



Knowledge space and modifying a mode of agricultural production among the Karen communities in Omkoi District, Chiang Mai Province

Suthanee Maliphan*, Sunti Srisuantang†, Varaporn Yamtim

Human and Community Resource Development Program, Faculty of Education and Development Science, Kasetsart University, Kamphangsaeen Campus, Nakhon Pathom 73140, Thailand

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Abstract

This research aimed at investigating the construction of knowledge space on production and empowering using knowledge, which is consistent with a mode of Agricultural Production of Karen communities in Omkoi District, Chiang Mai Province. This research employed a qualitative method and was conducted in two stages. First, an analysis of development and construction of knowledge space on agricultural production of Karen communities was carried out. This stage included 20 key informants. Data were collected through interviews, participatory observation, and group discussions, and analyzed through a content analysis approach together with triangulation technique for data reliability test. Second, a synthesis of approaches was used to empower using types of knowledge which corresponded with mode of agricultural production of Karen communities, through activities with villagers, agricultural officers, staff members of NGOs, Brokers who are responsible for cash crop extension, and the researcher. Data were collected through group discussions and analyzed through a content analysis approach. The findings revealed that development and construction of knowledge space on production of Karen communities can be explored in three periods: first, a nature-based knowledge period, second, a knowledge for collaboration and resistance period, third, an alternative knowledge period. Regarding approaches used to empower using types of knowledge which corresponded with mode of production of Karen communities, the findings revealed that opening a space of knowledge encouraged people to become involved. These activities consequently became a critical way to construct knowledge about production.

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Introduction

Development and change have not emerged automatically or naturally, but are always based on a particular set of knowledge influenced by norms and assumptions determining what is believed to be true and accepted without proving (Ganjanapan, 2010). Giving priority to scientific knowledge in development for more than 40 years has brought about a gradual vanishing or devaluing of local knowledge in

developing countries. There is no room for other types of knowledge constructed by localities or no recognition for them at the same level as western knowledge (Alvares, 2010). This situation relates to the changing development landscape, such as transformation of natural areas for monoculture towards economic growth orientation, leading to devastation of diversity in society, economy, and environment (Sachs, 2010). However, in order to expand boundaries of knowledge and use it as an instrument for development, there is a need to go beyond a binary opposition between local and scientific knowledge, exploring how these two poles of knowledge can be integrated and consequently produce a new set of knowledge.

* Corresponding author.

E-mail address: Suthanee_m@hotmail.com (S. Maliphan).

† Co-first author.

E-mail address: satsts@ku.ac.th (S. Srisuantang).

The meaning of knowledge space covers constructions of knowledge, knowledge utility, and the truths established within diverse sets of knowledge. It is a space where different sets of knowledge from different fields coexist. Construction of space is also the construction of knowledge from different fields. Nonetheless, they remain independent from one another (Turnbull, 2003). A concept of knowledge space enhances establishment of space for integration between different sets of knowledge that will be subsequently used for development through power relations and negotiation (Ganjanapan, 2008). Findings from previous studies revealed that the construction of knowledge space enhances expansion of knowledge boundaries and decentralization of knowledge construction processes. Knowledge is constructed through communication and interaction, after which it becomes advanced. Additionally, levels of knowledge can be changed, added to, and shifted all the time (Wright, 2005). For example, in the integration of local knowledge and knowledge of specialists to find out solutions for Pak Mun Dam management, several sets of knowledge from stakeholders in that area led them to a mutual agreement at the end (Manorom, 2005). Another example is a knowledge base for fisheries management from localities, which strengthens food and income security of people (Baird & Flaherty, 2005).

Karen communities in Omkoi District under the context of development and constant interaction with outsiders has all the way influenced their production system. By different thoughts and practices of different groups, village leaders, the researcher, community developers from NGOs, and capitalists, a Mode of Agricultural Production of the communities are then in the contestation of many camps of thoughts, especially in a case of monoculture promotion. In this case, people are facing risks of price fluctuations, pesticide residues, and devastation of natural resources and an environment that might affect their food security after all (Sethakul, 2003). This case reflects a lack of participation and integration of knowledge from associated parties considering a Mode of Agricultural Production of Karen communities that would lead to solutions and a suitable production system. This research aims to synthesize knowledge space and practices to connect people and have them take part in knowledge exchange, showcase, and construction. This space can help people gain knowledge on production, solve problems, and ultimately achieve self-reliance or self-production management.

