



Participation of Tree Plantation Farmers in Sustainable Forest Management



Food and Agriculture Organization of the United Nations
FAO Regional Office for Asia and the Pacific
Bangkok, Thailand, December 2012

TECHNICAL COOPERATION PROGRAMME
(TCP/THA/3203)

Participation of Tree Plantation Farmers in Sustainable Forest Management

Editors:

S. Appanah
K. Pragtong
J.K. Sharma
R. Leslie



FOOD AND AGRICULTURE
ORGANIZATION OF THE
UNITED NATIONS



MINISTRY OF NATURAL
RESOURCES AND
ENVIRONMENT, THAILAND

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

FAO encourages the use, reproduction and dissemination of material in this information product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, or for use in non-commercial products or services, provided that appropriate acknowledgement of FAO as the source and copyright holder is given and that FAO's endorsement of users' views, products or services is not implied in any way.

All requests for translation and adaptation rights, and for resale and other commercial use rights should be addressed to www.fao.org/contact-us/licence-request or to copyright@fao.org.

For copies write to: Patrick B. Durst
FAO Regional Office for Asia and the Pacific
39 Phra Atit Road
Bangkok 10200
Thailand
Tel: (+66) 2 697 4000
Fax: (+66) 2 697 4445
E-mail: patrick.durst@fao.org

Foreword

Following the ban in logging of natural forests in 1989, Thailand instituted a number of measures to promote private sector involvement in forest plantations. One of the measures to meet the wood industry's shortfall in timber included promotion of Forest Farm Plantation Extension. The small farm holders were encouraged to invest in forest plantations, especially by raising long rotation indigenous timber species. While the programme achieved much enthusiasm at the start, with some 80,000 farmers participating in it, it soon fizzled out. Only about 40 percent of the planned 1.2 million hectares were planted despite the provision of various incentives. The Royal Forest Department followed this up with other measures which likewise did not fare well either.

The sought the assistance of FAO on developing a well-defined national strategy to promote tree cultivation in private lands to meet the demand in wood supply. The key issue is sustainable wood production in private lands for the livelihood of farmers as well to support the Small and Medium Enterprises of Wood Processing Industries. To meet this objective, FAO with the Government of Thailand initiated a project with funding from the Technical Cooperation Programme. The TCP Project, entitled "*Participation of Tree Plantation Farmers in Sustainable Forest Management*" was in December 2009. The development objective of the project was to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply through creating enabling environments for planting, harvesting, and processing long-rotation tree species. Under the guidance of the Project Steering Committee and technical guidance of FAO's forestry staff, the work was undertaken by national and international consultants. This was further augmented with many additional staff from RFD.

The project looked into several aspects, the principal ones being: a) Problems and issues with promotion of long rotation tree species; b) How to promote plantations in farmers' private land for sustainable timber production; c) Forest industry that would support small scale wood growers; d) Forest extension services appropriate for such farms; e) New policies for promoting small scale forest plantations; f) Amendments to land acts for promoting tree plantation; and g) Draft Act for promotion of tree plantations in non-forest lands.

It is evident from the outcome of that there are numerous issues and problems farmers are facing in cultivating tree crops in their lands or lands alienated for such purposes. With that in view, the RFD would need to address a number of fundamental issues relating to forest policy, forest and land acts, extension services, and with the promotion and marketing of the products of tree farms. Based on the project, a key set of recommendations have been forwarded to the Ministry of Natural Resources and Environment.

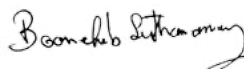
Each of the recommendation has several action oriented specific recommendations which need to be addressed for promoting tree cultivation in farm lands and Small and Medium Enterprises (SMEs) of wood-based industries. Briefly, they touch on the following activities: for a start, the findings clearly express the need to revise the Forest Policy and Legislations pertaining to forestry and land use rights only upon which the environment would be amenable for small holders to undertake long rotation tree plantations. The policies and acts also touch upon the small and medium scale wood processing industries, so they too can operate seamlessly to support the small forest farms. The tree growers would obviously have to compete with some of the subsidies that agricultural crops usually receive. This being so, it has been deemed essential for the forest sector to likewise develop appropriate financial assistance to tree growers and as well the wood processors. These aside, there are numerous recommendations in the report that cover better inter-governmental coordination, improvement in research support and quality of tree planting material for planting, and as well strengthening the marketing of wood products coming from these rural enterprises.

The Report covers all the critical areas comprehensively. But unless the findings are turned into action, we would lose additional time and opportunities. Looking at the scenario in the larger context of the Asian region, Thailand's wood industry would sooner or later face stiff competition. Countries like China and Vietnam, with their rapid economic growth, have concomitantly seen a strong growth of their wood industry, and are beginning to consume large volumes of wood from neighbouring countries. Under the circumstances, Thailand's wood industry would be starved of timber in the coming decade. So, growing wood in small farms would be a significant contribution to the continued performance of the wood industry. However, the greater value of this work is that not only does it support wood production in the village context, it in reality also attends to raising the quality of jobs and income generation opportunities in rural areas. As Thailand slowly moves into a more industrialized state, the migration of people from rural to urban areas is expected to accelerate. But by reversing the conditions and employment opportunities available in rural areas, such migration problems can be stemmed. In this context alone, this Report has far reaching consequences to the overall socio-economic development of Thailand.

With these observations, I would like to thank all the staff involved in producing this valuable report, which includes the members of the Project Steering Committee, The National Project Coordinator, the National and International Consultants, supporting staff of RFD, and Forestry Officers of FAO/RAP. This work is also testimony to the close collaboration between the Royal Government of Thailand and Food and Agriculture Organization of the United Nations.



Hiroyuki Konuma
Assistant Director General and
Regional Representative
FAO Regional Office for Asia and the Pacific



Boonchob Suthamanuswong
Director General
Royal Forest Department
Ministry of Natural Resources
and Environment

Acknowledgments

This work is the culmination of efforts of a very large number of people, and it is likely many of them will not be effectively acknowledged here. The significant contributions are however indicated in this brief space. When the Ministry of Natural Resources and Environment posed the problem to FAO, the Ms. Akiko Inoguchi played a key role in supporting the Reporting Officer in organizing the field consultations, identifying the problems, and formulating the project proposal. At the initiation of the project, Ms. Marija Spirovska undertook all the tedious ground work to get the project going. As with all collaborative work, the support from the staff of the Government of Thailand was instrumental in the success of the work. We would like to thank both the DGs, Mr. Suwit Rattanamanee and Mr. Boonchob Suttamanuswong of RFD under whose leadership this work took place. Critically important was the role played by the members of the National Steering Committee who guided the work, and ensured all the various agencies related to forestry were accessible, and contributed readily to the numerous demands on their time and information. Mr. Chonlatid Suraswadi, DDG of RFD, personally guided the discussions of the NSC. Mr. Veerapol Suthipornpalangkul, the National Project Coordinator, was full of patience and encouragement in the entire undertaking. Work of this complexity cannot be fulfilled without the unstinting support from technical officers of RFD. In that respect, Ms. Renoo Suwanarat shouldered the entire task of coordinating and organizing all the field work, and as well dealing with all the national and international consultants. The National Consultants led by Mr. Komon Pragtong (Mr. Suchint Simaraks, Mr. Yasutoshi Yamada, Mr. Songkram Thammincha, Mr. Nikhom Laemsak, Mrs. Onepen Jijongrak and Mr. Narong Khamhirun) gave their deep insights to various aspects that have been captured in this Report. The work of course was lifted to a much higher quality with the unstinting support of the International Consultant, Dr. Joshi K. Sharma. The results speak for themselves. All reports are as good as the editor, and for that I owe a special debt to Mr. Robin Leslie who did the painstaking task of cleaning the material and improving the text. And finally, my special thanks to Ms. Kallaya Meechantra, who provided the thankless task of secretariat support throughout the gestation of this Report.

Mr. Simmathiri Appanah
Lead Technical Officer, FAO-RAP

Abbreviations and Acronyms

AEC	ASEAN Economic Cooperation
AED	Agricultural Extension Department
ALRD	Agricultural Land Reform Department
ALRO	Agriculture Land Reform Office
AMAF	ASEAN Ministers of Agriculture and Forestry
AMC	Agricultural Marketing Cooperatives
ASEAN	Association of South East Asian Nations
AWPB	Annual Work Plan and Budget
BAAC	Bank of Agriculture and Agriculture Cooperatives
BOI	Board of Investment (Ministry of Finance)
C&I	Criteria and Indicators
CDD	Community Development Fund
CDF	Cooperative Development Fund
CF	Community Forestry
CNEP	Comprehensive National Extension Plan
CPD	Cooperation Promotion Department
CSC	Consultative Steering Committee
CSO	Clonal Seed Orchards
CSR	Corporate Social Responsibility
DAE	Department of Agriculture Extension
DANIDA	Danish International Development Assistance
DEP	Department of Export Promotion
DFT	Department of Foreign Trade
DLSO	Department of Labour Skills Organization
DMCR	Department of Marine and Coastal Resources
DNP	Department of National Parks, Wildlife and Plant Conservation
DOA	Department of Agriculture
DOA&E	Department of Agriculture & Extension
DOCP	Department of Cooperatives Promotion
DOIP	Department of Industrial Promotion
DSD	Department of Skills Development
DTN	Department of Trade Negotiations
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCPO	Forest Cultivation and Promotion Office
FGRC	Forest Genetic Resources Committee
FINNIDA	Finnish International Development Agency
FIO	Forest Industries Organization
FLEGT	Forest Law Enforcement, Governance and Trade
FPI	Fuel and Charcoal Price Index
FRMO	Forest Resources Management Office
FSC	Forest Stewardship Council
FSC	Farmers' Service Cooperatives
FSMP	Forestry Sector Master Plan
FVP	Forest Village Programme
GIS	Geographical Information System
ICT	Information/Communication Technology
IMD	Institute of Management Development
ITR	Illegal Timber Regulations
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature

JICA	Japan International Cooperation Agency
LANDSAT	Land(sensing) Satellite
LDD	Land Development Department
LEV	Land Expectation Value
LFA	Logical Framework Approach
LFA	Leasehold Forestry
LNC	Lead National Consultant
MDF	Medium Density Fibreboard
MOI	Ministry of Industries
MONRE	Ministry of Natural Resources and Environment
NESDP	National Economic and Social Development Plans
NFLP	National Forest Land Allocation Program
NFP	National Forest Policy
NFPC	National Forest Policy Committee
NFR	National Forest Reserves
NGO	Non Governmental Organization
NLC	National Lead Consultant
NSEDPs	National Social and Economic Development Plans
NWFP	Non-Wood Forest Produce
OAE	Office of Agricultural Economics
OECD	The Organisation for Economic Co-operation and Development
OJT	On-the-job training
OLRA	Office of Land Reform for Agriculture
OSMEP	Office of Small and Medium Enterprise Promotion
OPS	Office of the Permanent Secretary
OTOP	One Tambon One Product
PAO	Provincial Administration Organization
PCC	Programme Coordination Community
PDA	Population and Community Development Association
PES	Payment for Environmental Services
PIP	Proprietary Integrated Project
PRA	Participatory Rural Appraisal
PREP	Private Reforestation Extension Project
RECOFTC	The Center for People and Forests
RFD	Royal Forest Department
RIC	Rural Income per Capita
RTG	Royal Thai Government
SLC	Special Land Certificate
SME	Small and Medium Enterprise
S.T.K.	Sor Tor Kor (land titles that allow only growing of crops)
SPA	Seed Production Area
TABCO	Thai Agri-Business Co. Ltd.
TAO	Tambon Administration Organization
TCDC	Technical Cooperation among Developing Countries
TCP	Technical Cooperation Programme
TFSP	Thai Forestry Sector Master Plan
TIC	Teak Improvement Centre
TPC	Teak Improvement Centre
UNDP	United Nations Development Programme
USAID	United States Assistance for International Development
VPA	Voluntary Partnership Agreements
WBPS	Wood-based Products Sector

Table of Contents

Foreword	iii
Acknowledgements	v
Abbreviations and Acronyms	vi
Chapter 1. Introduction: Problems and issues associated with long rotation tree plantations in Thailand - Komon Pragtong, Renoo Suwanarat and J.K. Sharma	1
Chapter 2. Approach to collection of field data: PRA Training, Field surveys and Workshops - Komon Pragtong, Renoo Suwanarat and Suchint Simaraks	36
Chapter 3. Status of forest extension services in Thailand: Constraints and recommendations - Yasutoshi Yamada and Dongkram Thammincha	80
Chapter 4. Forest Industry Promotion and Marketing in Thailand - Nikhom Laemsak	109
Chapter 5. Formulation of a new National Forest Policy addressing issues that made the 1985 Forest Policy Ineffective-J.K. Sharma and K. Pragong	123
Chapter 6. Amendments in Acts Governing Land Rights to Promote Tree Plantations by Farmers on Farms/Private Lands in Thailand - J.K. Sharma and Narong Khamhirun	140
Chapter 7. Draft - Promotion of Tree Cultivation in Non Forest Areas: Private, Farm and Community Land Act - J.K. Sharma and Narong Khamhiran	159
Selected Reference Material	

Chapter 1

Introduction: Problems and issues associated with long rotation tree plantations in Thailand

- Komon Pragtong, Renoo Suwanarat & J.K. Sharma

Summary

Thailand lost much of its forest land during implementation of National Social and Economic Development Plans (NSEDPs) since 1961. The loss accounted for more than 28 percent of forest in 30 years. This was because forest lands were diverted for agricultural land use and other infrastructure developmental activities that generated land-use changes in rural areas. The National Forest Policy was formulated in 1985 for the management and development of forests during various Development Plans. The forest land to be maintained was targeted at 40 percent of the total geographic area. However, the forest utilization/conservation targets for economic forest and conservation forests, which were fixed at 25 and 15 percent, were interchanged, giving more emphasis to conservation aspects. This changing of forest land use in Thailand resulted in annual floods and droughts. Also, the import of timber and processing of wood from foreign markets has increased from 8 920 million baht in 1998 to 15 943 million baht¹ more recently. To meet the domestic demand and supply of wood, the Royal Forest Department (RFD) initiated a Reforestation Project, in order to promote tree planting of selected indigenous species by farmers. However, the project did not yield sustained results, as farmers largely opted to replace planted stands with annual cash crops. The main problems and constraints were due to stringent regulations and lack of government support for planting as well as processing of long rotation tree species. These regulations were once relevant in the historical context of controlling illegal logging from natural forests but in the changed scenario the same regulations hindered the promotion of tree cultivation in private lands and their utilization.

The Technical Cooperation Programme (TCP) project between FAO and the RFD on ‘Participation of Tree Plantation Farmers in Sustainable Forest Management’ was designed to enhance enabling environments for planting, harvesting and processing of long rotation tree species in private lands, especially by farmers. The following project outputs were envisaged:

- (i) Existing situation reviewed, relevant regulations and incentive systems for planting of long rotation tree species drafted through a wide stakeholder consultation process for endorsement by the Ministry of Natural Resources and Environment (MONRE);
- (ii) Existing situation reviewed, relevant regulations and incentive systems for the development of wood processing industries from long rotation tree species drafted through a wide stakeholder consultation process for endorsement by MONRE;
- (iii) Gaps in training and extension services identified, for promoting planting and industrial development of long rotation tree species; and
- (iv) Capacity of RFD officers enhanced, particularly with regard to policy review and incentives’ system development for market-based tree planting promotional activities, through on-the-job training.

The main objective of the report was to review the existing situation with respect to tree cultivation in private lands and the national forest policy. The current status of tree cultivation in private lands was

¹ US\$1.00 = 30 baht (February 2012).

ascertained through feedback from the stakeholders for which a four-level participatory rural appraisal (PRA) approach was used. Training on PRA techniques was given to 30 project management staff to provide experience on theory and practice before working/interacting with the stakeholders. Issues and problems with regard to various activities of tree cultivation and utilization were identified at the end of each workshop. The results were presented in national workshops.

The establishment of tree plantations in Thailand can be traced back 105 years when the first planting started in 1906. The objectives of tree planting changed from time to time, depending upon requirements and to cope with forest utilization prevailing at that time. Assuring wood supply to people and wood-based industry was the priority between 1906 and 1965. With the above background, a review of the approaches taken to promote involvement of the private sector in tree plantations was undertaken. This was further bolstered with the review of the forest policy instruments in the country, and the gaps were identified. The contributing factors from the policy framework for lack of tree cultivation were identified. They included lack of priorities, no linkage to regular forestry operations, people's needs being overwhelmed by the commercial interests, land tenurial issues, settlement of forest farmers on degraded reserved land, etc. The Report further looked at the laws relating to forestry, and identified the ones that were contradictory to the policies that promoted tree cultivation in private lands.

In order to review the existing situation and obtain feedback from stakeholders with respect to tree cultivation in private lands, a four-level PRA approach was adopted. First the staff was trained on PRA techniques before working/interacting with the stakeholders. The stakeholders were selected from two provinces in each of the seven ecological zones. Five pre-surveys, seven field surveys and seven workshops were attended by stakeholders such as tree plantation farmers, wood manufacturing plant owners/farmers, log and lumber retailers, cooperative members, extension officers and women's groups. The workshops identified various problems and issues related to tree plantations, harvesting and processing of timber and how to address them.

Analysis of problems and issues and proposed recommendations

Thailand is changing from forest management by the government authorities to participatory forest management with all stakeholders. The national forest area declined from 53 percent in 1961 to 25 percent in 1998 resulting in different forest land use. Forests were protected as conservation areas, national parks and wildlife sanctuaries and watershed headwaters. Isolated forests in degraded forest land traditionally were managed by local communities. In the 1990s, abandoned private agriculture lands were promoted for conversion to tree farm plantations. At the same time, there were many institutional changes in former forest land areas. Many authorities concerned like the Community Development Department (CDD), Cooperatives Promotion Department (CPD), Agriculture Extension Department (AED), etc. worked with the farmers' groups. Many agencies, including those of the government, provided funding support for tree farming managed by farmers' groups/cooperatives at the village level.

Based on the studies, several serious organizational problems and issues were identified, as following.

- (i) Overlapping policies on forest land use and existing rural land use – the converted forest land, the cooperative land settlement, the agrarian land reform; land tenure, legal ownership.
- (ii) Overlapping of the existing forest laws and regulations, as tree farm plantations have to abide by the Forest Act B.E. 2484 and the Tree Plantation Act B.E. 2535.
- (iii) The reorganization of the RFD had weakened the extension system to the tree plantation farmers. Lack of extension service in the field at the Tambon (subdistrict) level restricts access to local government assistance.
- (iv) The shortage of extension/technical support on silviculture methods and appropriate markets

results in many unthinned small teak plantations. The extension officers need more training on all aspects of silvicultural techniques.

- (v) There are few model forest cooperatives. Strengthening of the existing forest cooperatives for tree plantation farmers should be encouraged.
- (vi) The extension system should cover all activities of farm management from tree planting, wood processing to product marketing.
- (vii) There is shortage of skilled labour at farm sites and in factories. Farmers' learning centres should be supported to create local woodworkers. There should be a short course on tree farm management for the tree plantation farmers.
- (viii) There are no incentives for small farmers to keep the existing standing trees in agricultural fields/farms. Payment for environmental service (PES) should be encouraged for private companies via the CSR programme.
- (ix) Educating tree plantation farmer to follow the international and ASEAN market for ASEAN 2015.

The problems and issues with respect to long rotation tree plantation farmers identified during the surveys and workshops were and presented in the Report. These would have to be closely studied, and appropriate actions taken to bolster farm forestry in Thailand.

1. Project background and objectives

Background

Thailand lost much of its forest land during implementation of NSEDPs since 1961. The loss accounted for more than 28 percent of forest in 30 years. This was because forest lands were diverted for agricultural land use and other infrastructure developmental activities that generated land-use changes in rural areas. The National Forest Policy was formulated in 1985 for the management and development of forests during various Development Plans. The forest land to be maintained was targeted at 40 percent of the total geographic area. However, the forest utilization/conservation targets for economic forest and conservation forests, which were fixed at 25 and 15 percent, were interchanged, giving more emphasis to conservation aspects. This changing of forest land use in Thailand resulted in annual floods and droughts. Also, the import of timber and processing of wood from foreign markets has increased from 8 920 million baht in 1998 to 15 943 million baht more recently.

To meet the domestic demand and supply of wood, the Royal Forest Department (RFD) initiated a Reforestation Project, in order to promote tree planting of selected indigenous species by farmers. However, the project did not yield sustained results, as farmers largely opted to replace planted stands with annual cash crops. The main problems and constraints were due to stringent regulations and lack of government support for planting as well as processing of long rotation tree species. These regulations were once relevant in the historical context of controlling illegal logging from natural forests but in the changed scenario the same regulations hindered the promotion of tree cultivation in private lands and their utilization.

The TCP project between FAO and the RFD on 'Participation of Tree Plantation Farmers in Sustainable Forest Management' was designed to enhance enabling environments for planting, harvesting and processing of long rotation tree species in private lands, especially by farmers. The following project outputs were envisaged:

- (i) Existing situation reviewed, relevant regulations and incentive systems for planting of long rotation tree species drafted through a wide stakeholder consultation process for endorsement by the Ministry of Natural Resources and Environment (MONRE);

- (ii) Existing situation reviewed, relevant regulations and incentive systems for the development of wood processing industries from long rotation tree species drafted through a wide stakeholder consultation process for endorsement by MONRE;
- (iii) Gaps in training and extension services identified, for promoting planting and industrial development of long rotation tree species; and
- (iv) Capacity of RFD officers enhanced, particularly with regard to policy review and incentives¹ system development for market-based tree planting promotional activities, through on-the-job training.

2. Introduction

Thailand: geographic regions, climate, land-use patterns, natural forest types and area, administrative regions

The Kingdom of Thailand, located in the Indochinese Peninsula of Southeast Asia, covering an area of 320.7 million rai or 513 985 square kilometres between latitude 5°40' to 20°30' north and longitude 97°07' to 105°45' east, is a tropical monsoon country in Southeast Asia. It is bounded by Myanmar to the north and west, by Lao PDR to the northeast, by Cambodia and the Gulf of Thailand (Siam) to the southeast, by Malaysia to the south and by the Andaman Sea and Myanmar to the southwest.

Geographic regions

The Northern region consists of a series of parallel and longitudinal fold mountains extending through peninsular Thailand into Malaysia. The average height of peaks is 1 600 metres with some above 2 000 metres above sea level. Between these ridges lie relatively flat basins in which flow the four major tributaries of the Chao Phraya, Thailand's main river – the Mae Ping, Mae Wang, Mae Yom and Mae Man. The alluvial soils of these basins are fertile. The region has a mild dry climate.

The Northeastern region with the Khorat Plateau is separated from the Central Plateau by the Don Phraya Mountains. The elevation of the plateau varies between 130 and 200 metres above sea level. The mountains in the west are between 800 and 1 300 metres and the southern edge of the plateau averages about 400 metres with peaks up to 700 metres.

The plateau gently slopes eastwards towards the Mekong River but fairly abruptly northward towards the Mae Nam Mun. Most of the plateau is sandstone, which is the parent material of the sandy soils. Some alluvial areas are scattered along the courses of the two major rivers, the Mae Nam Mun and Mae Nam Chi and their tributaries, and they constitute the major agricultural areas.

The Central plain region is the largest and can be subdivided into three physiographic subregions:

- The southeastern subregion is much dissected by southerly flowing rivers and flanked by hills in the east. The alluvial streams are utilized for rice cultivation, the higher and well-drained grounds for plantations and orchards;
- The northern rolling plains subregion where the northern rivers flow together into the Chao Phraya. This area is, in generally, fertile;
- The Chao Phraya Delta subregion is generally flat and usually flooded in the wet season. It is the largest and most fertile lowland area of the country, almost completely under cultivation except for the mangroves, and is composed of silt brought down by the rivers. Bangkok is situated in this delta.

The Southern region is peninsular Thailand and is composed of mountains, in the west, up to 1 000 to 1 500 metres, and flat land. Streams flow eastward toward the Gulf of Thailand and have often built up deltas suitable for wet rice cultivation.

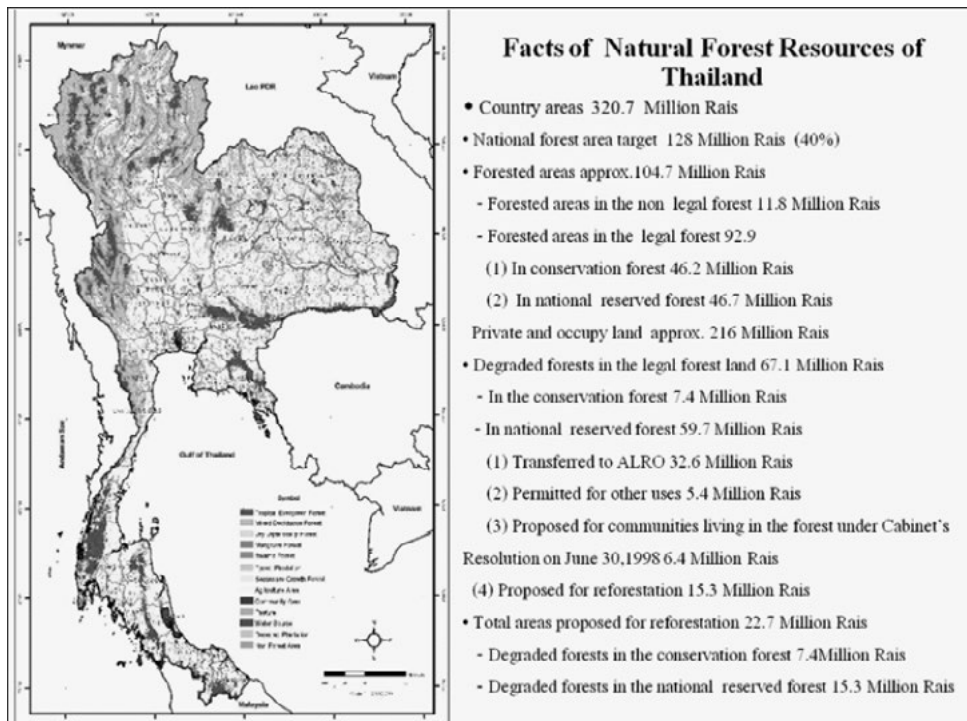


Figure 2.1. Natural forest resources of Thailand

Climate

In northern Thailand, the seasons are clearly defined. Thailand has a monsoonal climate with a wet season (90 percent of the annual rainfall) from April to September during the southwestern monsoon. Between November and May the weather is mostly dry, however this is broken up into the periods November to February and March to May. The later part of these two periods has the higher relative temperatures; although the northeast monsoon does not directly affect the northern area of Thailand, it does cause cooling breezes from November to February.

During the dry season, Thailand is also influenced by the southern Asiatic cyclonic storm belt that brings irregular amounts of additional rain. Annual rainfall is highest in the southern and western parts of the peninsular region and in the southeastern region (from 2 000 to more 4 000 millimetres). It is lowest (less than 1 000 millimetres) on the central plain that, in fact, lies in the rain shadow of the western mountains.

The northeastern region has an average rainfall from just more than 1 000 millimetres in the west to more than 2 000 millimetres in the northeast. Temperature variations are small in the southern and southeastern regions, around an average of 28° C. Temperatures in Bangkok vary between 16° C in December and 35° C in April. Winter temperature in the north can fall to approximately 10° C or lower.

Natural forest types and area

Thailand has a variety of vegetation types ranging from tropical evergreen rain forest to dry deciduous forest and savannah forest that reflect a wide range of ecological and climatic conditions (Banijbatana 1962; Gartner and Beuschel 1963; Smitinand et al. 1980; and Whitmore 1975). There are two main types of forests in Thailand: evergreen forest and deciduous forest.

Evergreen forest

The evergreen forest is subdivided into tropical evergreen forest, pine forest, mangrove forest and beach forest.

(a) *Tropical evergreen forest*: The tropical evergreen forest is found all over the moist parts of the country. This type of forest is also subdivided into tropical rain forest, semi-evergreen forest and hill evergreen forest.

The tropical rain forest is characterized by a very rich flora diversification and very dense undergrowth. This type of forest is commonly found in the southern and the eastern regions where rainfall is above 2 000 millimetres. It is also found along rivers and/or in valleys in other parts of the country. The predominant species (the top storey species) are, for example, *Dipterocarpus* spp., *Hopea* spp., *Lagerstroemia* spp. and *Shorea* spp., whereas the lower storey species are bamboos, palms and rattans.

The semi-evergreen forest is scattered all over the country where the rainfall is between 1 000-2 000 millimetres. The predominant species are *Dipterocarpus* spp., *Hopea* spp., *Diospyros* spp., *Azelia* spp., *Terminalia* spp. and *Artocarpus* spp. The main undergrowth species consist of bamboos and rattan.

The hill evergreen forest is found on the highland parts (above 1 000 metres from sea level) of the country where the climatic condition is of the humid subtropical type. The presence of mosses and lichens on trees and rocks is the indicator of this forest type. The predominant species are oaks and chestnuts, or *Castanopsis* spp., *Quercus* spp. and *Lithocarpus* spp.

