

# Current functions and expected roles of Private Forest Plantation Cooperatives in Thailand

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## Abstract

In Thailand, large areas of private tree plantations were established by the Economic Tree Plantation Promotion Project initiated by Royal Forest Department (RFD) since 1994. To secure the profits from these tree plantations, Private Forest Plantation Cooperatives (PFPC) have been set up all over the country since 1996. As a result, a total of 36 Private Forest Plantation Cooperatives had been established by 2002. The current functions and expected roles of PFPC were investigated on the basis of interviews with the board members of PFPCs. The results showed that the current functions and expected roles of PFPCs differed from place by place according to regional properties, such as the existence of a local market for teak and the abundance of resources. Some key points for the future development of PFPCs were considered to be planning of development that fits the local needs and constraints, strengthening of organization and appropriate role sharing among board members, and consideration of the sustainability of activities based on updated forest resource information.

**Keywords:** Private Forest Plantation Cooperative, Teak (*Tectona grandis*), Tree planting promotion, Farm forestry, Thailand

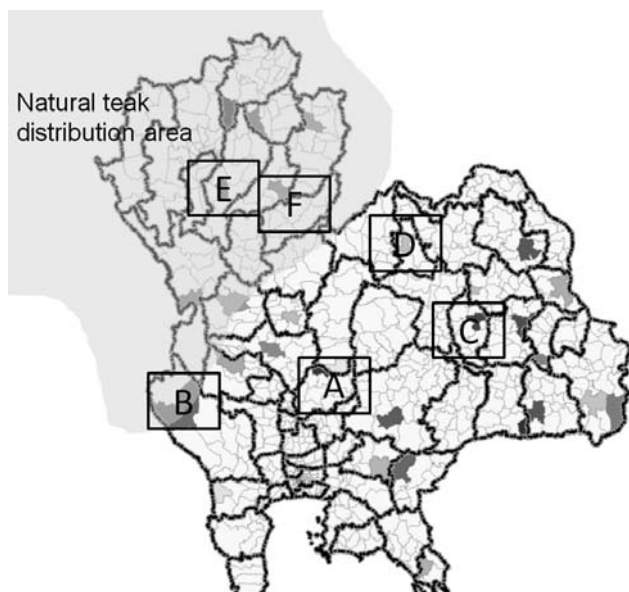
## Introduction

In Thailand, forest areas declined drastically from 53.3% in 1961 to 25.3% in 1998 (RFD 2008). Legal and illegal logging and land conversion from forests to agricultural land are the main causes of deforestation (Mahannop 2004; Sharp and Nakagoshi 2006). The Royal Forest Department (RFD) initiated several policies and projects to oppose this one-sided conversion by promoting private plantations around the beginning of 1990. The office of Private Reforestation and Extension was set up in the RFD in 1986 and the Forest Plantation Act was endorsed in 1992. Two important projects supporting private sector involvement in tree plantation development were initiated in 1994 (Mahannop 2004). Among these, the Economic Tree Plantation Promotion Project was one of the most influential projects initiated by the government. This project provided a subsidy (3,000 baht/rai (1 rai=0.16 ha), equivalent to US\$750/ha in 1994) to people who planted economic tree species on their land over the initial 5 years (Sharp and Nakagoshi 2006). The project was implemented from 1994 to 2002. A total of around 390,000 hectares were

planted by local people under the project (RFD 2002).

Teak (*Tectona grandis*) has been one of the most important and valuable tree species in Thailand with a long history of plantation started in 1906. Therefore, many participants chose teak as the tree species to plant under the project (Sharp and Nakagoshi 2006). More than 15 years have passed since the project started. Teak trees in the first generation of the project have grown to reach the minimum merchantable size (Kijkar 2001). Therefore, some harvesting of teak for sale came to be observed in local areas. At the same time, some planters converted their tree plantations back into agricultural land or other types of plantation when they lacked sufficient information or a clear vision on the future returns of their tree plantations. It is reported that many planters were unwilling to sell their trees to buyers or middlemen at an unreasonably low price (Noda et al. 2011). Under these circumstances, it is important to organize groups such as cooperatives or associations to secure planters' profits while attaining independence of individual planters and achieving fair trade.

In Thailand, Private Forest Plantation Cooperatives



**Fig. 1.** Distribution of the established PFPCs (their locations are shaded) and the surveyed PFPCs and SCs (shown by letters) (A: Lop Buri PFPC, B: Kanchanaburi PFPC, C: Maha Sarakham PFPC, D: Nong Bua Lam Phu PFPC, E: Lampang Handicraft Cooperative, F: Don Moon Wood Product Service Cooperative). This map was drawn on the basis of documents from the Private Plantation Division of RFD. The distribution of teak natural stands was sketched with reference to Gyi and Tint 1998.

