200 years ago, perhaps going back as many as 250 years (from interview).<sup>3</sup>

Ban Mae Chang is situated in the mountain region about 880 meters above sea level, in which villagers have traditionally practiced "rotational swidden<sup>4</sup> cultivation" (Yos 2003:26) (or shifting cultivation) using their own farming fields of four or five plots by rotation. Basically, nearly all household practice dry rice farming every year to produce enough rice for its members. In the same dry rice field, they often simultaneously grow together with the dry rice such crops as corn, potatoes, pumpkins, beans, sesame, chilli, cucumbers and other green vegetables. A dry rice field plot is used for one year and then left fallow in the following four to five years. Additionally, irrigated terrace<sup>5</sup> farming has been also practised in the village since the 1960s. According to the authors' survey in 2002, out of the total rice yield (6,041 *thang*<sup>6</sup>) of Ban Mae Chang produced by the 51 households surveyed in this village, the yield of swidden rice was 4,571 *thang* (76% of the total rice yield), while the terrace rice was 1,470 *thang* (24%).

The general life of the villagers in Ban Mae Chang has been based heavily on the production of rice, which implies their belief system is closely related to year round rice farming. They still practice traditional ritual ceremonies for various important agricultural products, except for cabbages, to ask for help from the spirit of all natural resources in the Pwo Karen world before and during the farming

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1 All of the seven villages (Mae Kanai, Mae Chang, Dong Ku, Dong Luang, Huai Pla Kang, Khun Wong Thai and Khun Wong Nua) have been existing at least since the early 1970s.

2 As to the GONGOVA described in this figure, see Kawashima and Samata (2002).

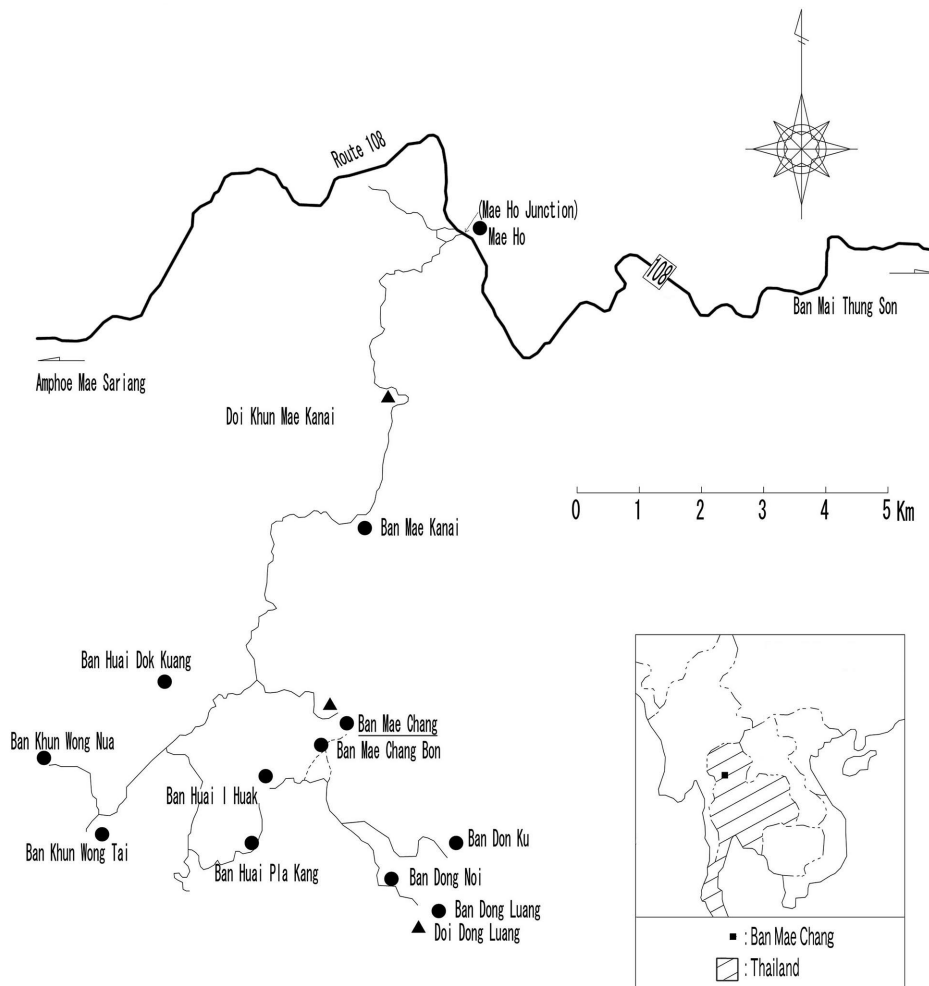
3 Administratively, Ban Mae Chang consists of its major part and satellite part which is called Ban Mae Chang Bon. The total population of Ban Mae Chang is 298 persons from 73 households; 245 persons from 54 households in the major part, and 53 persons from 19 households in its satellite part (surveyed in February through March, 2002).

4 When the term "swidden" is mentioned in the context of Thai agriculture, it mainly refers to "dry" or "upland" rice cultivation which can be clearly differentiated from "wet," "lowland" or "paddy" rice farming conducted by the lowland-Thai people (Judd 1977:137). "Swidden agriculture" is defined, according to Conklin (1957:1; cited from Judd 1977:138), as "discontinuous cropping of particular fields which are slash-cleared and burned for one or more year's crops, and then allowed to lie fallow and return to natural vegetation for at least several years before being used again."