(b) *Pine forest*: There are two species of tropical pines in Thailand: *Pinus merkusii* locally called Son Song Bi (the two-needle pine) and *Pinus kesiya* locally called Son Sam Bi (the three-needle pine) found in the northern and the western part of the central regions, where the soil is poor gravel, lateritic and podzolic. *Pinus kesiya* is found only on the highlands of the northern and northeastern regions.

(c) *Mangrove and beach forests*: Mangrove and beach forests occur along the coastal areas of the eastern, central and southern regions. The mangrove forest is scattered along the estuaries of rivers and muddy seashores where the soil is muddy and influenced by the tide. The predominant species are *Rhizophora* spp., *Aveicennia* spp., *Bruguiera* spp. and *Nypa* spp. The beach forest occurs along the sandy coastal plains especially in the eastern coast of the southern regions. The main species in this type of forest are *Diospyros* spp., *Croton* spp., *Lagerstroemia* spp. and *Casuarina* spp.

Deciduous forest

Deciduous forest is commonly found throughout the country. It is broadly subdivided according to species composition into mixed deciduous forest (with and without teak) and dry dipterocarp forest.

(a) *Mixed deciduous forest*: Mixed deciduous forest is among the most commercially valuable timber of Thailand. In the northern region, this type of forest is composed of teak (*Tectona grandis*), *Xylia kerrii*, *Pterocarpus macrocarpus*, *Azelia xylocarpus* and *Dalbergia* spp. (rose wood).

(b) *Dry dipterocarp forest*: Dry dipterocarp forest is commonly found in the dry area (rainfall below 1 000 millimetres) where the soil condition is infertile and sandy or gravelly lateritic soil. The predominant species are mainly in the family of Dipterocarpaceae such as *Dipterocarpus tuberculatus*, *Dipterocarpus obtusifolius*, *Shorea robusta* and *Shorea siamensis*, with the presence of other species such as *Dalbergia* spp., *Lagerstroemia* spp. and *Terminalia* spp.

Administrative regions

Administratively, Thailand is divided into five regions: the northern, northeastern, central, eastern and southern regions. The country is also divided into 77 provinces (*Chang Wad*) and 716 districts (*Amphoe*). Each district is further divided into subdistricts (*Tambons*). The capital of Thailand is Bangkok (*Krung Thep Maha Nakhon*).

Table 1. Forest area by type and region in 1982

Type of	Area											
	North		Northeast		East		Central		South		Total	
	Km ²	%	Km ²	%	Km ²	%	Km ²	%	Km ²	%	Km ²	%
Tropical evergreen forest	25 568	29.14	9 305	35.95	6 216	77.7	12 449	67.23	14 323	87.11	67 816	43.33
Mixed deciduous forest	25 006	28.49	2 618	10.11	1 113	13.91	5 192	28.04	0	0	33 929	21.67
Dry dipterocarp forest	34 318	39.11	13 819	53.38	253	3.16	540	2.92	0	0	48 930	31.25
Mangrove forest	0	0	0	0	418	5.23	335	1.81	2 119	12.89	2 872	1.83
Pine forest	2 018	2.3	144	0.56	0	0	0	0	0	0	2 162	1.38
Scrub forest	846	0.96	0	0	0	0	0	0	0	0	846	0.54
Rubber plantation area	0		0		(650)		0		(15 200)		(15 850)	
Total	87 756	56	25 886	16.53	8 000	5.11	18 516	11.82	16 442	10.5	156 600	100

Note: Excluding the para rubber plantation area

Source: Forestry Statistics of Thailand (1996)

Constitution and administration of the government

The Constitution

Thailand's new Constitution was approved in 1997 and further amended in 2007. This new Charter differs within many areas from the former one, and should have significant implications for the approach to public administration including environmental management.

The 1997 Constitution recognizes the rights and roles of Thai people to participate in national policy formulation regarding resources and environmental development and conservation. The Constitution clearly notes the rights of civil societies in managing natural resources and the roles of actors

Sufficiency economy and the context of national development as initiated by His Majesty the King of Thailand

Thailand is a constitutional monarchy under a parliamentary system with His Majesty the King Bhumibol Adulyadej as the ruling monarch. His Majesty the King realized that Thailand is a fundamentally agricultural country and most of his subjects in the rural areas are farmers. His Majesty the King analysed the causes of the problems faced by the people and proposed solutions that would bring about sustainable national development. Among these is the philosophy of a "Sufficiency Economy" which aims at enhancing the quality of life of people and local communities so that they will become self-reliant, thus achieving sustainable development.

Government administration

Democracy, decentralization and civil society organizations as development partners in the management of the country is in principle an expression of the policy of the government and also of the various central institutions and ministries concerned with policy development and economic and environmental management. At the overall level the government's policy concerning participation is/should be materialized in the system of a representative democracy. It is a recognized fact that Thailand's institutions and the political culture are still highly influenced by the centralized and patriarchal order of the past.

Local fiscal capability has been strengthened since 1993; revision of the relevant laws and regulation is believed to have helped in almost doubling tax income for local authorities. Democratic decentralization efforts reached a preliminary culmination with the passing of the new Constitution in September 1997.

Development of decentralized local government: Tambon Council and Tambon Administrative Organization

To decentralize administration from central to local levels, efforts to establish various kinds of local influence and authority have been evolving during the last 25 years. For instance the Tambon Councils were established as administrative units in 1972 but with effect from 1995 Tambon Councils have become legal entities thus improving local participation in administration.

During 1972-1994, the Tambon Council was established as an administrative unit but it was not a juristic entity. Administration could not work effectively and it lacked management skill. In 1994, there was an improvement of Tambon Council status and its administrative system in order to facilitate public participation of local people as part of local administration. The Tambon Council and Tambon Administrative Organisation Act 1994 were enacted on 2 March 1995. While many Tambon councils were established during the period, they need to be upgraded for them to function effectively. According to the Tambon Council and Tambon Administrative Organisation 1994, a Tambon Council, a juristic entity in charge of local administration, is to be established in all Tambons outside municipal and sanitation areas. Authority of the Tambon Council includes responsibility for development in the Tambon as follows:

- To plan and implement Tambon development according to its plans, projects and budget.
- To give advice to officers concerning Tambon administrative and development issues.
- To provide water supply for household consumption and agriculture.
- To provide and maintain waterways, drains and streets, and to clean streets, canals, pedestrian thoroughfares and public places.
- To conserve natural resources and the environment.
- To provide and improve income-earning opportunities for people
- To provide development activities for women, children, youth, the elderly and the disabled.

3. Status of forest in Thailand

Commercial teak exploitation in Thailand was started in the mid-nineteenth century by foreign companies (Borneo Co., Anglo-Thai Co. and Bombay Burma Co.). There were no regulations to control timber harvesting and the right to exploit forest areas was conceded by the local ruling authorities. In 1896, the RFD was established to manage all forests in the country. Since then, timber exploitation has been carried out under the selective cutting system, on the basis of the growth rates of each tree species and their appropriate marketable size.

Thai forestry has undergone three stages of change and is now in the fourth (Pragtong and David 1990).

- i. **Early exploitation:** Logging for commercial purposes started when teak was in demand within the country and abroad. The RFD was established in 1896 to regulate forest exploitation, particularly in teak forests of the north. This stage lasted from the mid-1890s to the early 1930s.
- ii. **Forest exploitation and management:** Logging became an important economy building activity. It generated foreign exchange, capital for national development and government revenue, as well as making land available for agriculture. The RFD attempted to put forest exploitation under management by enacting important forest laws, opening a school to train foresters and putting them to work to implement forestry laws and regulations. The Forest Industries Organization (FIO) was also established during this period. This period lasted from the 1930s to the early 1960s.
- iii. **Forest exploitation peak and decline:** From the 1960s to the mid-1980s, logging peaked, export-oriented agriculture expanded and national economic development gained momentum. As the forests dwindled, a growing awareness of the link between the forest and national well-being emerged. Desperate measures were introduced to rationalize forest management, but were unsuccessful.
- iv. **Forest exploitation closing stage and the dawning of a new forestry era:** Starting from the late 1980s, the country entered the fourth stage characterized by people's highly developed awareness of the adverse effects of forest exploitation and the search for a new forestry agenda. Forests had declined to a point where the nation had to decide what should be kept for conservation rather than further exploitation.

There is now much concern over the adverse environmental impacts attributed to deforestation, such as water shortages in the dry season; destructive floods in the wet season; loss of biodiversity; and global warming. At the same time, there is divided opinion over who should now be put in charge of rehabilitating the land – the local people (who need to earn a living) or the industrialists (who want to prosper by supplying the country and its growing economy with wood-based products). The move to change forest policy and to strengthen its implementation is gaining momentum.

Forest cover change

The results of forest assessment using visual interpretation of 1: 250 000 LANDSAT imageries since 1973 to 1998 are shown in Table 2. During this period, deforestation in Thailand was about 92 003 square kilometres with an annual deforestation rate of about 3 680 square kilometres. Deforestation peaked in the mid-1970s, when annual loss was about 11 596 square kilometres

Table 2. Forest coverage assessment in Thailand between 1973 and 1998

Year	Forest area (km ²)	Percent Deforestation (km ²)	Deforestation area (km ²)	Periods	Annual deforestation rate (km ²)
1973	221 725.00	43.33			
1976	198 417.00	38.67	23 308.00	3	7 769.33
1978	175 224.00	34.15	23193.00	2	11 596.50
1982	156 600.00	30.52	18 624.00	4	4 656.00
1985	150 866.16	29.40	5 733.84	3	1 911.28
1988	143 803.49	28.03	7 062.67	3	2 354.22
1989	143 417.00	27.95	386.49		1 386.49
1991	136 698.05	26.64	6 718.95	2	3 359.47
1993	133 553.55	26.03	3 144.51	2	1 572.25
1995	131 485.06	25.62	2 068.49	2	1 034.24
1998	129 722.28	25.28	1 762.77	3	587.59

Sources: Royal Forest Department (1999)

National land-use change

Being an agricultural country, approximately 78 percent of the Thai population is engaged in farming. About 39 and 29.5 percent of the total land area (51.3985 million hectares) are farm- and forest land, respectively; 64 percent of the population is involved in farming. The per capita income in Thailand is US\$4 716.

The major crops are rice, maize, cassava, field crops, fruit trees, timber trees and vegetables. During 1961-1982, the area of agricultural land, including paddy rice, other crops, fruit orchards and trees increased tremendously from 9 035 million hectares to 18 479 million hectares. However, the forest area declined from 27 363 million hectares to 15 660 million hectares. At the same time unclassified lands increased from 13 635 to 15 878 million hectares. The area of fruit orchards and trees increased from 1 739 million hectares in 1973 to 3 571 million hectares in 1995 (paddy rice fields and other cropland were converted as shown in Table 3).

Table 3. Land-use changes in Thailand during 1955-1995 (million hectares)

Year	Paddy rice	Crops	Fruit orchards and trees	Others	Forest	Unclassified land
1955	5 770	1 249	921	1 687	30 400	11 284
1961	6 072	1 444	1 519	1 279	27 363	13 635
1973	11 289	3 202	1 739	1 710	22 171	11 200
1976	11 411	3 541	1 646	1 500	19 842	13 372
1978	11 723	3 913	1 668	1 326	17 522	15 159
1982	11 716	4 863	1 900	1 296	15 660	15 878
1985	11 824	5 268	2 154	1 330	14 905	15 830
1988	11 871	6 612	3 126	2 040	14 380	13 283
1992	11 013	5 247	3 336	1 531	13 495	16 688
1995	11 927	5 122	3 571	1 014	13 148	16 966

Note: Others include housing and unutilized areas; crops include the area for vegetables, flowering plants and livestock; paddy rice includes rice and uncultivated fields; unclassified land includes public land, highways, railroads and unsurveyed wetland, Crown Property land and urban areas.

Urban-rural habitat change

The changes in the national land use and density of provincial populations were analysed following cluster analysis of land-use patterns in each province. Adisorn et al. (2001) classified the changes in land-use clusters during 1975, 1985 and 1995 into six steps namely:

- i. Forest characterized by high forest, low farmland and low population
- ii. Forest agriculture characterized by high forest, medium farmland and low population
- iii. Agriculture forest characterized by medium forest, high farmland and low population
- iv. Agriculture characterized by low forest, high farmland and low population
- v. Urban agriculture characterized by low forest, medium farmland and medium population
- vi. Urban agriculture characterized by no forest, medium farmland and high population

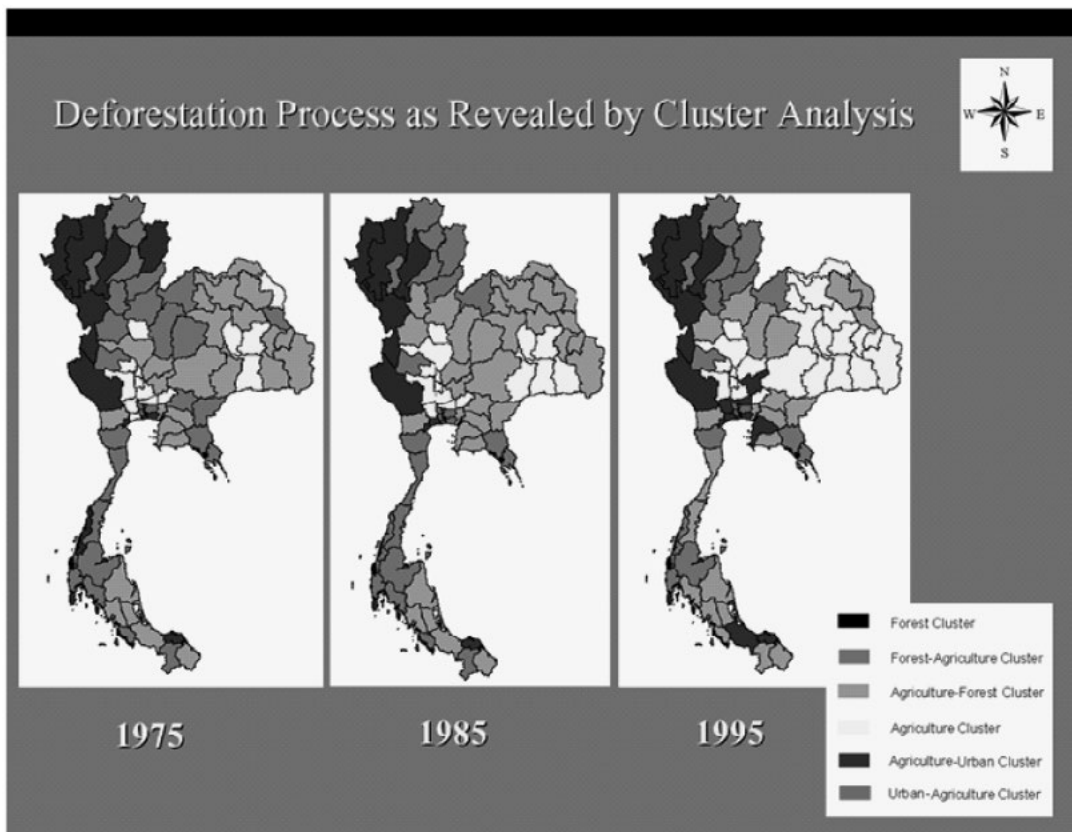


Figure 2. Land-use change in 1975, 1985 and 1995

The land-use change of provinces was reflected by the change in clusters as shown in Figure 2. The provinces in the clusters of Forest Agriculture and Agriculture Forest are areas where forest land was converted to other uses. Many forest land policies were introduced to address occupation of degraded forest. The promotion of long rotation tree plantation was also introduced in this context. These forest areas included degraded forest land for cooperative land settlement, agrarian land reform, forest land-use rights (S.T.K), forest land permitted for plantation and other use. These approved areas became sites for long rotation tree plantation.

4. Review of forest policy formation and forest policy instruments in Thailand

The NFP is an expression of the national will with regard to the forestry sector. It reflects national values and is the mechanism by which the government ensures that society gets what it wants from the sector. The NFP also provides directions to national forestry institutions, in both public and private sectors. It forms the basis for legislation.

When a policy no longer reflects the values, needs and aspirations of society, it ceases to be relevant and must be updated. Implementation of policy needs policy instruments. For example, when policy changes, laws may no longer be consistent with the policy and must be amended. Assessment of the current forest policy and legal framework is therefore an important part of the planning process. Hence, policy and legal reform are integral parts of the planning process.

National direction and forest policy

Forest policy in the National Social and Economic Development Plans

NSEDP No. 1 (1961-1966): Direction focused on physical infrastructure development for agriculture such as construction of water reservoirs, irrigation canals, roads, market centres, loans and credit for agriculture; there was a focus on changing from a self-sufficient economy to an export economy. Forest cover targeted 50 percent of the national land area. During this period, forest cover declined from 54.6 percent of the total land area to 51 percent.

NSEDP No. 2 (1967-1971): Direction focused on the expansion of physical infrastructure; encouraging use of the national forest reserve by establishing national parks and wildlife sanctuaries; establishing forest plantations and timber management in the national economic forest. In this period, the forest land cover target was changed to 40 percent but cover remained at 42 percent.

NSEDP No. 3 (1972-1976): Direction focused on the expansion of the export of agricultural products, land allocation for the rural poor in degraded economic forest, forest protection, national parks and wildlife sanctuaries, reforestation projects and forest villages and timber management in national economic forest. The forest cover declined to 38.7 percent.

NSEDP No. 4 (1977-1981): Direction focused on accelerated development of the rural poor. Focus changed from agricultural development to rural industry development. The establishment of small irrigation reservoirs and rural institutions as well as assistance in the form of agricultural loans and credit were part of development plans. There was further expansion of conservation forest, forest protection and reforestation as well as support for land tenure in degraded economic forest (the S.T.K. project) but forest cover declined to only 30 percent of the country's land area.

NSEDP No. 5 (1982-1986): Direction focused on rural development, agricultural industry and other industry for export. There was a focus on increasing production efficiency, loans and credit, and marketing. The forest protection target was 40 percent of national land. The rehabilitation of degraded forests was undertaken via water management, fast growing tree plantations and by establishing forest villages in the special target areas. Only 29 percent of the country's land area was covered with forest by the end of the plan.

NSEDP No. 6 (1987-1991): Direction focused on urban and rural development and the promotion of industrial exports. The national forest target was changed to 15 percent for conservation and 25 percent for economic use. A project on forest land management was introduced for degraded forest land. The promotion of community forest was meant for community wood consumption. Forest cover declined to only 26.64 percent of the land area.

NSEDP No. 7 (1992-1996): Direction focused on sustainable development and livelihood development for economic and social justice. The national conservation forest target aimed at 25 percent. Support was provided for a rehabilitation project on degraded natural resources and environment. Stakeholder participation was encouraged.

NSEDP No. 8 (1997-2001): Direction focused on people as the centre of development, promotion of livelihood development, competitive products and conservation of forest resources and the environment. The participation of local organizations and community groups in natural resource and environmental management was promoted.

NSEDP No. 9 (2002-2006): Direction focused on sustainable development, poverty eradication and the participation of local organizations and communities.

NSEDP No. 10 (2007-2011): Direction focused on the promotion of a self-sufficient economy and participation of local organizations and local communities. Based on the forest area assessment in 2000, the existing forest areas was about 172 050 square kilometres or 33.44 percent of the total area of the country. At least 25 percent of these forests were envisaged to be kept within the protected area system.

Forest change and associated factors

During the first NSEDP (1961-1966), forest land and trees were managed for economic benefits from timber and non-wood products. During the second plan (1967-1971) and third plan (1972-1976), forest lands were easily accessed by landless farmers after physical infrastructure improvement. Forest lands were converted to agriculture and other uses. In the fourth plan (1977-1981) and the fifth plan (1982-1986), enhancing development of the rural poor was carried out to mitigate disparities between urban and rural areas. Community forest management and capacity building were introduced to the forestry sector. In the sixth plan (1987-1991), urban and rural development was encouraged. Strengthening of community forest management was introduced to rural communities. During the seventh plan (1992-1996), sustainable development focused equally on social, economic and environmental issues. In the eighth plan (1997-2001), the focus on people as the centre of development accorded more importance to humans than the environment. In the ninth plan (2002-2006) and the tenth plan (2007-2011), owing to the participation of local organizations/decentralization, the introduction of the Sufficiency Economy theory and more sophisticated technology forest cover increased to 33.44 percent.

The national agenda: forest policy in 1985

During the period of the fifth NSEDP (January 1985), the cabinet approved the appointment of the National Forest Policy Committee. The committee was assigned to draft the National Forest Policy (NFP) and operational plan and submit to the cabinet within one year. The cabinet approved the NFP on 3 December 1985 as the national guideline for long-term forestry development. The NFP expressed the direction of the national ideology on forest management and utilization. The policy filled the gap of periodic forest policy revisions as stated in the NSEDPs and challenging forest issues in urgent situations addressed by cabinet resolutions.

Provisions for tree farming

The NFP of 1985 made adequate provisions for private/people's participation in forest management, improving tree cover and generating wood/timber resources to support wood-based industry. This is evident in the following extracts:

“2. Role and responsibility sharing among various government agencies and the private sector in forest management and development shall be promoted.

5. Public and private sectors together shall develop and manage the forest area to achieve the objective of providing perpetual direct and indirect benefits to the country.

12. The State shall promote reforestation by the public and private sectors for domestic industrial consumption. Export of wood and wood products shall be encouraged. Community forestry such as reforestation on public land by private sector, tree planting on marginal agricultural land and establishment of forest woodlot for household consumption shall also be promoted.

19. Incentive systems shall be established to promote reforestation by the private sector.”

The RFD promoted private tree plantations in 1985. The office of Private Plantation Promotion was set up in the RFD to provide advice to private forest plantation owners. In 1992, the RFD was reorganized to promote people-oriented forestry and included the office of Private Plantation Promotion as a division in the Plantation Promotion Office. The function of the Private Plantation Promotion Division was to set up the working plan for private tree plantation promotion through technical advice, fund seeking, market promotion and legal analysis. This also included support for planting of long rotation tree species (Renoo 2009).

Inadequacy of the NFP in three crucial areas

1. Deforestation with all its negative impacts and loss of forest cover continues because its root causes have not been addressed.
2. The Kingdom's household and industrial wood demand has not been met in a sustainable manner.
3. The conflicts over forest land use by many types of illegal occupants of state forest land remain unresolved, thereby exacerbating land degradation and maintaining the social tensions which could give rise to conflict at any time.

Contributing factors to the lack of success

Some of the contributing factors to the lack of success in cultivating long rotation tree species by tree farmers in the purview of the NFP were:

- *No clear priorities:* The policy statements did not set clear priorities for the administrative and implementing agencies to follow. This left the agencies in a position to set their own priorities, which may not always have been consistent with national values.
- *Implementing instruments not harnessed to policy execution:* The NFP has remained an isolated expression of some 20 mandates, which were not linked to each other to regular operations involving the forest. This made the policy ineffective.
- *No accountability in the implementation of the NFP:* There is no allocation of accountability for the planning and management of some of the important benefits, which are derived from forests, such as conservation of biodiversity and production of wood.
- *Unrealistic key policy statements:* The target of “40% forest cover” in practice was very unrealistic as it was not based on any logical framework analysis.
- *Strong emphasis on the commercial use of forestry:* The importance of the forest in supporting the needs of millions of people was not adequately addressed. Nor was the potential of forests to contribute to improving the living standards of forest inhabitants considered important.
- *Up-to-date information not used to analyse the forestry situation:* The information used for the policy was not up to date and did not take into account what the Thai society wanted from the forests and what the forests could provide people for their livelihoods.

Noticeable shift in forest policy priorities due to recent developments

Some of the following overriding developments that took place in the government's initiatives during the past two decades have indicated a clear shift in priorities over the NFP:

Ban on logging of natural forests (imposed in 1989): While the ban on logging was imposed partly because the RFD had lost effective control over logging, this also clearly indicated that forest conservation and protection were given priority in forest management by the government. While imposing this ban, which was made permanent during 1992, no new policies were devised to fill the gap in wood/timber requirements of the industry.

Increased emphasis on conservation forestry in national planning: The NFP fixed a target to maintain 40 percent of the land area under forest cover of which 15 percent would be designated protected forest and 25 percent commercial forest. These figures were later changed to 25 percent protected and 15 percent commercial forest, which indicated the government's emphasis on conservation forestry. No indications were given on how this could be achieved in view of the fact that over time forest cover has been depleted to a great extent.

Ban on commercial-scale forest plantation development on state forest land: The private sector was given permission to establish forest plantations on degraded forest lands already allotted to it by the RFD. However, there was conflict with the farmers who had already occupied these lands. Hence, ultimately, the government imposed a ban on commercial-scale forest plantations on government forest lands.

Restructuring/reorganization of the RFD: Due to change in the undeclared forest policy of the government and to meet the present day requirements and emphasis on forest conservation, the RFD was divided into four separate divisions, each having separate missions. This restructuring created confusion and the link maintained with the provincial forest administration was lost, especially the extension structure providing technical assistance to farmers. In the present scenario, the farmers seek this technical assistance from agriculture extension staff.

Early forest policy changes

At the onset of the first NSEDP, forest cover was 54.63 percent, which had decreased to 25.28 percent by 1998. In this context the forestry sector had to wake up to pressing realities. Thus land-use policies were changed with regard to forest land cover targets, communities occupying forest land and forest land-use management.

Change in forest land targets: In 1961 the government agreed to set forest land cover at 50 percent of the total land area because forest resources were directly and indirectly beneficial to the economic, social and environment development of Thailand. However, national forest cover declined to 40 percent over time. Thus a new target of 15 percent was set for conservation forest and 25 percent for economic forest. As the forest would be reserved and protected as permanent national forest, this precluded farmers from income-generating activities on this land necessitating their transfer elsewhere. In NESDP No. 4 (1976-1981), strong emphasis was given to conserving at least 40 percent forest cover but due to political, economic and social pressures, the goal could not be realized.

The land leased cooperatives project: In 1970 and 1974, the government had agreed to hand over the degraded permanent forest to organized groups in a land leased cooperative land settlement arrangement in 14 degraded forests in 13 provinces. The forest land was divided into watershed areas and land for agriculture. The land suitable for agriculture was allocated to the existing farmers. The farmers had the right to use it but without a land title. About 60 000 farmers were allocated land over 1.51 million rai in 13 Cooperative Land Settlements. Those tree farmers who planted the trees in the leased cooperative land were not allowed to cut their trees in the transferred forest land.

Forest village land settlement project: In order to have a clear policy statement on the degraded reserved forest and to prevent misunderstandings between forest officers and landless farmers, the government in 1975 agreed to the forest village land settlement project in the degraded national reserved forests. Under the project the degraded forest was divided into watershed areas or protected forest and the degraded forest was allotted to farmers at a maximum of 15 rai for each person. The government established large-scale forest plantations in village environs to encourage farmers' employment and income generation. This was a successful scheme. There were more than 150 forest villages all over Thailand before the project was transferred to the Agricultural Land Reform Office (ALRO) in 1993.

Assisting forest farmers to have land usufruct rights on degraded reserved land (SOR TOR KOR project): In order to address farmers' landholdings in degraded reserved forest, the government agreed to the SOR TOR KOR project. In 1985, the Forest Reserved Act B.E. 2507 was amended to add a provision concerning permission for usufruct rights in the degraded reserved forest.

Land allocation for the landless in degraded reserved forest (KOR JOR KHOR project): The project aimed to assist landless farmers in degraded forests to obtain land usufruct rights and protect watershed areas and forest land from further encroachment. The government implemented the project in 1991 in the northeast. However, there were many complaints from farmers who did not want to move to the new area proposed by the project officers. The project was stopped in 1992 and replaced by the Natural Resources Conservation Management Project.

Problem-solving for forest land occupants and ALRO: To address forest dwellers who occupied and utilized degraded forest land the government yet again implemented a project by transferring 44 million rai of land to ALRO, except land reserved for conservation purposes and for other uses. However, in 1995, the government stopped the process of transfer due to an error concerning land not meant for reform (conservation area). The situation is still ongoing. The affected tree farmers who planted the trees in the proposed area were not allowed to cut trees in the transferred forest land.

Forest law supporting the implementation of forest policy

There are several laws relating to forestry but some of them have been repealed due to obsolescence. Nowadays there are six laws being enforced, which aim to conserve, protect and utilize forest resources. The Tree Plantation Act B.E. 2535² is the only act that supports tree plantation for commercial purposes on public and private land as well as to generate employment, produce more timber and increase forest cover.

Laws relating to forestry

Forest Act B.E. 2484: To protect, preserve and control logging and grant concessions. During that time teak and yang were logged mainly for export, especially teak in the north and yang in the south to earn foreign exchange.

National Park Act B.E. 2504: To protect existing natural resources such as tree species, forest products, wild animals, landscape, forests and mountains from disturbance and maintenance of natural condition for direct and indirect public benefits.

National Reserved Forests Act B.E. 2507: To improve national reserved forests because the law on protection and forest reservation is not precise or effective. As the penalties are not appropriate for violations, people are not intimidated to encroach or log illegally resulting in extensive damage to forests. It protects and preserves the nation's natural resource wealth.

