

## The Study of Community Forest Management in Eastern Economic Corridor: Case in Nakhon Nayok

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### Abstract

This study aims to examine the strengths and weaknesses of community forest management in the east corridor of Thailand. Methodology required will be of high quality, so use group and individual interviews to collect as much data as you can. The tools that will be used are semi-structure interviews and checklists that will help provide content analysis. The desired results of this study are: to review the community forest committee in the three areas of Thailand's east corridor, to set up a form of government organization following the project, and for the SWOT analysis of community forest management of committees in the area. Ten issues can be classified with three major points, and weaknesses related to ten topics can be classified by two main points. The opportunities involved can be broken into seven categories with two major points. The threat has five categories and two issues. Thus, the recommended solutions are: 1) Studies continue examining the three main issues, and 2) Continue developing solutions for the three issues.

**Keywords:** Community forest; East corridor; Thailand.



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### 1. Introduction

Thailand started to use aerial photography services to examine forest areas in 1961. At that time, the country had forest area measuring about 273,628.5 square kilometers (km<sup>2</sup>), or 53.3% of the total area of the country. The next time the government surveyed the forests in 1973, the area of forest was reported to be about 221,707 km<sup>2</sup>, or 43.2% of total area of the country. In 2008, it was reported the total forest area measures about 171,585.7 km<sup>2</sup>, or 33.4% of the total area of the country (Government Strategic Information Center, 2013). Information regarding the forested areas of Thailand revealed the rate is decreasing too fast (decreasing at a rate of 62.70% over the course of 47 years), and the decreasing rate should have stopped in 1989 because the government abolishment the deforestation in Thailand (Duangjai *et al.*, 2013), but data reveals a trend of decreasing forest area continues. The trend of vanishing forest in Thailand has many factors influencing the decreasing rate, so the development and improvement of country policy is one of many factors directly impacting the decreasing forestry. Policies such as the first National Economic and Social Development Plan started in 1961. Since then, Thailand has developed infrastructure, increased the agricultural areas and grassy space for livestock raising, and so on (Seub Nakhasathien Foundation, 2014). Government policy has attempted to subdue smuggled forest products as well.

We must consider that forests are renewable natural resources (Suksa-ard, 2009) important to human living, biodiversity, providing natural habitats, and so on. Nevertheless, the benefits of forests can be broken down into two parts: 1) Direct benefits to humans, as the forest contains a stock of herbs and natural foods, and 2) Indirect benefits to humans, such as acting as wind breaks and carbon dioxide (CO<sub>2</sub>) absorption (Duangjai *et al.*, 2013). Relationships between humans and forests, however, are deeply important to culture and beliefs. In the report by Jamratphan (1997), *Cultural and Community Forest Management for Biodiversity*, the paper illustrated a belief system showing respect and gratitude from a villager to a community forest through a *phoe puta* (spirit ceremony), so the setting of the *phoe puta* will be in the conservation zone of community forests (Srichaiwong *et al.*, 2014). Srichaiwong reported the value of natural food in the forest measured to roughly 19,000 baht per year (current

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approximation is 36 baht = 1 USD), so the forests have more benefits to us if they thrive. Deforestation increase affects many local communities and Thailand as a whole. Thailand's government processed forest protection, and the community described above is one of many attempting forest conservation.

Thailand developed an Act of Parliament bill in 2007 to offer rights to villagers for managing their community forests ([Secretariat of the Senate, 2007](#)), but at the present time, the Act is not used, and the information center of the Royal Forest Department reported in 2016 that areas of community forest has dropped by about 522 km<sup>2</sup>, or 0.1% of total area of the country.

