

## CHAPTER VI

### CONCLUSION

This final chapter first sums up what has been discussed in the previous chapters with particular emphasis upon the two points: (1) some essential findings gained through my fieldwork in the Pwo Karen community, and (2) major theoretical and empirical interpretation of the findings. As for the first point, the central subjects addressed are the potential risk with which the highlanders are faced in cabbage cultivation, primal causes of the shortening fallow period, severe constraints for the highlanders in choosing possible alternatives for agricultural development, and the dilemmatic “no-win situation” of highlanders in agricultural transformation. As to the second point, analytical considerations are made in the context of the Pwo Karen community, centring on the issues of population growth and economic development, local technology and development processes, and the inevitability of highlander involvement in cabbage cultivation activities<sup>1</sup>.

Furthermore, this chapter tries to explore policy implications drawn from the outcomes the present study. It also tries to search for possible future research topics derived from the study, followed by a short closing remark to help bring out academic and social meaning of the proposed research agenda topics as well as that of this study.

#### **6.1 Main Findings of the Fieldwork Study**

##### **6.1.1 Risk of Agricultural Technology and Economy in Highland Society**

Both Ban Mae Chang and Ban Dong Luang have adopted the technological innovation of irrigated terrace farming and cabbage cultivation in different ways and to different extents depending on the magnitude of the increasing population density and decreasing arable land. On the one hand, the villagers in Ban Mae Chang can even now still rotate their farming land in four to five-year cycles, to maintain relatively traditional

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<sup>1</sup> These activities include labour works supplied to those households that are actually carrying out cabbage cultivation.

approaches to manage natural resources though it is not as easy as it used to be. On the other hand, the villagers in Ban Dong Luang have changed their agricultural methods from the more traditional practices which can be often observed in the current farming in Ban Mae Chang, to a new manner of mixing cash cropping of cabbage with dry rice farming.

In my research site, the Pwo Karen farmers have been struggling with a number of *risks* associated with the new agricultural technology and economy in cabbage cultivation, though the technological innovations have been significant factors in developing and changing human life. Because it is a double-edged sword, the technology adopted in the development process has certainly allowed the people to enjoy a better life, but has also forced them to face new and complicated problems and to suffer from the adverse effects stemming from the introduction of new agricultural technology. These phenomena can be empirically observed without so much difficulty through the investigation of the current trend described by the socio-economic data on the Pwo Karen community with sociological and anthropological analytical perspectives. Be that as it may, the following three risks are the main examples of the aforementioned risks on the agricultural technology and economy in cabbage cultivation.

### **(1) Risk of Declining Soil Fertility**

More than fifteen years have passed since the Pwo Karen in Mae Sariang district started to grow cabbage in the middle of the 1980s with their respective adaptive practices, following the Hmong groups' practical experience. Applying additional chemical fertilizers in the soil for cabbage, some farmers have enjoyed more rice output<sup>2</sup> and accordingly more cash income than before. Actually, this type of agriculture is only beneficial for the richer<sup>3</sup> farmers in the village who can afford larger terraced fields and

<sup>2</sup> The residual chemical fertilizer from the previous use of the land for the cabbage cultivation generally contributes to an increase in productivity of the land for the rice production following the cabbage cultivation.

<sup>3</sup> In this study, we set two kinds of income-level (*Baht*/year) classifications as shown in Table 3.1. The first one is a four-group classification consisting of rich (20,000≤•), well-to-do (10,000≤•<20,000), middle (4,000≤•<10,000) and poor (•<4,000) classes. The second one is a two-group classification made up of richer class comprising rich and well-to-do classes, and poorer class comprising middle and poor classes.

can continuously use chemicals in their swiddens, but not for the poorer farmers who can afford neither larger terraces nor chemical fertilizer. In these situations, the villagers in the research site have been aware that the soil in their arable swidden land has been deteriorated. The data on rice sufficiency in Ban Dong Luang show that the rice output of poorer farmers has turned out to be so low that they have to compensate it with labour work in cabbage cultivation conducted by the richer farmers inside and outside the village. This is due to not only to the fact that the poorer farmers possess smaller amounts of arable land, but also that they are forced to use their land so intensively to grow dry rice every year and cabbage from time to time which would result in a rapid decline in soil fertility.