Research Objectives

1. To analyze development and construction of knowledge space on production of Karen communities in Omkoi District, Chiang Mai Province.
2. To recommend approaches used to empower types of knowledge which are corresponding with Mode of Agricultural Production of Karen communities in Omkoi District, Chiang Mai Province.

Methodology

This research was conducted in two stages as follows.

Stage 1: an analysis of development and construction of knowledge space on production of Karen communities

Participants: 20 research participants were selected by purposive sampling. They were senior villagers, traditional

leaders, heads of government agencies, government officials, staff members of NGOs, and Brokers.

Research tools: 1) question guideline for semi-structured interview and 2) field log sheet.

Data collection: 1) interviews with key informants, 2) group discussions, and 3) participatory observation.

Data reliability test: a triangulation technique in three dimensions, method of data collection, method of using different sources of data, and method of testing by using different data collectors.

Data analysis and presentation: this research employed an inductive approach in data analysis and the findings were presented in description together with tables, maps, and figures.

Stage 2: a synthesis of approaches used to empower using types of knowledge which correspond with mode of Agricultural Production of Karen communities

The researcher adopted an action research method. Fifteen participants in this stage were 1) villagers, 2) agriculture officers, 3) staff members of NGOs, 4) Brokers, and 5) the researcher. Research tools were a questionnaire and a practice assessment form.

Data collection: associated parties arranged an activity, “mobilizing knowledge space towards a sustainable Mode of Agricultural Production by participatory approach”, which consisted of three steps as follows.

Step 1: preparing information and seeking out participation from the communities.

Step 2: 1) trainings on sustainable production, and 2) events for knowledge exchange on sustainable and suitable Mode of Agricultural Production for the communities by farmers who worked under a plan. The researcher collected data in these events.

Step 3: reflections to move knowledge space forwards a sustainable Mode of Agricultural Production for Karen communities.

Data analysis and presentation: Data were analyzed by a content analysis approach and tested for data reliability by a triangulation technique. Findings were presented in description, together with figures and tables.

Results

Development and Construction of Knowledge Space on Production of Karen Communities

Development and construction of knowledge space on production of Karen communities in Omkoi District can be explored in three periods as follows.

Nature-based knowledge period (1957–1997)

It revealed that a Mode of Agricultural Production and construction of knowledge space on production of Karen communities in Omkoi District were based on highland ecosystems, i.e., growing upland rice and other food crops together with raising livestock in household areas.

Villagers define knowledge on production, which is synthesized under the specific conditions, as “**the knowledge from practice or from experiences of trial and error**”. This kind of knowledge covers environmental dimensions and traditional belief of the tribe. People who constructed the knowledge were 1) the village chieftain, *Ngì Khu* or *Hi Kho*, 2) senior villagers, and 3) leaders in traditional belief and

shaman. Knowledge transference was carried out through processes of observation, memorization, and practice. Pha Ti A Ni explained three processes to pass down the knowledge of shifting cultivation of Karen communities as follows. Processes to transfer and practice always happened in the household, family lineage, and community.

Knowledge for collaboration and resistance period (1997–2007)

This period was situated under the context of development policy of the government for rural and remote areas. At the same time, the communities were tied up more closely with market economy. A process was found to promote agriculture in a modern system through many development projects by the government and business community, such as trainings, study visits, practices and assessments. An officer in agricultural development station revealed that

“During the first few years, there were many problems and obstructions in working with villagers, especially in the fact that they didn’t agree with us. There was a contestation of thoughts in many issues because villagers believed that a new farming system would affect their shifting cultivation”. (Ekkaphon Prasoe, personal interview, October 20, 2016)

