Community Forest Management for Sustainable Local Agriculture Development in Ban Huay Pu Kang, Thailand

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Abstract This article focuses on community forest management of the village by using descriptive statistic. The data received from group discussion and interview with village headman, forestry officers, and members in community. The result showed that in the area there was no upstream management in community area, inefficiency of reservoir and unamend dam due to lack of water for agriculture. Conversely, flood in agricultural area was found as a problem. As a result, community leader, forestry officers, and community members of Ban Huey Poo cooperated to resolve the guideline of community forest management in order to bring traditions and culture of community, as the strong point of social capital, altogether with forestry principles such as check dam, and tradition of spirit thanks event for caring the upstream, and to build network with external organizations based on community’s needs. The key result which happened to community was to have water resources for sustainable agriculture and to bring about the learning process of people in community so that people could rely on for continuous mutual benefit, upstream conservation, livestock area, water and food resource, and activities arrangement of sustainable community forestry management.

1. Introduction

Country development and economic expansion are rapidly growing. Natural resources are utilized as ingredients for consumer goods production, especially overused forest resources beyond its potential and deforestation and forest invasion for agricultural which affect other resources e.g. lack of water, infertile soil. These cause ineffective agriculture and low life quality among people who relying on forest resources and earn from doing agriculture. Farmers need to expand their own growing area and it leads to forest invasion [1]. Local knowledge, local ecological knowledge, traditional ecological knowledge, traditional knowledge, wisdom, traditional environmental knowledge, have often been used by authors interchangeably to mean the same thing with slight variation depending on the context and so is the case of scientific, expert and western knowledge [2].

Community Forestry or Social Forestry emerged in the late 1970s, when concern over increasing deforestation rates led to a questioning of state control over forest resources and its capacity to effectively protect and manage forests sustainably. Social or Community Forestry was seen as an alternative to solving forest management problems [3] and forest conflicts [4].

Community forest is forest resources management in community. The mode of practice is communal property system or communal property resources system of community for family and community
benefits. This activity also supports and authorizes people to participate in forest plantation, management, protection, and to take advantage of forest under sustainable management system which consists of trees, meadow, plant varieties, wildlife, water resources, and all in natural belonging to ecosystem. Community forest is possibly located around village, community, or nearby community. The community can be official community such as Subdistrict Administrations Organization or traditional village which leads to specify the regulation, to plan management, and to set the mechanism for community forest of villagers or people in the community. Community is built from plan cooperated by people in community which need real corporations from members. Moreover, planning for community management needs to be perceived and accepted by neighbor community. If not, there would be conflict between communities. So, to manage community forest successfully and sustainably needs cooperation in the form of network e.g. watershed network and community forest network.[5].

People in the Ban Huay Poo Kang Community Forest, Chiang Khong District, Chiang Rai Province, mostly are agriculturists, planting rice, vegetables, and raising livestock but they still do not have upstream management in community area, lack permanent dam or large reservoir, and check dam is in unalmented condition, causing low level of water resources, insufficient water for agriculture and conflict over water for agriculture. Conversely, flood in agricultural area was found as a problem.

Public and private organization, community leader, institute which has knowledge related to community forest management, are supposed to consult together in order to find guideline for community forest management, correctly expand this knowledge to people, build external cooperation network according to community need, and finally lead to sustainable community forest management.

2. Conceptual framework: community forest management and participation

Forestry means use of forest for achieving specific objective that introduces it into different types [6]. But managing forests for the express intent of benefitting neighboring communities is a community forestry [7]. In community forestry, forest user group (FUG) control and manage the local forests while harvesting and pricing of all forest products and forest management is governed by an executive committee elected in the FUG assembly [8]. With the formation of a FUG, local forest users can gain membership that encourages them to practice sustainable management and observe institutional regulations. Community-based forestry presumpt that forest areas can be sustainably managed to protect the natural resource base and forest ecosystem functions, and also provide enhanced income opportunities to community residents form traditional and nontraditional products and services [7].