Wild Animal Reservation and Protection Act B.E. 2535: Replaced the Wild Animal Reservation and Protection Act B.E.2503 because the former law was unable to conserve and protect wild animals efficiently. The new law aimed to accelerate and increase the population of wild animals and their preservation and protection as well as to meet current international agreements.

² To convert Buddhist Era (BE) to Common Era (CE), subtract 543.

Tree Plantation Act B.E. 2535: Promotes tree plantation for trade in public and private lands. It also promotes tree plantation as a livelihood, to produce timber for wood products and to increase the country's forest area. The tree plantation farmers were accorded rights and benefits such as waived royalties and exclusion from certain rules as prescribed under the Forest Act B.E. 2484.

Chain Saw Act B.E. 2545: Enacted to prevent the misuse of chainsaws with particular reference to illegal logging, and the widespread damage they can cause if used unethically.

Organizational changes due to restructuring of the RFD

During the implementation of forest policy and planning under NSEDP 1-10 there were two drastic changes with respect to the reorganization of the RFD. The first change came from the ministry while the second change came from outside the ministry.

People-oriented reorganization: On 8 September 1992, the cabinet of the ministers' resolution agreed to the proposal on the restructuring of the RFD under the Ministry of Agriculture and Cooperatives. In order to respond to accelerated changes in forest land use and to minimize the conflict among the RFD staff and landless farmers in forest land, the RFD restructuring laid more emphasis on people-oriented reorganization. Forest conservation and protection were concentrated in available forest and people's participation was adopted. The RFD was the sole organization responsible for all forestry activities at central, regional and provincial levels.

Functional reorganization: In 2002, the government reorganized the structure of ministry administration under the Reorganization of the Ministries Act 2545. Under this restructuring, the RFD was divided into four separate departments: the RFD, the Department of National Parks, Wildlife and Plant Conservation (DNP), the Department of Marine and Coastal Resources (DMCR) and the Office of the Permanent Secretary (OPS), under the Ministry of Natural Resources and Environment (MONRE). The role and functions of the former RFD were divided among the four new MONRE departments. Conservation forest such as national parks and wildlife sanctuaries were administered by the DNP. Economic forest including national reserved forest, permanent forest and private forests were mandated to the RFD. Mangrove forest in coastal habitats came under the DMCR. The Office of the Permanent Secretary was responsible for provincial forest administration. No forest staff was provided for forestry activities at the TAO level.

RFD's adaptation to decentralization: The RFD had been testing pilot projects to prepare the department for decentralization at the TAO level. They included:

Community forest and buffer zone pilot projects: These projects were implemented in forest reserves surrounding national parks and wildlife sanctuaries. They aimed to increase understanding on local tools and processes for developing collaborative management arrangements between local organizations and the RFD to manage natural forests in buffer zone areas. The projects began in 1997 and are currently being carried out in six regions of the country.

Small-scale forest plantations: This project encourages job creation in rural areas for workers who have returned home since the economic crisis that started in July 1997. The project aimed to support the TAO in its role as primary local manager and encourage small-scale enterprises and employment. Areas of 10-20 hectares were allocated to the TAO for reforestation. The RFD works with the TAO to ensure sustainability.

Forest and forest fire protection: Initiated in 1997, this five-year project promoted people's involvement in forest fire protection. The RFD aimed to support TAOs in developing forest fire protection plans to mitigate the impact of forest fires on local economies and ensure that fires do not devastate national parks and other sensitive forest areas.

Forest management with the TAO: This pilot project covered all 75 provinces in the country and aimed to develop procedures for local forest officers to work effectively with the TAO administration to manage forest land in their territories. TAOs developed five-year plans for their subdistricts, which included forest management activities. The local forest officers play a crucial role in providing extension support to plan and implement forest management activities.

5. Development of tree plantations in Thailand

Changes in forestry objectives during different periods

Tree plantation for assuring wood supply (1906-1965)

The RFD started the first trial plantation of teak (*Tectona grandis*) in Phrae Province in the northern teak region of Thailand in 1906. Praya Wanapruekpicharn (Mr Thongkam Sawetsila) initiated teak planting by using *taungya* (agroforestry) system, which had been successfully developed in India and Burma. Other non-teak suitable localities were planted with tree species such as *Xylia keri*, *Acacia catechu*, etc. There are no detailed records available of these tree plantations. Over the years some of the plantations have been converted to other land uses. Since 1925, records of the teak and non-teak plantations established in the north and the south of Thailand are, however, available.

In 1938, Thailand adopted National Planting Day on 24 June for promotion of tree planting on government office land. In 1941, silviculture research stations were first established in three regions of the north, central and south zones of the country. In 1952, a soft wood tree plantation trial was established for the production of raw material for pulp and paper mills. In addition, a species trial of temperate trees to be planted on degraded forest in mountainous zones was also established. In 1954, the RFD started tree plantations in the northeast, especially teak plantations on the highway linking Saraburi and Nakornratsima.

Tree plantation for the rehabilitation of degraded forest (1965-1975)

The second NSEDP (1967-1971) had a target to plant 15 000 rai of teak and 10 000 rai of non-teak species. In 1966, the FIO, supported by the government, planted teak in six plantations in the north and six non-teak plantations in the south and northeast. Forest village programmes were adopted by the FIO for its plantations. The RFD initiated a teak genetic and tree improvement programme in 1967 and pine genetic and tree improvement in 1971.

In 1972, the third NSEDP (1972-1976) aimed to plant 20 000 rai of teak and 10 000 rai of non-teak species. The scheme was adopted by the FIO, Plywood Co., Ltd. and other forest concessionaires. Projects such as Voluntary Program of Tree Planting in the Rainy Season were promoted. The national planting day was changed to the first day of Buddhist Lent. Under the volunteer programme, 288 212.00 rai of plantations were raised. In 1975, the forest villages used the RFD plantations in the degraded forest reserves.

Tree plantations for rehabilitation of degraded watersheds (1977-1981)

In the 4th NSEDP (1977-1981) the area under tree plantations was increased by annual planting of 400 000 rai. The government expanded the voluntary tree planting programme and tree plantations were raised by the RFD, FIO and other forest concessionaires. The tree plantations established in degraded forests afforded employment opportunities for forest villagers in the land resettlement areas.

Tree plantations for village wood energy and supply (1982-1987)

In the 1980s tree community woodlots were promoted to support wood energy and wood supply to villages outside forest land, identified as wood deficit areas and in forest land resettlement areas in degraded forest land.

Tree plantation in degraded forest by the private sector (1987-1992)

In order to promote involvement of the private sector in tree plantation, the regulations to permit private companies in tree plantations in degraded forest land were enforced. The government allowed the private sector to plant trees on degraded forest land and private land and to export timber from plantations in 1983. In 1988, the RFD assigned responsibility for promotion of planting trees for self-consumption and for commercial purposes by the private sector to the Division of Private Plantation Promotion.

Tree plantation for the celebrating the 50th anniversary of accession to the throne (1996-2002)

Plantations were established by various interest groups to support tree planting in degraded watershed areas and urban green zones. There was emphasis on CSR in the private sector. Government enterprises and private companies initiated tree plantation for public benefit.

The tree plantation promotion on private land (1996-2002)

Tree farmers were encouraged to grow long rotation tree plantations; 3 000 baht/rai for five years were provided for tree growing on titled land. The programmes were implemented by the government in 1994-2002. About 2 437 215.87 rai were planted. As some farmers changed tree plantations to other land use, the total area under long rotation plantations declined to 1 053 259.74 rai. Further conversion to sugar cane, cassava, rubber trees or crops reduced this figure to 800 724.02 rai in 2002 as shown in Table 4.

Table 4. Number of farmers, planting areas and long rotation tree plantations 1994-2002

Planting year	5 years supported		Plantations	
Plot	Farmers	Area (rai)	Farmers	Area (rai)
1994	28 365	392 547.49	23 419	311 316.27
1995	26 774	326 154.00	20 870	226 088.25
1996	8 812	116 475.75	6 549	73 399.00
1997	7 565	103 918.25	6 202	80 835.75
1998	1 964	28 074.25	1 827	23 855.75
1999	1 900	27 346.75	1 880	24 672.75
2000	3 097	40 037.00	3 010	39 051.50
2002	1 649	21 504.75	1 649	21 504.75
Total	80 126	1 056 058.24	65 406	800 724.02

Tree plantation by various groups (2002 to present)

Tree plantations were developed by various groups under the CSR programme supported by TAOs/PAOs. More than 12.3 million rai of tree plantations were established (Table 5). Approximately 1 056 058.24 rai of long rotation tree plantations had been subsidized for five years of tree planting by 2002. However, by 2006 (Table 5) there were only 800 724.02 rai left. About 1 050 624 rai belonging to private tree farmers were registered by January 2011.

In addition, the eighth NSEDP (1997-2001) emphasized human resource development as its main thrust. Many of the strategies in the plan focused on people's participation in national resource management.

Departments/organizations promoting long rotation tree plantation

Six government agencies provide full or partial extension/promotion services for the development of tree plantations.

- i. Royal Forest Department (RFD)
- ii. Department of Agricultural Extension (DOAE)
- iii. Cooperatives Promotion Department (CPD)
- iv. Agricultural Land Reform Office (ALRO)
- v. Land Development Department (LDD)
- vi. Bank for Agriculture and Agricultural Cooperatives (BAAC)

Table 5. Different tree plantations initiated since 1856

Project	Area (million rai)
RFD Economic Plantation	4.75
FIO Concession Plantation	0.92
FIO Rehabilitation Plantation	0.22
Thai Plywood Industry	0.028
RFD Rehabilitation Plantation	0.38
Restoration from other forest land used	0.15
Rehabilitation of conservation areas (CSR)	2.07
Rehabilitation outside conservation areas (CSR)	1.2
Watershed rehabilitation	1.39
Watershed ecosystem improvement	1.20
Total	12.308

Note; Some of the tree plantations were converted to other land uses.

The Royal Forest Department (RFD)

After the launch of the NFP in December 1985, the National Forest Policy Committee appointed a Working Group in 1989 to draft a 30-year forest plantation development plan from 1991 to 2020. The plan aimed to cover 38.5 million rai of forest plantations both in public and private sectors. There were five groups responsible for forest plantation establishment:

- | | |
|--|-------------------|
| (i) Royal Forest Department | 6.75 million rai |
| (ii) Army | 1.50 million rai |
| (iii) Forest Industry Organization (FIO) | 2.85 million rai |
| (iv) Thai Plywood Co., Ltd. | 0.45 million rai |
| (v) Private sector | |
| - Economic forest | 20.95 million rai |
| - Community forest | 6.00 million rai |

However, the implementation of the plan was not successful. After forestry administration was split into three departments in 2002, there were a number of campaign projects on forest plantation establishment, such as:

i. Private Reforestation Extension Project (PREP)	2002-2005
ii. Project for Reforestation Promotion on Usufructuary Land	2006-2009
iii. Project for Life Assurance through Economic Tree Planting	2008-2012
iv. Project for Promotion of Fast Growing Trees for Renewable Energy	2009-2012

These projects failed to reach the targets due to the following problems concluded by the RFD:

- i. Cancellation of planting areas due to floods, fires, unsuitable land, lack of good
- ii. maintenance, change of ownership and unethical farmer's intentions.
- iii. Lack of long-term financial arrangements, as the BAAC provided loans only for fast-
- iv. growing tree plantations with a maximum three-year rotation.
- v. Inefficiency of implementing organizations, particularly limited number of staff, problems in
- vi. financial practices, law and regulation constraints.

The major vulnerabilities of tree planting promotion are poor extension mechanisms and inadequate extension resources, i.e. human, material and financial resources. There is no specific extension division or unit in the RFD and DNP. The RFD's Forest Resources Management Office (FRMO) located in 19 provinces and some field units/projects may provide extension activities concerning forest nursery, seedling production and tree planting on private land, as well as data and information about forestry and related issues. The Silviculture Research Division under the RFD's Research and Development Office is the main source of knowledge on forest tree plantations and related fields. There are four Regional Silviculture Centres with a total of 47 field stations:

Regional centres	No. of field stations
(i) Northern Silviculture Center	17
(ii) Northeastern Silviculture Center	12
(iii) Central Silviculture Center	10
(iv) Southern Silviculture Center	8

If extension services are well organized with full extension resources, these centres and field stations will be very efficient extension units for forest plantation establishment and management. The RFD's extension services consist of the following tools:

- i. Policy, law and regulations
 - National policy and target
 - Forest Plantation Act B.E.2535
 - Forest Plantation Cooperatives and Community Enterprise
- ii. Incentives/support
 - Seedlings
 - Fertilizer
 - Funds
 - Low-interest loans
- iii. Technology transfer/knowledge dissemination
 - Training
- iv. Marketing
 - None

Department of Agricultural Extension (DOAE)

The DOAE is responsible for enhancing farmer potential in production, processing and value adding of agricultural commodities; regulating measures and directions of promotion and control of commodity and product quality; agricultural technology transfer to farmers for income generation and sustainability of production and livelihoods. It has the following duties and authority:

- a. Promotion and development of farmers and farmer organizations;
- b. Training of farmers and provision of agricultural services;
- c. Development, promotion and coordination in agricultural knowledge transfer and management of crop, fishery and livestock products.

The DOAE extension services can contribute a great deal to promotion of long rotation tree planting and development of farmer potential in terms of the following advantages:

- i. Policy/law and regulations
 - National policy and target
 - Agencies at provincial, district and subdistrict levels
 - Zoning of extension areas
 - Community Enterprise Promotion Act B.E. 2548
 - Cooperative system and community enterprises
- ii. Incentives/support
 - Provision of seeds, fertilizer, farm materials
 - Seed fund
 - Revolving fund
 - Low-interest loan through the BAAC
- iii. Technology transfer and knowledge dissemination
 - Training services
 - Technology transfer through model farmers and local mentors
 - Farmers' schools
 - Farmers' network and volunteer services
- iv. Marketing
 - Central market
 - Price guarantee
 - Overseas market

Cooperatives Promotion Department (CPD)

The CPD is responsible for extension and dissemination of knowledge about principles and methods of cooperatives to cooperative personnel, farmer groups and the public; promotion, support and development of cooperatives systems through development of learning for capacity building in administration, management and operation; and coordination of cooperatives enterprises towards international levels for better quality of life of all cooperative members in both economic and social aspects.

- i. Policy, law and regulations
 - Cooperatives Act B.E. 2542
 - Land Provision for Livelihood Act B.E. 2511
 - Provincial agencies

- ii. Incentives/support
 - Cooperatives Development Fund
 - Infrastructure development for cooperatives estate
- iii. Technology transfer/knowledge dissemination
 - Training services
 - Coordination and facilitation
- iv. Marketing
 - Local market management
 - Cooperatives shops

Agricultural Land Reform Office (ALRO)

ALRO has the following authorities and responsibilities that contribute to promotion of tree planting in land reform area:

- i. Provision of private and public land for the land reform scheme together with arrangements for housing; management of land for cultivation, lease, mortgage, rights for ownership and land utilization;
- ii. Cooperation with the DOAE; research and development on land reform and related issues.
- iii. Development of infrastructure, land-use classification, development of resource management efficiency, environmental rehabilitation and maintenance of agrarian land.
- iv. Administration and management of the Land Reform Fund.

ALRO also has a land reform policy for allocation and development of land for farmers in land reform areas; promotion of economic tree planting and income generation for farmers; capacity building and development of self-dependence using sufficiency economy principles; and promotion of opportunities for community economic development. As there are vast areas under the land reform scheme, promotion of tree planting will contribute tremendously to the future development of tree plantation.

- i. Policy, law and regulations
 - Land Reform Act B.E. 2518
 - Land reform policy
 - Promotion of economic tree planting and trees for community food banks
- ii. Incentives/support
 - Land Reform Fund
 - Infrastructure development
 - Provision of necessary farm inputs
- iii. Technology transfer/knowledge dissemination
 - Training
 - Model land reform
 - Local mentors in land reform areas
- iv. Marketing
 - Promotion of farm products

Land Development Department (LDD)

The LDD is responsible for formulating land-use policy and land-use planning for agricultural areas, soil survey and classification, soil and water conservation, and soil improvement through provision of

services and technology transfer and land development schemes, data and information about soil and land utilization for productivity improvement and sustainable land use.

The LDD can provide extension services in connection with tree plantation in terms of soil suitability classification, soil improvement techniques, production of organic fertilizer, and soil and water conservation. The LDD's Land Development Stations are the main sources of these extension services. The LDD's local soil volunteers can provide close consultation to tree plantation farmers in this regard.

Bank for Agriculture and Agricultural Cooperatives (BAAC)

The BAAC is a very important financial source for Thai farmers. With respect to tree plantation farmers, the bank is responsible for:

- a. Providing credit and loan services to farmers;
- b. Development of a learning society for better quality of life of the farmers;
- c. Development of new services responsive to farmers' demand with quality and efficiency.

The BAAC provides credit and loans to tree plantation farmers, but this is limited to fast growing trees with a maximum of three years rotation. However, it has been working on long rotation trees, teak in particular, for long-term loans. The BAAC is in the process of adopting the concept of 'Tree Bank' and 'Tree Planting for Long-Term Capital' both of which will be extremely beneficial in supporting the participation of tree plantation farmers in sustainable forest management

6. Field surveys and workshops: analysis of problems and issues related to long rotation tree planting and recommendations

Prevailing situations in the field were analysed through the field surveys of tree plantation farmers who were probed about constraints they experienced. Workshops were organized in Lopburee, Nakornrajsima, Nakornsawan, Nakornsrithamaraj, Prachinburee, Nonthaburee, Patumtanee and Bangkok. The workshops considered amendments to laws and regulations as well as problems and issues pertaining to tree cultivation on farmlands. Potential solutions were identified and categorized for each problem.

Figure 5 illustrates the general system for long rotation tree planting.

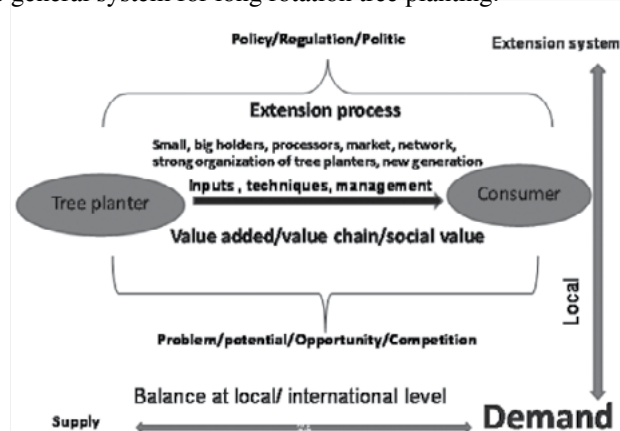


Figure 5. General tree planting/wood product extension and marketing system

From the workshops, it appeared that the demand side, local and international, of wood and wood products is much greater than the supply side. This poses a question of what will happen to the wood production and extension systems after considerable periods of implementation. Participants identified various problems and constraints and recommendations ranging from policy to plot levels and complex interactions between these issues.

Land: Types of land title and tree planting registration are important incentives for tree planting. There are various types of land title, ranging from full legal to non-legal ownership but they usually receive government sanction. The latter type discourages tree planting. If tree planting farmers use this type of land to grow trees they need to register at the proper government office but many are unaware of this regulation. By the time they want to cut the trees, under any form of landownership, they have to get permission before cutting (if the trees are classified types); some farmers know this regulation but obtaining permission is irksome. Besides small land size, priority for land use (lowland paddy, upland cash crops) also limits tree planting.

Types of plantation: For large tree plantations with considerable capital, planting long rotation tree species only poses no problem. However, small plantations require short-term cash so they prefer mixed cropping or intercropping of short rotation crops or trees with long rotation trees. If small holders are targeted to grow more long rotation trees, extension services need to include mixed or integrated systems in their approaches.

Inputs and management: Species and quality of seedlings were mentioned at the workshop but there was little discussion. Companies with eucalyptus tree plantations appear to be more aggressive in selling or providing free seedlings. Moreover this tree is a short rotation species and can regenerate after cutting. Competition between short and long rotation species was pointed out clearly. Regarding application of chemical fertilizer in terms of quality and quantity, large plantation owners indicated use of chemical fertilizer while small plantations applied some organic fertilizer or both. Thinning techniques and timing were discussed by some of the larger stakeholders; some of them do not practise thinning.

Wood marketing: Besides wood cutting and transportation regulations, some smallholders do not know the buyers. A network should be introduced and information should be made available through the network. Empowering this network is strongly recommended; it should encompass producers, processors and consumers.

Processing and marketing: Investment capital for wood buying appeared to be a significant issue for some wood processors. They want an adequate revolving fund to buy wood. Technology was not a constraint but lack of wood craftsmanship and marketable design were pointed out as serious threats. In this respect there should be a curriculum in relevant teaching institutions. Restrictions on transportation of finished products should be lifted or relaxed.

Value chain: Value addition of wood and wood products, including the social value of wood, was not directly mentioned at the workshops but there are implications that they should be developed, possibly through the network; consumers' preferences should be researched.

New generation: Most of the tree planters were middle aged or older and indicated that their offspring were unlikely to continue with plantation activities. Therefore sustainability of tree plantations needs to be addressed. Back migration of labour to rural areas should be studied for a possible new generation of tree planters.

Policy and regulation: Information on policy and regulations does not filter down to stakeholders successfully enough. Many participants at the workshop complained about this bitterly. Solutions must be found and disseminated to all parties.

Extension system: Discussion indicated that many extension workers have a narrow scope that needs to be expanded considerably to address all aspects of plantation activity. Proper capacity building of extension workers or related personnel should be implemented.

Strategic partners: As extension workers need to widen their scope of work, which may overlap with other departments and even NGOs, strategic partners and networks need to be identified and built at departmental and local levels.

For detailed analysis of problems and issues associated with long rotation tree plantations as well as recommendations from the field surveys and workshops, see the Annex 1.

Legal aspects

TCP report: Identification of problems/obstacles of forest laws and regulations in promoting long rotation tree plantations in farmers' lands and their mitigation by Narong Khamhirun.

Forestry extension

TCP report: Status of forest extension: analysis of problems and issues and recommendations by Yasutoshi Yamada

TCP report: Review of forest extension and recommendations by SongkramThammincha

Forest industry promotion and marketing

TCP report: Forest industry promotion and marketing by Nikhom Laemsak

Incentives for sustainable wood production in private lands to support small- and medium-size wood-processing industries and recommendations

TCP report: Promotion of tree plantations in farmers' private lands for sustainable timber production for small and medium enterprises of wood processing industries by Jyoti K. Sharma

TCP report: Promotion of Small and medium enterprises of wood processing industries in Thailand through sustainable timber production by tree farmers in private lands by Jyoti K Sharma

7. Conclusion

Thailand is changing from governmental forest management to participatory forest management by involving all stakeholders. National forest cover declined from 53 percent in 1961 to 25 percent in 1998, which resulted in shifting rural land-use patterns. The existing forests were protected as conservation forest as park and wildlife sanctuary and watershed headwaters. Isolated forest in degraded forest land traditionally was managed by nearby communities. In the 1990s, this land was promoted for conversion to tree plantations. At the same time, there were many institutional changes in areas that were formerly forest land. Many agencies like the Community Development Department (CDD), Cooperatives Promotion Department (CPD) and the Agriculture Extension Department (AED) worked with farmers' groups. Funds were allocated by the government and managed by the farmers' groups at the village level.

There are some structural problem and issues facing the shift to participatory forest management:

- Overlapping policy on forest land use and existing rural land use.
- Overlapping of existing forest laws and regulations.
- The reorganization of the RFD has weakened extension services to tree plantation farmers.
- Shortage of technical support on silvicultural methods has resulted in no thinning in many small teak plantations. The extension officers also need more training on all aspects of silvicultural techniques.
- Active forest cooperatives are few in number so they should be strengthened as forest cooperative models for tree plantation farmers.
- The extension system for tree plantation farmers should cover all activities of farm management from tree planting to wood processing and product marketing. A coordination body (national committee) should be established with well-defined functions.
- There is shortage of skilled labour in plantations and factories. Farmer learning centres should be supported to produce local woodworkers. There should be short courses on tree farm management for the tree plantation owners/farmers.
- There are no incentives for small farmers to keep standing trees. Payment for environmental service should be encouraged for private companies in the CSR programme.
- Tree plantation farmers should have more awareness about international markets and the ASEAN market for ASEAN 2015.

The national workshops arrived at two sets of recommendations:

Recommendations that can be carried out immediately

- Stakeholders must be organized into a 'working committee' or something similar to find solutions to constraints.
- The participatory concept and practice must be strengthened, especially in extension work.
- Human resource development on facilitation and participation must be initiated and sustained.
- The RFD should cooperate with the private sector to implement CSR and similar activities, including those related to carbon credits. A strategy for fund raising must be devised.
- Action research must be built in the extension process.
- The extension system must be revised to embrace problem-solving and networking.
- Training, both in survey and facilitation, and lessons learned should be further developed, particularly in extension work.
- Public awareness must be addressed.
- Information must be made more available and accessible to stakeholders.

Recommendations that need more time and effort:

- Some laws and regulations that inhibit tree plantation, wood processing, wood marketing, wood product export and other activities need amendment.
- Organizational restructuring.
- Long-term embedding of public awareness.
- Product quality development.
- Creating learning institutions for skills training and development.
- The role of extension services must be changed to facilitate and empower stakeholders and their networks.
- The working committee should initiate coordination to drive concerned organizations to initiate action.

Annex 1. Significant issues for long rotation tree plantations

Tree farming

Incentives for tree farming – tax issues, revolving/rotating fund

- Land tax exemption for tree plantation farmers during periods of no income from trees.
- A progressive tax for large landholders to encourage using land for tree growth.
- A revolving fund for tree plantations similar to those for rice, rubber trees, sugar cane and other agricultural crops.
- A rotating fund to promote long rotation tree species.
- A plantation insurance scheme to cover the risks involved in tree plantations.
- Revolving funds to support the wood industry for purchasing timber from plantations.

Lack of labour to work in plantations

There is a shortage of skilled labour in the forestry sector, especially regarding silvicultural practices and the domestic wood industry.

Coordination on tree bank promotion

There should be coordination of tree bank promotion among the RFD, BoA and the NGO programmes.

Land-use planning/planting/performance of species/long rotation species

- Land-use planning coordination is needed among government authorities for tree and plant promotion programmes, especially eucalyptus, rubber trees, sugar cane and other agricultural cash crops.
- The long rotation trees are recommended for small farmers to plant on their land boundaries and for communities to plant on temple, school and abandoned land.
- The tree plantation project should last for 15 years to cover the duration of planting and thinning; thinning can provide income for farmers.
- Farmers feel that teak planted on land boundaries grows better than teak in plantations. Teak planted with other species grows better than the pure stand of teak due to the difference in nutrient consumption.
- Most dry dipterocarp forests are unsuitable for teak cultivation. Some farmers would like to plant eucalyptus for quick cash returns. Some would like to plant rubber tree promoted under the government programme.
- Some tree farmers would like to diversify their plantations by applying agroforestry techniques with bamboo and medical herbs.

Choice of tree species/native tree species

- Some tree species are overpromoted by private seedling nurseries, resulting in selection of inappropriate species that costs the farmer time and money.
- Farmers prefer to plant other native species such as pradu (*Pterocarpus* spp.), payung (*Dalbergia* spp.) and bamboo.
- Native tree species such as jamjuree (*Albizzia* spp.), pradu (*Pterocarpus* spp.) and yang (*Dipterocarpus* spp.) should be planted on suitable soil in the northeast as well as bamboo and other medicinal plants.
- There should be promotion of native long rotation tree species suitable for local conditions.

Quality of planting material – poor quality of seedlings

- Poor quality tree seedlings have been provided by extension projects in the past resulting in slow growth in plantations.
- Good quality seedlings should be provided for planting in suitable soil to assure the good yields.

Management of plantations/site species matching/poor growth of trees

- There is a need for handbooks and guidelines for plantation management to promote sustainable plantation management.

Technical guidance/advice/services/training

- There is a need for technical government extension services for farmers on various aspects of plantation management such as good quality seedlings, soil conservation and carbon credit marketing etc.
- Farmers need technical advice on plantation thinning.
- There is a need for training on tree plantation management that covers all activities of planting, tending, thinning, cutting, transporting, processing and marketing.
- Farmers are not familiar with procedures under the Tree Plantation Act B.E. 2535. An easy manual on land selection, registration of the plantation, wood transportation, etc should be developed.

Inventories of yields, stocks of tree plantations and consumption of wood/wood balance

- There is a need for stock inventories and mapping of plantations in each province.
- Inventories of the yields and stocks of tree plantations and consumption of wood by different stakeholders should be carried out in ten-year periods to modify policies.
- There should be national wood utilization planning for domestic production, consumption and export. This will balance the future use of raw material from the tree plantations.

Harvesting and transportation of logs/timber

Timber stamps

The plantation owner's timber stamp should be registered in the name of the cooperative/group – not as the individual plantation owner – due to problems associated with timber smuggling and the rotation of the document.