It is possible, however, that the urban development in the country has had a direct impact on the livelihoods of local people, whether they're directly related to professional career survival, or whether our values have changed according to the flow of such rapid development. In particular, Thailand will become a member of the ASEAN countries, so changes to transportation routes have been created. These new routes connect Thailand with the other ASEAN countries. The border of Thailand in the northeast connects to Laos, in the south, Thailand connects to Malaysia, Thailand's west border connects with Myanmar, and the eastern part, Cambodia. In the eastern part exists a short corridor, and in the future, Bangkok will be linked to Nakhonnayok, Prachinburee, and Sakeaw Provinces, and connect Thailand's cities with the borders of Cambodia. Due to the trend of ongoing development of the country, possible relationships between human and forest communities may remain the same or may change. One research question to bear in mind is, "How can we manage the community forests around the east corridor of Thailand?" This research will be basis of study of community forest management patterns and perspectives, allowing us to consider the advantages and actions that will need to be taken in forest management planning to ensure their communities are held in check more effectively. The areas for this study is selected by representatives of forest communities. The three areas for this study include: 1) The Nonmakha community forest in Nakhonnayok Province, 2) The Nonhinpheang community forest in Prachinburee Province, and 3) The Bangphoaw community forest in Sakeaw Province. However, in theoretical framework of the research conducted is focused on the function of management practices of community forest committees, so consider public participation and processes at community forest areas ([Asanga, 2002](#); [Royal Forest Department, 2009](#)). Also consider other activities by using a village in or near a community forest for explaining resource utilization.

Research of community forest management covers a procedural viewpoint of resource utilization under various forms of multi-dimensional user groups, and the base of the community, or rather, the basic element of the community, is the people within the community itself or in close relation to someone using the forest. This can have value in research. Combine that value with the elderly who live in the area to show the development of the community and the forest. This will aid in considering the impact of change and development, as well as factors affecting the change, which will reveal the effect of information with the management of the forest. This is considered a form of strength and weakness in the project. The aims of article for study the situation of management in the community forest in the east corridor of Thailand, and study will identify strong and weak points of community forest management in the east corridor of Thailand.

## 2. Methodology

This is a phenomenal study of community forest management of the villagers in three provinces around east corridor of Thailand. The qualitative methodology will be mainly used for processing management and perception of forest management within the community, which significantly focuses on patterns of community forest committee activities to manage and utilize the forest.

### 2.1. Study Site

This study focus on three communities in three different provinces, which are: Nonmakha Community Forest is the studied forest of Nakhonnayok Province, limited UTM (Universal Transverse Mercator), Zone 47 E736398.55 N1581282.96; Nonhinpheang Community Forest is within Prachinburee Province, limited UTM, Zone 47 E78920.18 N1551311.63; and the Bangphoaw Community Forest in Sakeaw Province, limited UTM, Zone 47 E199237.06 N15122003.41.

### 2.2. Collecting Data and Key Information

Used 2 methods for data collected were;

#### 2.2.1. Group Interview

Used for collecting data from a community forest committee about the benefits of forests, the activity of the committee, the function of the committee, the organization's activity in people joining the committee, and problems of management, along with other information that may be useful to this study. The key informants are 45 committees within 3 community forest study sites.

#### 2.2.2. Individual Interview

Used for collecting data concerning the structure and function of committees and history of the community forests in relation to the villages, collecting data from the three headmen of the community forest and the headmen of the three villages at the study sites, and for considering the relationship between local administration and committees involved with the community forests.

### 2.3. Tools for Collecting Data

The tools for collecting data will be the semi-structure interviews (SSI) and the rapid rural appraisal method (RRA) (Simaraks and Suphatera, 1987), combined with the observation checklist and assessment survey form.

### 3. Data Analysis

This study uses content analysis to analyze the community forest committees in each area, taking into consideration structure and function management of the committee, and using SWOT analysis to consider points for improving the organization.

## 4. Results and Discussion

### 4.1. Background of Study Site

#### 4.1.1. Community Forest Establishment

Local community forests were promoted around 1987 to impose the mechanism for forestry protection (Onphom, 2011), so the government ramped up the project to search for public community forests to include in the project. The history of the community forests are:

##### a. Nonmakha Community Forest

In 2004, government officials suggested village headmen set up a community forest project to submit to the Royal Forest Department. After the project was approved in 2004, the area of community forest was designated to about 12 hectares.