5 "Irrigated terrace" is generally defined as "the use of an artificial means to influence the supply of moisture to increase crop production" (Yudelman 1989:63), and the irrigated terrace does not require a fallowing period to regenerate itself as does the swidden.

6 One *thang* is equal to 20kg.

**Figure 1 Location of Ban Mae Chang and Local Extension Market for Cabbage at Mae Ho (Map: A Part of Mae Sariang District in Mae Hong Son Province)**



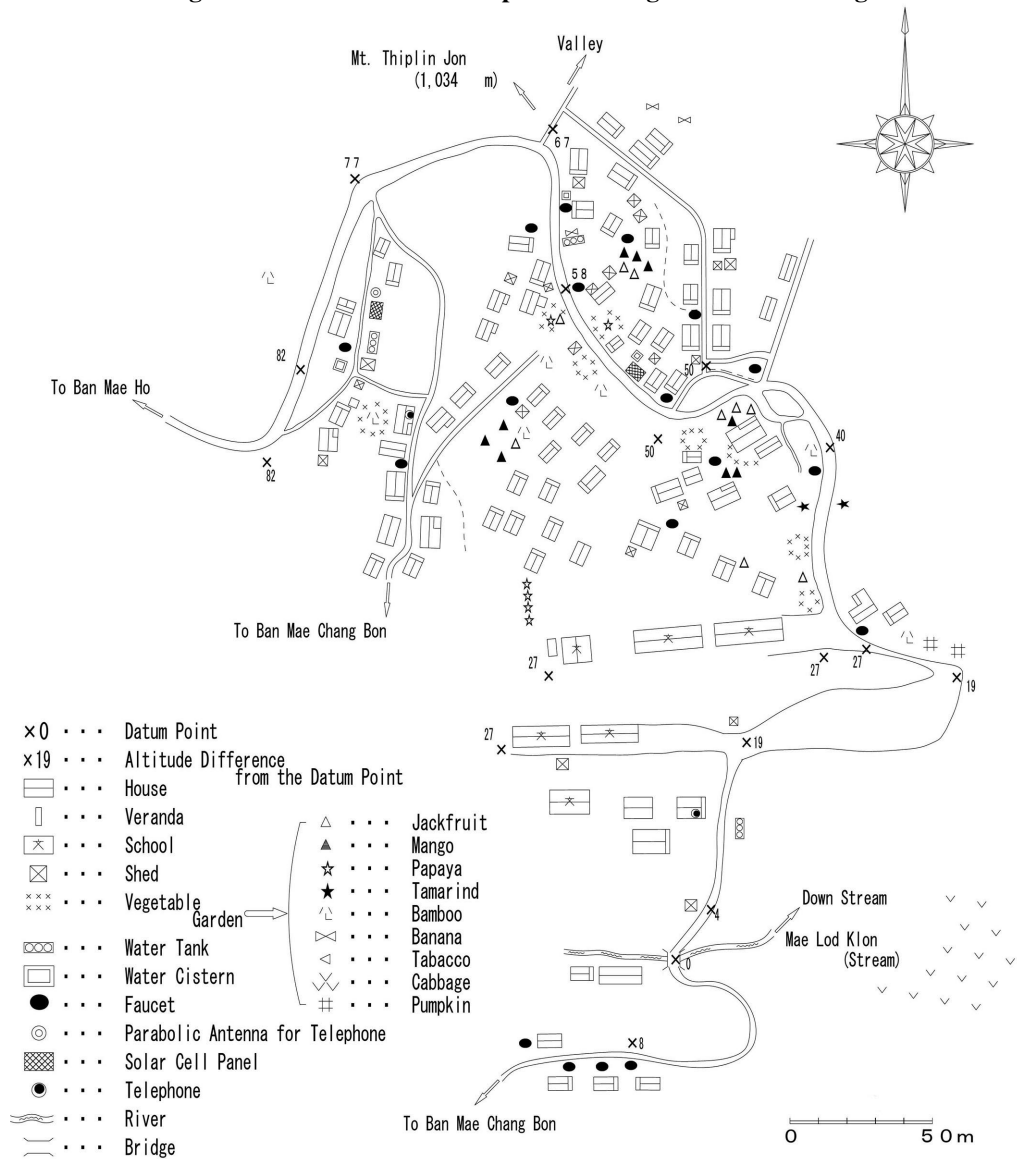
**Legend:**

- . . . Arterial Road  
(Hard Surface Paved Road)
- . . . Local Road (Loose Surface  
Unpaved One-lane Road)
- - - . . . Footpath, Trail
- . . . Village
- ▲ . . . Mountain

**Sources:**

- (1) Map surveyed by satellite imagery in March 1992  
(Sheet No. 4645111, Series L7017S, Edition 1-RTSD,  
BAN BO SALI; published by Royal Thai Survey  
Department, Bangkok 10200)
- (2) Direct observations through the field-study work  
by the first author

**Figure 2 Residential-area Map of the Village: Ban Mae Chang**



Cartography Project for Ban Mae Chang, Mae Sariang, Mae Hong Son, Thailand

Director: Runako Samata (also serving as supervisor)

Assistant Engineer: Yuji Ito

Research Assistants: Students of Gakushuin University (GONGOVA2002 participants)

Research Advisors: Hirohisa Samata and Tatsuhiko Kawashima

First Survey : March 2002

Second Survey : June 2002

Third Survey : August 2002

Fourth Survey : December 2002

Fifth Survey : January 2003

season.