Chain Saw Act

- Chainsaw owners currently need permission to carry the equipment to other provinces as stated in the Chain Saw Act 2540.
- There should be flexibility in regulations for the movement of chainsaws from one area to another to address problems associated with chainsaw registration.
- Getting permission to transport chainsaws to other provinces is costing wood buyers time and expense.

Thinning

- Under the Tree Plantation Act B.E.2535, there is conflict in implementing of tree thinning as the plantation treatment to stimulate tree growth and generate income. The thinning of trees needs official cutting permits that demand time and expense.

Transportation of logs/timber

- Log transportation paperwork that requires official documents to show the site of origin.
- Reducing wood transportation documents will encourage the conveyance of tree plantation timber from nearby provinces.
- In order to minimize and facilitate wood transportation on highways, there should be coordination among the highway police, RFD extension officers.

Marketing of timber/logs

Intermediaries – low price of logs/timber

- The price offered for timber from plantations is too low due to intermediaries who suppress the price of wood in the domestic market.
- As such, plantation owners retain the trees and do not sell timber.
- Cooperatives also offer low prices. Farmers need quotation of the central price as the standard (see next section).
- Intermediaries set the price in the market.

Standard pricing/pricing of timber based on the value of standing tree

- There should be standard pricing for timber from plantations similar to the standard price for rice, rubber and other agricultural products.
- There should be estimation of the economic value of the standing trees to be used for appraisal of the tree plantation value and pricing of timber.
- The price of timber varies due to the quality of wood, difficulty in wood cutting and piling and transportation distance.

Need for a central market for selling logs/timber

- There is lack of information on how and where to sell. There should be a central market that farmers can trust.
- There should be a local market place for tree farmers where timber buyers and timber sellers can meet directly without the interference of intermediaries.
- Similarly there should be a central market for these stakeholders equipped with Internet facilities.

Marketing/selling/export

- Large-scale tree plantation farmers would like to export their teak wood as done by the FIO.
- There is a need for export promotion for timber and wood products from tree plantations.

Domestic market for tree farmers' wood furniture

- Wooden furniture and other products from tree farmers should be promoted in the domestic markets.
- There should be the promotion of domestic wood product manufacturing and marketing for small-scale plantation farmers.

Processing and utilization of logs/timber

Wood manufacturing plant, sawmills – shortage/lack of skilled labour/carpenters

- Medium- and large-scale tree plantation farmers with more than 20 rai to establish their own wood manufacturing plants using their own wood or that bought from neighbouring plantations.
- There is a shortage of skilled carpenters. There should be a training centre in this regard. There are concerns about wood residue shortage in the near future.
- Tree plantation farmers should be permitted to operate their own factories using raw material from the tree plantation.

Training of carpenters/workers for skill development / value addition design

- To solve the problem of lack of good design and skilled carpenters, a training centre should be established for young energetic carpenters.
- There should be training on wood products and design for wood industry artisans. A standard for wood products should be established for wood from sustainably managed plantations for wider markets, not just domestic markets.

Renovation of old machinery/lack of modern machinery in wood-processing plants

Upgrading of equipment used in the wood manufacture is needed. Long-term loans for modern equipment should be provided under the tree plantation project.

Tree Plantation Act 2535

Legal procedures/manual/ awareness/advice/training

- There is a need for training on the legal process involved in tree farming for tree plantation farmers and wood industry stakeholders.
- There should be an easily understandable legal manual for tree plantation farmers.
- There is a shortage of competent officers to explain forestry techniques and legal procedure to farmers. Training is needed for new officers. There should be a provision that costs of training the officers should be borne by plantation farmers' groups.
- The tree plantation farmers are not familiar with procedures under the Tree Plantation Act B.E. 2535. An easy manual on land selection, registration of the plantation, wood transportation etc should be developed for farmers.
- The farmers do not know the details of the Tree Plantation Act B.E. 2535. A training course should be provided for them and front-line forest extension officers.
- After the reorganization of the RFD are no district forest officers. This leads to lack of a one-stop service at the regional administration level.

Need to reduce time-consuming red tape

- The processes for wood cutting, transportation, establishment of the wood processing plant and wood product stocking demand time and expense. The whole process as required by the law should be shortened.
- There is wastage of time and expenditure in the process of tree plantation management. There should be reduction of paperwork required by the Tree Plantation Act B.E. 2535.
- To increase the number of tree farmers, the Tree Plantation Act B.E. 2535 should be revised.

Transportation rules

- The timber transportation documents of the tree plantation owners can be transferred to the buyers.
- Regarding logging transportation on the highway, there is a need to include all tree species rather than teak and yang only, as cited in the Tree Plantation Act B.E. 2535.

Landownership – legal status

- There is a need for case studies on land used for tree plantation that cannot be registered under the provisions of the Tree Plantation Act B.E. 2535.
- Rules need to be amended for trees planted in the uncompleted cooperative land settlement in the reserved forest as it cannot be registered as trees cut under the Tree Plantation Act B.E.2535.
- The legal status of landownership is not clear generally.
- There are a number of farmers who occupied the national forest reserved land under various settlement programs of the authorities concerned. Some tree plantation was promoted under the RFD program. Nevertheless, tree plantation cannot be managed under the provision of the Tree Plantation Act B.E.2535.
- There are the problems of land rights in the land settlement project that the farmer cannot register their plantation under the tree plantation Act B.E.2535

Registration of forests and tree harvest problems

- There are many farmers who occupy forest land under different government programmes. Tree plantations have been established but cannot be registered under the Tree Plantation Act B.E. 2535 due to legal tenure problems. The issue needs to be addressed to grant timber planting rights to owners.
- There should be the amendment to the rules for trees planted according to the agrarian land reform scheme in reserved forest that cannot be registered and cut under the Tree Plantation Act B.E. 2535.
- Those farmers who occupy forest land and public land cannot cut trees in their plantations. Plantations cannot be registered under the provision of the Tree Plantation Act B.E.2535. This issue should be studied for amendment in the rules.
- If tree plantations are in reserved forest or other public land, the local municipal and subdistrict administration should guarantee appropriate documentation for plantation registration.

Contradictory/conflicting Tree Plantation Act B.E. 2535 and Forest Act B.E. 2484

- These two Acts should be revised due to mutual conflicts in their provisions.
- All activities in wood industry, marketing and wood processing under the Tree Plantation Act B.E.2535 should be free from the Forest Law B.E. 2484.
- Conflicting provisions in the Forest Act B.E.2484 and the Plantation Act B.E. 2535 result in difficulties for the wood product industry and marketing.
- This also applies to timber cutting, timber transportation, wood processing and marketing for teak and yang.
- As such, plantation owners do not have free access to their products.

Non-reserved tree species

- All tree species grown in farmers' land should be registered under the Tree Plantation Act 2535.

- All teak and yang planted in tree plantations/ farms should be declared as non-reserved tree species under the Forest Act B.E. 2484.
- Allowing wood processing of 13 of non-reserved tree species under the Tree Plantation Act B.E. 2535 will result in the loss of the standing trees in private lands.

Charcoal production

- There should be legal provisions for wood charcoal making from the plantations.
- The charcoal kiln operator can buy the wood from the tree plantation farmers and can export the charcoal to the international market if clear origin of the wood can be provided.

Book keeping

- Most farmers have no experience of book keeping in the manufacturing plant as required under the Forest Act B.E. 2484. Procedures should be modified to simplify the processes involved.

Extension

Extension officers and their services

- The RFD should supply district forest officers to provide a one-stop service, especially with regard to different for extension and permission requirements.
- There are no extension officers at the district level.
- The extension services for tree plantation project should have continuity and cover all activities and processes of tree plantation management.
- More extension office competence is required.
- Tree plantation promotion requires skilled and experienced extension officers. They should receive regular training on sustainable tree plantation management.
- There should be a hotline to deliver reports of unethical behaviour by extension officers.
- The reorganization of tree plantation extension should be revised to cover all activities: wood cutting processes, transportation, establishment of the wood processing plant, wood product stocking.
- The processes and activities stated in Tree Plantation Act B.E. 2535 are complicated. The extension officers are unable to explain them to farmers. Training on this issue and development of a simple manual are necessary.

Need for one-stop services/information centres

- Too many activities/requirements demand the establishment of one-stop service centres to minimize outlays on time and expense by farmers.
- There should be an information centre for tree plantation farmers to support all activities as stated in the Tree Plantation Act B.E. 2535.

Cooperatives/community enterprises/self-help groups

- Some tree farmers have established farmers' learning centres to promote indigenous self-sufficient land use.
- Small tree plantation farmers have organized wood manufacturing cooperatives for their own timber.
- Small tree plantation farmers are developing homemade wood souvenirs from wood residues

for which there is a domestic market. As community enterprises they can access SME funds from the government.

- Local wood industry and processing businesses should organize self-help groups for product design and to bargain with intermediaries.
- The promotion of tree plantation farmers' cooperatives should be strengthened. A revolving fund for the cooperatives should be established to support their continuity.
- The cooperatives should work as the centre of wood industry for the tree plantation farmers. Cooperative wood processing should be established with government support.

Livelihood issues

- The small farmers need income from cash crops. They do not want long rotation trees. They need free good quality seedlings to plant on their land boundaries.
- Some sort of programme targeting income generation via activities such as mushroom cultivation, bamboo shoot cultivation, goat raising etc. on plantations should be formulated.
- There should be promotion of wood charcoal and wood vinegar from tree plantations.
- There should be promotion of mixed tree planting and agroforestry in tree plantations to support farmers during no return periods.
- There should be a revolving fund for tree plantations similar to that for the promotion of rice, rubber trees, sugar cane and other agricultural crops.

Women's empowerment

- The role of women in the management of a community enterprise includes project planning, collection of wood residue, wood souvenir making and marketing of the products.
- The role of women is very strong in wood furniture making and marketing and it should be recognized and promoted.
- Women should have supportive roles in community enterprise (tree plantation) management.

Legal aspects of the Tree Plantation Act B.E. 2535

Important sections

Section 4

Land that can be registered for tree plantation under Section 4 of the Tree Plantation Act B.E. 2535 shall have to meet one of the following conditions:

- Have a land deed or exploitation certificate under the Land Code;
- Have evidence of permission, land lease or land lease-purchase under the Land Reform Scheme for Agriculture Code;
- Have an official certificate, or may receive a land deed or exploitation certificate in accordance with the Land Code, or possession or exploitation of such land under the Land Reform Scheme for Agriculture Code or the Land Classification for Vitality Code;
- Have permission issued in accordance with the National Reserved Forests Act, to allow any person to replant trees in such therein under Section 16 in the second paragraph or be allowed to reforest in a degraded forest under Section 20;
- Subject to reforestation by a public body or government agency.

Section 4 (1) of the Forest Act B.E. 2484

Under the Section 4 (1) of the Forest Act B.E. 2484, 'forest' means land that has not been taken up or acquired by any other means under the Land Law. Land that can be registered for tree plantation is divided into:

- Land that has a land deed or exploitation certificate under the Land Code;
- Degraded land (land referred to in Section 4 of Article 2-5 that has not been acquired under the Land Law).

Section 3 of the Tree Plantation Act B.E.2535

Under Section 3 of the Tree Plantation Act B.E. 2535 'tree plantation' means the surface of land which has been registered under Section 5 to replant and improve the trees that are reserved tree species under the Law on Forests; 'wood' means trees that are grown, or replacement trees, the uses and benefits from wood and other purposes. Hence, the two types of reserved tree species can be grown, enhanced and registered as tree plantations under the Tree Plantation Act B.E. 2535.

Section 6 of the Forest Act B.E. 2484

Under Section 6 of the Forest Act B.E. 2484, reserved tree species are divided into two categories:

Category (A): Ordinary reserved tree species are timber species for logging for which permission must be obtained from the competent officer or which are granted concessions under this Act.

Category (B): Special reserved tree species are those comprising rare species, or need to be preserved for which logging permission cannot be granted unless special permission is obtained from the Minister.

Section 7 of the Forest Act B.E. 2484

Under Section 7 of the Forest Act B.E. 2484 teak and yang trees in the forests throughout the Kingdom are reserved tree species under Category (A). Other tree species in the forests which are to be reserved in any locality and under any category shall be prescribed by a Royal Decree to that effect.

Hence, teak and yang grown on land that has a title deed or utilization certificate under the Land Law or reserved tree species grown on degraded land can be logged with permission from the competent officer. Other reserved tree species shall be prescribed by a Royal Decree. Also, other reserved tree species grown only on degraded land, such as Sor. Por. Gor Cooperative land that is still considered to be degraded. Therefore land that has a title deed or the utilization certificate under the Land Law shall contain only teak and yang trees.

Chapter 2

Approach to collection of field data: PRA Training, Field Surveys and Workshops

- Komon Pragtong, Renoo Suwanarat & Suchint Simaraks

Summary:

The implementation of the project on the “Participation of tree plantation farmers in sustainable forest management” required collection of data from the field and the stakeholders, including the farmers, traders, NGOs, and staff of government agencies. This was further supplemented with observations on the ground. Participatory Rural Appraisal (PRA) approaches were employed to obtain data during workshops and field surveys.

In order to undertake the task using the PRA approach, the staff of RFD engaged to undertake the task were first trained in the methodology. The staff was first trained in the theory and practice of PRA. Following that, the field surveys and workshops were organized in seven regions selected on the basis of forest type, existing initiatives, and cooperative processing capacities. The field surveys required interviewing nine representatives including plantation farmers, wood manufacturing plant owners, and the wood handicraft owners. A set of pre-designed semi-structured interviews were employed to gather the required information during the field surveys. These were presented to the participants during the workshops.

The information collected during field surveys of tree farmers included income from cash crops, the lack of information on tree plantations from RFD, the poor seedling quality, the lack of importance given to the role of women in the small enterprises, etc. These findings were provided to the participants of the workshops, and the responses from the various groups (tree plantation farmers, wood industry, etc.). The responses from the various groups were reported as issues to be taken up in the Report. Some of the critical findings included concern on the legal status of land ownership in land resettlement programs, splitting of RFD extension units following the reorganization of the Ministry, confusion among the various extension programs, and the lack of skills in the wood products manufacturing and trade.

Following field surveys, periodic wrap-up meetings were further held. Finally, a national workshop was held in Bangkok to summarize the findings and finalize the recommendations, which were proposed for inclusion the policy revision and Forest Act draft.

1. Training Course on Participatory Rural Appraisal (PRA) for project counterpart and staff of Project “Participation of Tree Plantation Farmers for Sustainable Forest Management”

1.1 Rationale and Justification

In accordance to the Food and Agriculture Organization (FAO) and the Royal Forest Department (RFD), Ministry of Natural Resource and Environment, assistance for implementation of the project entitled “Participation of tree plantation farmers for sustainable forest management” was signed on December 30, 2009. In order to promote growing of long rotation tree species by farmers, especially

those who were once the clientele of various RFD extension projects, the RFD need to organize the technical workshops to identify the problems and issues faced by them while taking up tree cultivation. In addition, representatives of all concerned stakeholders in rural areas including RFD, Sawmill, Wood industry, Ministry of Industry, Department of Agricultural Extension (Ministry of Agriculture and Cooperatives), Department of Environment Quality Promotion (Ministry of Natural Resource and Environment) and non government organizations which work for the environment and rural development were also included as the workshop participants (Annex 1).

During field surveys and workshops PRA technique will be the channel for data collection. It was envisaged that the workshops will result in better understanding of problems of long rotation tree planting and the opinion of the stakeholders concerned which will be effective in the formulation of framework and approach for new policies for promoting tree plantation farmers. However, as most of the RFD officers and project staff lack the knowledge of PRA technique and its application, capacity building of project counterparts and RFD staff in using PRA and its application in multi stakeholder analysis will be needed. Thus, it was essential for RFD counterparts and staffs to get training in Participatory Rural Appraisal (PRA).

1.2 Objectives and topics

To build the capacity and improve the competency of the counterpart and project staff on the application of PRA technique for field survey and workshop of multistakeholders.

Workshop core topics:

- 1 Theory (12 hours)
 - Participation (PRAs) for 6 hours.
 - Making mind map for 3 hours.
 - The conclusion of the main details for 3 hours.
- 2 Practice (6 hours)
 - Participation for 2 hours.
 - Making mind map for 2 hours.
 - The conclusion of the main details for 2 hours.

Number of training staff:

Thirty counterpart and project staff of the “Participation of tree plantation farmers for sustainable forest management”.

Duration:

Three days during June 4-6, 2010

Place for training:

Ton Palm Inn, Chaibardan, Lopburi province.

Budget:

The budget for workshop in total of 150,000 Baht

Summary of the training:

The training started at 13.00 hr. The activities of the training were divided into three modules as summarized below:-

1. Inauguration and understanding the project

Mr. Veraphol Suthipornplangul, National Coordinator, inaugurated the training course and explained the background of the project to the participants. He told about the needs of the project which stemmed from the previous extension project on private forest plantation since 2538. There were many tree farm plantations, registered under the Private Forest Plantation Act BC.2535, facing the legal conflict of land uses, wood industry and wood process and marketing of the product. Also, the competition of various extension programs of other government agencies concerned often led to disincentive for the farmer to practice long rotation tree farming. In order to improve the situation RFD requested for technical assistance from FAO which resulted in the project entitled “*Participatory of Tree Plantation Farmers for Sustainable Forest Management*”

Mr. Komon Pragtong, the Lead National Consultant, gave additional information on the nature of the project. The project framework and its impact, project outcome and output were explained to participants. Also, the project implementation and management by Project Management Unit will work as a focal point for joint coordination of FAORAP and RFD. The participants were also told about the consultants, both national and TCDC. The participants were told that this project will result in the best practices of capacity among the RFD staff by working with the consultants on various activities. The process of capacity building will be developed to cope up with the future needs in addressing the similar gaps in regulation and incentive frameworks.

2. Module of theory and practice of PRA

Dr. Suchint Simarak explained the concept and theory of PRA under eight sub topics as follows:-

1. *Introduction of PRA:* Participatory Rural Appraisal, which evolved from Rapid Rural Appraisal, was used for data collection. The PRA was done through structured questionnaire and interviews the interviews of various stakeholders.

2. *Changing attitude:* The interviewers have to change their attitude and behaviour to understand the change in the rural areas. Also, the semi-structured interviews (SSI) and other tools were introduced to the participants.

3. *Data collection in action:* The work on data collection was divided into three steps: pre field survey, field survey and after field survey.

4. *Building of sub topic:* The participants were told how to build their own sub topics for using in the interview. Then the sub-topics could be grouped into different groups as province, community and household. Mind map technique was also practiced.

5. *Building of assistant tool and SSI:* The participants were told about the tools used for easing an interview such as Map, calendar, question, etc.

6. *Data recording:* During the interview, the participants learnt what could do and what should do in order to honour the key informant and receive all data given.

7. *Understand real situation of SSI:* The participants learnt what to do and not to do in SSI and had a chance to practice SSI before conducting the interview. They were divided into three groups and visited to the farmers’ houses. The key informants consisted of five tree farmers and two non tree farmers.

8. *Reporting*: After the field visit three groups of participants discussed the data from the field and presented to the meeting.

3. Module of application of PRA

The PRA were applied for facilitating the self analysis of the rural developer and the rural participation. The rural community can be organized and strengthened for self dependency.

4. Module of closing

The participants evaluated the training course and the lecturer. The certificates of participation were presented to each participant. Mr. Komon Pragtong, National Lead Consultant, acted as the chair person in the closing ceremony.

1.3 Results of the Training

From the course evaluation of the participants it was found that:

1. Most of participants considered this training an excellent course due to the benefit they received from the course.
2. They found the benefits of the SSI and the mind map technique could be used in the participatory works.
3. Most of the counterparts and project staffs could apply the PRA technique in the field and the stakeholder workshops.

1.4 Future action

The project management unit will apply the PRA technique in field survey for individual farmers and for multi-stakeholders analysis in seven regional workshops of tree plantation farmers and other stakeholders.

2. Field Surveys and Workshops

Background

The TCP Project “Participation of tree plantation farmers in sustainable forest management” was officially signed on 30 December 2009. The project was executed by the Royal Forest Department (RFD) with the main objective to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply through creating enabling environments for planting, harvesting, and processing long-rotation tree species.

Comprehensive stakeholder participation process was envisaged in the project in order to review current regulations, incentive systems and propose necessary measures to support tree farmers interested in growing long rotation tree species. Farmers, processors, market representatives, and relevant government officials from different institutions were involved in the process that included seven field surveys and regional workshops based on Participatory Rural Appraisal (PRA) methodologies. The field surveys and workshops were organized in seven regions selected on the basis of forest type, existing initiatives, cooperative structure, and processing capacities. One national workshop in Bangkok was organized towards the end of the process in order to summarize findings and finalize the recommendations for the policy revision.

Periodic wrap up meetings were organized after two workshops in order to monitor the results of the process and improve the procedure. The first wrap up meeting was organized after the two-field surveys and workshop in Lopburi and Nakhonratchasima. The second wrap up meeting was organized after the field survey and workshop in Udonthani and Nakhornsawan. The final wrap up meeting was organized after the field surveys and workshop in Chiangrai, Nakhonsithammarat and Bangkok region.

2.1 Saraburi and Lopburi Region

2.1.1 Methodology

The first field survey was organized in Saraburi and Lopburi province on September 20-22, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview nine representatives of the plantation farmers, wood manufacturing plant owners and the wood handicraft owners. The SSI guidelines designed in the pre-surveys were applied to interview the representatives.

The first workshop was organized at The Grand Narai Hotel, Lamnarai district, Lopburi province on September 23-24, 2010. The workshop was attended by 30 participants including tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers from Lopburi and Saraburi provinces. The results of field survey were presented in the workshop for getting further suggestions and modifications, if any. The group discussions were organized in three groups of tree plantation farmers, and manufacturing, marketing and extension agencies. At the end the plenary discussion was opened for the final recommendations.

2.1.2 Out puts of field surveys

The following information was obtained during field surveys from tree plantation farmers:

- i. The small farmer needs income from cash crops. They do not want the long rotation trees. The small land farmers need free good quality seedlings. They like to plant trees on their land boundary only. The trees will be retained for their children.
- ii. The small farmers do not receive any information on new programs on tree promotion initiated by the RFD due to the lack of communication.
- iii. The tree plantation farmers have experience of poor quality tree seedlings provided by the extension projects in the past which resulted in slow growth of trees in plantations.
- iv. There are many projects of tree plantations promoted in the area. They differ in offering the incentives or support. Many small land farmers change from the long rotation to other crops. Some farmers have sold all clear felled teak at low price to local wood buyers and or the middle men from the manufacturing plants from other provinces.
- v. The medium and large scale tree plantation farmers who own land more than 20 rais established their own wood manufacturing plants using their own planted wood and also wood from the neighbouring plantations. The small tree plantation farmers organized themselves in to tree farmers' cooperatives. The cooperative established the wood manufacturing plant for its own timber. They have no experience of products book keeping in the manufacturing plant as required under the Forest Act B.E. 2484.
- vi. The small tree plantation farmers manufacture homemade wood souvenir from wood residues. These domestic products are available in the local markets. Their products become one Tambon one product (OTOP) of the district. The group of farmers have also formed community enterprises and which can have access to the SME fund of the government.
- vii. The role of women in the management of the community enterprises and business should be recognized starting from the project planning, collection of wood residue, wood souvenir making and marketing of the products.

- viii. There is shortage of skilled wood makers and they are difficult to find. There is a need for training centres for carpenters. Farmers showed their concern about wood residues shortage in near future.

2.1.3 Out puts of the Workshop

The following information was gathered from the stakeholders in the Workshop.

The additional comments on the observations of field surveys:

- i. The problem of the log transportation from the planting site to other sites which requires attaching official papers to show the site of origin.
- ii. The problem of incomplete land resettlement in the forest-reserved land due to which planted trees cannot be cut in case the owner wants to sell the timber.
- iii. The need for central wood market as the meeting place between the seller, buyer and the producers.

The information from three Group Discussions is as follows:

A) The tree plantation farmer groups discussed on the issues concerned and provided the recommendations on various issues as follows:

- There should be land tax exemption for tree plantation farmers during the period there is no income obtained from long rotation trees.
- There should be incentives to provide a revolving fund to promote long rotation tree species similar to Rubber revolving fund, Sugarcane fund, etc.
- To solve the problem of chain saw registration, there should be flexibility in taking the chain saw from one place to another.
- To have good seedlings, there should be quality control for seedlings to be supplied to farmers.
- For planting a tree species in a site suitable for cultivation, there should be zoning of trees suitable for each site.
- To promote sustainable plantation management, there should be handbooks and guidelines for plantation management for small tree plantation farmers.

B) The wood industry products and marketing group provided the recommendation on various issues as-

- To solve the problem of shortage of skilled carpenters, there should be training centres at the sub district level.
- To assist the farmer's SME/ industry, leaflet and CDs of wood product designs should be supplied to small wood industries/SMEs.
- The long rotation trees are recommended for promoting to the small land farmers on their land boundary and to the communities to plant on temple, school and abandoned lands.
- To support the tree-planting fund, the government should provide the channel to access to the various sources of funds.
- To promote the wood product market continuously, regular wood products exhibition should be organized at local and national level and publicized through TV and Internet.
- To support the cooperatives, the cooperatives should be allowed to buy equipments/machinery with tax exemption.
- To support the wood products from the plantations, the government should train the owners of SMEs in running their business, book keeping with simple proforma.
- To inspect transportation of log from the plantation site, the authorities concerned should provide the clear-cut methods and provide incentives rather than controls.

C) *The legal group provided the recommendation on various issues as follows:--*

- The tree plantation farmers should understand the technique of wood charcoal making and the by-product of wood vinegar.
- There should be easy understandable legal manual for tree plantation farmers.
- There should be legal provision for wood charcoal making from tree plantations.
- There should be solution for trees planted in lands with unsettled land rights / cooperative land settlement in the reserved forest where farmers cannot register and cut trees under the Tree Plantation Act B.E.2535.
- All activities related to wood industry, marketing and wood processing in the tree plantation should be under the Tree Plantation Act B.E.2535 and should be free from the Forest Act B.E. 2484
- There should be provisions that all trees can be registered under the Tree Plantation Act 2535
- The timber transportation documents of tree plantation owners can be transferred to the buyers.

2.1.4 Conclusion

The information on the situation of tree plantation farming gathered from the field survey and the workshops in Lopburi and Saraburi can be summarized as following:

- i. The legal status of land ownership is not clear due to incomplete land resettlement under many programs concerning departments such as Cooperative Promotion Department., Agrarian land Reform Office, etc.
- ii. The splitting of the RFD extension system after the reorganization has separated the forestry service from the farmers. The extension works is now divided into different divisions in the ministry. There is no one-stop service of forestry at the district level. They would like the Tambon Administration Organization (TAO) to coordinate all extension from various sources in their district.
- iii. There are tree planting extension programs on other tree species such as eucalyptus and rubber tree by private companies. Those extension programs are supported by the subsidies and incentives. Many tree plantation farmers intend to change the tree-planting scheme if there is no revolving fund support. The revolving fund should support the farmers until they start earning the income from the plantation.
- iv. The small home wood manufacturing units and medium wood processing units need training on the management of wood products business. In addition, the owners need training for carpenters in skill development to work in their own factory. The learning centre should be established in the vicinity of tree plantations.

2.2 Nakhonratchasima and Buriram Region

2.2.1 Methodology applied in second field survey and workshop

The second field survey was organized in Nakhonratchasima and Buriram province during September 26-28, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview six representatives of plantation farmers, wood manufacturing plant owners and wood handicraft owners. The SSI guidelines designed for the pre surveys were applied to interview the representatives.

The second workshop was organized at Raya Grand Hotel, Nakhonratchasima province during September 29-30, 2010. The workshop was attended by 31 participants including tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers from Nakhonratchasima and Buriram provinces. The results of field survey were presented in the

workshop for getting additional information/ confirmation/ modifications, if any. The flesh cards were used by the participants to express the problems and issues in tree plantations. The group discussion was held in three groups of the tree plantation farmers, manufacturing and marketing and officers from various extension agencies. The plenary discussion was opened for final recommendations.

2.2.2 Outputs of field surveys

The following information on tree plantation farmers was gathered in Nakhonratchasima and Buriram province:

- The tree plantation farmers are retired citizens. Some occupied the government land without legal status which does not comply with the Tree Plantation Act B.E.2535. There are different land rights statuses due to differences in land settlement projects.
- The farmers planted trees with different expectations. Some of them would like to keep/ retain the trees for the sake of nature conservation. Some of them would like to keep the trees as their heritage for their children. They have experience of planting many different types of tree species rather than only Teak, Yang Eucalyptus and rubber tree.
- The small farmers would like to sell their wood but they lack wood market information. They think that the price of the wood offered to them is too low. They expect that the RFD should take this role of marketing coordination between the buyer and the seller.
- The small farmers have organized themselves into group of tree plantation farmers and wood products with the assistance of the forest extension officers. There is role for women in organizing the self-help programs on tree planting and wood products marketing among the members.
- The local wood product-manufacturing units buy all timber/ wood available in the area, including fruit trees and lesser used tree species. They found that teak planted locally is not big enough for making the frame and furniture since it is not the right site for teak. They have to buy the quality teak from other areas.
- The small-scale wood manufacturers need the support fund for running their business. They need skilled labours for their SMEs.