##### b. Nonhinpheang Community Forest

The forest has an area of about 71.52 hectares. Part the forest was once the cemetery of a village. In 2001, the village set up a community forest group and registered the area as the Nonhinpheang Community Forest with the Royal Forest Department. This particular community forest supports three villages.

##### c. Bangphoaw Community Forest

Part of this community forest was public forest until 2012, but soon after, a forest government official suggested village headmen set up a community forest project to submit to the Royal Forest Department. The project was approved on August 8, 2012, and the area of this community forest was measured to about 164.16 hectares.

#### 4.1.2. The Geography and Characteristics of Community Forests

##### a. Nonmakha Community Forest

This community forest, which is adjacent the Klongbot reservoirs, has a smaller area than the other community forests. Its foothills do not have a large expanse of trees, but the area of this community forest connects to a conservation area of the Royal Forest Department.

##### b. Nonhinpheang Community Forest

The community forest has three villages surrounding it, and most of the forest is spread out on flat land. The soil contains powdered clay, and the forest has more large trees in it than other community forests.

##### c. Bangphoaw Community Forest

This community forest acts as a buffer between an agriculture zone and residential zone of a village. The trees in this forest are mostly teak, and the forest has a drier climate and contains a great number of dipterocarp trees.

#### 4.1.3. Community Forest Rule

The rules of respect for these three community forests are similar to one another because the core guidelines follow the rules of forestry government. These guidelines have three similar issues:

##### a. Protection Through Patrolling

The village and government officers patrol for protection from the smuggled goods as a result of deforestation.

##### b. The Prohibition of Damaging a Community Forest

Just as villager can't cut a tree down, villagers also can't hunt animal or damage any other aspect of the community forest in their area.

The real concern with patrolling the community forest, however, is between government officers and villagers. As the villagers see it, patrolling is an activity the community forest committee has down to a routine. Villagers rely on the community forests for more activities and for their livelihoods than those who do not live in the villages do. In comparison, government officers have less at stake than the villagers, and may not feel the protection of the forests is as important to check on. The rules a community forest committee tries to promote mainly involve prohibition of logging or harming natural resources in the forest, so a good rule to managing these community

forests should be drawn from villager information because it would reinforce the local authority (Pagdee *et al.*, 2003).

#### **4.1.4. The Function and Relationship Between Villages and Community Forests**

In part, the function of a community forest is:

##### **a. Food Bank**

The community forests are fantastic sources of natural foods, including vegetables and animal meat (Srichaiwong *et al.*, 2014). The natural production of various sources of food will change seasonally throughout the year.

##### **b. Energy Resources**

Large amounts of energy for cooking a village meal come from charcoal and firewood, and the community forests are great sources of wood in the community.

##### **c. Local Economy of Villages**

The production from forest if over consumption or if a household within the village takes too much from the forest, will be sold by the villagers for extra income (Shirai and Rambo, 2008).

##### **d. Belief**

When a villager attempts to collect a natural product from a community forest, they will pray to the forest spirit for help in the searching out the natural product they need.

Currently, the function of community forests is changing so that only one component or area is harvested at a time. The villager has difficulty utilizing items that have differences from others compared to previous times. The factors influencing the function and relationship of villages and community forests differ if compared. Three major factors of this comparison are:

##### **e. The Livelihoods of Villagers Are Changing**

The livelihood of villagers include the occupation of villagers who do most of their work outside the village. Work routine is affected if they not have a time to use the forest to find products they need, and mainly food is what villagers will sell in a local or mobile market.

##### **f. The technology improved**

Villagers use charcoal and firewood as mainly energy for cooking. At present, all urban households use gas or electric stoves to cook, however, most villagers will buy charcoal from the market.

#### **4.1.5. Health Knowledge Improving Villager Lives over Belief**

once, the belief in spirits of the forest would help a villager heal from illness. Before, a villager would collect an herb in the forest to heal illnesses, but not nowadays. If sick today, the villager will go to the hospital instead of searching for herbs in the forest.

