CHAPTER 1

Introduction

Statement of the problem

In the past, Thailand was considered as one of the most natural resource-rich countries, as Bock (2000), wrote about how abundance of Thailand from his journey from Bangkok to Chiang Rai. There is the saying “there’s always fish in the river, always grain in the rice field” which is symbolic about how Thai people could live peacefully with what the nature had to offer without much help from their government. Life for Thai people was completely simple and sufficient, especially people in the North part of the country, where covered by mountains and hills. Minerals, wild animals, trees and rivers were found naturally in the forest, and they were also serving the purpose to many families. Since most of Thai people are working in agriculture sectors, it is therefore very important to have an access from the river.

Unfortunately, Thai government granted a concession to the private companies taking over some part of natural resources in order to develop the electricity system, water supply system, post office and transportation network in Thailand (Ruengsilapa, 1998). The North part of Thailand, especially, Lampang became the main site of wood industry which owned and was concessional by the foreign company with the contract of strictly reforestation (Royal Forest Department, 1996).
Sukkorn, Wipasrinimit, Chainan, Toanabudtara and Supachantasak (2012) reported that people in the upper north of Thailand have a very close relationship with their forests due to the geography where most of the area are mountains and hills. Ninety percent of the local who live nearby the forest work in agriculture which is the main economic drive in the area (Nartsupa, 2011). Nonetheless, the economy and population growth had a critical effect on the size of the forest. In 1960, Thailand had 26,257,916 people (National Statistical office, 2009) and the size of the forest was 171 million rai or 53% of the country (Wises, 1997). However in 1990, Thai population had raised to 54,548,530 people (National Statistical office, 2009) but the size of the forest decreased to 85 million rai or only 26% of the country (Wises, 1997).

According to the decreasing of the forest, it clearly caused the natural disasters; including floods, droughts, and so on. Punlam (2000) had also studied about the effect of deforestation which could lead to another problem such as the raising rate of floods and droughts in Upper Chao Praya basin where the 4 rivers joins. In 2011, World Bank had calculated the damage of the economic lost from the incident of flooding in Thailand at approximately 1.356 trillion baht (Thai Publica, 2011). The problem that occurred because of the deforestation and the capitalism had ruined evidently to the community economics. The statistic of the labor in agriculture sectors decreased from 63.3% in 1990 to 41.1% in 2011 (National Statistical office 2009). Kasikorn Research Center also estimated the cost of damage that the droughts in 2016 had effected the income of agriculture industry around 64,161 million baht (Thansettakij, 2016).
In 2008, the size of the forest in Lampang had also decreased from 5.9 million rai to 5.5 million rai (Royal Forest Department, 2016a) or the forest is reduced around 80,000 rai per year. Lampang is also one of the 11 provinces in the North of Thailand that faced natural disasters almost every year (Hydro and Agro Informatics Institute, 2015).

Fortunately, there were some villages in Lampang that did not ignore the forest deterioration problem. People looked for the way to protect their community forest and restore the moisture, therefore, they had less effect from the nature disaster. Baan Sam Kha Village, Mae Tha district (Chanchom et al., 2003) and Baan Sa Sob Hok, Chae Hom district (Saema et al., 2010) were examples of villages that had sufficient water for household consumption and agricultural uses within their cooperation.

The government, the public enterprises and the Thai people had been trying to make an effort to restore the forest constantly. Unfortunately, Internal Security Operations Command (2014) concluded that the reforestation still would not make enough change in order to restore so they proposed the proper plan to protect the forest, prevent the forest encroachment, and long-term manage natural resources. The ideal plan would be having the abundance of the nature which will be the base to develop the nation. The goal is to have forests at least 40% of the country and to have a long-term protection and restoration plan for each forest by having participation from all sectors of the societies.

In the past, Hoey Sai Forest, Cha-am district, Petchaburi province was one of the most fertile forest in Thailand but after the uncontrollable immigrant to the area, this place was ruined by deforestation and uses of herbicides and insecticides. Within 40 years, the forest was completely destroyed; instability of rainfall and droughts
happened. This area became very dry and unable for plants to grow. His Majesty King Bhumibol Adulyadej had mentioned that this area could turn into a waste land or desert, therefore he gave the advice to the government on how to restore and develop natural resources, especially the water.