2.2.3 Outputs of the Workshop

The following information was gathered from the stakeholders.

The additional comments on the observations of field surveys were as follows:

- i. The tree plantation farmers expressed their concern about the continuity and split of the tree planting extension program after the reorganization of the RFD. The tree planting extension work was done by the RFD extension staff while the permission was given by the forest officers of the provincial environment and natural resources office. No extension officers were posted at the district level.
- ii. The tree plantation farmers found the price of the trees felled from plantations too low due to the middle man who suppressed the price of wood in the domestic market. They lacked information and market centre. They need a central market center that they can trust for selling their wood.

The following information was gathered from flesh cards session:-

A) The problems and issues related to tree plantation farmers are summarized below:

- There should be technical services provided to the farmers by the government on various aspects such as the good quality of seedlings, soil conservation, carbon credit marketing, plantation management scheme, etc.

- Tree farmers should have access to the market information that will assist the farmers in their decision on long rotation tree planting
- The tree plantation farmers should be organized in various institutions such as farmers' enterprise group and tree plantation cooperatives supported by proper extension service.
- The public should be informed about the role of tree plantations on the environment protection, especially to the younger generation.
- The farmers feel that teak planted on the land boundary grow better than the teak planted in the plantation. Teak planted with other species grows better than the pure stand of teak.

B) The problems and issues related to wood industry, wood products and marketing are summarized as follows.

- To solve the problem of lack of good design and skilled carpenters, there should be training centres for young energetic carpenters.
- The local wood processing industry should be organized into self help groups in product design and so that they can bargain the prices from the middlemen.
- The information on the role of trees in reducing green house gas should be included in promotion of all tree-planting programs.
- There should be research and development wing of the RFD to provide direct information to tree farmers on quality of seedlings and plantation management of some commercial tree species.

C) The problems and issues on the legal aspects are summarized as follows.

- The charcoal kiln owners should be able to buy wood from the tree plantation farmers and export the charcoal to international market, if they have the clear origin of their timber.
- The tree plantation farmers do not know procedure under the Tree Plantation Act B.E. 2535. Simple manuals giving information on land selection, register of tree plantation, wood transportation, etc should be provided to the farmers.
- The issue of trees planted in uncompleted agrarian land reform in the reserved forest that cannot be registered and cut under the Tree Plantation Act B.E.2535 should be resolved.

The following is the information from working group sessions.

A) The problems and issues on tree plantation farmers are summarized as follows;

- The establishment of the tree plantation farmers' cooperatives will help each other in the management of the tree farming.
- The farmers need call centre for getting technical information on plantation technology, seedlings, soil conservation, thinning technique and technical visits by extension officers of RFD
- The farmers need supporting fund during the period of no income from the plantation.
- The farmers need the service from the competent technical practitioner and procedure support of RFD.
- The farmers have the critical option of government land holding and the fluctuation of the price of annual crops.

B) The problems and issues on wood industry and marketing of wood products are summarized as follows:

- The large-scale wood industry need to buy wood with unlimited quantity with assured supply/continuity of wood. The scattered tree plantations site the increase the cost of transportation.

- The small and medium scale wood industry can buy various types of wood from tree farmers on higher price if they can use the wood residues for other purposes. They need the government support for kiln for drying the wood/
- There is lack of communication between wood industry and tree farmers. They propose networking among the tree farmers.

C) The problems and issues on legal aspects are summarized as follows:

- With the response to the problems of log transportation on the highways, there is a need to include all tree species rather than Teak and Yang in the Tree Plantation Act B.E. 2535.
- In case of tree plantations are in the reserved forest or other public land the local municipal and sub district administration should guarantee the land tax or other land use papers in the district for the plantation registration.
- There is shortage of competent officers to explain the forestry techniques and legal procedures to the farmers. The training is needed for the new officers. There should be provision that the service expense of the officers should be met by the plantation farmer groups.

2.2.4 Conclusions

The information from the field survey and the workshop in Nakhonratchasima and Buriram reflected the prevailing situation of tree plantation farming as follow:-

- i. The tree farmers consisted of retired citizens. The trees were planted for conservation purposes. Most of the income comes from children and not from the plantations. The farmers acquired the land under the government resettlement program as agrarian land reform or land resettlement.
- ii. The shortage of the skilled labours have been experienced in the forestry sector, especially in the silvicultural practice and small scale home wood industry
- iii. The tree plantation farmers should organize themselves in to self-help groups assisted by the officers. They are also strong women groups in the tree plantation and wood products.
- iv. The legal status of land ownership is not clear due to unsettled land resettlement in many programs of authorities concerned such as Cooperative Promotion Department, Agrarian land Reform Office, etc.
- v. There are tree planting extension programs on other tree species such as eucalyptus and rubber tree offered by private companies. These extension programs are supported by subsidies and incentives. Many tree plantation farmers wanted to change the tree-planting schemes if there is no revolving fund support.

2.3 Nongbualamphu and Udonthani

2.3.1 Methodology Applied in Third Field Survey and Workshop

The third field survey was organized in Nongbualamphu and Udonthani province during October 11-13, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview 10 representatives of plantation farmers, wood manufacturing plant owners and the wood handicraft owners. The SSI guides designed in the pre-survey were applied to interview these representatives.

The third workshop was organized at The Ban Chaing Hotel, Udonthani province during October 14-15, 2010. The workshop attended by 31 participants included tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers from Nongbualamphu and Udonthani provinces. Flash cards were used by the participants to express the

problems and the issues in tree plantations. The group discussion was conducted in four groups of small tree plantation farmers who have tree plantations less than 20 rai in area, the large-scale tree plantation farmers who have tree plantations in more than 20 rai, manufacturing and the extension agencies and the government agencies. All groups discussed the problem and issues of promoting tree plantations in farmers' lands. The group shopping technique applied to exchange their views among the groups. The results of field surveys were presented in the workshop for exchanging the views. At the end, plenary discussion was opened for final recommendations.

2.3.2 Outputs of field surveys

The following information on tree plantation farmers was gathered during the field surveys conducted in Nongbualamphu and Udonthani provinces.

- i. The land used for tree plantations is diverse due to the status of land holding rights. Some occupy the national reserved forest land under the government program. Some occupy the agrarian land reform land while the others occupy private lands. Since, these lands are under different status of the land holding rights thereby they are categorized differently under forest laws.
- ii. Most of the areas are Dry Dipterocarp forest unsuitable for Teak. The farmers prefer to plant other native species such as Pradu (*Pterocarpus* spp.), Payung (*Dalbergia* spp.) and Bamboos. Some of the farmers would like to plant Eucalyptus for quick cash returns. Some would like to plant rubber trees promoted under the government program.
- iii. The small-scale tree plantation farmers experience poor growth resulting in small sized trees due to the lack of technical knowledge about plantation management. There is no seedling selection of good varieties for unsuitable soils. The owners decide to retain the trees due to the middlemen who buy the timber at very low prices. Some would like to diversify their plantation by applying agro-forestry techniques with bamboo and medicinal herbs. Some have established farmers' learning centre to promote indigenous self-sufficient land use.
- iv. The large-scale tree plantation farmers have diversified their farm by following economy-based self-sufficient activities. The land was divided for tree planting, fishing pond, fruit trees and livestock. The wood processing units are established to utilize wood production from their plantation and further increase their livelihoods.
- v. The large-scale wood industry owners need wood from the fruit trees and the *Albizia* spp. mostly grown on paddy field boundary. The processed wood was sold to furniture making groups. There is shortage of *Albizia* spp., and hence need to be promoted in farm lands.
- vi. The wood furniture makers and interior designers require skill development in wood making, carpentry and the designs for the wider markets not only for the domestic markets alone.
- vii. In practice the process of wood cutting, transportation, establishment of wood processing plants, wood product stocking, etc., require considerable tree plantation farmers' time and expenses. The process should be reduced into one stop service centre that can minimize in time and expense of the farmers.
- viii. The large-scale tree plantation farmers would like to export teak wood from their own plantation as in the case of FIO.

2.3.3 Outputs of the Workshop

The information from various stakeholders gathered during the workshop is as follows:-

Information from flesh cards session is given below:

A) The problems and issues on tree plantation farmers are summarized as follows:-

- The discontinuity and incomplete process of tree plantation promotion deprive the farmer of real benefits accruing from the tree-planting program sponsored by the government.

- The promotion of tree planting on suitable soils of northeast region should be of native tree species such as Jamjuree (*Albizia* spp.), Pradu (*Pterocarpus* spp.) and Yang (*Dipterocarpus* spp.). They also suggested bamboos and medical plants.
- The seedlings from good quality sources should be provided to the farmers for planting in suitable soil. The good quality seedlings will assure the higher yield of plantations.
- There should be coordination for land use planning among the authorities concerned of the government for the trees promotion programs, especially on eucalyptus, rubber tree, sugarcane and other agriculture cash crops.
- In order to obtain high yield of trees from plantations, the farmers need suitable technical advice on thinning operations in plantations. They also need good services from the agencies concerned in all activities conducted in the plantation, from the planting sites to the marketplaces
- The tree plantation farmers would like to know what, when, where and to whom they could sell the trees from the plantation for carbon credit.

B) The problems and issues on the wood industry products and marketing are summarized as follows:-

- The farmers have experienced low price of the timber bought by tree farmer cooperatives. There should be quotation system for obtaining standard price of timber from the plantations in central market.
- The tree farmer cooperatives require the revolving fund for buying timber from members of cooperatives.
- The wood furniture made by the tree farmers should have domestic markets for their products.

C) The problems and issues on the legal aspects are summarized as follow.

- The farmers who occupy the national forest reserved forests cannot register their plantations under the provision of the Tree Plantation B.E. 2535.
- All steps for establishing and utilization of tree plantations starting with registration, planting, thinning, logging, timber transporting, wood processing and wood marketing, require considerable paper work and time. The reduction of the whole process can offer incentives to Teak and Yang plantation farmers in enhancing their tree farm business.
- The legal aspects of tree plantations are unknown to the tree farmer. There is the need of short training courses for the farmers and the front line extension forest officers.

The following information is from working group session.

A) The problems and issues on tree plantations of small scale farmers are summarized as follows;-

- Because of time and expenditure incurred for raising tree plantation and its management there should be reduction in various activities and the paper work as required under the Tree plantation Act B.E. 2535.
- The farmers do not know various provisions of the Tree Plantation Act B.E. 2535. A training course should be provided to farmers and the front line forest extension officers.
- There should be standard price fixed for trees from farmers' trees plantation as in the case of rice, rubber and the other agriculture products
- There should be provision for marketing tree plantation farming as carbon credits.
- There should be training courses for small land farmers on tree plantation management covering all activities of planting, tending, thinning, cutting, transporting, processing and marketing.

- The extension service should be permanent and cover all activities indicated in the Tree Plantation Act B.E. 2535. The extension service should have skilled and kind hearted forest officers of good conduct.

B) The problems and issues on tree plantations of small scale farmers are summarized as follows:-

- The extension service should be permanent and cover all activities as indicated in the Tree Plantation Act B.E. 2535.
- There should be some estimation of economic value of standing trees by RFD. These values could be used for the appraisal of the tree plantation value.
- There should be a revolving fund for tree plantation farming as in the promotion of cultivation of rice, rubber trees, sugar cane and other agricultural crops.
- The tree plantation promotion requires skilled and experienced extension officers. There should be a development plan and training for the extension officers who could work to promote all activities of tree plantation management.
- The extension service of the tree plantation farmers should be divided in to extension and permission. There should be reorganization of extension services in RFD that has one stop service for tree plantation promotion. There should be forest extension officers at the district level.
- There are many farmers who occupy the forest land under different government programs. They have established tree plantations but that cannot be registered as tree plantation under the Tree Plantation Act B.E. 2535. The solution should be found out to assure the farmers of their rights.

C) The problems and issues on tree plantations by the extension officers summarize as follows:-

- To promote participation of the farmers in tree farming the Tree Plantation Act B.E. 2535 should be revised to reduce paper works and the process involved in plantation activities.
- There should be one stop service to provide services of all activities to tree farmers.
- There should be training course on wood products and design given to staff and labour of wood-based industries. The standard of the wood products should be established and certified for the wood from the sustainably managed plantations.
- There should be research support for the tree plantation farming which can provide technical assistance to farmers.
- The promotion of the tree plantation farmers' cooperatives should strengthen through their experiences. The revolving fund for the cooperatives should be established to support the continuity of cooperatives.

D) The problems and issues wood industry and marketing of forest products are summarized as follows:-

- There is high migration rate of skilled workers and carpenters resulting in lack of skilled labours. To fill this gap there is a need of training the workers in wood making and design for the domestic and export market.
- In order to support the tree farm plantations, there should be revolving fund to support the wood industry for buying timber from tree farms.
- In order to minimize the cases of harassment of timber transportation on highways, there should be coordination between the highway police and the RFD extension officers and the tree farmers to facilitate transporting timber and wood products on the highways without much problem.

2.3.4 Conclusion

The information from the field surveys and the workshop in Nhoungbualumpoo and Udonthani reflect the situation of tree plantation farming as follow:-

- i. The tree plantation farmer would like the RFD to support the private tree plantation farming in a big way. There should be long term continuity of the long rotation tree promotion projects. The project should cover all activities of plantation management.
- ii. There should be revision in the process involved and paper work requirements in various activities of plantation management as under the provisions of the Tree plantation Act B.E. 2535.
- iii. There should be research work on the tree improvement for the soil condition of the northeast. The tree species promoted for tree plantations should be suitable for the soil of a particular area and the available market for the timber.
- iv. There should be standard quotation price of trees from plantations of small-scale tree plantation farmers. The domestic wood product should be of good quality and certified to promote wood products market.
- v. There should be an appraisal of tree plantation value for bank guarantee and for selling of carbon credit. The training course on the technique of appraisal should be given to farmers, bankers and the front line forest extension officers.
- vi. In order to promote wood utilization, there should be training course on wood carpentry and wood design for the young labour force. The contest on wood design and wood making should be part of Thai culture.

2.4 Phitsanulok and Kamphaengphet

2.4.1 Methodology Applied in fourth Field Survey and Workshop

The fourth field survey was organized in Phitsanulok, Kamphaengphet and Nakhonsawan province during October 18-20, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview 10 representatives of plantation farmers, wood processing plant owners and the wood handicraft owners. The SSI guides designed in the pre-survey was applied to interview these representatives.

The fourth workshop was organized at The Asia Hotel, Nakhonsawan province during October 21-22, 2010. The workshop was attended by 39 participants including tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council representatives and forest officers from Kamphaengphet and Nakhonsawan provinces. The flash cards were used by participants to express the problems and issues in tree plantations. The group discussion was conducted in four groups: 1) the small tree plantation farmers who possess tree plantations of less than 20 rais, 2) the large-scale tree plantation farmers who possess tree plantations of more than 20 rais, 3) the wood manufacturing and the extension agencies and 4) government agencies. All groups discussed the problems and issues of promoting the tree plantations. The group shopping technique was applied to exchange their views among the groups. The results of field surveys were presented to the workshop for exchanging the views. At the end plenary discussion was opened for drawing final recommendations.

2.4.2 Outputs of field surveys

The information gathered during the field surveys on tree plantation farmers in Phitsanulok, Kamphaengphet and Nakhonsawan provinces was as follows:

- There are a number of farmers who have occupied the national forest reserved land under various

settlement programs of the government. Some tree plantations were promoted under the RFD program. However, these tree plantations cannot be managed under the provision of the Tree Plantation Act B.E.2535 due to unsettled land rights.

- The farmers have changed their paddy fields to agro forestry land use. Long rotation trees of Teak (*Tectona grandis*), Yang (*Dipterocarpus alatus*), and Khanhun Pa (*Artocarpus* spp.) were planted. The bamboo was also planted for shoot collection.
- The agro forestry farmers organized themselves into community enterprises of wood processing plants owned by them. They also established training centres for carpenters and wood furniture makers. Some farmers have been supported by the concerned government departments.
- The provincial governor has supported the community enterprises of furniture that use wood from plantation-grown timbers. The women's role in community enterprise management is supportive to the tree plantation farmers. The women worked as carpenters making furniture items and marketing the wood products.
- The timber sellers need reasonable/ high price for their wood while the timber buyers need low price for their raw material. The middlemen both in sellers and buyers categories govern the price in the market.
- Some of the farmers have sold small timber from their unmanaged plantations. A training course on plantation management is needed for tree farmers. They also need training in wood furniture making and marketing.
- Tree plantation cooperatives started with many members from faraway places. The members cannot coordinate well and loose the contact with each other. The debts of the members were established since the beginning of the cooperatives and the tree plantation establishment. There was no pay back from the members.
- There is a need for training course for the front line forest extension officers. The training course should focus all activities of the tree plantation management under the provision of the Tree Plantation Act B.E. 2535; the training course should also cover the marketing of the plantation wood products.
- The forest extension system should be decentralized to the sub-district level of TOA in order to support the tree plantation at the local administration level.

2.4.3 Outputs of the workshop

In the workshop the following information was gathered from the stakeholders:

The following information was collected from flesh cards session:

A) The problems and issues on tree plantation extension are summarized as follows:-

- Those farmers who occupy the forestland and public land cannot cut the trees in their plantations. The plantation could not be registered under the provision of the Tree Plantation Act B.E.2535. The problem should be resolved at the earliest.
- Farmers would like to practice the King Bhumibol's initiative pattern of three species with four benefits on their land. They requested for central nurseries that provide good quality seedlings of tree species.
- There should be continuity and integration of extension system at all levels. A one stop service centre should be established for promoting tree plantation management. The service should include all aspects of technical, legal and wood production from the plantation and marketing.
- There should be mixed planting of long rotation tree species and fast growing trees so that the farmer can earn income in between for their livelihood. The income generated in short term will be incentive for retaining the plantation till the end of the long rotation period.
- There should be provision of some financial returns for those tree plantation farmers who plant trees for environmental protection.

- There should be long rotation tree planting promotion on the land occupied by those farmers who were allowed by the cabinet resolution to live in the forestland.
- After the reorganization of the RFD in 2546, there were no district forest officers. This has led to absence of one stop service at the regional administration level. The training courses should be offered to the forest extension officers on sustainable tree plantation management.

B) The problems and issues on the wood industry products and marketing are summarized as follows:-

- To attract and expand the markets, there should be creative good designs and patterns of wood products. These designs and patterns could be promoted to the community enterprises.
- In order to reduce the intermediary cost, there should be central market where the wood seller and wood buyer of the timber can meet each other. The quotation for price of the timber should be the practice to get appropriate price of the wood.
- There should be promotion for the utilization of young wood from thinning of tree plantations for items such as teak swing chair, out-door wood table, dining table etc.
- There should be control and protection of selling of the smuggling timber from private tree plantations. The stolen wood is sold at low price, which greatly affected the real price of the timber in the market.

C) The problems and issues on the legal aspects are summarized as follows:

- In practice the process of wood cutting, transportation, establishment of the wood processing plant, wood product stocking required the tree plantation farmers' time and expenses. The time consuming process as per the provisions of law should be minimized to reduce time and expenses of tree farmer.
- In the national forest reserved the legal status of the land ownership is not clear due to unsettled land rights by the authorities concerned such as Cooperative Promotion Department, Agrarian land Reform Office, etc. These tree plantations cannot be registered under the provisions of the Tree Plantation Act B.E.2535.
- All Teak (*Tectona grandis*) and Yang (*Dipterocarp* spp.) planted in farmer's tree plantations should be declared as the non-reserved tree species under the Forest Act B.E. 2484.
- Under the Tree Plantation Act B.E.2535 there are practical conflicts with regard to in the application of the tree thinning as the plantation treatment to stimulate tree growth. For thinning trees one needs official cutting permits which required time and expense of the tree plantation owners.
- The wood manufacturing plants cannot be established in tree plantations in the Agrarian land reform projects as the land comes under national forest reserves.

The following is the information from working groups' session:

A) The problems and issues on tree plantation of the small scale farmers are summarized as follow:

- The tree plantation project should be continued for a longer duration. The extension service should cover all activities of tree plantation management.
- The tree plantation project should be at least for 15 years to cover the duration of planting and the thinning. The program of thinning can provide early monetary returns to the farmers.
- The central market of tree plantation timber should be established in each province. The market will be the meeting place of seller and buyer by passing the middlemen.
- There should be price guarantee of the timber from the tree plantations similar to rice, sugarcane, rubber, etc.

- There should be training provided on the good governance to the government officers whose work is concerned with the sustainable tree plantation management.
- There should be coordination among various government agencies that have the land settlement project in the forest land: RFD, Agrarian land Reform, land Cooperatives, etc. The problem of tree plantations in the national forest reserved should be resolved.

A) The problems and issues on tree plantation of the large scale farmers are summarized as follows:-

- The training needs for front line officers to provide the service in tree plantation management: the process of wood cutting, transportation, establishment of the wood processing plant, wood product stocking, etc.
- The trees cannot be logged from tree plantations located in the national forest reserved due to unsettled land settlement project: This should be resolved in the interest of tree plantation farmers.
- There should be a central market where the buyer/seller can obtain quotation for price of the timber from tree plantations for direct buying and the selling.

B) The problems and issues of wood industry and marketing of wood products are summarized as follows:-

- The tree plantation project should be continued until the farmers start earning income. The integrated extension system should cover all activities of tree plantation management. The farmer can experience good yields from the sound management through efficient extension system.
- The documentation process should be minimized for transporting the wood furniture from furniture factories to the buyer's resident.
- There should be renovation of the equipment used in the wood processing plants. Long-term loans should be provided to buy modern equipments under the tree plantation project.
- To promote marketing of tree plantation timber central markets with internet facilities should be established in the locality of tree plantations.

C) The problems and issues related to extension officers are summarized as follows:-

- Forest extension system should be revised to cover all activities of tree plantations: planting, thinning, logging, transportation, establishment of wood processing plants, processing of wood, wood products stocking, etc. In order to minimize time and expenses of farmers, one stop service office should be set up.
- There should be recognition of the role of tree plantation cooperatives and wood community enterprises in promoting tree cultivation by tree plantation farmers.
- To expand the market and provide job opportunities, there should be skill promotion to upgrade of carpenters in design and the construction of wood from tree plantations.

2.4.4 Conclusion

The information from the field survey and the workshop in Phitsanulok, Kamphaengphet and Nakhonsawan reflected the following situation of tree plantation farming:

- i. There are many farmers who occupy the forestland under different government programs. The tree plantations have been established but these cannot be registered as tree plantations under the Tree Plantation Act B.E. 2535. The problem should be resolved on their status of forestland to assure the rights for planting and utilization of timber.
- ii. There should be a continuity of tree plantation farming projects with an integrated approach. The extension system should involve the process of wood cutting, transportation, establishment

of the wood processing plant, wood product, marketing, etc. In order to minimize time and expenses, the extension system should be reorganized to have one stop service office. The district offices and the provincial offices of forest extension should be re-established.

- iii. The community enterprises of wood furniture should be encouraged as they can support the job opportunity of the local wood furniture making and marketing of timber from the tree plantation farmers. The support of revolving fund for the products can sustain the tree plantation and the job opportunity of the members. The women's role is very strong in wood furniture making and marketing and it should be recognized and promoted.
- iv. The wood buyers and sellers should be provided with the central timber market facility and the system of quotation for the price to obtain maximum benefits from tree plantations. This way the timber market will support long term sustainable tree plantation management.
- v. The strengthening of the existing tree farm cooperatives should start from the energetic members. The revolving funds should be established to encourage the local timber markets.
- vi. There is a need for training courses on sustainable tree plantation farming for extension officers.
- vii. The need of wood industries for providing training for the skilled carpenters and for skilled labour in design and marketing of the furniture should be addressed.
- viii. The forest extension system should be provided at all level of administration: local, regional and central level.

2.5 Chiangrai and Phayao

2.5.1 Methodology Applied in the Fifth Survey and Workshop

The fifth field survey was organized in Chiangrai and Phayao provinces during November 1-3, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview 10 representatives of the plantation farmers, wood manufacturing plant owners and the wood handicraft owners. The SSI guides designed in the pre-survey was applied to interview the representatives.

The fifth workshop was organized at the Thanya Inthra Hotel, Chiangrai province during November 4-5, 2010. The workshop attended by 44 participants included tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers from Chiangrai and Phayao provinces. The flash cards were used by the participants to express the problems and the issues in tree plantations. The group discussion was conducted in four groups: 1) small tree plantation farmers who possess tree plantations of less than 20 rais, 2) large-scale tree plantation farmers who possess tree plantations of more than 20 rais, 3) manufacturing and the extension agencies, and 4) government agencies. All groups discussed the problems and issues of promoting the tree plantations. The group shopping technique was applied to exchange the views among the groups. The results of field surveys were presented in the workshop for exchanging the current situation of tree farming. At the end the plenary discussion was organized which was open to all the participants.

2.5.2 Outputs of field surveys

The following information on tree plantation farmers was gathered in Chiangrai and Phayao provinces:

- The tree farmers experienced low price of timber due to selling of young timber for their earning/ livelihood or changing to other the land use such as rubber trees for better returns.
- The tree farm cooperatives should be strengthened to assist the members of tree farmers in marketing of wood products and timbers from the plantation.
- The tree plantation project is lacking continuity and does not cover all activities and processes of tree plantation management. Therefore, tree farmers cannot have real benefit from the plantation.

- The income from plantation is not attractive to the tree farmers and hence cannot be considered as the permanent livelihood means. They lack technical knowledge of plantation management.
- The farmers need to have intercropping of teak with bamboo or other cash crop in their plantation. There is no timber market support for teak plantations. The farmers would like to know more about the Tree Bank project of BOA and NGO.
- They need the skill in woodworking and designing. The centre for skill promotion and training should be established.

2.5.3 Outputs of the workshop

In the workshop the following additional information was gathered from the stakeholders.

The following information was obtained from flesh cards session.

A) The problems and issues on tree plantation extension are summarized as follows:-

- There should be one stop service in tree plantation project which should cover all the processes related to tree plantation management.
- The farmers need assistance for protecting timber from wood smuggling/ theft from tree
- There should be regular evaluation of growth of tree plantations. The risks involved with tree plantations should be identified.
- The farmers need income for their livelihood during the period no monetary return is expected from tree plantations.
- The tree plantations should be retained at least for 15 years so that the farmers can make a living from the intervening thinnings.
- The forest extension lack continuity and does not cover the whole process and activities related to tree plantation management.
- There should be livelihood program support for tree farmers such as bee keeping, mushroom cultivation, goat rearing, etc.
- The farmers need good variety of the seedling for their plantations.
- The agro forestry system should be promoted in tree plantation management by farmers.
- The extension officers should have frequent site visits to monitor the plantation health.

B) The problems and issues related to wood industry, wood products and their marketing are summarized as follows:-

- There should be some provision for livelihood support during the period farmers have no source of income from the plantation.
- There should be common market place where timber buyers and timber sellers can meet directly without the middlemen.
- Training centres should be established for training skilled labours in furniture making and designed.
- The export of timber from tree plantations should be encouraged; marketing of wood products of tree farmers, especially in the tourist spot areas should be promoted.

C) The problems and issues on the legal aspects are summarized below.

- There are problems of land rights in the land settlement project that the farmer cannot register their plantation under the Tree Plantation Act B.E. 2535.
- The problem of chainsaw owners that they need permission to carry it to other provinces as stated in the Chain Law Act 2540.
- The farmers have to register the plantation of other tree species but not teak and yang on the

private land. The Tree Plantation Act B.E.2535 provides the permission of tree cutting activities that is controlled by the Forest Act B.E. 2484.

- The register of the owner's signatures for timber stamp should belong to the cooperatives or groups and not the individual plantation owner due to the problem of timber smuggling and the rotation of the document.
- The conflict between the Forest Act B.E.2484 and the Plantation Act B.E. 2535 has resulted in confusion and difficulty for wood product industry and marketing of wood products.
- The cooperatives should work as the centre of wood industry of tree plantation farmers. The wood processing of the cooperatives should be established with the government support.

D) Other matters.

- The one stop service of district forest officers should be established to include the activities and processes of tree plantation farmers.

The information obtained from working group sessions was as follows:

A) The problems and issues on tree plantation of the small scale farmers are summarized as follows;-

- There is a need for the good variety seedlings to be used in tree plantations.
- There should be estimation of tree plantation value to be used as the asset value for any legal activities.
- There should be revolving fund to support the group of tree plantation farmers who practice intercropping with medicinal herbs, bamboos, etc during the period when there will be no returns from plantations.
- There should be tree plantation insurance program to protect the plantations from risks involved.
- Training is required for tree plantation farmers on various aspects covering technical, legal, wood products and marketing.
- The common timber yards and central market places should be established for the farmers as the place for group collection of timber in different tree planting areas.
- The local wood manufacture should be established to produce local products with good designed to attract the tourism in the area.