The strongest ties in their society are cognatic relationships (Hinton 1975:36), since the society of the Pwo Karen is commonly matrilineal and the mother's line is respected (Kwanchewan 1988). Through our personal observation, although the traditional inheritance system has been gradually changing due to the increasing limitation of housing space and living convenience, the matrilineal system (Yos 2001:108-112) is still being practiced in the community.

In Ban Mae Chang, their religion is basically Buddhism mixed with animistic belief. There is a traditional religious village headman (*chia kei khu*) in each village. The senior authority of the community used to be this religious village headman, who led almost all village activities, making decisions on the schedule for the ritual ceremony for the community, assigning each farming area for each household every year, and settling disputes among the villagers. His status is still the highest in the ritual hierarchy, and the office succession is hereditary, as his eldest son usually inherits the post (Hinton 1979:83). Meanwhile, there is a female spirit head (*ther mue khae khu*) whose concern centres around the sound health of the members of the lineage in the village (Kwanchewan 1988:86, and interview in August 2002).

In the present village administrative system, there is one "elected official village headman" and two "elected assistants to the headman." In addition, two sub-district administrative office (*O.Bo.To.*)<sup>7</sup> members are elected from and by the villagers. The official headman is a representative of the village, and is responsible for the relations between the village and the local government office in Mae Sariang district. He and his two elected assistants perform officially recognized administrative tasks. They generally have the ability to speak Thai. According to our survey, all of those three elected persons can have a relatively higher income than other villagers partly because of a regular monthly salary paid by the local government and some additional benefits directly or indirectly associated with their positions.

Before closing this section, let us briefly look at for reference the case of the Pwo Karen village of Ban Dong Luang, concerning the process of agricultural transformation of this village from the stage of the traditional swidden farming to the stage of the modern cash-crop farming.

In Ban Dong Luang<sup>8</sup>, a neighbouring village of Ban Mae Chang, they no longer conduct rotational farming as in Ban Mae Chang. Each household in Ban Dong Luang presently holds about two or three farming plots of swidden to grow only dry rice, or both dry rice and cabbage in turn each year. Their land, in the form of either swidden or irrigated terrace, has in general been seriously deteriorating over the years as a result of, for example, continuing population growth, increasing overuse of farmland, ever-increasing difficulty of opening up new farmland, and the constant use of chemical fertilizers. There are 14 households out of the total 63 households that own the irrigated terrace. Some of them grow only wet rice and no dry rice at all for their own consumption as well as cabbage cultivation in their swidden nearly every year. In this village of Ban Dong Luang, the majority of households engage in cabbage cultivation.<sup>9</sup>

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7 *O.Bo.To.* is the abbreviation of *oŋkaan boorihǎan sàan tambon* (tambon <sub-district> administration organization).

8 Ban Dong Luang has a population of 248 persons from over 60 households (in the major part of the village), and is located around 1,050 meters above sea level, higher than Ban Mae Chang.

### 3. National Land-use Policies: In Highland Region

The history of the forest management in Thailand started in the era of King Chulalongkorn's modernization projects from 1869 to 1911, under the influence of the European approaches, to establish an administration and to integrate the kingdom's regional tributary states of the North, Northeast and South regions. With this background, the Royal Forest Department (RFD) was established in 1896 on the recommendation of a British forester who served as the then concerned administrator. Subsequently, the forest regulation scheme of the central government was gradually expanded through acts like the Forest Protection Act of 1913 and the Protection and Reservation of Forest Act in 1938. The government initiated the authorization of land ownership rights (title deeds) under the Land Act in 1954, and this nationalization of the forest continued into 1960. Then, the National Forest Reserve Act of 1964 was enacted, which were the starting point for conflicts between the activities of forest resource preservation and those of agricultural land use by the highland swidden-shifting cultivators (Sureerantna 2001:118).

Within the Thai legal framework, all the land including the forest, belongs to the state (Sophon 1978:46), and the RFD holds full responsibility for the administration and management of the forest resources and issues concerned with the forest resources. Under this framework, since the 1970s, the RFD has set up stricter programmes than ever to halt forest loss and deforestation, to which shifting cultivation by the highlanders has been alleged to contribute. Dominated by the ideology of conservation, the RFD has pursued active reservation programmes for the forest since the 1960s, when conflicts between local people and the scientific forest classification system started. According to the research at the end of the 1980s, it was estimated that 1.2 million families, approximately 20% of Thai farmers, were in illegal occupation of land in the forest reserves (Hirsch 1990:168, cited from England 1996:65).