### ***(2) Risk of Debts Accruing from Fluctuating Market Price***

The Pwo Karen's traditional agricultural production system has been gradually absorbed into the system of modern market economy. Being integrated into the market economy system, the first successful farmers, though limited in number, have been materially enjoying a more comfortable life to gain more cash, rice, and such properties as terraced fields, cars, motorcycles, and cattle. Out of those richer villagers, some have become middlemen and investors to disseminate cabbage cultivation over the region. Meanwhile, the late-start unsuccessful farmers, who form the majority in Ban Dong Luang, have been suffering from heavy debt burdens of the loans to purchase chemicals and lower rice productivity caused by the reduction of soil fertility. Thus, they must earn their living by labour work and through other means, possibly including illegal trading. Although their cabbage cultivation is less intensive in scale than that of Ban Dong Luang, the Pwo Karen in Ban Mae Chang have embarked on the cabbage cultivation by tracing a path similar to that of the Ban Dong Luang people. For this situation, the Village Fund 2002<sup>4</sup> can be considered to be a significant assisting tool for the poorer farmers who have not regularly been engaged in cash cropping in their swiddens to grow cabbage by themselves. Nevertheless, what the Village Fund so far provided to the villages has not

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4 This financing policy of the Village Fund 2002 is distinctive from the previous funding-loan policies in

in general yet been evaluated as successful in the research site. Moreover, there is a possibility that the Village Fund would behave as another type of trap for the poorer farmers that causes them to suffer from new debts unless carefully operated though this Fund carries potentially promising aspects.

### **(3) Risk of Losing Land Security**

Cabbage cultivation in the Pwo Karen community has actually generated new natural resource conflicts between the two villages of Ban Mae Chang and Ban Dong Luang. In the year 2001 in my research site, there was an incident of fraud in which some of the richer Pwo Karen farmers in Ban Dong Luang lost their large area of terrace fields to a Buddhist agent deceived by speculating motivation offered by the agent in the name of donation.<sup>5</sup> So far, for the Pwo Karen in the research site, the transfer of their swidden land in monetary exchanges has been restricted. However, it cannot be assured that they will never sell their swidden lands to industrial agents or be tempted to receive money by mortgaging the swidden as some of them are now doing for their terraced fields. By giving a way their swidden farming to cash cropping by for those who come from outside the village, the marginalized status of the highland Pwo Karen may become more serious. It is possibly just the inception of trading swidden land in the Pwo Karen of Mae Sariang like the case of Pwo Karen of Wa Ga Gla in Uthaitani province (Gravers 2001:67).

#### **6.1.2 Factors that Have Shortened the Fallow Period**

For the Pwo Karen community in my research site, there are at least five factors that have shortened the fallow period from approximately ten years three decades ago down to four to five years at present for Ban Mae Chang and down to almost no fallow period for Ban Dong Luang:

- (1) Population growth mainly from natural increase (internal factor)

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the sense that the maximum level of the loan amounts up to 1,000,000 baht per applicant village.

<sup>5</sup> For more explanation, see the footnote in Section 5.1.3 Changes in Values and Economic Security of CHAPTER V.

- (2) Population pressure of the Skaw Karen people who have been continuously immigrating into the terrain of Ban Mae Chang for the past 80 years (external factor)
- (3) Reduction in the dry-rice productivity per unit of land due to the overuse of the land (internal factor) [Though this information needs the reconfirmation in my research site.]
- (4) Increasing difficulty in opening new farmland for the rotational swidden cultivation due to the implementation of stricter regulation by the government (external factor)
- (5) Introduction of agricultural technology and capital investment for cabbage cultivation into the community (internal and external factor)

Factors (1), (2), and (4) have contributed to the shortened fallow period via the decrease in the arable land per family (or per village) which accordingly requires the more extensive use of the land. The factors (3) and (5) have contributed to the shortened fallow period via the consequential demand for the more extensive and intensive use of the land respectively. In order to cope with the issues associated with factors (1) through (4), they have introduced technologies to change their traditional rotational fallow-swidden system to mix it with irrigated terrace farming and cabbage cultivation, as indicated by factor (5).

Meanwhile, the research site is situated inside a reserved forest area for which legal control by the government is stringent but not as strict as the protected forest area.