Forest management that involves local people requires a change in local people's attitudes, after a careful analysis and understanding of the context of existing social and ecological systems in the relevant area. Policy scientists, social theorists, and policymakers have been faced with the challenge of how to influence public attitudes and behavior, and develop policy instruments. A policy instrument is “a deliberate structured effort by a governing body to solve a policy problem by modifying the actions of the governed” [9] that works to link governing institutions and society in general through technical and social intermediaries [10], and which is intended to provide optimum solutions through a careful balancing of interests [11].

There are four kinds of participation constitute something of a cycle for rural development activity. The main kinds of participation that warrant major concern are: (1) participation in decision-making; (2) participation in implementation; (3) participation in benefits; and (4) participation in evaluation. We find that the first three kinds of participation are reasonably well defined in the approaches of development assistance agencies up to now, and there appear to be no grounds for objecting to the fourth. While evaluative participation occurs less frequently than the others, it deserves increased attention if development efforts are to be progressively improved. Its underscoring here is consistent with efforts being made in the development community to introduce systematic evaluation into most or all of its activities [12].

3. Research methods
This article is based on the findings of in-depth, qualitative case study research, using interview data and literature of policy and was conducted during the period of March-July 2018. This was survey research by qualitative analysis which aims to study Ban Huay Pu Kang Community Forest, Chiang Khong District, Chiang Rai Province for sustainable agriculture. The methodology is shown below.

1) **Focus group discussion** including forestry officers, village headman and villagers of case study: Ban Huay Pu Kang Community Forest, Chiang Khong District, Chiang Rai Province. The group discussion also helped in identifying the most knowledgeable forest users and managers to be chosen as key informants for interviews. During the FGD, audio recordings as well as notes were taken.

2) **In-depth interview** was used with key informants including forestry officers, village head man and villagers of case study: Ban Huay Pu Kang Community Forest, Chiang Khong District, Chiang Rai Province who were related with participation in local community forest management for sustainable agriculture. The key informants were identified after the focus group discussion was held and from the FGD participants who appeared more active during the discussions and are also the committee member.

### 4. Findings: sustainable local agriculture development

Huay Pu Kang community has been living with community forest which has upstream nourishes people, places, and food resources until a valuable tradition in accordance with way of life of people in community occurred which increases social capital, strength and trust of people in mutual resources management and led to learning process and adaptation to the change, reviewing themselves, finding community capability through research. Lastly, community has learning process to adapt themselves to the change, and to develop their capability systematically and continuously.

| Interviewee               | Date        | Location            |
|---------------------------|-------------|---------------------|
| Mr. Surat Somroob        | 31 March 2018 | Huay Pu Kang temple |
| Mr. Duangnet Chaityawong  | 31 March 2018 | Huay Pu Kang temple |
| Mr. Santiboon Jaikum     | 31 March 2018 | Huay Pu Kang temple |
| Mrs. Kumyaung Changpradit | 31 March 2018 | Huay Pu Kang temple |
| Mr. Dech Oonkum          | 31 March 2018 | Huay Pu Kang temple |
| Mr. Duangdee Saengjoy     | 31 March 2018 | Huay Pu Kang temple |
| Mr. Boonchai Intaeng     | 31 March 2018 | Huay Pu Kang temple |
| Mr. Moon Kooha           | 31 March 2018 | Huay Pu Kang temple |
| Mrs. Fongkum Saengjoy    | 31 March 2018 | Huay Pu Kang temple |
| Mr. Thong Somroop        | 31 March 2018 | Huay Pu Kang temple |

| Name                      | Date        | Location            |
|---------------------------|-------------|---------------------|
| Mrs. Kumyaung Changpradit | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Dech Oonkum           | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Duangdee Saengjoy     | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Boonchai Intaeng      | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Moon Kooha            | 28 July 2018 | Huay Pu Kang waterfall |
| Mrs. Fongkum Saengjoy     | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Thong Somroop         | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Kumdang Kutyod        | 28 July 2018 | Huay Pu Kang waterfall |
| Mr. Junthong Oonkum       | 28 July 2018 | Huay Pu Kang waterfall |
| Mrs. Sopa Thasom          | 28 July 2018 | Huay Pu Kang waterfall |

Problems found in the past from community water management for agriculture was that people in community lacked knowledge in community forest management, systematic water management,
insufficient reservoir, unamended check dam which resulted in floods during rainy season and insufficient water for agriculture during summer. Later, people in community were gathered under the supervision of community leader: village headman, representative from Department of Forestry to consult and to find guideline for systematic water management, including upstream protection by people so that local community forest management would be successful.