(PFPCs) started to be set up by the RFD in 1996. A total of 36 PFPCs had been established by 2002. However, the total number of PFPCs had declined to 30 by 2009. This shows that PFPCs did not always work as well in Thailand as they should (ITTO 2006; Himmapan et al. 2010). There were some studies on the factors affecting the planters' decisions upon participation in a PFPC (e.g. Saengpan 2003; Laowphaphao 2005). However, there have been quite a limited number of studies directly focusing on the activities of PFPCs.

Therefore, the objective of this study was to elucidate the current functions and expected roles of PFPC through comparative case studies on organization and activities in order to find out the keys for developing PFPCs in Thailand.

## Materials and Method

Interviews with the board members of selected PFPCs and related Service Cooperatives (SCs) were conducted in December 2009. Candidate cooperatives that cover the whole of Thailand, except for the southern part, were sampled. The six sampled provinces were Lop Buri, Kanchanaburi, Maha Sarakham, Nong Bua Lam Phu, Lampang and Phrae (Fig. 1). Items on which questions were asked were organization of cooperatives, current activities,

future plans and surrounding conditions. Firstly, the current functions and the expected roles of PFPCs in Thailand were investigated referring to actual activities and good practices. Then, on the basis of the earlier observations on current situations, the obstacles and expectations for PFPCs were discussed.

## Results

The current status and activity of surveyed PFPCs were summarized in Table 1. All these PFPCs were established around the year 2000, but the current functions of PFPC differed from place by place according to regional properties. Operation of Lampang PFPC in the north of the country was not successful and cancelled. Therefore, the activities of Lampang Handicraft Cooperative and Don Moon Wood Product Service Cooperative in Phrae were only mentioned in the text.

Hereinafter, the results of interview on current functioning, successful practices and expected roles of PFPC were described in detail.

### 1. Securing and expanding the teak wood market

There was a teak market in the northern part and eastern part of the country because there used to be teak wood processing factories and also a high demand in the central region near Bangkok. However, in the northeast of Thailand, there was a limited demand for teak because local factories were not used to dealing with it. Therefore, the PFPC itself was expected to provide a market for teak logs by running a sawmill and/or a furniture factory. Nong Bua Lam Phu PFPC has been running a furniture factory to process doors and window frames by order (Fig. 2). Maha Sarakham PFPC also has been buying teak logs from its members and has been running a factory to process them, although its main material was eucalyptus wood. Lop Buri PFPC in the central part of the country also has been buying teak logs from its members at a higher price than others and processing these at a variety of processing stages, such as log, sawn timber, and furniture, making use of the advantage that it was located near Bangkok and also near the wood processing factories surrounding Bangkok.

### 2. Sharing knowledge and techniques

The Economic Tree Plantation Promotion Project was initiated to promote tree planting by the private sector in Thailand (Mahannop 2004). Technical assistance was needed because planters usually did not have much experience or knowledge about silvicultural activity. It was also pointed out that buyers set a low price upon trading in teak directly with farmers (Noda et al. 2011). Therefore, not only technical assistance in terms of silvicultural techniques but also support and the provision of knowledge on socio-economic aspects were needed. The private plantation promotion division of the RFD has been providing seminars

**Table 1.** Current status and activity of surveyed PFPCs and regional characteristics

Location	Code Region Cooperative	A Central Lop Buri	B Central Kanchanaburi	C Northeast Maha Sarakham	D Northeast Nong Bua Lam Phu
Establishment		2000	1998	1997	2000
Regional characteristics	Distance to Bangkok	○	△	△	×
	Distance to North	×	×	×	△
	Local market	×	○	×	×
	Low land competition	○	△	×	×
Activity	Current activity	○	×	○	○
	Factory	○	×	△	○
	Technical consultation	○	×	○	○
	Technical seminar	○	○	○	○
	Production of seedlings	×	×	○	×
	Planting (contract work)	×	×	○	×
	Logging (contract work)	△	×	○	△
	Support for permission	○	×	○	○
	Networking	○	△	○	○
	Promotion	△	△	△	△
	Money lending	×	○	×	×
Remarks		Selling logs, sawntimber, furniture Strong hope for log auction market	Many members or planters operate small wood processing factory Money lending	Main activity is on eucalyptus wood and charcoal making Good dividend	Selling furniture by order

The marks in the table show the positive (○), negative (x), moderate (△) evaluation given by the author subjectively based on the interviews. Locations of the PFPCs are shown in Fig. 1.