### **6.1.3 Limited Choices to Changes under Development Scheme**

Another situation with which the Pwo Karen villagers have been struggling is that the available choices for them are limited in the process of agricultural transformation. Practically, there are only four major feasible choices for the Pwo Karen farmers to utilize as alternatives to traditional fallow cultivation; (1) irrigated farming, (2) cabbage cultivation, (3) coffee-tree planting and (4) wage labour. Concretely speaking, these



alternatives are actually far from the literal meaning of “choices” to be selected at their discretion, and available options are quite limited to them in their local context. In fact, among these choices, only the wage labour has been feasible for the majority of the Pwo Karen in the research site, although the supply of wage labour is not always oriented to agriculture. The chances of the coffee-tree planting have been intermittently provided by the government’s development projects since the 1980s as alternative crop to shifting cultivation. However, it has not yet come to help their living in the Pwo Karen region. Irrigated farming is the primary option to cope with rice scarcity for some Pwo Karen villagers after the 1960s, though it has not brought about solutions for the majority of the farmers due to the constrained condition of the geographical configurations in the vicinity of their community. Compared to that, cabbage cultivation has widely spread among the Pwo Karen, especially in Ban Dong Luang. Although it is still restricted for the majority of the Pwo Karen in terms of capital and risk of debt, cabbage is the most viable crop from the viewpoint of (1) easiness to grow in their swidden, (2) quickness to grow within only three months, (3) availability of transportation access to the regional cabbage trading market in Mae Ho, and (4) practicability of growing without individual initial budget.

Yet, in such severe conditions, the adaptive practices and motivations of the Pwo Karen are varied between the economic classes of the richer and poorer, and among the farmers with the same status in each income class. In the highland swidden area, the decision-making sequence to agricultural choices are never homogeneously based on the economic incentive towards the gross returns, but rather literally “survival strategy” as a result of deliberate consideration and evaluation in accordance with their own criteria. To maximize their benefit and utility for each household, they are not only struggling with agricultural changes for survival inside and outside the village, but also actively exerting and utilizing the opportunities provided by the market economy system. In the swidden society, the issue of the local subsistence cannot be appropriately viewed simply within the framework of “risk preference” vis-à-vis “risk aversion” nor “traditional farming” vis-à-vis “modernized agriculture” since highlanders have been adjusting themselves to the process of agricultural transformation in various dynamic and viable

ways.

Regarding the variation of agricultural choices, among the cases showing how the Pwo Karen have adopted new options at their discretion since the 1980s, there are two suitable examples. One is the adoption of “cabbage cultivation” and the other is that of “coffee-tree planting.” As mentioned above, cabbage cultivation in the region was introduced by the Hmong people in the 1980s for the first time in the Mae Ho sub-district region. Through the Hmong people’s experience in this development, the Pwo Karen have learned how to engage with the market economy, and empirically realized the cash crop’s feasibility for them. The coffee-tree planting, on the other hand, started as one of the substitute cash-crop options for cabbage cultivation. In the case of the Pwo Karen in Ban Mae Chang, they started last year (2002) to grow coffee trees in an organic manner as an alternative to cabbage. This project has been introduced to the village by a local NGO, and carried out through collaboration between the Ban Mae Chang villagers and that local NGO. This introduction of the coffee-tree planting has been made in light of their severe experience of the failure in cabbage cultivation and of the degradation of natural environmental conditions resulting from the soil degradation caused by cabbage cultivation. It has driven the Pwo Karen to search for the better and safer approaches in their agriculture with the help of local NGO.

It is reported that the coffee-tree planting programme which was promoted before by the local governmental office (Hill Tribe Welfare and Development Centre at Mae Ho) could not attract enough attention from the Pwo Karen in my research site (Kwanchewan 1988). Since this second trial of the coffee-tree planting programme in Ban Mae Chang has just started, it is too early to assess the adequacy of its outcomes. However, it can be perhaps pointed out that a rather positive attitude of the current Pwo Karen toward such cash crops as cabbage and coffee has been created because they have not been forced this time to adopt them by coercive powers. The decision of the Pwo Karen is usually based on the criteria of whether the new approach is workable, effective, and helpful for their life. Why did they adopt the introduction of cabbage by the Hmong people, but not by the officials? Some village informants say that it is surely beneficial

for them to follow the Hmong in agricultural activities, and that they are often sceptical of the success prospects of the public body's suggestion since they know from experiences that the risk to lose is high if they follow it (interview in Ban Dong Luang). To the eyes of the Pwo Karen, the Hmong people have actually shown the concrete result of success in cabbage cultivation.