B) The problems and issues related to tree plantations of large scale farmers are summarized as follows;-

- The extension of tree plantation projects should have continuity covering all the processes of tree plantation management.
- There should be livelihood security for the farmers during periods of no returns from the plantations.
- There should be supporting fund for the farmer who looks after the tree plantations for environmental protection purpose.
- The utilization of wood for tree farmers' own consumption should be free from the Tree Plantation Act B.E.2535.
- There should be training for tree plantation farmers on technical, legal, processing and marketing aspects.
- There should be common market place for the meeting of wood buyers and wood sellers with the system of quotation for the price of wood as a standard practice.
- More effective role is expected from the tree plantation cooperatives in assisting the members on tree plantation management.

C) The problems and issues on tree plantation faced by the wood industry and marketing of wood products are summarized as follows;-

- The one stop service of forest extension should start from raising tree plantation, thinning, logging, transportation, wood processing and marketing.
- There should be continuity of tree plantation extension services to assure the farmers in tree plantation management.
- The selection of tree species for planting should be extended to other tree species as well rather than only teak and yang.
- The tree plantation cooperatives should be strengthened and supported to have wood processing factory to support the farmers' marketing of their products.
- There should be regular training courses organized to enhance the skill of labours/ workers on woodwork and wood design. If the quality of wood products is value added these wood products can attract the outside market and tourists.
- There should be price guarantee to support assured higher income for farmers from tree plantations.

D) The problems and issues on tree plantations faced by the extension officers are summarized as follows:-

- The tree plantation extension should have continuity and cover all processes and activities.
- There should be livelihood security of farmers during the period there will not be any returns from plantations.
- There should be permanent solution for the tree plantations on various land status. The committee should be set up to study the land use problem on case to case basis.
- The wood from farmers' plantations if used for their own consumption should be free from the provisions of the Tree Plantation Act B.E.2535.
- There should be a central timber market and the system of obtaining quotations for best value of timber to protect the farmers from the role of the middlemen who suppress the actual price from buyers and sellers.

2.5.4 Conclusion

The information from field surveys and the workshop in Chiangrai and Phayao Provinces reflected the following situation of tree plantation farming in these provinces.

- i. The forest extension should have continuity and cover all processes and activities of the tree plantations.
- ii. The problem of tree plantations having land rights should be resolved on case to case basis by a reliable committee.
- iii. There tree plantation farmers groups and cooperatives should be strengthened in assisting their members.
- iv. There should be reorganization of the extension service in RFD to have one stop service at the district level; the district forest officer should be reinstated in districts.
- v. The conflict between the Tree Plantation Act B.E.2535 and the Forest Act B.E.2484 should be resolved. The problems related to establishment of wood processing factories of Teak in the North should be resolved.

2.6 Suratthani and Nakhonsithammarat Region

2.6.1 Methodology Applied in the Sixth Survey and Workshop

The sixth field survey was conducted in Suratthani and Nakhonsithammarat provinces during November 12-14, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview 10 representatives of plantation farmers, wood manufacturing plant owners and wood handicraft owners. The SSI guides designed in the pre-survey was applied to interview all the representatives.

The sixth workshop was organized at the Grand Park Hotel, Nakhonsithammarat province during November 15-16, 2010. The workshop was attended by 44 participants including tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council representatives and forest officers from Suratthani and Nakhonsithammarat provinces. The flash cards were used by the participants to express the problems and the issues in tree plantations. The group discussion was conducted in four groups: 1) small tree plantation farmers who possess tree plantations of less than 20 rai, 2) large-scale tree plantation farmers who possess tree plantations of more than 20 rai, 3) manufacturing and the extension agencies, and 4) various government agencies. All groups discussed the problems and issues of promoting tree plantations in farm lands. The group shopping technique was applied to exchange the views among the groups. The results of field surveys were also presented in the workshop for exchanging views on the current situation. At the end there was plenary discussion for final recommendations.

2.6.2 Outputs of field surveys

In the field survey the following information was collected on the tree plantation farmers in Suratthani and Nakhonsithammarat provinces:

- i. The wood processing plants buy all wood/ timber from the fruit gardens. There is lack of skill for utilizing this timber in utilizing for wood furniture making and designing.
- ii. The tree plantation farmers are interested in Tree Bank Project supported by a group of tree farmers and BOA.
- iii. The processes and activities tree plantation as provisioned under the Tree Plantation Act B.E. 2535 are complicated. The forest extension officers cannot explain the details to the farmers. Appropriate training and manual should be provided to Extension Officers in order to support the tree plantation farmers in management and legal aspects.
- iv. The wood processing factories buy all type of wood available such as rubber tree, Champa (*Michelia* spp), Chamjuree (*Albizia* spp). There will be a shortage of wood soon. The price of the timber is varied due to the quality of wood; the difficulties are also experienced in logging, piling and long distance of the timber transportation.
- v. There should be stock inventories and mapping of all the tree plantations in each province.
- vi. There is a need for training on legal process for the tree plantation farmers and wood industry owners.
- vii. The tree plantation farmers cannot organize as groups due to isolation of farm settlements. The native long rotation trees should be planted in rubber plantations to assure the wood supply after clear cut of rubber trees in the near future.
- viii. The problem of time and expenses required for getting the permission for transporting the chain saw to other provinces has been experienced among the wood buyers and these needs to be addressed.

2.6.3 Outputs of the workshop

In the workshop the following additional information was obtained from the stakeholders:

The information from flash cards session is as follows:-

A) The problems and issues on tree plantation extension are summarized as follows:-

- There should be promotion of native long rotation tree species suitable for local conditions.
- The extension of tree plantation project should have the continuity and cover all activities and processes of tree plantation management, which can ensure the farmers of real benefit of tree plantation.
- There should be coordination on tree bank promotion among the RFD, BOA and various NGO Programs.
- There should be more competent and efficient extension service covering all the aspects of plantation management to promote tree plantation by the farmers.

B) The problems and issues related to wood industry, wood products and marketing are summarized as follows:-

- The wood processing factory of tree plantation farmers should be permitted on the basis of raw material availability from tree plantations.
- There should be a central market for buying and selling wood/ timber from tree plantations. The market will be the place where the wood buyer and wood seller can bargain on the price of the wood.
- There should be skill promotion/ development of carpenters and workers in wood making and designing. Training centres should be established to fill the gap of skilled labour.
- All government offices and schools should use wood and wood products from these tree plantations rather than from the open market.
- There should be promotion of use of wood charcoal and wood vinegar from tree plantations.
- There should be strict law enforcement of protection of wood from conservation area and to promote the use of timber from farmers' tree plantations.

C) The problems and issues on the legal aspects are summarized as follows:-

- For clear understanding there should be a manual on legal aspects covering all the activities and processes for the farmers and the extension officers.
- There should be time line for the permission process of each activity stated in the Tree Plantation Act BE 2535 and for wood processing in the Forest Act B.E.2484.
- There is conflict on the practice of the Tree Plantation Act B.E 2535 and the Forest Act B.E. 2484 on the reserved tree species, Teak and Yang.
- The permission of wood processing of 13 of non-reserved tree species under the Tree Plantation Act B.E.2535 will result in the loss of standing trees of these species on the private land.
- There are many steps of permission in tree plantation resulted in the lost of times and expenses of the farmers.

D) Others

- Reduce the import of wood/ timber from abroad and increase the use of native trees from tree plantations which will open the domestic market for tree farmers.

The information from working groups' session is as follows:

A) The problems and issues on tree plantations of small scale farmers are summarized as follows:

- The extension service should focus on good variety of seedlings that are suitable for a particular locality.
- The land allocation program should support the landless farmers by establishing tree plantations.

- The evaluation of value of tree plantations should be done for the benefit of tree plantation farmers as part of their assets for legal activities.
- There should be promotion of community level wood processing to support wood utilization and marketing of tree plantation products in each province.
- The training needs should be addressed for skill promotion of workers/ labour of wood manufacture/ processing industries.
- There should be training on ethics, virtues and good governance for the officers involved with the tree plantation management.
- There should be promotion of quality of wood products both for internal and external markets.
- There should be promotion of intercropping with medicinal herbs and food trees in tree plantation for income generation of tree farmers.

B) The problems and issues on tree plantations faced by the large-scale farmers are summarized as follow:-

- Reducing the steps required for obtaining various permissions in the Tree Plantation Act BE.2535 will save time and expenses of farmers.
- The tree plantation promotion should be continued process and cover all activities and processes of tree plantation management.
- There should be promotion for strengthening of tree plantation cooperatives to act like the centre of tree farmers. The centre will play role of supporting all activities of tree plantation management.
- The land allocation should be provided to the landless farmers for the tree plantation.
- There should be a training centre for skill development of labours/ workers in wood making and furniture designing for local wood industries.
- There should be promotion of local wood processing with the revolving fund for replacing the old machinery with the modern equipment.
- There should be training for running the export business for wood industry owners to support the tree plantation farmers.

C) The problems and issues on tree plantation by the wood industry and marketing are summarized as follows:-

- The tree plantation project should have continuity covering all activities and processes of tree plantation management.
- There should be a campaign for using the tree plantation wood for the benefit of environmental protection.
- There should be awareness created among tree plantation farmers, extension officers and the wood industry owners on the practice of legal aspects of Tree Plantation Act B.E.2535.
- There should be establishment of local training centre for skill development in wood processing and designing to attract the local and foreign markets.
- To facilitate changing of old equipments of wood processing factories there should be financial support at low interest rate for changing equipments in wood processing factories.
- There should be reduction of documentation work for impractical bookkeeping in the wood processing plants and for sale purposes.

D) The problems and issues related on tree plantations related to the extension officers are summarized as follows:-

- There should be the reorganization of RFD to have district forest officers at the district level. The district forest officers can provide the one stop service in all activities and processes required as per the Tree Plantation Act B.E.2535.

- The amendment in the Tree Plantation Act B.E.2535 to allow other tree species to be registered as the tree plantations.
- There should be a manual for extension officers that will provide practical knowledge on various activities of tree plantation such as technical, legal, wood products and marketing.
- There should be a manual for tree plantation farmers to understand all the activities and process of tree plantation management.
- The wood from sustainably managed plantation should be certified.
- There should be a central market for the wood from the tree plantations. The market should provide quotation for price information and e-commerce.
- Training centres should be established for skill development of labour/ labour of the local wood manufacturing units.
- There should be mobile units in the service of The R.F.D. to provide information on tree plantation management to the farmers, groups and cooperatives.
- The tree plantation groups and cooperatives should be set up to respond to the technical queries and market price negotiation.

2.6.4 Conclusion

The information from the field survey and the workshop in Suratthani and Nakhonsithammarat provinces reflected the following situation of tree plantation farming in these provenances.

- i. The tree plantation farmers cannot be organized as groups due to the isolation of fruit tree and rubber tree farm settlement. The native long rotation trees should be interplanted in rubber plantations to assure wood supply after cutting of rubber trees in the near future.
- ii. The evaluation of value of tree plantations should be done for the benefit of tree plantation farmers as part of their assets for legal activities.
- iii. The land allocation program should support the landless farmer to establish the tree plantations.
- iv. To facilitate changing of old equipments of wood processing factories there should be financial support at low interest rate for changing equipments in wood processing factories.
- v. The training centres should be established for the skill development of labour/ workers of the local wood manufacturing units.
- vi. There should be mobile units in the service of The R.F.D. to provide information on tree plantation management to the farmers, groups and cooperatives.

2.7 Bangkok, Pathumthani, Nonthaburi, Chachoengsao and Nakhonnayok Region

2.7.1 Methodology Applied in the Seventh Survey and Workshop

The field survey was organized in Bangkok, Pathumthani, Nonthaburi, Chachoengsao, and Nakhonnayok provinces during November 1-3, 2010. Participatory Rural Appraisal technique (PRA) was applied to interview 10 representatives of plantation farmers, wood manufacturing plant owners and wood handicraft owners. The SSI guides designed in the pre-survey was applied to interview all the representatives.

The seventh workshop was organized at the Maruay Garden Hotel, Bangkok province during November 4-5, 2010. The workshop attended by 44 participants included tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers from Pathumthani, Nonthaburi, Chachoengsao, and Nakhonnayok provinces. The flash cards were used by the participants to express the problems and the issues in tree plantations. The group discussion was held in four groups: 1) small tree plantation farmers who possess tree plantations of less than

20 rais, 2) large-scale tree plantation farmers who possess tree plantations of more than 20 rais, 3) manufacturing and the extension agencies and 4) government agencies. All groups discussed the problems and issues of promoting the tree plantations. The group shopping technique was applied to exchange the views among the groups. The results of field surveys were presented in the workshop for exchange of views and modifications. At the end the plenary discussion was opened for all for formulating recommendations.

2.7.2 Outputs of the field surveys

From the field survey the following information was gathered from the tree plantation farmers in Bangkok, Pathumthani, Nonthaburi, Chachoengsao and Nakhonnayok provinces:

- i. The teak plantations, promoted by the private land estates in the surrounding province of angkok during the economic boom in late 2000's, were quite successful.
- ii. The farmers are not aware of the activities and processes of tree plantation management under Tree Plantation Act B.E 2553.
- iii. The farmers do not know the legal procedures involved in tree plantation management under various forest laws.
- iv. The extension forest officers are not familiar with the legal procedures of the Tree Plantation Act B.E. 2535 and the Forest Act B.E. 2484.
- v. The wood manufacture buys wood from the tree plantation farmer in nearby province such as Lopburi, Suphanburi and Kanchanaburi surrounding Bangkok.
- vi. There should be one stop service for all the permissions pertaining to all activities of tree plantation management that can reduce time and expense of the farmers.
- vii. There is market for big trees for transplantation from trees plantations and private land for landscaping/ decoration in urban area.
- viii. There should be groups or cooperatives to assist exporting the tree plantation farmers' wood products.
- ix. There should be study tours for groups and cooperatives of farmers to visit and learn about tree plantation management in other countries.
- x. There should be guaranteed support price for wood from the tree plantations.
- xi. The tree plantation products should have brand name and certificate of sound environment management to attract the customers.

2.7.3 Outputs of the workshop

During the workshop the following additional information was gathered from the stakeholders:
The following information was from flesh cards session:

A) The problems and issues related to tree plantation extension are summarized as follows:-

- There is promotion of some undesirable tree species by private seedling nurseries that has resulted in farmers to lose time and expense
- There should be promotion of good variety of seedlings for tree plantations.
- The tree plantation extension should be permanent and cover all the activities and processes of tree plantation management.
- The tree plantation farmers do not know the activities and processes of tree plantation management.
- There should be extension program on the knowledge management of all activities of tree plantation management for tree farmers.
- There should be promotion of the mixed tree planting and agro forestry crops in tree plantations to support the farmers during the lean period when there will not be any income from trees.
- There should be progressive tax for the large landholders to encourage land use for tree planting.

B) The problems and issues on legal aspects are summarized as follows

- The Tree Plantation Act B.E. 2535 required permissions that are against the rights of tree plantation owners. It is different from other agriculture crops as the owners can have free access to their products but not under this Act.
- The legal permissions/ procedures in all activities of the plantation management should be reduced.
- Since the extension officers are not familiar with the legal procedures they should be training course for them.
- There are conflicts in the Tree Plantation Act B.E. 2535 and the provision of the forest activities under the Forest Act B.E. 2484 such as the wood processing, manufacture of products using tree plantation timbers
- There is the difficulty of book keeping for the wood processing plants and sale procedures should be improved on the basis of real situation and not for putting controls.
- The farmers should organize themselves into groups or the cooperatives to have self-help control in tree plantation management.

C) The problems and issues on the wood industry products and marketing are summarized as follows:

- The farmers lack information on the market of timber and wood products.
- There should be provision for exporting the timber and wood products from tree plantations.
- There should be a government organization which supports the commerce of timber and wood products from tree plantations.
- There no personnel having expertise in wood products in the government and private sector.
- There is problem of wood shortage of certain tree species in some areas and hence need tree plantation promotion of these species.
- There should be a central market for timber and wood products from the tree plantations.
- The lack of district forest officers cannot provide one stop service for all the activities of to promote tree plantations in districts.
- There should be training in ethics, virtues and good governance for extension and forest officers who are involved with the all activities and processes of tree plantation management.
- There is lack of labours in tree plantations that forces the owner to use foreigner labours in their plantations.
- There should be inventories done every 10 years for tree plantations for the stock of raw material.

The following information was gathered from working groups' session:

A) The problems and issues on tree plantations of the small scale farmers are summarized as follows;-

- There should be one stop service for legal permissions/ processes involved with tree plantation management.
- There should be promotion of using good variety of seedlings for tree plantations.
- The research and sample plots on farmers' tree plantation should be established to transfer the technical aspects to the farmers.
- There should be the revolving funds support the promotion of tree plantation. The funds also support the farmers' livelihood program in the period of no returns. There should be also the environment funds support the plantation for environment protection.
- There should be the capacity building of the cooperatives for assisting the marketing aspects of the tree plantation farmers.
- There should be the training courses for the farmers on technical, legal, wood product and marketing of tree plantation.

- There should be the promotion of home wood products manufacturing and marketing for the small-scale plantation farmers.
- The information centres and central markets equip with the computer and Internet should be established to support the farmer's activities.

B) The problems and issues of tree plantations of large scale farmers are summarized as follows:

- There should be export promotion for timber and wood products from tree plantations.
- To speed up the work of tree plantations, monitoring of the officers, their travelling cost and daily allowance should be included in the permission fee.
- The wood processing factory should be established in large-scale tree plantations, in farmers' groups and in farmers' cooperatives to support local wood products.
- There should be information centre for tree plantation farmers to support all activities as required under Tree Plantation Act B.E.2535.
- The inventories of yields and stocks of tree plantations should be carried out on 10-year period basis.
- To minimize the problem of shortage of labours in tree plantations, employment of foreign labours in tree plantation activities should be allowed.

C) The problems and issues related to tree plantations faced by the wood industry and marketing of wood products are summarized as follows:-

- Reduction in wood transportation documents will support the use of the tree plantation timber from nearby provinces.
- Planning of wood utilization at national level for domestic consumption and export will balance the future use of the raw material from tree plantations.
- There should be promotion of tree plantation and tree planting to provide timber for the future use. Trees should be planted on the available waste land, boundary, roadside, river and canal sites, etc.
- Change of equipments used in wood processing industries should be allowed. Research for the development of appropriate equipments should be undertaken and results provided to farmers.
- There should be government units for promoting the export of wood from tree plantations.
- There should be a central market for timber and wood products.
- There should be a plantation insurance program to cover the risks involved with tree plantations.
- The conflicts between the provision of Tree Plantation Act B.E. 2535 and the Forest Act 2484 should be resolved to make them supportive to tree plantation farmers.

D) The problems and issues of the extension officers are summarized as follows:-

- There should be documentation of lands used for the tree plantations that cannot be registered under the provision of the Tree Plantation Act B. E. 2535.
- There should be training for the extension officers on all aspects of tree plantation management such as technical aspects, legal aspects of all activities, wood products and marketing.
- There should be hot line to report the behaviour of the officers involved with the activities of Tree Plantation Act 2535 in order to ensure the ethics, virtues and the good governance of tree plantation extension.
- There should be district forest officers as the front line one stops service provider on behalf of R.F.D.
- There should be a central market as the meeting place of wood buyers and the wood sellers.

2.7.5 Conclusion

The following information from field surveys and the workshop in Bangkok, Pathumthani, Nonthaburi, Chachoengsao and Nakhonnayok provinces reflects the current situation of tree plantation farming in these provinces.

- i. There are private agriculture land estates which have established tree plantations in provinces surrounding Bangkok. The land and tree plantation owners have no experience with the tree plantation management. They need efficient extension service from the R.F.D.
- ii. There are markets for wood from tree plantations in wood processing in the suburb areas of Bangkok which need transport of wood from the planting site to their manufactures.
- iii. There is a need for government units to promote the wood products to foreign exports.
- iv. There should be stock inventory of tree plantations in 10 years period to support the of tree plantation planning.
- v. To meet the shortage of labours working in all activities of tree plantations need the foreign labours should be recruited.
- vi. The changing of old equipments used in the wood processing/ manufacturing industries established by the farmers' groups and the cooperatives should be allowed and there should be a revolving funds in support of this.

3. National Workshop on Project “Participation of Tree Plantation Farmers in Sustainable Forest Management”

3.1 Background and opening of the Workshop

The TCP Project “Participation of tree plantation farmers in sustainable forest management” was officially signed on 30 December 2009. The project was executed by the Royal Forest Department (RFD) with the main objective to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply through creating enabling environments for planting, harvesting, and processing long-rotation tree species.

Comprehensive stakeholder participation process was envisaged with the project in order to review current regulations, incentive systems and propose necessary measures to support tree farmers interested in growing long rotation species. Farmers, processors, market representatives, and relevant government officials from different institutions were involved in the process that included seven field surveys and regional workshops based on Participatory Rural Appraisal (PRA) methodologies. The field surveys and workshops were suggested and recommended by the Consultative Steering Committee (CSC) in its first meeting held on July 13, 2010. These activities were organized in seven regions selected on the basis of forest type, existing initiatives, cooperative structure and timber processing capacities.

The findings of field surveys and workshops were presented in the second CSC meeting held on February 15, 2011 where it was also agreed to organize the national workshop in Bangkok. The national workshop will be the end of the project to summarize findings and finalize the recommendations for the policy revision.

The venue:

The meeting room of the Maruoy Garden Hotel, Ladyaow, Jatujak, Bangkok,

Date: March 21-23, 2011.

March 21, 2011 (13.00 -16.30 hr)

13.00 hr: The meeting started on the schedule. The stakeholders, both from private and government sectors, registered to the national workshop. The session started with the self introduction of stakeholders.

14.00 hr: Mr. Komon Pragtong, the Lead National Consultant, introduced the project on “*Participation of Tree Plantation Farmers in Sustainable Forest Management*” by presenting the background, framework of the project, management structure, project’s work plan, project personnel and budget.

15.30 hr: Miss Renoo Suwanarat, Deputy National Project Coordinator, led the participants to visit the booth on livelihood of tree plantation farmers’ poster presentation and exhibits of wooden souvenirs and wooden furniture by home manufacturing units and cooperatives. The posters were about the women’s roles in tree plantations starting with tree planting, management to wood processing in wood manufacturing plants. The self-help group of the tree plantation farmers organized themselves into enterprise and cooperative groups with the support of the concerned agencies. The discussion among the participants continued till dinner exchanging ideas and knowledge.

March 22, 2011

The meeting started at 09.00 hr.

Opening of the Meeting (09.00 - 09.30 hr):

Mr. Rerngchai Prayoonwat, the Deputy Director General, opened the National Workshop on behalf of Mr. Suwit Rattanamanee, Director General, RFD. He reminded the participants that the National Workshop is organized as per the decision of the project’s Consultative Steering Committee during the second meeting on February 15, 2011 when it reviewed consultants’ reports on the analysis of the problems and issues of long rotation tree plantation farmers, seven field surveys and seven regional workshops. The Royal Forest Department is grateful to the support of FAO for the project and to other agencies and farmer groups who provided data, information and time on the recommendations. He also hoped that this workshop would be the first start of the participation of tree plantation farmers in the sustainable forest management in Thailand.

Dr. Appanah Simmathiri, Technical Forest Advisor, FAO, RAP expressed his concern on the important role of forestry in improving the livelihood of people in rural areas. The sustainable forest management can take place due to the participation of tree plantation farmers. There is a need for the revision of forest policies and policy instruments such as legal, industries and marketing and extension. He also hoped that this National Workshop will provide useful recommendations for the development of sustainable management of forests of Thailand.

3.2 Report on Work done by PMU (09.30 -10.00 hr):

Miss Renoo Suwanarat, Assistant National Project Coordinator and the CSC Assistant Secretary reported on the work of PMU since the 1st CSC meeting on July 13, 2010. The five pre-surveys were carried out during July 20 - September 3, 2010 in 18 provinces to coordinate the tree plantation farmers and the concerned government officers. Seven field surveys in 17 provinces during September 20-November 24, 2010 and the seven workshops in Lopbure, Nakornratsima, Udornthane, Nakornsawan, Chaingrai, Nakornsithamarat and Bangkok were organized during September 23-November 30, 2010. Several problems and issues were identified by the consultants, which will be reported during the national meeting.

3.3 Presentation of the findings and recommendation by the consultants (10.00 -12.30 hr):

Mr. Komon Pragtong, the Lead National Consultant, presented the application of PRA in the five pre-surveys, seven field surveys and seven workshops. The process of the data collection ensured the involvement of all the stakeholders concerned such as tree plantation farmers, wood manufacturing plant owners, log and lumber sellers, cooperatives members, tree plantation farmers, extension officers, permission officers and women groups. The results of the seven field surveys and workshops, including the problems and issues associated with the growing of the long rotation tree plantation will be presented.

Mr. Pragtong also presented the findings and recommendations of Dr Jyoti K. Sharma, TCDC Forest Industry Promotion Policy Expert. They included the framework for incentives for sustainable wood production in private lands to support small and medium scale entrepreneurs and the wood processing industry. There are nine key areas to promote the cultivation of trees in the private land and small and medium scale wood processing industries. They are: i) amending the forest policy and legislation; ii) establishment of institutional coordination; iii) promoting cooperatives of tree farmers and small and medium scale wood processing industries; iv) facilitating and providing financial assistance for tree farmers and small and medium scale wood processing industries; v) promoting sustainable plantation forestry in private land; vi) establishing strong Forestry Extension system in RFD; vii) improving small and medium scale wood processing industry and quality of their products; viii) promoting marketing of wood products of small and medium scale wood processing industries; and ix) addressing Institutional issues relating to the forestry sectors.

Mr. Narong Khamhiran, the National Legal Expert, presented his review on forest laws and regulations enforced by RFD and which deal with the long rotation tree plantations. There are six laws relating to the forestry, the current laws enforced by RFD and the related laws, regulations, stipulations and ministry regulations which directly affect the long rotation tree plantations. He presented the legal problems and issues of the tree plantation farmers from the field survey and workshops, and proposed six points of recommendation on different aspects such as: i) Land use; ii) Tree species; iii) Laws/regulations; iv) Merit and ethics of the officer; v) RFD Reorganization; and vi) The value addition of timber. He also pointed out the need to establish the natural resources and environment court.

Mrs. Wanpen Jaijongrak, the TCDC consultant on Forest legislation presented her findings on the legal aspects and the tree plantation Act. She pointed out different degrees of law enforcement under the constitutional law, forest laws, resolutions of the cabinet, and the judgment of the Supreme Court as the basic legal enforcement instruments in Thailand. She recommended five key points: i) Reform of the national policy; ii) Amendment of some of the provisions in the Forest Act B.E.2484 and Forest Plantation Act 2537 in accordance with the constitution; iii) MONRE must have a master plan for developing, monitoring, rewarding and reducing gap in information; iv) Empowerment of the provincial Governor and frontline officers; and v) Decentralization of the local administration.

Dr. Songkram Thamitcha, National Forest Extension Expert presented his findings based on the problems and issues on forestry extension identified from seven field surveys and workshops. He classified the forest extension problems into five key areas: i) Plantation establishment and management; ii) Extension services; iii) Wood processing; iv) Marketing; v) Database system; and vi) women groups. He proposed five recommendations for improving the forest extension on the promotion of the long rotation tree species plantations: i) Institutional arrangements; ii) Financial arrangements; iii) Human resource development; iv) Public relations; and v) Research and development.

Mr. Yasutoshi Yamada, TCDC Expert on Forest Extension, presented his findings on forestry extension. Based on interpretation of problems and issues raised in the field surveys and workshops, he proposed nine recommendations with concrete actions for each. The recommendations deal with not only RFD alone, but also other departments, private forest plantations, forest cooperatives, tree farmers, woodwork manufacturers, wood product workers/handicraft workers, etc. For example, formulation and implementation of a National Extension Plan requires strengthening RFD's cooperation with the concerned departments and institutions, while practical actions to strengthen RFD officers' capacity for extension work are recommended to RFD alone. Practical actions to realize other recommending issues, such as strengthening livelihood foundation of long-rotation tree plantation farmers, their consultation networks, private forest plantation cooperatives, and woodwork industries, require involvement of various stakeholders, such as RFD, DOAE, DOIP, DOCP, DLSD, PAO, tree farmers, the cooperatives, merchants, etc.

Dr. Nikom Laemsak, National Forest Industry Promotion and Marketing Expert, presented his review on the trends of wood production and consumption in Thailand and the global situation. He presented the current situation of wood industry in Thailand, including the primary and secondary processing. His recommendations covered four points: i) establishment of machine revolving fund; ii) establishment of training centres for skill development; iii) establishment of central market with ICT for domestic and international markets; and iv) promotion of furniture industry in domestic and international markets.

3.4 Group Discussions (13.30 - 18.00 hr):

Dr. Suchint Simarak, facilitator of the Workshop, divided the participants into five groups by their background of work related to tree plantations: i) plantation farmers group comprising of participants who have planted trees; ii) entrepreneurs who are engaged with the management of wood processing plants; iii) legal officers and forest researchers; iv) permit awarding group that comprised of forest officers who worked at the provincial level; and v) the mixed group from all agencies concerned.