**Fig. 2.** Photograph of the furniture factory operated by the Nong Bua Lam Phu PFPC

related to the management of teak plantations and periodically also providing information on the price of wood to the PFPCs. Participants in seminars were often chosen from the members of the PFPCs. The PFPCs often referred to the provided price table in terms of setting a buying price and in the case of inquiry from their members. PFPCs provided such price lists to their members at annual general meetings. The seminar topics were chosen from

among the hot topics. In Kanchanaburi, many participants in a seminar on small log utilization set up small-scale factories individually to process furniture or woodcrafts after attending a seminar. Lop Buri PFPC provided technical seminars on the occasion of their annual general meeting. Voluntary workshops were held at Nong Bua Lam Phu PFPC. Independent developments of PFPCs were ultimately expected. Therefore, the utilization of a variety of occasions for sharing knowledge and techniques among members was highly anticipated.

### 3. Technical advice and contract work of silvicultural activity

Typical small farm forest planters would experience harvesting for thinning a few times and once at the final cutting. Therefore, it was not easy for individual planters to prepare equipments for harvesting and/or transporting. It was also not so easy for unskilled planters to evaluate their teak stands, which included various sizes of trees. This enabled the middlemen to buy their logs at low prices. Therefore, there was potential for PFPCs to promote fair trade by helping their members to calculate the value of their goods and to support harvesting and transportation, although the validity of the value set by the PFPC should also be assessed separately. At Nong Bua Lam Phu PFPC, one board member collected information on the individuals who wanted to sell their trees and went to calculate teak

stand values for members. In the northeast of Thailand, planters did not have enough information on selling trees because the trading of teak was not observed regularly. Lop Buri and Maha Sarakham PFPCs organized a temporary working group to harvest and transport logs using the equipment that they owned. There seemed to be demand for contract work for logging and transportation. Maha Sarakham PFPC even enabled substitute members to plant trees as contract work. Planters were usually not familiar with thinning activity, such as the selection of trees to cut. Therefore, contract work or technical assistance for thinning by a PFPC was considered to have potential to accelerate the implementation of thinning. At present, workers were usually hired occasionally for silvicultural activity. If the number of experienced workers would increase and a sufficient quantity of work be secured, a professional working group may potentially be organized in PFPCs in the future.

#### **4. Support for registration and permission for harvesting and transportation**

Harvesting and transportation of teak wood were strictly controlled by the authorities in Thailand. Teak planters had to go to a provincial office to register their tree plantation and to get permission for the logging and transportation of teak. Before the reorganization of the RFD in 2002, there were local staff members at district or sub-district level. Therefore, it was easy for people living in rural areas to contact local officers. Local officers could also easily visit tree plantations for consultations. However, this was now inconvenient for both planters and officers, especially when tree plantations were located far from the office. This was considered to be one factor that prevented planters from implementing thinning. Board members of PFPCs were often elected as a representative to cover the local regions (e.g. district). Therefore, PFPCs may complement the function that the local offices were previously responsible for. In the north or east of Thailand, there was high demand for teak from factories that have been processing wood or making furniture. Therefore, tree cutting and trading has been observed more often in these regions. Planters could easily access information on obtaining permission for their activities locally. Officers were also familiar with the procedures. In addition, buyers could also provide support for the procedures for planters. On the other hand, in the northeast of Thailand, the demand for teak was not so high. Planters in this region lacked experience and knowledge of teak trading and of the procedures for getting permission for their activities. Therefore, PFPCs located in the northeast of Thailand were expected to provide support in the documentation required for permission.



**Fig. 3.** Photograph of teak processing factory complex managed by Don Moon Wood Product Service Cooperative in Phrae Province

#### **5. Support for permission for processing and selling teak wood**

In Thailand, processing and selling or transporting teak wood products were also under the control of the authorities. In particular, it was difficult for an individual to obtain and keep permission for such activities. PFPCs could obtain permission more easily. Making use of this advantage, PFPCs in Nong Bua Lam Phu, Maha Sarakham and Lop Buri run their own factory. Don Moon Wood Product Service Cooperative in Phrae obtained permission, and the members of the cooperative run factories under the one license of the SC. In this case, the SC kept the license to collect rental fees for land and obtained a margin according to the amount of wood processed at each factory. In addition, SC got quotas of teak wood from the local Forest Industry Organization (FIO) to secure raw materials for members (Fig. 3). It would be difficult for an individual to do this, but the existence of a cooperative enabled it.