#### **6.1.4 Dilemma in Agricultural Transformation for Highlanders**

What I have learned through the investigation of my research site, can be described as the state of "dilemma" of highlanders in their agricultural transformation. In other words, the highlanders in the research site are living in the dilemma of the choice between equally unsatisfactory alternatives of development schemes. Specifically, their dilemma is *whether* to conduct the cabbage cultivation with a possible result of ending up in heavy debt and with an unavoidable result of land degradation caused by the use of agricultural chemicals and chemical fertilizer, *or* to continue the traditional agricultural farming based on the local technical knowledge (LTK) with an inevitable consequence that the land will be further farmed out due to the shortening of the fallow period. This implies that highlanders are facing what is called a "no-win situation," which may be a passing phenomena. As to the latter alternative, the dry rice whose productivity per unit of land has been continuously decreasing, can no longer function as a subsistence crop for the majority of the poorer villagers. Accordingly, in order to get necessary daily rice, they have to sell their labour to the richer farmers inside and outside the village for cabbage cultivation or at the towns for, say, construction work.

The mainstream views of economic development have been repeatedly criticized by the discourse theorists that those views tend to ignore the local practices including strategies and knowledge systems that have sustained the local livelihood for long time (Williams 1995). In Thailand, there are some cases of other highlanders that have proclaimed their counter-discourse to bargain with the authority. Contrary to this, the Pwo Karen are presently suffering under the new development scheme from the hard conditions that are in many cases beyond their control, resulting in further



marginalization.

The above-mentioned discourse theory has been, in turn, reviewed that it frequently fails to look at the conventional institution in which a number of essential relationships of social reciprocal protections and the redistribution of economic benefit are maintained. In fact, in my research site, the farming of the new commercial cropping of cabbage has been so far working favourably for the poorer farmers as well, since it has increased their labour-job opportunities to work at the cabbage fields for the richer farmers.

## **6.2 Analysis of the Findings**

### **6.2.1 Population Changes and Economic Development: Theories in Local Context**

The causes and effects of population growth have been intensively discussed in the history of modernization since Malthus' argument at the end of the eighteenth century. In the recent decades several researches have discussed, during the 1960s to the 1970s, the issue of increasing population density and declining productivity in the highland region of Thailand (*e.g.*, Kunstadter and Chapman 1978 and Hinton 1975, 1978 *et. al.*). Since the 1990s, a different perspective with its ground in the discourse theories has come out to argue that 'population growth' has been frequently regarded by the World Bank and other internationally influential development planners as a main culprit causing the deterioration or undeveloped status (Williams 1995, *et.al.*). In my research site, the Pwo Karen villagers perceive that the reason of shortened-fallow period in their swidden farming is attributed to overpopulation in their community. That is why, as the villagers state, they have been neither able to fallow their arable land long enough nor to produce sufficient rice, so that they have to supplement their daily rice by such other means as wet rice farming, cabbage cultivation and labour work. In this subsection, I try to analyse this point about my research site by briefly referring the perspectives of typical population theory and development discourse theory.

According to the views of some economists, population growth is regarded as an

important prerequisite for the development towards more productive economic systems (Boserup 1965, cited from Kunstader and Chapman 1978:16-23). For example, Shultz (1964) explains that the “traditional” farmers efficiently utilise their limited resources, by which they can eliminate inefficiencies and attain “a particular type of equilibrium (cited from Mitchell 1995:140-141).” Conversely, there are counter arguments against such a harmonious relationship between population growth and economic development. One of those standpoints is the neo-Malthusian theory. It regards the population growth as a result of economic development. However, increasing population promoted by the economic development and technological innovation may hamper further possible economic growth, since the increment in productivity are continually offset by the demands of the expanding population for the larger product-share of dependents. It is because the age distribution contains a much higher proportion of younger people for the case of growing population than the case of non-growing population (Kunstader and Chapman 1978:16). These population theory perspectives tend to be discussed mainly in the relationship of population changes with economic growth, and therefore tend to fail to look at the social and institutional context as well as the consequence of social impacts caused by the development dynamism.