Several factors in the development of the community and the forest have caused the function of the community forest and its relationship to the villager to decline. The villager currently perceives the community forest to be a conservation zone but does not realize the value and awareness with benefit of the community forest.

#### **4.1.6. Structure and Activity of Community Forest Committee**

All community forests have the following management team has structure:

##### **a. Chairman of Community Forest**

Positioned to contract with government organizations and promoted to be a committee member and villager; almost always will use the community forum in the village for distributing data to the villager.

##### **b. Treasurer**

Budgets management organization; at the three study sites, the treasurer will work together with the chairman on contracting with the government sector.

##### **c. Committee**

Will be similar to a general organization, so it accepts data and makes suggestions to the chairman to ensure that the high-level organization continues.

##### **d. Secretary**

Records the minutes and meeting summaries. The structure of the community forest committee has been set up based on the government organization suggestion. The village committee will be used for the commission of community forest activities. And the frequency of the community forest committee meetings depends on the village

headman's annual meeting in the village, as the committee of the community forest is the same group as the village committee.

#### 4.1.7. The Participation of Villager in Community Management

In the study with activities in the community forest, according to three studies sites are: 1) planting a tree in the royal area on His Majesty the King's Birthday and Her Majesty the Queen's Birthday, and 2) forestry ordination; the activity started in the North of the country, but at present, it has been distributed throughout all countries. However, in terms of the government's working style, one project nationwide still has a low level of participation when it comes to working together with the villager and the community forest committee, so there is a big gap of interoperability between the government and community.

#### 4.1.8. The Network of Community Forest Management

In the community forest under a project of the Royal Forest Department, the government officer is the mentor for management and set up activity in the community. The officer will set up the network of the community forest to facilitate the exchange of knowledge; for instance, the Nonhinpheang community forest committee has been on a field trip in the area of the Banphoaw community forest, etc. This activity is one of the government's many methodologies for developing the management practices of the committee so that they can select a suitable method for management (Xu *et al.*, 2016).

#### 4.1.9. Situation of Community Forest Committee in the Study Site

The situation of the community forest requires a standard for checking 10 issues, so consider from the survey and interviews the actions of the committee of the community forest. The study found that the community forest committee has taken a lot of action in the village; most people are part of the village committee and community forest committee. They understand the community's situation and can join government organizations. The knowledge document is produced when the villager joins with other organizations to make it. These issues are shown in Table 1. In the results, it was found that the Nonhinpheang community forest has all issues, and the Banphoaw community forest has seven issues, while Nonmakha has four issues. It is possible that the situation of the community forest will be related to the characteristics of the community, and to the relation between the government officer and community forest committee, *etc.*, to impact the this situation.

Table-1. Situation of Community Forest in the Study Site

Topics	Community Forest			Remarks
	Nonmakha	Nonhinpheang	Banphoaw	
Put together a community forest committee to work in the community.	✓	✓	✓	Normally, a village committee will take the position of protecting the community forest together.
The community forest committee is not the village commission.		✓		
The community forest committee can work with the village commission.	✓	✓	✓	
Have a clear community forest commission structure, and have documents by committee appointed.	✓	✓	✓	
The community forest committee will apprehended the smuggled aspects of deforestation in the community forest.		✓		The villager calls to the village headmen to arrest the deforestation smugglers.
Have a community forest document, such as a hand book or a report with community forest information, etc.		✓	✓	
Have a sign with rules of the community forest clearly listed.		✓	✓	Normally the sign will be supported by the government.
Actively aid in reforestation every year and participate in conservative activities each year.	✓	✓	✓	Every year, the villagers will be involved in activities, including planting trees in the community forest on His Majesty the King's birthday

				and Her Majesty the Queen’s birthday.
Maintain a complete record of biodata of plants in the community forest.		✓	✓	The government officer, working with the villagers, will make a biodata record of plants in the community forest.
Maintain a community forest network and field trip for community forest management.		✓	✓	The community forest committee in and around Nonhinpheang community forest has issues that need to be fixed, and Banphoaw community is a network.
Build and maintain a spirit house in the community forest.		✓		
<b>Total survey rate</b>	<b>4</b>	<b>10</b>	<b>7</b>	