Similarly, a staff member of NGO revealed that

“For the first time I worked with villagers, they didn’t give much importance to and wasn’t active for this issue. We had to form a network of insiders and outsiders and create activities to raise awareness, for example, study visits to increase awareness of their rights over resources. We had to adjust a strategy to work on the ground, including making maps and using field demonstrations as a tool to deal with villagers as well as to create new knowledge for them”. (Thandon Chaisotsai, personal interview, October 20, 2016)

Alternative knowledge period (2007–present)

Agricultural product prices and continuity of development policy are driving forces for expansion of lands for monoculture in Karen communities. This Mode of Agricultural Production always needs knowledge in various fields as well as modern technology. Hence, Karen communities have to adapt themselves and their knowledge to meet the current situation. There are many issues such as villagers and construction of knowledge to deal with diseases and pests, falling agricultural product prices, and impacts on health and environment from pesticides and other chemical substances. Moreover, there is also a problem among villagers about lands for cultivation and boundary demarcation. Likewise, NGOs have to adjust their role to focus more on raising awareness about protection of natural and cultural resources. Agricultural officers also have to adjust their strategy to deal with villagers on issues of chemical substance reduction, production cost reduction, and construction of knowledge management mechanisms on marketing. The construction of knowledge space was, thus, carried out through community-based management and networks with outsiders. Knowledge from two sides was integrated and used in accordance with a Mode of Agricultural Production of the communities. A summary of the construction of knowledge space on production of Karen communities in Omkoi District is shown in Table 1.

Table 1 Summary of the construction of knowledge space on production of Karen communities in Omkoi District

Nature-based knowledge period (1957–1997)			Knowledge for collaboration and resistance period (1997–2007)			Alternative knowledge period (2007–present)		
Set of knowledge	Knowledge constructor	Social mechanism	Set of knowledge	Knowledge constructor	Social mechanism	Set of knowledge	Knowledge constructor	Social mechanism
1.Nature-based knowledge 2.Knowledge in traditional belief	1.Ngi K/hu or Ht K/ho 2.Senior villagers 3.Leaders in traditional belief	1.Authority and conditions in traditional belief	1.Nature-based knowledge and traditional belief 2.Knowledge in agricultural science	1.Villagers 2.Government officials 3.Brokers	1.Development projects 2.Monoculture promotion	1.Nature-based knowledge and traditional belief 2.Knowledge in agricultural science	1.Villagers 2.Agriculture officers 3.Capitalists/ Brokers 4.NGOs	1.Development 2.Market economy 3.Conservation of tribal Mode of Agricultural Production
Condition/situation of production in communities								
Highland ecosystem and food shortage			Development projects for remote areas, promotion of knowledge on production by government sectors, and capitalists			Continuity of development projects, impacts of market economy		
Change and adaptation in production of communities								
A set of knowledge of the communities has changed by using knowledge on local ecosystems to meet changing environment.			Integration of knowledge on production based on local knowledge and knowledge from outside			Seeking alternative Mode of Agricultural Production concerning sustainable market system to negotiate mainstream development.		

As shown in Table 1, the construction of knowledge space on production of Karen communities can be explored in three periods. First, a nature-based knowledge period, when the production was self-sufficiency oriented and based on local wisdom of the tribe. Second, a knowledge for collaboration and resistance period. This kind of knowledge was constructed by academics and communities. The knowledge was used both for collaboration and resistance. Third, an alternative knowledge period, when knowledge was constructed from various dimensions and was dependent on situations and problems in production to figure out appropriate solutions for individuals and groups.

Approaches used to Empower Types of Knowledge which are Corresponding with Mode of Agricultural Production of Karen Communities

As the communities are facing volatility of production, all associated parties should come to exchange and review the state of knowledge in order to find a suitable mode of production. As mentioned above, the construction of knowledge space was conducted through a participatory approach by using the activity “mobilizing knowledge space towards a sustainable mode of production”. The 15 participants in this process were 1) representatives of the communities, 2) agriculture officers, 3) staff members of NGOs, 4) Brokers, and 5) the researcher. Details are discussed below.