As one of induction, it is said that the heavy population density in Ban Mae Chang and Ban Dong Luang has led some villagers to adopt or convert to the irrigated wet rice farming and cabbage cultivation in order to cope with the reduction of the per capita productivity of the arable land for dry rice. Due to the gradual development of the village irrigation system, some farmers who could afford to utilize terraced fields to grow wet rice have been able to enjoy more rice productivity than before, since the 1960s. It implies that the technological innovation, as to the irrigation scheme and the economic affluence to afford the terraced field, have helped to support a larger highland population in the community’s macroscopic level. However, at the microscopic household level, this irrigation technology has not been widely diffused for the benefit of the majority due to the various types of social, economic, geographical and division of labour constraints. In the case of cabbage introduction into my research site, among the primary conditions

to allow the highland Pwo Karen farmers to increase economic benefit and social stability are; (1) mobilization of the local available capital to augment the terraced land, (2) hold of enough male adult labour to attract investment from the investors outside the village, and (3) improvement of the transport disadvantage to have better spatial access to the regional cabbage market and the chance to contact outside investors. On the other hand, those farmers who are unable to hold terraces and disadvantageous to joining the market due to several restricted conditions, such as smaller arable land without terrace, no available male adult labour, and consequently no access to the investors, cannot improve livelihood nor solve rice scarcity. However, the poorer farmers can also enjoy benefits of cash from wage labour in the cabbage field of the richer farmers.

This indebtedness between the richer and poorer farmers has been already established as an important element of the production system in Ban Dong Luang since they changed their farming manner. In this sense, one might consider that, following Shultz's view, this newly emerged relationship inside "traditional" farming community has occurred as the result of a "new type of equilibrium," in which a small-scale of redistribution system between the rich and the poor is composed. However, this theoretical scenario does not take into account the deteriorating status of marginalized poor and emerging conflicts on the natural resources allocation among the community members. Hill (1986) critiques the perspective of Schultz that the most "efficient" allocation of resources would never reach the poorest farmers. This argument is applicable to the situation of Ban Dong Luang in this study, in which the poor have less access to arable land of both swidden and terrace in the process of commercialization of farming in the communities.

The standpoint of discourse analysis makes the critique that the optimistic view of population growth tends to ignore the aspect of the socio-economic inequality. What have made the Pwo Karen farmers suffer is not "population growth" but the "violence of development," in their terminology, which has been caused by the present development scheme of short-term economic development to increase transient cash income.

### 6.2.2 Local Technical Knowledge in Development Scheme

The Pwo Karen farmers in the research site said to me that they could generally produce enough rice and *catch* crops in swiddens when they could secure enough fallow period as the old time. On the other hand, their traditional farming carries the risky and uncertain characteristics of being frequently damaged by the weather conditions and other unpredictable factors. Regardless, even under harsh circumstances, the rotational fallow system conducted by the Pwo Karen has been maintained with their deep knowledge and technical skills of the environmental management. The manner of natural resource management of the Pwo Karen can be regarded as the “local technical knowledge (LTK)” (Bodley 1976, Warner 1991) and it explains the practical knowledge system accumulated through generations of experience.

Warner (1991) points out that the “decision making sequence” of the shifting cultivators depends on their LTK to create a dynamic way of viable food production under physical and customary constraints. In this regard, Yos (2003:26) states that the Karen people are generally well known for their ecological production systems to secure the sustainable natural resource management in the research sites. Through my fieldwork, it is observed that the Pwo Karen in Ban Mae Chang are carefully applying their LTK when utilising their natural resources and managing the soil for farming. For example, even some of richer farmers of Ban Mae Chang who grow cabbage in a relatively intensive manner, try to avoid the reduction of soil quality through the rotation of their land by mixing cabbage cultivation with dry rice farming in sequence. This is a way of their traditional soil management, and this aspect is relevant in Ban Mae Chang to the definition of shifting cultivation as dynamic complex which is continually responding to the changes (McGrath 1987, Warner 1991).