#### 4.2. Perception of the Community Forest Committee for Increased Efficiency of Community Forest Management

In the study, it was found that previously, the community forest’s use of the villager was relative to the value of the forests, but in the present, the big question is: “How do you use the community forest when people buy everything from the market?” Thus, the perception of the community forest committee in the three sites is similar to the idea of community forest management for the protection of forestry; the perception of the committee is as follows: “*We’re protecting it for the next generation of utilization*” and “*There are forestry and we must preserve it.*” However, the perception of the committee was to focus on forest conservation to support the next generation, but a lot of people on the committee do not understand the real function, so the report of [Camara et al. \(2011\)](#) explained that the perception of the villager in the community forest is important for preserving the partnership between the villager and the government officer. This is necessary in light of the role and benefit of the community forest in supplementing forestry utilization and value added for villagers has awareness of the community forest.

#### 4.3. The Strange and Weak point of the Community Forest Committee in the East Corridor

Information from the interview with the community forest commission in three villages highlights community forest management with regard to its strengths, weaknesses, opportunities, and threats (SWOT). These issues are shown in [Table 2](#). The SWOT analysis of community forest management in the east corridor found 10 strengths, 10 weaknesses, seven opportunities, and five threats, as presented in the table above.

**Table-2.** SWOT Analysis of Community Forest Management in the East Corridor

<b>Strengths</b>	<b>Weakness</b>
1. Have government support, such as providing a solid budget, helping to plant trees and maintain the community forests, and so on.	1. The community forest commission has more activity for working to get income for local households.
2. Have a community forest committee to work in the community.	2. At present, villager utilization the community forests differ by area.
3. Every villager (age over 35) has been utilized in helping to maintain community forests.	3. The community forest commission is not an authority in management of the forest, because the community forest has the Act of Parliament bill in the forest management.
4. The community forests are near residential areas.	4. The community forest lost participation between government officers and villagers in the community when the government became involved.
5. The community forests have a source of natural food.	5. The villagers’ perception of forest spirits is changing due to the relationship between villagers and decreasing forestry and increasing use of modern medicine.
6. The community forests allow villagers to collect firewood for using in their households.	6. The activities between government organizations and community organizations working together no longer continue.
7. The village communities have the local knowledge pertaining to plants and herbs.	7. A great deal of activity within community forests, such as ordaining forests or tree
8. Government officers have knowledge and collaborate well with community forest management.	
9. The community forest committee focuses on conservation.	
10. Have a network of community forests.	

	<p>planting, has almost stopped due to government organization.</p> <p>8. At present, the community forest itself can't generate the items needed to increase the incomes of local villagers.</p> <p>9. The network set up from the government organization has not functioned properly because of the government's lack of orders.</p> <p>10. The community forest committees don't understand the function of forest management.</p>
<b>Opportunity</b>	<b>Threat</b>
<ol style="list-style-type: none"> <li>1. The government accepted the project for conservation of the community forests.</li> <li>2. The Department of Forestry has a branch for supporting the community forests.</li> <li>3. The government policy empowers the community forest committees.</li> <li>4. The blank area (public area) around the community forests can increase the area of the community forests.</li> <li>5. Trees within the community forests have a high product value.</li> <li>6. The villagers have not collected the natural food from community forests in a while, allowing the ecosystems to replenish.</li> <li>7. The community forests are distributed throughout the country.</li> </ol>	<ol style="list-style-type: none"> <li>1. The community forest committee must earn money to support the families within the villages.</li> <li>2. Government involvement will not continue.</li> <li>3. At present, the relationship between villagers and community forests is decreasing.</li> <li>4. The role of community forests is not interesting to the villagers; they do not wish to participate.</li> <li>5. The utilization of community forest resources is decreasing.</li> </ol>