Until now, the population in Hoey Sai Forest area is able to live along the nature again without ruining the forest, the village become very strong community (Huai Sai Royal Development Study Center, 2017). In 2002, people in the community could earn 13,234 baht/person/year and increased to 38,777 baht in 2012 (The Community Develop Department, Cha – Am, 2012). The forest restoration definitely improved the community economy.

The healthy forest could be the source of an alternative energy for the country as well as in Baan Mae Mon village (Chae Son National Park, 2016). The Government established an Alternative Energy Development Plan (AEDP2015) to be implemented from 2015-2036. The Plan sets a goal to increase power generation from small scale hydropower from 142.01 MW in 2014 to 376.00 MW in 2036, or 165% increase (Ministry of Energy, 2015). Presently, there are 9,585 community forests, with a total area of 4,244,033 rai (Royal Forest Department, 2016b). Consequently, community forests are a promising alternative source of alternative energy for generating electricity at a small scale for community’s economic development.

The main purpose of this research is to find out the solution to restore the moisture in the forest so that the community forest would be in healthy condition as the natural forest, in order to revive and sustain water resources for community’s economic development.
Research Objectives

The objectives of this research are:

1. to compare characteristics and components of community forests with natural forests
2. to analyze conditions and problems of reforestation done by communities
3. to develop model of forest moisture restoration
4. to evaluate the financial value of community forests and natural forest

Research Questions

1. What are the characteristics and compositions of community forests? Are they different or similar to the natural forests?
2. What is the problem of community forest restoration?
3. What are the reforestation patterns to restore moisture in community forests?
4. How much is the economic value of community forests and natural forests?

Expected Outputs

1. Understand characteristics and components of community forests and natural forests.
2. Realize problems of forest restoration in community forests.
3. Have model or solution for moisture restoration in community forests.
4. Realize economic value of community forests and natural forest.
Scope of Study

This research is a qualitative research and is conducted to develop forest moisture restoration model for community economic development in Lampang. In doing so, the scope of study covers the following approaches:

1. Area

A total of four community forests and one natural forest were chosen to study in the research, namely Baan Sam Kha community forest, Baan Sa Sob Hok community forest, Baan Rai Sila Thong community forest, Baan Ton Tong community forest, and Mae Mon natural forest (Figure 1.1).
Figure 1.1 Locations of the community forests and natural forest

Figure 1.1 depicts the location of the 4 studied community forests scattered in various areas in Lampang. The natural forest is Mae Mon Forest located in the northern part of the province.
2. Population and Sample

The population of four communities used in this research consists of 656 people from Baan Sam Kha, 445 people from Baan Sa Sob Hok, 1,113 people from Baan Rai Sila Thong and 1,400 people from Baan Ton Tong (Lampang Government Center, 2017). The sample included 40 representatives (10 people from each community). Information is gathered from the an observation and interviews.

3. Content

Reviewing the relevant documents, field surveys and interview to compile data on characteristics and compositions of forest. Analyzing the problem and developing model for forest moisture restoration in order to have capital for community economic development.

4. Time

This research was conducted since 2014. In the first year, the researcher reviewed problems, theories, and relevant sources of information. In the second year, the researcher collected data and interpreted results. In the last year, the researcher summarized findings and made conclusion as well as recommendation.

Definitions

Community forest refers to forest areas of Baan Sam Kha, Baan Sa Sob Hok, Baan Rai Sila Thong and Baan Ton Tong. These forests are managed by community motivation for direct and indirect benefits to ecosystem, and for wood and non-wood products of community according to sustainable goals.

Natural Forest refers to forest areas of Mae mon Natural Forest at Chae Son National Park, Lampang.
Solar Energy Maximizing (SEM) refers to a conversion of solar energy into carbon dioxide, minerals, sugar and oxygen through the process of photosynthesis of evergreen trees.

Water-drawing trees’ roots model is a form of accelerating moisture restoration in community forests.