Internal factors which accomplish community forest management for agriculture were the strong leader, harmony of community members, participation of people in community, and ritual and belief stratagem in forest conservation which could implement knowledge to their way of life in accordance with community forest management based on forestry principles. There should be integrated activities based on community forest management principles for sustainable agriculture, focusing on that natural resources and environment belonged to all in community. So, it was obligation to all to protect, care, and raise awareness of co-ownership in natural resources and environment which recognized as consciousness creation of community resources usage.

External factors which accomplish community forest management for agriculture were to create cooperation network with external organization in terms of supporting community, knowledge and training including Thailand Research Fund (TRF), organization related to forest resources management e.g. Department of Forestry, educational institute in the area. At the same time, community need cooperation between community and external organization by assigning people to the field trip in the areas proceeding continuous activities which build the pride as important thing so that community realizes the importance of forest protection and co-ownership in natural resources

The study of Huay Pu Kang community forest management process was in concordance with concept of [13] who studied Punamdan upstream forest management for sustainability of community food resource base. It was found that integrated guideline of community forest management to sustainable success of both natural resources and better living conditions of people in area, most people are agriculturists. Framework applied in this research were planned into three guidelines. (1) It was to create network from community base themselves by gathering of village committees who managed and administrated and community members who participated in other activities e.g. mountain waterworks system, monthly forest patrol, and building network with outer organization. (2) Community set rule and regulation related to Punamdan upstream forest management and mountain waterworks system. The result pointed out that community set the rule and regulation loose and then turned them stricter depending on factors affecting on upstream forest in each period. If there is an offender, inform villagers as another social sanction. (3) Tradition and culture of food resources base management related with upstream forest was strategy to raise awareness of upstream spirit’s value which protected water resources and kept them fertile and also kept villagers’ life sound. If people wanted sound life, they needed to protect upstream forest.

After analyzing factors of success in Huay Pu Kang community forest management, it was in accordance with concept of [5] who studied Development of people participation form in community forest management: Banta Papao Case Study, Ta Pladuk Sub-district, Mae Ta District, Lumphun Province. It was found that five creation of participation development principles could occur by relying on two main things: internal and external factors. Internal factors consisted of (1) harmony of villagers, (2) leader who had vision and sacrifice, (3) conservative concept for being agriculturist of villagers, and (4) driving force from result of villagers’ deforestation in the past. External factors consisted of (1) rules and regulations of public sectors, (2) support from outer organizations, (3) acceptance from external, and (4) experiences from exchanging with external learning.

5. Conclusions

Huay Pu Kang community had successful community characteristics in accordance with conditions of community forest management which were that community still remained the same way of life and community culture, norms, tradition of mutual natural resources conservation combining with setting rules to care natural resources in community forest. Community forest committees were set to care community members’ participation and to control members’ resources base usage in the forest,
especially upstream forest which nourished villagers’ life for both agricultural and domestic usage. There should be continuous learning process and using community research process as support for continuous and systematic which linked to community forest activities according to concept and practice and finally becoming villagers’ way of life is community.

Suggestion for Huay Pu Kang community forest management for sustainable agriculture, there should create continuous community forest management activities and the local government and private sector would support them to conserve their forest management. Finally it would be helpful to villagers could be recognized by legal institutions to help apprehend any offenders. However, this would need support from government in initiating formal dialogue with the legal institutions. The above suggestions would ensure that every sectors shall play a real role not only in environmental and biodiversity conservation but also in improving the livelihood of rural communities in the village.

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