With the Wildlife Preservation Act in 1960 and the National Park Act of 1961, the government has continuously enclosed more and more forest areas to conserve natural forest resources and to solve the hotly debated deforestation issue (Santita 1996:261). In Uthaitani province, in 1986, there was an act of resettlement in line with these coercive forestry policies, through which a large scale relocation of villagers took place in the extension project of the Huai Kha Khaeng Wildlife Sanctuary inside which logging and swidden agriculture were totally prohibited. In conjunction with this case, six Pwo Karen youths were arrested, jailed, and accused of illegal felling, although it was said that the logs they cut were a few small trees for house posts (Gravers 2001:68). There are an estimated 5,000 to 8,000 Karen people living in the Thung Yai-Naresuan-Huai Kha Khaeng sanctuaries and national parks, which cover a total forest area of about 14,000 km<sup>2</sup> (*ibid.*). Inside the sanctuary and at the border of the new buffer zone around the sanctuary, there are some Pwo Karen villages in the Ban Rai district in which the villagers can neither exercise their communal-use rights over their commons anymore, nor do they have the chance to participate in any related projects. Moreover, restrictions and controls over the forests were enforced with increasing vigour, to the point that the villagers now have practically no access to the

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9 The 13 households out of 63 in Ban Dong Luang did not grow any cabbage in 2002.

forest resources (*ibid.*).

The situation of the Pwo Karen people in the forests of our research site in Mae Sariang district is different from the above case in which the Pwo Karen people have suffered from marginalization and the strict prohibition to carry out the swidden farming. There are two major reasons for this. First, the differences in geographic importance and configurations in terms of the watershed natural resources between Uthaitхани province and Mae Sariang district of Mae Hong Son province. The second is related to the official classification of land-use category; the research site of the present paper in Mae Sariang district is classified as "reserved forest (*pàa sajjáan*)," in which enforcement of official forestry policies is not so strict as in the areas classified as the area of "protected forest (*pàa ànúrák*)" as indicated by Figure 3. The villagers of Ban Mae Chang, therefore, have not been so harshly restricted in their traditional farming<sup>10</sup> so far. As far as the authors know from their fieldwork there, the relationship between the Pwo Karen people and the office of the RFD seems to have been moderate.

#### 4. Cabbage Production

It has been over a decade since cabbage cultivation was introduced as a cash crop to bring economic growth to the highland communities in Mae Sariang district. Since the latter half of the 1980s, the villagers of Pwo Karen in this area were engaged in cabbage cultivation as daily labourers for the *Hmong* people (another ethnic group in northern Thailand) who rented land from the Karen. It was through this means that the Karen farmers learned how to grow cabbages (Kwanchewan 1988:103, and interview). After the promotion of cabbage cultivation, the mountain road from the above-mentioned villages was partially paved (two 100m segments) to transport cabbages to the nearby Route 108 junction and to the trading point Mae Ho. As a result, some Karen villagers have made relatively large profits through this new type of agriculture.

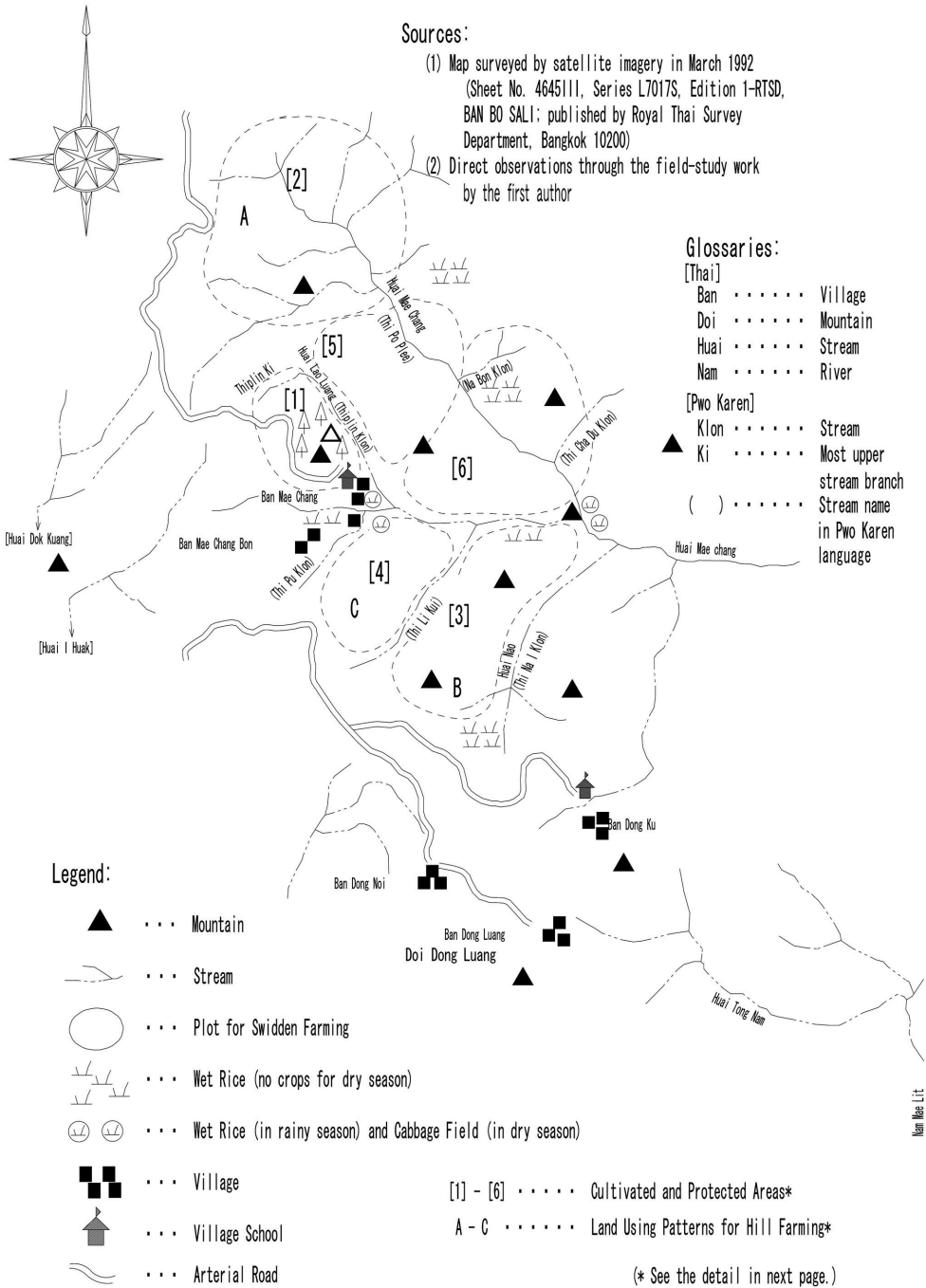
The cabbage cultivation by the Ban Mae Chang villagers was also launched in both swidden and irrigated terrace fourteen years ago. In the beginning, a number of households in the village engaged in the cabbage cultivation. However, they experienced a big loss five or six years ago. After then, only around 10 families have been growing cabbage, in the fields regularly near the road in Ban Mae Kanai (interview with the villagers in August 2002). In Ban Dong Luang which is another Pwo Karen village near Ban Mae Chang, almost all farmers are presently engaged in cabbage cultivation. Since some villagers had begun to grow cabbage towards the end of the 1980s, the function of the swidden system in Ban Dong Luang has been enlarged as a whole, although their per-household area of the arable land has become smaller and smaller.