However, the explanation of the LTK by Warner and *et.al.* (1991) cannot foresee the effect and impact of the socio-economic changes upon the shifting cultivation societies under the growing global market economy. In other words, the LTK has manifested its limitations as being unable to relieve the changing condition in the production of the highland farmers in my research site. In Ban Dong Luang, where more

intensive cabbage cultivation is conducted than in Ban Mae Chang, they have changed their swidden farming to meet the changing circumstances. Their LTK as traditional knowledge has been fairly absorbed into the stronger force of the modern scientific methods for the cabbage cultivation, which is a new type of commercial cropping. Meanwhile, the new technological knowledge of the cash cropping has not been able to distribute its effects widely to the villagers yet. In fact, the Pwo Karen farmers in Ban Dong Luang are presently coping with the problem of the intensification of crop rotation by growing dry rice and cabbage on the sloping hill. This approach will be helpful for reducing the land degradation, but will not be able to overcome soil erosion unless farmers exercise the soil conservation practices since the intensive chemical inputs on cabbages would destroy the soil-structures.<sup>6</sup> Therefore, the system in which highland farmers growing cabbage without enough fallow period and appropriate treatments for soil management will not be expected to sustain the productivity in the long run.<sup>7</sup>

There are debates on the “environmental catastrophe” regarding population growth in highland areas. Grandstaff’s analysis (1980) states that such perspectives are myths of twofold facets of “deductiveness” involving the carrying-capacity argument and “inductiveness” leading the historical catastrophe to foresee the future scenario in highland. Moreover, those mythical arguments have been imposed on cabbage cultivation to accuse it as a polluting factor to the natural environment since the commercial cash cropping as the opium-replacement had been introduced in the highland areas of Thailand. The result is that environmental degradation and agricultural runoff caused by the cabbage cultivation tend to be made the fault of highland farmers.

Such arguments totally ignore the existence of a number of development projects that have disseminated the commercialized cropping together with the numerous amount of chemicals for marketing efficiency. It should be noted that the whole regional and national economic system in agriculture has been sustained through the promotion of a number of cash crops to highland farmers.

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<sup>6</sup> The “soil-structure” refers to the chemical organization of the soil.

<sup>7</sup> About the soil management in agricultural practice in this section is based on the personal lecture to me by Prof. Phrek Gypmantasiri, Faculty of Agriculture at Chiang Mai University on June 7<sup>th</sup> 2003.



### 6.2.3 Local Decision-making under Constraints

About economic development in swidden society, Grandstaff (1980:10-12) pointed out the existence of the ecological and socio-cultural constraints within the system for which the highlanders have been in general limited in the agricultural dynamic innovation. In this context, the dichotomous notions of the “risk taking” and “risk aversion” are not a relevant means to apply for understanding the attitude of the local people. The usage of those terms are misleading. On one hand, it tries to explain the fundamental rules too simply. On the other hand, this dichotomy is used as indicator of social-psychological moods of the farmers and investors (Boussard 1979:65, cited from Ortiz 1980:197). Beside this, the normative economic approach is also not appropriate because it fails to take into account the distinction between *risk* and *uncertainty* for the peasants (Cancian 1980:161-165) who are sensitive to the difference between them in the decision on their agricultural activities. Through the investigation of Ban Mae Chan villagers’ cabbage cultivation, it is found that there are a number of their attitudes towards cabbage cultivation and various numerous conditions restraining the villagers from the dynamic adjustment in agriculture. This would indicate that the dichotomy of “risk taking” and “risk aversion” cannot provide a suitable analytical framework for the investigation of the Pwo Karen community.

For the cases of Pwo Karen farmers in this local context, it is possibly adequate to apply the “real-life choice” theory proposed by Gladwin (1980:68-71) to explain the decision-making sequence of the highland farmers who are in general still living far from even rice security. By applying the Gladwin’s theory to the agricultural adaptation of the Pwo Karen observed in my field-study, their actual status and nature can be considered as “highly selective” in the evaluation attitude towards the new things when they assess the expected benefit for them based on their own preference criteria. This understanding is different from the narrative on the image of the Pwo Karen previously described by outsiders as “primitive stubborn” in development space. In the case of the Pwo Karen, the decision-making for the adoption of options in the adaptation is always changing

according to their experiences and surrounding conditions.

Among the derivative notions from the concept of “sustainable development” are “decentralization,” “quality of life,” and “people’s participation” all of which are aimed at in any current development planning in Thailand. In terms of decentralization in agricultural sphere, the local trading market in Mae Ho has performed substantial roles to spread cabbage cultivation over highland swiddeners in its hinterland. The whole process of growing cabbage requires several factors such as enough water, chemical input, labour work to replant and harvest, and transportation of the products to Mae Ho. There also exist serious constraints against highland farmers in this cash-cropping activity in conjunction with the fluctuation of the cabbage price. As a matter of fact, the more cabbage they produce, the worse the cabbage market price tends to change. In addition, while they can easily borrow money from external agencies for their investment in cabbage and such a community budget as the Village Fund 2002 offered by the government is available for cash cropping, it is often difficult for them to return the debt because of frequent and rapid drops in price. At the same time, the greater the popularity of the cabbage cultivation increases among the villagers, the more intensively their limited arable lands are used, resulting in deterioration of soil quality. Furthermore, the introduction of new agricultural technology has not so far contributed to the solution of the land scarcity issue.