Farmers' knowledge concerning sustainable production

Brain storming among research participants aimed at opening knowledge space on sustainable production. Additionally, data from observation regarding receiving new body of knowledge among villagers revealed that they were very active in this process. This point was supported by pieces of empirical evidence, such as acts of recording, asking questions, discussing with trainers on certain issues, and bringing knowledge to practice. Similarly, an agriculture officer reflected that

“Training is an instrument to work with villagers as well as to construct new knowledge for them. They have actively been concerned about new body of knowledge. In so doing, they remember it and bring it to practice or in problem solving. So, in anything if they see the importance, they will voluntarily follow.” (Buncha Jaihan, personal interview, October 23, 2016)

Therefore, training can be considered one of the instruments to empower using knowledge, which is consistent with a Mode of Agricultural Production of Karen communities.

Practice assessment

Practices of farmers to prevent and eliminate diseases, pests, and weeds in a sustainable way in field demonstrations in Mae Khong Village, Omkoi District, Chiang Mai Province. From the observation on practices of farmers to prevent and eliminate agricultural diseases, pests, and weeds, it was found that farmers in shifting cultivation would choose local knowledge to prevent and eliminate diseases, pests, and weeds. For example, they used hands and sickles together with “*kha ke*”, or a ritual to eradicate agricultural diseases, and a

ritual to worship spirits of paddy field and crop field (Thai: *phi rai phi na*). Moreover, they burned elephant dung with tobacco leaves to prevent agricultural diseases and used animal traps called “*thueng o*” to get rid of rats, birds, and insects. However, only when all above methods had failed, would they turn to chemical substances. These practices were different from farmers in monoculture, in which using chemical substances to prevent and eliminate diseases, pests, and weeds was the main practice.

Reflection for sustainable mode of agricultural production suitable for Karen communities

Activity “mobilizing knowledge space towards a sustainable mode of production” was also designed to encourage reflection on a sustainable and suitable Mode of Agricultural Production for Karen communities through knowledge exchange and knowledge criticizing. The 15 participants in this process were villagers, agriculture officers, staff members of NGOs, Brokers, and the researcher. Details are discussed in Table 2.

As demonstrated in Table 2, the interaction, through knowledge exchange and knowledge integration, between associated parties has consequently constructed a new set knowledge. These parties have jointly been involved in learning, planning, finding solutions, reflecting, and deciding a suitable Mode of Agricultural Production for Karen communities. The knowledge is dynamic because it demonstrates utilization of prior knowledge and experiences and utilization of new knowledge. The utilization of new knowledge was found among some participants who showed a process of selection and elaboration of prior knowledge to meet the specific context. However, all of these depended on degree of experience and knowledge interpretation of each participant.

Discussion

The development and construction of knowledge space on production of Karen communities in Omkoi District revealed that their Mode of Agricultural Production was primarily for self-sufficiency and people in the communities have constructed knowledge to meet their everyday needs. This was because the settlement pattern and production system of Karen are in harmony with highland ecosystem and surrounding forest (Santasombat, 1999). Under the highland ecosystem, villagers have synthesized a set of knowledge through practices. In this set of knowledge, concept and practice were integrated since it has been constructed through trial and error as well as a need to control nature (Laungaramsri, 1998). Community leaders have the power to command members to follow by using a traditional belief (Paramee, 2014). This signified construction of knowledge from their creative power as well as construction of social relation system to manage risks. Approaches to empower knowledge in this situation were formed through practices in traditional or supernatural beliefs. Findings in most studies conclude consistently that the power of spirits in resource management is a means and wisdom for sustainable forest management (Kesmanee, 1996).