In Ban Mae Chang area, the cabbage cultivation which is usually carried out in the swiddens near the road, is in general conducted simultaneously with rice farming in other parts of the swidden by utilizing rainfall. Since in the village they do not have any special irrigation system for the cabbage cultivation in the swidden, they just practice cabbage farming as conditions allow, as in the case of dry-rice farming. Therefore, their cabbage cultivation starts with the arrival of rain in May, as with dry rice.

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10 Regarding the farming activities, and the land-use pattern in the vicinity of Ban Mae Chang, see also Figure 3 and its remarks.

**Figure 3 Natural Resources and Land Use in Ban Mae Chang and Its Vicinity**





### Figure 3 (Continued)

#### Remarks for areas (or lots) [1] - [6] and sub-areas [A] - [C]

[1] ***Thiplin Phεε Area*** (Protected forest including community forest area)

.....Mt. *Thiplin Jon*

.....Mt. *Plon Alon Lu* (Burial Forest)

[2] **Area in the vicinity to Ban Mae Kanai** (This place is close to the road.)

A -- Partially cultivated area in 2002:

Used for cabbage (almost annually) and dry-rice production in the rainy season.

There are six households from Ban Mae Chang involved in cabbage production here.

(All cabbage producers here enjoyed profits in 2002.)

[3] ***Kui Pha Lεε Area: Vicinity to Ban Dong (Luang & Noi)*** (This place is close to the roads.)

B -- Partially cultivated area in 2002:

Used for cabbage (almost annually) and dry-rice production in the rainy season.

(Some cabbage producers here went into the red in 2002.)

[4] ***Yo Lo Moi Area***

C -- Partially cultivated area in 2002:

Used for cabbage (By use of the 2002 Village Fund) and dry-rice production in the rainy season.

(Some cabbage producers here went into the red in 2002.)

[5] ***Du Li Khu Area***

Totally cultivated area in 2003:

Used mainly for dry-rice production in the rainy season.

[6] ***Tha Po Area***

Totally fallowed area in 2002 and 2003 (Fallow period: around four or five years):

This lot will be used for agricultural cultivation in the rainy season of 2004 (and perhaps be used again in 2009 after four years of fallow period).

In May, they start to prepare the land for cabbage cultivation, and to grow a nursery for cabbage for about 35 days. They make contracts with cabbage middlemen in May; plough the fields from May to June; make a nursery for growing cabbage seedlings in July; a month later, they transplant the young cabbage plants into the swidden fields; three weeks later, applying fertilizers and chemical pesticides; they weed the cabbage during the next three months; and harvest them towards the end of October. In August, the seedlings from the nursery are transplanted to other plots at intervals of 30 cm. After this, they start to weed and continue this work until the harvest time. During this period, they put chemicals on the seedlings ten days after transplantation, and apply two kinds of fertilizer (e.g., type 16-20-0 fertilizer to enrich the soil in the beginning, and type 21-0-0 fertilizer to give the cabbage a good-looking round shape three weeks after transplantation). If they find insects on the cabbage, they apply pesticide.