Hence, the cabbage cultivation in my research site cannot be generally considered as a sustainable means of improving agricultural activities in the village, though, in light of the limited available alternatives, it is inevitable that the highlanders will be connected with cabbage cultivation.

### **6.3 Finalization: Toward Sustaining Development for the Local Community**

#### **6.3.1 Policy Implications from Research Outcomes**

Several relevant and important questions come out of what have been discussed so far in this study regarding the sustainable development in the Pwo Karen communities

of the research site. One of them is a question of how public policies, as well as the roles of private external agents, both of which are closely associated with the community's development course, can effectively mobilize the potential basic ability and limited available resources that the highlanders possess, for reasonable agricultural transformation and community well-being. To answer this, one must emphasize the profound recognition that "the highland farmer as a decision maker" utilizes their LTK in the "agroecosystem" which means an agricultural production system as a component of the larger natural ecosystem (Benneh 1972, Warner 1991). This approach intends to construct a comprehensive agro-space model and underscores that the swidden and fallow system is a part of an overall subsistence strategy which should frequently respond to the social, economic and natural environment changes (Gliessman 1985, Warner 1991).

By utilizing this potential and ingenuity in both local society and technological innovation, it is still possible to lead modernization and development to better and more benefits for the majority of the village people.<sup>8</sup> Consequently, I prefer the connotations of "sustaining" development, and agree with the idea that the "economic problem is not to discover *the* 'sustainable path' and stick to it, but rather to keep working on the institutional arrangements of the economy so that human action is guided in propitious directions (Bromley 1999:3)." With regards to the issue of risk and uncertainty in agriculture, Binswanger (1979, cited from Ortiz 1980:197) emphasises the institutional structure (formal evaluation) or personality constraints (farmers' perceptions) that may account for attitudes towards risk by overcoming gross simplification.

<sup>8</sup> For the environmental deterioration such as declining soil fertility caused by agricultural activities, the environmental economists view that the agricultural runoff is a "nonpoint externality" which provides us with significant implications for both research and policy (Griffin and Bromley 2001). Meanwhile, for increasing efficiency in highland agriculture, Grandstaff (1980:30-34) emphasizes that the "monitoring of trends" in distributions of resource and income in swidden areas which would be essential part of the enterprise and agricultural development. The accomplishment of the transfer of technical knowledge to the swiddeners is also another necessary point in order to protect the highlanders from the desperate agricultural failure. He called the society of highlanders who have maintained rotational swidden cultivation as 'essentially dual society' in which the swiddeners hold both subsistence and cash-earning sectors. Phrek (1993) explains that it is food security for the dual system society to be the first priority though few development projects have made fair attempts to put the problems of rice insufficiency as the basic issue for the highlanders. Sustainable agriculture for the highlanders under the market economy system should gain another principle to be less dependent on external inputs which is different former manner of cash cropping. It is to be emphasised that the performance of the sustainable agro-system includes not only the increase in productivity and stability in agriculture, but also the fulfilment of social

In order to make situations better in the swidden societies, institutional arrangement is a significant approach to sustain the local life. For more fruitful investigation and implication, “institutional approach” will facilitate the widening and deepening of insights on the development issue. Anan (2002) explains the “institutional approach” for natural resource management in Thailand as one of the breakthroughs grounded in an idea of multiple systems of knowledge. This approach regards each unit of community a part of an organic whole in which it functionally interplays with other parts of society but not as an independent entity. In the light of the perspective that “community is an integral part of larger political and economic relationships particularly the nation state and the global capitalist market (*ibid.*),” it regards the community as a form of “capital.” As to this point, Suthawan (1992) appropriately argues: “For example, if the state prohibits villagers from using their economic capital of the community forest, the social capital especially local organization will weaken because the community is denied its rights to manage the forest. On the contrary if the state strengthens the security of economic capital by giving villagers’ legitimate rights to use of the forest such policy will act as an incentive for their participation in protecting the community forest (Suthawan 1992, cited from Anan 2002).”