All groups were assigned to consider the results of the finding as presented by the consultants and to confirm or add or revise and make final recommendations on: i) what is important and needs to be addressed immediately? and ii) what is important and needs to be addressed by bypassing the existing laws and regulations. Each group presented their results of discussion and the discussions continued till dinner.

March 23, 2011

The meeting started at 08.30 hr.

Summary of Group discussion

Dr. Suchint Simarak and team of facilitators presented the summary of group discussions. The plenary discussion was opened for the participants. From the open discussion, two groups of additional solution were proposed. Those can be immediately implemented or put into operation and those take more effort and time to achieve:-

3.5 National Workshop Recommendations and Conclusion

In the National Workshop conducted during March 21-23, 2011 the analysis of the problems and issues and the recommendations were presented by the consultant team. Many problems and solutions had been identified by the Consultants the details of which are given in separate reports of the respective consultants.

There were some important aspects related to solutions that are included as part of the Recommendations of the Workshop. The solutions were divided into two categories i.e., (i) Those recommendations that can be immediately implemented or put into operation and (ii) Those recommendations that require more effort and time to achieve as they are related to the policy and existing regulations.

(i) Recommendations that can be carried out immediately

1. Mechanism to set to organize stakeholders into a “Working Committees” to activate the concerned/ related organizations to work towards finding solutions to the problems and issues.
2. To strengthen participatory concept and practice, especially in Extension work.
3. To initiate and sustain human resource development on facilitation and participation.
4. RFD to cooperate with private sector to implement Corporate Social Responsibility (CSR) and similar activities, including those that are related to Carbon credit. Strategy to fund-raising for the tree planting program must be laid out.
5. Action research must be built in the Extension process.
6. Extension system must be revised to embrace problems solutions and networking.
7. Experiences gained, both from surveys and facilitation should be further developed and used particularly in Extension work.
8. Public awareness, especially those of farmers about tree cultivation must be addressed.
9. To initiate actions for the desired information to be available and accessible by stakeholders.
10. To examine whether some of the Regulations related to tree plantations could be appropriately modified/ made favorable by the Legal experts.

(ii) Recommendations that require more effort and time

1. Organizational restructuring of the concerned organizations to favour tree cultivation by
2. Some of the laws and regulations that prohibit tree plantations, wood processing, wood marketing, wood product export and others to be addressed appropriately.
3. Long term measures to create public awareness on tree cultivation.
4. Product quality development and improvement through value addition.
5. Establishing institutions for imparting training on planting and management of tree plantations, Wood Product Development and Extension.
6. Change the role of Extension to facilitate and empower stakeholders and their networks.

Conclusion (14.00 hr):

The National Workshop was concluded by the four representatives of the participants by expressing their concern on satisfying the participatory process of the project and wished that the results of the studies will promote expansion of tree plantations in Thailand.

The expenditure of the National Workshop was 310,200 THB.

The workshop closed at 14.30 hr.

4. National Workshop on Participatory Development of Legislations, Wood Products and Marketing of Long Rotation Tree Species

4.1 Background

The TCP Project “Participation of tree plantation farmers in sustainable forest management” was officially signed on 30 December 2009. The project was executed by the Royal Forest Department (RFD) with the main objective to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply through creating enabling environments for planting, harvesting, and processing long-rotation tree species.

Comprehensive stakeholder participation process was envisaged in the project in order to review current regulations, incentive systems and propose necessary measures to support tree farmers interested in growing long rotation tree species. Farmers, processors, market representatives, and relevant government officials from different institutions were involved in the process that included seven field surveys and regional workshops based on Participatory Rural Appraisal (PRA) methodologies. The field surveys and workshops were organized in seven regions selected on the basis of forest type, existing initiatives, cooperative structure, and processing capacities. One national workshop in Bangkok was organized towards the end of the process in order to summarize findings and finalize the recommendations for the policy revision.

Periodic wrap up meetings were organized after two workshops in order to monitor the results of the process and improve the procedure. The first wrap up meeting was organized after the two-field surveys and workshop in Lopburi and Nakhonratchasima. The second wrap up meeting was organized after the field survey and workshop in Udonthani and Nakhonsawan. The final wrap up meeting was organized after the field surveys and workshop in Chiangrai, Nakhonsithammarat and Bangkok region.

The Workshop Report is divided into Workshop Reports, Suggestions and Comments.

4.2 Workshop Reports

4.2.1 Lopburee Workshop Report

Participants

There were 23 participants consisting of small and large tree planters, wood processors, three experts and forest officers from the Department of Forestry.

Workshop design

The workshop was organized in such a way to gain much better response from the participants. Reflecting on the lessons learnt, the Lopburee workshop design was improved. There were more types of stakeholders (small and big tree planter, wood processor, officer, old and young, male and female and knowledgeable participants) and number of participants. Tools such as, cards, flip charts were used to initiate full participation. Issues and problems related to forest extension, law and regulations and products and market were identified and suggestions taken from the participants.

Result

Detailed results of the workshop are reported separately by the national consultant. As a whole this workshop was satisfactory. Objectives were met and could be analyzed for further formulation of the required recommendations. Participants were active throughout the process.

Capacity building

For better and efficient facilitation the following reflections and suggestions should be considered for further improvement:

- 1 After each workshop the concerned departments should identify and exchange problems. The lessons learnt should be put them into practice. Seniors officers should also participate for short as well as long term support.
- 2 Principle of triangulation should be regularly applied, in terms of variety of participants, tools and perceptions so that differences and similarity can be verified and concluded with reliability.
- 3 Make it clear that each workshop belongs to the participants and benefits go to them not the forestry department so that they feel free and eager to contribute.
- 4 Facilitation is not simply to identify problems and solutions but causes and effects are more important. Hence, motivation for discussion in detail along the process of facilitation is the key to success. Causes and effects may lead to better understanding of the problems and appropriate solutions.
- 5 Bring about horizontal (not hierarchical or authority of any forms) relationship environment so that the small or big, rich or poor participant feel free to discuss.
- 6 Try to make every issue clear to all. Issues should be immediately grouped and connected by using presentation tools (diagram, map, table, etc.), so that the participants can follow and generate new ideas.
- 7 If given knowledge is needed in a session it should be given in a neutral form not leading to decision according to the giver or the department. They should decide on their own.
- 8 Design the process to building momentum for discussion from one session to the next session.
- 9 The concerned officers should take more leading role in the process.
- 10 Increase the ability of facilitators to grasp meaningful issues from participants' discussion and use it for in-depth discussion and also for developmental opportunities.
- 11 Use more tools, diagram, mind map, table, drawing pictures, etc. in presentation and facilitation instead of written form.
- 12 Facilitation team should be strengthened for long term development.
- 13 Observe participatory behaviour of participants so that their full participation can be attained by applying appropriate tools.
- 14 Pre-survey results should be appropriately utilized for the workshop process.

4.2.2 Nakornrachasima Workshop Report

Facilitation process

Assuming that some of the participating RED team members from RFD have some background on PRA and facilitation skills, from the previous training, will participate throughout the process, proper sites, organizations and participants identified, tools and equipment provided. Learning by doing is expected to increase RFD staff's capacity in PRA as well as facilitation skills. The whole process was as follow:

Before the process

- Before any session facilitator and the team must meet to discuss about back ground of the identified participants, timing, process, etc.
- Revise and review objectives and related subtopics or issues and outcome.
- Set roles for the team members such as recording, writing, drawing, management of equipment and tools.

PRA at each site

- After interviewees identified, team members will be divided into few sub-teams for semi-structured interview concerning situation of tree plantation, problems and related issues.
- Data and information on situations of the tree plantation will be analyzed and concluded.
- Relevant issues will be identified and taken forward to the participatory workshop.

Participatory workshop

- Team members will work as a team for facilitation in the workshop.
- Participation techniques will be used to stimulate discussion and exchange of ideas among the participants.
- Data and information gained from the workshop will be compiled, analyzed and put into recommendation and suggestions.

Note: Before the whole process begins necessary consultation with the concerned RFD staff is needed

4.2.3 Udonthanee Workshop Report

Participants

About 30, consisting of small holders, big holders, wood processors, experts and forest officers from the Department of Forestry.

Workshop design

The procedure was slightly modified based on the lessons learned during the previous workshop in Nakornrachasima. In the previous workshop, during the small group discussions where the participants were mixed: small land holders, big land holders, operators and officers, domination of some participants during the discussion was observed, this limited the active participation by some in discussions. Hence, in this workshop each type of participant was grouped accordingly. Presentation of results from field survey was moved from the first part of the morning session on the first day in the previous workshop to the first part of the session on the second day to prevent taking much time in discussions.

Workshop result

Overall, the workshop was more effectively run and discussions were more open with more details gathered. Facilitator teamwork improved. Details are as followed:

Date 15 October 2010

09.20 hr: Following participant's introduction, brief history of forestry extension work, problems and potential of forest plantations were addressed. Future of wood deficiency in the country, competition of tree plantations with other land use activities and not up to date laws and regulations were pointed out. Questions were posted in terms of future policy for extension, extension process and management. Therefore, participants' contribution from their lessons learned in this workshop would be very valuable (by Mr. Somdet, Dr. Komon and Dr. Songkhram).

10.00 hr: Coffee break

10.20 hr: Card technique was used to gain participation and information about problems, potential and opportunities for tree plantations. Participants were free to express their views. Information from the written cards was discussed in more details and additional cards were written. Conclusions were made leading to the next session and small group discussion.

11.30 hr: Participants were divided into four groups according to small land holders, big land holders (based on area of plantations, less than 20 rai and more than 20 rai groups, 6.25 rai= a hectare), wood processing operators and officers. Discussion on issues was based on the results from the morning session. The issues could be classified into problems, potentials and opportunities related to extension of the forest plantation, law and regulation, processing, product development and marketing.

Second round of card writing was done to fill up some missing issues.

***Note:** The morning session went smoothly, with enthusiastic participation as cards were used properly. During the session cards were grouped and unclear issues were asked for clearer explanation.*

12.00 hr: Lunch break

13.00 hr: Small group discussions held. Each group was provided with one facilitator. Each group had to cover all the issues mentioned.

14.30 hr: Station technique was employed. Each group was rotated to each of the four stations, 15 minutes for each station. At one station one member of the group remained to explain to the visitors. Visitors exchanged and filled up suggestions or comments to make more complete information as much as possible.

***Note:** It went as good as the morning session however some details discussion, which may be important, were not all captured.*

15.45 hr: Whole group meeting to make conclusions and to inform about the next session.

16 October 2010

Flip charts recorded from yesterday's sessions were posted on the wall as a reminder for discussion in the morning session.

09.15 hr: Facilitators presented yesterday's results.

09.30 hr: Diagrammatic presentation of overall conclusions was made. Some overlooked issues were pointed out and floor was open for further discussions till 11.30 hr.

Remarks

Law and regulation: From the field surveys in these areas there is no much reflection on law and regulation, land ownership and registration for tree plantations. However, during the workshop these issues became obvious.

Extension: Problems of small and big tree planters are different. Teak has been the main tree species planted. Diversity of other crops in terms of inter-cropping with tree planting exists. Management and thinning of the planted trees are not well carried out. Some times by products from tree planting are greater than the trees. Different land titles and diversity of crops were mentioned in the discussion. Short term security, especially of the small tree planters is more important than the trees, this involved their livelihood security. Extension system is not well organized after the initial phase. Capital is needed. Service should focus at small holders.

Wood Products: Capital for wood buying is needed by operators. Processing operators produce various products. Skilled carpenters are available but limited. Long term capital is also needed. Extension workers should be more active and sincere. Questions on role of concerned organization, coordination and extension workers were mentioned.

Overall Conclusions

Discussion during the workshop indicated that at present and in future the demand of wood products in the country as well as at international levels is becoming high while the supply is very limited. This has posed questions on policy, role and organization of the extension system. Can these be changed? This was part of discussion in the workshop. On the other hand there need to be strong linkages between planter systems, starting from seedling to consumers. If consumers are not expanded in

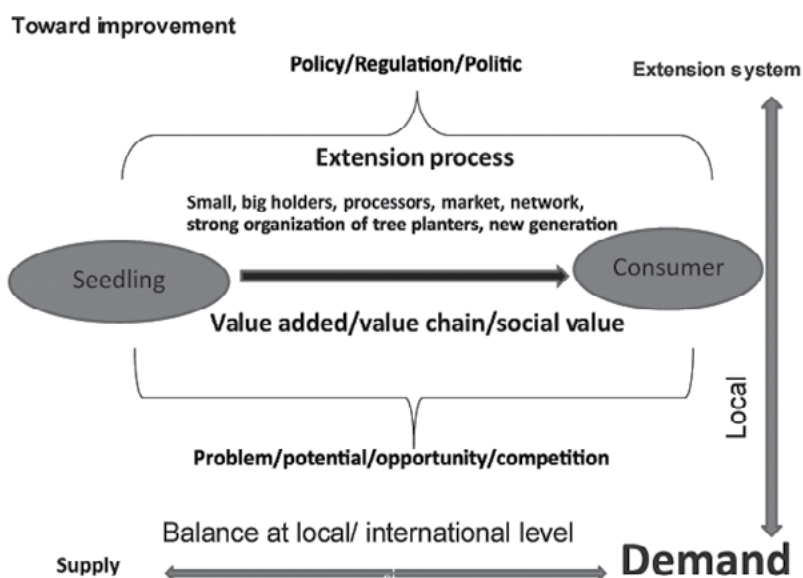


Fig. 1. Overall Conclusion from the workshop

The process there is no incentive to the processor operators and the tree planters. Between the seedling and consumers there are many issues needed to be addressed. There are many subsystems involved, tree planters, processors, market, network, strong organization and even younger generation to carry on. It is noted that most of the people involved in the whole process belong to older generation. Skilled labour is in great demand. Besides tree planning is directly competitive to other cash crops in terms of land use. To satisfy consumers and be competitive both economic value and social value are to be improved in short as well as long terms. Problems have to be solved, potential and opportunity must be exploited. These reflected the reform in policy, regulations and extension system. This conclusion is extracted from the details of discussion in the workshop. The details of the workshop are reported separately.

4.3 Comments from the Seven Workshop Reports

4.3.1 Field Survey and workshop reports, Saraburee and Lopburee

(i) Background

Before group discussion in the workshop local context, physical, agricultural, socio-economic, should be presented to reflect the outcomes of the survey results.

(ii) Information from field survey

- Information from the survey should be interpreted leading to recommendations or solutions.
- In giving information target should be well identified.
- More effort is needed to re-convince the farmers to plant trees again after bad experience.
- How to identify potential for organizing trees planters into strong group.
- Socio-economic change and incentive of certain aspects should be considered, since tree planting is a long term commitment.
- Tambon Administration Organization should get involved in some forms in the tree planting extension.
- Proper local learning or training on product development should be organized.

(iii) Workshop

- Problems on regulations of log and wood products transportation and tree cutting planted in conserved forest area should be solved.
- Local central wood and wood products market and network of wood processing operators and tree planters should be established.
- Benefits and incentives from carbon credit and related aspects must reach the planters.
- Any funds provided must be made sustainable.
- Extension should involve beyond tree planting, processing and marketing. The whole system and related issues must be dealt with.

4.3.2 Field Survey and workshop reports, Nakornrachasima and Burirum provinces

(i) Information from field survey

- Some comments from the previous report can be applied here and also to the next reports.
- Information from the field survey.
- Concerning old stakeholders, this is important for sustainability issues and the new generation should be properly recruited.
- Target tree planters, this is probably related to their livelihood which should be considered by

extension workers. More small holders can be targeted if tree planting does not interrupt their livelihood. Tree planting must be integrated into other farm activities.

- To empower tree planters they should be formed into groups or networked rather than as an individual.

(ii) Workshop

- Organizational change must be done in the RFD at the earliest.
- Wood product marketing should be well categorized and product development should match the classified market and work back to tree plantation extension.

4.3.3 Field survey and workshop reports in Nhoungbualumphu and Udonthani provinces

(i) Information from field surveys

- Other types of tree plantation, such as bamboo, para-rubber indicating competition for extension work which is related to farmers' decision making under dynamic social and economic situation.
- Many earning centres to empower farmers and promote self reliance and sufficiency economy livelihood have been successful. Should no change be implemented in the extension agency in RFD in terms of policy and process of extension?
- The above issue also reflected changes in the definition of target group for extension.

4.3.4 Report on field survey and workshop in Pitsanulok, Kampanget and Nakornsawan provinces

(i) Information from field surveys

- Since tree plantation extension involved many agencies, private and government, coordination between extension or related agencies at difference levels is important,
- Extension workers must understand why some farmers can plant trees and why other farmers do not want to do, so that they can formulate extension strategies.
- Women have been involved in carpentry, furniture making and marketing of the wood products, gender issue, in terms of role and skill should be studied as well.
- In wood marketing, who should be more important, middle man or farmer cooperatives? Can they be made complementary?

4.3.5 Field Survey and workshop reports of Chiangrai and Payao provinces

Similar comments as in the previous reports.

4.3.6 Field Survey and workshop reports of Suratthane and Nakornsrihamarat provinces

(i) Workshop

Over all legal problems should be well addressed and information should reach the involved farmers and processors along with the other extension information.

4.3.7 Field Survey and workshop reports of Bangkok, Patumtani, Nontabure, Chachergsoa and Nakornnayok provinces

(i) Methodology

Over all, modification of field surveys and workshops should be addressed as lessons learnt for future uses.

(ii) Information from workshop

Should tree planting be privatized in certain areas? If so what will be the role of government agencies? Should there be subsidy for tree plantation? These issues must be addressed.

4.4 Suggestions for the National Workshop design

Concerning the workshop session, it is mainly focused on problem solving - I would like to suggest the following process:

1. All the participants should be exposed to the problems and related information. This can be done by presentation and also posters. Handout or short report should be made available.
2. Participants should be grouped according to their interests or function of their organizations, such as legal issue, extension, producers, etc.
3. Within each group they should discuss to fully understand the related problems and later solutions. More time should be given to solution finding.
4. Each group has to prepare for presentation of the session's outcomes.
5. Either each group should make their presentation to all the participants followed by open floor discussion or using rotational station visit as done during the workshop.
6. Facilitators must compile all the outcomes from the discussions and make it more concrete.
7. Facilitators should present the conclusion and again invite for open floor reflection.
8. Timing of each session must be designed, number of participants and groups must be considered to decide on the timing.

4.5 Summary of Workshop Reports

4.5.1 Workshops

This report has been derived from seven brain storming workshops in Lopburee, Nakornratchima, Udonthanee, Nakornsawan, Chaingrai, Nakornsrithamarat and Bangkok (detailed report of each workshop is available separately).

4.5.2 Participants

Participants consisted of small and big tree planters, small and medium wood processing operators, extension officers, and experts.

4.5.3 Facilitation

Team of facilitators was responsible for the workshop process. The process was also designed as learning platform for facilitators. Before each workshop team of facilitators met to discuss about participants' background, plan the details of workshop. After each workshop the team also met to discuss the lessons learnt. Tools and techniques were used to bring about full participation of the participants.

4.5.4 Results

General system and constraints of tree plantation to wood products and marketing could be summarized and presented in Fig. 1. From the workshop, it appeared that the demand side, local and international of wood and wood products is much greater than the supply side. This poses a question of what will happen to the wood production and extension systems after considerable periods of implementation. Participants had identified various problems and constraints and recommendation ranging from policy to plot levels and complex interactions between these issues.

4.5.5 Land

Type of land title and tree planting registration are important incentive for tree planting. There are various types of land titles, ranging from full legal to non-legal ownership but allowed to be used by the government. The later type discourages tree planting. If tree planting farmers use this type of land to grow trees they need to register to the proper government office as tree plantation land, many of them do not know this regulation. By the time they want to cut the trees, whatever types of land ownership, they have to get permission before cutting (if the trees are under classified types), some farmers know this regulation but it is rather troublesome for them to get permission. Besides small land size, priority of land use (lowland paddy, upland cash crops) also limit tree planting.

4.5.6 Type of plantation

For large holders of tree plantation with considerable capital, planting only long rotation tree species poses no problem. However, for small land holders, they require short term cash so they prefer mixed cropping or intercropping, short term crops or trees with long rotation trees. If promotion of long rotation tree species is targeted to small holders, extension need to include the mixed or integrated systems in their process.

4.5.7 Inputs and management

Species and quality of seedlings were mentioned in the workshop but not much discussion observed. However, companies operating eucalyptus trees appeared to be more aggressive in selling or providing free seedlings to farmers. Moreover this tree species is of short rotation and can regenerate after cutting. Competition between short and long rotation species was pointed out clearly.

Application of chemical fertilizer in terms of quality and quantity was not the main issue discussed. The big land holders indicated the use of chemical fertilizer while some of the small land holders indicated use of some organic fertilizer or both.

Not much management problem was revealed except thinning. Thinning technique and timing were discussed by some of the big land holders. Some of them do not practice thinning.

4.5.8 Wood marketing

Besides regulatory limitation of wood cutting and transportation, some small land holders did not know the buyers. Network establishment should be introduced and information should be made available through the network. Empowering network is strongly recommended. Network should encompass producers, processors and consumers.

4.5.9 Processing and marketing

Investment capital for wood buying appeared to be important by some wood processors. They want to have sufficient revolving fund to buy wood. Technology was not much a problem as indicated in the workshop but lack of wood craftsmanship and design were pointed out as a serious lacunae. There should be forestry curriculum including wood crafting, teaching institutions. Legal or illegal restriction on transportation of finished products should be lifted or facilitated.

4.5.10 Value chain

Value addition of wood and wood products including social value of wood was not directly mentioned in the workshop but there are implications that these should be developed, may be through the network and consumers' preferences should be researched.

4.5.11 New generation

Since, most of the tree planters were over middle age, they indicated that their new generation was unlikely to continue the plantation activities. Therefore, question of sustainability of the tree plantation needs to be addressed. Back migration of the labour to rural areas should be studied for possible new generation of the tree planters.

4.5.12 Policy and regulation

Information on policy and regulation do not well reach the land holders and processors. But these issues received much complain during the workshop. It appeared to be one of the major constraints. Solutions should be addressed and made available to all concerned parties.

4.5.13 Extension system

Discussion indicated that extension workers work in narrow scope dealing with only tree plantations in contrast to livelihood of the land holders. They need to deal with many aspects of their farms; each activity of their farms may have interaction with tree plantation and management, or even in mixed plantation. They also need regular visits facilitating and receiving proper suggestions from the knowledgeable extension workers.

Considering the above information, extension system and process should be reconsidered/ reorganized carefully. Proper design for capacity building of the extension workers or related personnel should be laid out and implemented.

4.5.14 Strategic partner

Since the extension workers need to widen their scope of work which may overlap with other department and even NGO strategic partner and network need to be identified and built at departmental and local levels.

4.5.15 Conclusion

To get the wider adoption of long rotation tree plantation, wood products to consumers and sustainable production multi-dimensional factors must be considers. The few most important issues are policy and regulation, extension system and process, sustainability of tree plantation, value chain, strategic partnership and capacity building of concerned personnel. Proper design of the solutions should be carefully considered with the participation from all stakeholders.

4.6 Recommendations from the National Workshop

From the national workshop many problems and solutions had been identified, details are in separate workshop reports by the consultant team. However, there are some important aspects of the solutions that should be included here. According to the workshop, the solutions were divided into two groups i.e., (i) those that can be immediately implemented or put into operation and (ii) those that take more effort and time to achieve. Below are additional recommendations for the solutions.

(i) Those that can be carried out immediately

- Mechanism must be set to organize stakeholders into a “working committee” or alike, to activate concerned organization to work toward solutions.
- Participatory concept and practice must be fortified especially in extension work.
- Human resource development on facilitation and participation must be initiated and make it sustained.
- RFD should cooperate with private sector to implement cooperate social responsibility (CSR) and alike activities, including those that are related to carbon credit.
- Strategy for fund raising must be laid out.
- Action research must be built in the extension process.

- Extension system must be revised to embrace problems solutions and networking.
- Participatory process through training, both in survey and facilitation, and experiences gained should be further developed and used particularly in extension work.
- Public awareness issue must be addressed.
- Information must be made more available and accessible by stakeholders.
- Some regulation (from legal expert report) can be made favourable to the tree plantation in short time

(ii) *Those that take more effort and time*

- Organizational restructuring of the concerned organizations such as RFD.
- Some laws and regulations that inhibit tree plantation, wood processing, wood marketing, wood product export and others.
- Long term embedding of public awareness.
- Product quality development.
- Institution for skill training and development.
- Role of extension must change to facilitate and empower stakeholders and their networks.

Annex 1. List of participants

No.	Name	office
1	Mr. Komon pragtong	PMU/RFD
2	Mr. Veraphol Suthipornplangkul	Forest Plantation Extension Bureau
3	Ms. Renoo Suwanarat	Forest Plantation Extension Bureau
4	Mr. Nivat Luengborisut	Forest Plantation Extension Bureau
5	Mr. Narong Kaonkhuntod	Forest Plantation Extension Bureau
6	Ms. Anna Krengjing	Forest Plantation Extension Bureau
7	Ms. Nipaporn Suthisoen	Forest Plantation Extension Bureau
8	Mr. Athaphol Burirat	Forest Plantation Extension Bureau
9	Mr. Tanongsak Nontapa	Forest Plantation Extension Bureau
10	Ms. Sunis Yodnam	Forest Plantation Extension Bureau
11	Mr. Thanwa Saggapitakwong	Forest Plantation Extension Bureau
12	Mr. Sutipong Surinta	Forest Plantation Extension Bureau
13	Mr. Jirapat Paluang	Forest Plantation Extension Bureau
14	Ms. Padchayaporn Pinitputthapong	Forest Plantation Extension Bureau
15	Mr. Jakrapong Chanaboon	Forest Plantation Extension Bureau
16	Ms. Cholanet Preechacharoensri	Forest Plantation Extension Bureau
17	Ms. Darunee Chantrachot	Forest Plantation Extension Bureau
18	Ms. Areeya Panjaka	Forest Plantation Extension Bureau
19	Ms. Mathuros Panngern	Forest Plantation Extension Bureau
20	Mr. Amnat Charoenchit	Forest Plantation Extension Bureau
21	Mr. Sukrailurk Ludkood	Forest Plantation Extension Bureau
22	Ms. Amornrat Chuesakul	Forest Plantation Extension Bureau
23	Mr. Rashun Chaleephon	Forest Plantation Extension Bureau
24	Mr. Dumrongchai Panjuoi	Forest Plantation Extension Bureau
25	Mr. Tanee Bumrungpugdee	Forest Plantation Extension Bureau
26	Mr. Viphot Suwannasorn	Forest Plantation Extension Bureau
27	Mr. Werachon Arunyik	Forest Plantation Extension Bureau
28	Ms. Piyachart Choeyproad	Planning and Information Technology Bureau
29	Ms. Sukanya Boonsuwan	Planning and Information Technology Bureau
30	Mr. Somdet Champee	Forest Management Bureau No.6 (Udonthani Province)
31	Mr. Suraphol Sriyanguay	Forest Management Bureau No.6 (Udonthani Province)
32	Mr. Chuan Thirawutdudom	Forest Management Bureau No.8 (NakhonRatchasima Province)
33	Ms. Korapat Dumrongthai	Forest Research and Development Bureau
34	Mr. Thane Punsang	Forest Biodiversity Group
35	Mr. Vijan Sensakul	Legal Group
36	Mr. Montree Nuchanong	Permission Division

Chapter 3.

Status of forest extension in Thailand: Constraints and recommendations

- Yasutoshi Yamada & Songkram Thammincha

Summary

Background of the project and objective

The Technical Cooperation Project (TCP) ‘Participation of Tree Plantation Farmers in Sustainable Forest Management’ is executed by the Royal Forest Management (RFD) to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply in Thailand by creating enabling environments for planting, harvesting and processing of long rotation tree species.

A comprehensive stakeholder participation process was envisaged in order to review current regulations and incentive systems, and propose necessary measures to support tree farmers interested in growing long rotation tree species. Farmers, processors, market representatives and relevant government officials from different institutions were involved in the process that included seven field surveys and regional workshops based on participatory rural appraisal methodologies. The field surveys and workshops were organized by the Lead National Consultant in seven regions that were selected on the basis of forest type, existing initiatives, cooperative structure and processing capacities. One national workshop was organized during 21-23 March 2011 at the end of the process in Bangkok to summarize the findings and to finalize the recommendations for policy revision.

Scope of the report

In order to suggest a framework of recommendations for sustainable extension to promote growing long rotation tree species, this report highlights problems and issues concerning forest extension, which were raised during the regional workshops and field surveys, and makes recommendations for an effective forest extension system to benefit all the stakeholders, especially for the promotion of tree cultivation.