It generally takes about three months before the cabbages are harvested around the end of September or early October, depending on when they start. Family members usually work together, so relatives share the labour needed for the cabbage cultivation. When that happens, the profits gained from the cabbage is shared with the relatives. When school is over, the elder children are required to work with the adults in the cabbage fields as well as in the rice fields.

In Ban Mae Chang, there is one household that owns a terrace close to the residential area of the village. In 2002, this family began to grow wet rice on the terrace during the rainy season, and cabbage during the dry season on the same terrace using sprinklers. The family starts to plant the cabbage nursery beds of the beginning of January. At the same time, they start to prepare the land for transplanting the cabbage seedlings to the terrace. In February, the seedlings are transplanted, and fertilizer and pesticide are applied in the same manner as for the swidden fields. In January 2003, as a new effort, this family started to grow cabbage in another plot of the terraced field (2 *rai*<sup>11</sup>), which is owned by the parents of the head of this family, and the terrace used the last time is left fallow. The harvest takes place during April when the market price is usually best, and the cabbage crops are transported from the village to the trading market at Mae Ho by small-sized pick-up trucks.

## 5. Road Conditions to Metropolitan Consumers through Local Trading Market

### 5-1 Ban Mae Chang - Mae Ho - Bangkok

From Ban Mae Chang to the cabbage trading market at Mae Ho which is the nearest highway junction to the Pwo Karen villages in the area where Ban Mae Chang is located, it takes slightly over an hour by car during the dry season on the 15km unpaved mountain road with six paved short-distance segments (approximately 1.5km in total segment-distance at the 10.7km, 10.8km, 11.2km, 11.9km, 12.2km and 13.6km points from Ban Mae Chang). The partial pavement of the road started in 2000 to assist the transport of cabbage from the seven Karen villages to Mae Ho, although the paved portion is still less than 10% of the total road-length. In the rainy season, the condition of the road often becomes extremely muddy and slippery so that vehicles cannot travel easily or even at all. In Ban Mae Chang, there are three pick-up type cars which are owned respectively by the official village headman and two of his relatives. It is still not unusual at all for the villagers to go to Mae Ho and back on foot.

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11 One *rai* is equal to 0.16 ha.

As for road access, if we drive south along this mountain road from Mae Ho, we arrive at the intersection near Ban Mae Chang. Taking the direct route<sup>12</sup> to Ban Dong Luang from the junction, the cabbage fields can soon be seen. In the rainy season, we see them extending up the mountain-side to the distant upper ridges, while the pea-green rice fields can be seen in the valley paddies. We reach Ban Dong Noi (the satellite part of Ban Dong Luang) before we get to Ban Dong Luang. In the rainy season, the narrow dirt road, which is the only way for the villagers to transport cabbage to Mae Ho, is terribly muddy and slippery. There are nine pick-up type cars owned by the villagers in Ban Dong Luang, and eight in Ban Dong Noi. Among the younger generation, motorcycles are more popular than cars as a means of getting to town areas. There are more than six motorcycles in Ban Dong Luang (surveyed in 2002).

By the way, why do they grow only cabbage, and why do they not try other cash crops more enthusiastically? The most practical answer to this question is that the cabbage has the easiest access to the market. There are three cabbage trading places at Mae Ho, which is at the junction connecting the mountain road from the Karen villages in the mountain to the national highway Route 108 running from Chiang Mai to Mae Sariang. Mae Ho is situated 1,088 m above sea level, which is higher than the altitude of Ban Mae Chang (874 m) and Ban Dong Luang (1,073 m). Taking advantage of the cool weather and access to the highway, the cabbage trading places (or regional cabbage markets) have developed successfully. Each of the trading places is regarded as a sort of *koodaŋ* (i.e. "godown" in English) in Thai where there are at least four main operators; (1) the 'producers' coming mainly from the highland ethnic minority villages, transporting the cabbage by pick-up trucks from their own villages to Mae Ho to obtain cash by trading the cabbage, (2) the 'middle agents,' in other words, 'forwarding agents' or 'merchants,' mainly coming from the large markets in the country to the *koodaŋ* and transporting the cabbage by large-size trucks away from Mae Ho to large markets in metropolitan areas. (3) another group of 'middle agents' who invest their money for the cabbage production, and who are also involved in the cabbage trading by providing the producers with all of the necessary materials for cropping, and (4) the 'store owners at the trading place' who offer market space and facilities (e.g., weighing machines) for the buyers and producers of the cabbage and who, at the same time, operate other businesses such as gas stations, grocery stores, and restaurants. The trading of cabbage is usually conducted under a commission system. Buyers and producers of the cabbage have to pay a commission fee to the store owners. For instance, the store owner collects 1 *baht* per kg of cabbage from both producers and buyers.