This viewpoint is must be taken into consideration when we investigate means for enhancing the steady growth of the Pwo Karen community in my research site. Concerning the community development, Staudt (1991) argues that the goal of development is to enlarge choice, however, which is as much a precondition for development as its result (cited from Cowen and Shenton 1995:28). It is a key factor, I would think, for the future sustainable development of the Pwo Karen community, that the choice towards the agricultural transformation should be enlarged and that the possible programmes for community development would result in the future enlargement of the choice. For this purpose, appropriate governmental policies should be implemented to strengthen the locally institutionalised social capital.<sup>9</sup> Equally important

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equity and political autonomy of the local community.  
<sup>9</sup> “Locally institutionalised social capital” means, for example, the indigenous technological knowledge on traditional mechanism about (1) how to manage the community’s forest commons, (2) how to delineate the inter-village boundary of the local asset tenure, and (3) how to spatially distribute the available water



is that the considerable intellectual works<sup>10</sup> should be conducted by the Pwo Karen people to enable themselves to increase the ability of decision-making in their own discretion to choose suitable forms of agricultural transformation for their community, which the outside public and private experts may perhaps be able to assist at least in part.

### 6.3.2 Future Research Agenda and a Related Closing Remark

There are several research topics that can be directly derived, as a natural consequence, from the outcomes of this study. Among possible topics are as follows:

- (1) To investigate, in further detail, the agricultural transformation process experienced by the Pwo Karen community, with special attention to the role of the group of leaders in the community and its effects on community members in conjunction with changes in the *local* agricultural production framework.<sup>11</sup>
- (2) To investigate the adaptation process of the Pwo Karen to agricultural environment, with special attention to the *local* dynamism of the farming system, which has been shifting from the rotational swidden cultivation towards the non-swidden cultivation system.<sup>12</sup>
- (3) To investigate the socio-economic mechanism influencing the cabbage cultivation, with special attention to the function of the cabbage-collection centre at Mae Ho junction<sup>13</sup> associated with the *regional* agricultural production scheme in which highlanders are primarily involved.<sup>14</sup>

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resources. It also implies the so-called customary local rights though it is needless to say that, in case the customary local rights would provide the neighbouring regions or the whole society with the external diseconomies (or overall social costs) to a considerably large extent like opium cultivation and excessive usage of the watershed pivotal for the overall society, then these types of locally institutionalised social capitals ought to be fairly constrained.

<sup>10</sup> The intellectual work here means the knowledge and information inputs into the village as to the cultivation, distribution and pricing process of the village's agricultural products. These software-oriented inputs can be brought about by both villagers and outside experts through their own efforts. The setting and operation of a local "education and training" system and a "trend-monitoring" scheme concerning the regional and local agricultural activities, is an example of the intellectual work.

<sup>11</sup> This research topic carries a microscopic or local context.

<sup>12</sup> This research topic also carries a microscopic or local context.

<sup>13</sup> The altitude of the Mae Ho junction is around 1,090m. This junction is located on the national road (Route No. 108) connecting Mae Ho to Chiang Mai towards east (170km) and Mae Sariang towards west (20km). At the Mae Ho junction, several narrow roads branch off and lead to a number of highland villages. One of them is a road leading to Ban Mae Chang and Ban Dong Luang.

<sup>14</sup> This research topic carries a semi-macroscopic or regional context.



Regardless of its microscopic or semi-macroscopic context, each of the aforementioned research topics more or less focuses on:

- (1) Decision-making attitudes of highlanders over the choice of evading, adopting or creating new technology and institutions in the process of agricultural transformation, and fundamental elements driving highlanders to decisions they actually make within that transformation process, and
- (2) Mechanisms that enhance the contributing roles of conventionally existing or newly institutionalised social capital, which can be of assistance in finding innovative resource and technology substitutes for the future development of highland communities.

Sooner or later, agriculture in highland villages faces further challenges and chances as an outcome of newly emerging internal and external factors in the domain of agricultural and non-agricultural reality. In this connection, the present study and its following studies possibly along the line of the above-mentioned research agenda topics will hopefully help provide a better understanding of the Pwo Karen community and its surrounding regions, having a deeper insight into the highlander choice in the agricultural transformation under severe constraints of farming conditions, and searching for means the community to illuminate and tackle its own problems towards improving its well-being.