Table 2 Reflection for Sustainable Mode of Agricultural Production Suitable for Karen Communities

Mode of Agricultural Production	Farmers	Government officials	NGOs	Brokers	Researcher
1) Awareness	- Villagers collectively conserved local knowledge of Karen which was passed down from generation to generation.	- Relying on local knowledge, their produce can meet the demand, but we also needed to take care of them thoroughly.	- Villagers already have knowledge and experience in integrated Mode of Agricultural Production but did not yet practice it.	- Knowledge on upland rice cultivation will ensure food security of villagers.	- Knowledge on shifting cultivation was an identity of Karen Communities in Omkoi District.
2) Solutions	- Needed to learn much more about production and new things flooding in every day.	- Needed to adjust strategy to work with villagers, using field demonstration as a navigating instrument.	- Villagers did not want to change until seeing the results. Hence, it needed more focus on “procedural knowledge”.	- Needed to try an integrated Mode of Agricultural Production in order to mitigate risks.	- Needed processes to integrate different types of knowledge for applying in production.
3) Alternatives	- Should rely on local knowledge, such as using organic fertilizer to increase produce instead of chemical ones. In respect of new body of knowledge, we needed to consider it step by step.	- Knowledge enhancement for villagers must be carried out in systematic way covering field demonstration and follow-up. Through these processes, villagers will have a chance to exchange knowledge and learn new things.	- Needed to form collaboration between insiders and outsiders, such as through study visits and making maps.	- Needed to promote monoculture and cooperation of farmers to negotiate for a suitable Mode of Agricultural Production and fair prices.	- Needed to raise awareness about advantages and disadvantages of each type of knowledge to make choices for appropriate use.

However, when their traditional agricultural systems are threatened and obstructed by the State and market, the Karen have revitalized their traditional knowledge as a part of the construction of their identity as the people who protect and conserve the forests. This is identity politics to redefine themselves so that the public will accept them as the people who can live in the forest without the destruction of natural resources and environment (Walker, 2001). Their identity of forest conservationist is like a symbolic capital built up from their traditional knowledge which is their cultural capital (Santasombat, 2004). The identity as forest protector and sustainable farmers challenges the discourse and image of hill people as forest destroyer constructed by state agencies. The new identity is significant to be used by the movement to ward off the threat from the state and to legitimize their use of forest and their participation in development (Ganjanapan, 2010). Indeed, this does not mean that they hold on to only the traditional agricultural systems. Karen farmers in Omkoi have increasingly adopted commercialized agricultural system to fill in the gaps of self-sufficient swidden agriculture. Thus, the agricultural systems in Omkoi consist of both traditional self-sufficient agriculture and commercial agriculture, which shows plural and dynamic agricultural systems.

An analysis of the construction of knowledge space on production of Karen communities revealed that there were many types of knowledge in this knowledge space: 1) collaborative knowledge, 2) integrated knowledge to resolve specific problems, 3) negotiating knowledge to balance between knowledge, traditional belief, and modern technology, and 4) substituting knowledge. This knowledge space embraced different sets of knowledge on production, local knowledge of the tribe, knowledge from development projects of the government and business community, and knowledge

from learning and exchange process. These sets of knowledge coexisted and were used for production through various social strategies, such as practices in traditional belief and supernaturalism, discourse of conservation, integration of local knowledge and modern knowledge. This knowledge space was in line with a concept of knowledge space in terms of making of variety in social strategies, such as exchange, negotiation, integration, and practice so as to incorporate different sets of knowledge in one space or in the third space (Turnbull, 1997). Additionally, communication through various channels, e.g., travel and online communication, allowed knowledge exchange and learning process to happen anywhere and anytime. The power of knowledge expanded a boundary of knowledge unlimitedly while having influence on direction for changes of the communities' Mode of Agricultural Production in the future.

Conclusion

The study findings revealed different sets of knowledge incorporated in a Mode of Agricultural Production of Karen communities, i.e., local knowledge, knowledge from outside, and integrated knowledge. These sets of knowledge were incorporated through social strategies. However, transformation and adaptation of production systems among Karen communities was a result of the integration between local knowledge and knowledge from outside. This allowed them to have more choices on production, for example, by using integrated knowledge for some issues while choosing some point in one type of knowledge as main ideas for other issues. Overall, the integrated knowledge was used both to incorporate and resist depending on the situation. In respect of approaches to empower using types of knowledge, opening a

knowledge space for associated parties to take part in discussion, knowledge exchange and knowledge criticizing for suitable Mode of Agricultural Production were highlighted. This approach addressed the importance of “local people” because despite how much a Mode of Agricultural Production of the communities changed, local people should still be alert and constant learners. They will be able to cope with existing problems and are visionary to design a balanced, inclusive, and sustainable Mode of Agricultural Production for their communities. Therefore, human resource development, in various dimensions, is a crucial means to create valuable human resources who are active, critical, open minded, and good at problem solving.