Around those four main operators, there are various kinds of sub-operators working in the system in each *koodaŋ*. In the *koodaŋ-2* store, which is the biggest trading place at Mae Ho and is attached to the house of *O.Bo.To.*, they run a restaurant together with a grocery store and also sell car parts next to the unloading and loading section. This restaurant conducts good business and receives many customers from early morning until the evening almost every day. The business hours depend upon the situation in the cabbage trading, and therefore they close the shop after the cabbage trading is finished, sometimes around eight o'clock in the evening. At this *koodaŋ-2*, some Skaw Karen women work at the reception

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12 If we take the turning to the left, it leads us to Ban Mae Chang, which is situated 1.7km from this intersection.

box, to which the producers come with pick-up trucks full of cabbages to register first on the weighbridge, and then to receive cash for the cabbage yield after loading their cabbage on to the large-size truck. Those Skaw Karen women live near Mae Ho and are hired as wage labourers. The Karen males also work mainly loading cabbage on to the large-size trucks at each of the *kooday*, and sometimes work at the gas station too. There is another *kooday* called *kooday-1* located about 300 meters away from *kooday-2*. Its owner deals in petrol as well as groceries. According to a local informant, the owner of *kooday-1* is a Chinese-Thai, while the owner of *kooday-2* is a Thai, and that of *kooday-3* is of Hmong lineage. These trading places and their attached stores of *kooday* provide both Thai lowlanders and the ethnic highland farmers with job opportunities.

To the cabbage-trading places at Mae Ho come the producers from Mae La Noi, Khun Yuam and Mae Sariang districts as well as from several other districts in the northern part of Mae Hong Son province. The ethnicities of the producers are mostly Hmong, Skaw Karen and Pwo Karen.<sup>13</sup> The market price of cabbage was 3 *baht*<sup>14</sup> per kilogram on January 26<sup>th</sup> 2003, when the first author of this paper, Samata, had the chance to interview a Hmong farmer from a highland village near the more northern border of Myanmar. The Hmong village from which he came under the Royal Project scheme and engages in the Food Bank project with a fine irrigation system. They can thus grow the cabbage and other crops throughout the year. The problem for the Hmong farmers, however, is that the market place for the cabbage and other cash crops is too far from their village. In practice, it is only possible for them to bring the cabbage to the market at Mae Ho themselves. Mae Ho is the nearest market for them, even though it takes about six hours for the 280 km journey from their home village. The Hmong man whom the first author of this paper spoke to has grown cabbage for ten years. He also grows rice for family consumption in the rainy season and cabbage only during the dry season. In the Hmong village, all households of around 55-60 families grow cabbage at present. On that day when the first author met him, he said that ten households including his own from his village came to Mae Ho to sell the cabbage. After loading the cabbage on to a large-size truck with his teenage son, he got around 6,500 *baht* for 2,040 kg of cabbage. Another Hmong man from the same village earned around 7,000 *baht* by over 2,200 kg of cabbage on the same day (surveyed on January 26<sup>th</sup> 2003).

There are a number of agents, which can be companies, associations or individuals, who invest in the cabbage cultivation in the highland areas around Mae Ho and around the town of Mae Sariang. They offer to villagers such materials required for cabbage cultivation as seed, fertilizer and pesticide. Producers in turn offer their labour and land. In general, during the harvest period, the investors come up to the cabbage field in the highlands to collect and transport the cabbage to Mae Ho. The transportation costs are counted as extra expenditure in the production. The profit is shared fifty-fifty between the investor and the producer. If they do not make a profit, the investor will lose all his or her money, while the producer would not lose money but suffer from the opportunity cost<sup>15</sup>. The Hmong

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13 R. Samata, the first author of this paper, surveyed the cabbage trading places four times (August 14<sup>th</sup> 2002, January 26<sup>th</sup>, March 8<sup>th</sup> and 23<sup>rd</sup> 2003), and interviewed two cabbage producers (Hmong and Skaw Karen), one cook from the restaurant and one shop owner at the *kooday-2*. At *kooday-1*, we interviewed one Skaw Karen producer and one shop owner.

14 One *baht* is equal to around three yen in the beginning of 2003.

farmers sometimes become investors in the Pwo Karen villages of Ban Mae Chang, Ban Dong Luang and other nearby villages as well. For the Pwo Karen people in Ban Mae Chang, the middlemen who invest in cabbage are frequently their neighbours in the same village or rich highland farmers from outside the village like those from Ban Dong Luang and Ban Huai Pla Kang.

The merchants come to Mae Ho from all over Thailand with large-size transport trucks, which can carry 12,000 kg of cargo. It means that about five pick-up cabbage loads (around 2,000-2,500 kg of cabbage can be loaded per pick-up) can be carried by one big truck. They transport the cabbage along the paved roads to the large metropolitan areas like Bangkok, Nakhonsawan (surveyed on August 14<sup>th</sup> 2002) and Nakhonphatom (surveyed on January 26<sup>th</sup> 2003).<sup>16</sup> According to a receptionist at the trading place, the large-size trucks of the middle agents come to the store approximately 40 times per month.<sup>17</sup> In the rainy season, the trucks come more than 60 times per month. From this, it should be noted that the cabbage economy of the highlanders villages is heavily dependent upon the cabbage consumption tendency of large metropolitan areas in Thailand.

In conjunction with the aforementioned, we would like to close this section by touching a concrete example of the failure of a villager in cabbage production resulting from transport problems.

## 5-2 Case of Failure in Cabbage Production

Mr. O, a 29-year-old family headman, borrowed 20,000 *baht* from the Village Fund 2002<sup>18</sup>, and attempted to make a profit by using 8,000 *baht* to grow 4 *rai* of cabbage. Investing a high loan for cabbage in his first trial, he expected 10,000 kg yield. Before embarking on cabbage cultivation, Mr. O estimated; "If the market price of cabbage is 2 *baht* per kilogram during the season, then I can cover the cost. If it is 3 *baht* per kilogram, my profit will be 10,000 *baht* which will enable me to pay back the loan and gain benefit for my family."