#### **6. Promotion of wood products**

Marketing or promotion of teak wood products was also one of the most important roles for PFPCs in some cases. For example, many members in Kanchanaburi run a small-scale factory. Kanchanaburi PFPC was planning to provide the chance for members to sell and display their products at the shop that one member managed. Selling a variety of products may also lead to more consumers visiting the shop. The promotion of wood products was also important for the PFPCs that run their own factories. Maha Sarakham PFPC displayed its products at its office in the city. Nong Bua Lam Phu PFPC has also discussed the idea of making a showroom, although this has not been realized because the current location of the factory and office of Nong Bua Lam Phu PFPC was far from the city and the main road, and also because the present production level by order was recognized as the current capacity of the PFPC.

## 7. Money lending

In general, it takes time and money to reach a point where income can be obtained from a tree plantation. Although the efficiency and necessity of thinning have started to be understood gradually, the speed of implementation of thinning was still slow. One of the main activities of agricultural cooperatives in Thailand was financing (Saengpan 2003). Financing was also expected from PFPCs. However, there were only a small number of PFPCs that dealt with financing because of the lack of funding. Among the surveyed PFPCs, only Kanchanaburi PFPC collected funds from the Cooperative Promotion Department at a low interest rate and lent money to its members. Nong Bua Lam Phu PFPC has discussed the possibility of providing funds for its members to conduct thinning and to make members send back the money to the PFPC after selling the thinned trees. Such a short period of financing with a clear objective was considered to be acceptable for the PFPC with a limited budget and weak administration.

## 8. Networking of information and related institutions

PFPCs were considered to be points that form the basis of a variety of networks. Annual meetings and other meetings promoted the exchange of information and knowledge among the members. Members could ask for assistance on techniques and rules from the board members. Networking between PFPCs themselves was also important. Some PFPCs such as Lop Buri and Nong Bua Lam Phu have accepted study tours from other PFPCs. These PFPCs also planned study tours to other cooperatives and to the northern part of the country where the teak industry has developed. These tours provided new ideas to the members and the board members of PFPCs. PFPCs could also connect members with factories. In some cases, PFPCs provided the information of members who wanted to sell teak to factories as a negotiator. It was also very important to gain confidence among members, PFPCs and the authorities. At present, planters had to register and obtained permission when they cut trees. If a PFPC takes the place of members in obtaining such permission, exchanges between PFPC and the RFD occur more frequently and the confidence between them is considered to grow. There was a possibility that the procedure for obtaining permission might become much smoother than it was at present.

## Discussion

### 1. Relationship between current activity of PFPCs and property of regional forestry

There were differences in the current status of PFPCs according to their region. In the north and west of the country, there was high demand for teak because many teak processing factories have been established there historically.

Therefore, there was a market for teak without any support from PFPCs and planters did not expect much from PFPCs. As a result, PFPCs have not been so active in these regions. Instead, service cooperatives were active in securing licenses for processing and selling of teak products and also for securing teak resources as raw materials. On the other hand, it was expected that PFPCs would operate teak processing factories in regions where there was no local market for teak. In Lop Buri, which was close to Bangkok, there were a variety of demands, such as for logs, timber and furniture. As a special case, in Maha Sarakham where eucalyptus plantations prospered, Maha Sarakham PFPC supported teak planters in addition to its main activities with eucalyptus. In this way, the expected functions differed place by place according to the local resources and demand for teak. Therefore, PFPCs should develop with recognition of the regional differences in their expected functions.

### 2. Strengthening organization and appropriate role sharing

Strengthening the organization of PFPCs was considered to be one of the most important tasks. At present, board members were usually elected as representatives of the local area. The roles of each board member were not always clearly defined. On the other hand, in the example of Kanchanaburi PFPC, board members were elected mainly from the central city. This might enable board members to communicate more frequently; however, it might result in a failure to support or listen to local problems. Alternatively, it has also been pointed out at the interviews that there was a large burden for board members living in rural areas in some cases. These are conflicting issues and have to be settled on the basis of sincere discussions. Leadership of the president or the board members is very important for making PFPCs more active. Good ideas should be provided by the board members. Although the problem that board members could make PFPCs into a private company has been pointed out in some cases, monitoring of PFPCs by their members must be important to prevent this. In Nong Bua Lam Phu PFPC, strengthening of the accounting section contributed to a surplus. It is expected that PFPC activity will be renewed by strengthening and clarification of the roles of board members according to the activities of each cooperative.