Recommendations

1. Production system of Karen communities in Omkoi District was in a transitional period. Promotion of intensive monoculture as well as development of life without considering their true way of life may lead to contestation over resources. Therefore, all associated parties should work together to make a policy on production which is suitable for them.

2. As pointed out earlier that knowledge has an important role in change, it is thus necessary to consider the diversity of knowledge and open a space for people from different groups to become involved as the instructors or owners of knowledge. This process includes as much of their participation as possible in discussion and knowledge exchange about production of Karen communities.

3. This study explored the construction of knowledge space on production. However, it was found that this knowledge space also linked to other areas of development in Karen communities, such as natural resource management and food security. Thus, further studies can be made to explore the construction of knowledge spaces on other dimensions.

Conflict of Interest

There is no conflict of interest.

References

- Alvares, C. (2010). Science. In S. Wolfgang, (Ed.), *The development dictionary*. (pp. 243–259). London, UK: Zed Books.
- Baird, I., & Flaherty, S. M. (2005). Mekong river fish conservation zone in Southern Laos: Assessing effectiveness using local ecological knowledge. *Management*, 36(3), 339–354.
- Ganjanapan, A. (2008). *Multiplicity of community forestry as knowledge space in the Northern Thai Highlands* (Working Paper Series No. 35). Shiga, Japan: Afrasian Centre for Peace and Development Studies.
- Ganjanapan, A. (2010, August). *Knowledge space and multiple mechanisms in new imagination of transitional society*. Paper presented at a workshop on New imagination in sociology to handle new social risks, Bangkok, Thailand. [in Thai]
- Kesmanee, C. (1996). *The potential to manage soil, water and forest of Karen: A preliminary analysis* (Research Report). Chiang Mai, Thailand: Hill Tribe Research Institute. [in Thai]
- Laungaramsri, P. (1998). Discourse on hilltribes. *Social Sciences Journal Chiang Mai University*, 11(1), 92–135. [in Thai]
- Manorom, K. (2005). Political power and knowledge of the state policy on Pak Mun Dam. *Journal of Liberal Arts*, 2(1), 4–15. [in Thai]
- Paramee, K. (2014). *Expanding of the Royal Project on solving the issue of sustainable opium cultivation in Omkoi District, Chiang Mai Province* (Unpublished master's thesis). Chiang Mai University, Chiang Mai. [in Thai]
- Sachs, W. (2010). *The development dictionary: A guild to knowledge as power*. London, UK: Zed.
- Santasombat, Y. (1999). *Biodiversity and indigenous knowledge for sustainable development*. Chiang Mai, Thailand: Center of Biodiversity and Indigenous Knowledge for Sustainable Development, Chiang Mai University. [in Thai]
- Santasombat Y. (2004). Karen cultural capital and the political economy of symbolic power. *Asian Ethnicity*, 5(1), 105–120.
- Sethakul, R. (2003). A century of the village economy in the northern part of Thailand (1899–1999). Bangkok, Thailand: Thailand Research Fund. [in Thai]
- Turnbull, D. (1997). Reframing science and other local knowledge traditions [Electronic Version]. *Futures*, 29(6), 551–562.
- Turnbull, D. (2003). *Masons, tricksters and cartographers: comparative studies in the sociology of scientific and Indigenous knowledge*. London, UK: Routledge.
- Walker, A. (2001). The Karen consensus, ethnic politics and resource-use legitimacy in Northern Thailand. *Asian Ethnicity*, 2(2), 145–162.
- Wright, S. (2005). Knowing scale: Intellectual property rights, knowledge spaces and the production of the globe. *Social and Cultural Geography*, 6(6), 903–921.