Mr. O's family started to grow cabbage early in the season, at the beginning of July 2002, and transplanted the cabbage plants from the nursery to 4 *rai* of field in the middle of August. Mr. O prepared for cabbage transportation by making a reservation with a neighbouring car owner. Two months later, around the latter half of October, Mr. O and his wife harvested all the cabbage, and waited for the time to transport their cabbage to Mae Ho. The timing was unfortunate. It rained heavily for about two weeks in the upper area of northern Thailand from the middle to the end of October 2002. The mountain region of Karen in Mae Sariang district was also seriously affected by the weather. The car could not come up to Mr. O's cabbage field so he could not sell his cabbage on time to obtain no

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15 The opportunity cost in terms of the revenue of their labours and the rental price of their farmland, which otherwise would have come to their hand.

16 The road distance from Mae Ho to Bangkok and Nakhonphatom is around 900 km, while that from Mae Ho to Nakhonsawan is 650 km. At that end of 2001, the population of Bangkok was 5.7 mil. which is close to 10% of the total population Thailand (62.3 mil.).

17 That "40 times" here means that the total number of 40 large-size trucks come to the trading place per-month during the dry season to transport the cabbage to large metropolitan areas.

18 This financing policy of the Village Fund 2002 is distinctive from the previous funding-loan policies in the sense that the maximum level of the loan amounts to 1,000,000 *baht* per applicant village.

revenue from cabbage at all.

## 6. Conclusion

In Ban Mae Chang and other neighbouring Pwo Karen villages, cabbage has essentially been the sole cash crop for the swiddeners for about fifteen years. Some of them have engaged in cabbage cultivation since the middle of the 1980s when the Hmong group introduced cabbage cultivation by renting the farmland from the Pwo Karen people near the city of Mae Sariang. Although, the Pwo Karen villagers in Ban Mae Chang maintained their traditional rotational fallow farming, the cabbage cultivation was conducted regularly by a limited number of at most (estimated) 10 households until 2001. However, the number of the households growing cabbage in the rainy season of 2002 jumped to 23 households, which is 31.5 percent of the total 73 households. All of them know how to grow cabbage through their wage labour experience, and they have utilized the Village Fund 2002 loans in order to invest partially or totally in cabbage cultivation. For this farming season, five households incurred heavy debt because of the failure of their cabbage crop. Actually, most households grow cabbage with some debts from previous trials.

Also, in Ban Dong Luang, which is a neighbouring village to Ban Mae Chang and is one of the cognate villages of the Pwo Karen, almost all the villagers have relied heavily on cabbage cultivation in their village territory as a supplement to rice. Owing to the increasing population, the per-household arable land has steadily shrunk to less than half of what it was before, and consequently the villagers can no longer produce enough rice for their household consumption by the traditional rotational fallow system on the swidden land.

In Ban Mae Chang, as well as in other nearby Pwo Karen villages, sometimes a large amount of cabbage produced by the villagers remains unsold because (1) the difficult road conditions hinder the highlanders from transporting the cabbage to the local cabbage market at Mae Ho and/or (2) the market price of cabbage has become too low for the villagers to enjoy a profit. In such cases, those villagers who produce such cabbage have to eat cabbage at almost every meal at home.

Be that as it may, no matter how inconvenient for the villagers the road conditions turn out to be, and/or no matter how significantly low the cabbage price at market goes down, the villagers of Ban Mae Chang do not have any other choice at the moment but to be continuously involved in cabbage cultivation.<sup>19</sup> In other words, the cabbage cultivation in Ban Mae Chang cannot be generally considered as a sustainable means of improving agricultural activities in the village, though, in the light of the limited available alternatives, it is inevitable for the highlanders to be involved in cabbage cultivation.

One of the questions we would like to ask ourselves about this situation is: "Is there any feasible sustainable path for the villagers to rid themselves of such a dilemma which they now face in the transformation process of their agricultural activities,

(1) if the mountain road conditions can be considerably improved for the transportation of the villagers'

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19 In the involvement of cabbage cultivation, there are only two ways available for the Pwo Karen people: to adopt cabbage cultivation to supplement rice, or to work as wage labourers in the cabbage fields of the richer households inside or outside the village.

agricultural produce,

- (2) if the local market system can become more openly competitive for the villagers' agricultural produce, and/or
- (3) if the villagers can be given the chance to acquire more knowledge of the proper management of risks and uncertainties as to their agricultural activities?"

The answer would be "Yes, in general," should the three conditions hold simultaneously and "Yes, perhaps if the situation goes well" in case one of the above conditions holds. Regarding this, the first and second conditions can only be met primarily through strenuous effort by public entities such as local governments, while the third condition can be reasonably met provided that the functionally practical cooperation between the local governments and local NGOs is carried out to assist the villagers to improve their "knowledge-base ware" for agriculture in the context of highland farming.

This alternative corresponding to the third condition is perhaps among a few plausible and advisable choices in which the local NGOs can be effectively involved, in the form of private-public partnership, to contribute to the sustainable agricultural development of the Pwo Karen villages in the area where Ban Mae Chang is located.

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