#### 4.3.1. Strengths

The three main points related to the strengths of the resources in the community are: 1) human resources in the community; in the community, villagers have knowledge of herbal utilization and conservation forest management (local knowledge), 2) natural resources in the community forest, such as mushrooms, chicklets, lizards, *etc.*, and 3) a government to support network making, planting trees, *etc.* However, the points of the strengths are small points in the community. The local wisdom doesn't have the power to extend and support the conservation of the community forest committee. Perhaps the government officer should engage in knowledge and personal wisdom management and empower them to join the government and the community forest committee.

#### 4.3.2. Weakness

The 10 weaknesses can be classified as having two main points: 1) the livelihood of the group committee and the villager are almost not related to community forest utilization, 2) there is no interaction or connection between the government and the villager in the community because the government still operates using a top-down approach (giving orders for projects to the community), and loss stakeholders are not participating in community forest management. Compounding this is that in the village, many maintenance activities have points of weakness. Nevertheless, amid the weaknesses, the urbanization-related changes have a direct impact on the livelihood of the villager. Also, the technology developed to support the villager's way of life is decreasing forestry utilization if compares in the previous time.

#### 4.3.3. Opportunity

The seven opportunities have two main issues: 1) the government can support many aspects of the project, such as trees and pick up to the field trip with the community forest management in other area, as well as networking with the community forest, and 2) the area of the community has many public areas that can help with increasing the forest in the community. However, the opportunity that the villager has awareness of the community forest, so the government may use economic concepts such as Payments for Ecosystem Services (PES) to stimulate the villager in participating in community forest management.

#### 4.3.4. Threat

In the five threats, there are two issues: 1) the villager is less inclined toward utilization and has less of a relationship to the community forest differences compared to a previous time, and 2) the government organization that is not working continues in extension and monitoring activities in community forest management. However, the government should empower the villager and community forest committee and increase the participation between the government officer and the villager, promoting a friend and buddy style that is better than the top-down concept.

## 5. Conclusion and Recommendation

This research found in the practices of the community forest committee that there are three areas of the east corridor of Thailand. It is necessary to set up a form of government organization following the project and focus on the forested area of the public area in the community. Previously, the community forest had more benefit, and there was more value and more relation between the villager in the community and the forest. However, world development has affected the villager's livelihood, which is changing the impact on the relation between forestry and the villager. However, the government's working style is top down, so the villager and government should work to create a buddy-style relationship. For the strength point, 10 issues were found that can be classified as having three majors point, and weaknesses related to 10 topics can be classified as having two main points. Meanwhile, the seven opportunities can be categorized as having two majors point, and the five threats can be categorized as having two main issues. Based on this, the two recommendations are made:

### 5.1. Recommendation for Continuing Study

After studying community forest management in the east corridor, studies should continue on the following areas: 1) the guidelines for developing empowerment; focus on increasing the community forest committee to boost the performance of the committee in administration and management. 2) In the community, there is local wisdom regarding plant biodiversity and herbs. Knowledge management involving the local wisdom is necessary. Extract the knowledge for transfer to the villager. 3) The forest community has many ideas about forestry management, so the next study should collect ideas for developing related models.

### 5.2. Recommendation for Development

The community forest to the academician is very important from an environmental point of view. According to this study, the gaps that can be improved with community forest management are: 1) the government should empower the villager and the community forest committee in forestry management, 2) the government officer should work with villagers in a friendship style rather than using a top-down approach, and 3) monitor the community forest in networks and knowledge management. The local knowledge combined with forestry management improves modelling. This is valuable for classifying the zone and utilizing the knowledge series (the management model) suitable for extending the conservation of the community forest committee and empowering the villager.

## Acknowledgement

This research project was scholarship supported by Srinakharinwirot University. The authors and researchers would like to thank all villager are the Nonmakha village, Nakhonnayok province, Non village, Prachinburi province, and Phoaw village in Sakeaw province to supported the data and information in the research.

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