### 3. Consideration of lack of labor and shortage of technical knowledge on silviculture

Planters inevitably grow older, and the youthful laborers in families often move to the cities (Ubukata and Jamroenpruksa 1997). Such aging and family labor shortage was considered to be one of the reasons why planters could not conduct thinning. Therefore, there seems to be a potential demand for contract work on silvicultural activity by PFPCs. It was expected that experienced workers could work as substitutes for members with confidence and at low cost. Lop Buri and Nong Bua Lam Phu PFPCs have already





**Fig. 4.** Photograph of several sizes of teak logs on sale on the roadside in Lop Buri

hired temporary workers to organize working groups for some silvicultural work such as logging and transportation. Maha Sarakham PFPC conducted planting on the behalf of its members. If the costs of these activities are defined in advance, more investors may be able to make easier calculations and decide to invest in tree planting. In relation to the promotion of thinning, it is important for planters to understand the effectiveness of thinning by watching the growth of stands after thinning with their own eyes. Therefore, it may be an idea to set up demonstration stands of good management supported by PFPCs.

#### **4. Matching the scale of activity at technical, administrative and financial levels of PFPC**

PFPC was usually managed by board members who had few skills in business. In this sense, it is one option for PFPCs simply to operate a log auction market if it is difficult for them to manage their own wood processing factories. Log auction markets will connect planters with factories to provide a market. Factories will also be able to access various grades and sizes of logs. One merit of this for planters is that the price will be set appropriately through auctions. However, teak logs have to be transported and stacked at the places where log auctions will be held. These advantages and disadvantages have to be balanced. In interviews, many board members mentioned that it was difficult for PFPCs to prepare the funds to buy logs in advance because planters would need money in advance when they cut trees. For example, in Japan, payment will be made after the auction on the basis of trust between PFPCs and planters. At any rate, financial support for PFPCs should be planned to compensate for the short time lag between harvesting and auctioning. At present, Lop Buri PFPC sells its logs along the roadside (Fig. 4). The high demand for teak logs from factories located in and around Bangkok was considered to be one factor that enabled log selling. Lop Buri PFPC was interested in establishing a log auction market, although one has not been set up yet. As

mentioned above, board members of PFPC are not always talented in business like those of a private company. It is thus important at the initial stage for PFPCs to operate a sawmill factory or simply to sell logs to obtain a small amount of profit. Maha Sarakham PFPC expanded its business from a sawmill to a furniture factory step by step, although the main material was eucalyptus. There are various ways for PFPCs to develop; however, as an example, the initial cost of establishing a factory has been a big burden for Nong Bua Lam Phu PFPC because this PFPC has been suffering from a shortage of operational funds as a result of servicing its debts every year. Therefore, one approach is to start with a simple business such as selling logs and sawn timber to obtain profits and then to increase in the scale and quality of the business little by little.

#### **5. Departments in charge of cooperative and forestry policy**

In Thailand, there are difficulties in terms of the department in charge of PFPCs between the RFD and the Cooperative Promotion Department. PFPCs needs technical and political assistance from the RFD, but cooperatives are under the control of the Cooperative Promotion Department. The RFD itself does not have a sufficient budget to enable progression of the cooperatives. Therefore, the RFD cannot provide strong financial assistance in terms of technical aspects. Assistance from the RFD was limited to holding meetings at the initial stages. Thereafter, direct support from the RFD was limited to providing the opportunity for members to attend seminars and to providing price information. This difficulty in terms of the departments in charge was considered to be one of the barriers that inhibit the progression of PFPCs.

#### **6. Lack of information on resources and the activity for maintaining sustainability of resources**

PFPCs had information on the numbers and areas of members upon their registration, but PFPCs could not update their database in terms of when there was thinning or harvesting. Therefore, the lack of this information made it rather difficult for board members to give consideration on the sustainability for managing resources sustainably. As Maha Sarakham PFPC got support from a provincial office to produce seedlings, those activities for securing future resources should be initiated as one of the important tasks of PFPC.

#### **7. Potential of supporting on teak planters from the organizations operating main profitable activities besides forestry**

As they are categorized as special cooperatives, PFPCs conduct specialized work related to tree planting (Saengpan 2003; ITTO 2006). However, if the level of business is insufficient for managing a PFPC, there is another option of

larger cooperatives that include most of the planters, such as agricultural cooperatives, giving support to teak management as part of their work. Maha Sarakham PFPC was considered to be one of these cases because the main activity of this PFPC was related to eucalyptus, but it also supported teak planters to make use of its existing organization and networks that were created in association with eucalyptus-related activities.

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