The effectiveness of forest extension undertaken by staff of the RFD has been influenced significantly by government policies. Before the 2002 Government Reorganization Act was enforced, the RFD had five technical bureaus, seven administrative divisions, 21 regional offices, 75 provincial forest offices and 524 district forest offices. However, due to changes in the policy and the decentralization of forest administration, the RFD under the Ministry of Agriculture and Cooperatives was restructured by the Government Reorganization Act. The RFD was divided into three departments under the Ministry of Natural Resources and Environment as a result, which affected the functioning of the existing extension system.

The field surveys and regional workshops for stakeholders revealed numerous obstacles in providing extension service to farmers who cultivate long rotation tree species. In this context, the RFD’s forest extension system needs to be re-organized, strengthened and made more effective; this applies not only to the network but also in serving the interests of tree plantation farmers, particularly private forest plantation cooperatives, and concerned departments.

Analysis of the results of the seven field surveys and regional workshops

The problems and issues associated with forest extension raised during the field surveys and workshops are summarized below. Several problems and issues appear under more than one heading, while similar expressions under one heading are often found due to the views of various workshop participants. These anomalies highlight the phenomena that tree plantation farmers have been confronting and enduring directly with regard to tree cultivation practices. Nevertheless, further interpretations of their explanations are necessary to grasp their root causes, which should be addressed through an effective extension system.

- i. Unsatisfactory extension services;
- ii. Partial promotion of tree species without consideration of local circumstances;
- iii. Poor quality of seedlings;
- iv. Inadequate incentives;
- v. Lack of labour for plantation work;
- vi. Lack of coordination on tree bank promotion;
- vii. Various demands for appropriate land use;
- viii. Poor management skills among small-scale tree plantation farmers;
- ix. Persistent need for technical support;
- x. Inadequate databases/inventories for long-term planning;
- xi. Lack of support for livelihood management;
- xii. Dominant influence of intermediaries in timber market/price;
- xiii. Inadequate cooperatives/community enterprises/self-help groups;
- xiv. Rigid and time-consuming procedures for thinning, harvesting and transporting;
- xv. Complex book-keeping
- xvi. Insufficient access to market information and promotion of wood-related industries; and
- xvii. Lack of skilled workers in wood-related industries

Interpretation of problems and issues

These anomalies required interpretation and aggregation into statements describing problematic conditions. As such, 23 interpretations emerged:

- i. Local land conditions are not considered for zoning of tree species.
- ii. Without zoning of tree species or market information, it is difficult to promote tree species appropriate to local conditions.
- iii. The Ministry of Natural Resources and Environment lacks a long-term plan for developing a forest extension programme.
- iv. Several stakeholder departments approach the same target groups and areas for different promotions due to lack of mutual coordination.
- v. The RFD has not been able to address the land tenure problem of long rotation tree farmers.
- vi. The RFD has not been able to formulate management plans for long rotation tree plantations.
- vii. Forest area covered with long rotation trees is not as expansive as it should be.
- viii. Farmers feel discouraged about planting and growing long rotation trees because they cannot be utilized; the trees are grown on land with insecure land rights.
- ix. The RFD's extension system does not cover all the activities and processes of tree plantation management which ensure tree farmers accrue real benefits.
- x. RFD front-line extension officers are not skilled or trained in extension.
- xi. RFD officers of regional/provincial offices are indecisive about some tree farmers' problems.
- xii. RFD training for tree farmers often does not provide clear/good understanding.
- xiii. Long rotation trees require long rotation tree plantation farmers as it takes a long time for the trees to become commercially viable.

- xiv. Wood residues constituting wood chips and thinned trees are insufficiently utilized due to lack of awareness and guidance from the RFD.
- xv. The younger generation of farmers does not consider planting trees on private lands as a promising livelihood.
- xvi. Local politicians have scant interest in tree planting and lumbering by farmers.
- xvii. It is difficult for farmers to find appropriate persons/resources for consultation.
- xviii. Capital from government and/or financial institutions is inadequate for long rotation tree plantation farmers.
- xix. RFD officers have a negative approach to private forest plantation cooperatives.
- xx. Many members of private forest plantation cooperatives are interested in getting loans from their cooperatives.
- xxi. Wood product designs are neither well developed nor appealing to the market. Products lack value addition.
- xxii. Wood product makers and wood handicraft workers do not clearly identify their end-users or carefully consider end-users' needs in their product designs.
- xxiii. Skilled technicians for wood products are difficult to find due to lack of skilled training on wood products.

Recommendations

These interpretations were categorized into the following nine recommendations on forest extension, each of which requires both concrete actions as suggested and involvement of the concerned stakeholders who should take these actions. Needless to say, it is crucial that concrete actions and specific stakeholders are identified to the extent possible in order to ensure their implementation.

- Recommendation 1: Strengthening of legislative mandates with a clear policy framework for the RFD and concerned departments and institutions to promote long rotation tree plantations and wood-based industries.
- Recommendation 2: Consolidate and utilize a database on tree farmers for registration purposes.
- Recommendation 3: Promote an increase in planted area of long rotation trees.
- Recommendation 4: Strengthen RFD officers' extension capacity.
- Recommendation 5: Promote planting of tree species appropriate to local land conditions.
- Recommendation 6: Strengthen livelihoods of long rotation tree plantation farmers.
- Recommendation 7: Strengthen consultation networks of long rotation tree plantation farmers.
- Recommendation 8: Strengthen private forest plantation cooperatives through transparent management.
- Recommendation 9: Strengthen wood-based industries.

1. Introduction

The effectiveness of forest extension undertaken by staff of the RFD has been influenced significantly by government policies. Before the 2002 Government Reorganization Act was enforced, the RFD had five technical bureaus, seven administrative divisions, 21 regional offices, 75 provincial forest offices and 524 district forest offices. However, due to changes in the policy and the decentralization of forest administration, the RFD under the Ministry of Agriculture and Cooperatives was restructured by the Government Reorganization Act. The RFD was divided into three departments under the Ministry of Natural Resources and Environment as a result, which affected the functioning of the existing extension system.

The seven field surveys and regional workshops for stakeholders revealed numerous obstacles in providing extension services to farmers who cultivate long rotation tree species. In this context, the RFD's forest extension system needs to be re-organized, strengthened and made more effective; this

applies not only to the network but also in serving the interests of long rotation tree plantation farmers (hereafter referred to as ‘farmers’), particularly private forest plantation cooperatives and concerned departments.

The effectiveness of forest extension undertaken by staff of the RFD has been influenced significantly by government policies. Before the 2002 Government Reorganization Act was enforced, the RFD had five technical bureaus, seven administrative divisions, 21 regional offices, 75 provincial forest offices and 524 district forest offices. However, due to changes in the policy and the decentralization of forest administration, the RFD under the Ministry of Agriculture and Cooperatives was restructured by the Government Reorganization Act. The RFD was divided into three departments under the Ministry of Natural Resources and Environment, which affected the functioning of the existing extension system.

On the other hand, based on the 1992 Tambon Administration Act, Tambon Administrative Organizations (TAOs) have been expected to take a greater role in forest management, while the 1997 Constitution provides for the decentralization of national power and function to local governments. The Constitution states that local people and organizations should be involved in managing their natural resources. Nevertheless, decentralization and public participation in policy, planning and management of natural resources in the country are still rather limited.

2. Analysis

2.1 Analysis of results of the seven field surveys and regional workshops

The problems and issues associated with forest extension raised during the field surveys and workshops are summarized below. They highlight difficulties that farmers have been confronting and enduring directly.

The need for improved extension services

- Extension services of the tree plantation project should be continuous, comprehensive and cover all activities and processes of tree plantation management to ensure that farmers receive real benefits from tree plantations.
- Tree plantation extension is divided into extension and permit allocation. Tree planting extension work is done by RFD extension staff, while allocation of permits is undertaken by forest officers of the provincial environment and natural resources offices. Restructuring is needed to allow for one-stop services to facilitate tree plantation activities.
- After re-organization of the RFD in 2003, there have been no district forest officers. This led to no one-stop service at the regional administration level. Forest extension service officers are needed at the district level.
- The processes for felling wood, transportation, establishing wood-processing plants and stocking wood products require excessive time and expense. A one-stop service centre would help to mitigate this.
- Extension should be conducted by forest officers with interpersonal skills.
- Tree plantation promotion requires skilled and experienced extension officers. Appropriate training is required.
- Training for extension officers should include all aspects of tree plantation management. A training course on details of the Tree Plantation Act B.E. 2535 should be conducted for front-line forest extension officers.
- Front-line forest extension officers should also receive training on tree plantation management: processes for felling wood, transportation, establishing wood-processing plants and stocking wood products.

- A tree plantation management manual should also be provided for extension officers.
- A hotline is needed to monitor officers involved in activities according to the Tree Plantation Act B.E. 2535, to ensure ethical and correct conduct.

Biased promotion of tree species without consideration of local conditions

- Over promotion of some tree species by private seedling nurseries has resulted in selection of inappropriate species, costing farmers time and money.
- Farmers prefer to plant other native species as pradu (*Pterocarpus* spp.), payung (*Dalbergia* spp.) and bamboo.
- Promotion of tree planting on suitable soil in the northeast should address native tree species, such as jamjuree (*Albizzia* spp.), pradu (*Pterocarpus* spp.) and yang (*Dipterocarpus* spp.). Bamboo and medicinal plants are also suggested.
- Promotion of native long rotation tree species should accommodate local growing conditions.

Poor quality of seedlings

- Farmers have received poor quality tree seedling from extension projects in the past, which resulted in the slow growth of trees in their plantations.
- Good quality seedlings should be provided to farmers for planting in suitable soil so optimum yields will be assured.

Inadequate incentives

- Land tax exemption for farmers during the period when there is no income from tree growing is warranted.
- There should be a progressive tax for large landholders to stimulate land use for tree planting.
- A revolving fund for tree plantation farming similar those for the promotion of rice, rubber trees, sugar cane and other agricultural crops is needed (also for promoting long rotation species).
- A plantation insurance scheme to cover the risk of tree plantations is required.
- In order to support tree farm plantation, there should be a revolving fund to backstop the wood industry in buying timber from tree farms.

Lack of skilled labour for plantation work

There is a shortage of skilled labour in the forestry sector, especially for undertaking silvicultural work.

Lack of coordination on tree bank promotion

Coordination is needed on tree bank promotion among the RFD, Bank for Agriculture and Agricultural Cooperatives (BAAC) and NGO programmes.

Various demands for appropriate land use

- There should be land-use planning coordination among the various government authorities in the tree and plant promotion programmes, especially for eucalyptus, rubber trees, sugar cane and other agricultural cash crops.
- Long rotation trees should be recommended for planting on the land boundaries of small-scale farmers and for communities to plant in temples, schools and abandoned lands.
- A tree plantation project should last for 15 years so as to cover the duration of planting and thinning. Thinning can provide the monetary returns for farmers to earn a living
- Farmers believe that teak planted on land boundaries grows better than teak planted in plantations. Teak planted with other species grows better than in pure stand conditions, due to the differences in the nutrients consumed.
- Most of the dry *Dipterocarp* forests are unsuitable for teak cultivation. Some farmers would like to plant eucalyptus for quick cash returns. Others would like to plant rubber trees, as promoted under the government programme.

- Some tree farmers would like to diversify their plantations by applying agroforestry techniques, using bamboo and medicinal herbs.

Poor management skills of small-scale farmers

- Small-scale farmers lack skills in tree plantation management, resulting in poor growth of trees. Selection of good varieties of seedlings that can be grown in poor soils has not been done.
- Handbooks and guidelines for small tree plantation management are needed to support sustainable plantation management.

Continuous need for technical support

- Government technical support for farmers on various aspects, such as good quality of seedlings, soil conservation, carbon credit marketing, plantation management schemes, etc. is required.
- For good plantation yields, farmers need technical support on thinning activities. They also need other services from agencies for all activities conducted in the plantations, from the planting sites to the market place.
- Small-scale farmers need training courses on tree plantation management that cover all activities of planting, tending, thinning, felling, transporting, processing and marketing.
- Farmers are ignorant of the procedures under the Tree Plantation Act B.E. 2535. In addition to a training course on details of the Act, an easy and practical manual on land selection, registration of the plantation, wood transportation, etc., should be provided.
- There is a need for training on the legal processes involved in tree farming for farmers and wood industry stakeholders.
- There should be an easy and understandable legal manual for farmers.
- Farmers have no experience in wood product book-keeping in the manufacturing plant as required under the Forest Act B.E. 2484. The procedure should be modified for practicality, and not with a control focus. The farmers also need training on wood product book-keeping.

Inadequate databases/inventories for long-term planning

- Each province should have stock inventories and mapping of the plantations.
- Inventories of the yields and stocks of tree plantations and consumption of wood by different stakeholders should be carried out in ten-year periods to assist with policy modification.
- National wood utilization planning is needed for domestic production, consumption and export. This will help to balance future use of the raw material from tree plantations

Lack of support for livelihood management

- Small-scale farmers do not want long rotation trees as they need income from cash crops. They need free, good quality seedlings.
- Mixed tree planting and agroforestry in tree plantations should be encouraged to support farmers during no-return periods.
- Other livelihood programmes are needed to support farmers, such as bee keeping, mushroom cultivation, bamboo shoot cultivation, goat rearing, etc.
- There should be promotion of the use of wood charcoal and wood vinegar from tree plantations.

Dominant influence of intermediaries in timber market/prices

- The prices of trees felled from plantations are very low due to intermediaries who suppress the price of wood in the domestic market.
- Farmers prefer to keep their trees and not to fell them because of the low prices offered by intermediaries.
- There should be a central/local market place for farmers where a timber buyer and a timber seller can meet directly without the interference of intermediaries.
- The quotation price of the tree should be the standard price of the wood.

- Farmers need the quotation of the central price of wood as the standard price for timber from the plantation.

Inadequate cooperatives/community enterprises/self-help groups

- Private forest plantation cooperatives should work as the core of the wood industry for farmers. Wood processing by the cooperatives should be established with government support.
- The promotion of private forest plantation cooperatives should be strengthened. A revolving fund for the cooperatives should be established to support their continuity.
- The local wood industry and wood-processing businesses should organize self-help groups in product design and should be able to negotiate good prices from the intermediaries.
- An information centre for farmers should be created to support all activities as stated in the Tree Plantation Act B.E.2535, similar to farmers' learning centres to promote indigenous self-sufficient land-use systems.
- The role of women in community enterprises is very strong. They are involved in planning, collection of wood residues, wood souvenir making, furniture making and marketing of wood products. These roles should be recognized and promoted.

Rigid and time-consuming procedures for thinning, harvesting and transportation of wood

- The processes for felling wood, transportation, establishing the wood-processing plant and stocking wood products take up much time and expense. The whole process, as required by the law, should be made less complex.
- In order to increase more tree farming, the Tree Plantation Act B.E. 2535 should be revised to reduce the paperwork and simplify the process of plantation management.
- Under the Tree Plantation Act B.E.2535, there is a conflict between tree thinning as a plantation treatment to stimulate tree growth and generating income for livelihood. The thinning of trees needs official cutting permits which demand plantation owners' time and expense.
- The registration of the owner's timber stamp must be in the name of a private forest plantation cooperative or group, not an individual plantation owner, due to timber smuggling issues and the rotation of the official document.
- Chainsaw owners always need permission to carry their chainsaws to other provinces as stated in the Chain Saw Act 2540. The permission needed for transporting the chainsaws to other provinces means extra time and expense.
- Log transportation from the planting site to other sites requires official paperwork to show the site of origin. The removal of such documentation for transportation of wood would be beneficial.
- In order to minimize time-consuming inspections during wood transportation on highways, there should be coordination among the highway police, RFD extension officers and the farmers to facilitate the transport of products.

Difficult book-keeping

Farmers find it difficult to conduct book-keeping for wood manufacturing plants and sales. They have no experience with product book-keeping as required under the Forest Act B.E. 2484. The procedure should be modified with practicality in mind, not with a control focus.

Insufficient access to market information and promotion of wood-related industries

- There is lack of information on how and where to sell wood and products. There should be a central market, which farmers can trust.
- Information centres and central markets equipped with computers and Internet facilities should be established to support farmers' activities.
- Wood furniture and other products made by the farmers should be promoted in domestic markets.
- Exporting timber and wood products from tree plantations should be promoted.

Lack of skilled workers in wood-related industries

- There is a shortage of skilled wood makers. There should be a training centre for carpenters and construction counterparts.
- There is a high turnover rate and migration of wood makers and carpenters. There is a need for training in wood making and design for domestic and export markets. There should be a training centre at the subdistrict level in this context.
- In order to promote wood utilization, there should be a training course for young carpenters and wood makers. Competitive wood design and wood making should be part of Thai culture with regard to wood artisanship.

Interpretation of problems and issues raised during field surveys and regional workshops

These anomalies required interpretation and aggregation into statements describing problematic conditions. This was helped by analyses of the RFD's past training courses and workshops (Annex 2 and Annex 3). As such, 23 interpretations emerged:

1. Local land conditions are not considered for zoning of tree species.
2. Without zoning of tree species or market information, it is difficult to promote tree species appropriate to local conditions.
3. The Ministry of Natural Resources and Environment lacks a long-term plan for developing a forest extension programme.
4. Several stakeholder departments approach the same target groups and areas for different promotions due to lack of mutual coordination.
5. The RFD has not been able to address the land tenure problem of long rotation tree farmers.
6. The RFD has not been able to formulate management plans for long rotation tree plantations.
7. Forest area covered with long rotation trees is not as expansive as it should be.
8. Farmers feel discouraged about planting and growing long rotation trees because they cannot be utilized; the trees are grown on land with insecure land rights.
9. The RFD's extension system does not cover all the activities and processes of tree plantation management which ensure tree farmers accrue real benefits.
10. RFD front-line extension officers are not skilled or trained in extension.
11. RFD officers of regional/provincial offices are indecisive about some tree farmers' problems.
12. RFD training for tree farmers often does not provide clear/good understanding.
13. Long rotation trees require long rotation tree plantation farmers as it takes a long time for the trees to become commercially viable.
14. Wood residues constituting wood chips and thinned trees are insufficiently utilized due to lack of awareness and guidance from the RFD.
15. The younger generation of farmers does not consider planting trees on private lands as a promising livelihood.
16. Local politicians have scant interest in tree planting and lumbering by farmers.
17. It is difficult for farmers to find appropriate persons/resources for consultation.
18. Capital from government and/or financial institutions is inadequate for long rotation tree plantation farmers.
19. RFD officers have a negative approach to private forest plantation cooperatives.
20. Many members of private forest plantation cooperatives are particularly interested in getting loans from their cooperatives.
21. Wood product designs are neither well developed nor appealing to the market. Products lack value addition.
22. Wood product makers and wood handicraft workers do not clearly identify their end-users or carefully consider end-users' needs in their product designs.
23. Skilled technicians for wood products are difficult to find due to lack of skilled training on wood products.

3. Recommendations

These interpretations were categorized into the following nine recommendations on forest extension, each of which requires both concrete actions as suggested and involvement of the concerned stakeholders who should take these actions. Needless to say, it is crucial that concrete actions and specific stakeholders are identified to the extent possible in order to ensure their implementation.

- Recommendation 1: Strengthening of legislative mandates with a clear policy framework for the RFD and concerned departments and institutions to promote long rotation tree plantations and wood-based industries.
- Recommendation 2: Consolidate and utilize a database on tree farmers for registration purposes.
- Recommendation 3: Promote an increase in planted area of long rotation trees.
- Recommendation 4: Strengthen RFD officers' extension capacity.
- Recommendation 5: Promote planting of tree species appropriate to local land conditions.
- Recommendation 6: Strengthen livelihoods of long rotation tree plantation farmers.
- Recommendation 7: Strengthen consultation networks of long rotation tree plantation farmers.
- Recommendation 8: Strengthen private forest plantation cooperatives through transparent management.
- Recommendation 9: Strengthen wood-based industries.

Recommendation 1: Strengthening of legislative mandates with a clear policy framework for the RFD and concerned departments and institutions to promote long rotation tree plantations and wood-based industries

This deals with Interpreted Problems 1-4; three actions are recommended.

Establishing a policy framework for the RFD and concerned departments as well as institutions to promote long rotation tree plantations and wood-related industries: A clear policy framework to promote long rotation tree plantations and wood-related industries should be established. Under this framework, a Coordination Committee consisting of the RFD (committee coordinator) and other stakeholder departments at the central level should be formed; these departments include: the Department of Agricultural Extension (DOAE), Department of Cooperatives Promotion (DOCP), Office of Land Reform for Agriculture (OLRA), Land Development Department (LDD), Community Development Department (CDD), Department of Industrial Promotion (DOIP), Department of Labor Skills Development (DLSD) and Office of Small and Medium Enterprise Promotion (OSMEP), as well as the Bank of Agriculture and Agricultural Cooperatives (BAAC). Based on this policy framework, officers of these departments at regional, provincial and district levels are authorized to cooperate with one another more effectively and to synthesize their work for farmers as well as those in wood-related industries.

Formulating a Comprehensive National Extension Plan (CNEP) to support promotion of long rotation trees by the RFD and concerned departments using participatory techniques: Without a CNEP, long rotation trees cannot compete with promotions for rubber and other agricultural products. In setting concrete numerical targets for both state and private land in concerned regions, provinces and districts, the CNEP should take into account long-term marketability of various wood supplies, which is closely linked to sustaining farmers' livelihoods. Consequently, promotion based on the CNEP will encourage farmers' engagement in planting and taking care of long rotation trees and thus provide ample resources domestically for wood-related industries.

Implementation of the CNEP through monitoring and nationwide dissemination: The Coordination Committee should monitor CNEP implementation to assure nationwide dissemination. Verifiable indicators need to be set and periodically measured.

Recommendation 2: Consolidate and utilize a database on tree farmers

This deals with Interpreted Problems 5 and 6. One action is recommended.

Integrating data on farmers into a database for farmer registration: The RFD and DOAE should integrate data on farmers into the DOAE's database for farmer registration. This will give the RFD a holistic view of tree farm management to formulate a more effective extension programme.

Recommendation 3: Promote an increase in planted area of long rotation trees

This deals with Interpreted Problems 7 and 8. Two actions are recommended.

RFD to encourage more farmers to plant long rotation trees via incentives: These farmers include tree farmers who stopped growing long rotation trees, tree farmers who plant other kinds of seedlings instead of long rotation trees and farmers who have never planted tree seedlings. One possible approach would be for the RFD and DOIP to demonstrate the marketability of long rotation trees, including utilization of their residues, while the RFD and DOAE promote agroforestry among these farmers. An alternative would be to exempt or lower their land tax, particularly for farmers' land plots using long rotation trees, for a certain period of time, such as 15 years. Moreover, progressive taxation for large landowners could be an incentive. Members of private forest plantation cooperatives, i.e. farmers who have planted long rotation trees should be given, as an incentive, high priority to participate in RFD training on an appropriate topic regarding long rotation forest land management.

Permitting new/other kinds of private land plots for planting long rotation trees: The RFD should permit new/other kinds of private land plots, including boundaries of land plots, for planting of long rotation trees to inspire confidence among farmers about investing in growing long rotation trees.

Recommendation 4: Strengthening RFD officers' extension capacity

This deals with Interpreted Problems 9-12. Seven actions are recommended.

Earning trust among long rotation tree-planting farmers through frequent contact and accurate information dissemination: This is essential for the RFD's front-line extension officers. They must employ two-way communication and interpersonal skills.

Developing and utilizing a network of resource persons in both government and private sectors to link farmers with complementary stakeholders: It is crucial for RFD extension officers of regional/provincial offices to have useful resource persons to assist with the dissemination of accurate information in response to farmers' inquiries. RFD extension officers of regional/provincial offices should develop a network of resource persons in both government and private sectors, by becoming acquainted with them and seeking their assistance in backstopping farmers.

Conducting on-the-job training (OJT) for RFD regional/provincial extension officers with regard to monitoring farmers and providing technical advice: In order to improve their skills in extension, the RFD should require its regional/provincial offices to conduct OJT in this context. It should emphasize frequent meetings with the farmers, listening to their problems and concerns and providing useful technical advice. RFD senior officers of regional/provincial offices must closely supervise this OJT and receive feedback from front-line officers to avoid any irregularities.

RFD front-line extension officers should write an extension report for each of their contacts with the farmers, prior to providing feedback to senior officers. Although it can be brief (as short as one-page),

the extension report must include: (i) the farmer's query; (ii) how it was answered; and (iii) further action required. Compilation of such extension reports will create a database for extension work, and monitor the efficiency/effectiveness of the officers' work. This database can be developed into a useful and practical extension manual consisting of a number of Questions and Answers based on those conducted in the field.

Recognizing RFD regional/provincial extension officers' acquired extension skills as a factor for their promotion: This needs to be encouraged, as indirectly it will also assist farmers. At the same time, RFD front-line extension officers should be willing to improve their extension skills. Diligence in self-improvement should be a factor for promotion among front-line extension officers.

Moreover, there is an urgent need to recruit new graduates from university forestry faculties, who have studied extension techniques, as prospective forest extension officers. Forest extension courses in faculties should pay significant attention to two-way personal communication skills. Such recruitment is also applicable to forest-based industries as well as the BAAC.

Conducting a needs survey of RFD regional/provincial extension officers to formulate a capacity-building programme: It is desirable that RFD regional/provincial extension officers identify skills to be developed further and/or concerns to be explored more. Therefore, the RFD should conduct a needs survey in this respect in order to formulate an effective capacity-building programme.

Providing RFD regional/provincial extension officers with technical training on forestry as well as farm management (topics to be based on the needs survey): The RFD should formulate and conduct technical training in this context.

Establishing a continuous management cycle of formulation, implementation and evaluation of training courses that effectively respond to crucial needs of farmers: RFD officers of regional/provincial offices have had valuable opportunities to prepare, coordinate and manage training courses. This should be continued. These officers are required to periodically and continuously follow up on training course outcomes when they contact farmers.

More importantly, if outcomes are not positive, RFD officers of regional/provincial offices should discover the reason. As such, they will be able to modify training contents as well as approaches and formulate and manage further courses to benefit farmers.

Recommendation 5: Promote planting of tree species appropriate to local land conditions

This deals with Interpreted Problem 13. Three actions are recommended.

Conducting training courses for RFD regional/provincial front-line officers on zoning: Zoning of land conditions is very helpful to identify tree species appropriate to local land, and it should be a prerequisite for RFD front-line officers to be knowledgeable about and skilful in carrying out such zoning to identify appropriate tree species. In this connection, the RFD should conduct training/practice courses for RFD regional/provincial front-line officers.

Implementing the zoning of land condition in a participatory learning manner with tree farmers
When RFD front-line officers, together with DOAE field officers, implement the zoning of land to identify appropriate tree species, this should be done in a participatory learning manner with farmers. While officers can recommend appropriate tree species based on scientific results of land examination to farmers, the farmers should be consulted and allowed to discuss their preferred tree species from the viewpoint of sustaining their livelihoods. RFD front-line officers should not impose scientifically

classified results of land zoning but try to impart understanding on how to utilize land and earn a living from planting long rotation trees.

Providing seedlings appropriate to local land conditions to farmers: Based on results of the zoning of land condition in the above-mentioned participatory learning manner, RFD regional/provincial offices should provide good seedlings appropriate to local land condition to tree-planting farmers.

Recommendation 6: Strengthen livelihoods of long rotation tree plantation farmers

This deals with Interpreted Problems 14-16. Three actions are recommended.

Promoting agroforestry among farmers and supply of agricultural input: Farmers will be unwilling to invest in growing long rotation trees, unless they feel secure about sustained livelihoods. Because agroforestry can strengthen their livelihoods, RFD front-line extension officers, together with DOAE field officers, should promote agroforestry among them with various agricultural inputs.

Conducting training/practice courses on agroforestry techniques for farmers: RFD regional/provincial offices, together with DOAE regional/provincial/district offices, should also conduct training/practice courses on agroforestry techniques for farmers to implement effectively.

Building a network among farmers, researchers and wood-related manufacturers to commercialize materials/products made from wood residues: Farmers' livelihoods can be strengthened if utilization of wood residues of their long rotation trees is increased. In other words, more wood residue products need to be developed and commercialized. The RFD and the DOIP should help to build a network among the farmers, researchers and wood-related manufacturers in this context.

Recommendation 7: Strengthen consultation networks of long rotation tree plantation farmers

This deals with Interpreted Problems 17 and 18. Six actions are recommended.

Appropriate information for long rotation tree plantation farmers: Farmers should seek appropriate information that they find useful. They should be enthusiastic about this.

Farmers optimize daily communication not only among their friends, neighbours and relatives but also with traders and government officials to address their technical/management problems: This further consolidates the acquisition of appropriate information mentioned above.

Farmers provide feedback to traders and government officials regarding the information obtained from them: This will enhance two-way communication with these resource persons further.

RFD to encourage farmers to build a network among training participants at training/practice courses: RFD regional/provincial officers should encourage training participants to build a mutual network. As participants will have a common interest in attending such courses this would further facilitate resolution of technical/management problems.

For raising awareness on tree plantation management among local politicians, RFD regional/provincial offices should invite important local politicians to deliver an opening speech for the training/practice course. This would add prestige to a tree-farming consultation network.

RFD to be assisted by farmer volunteers: Due to its limited human resources, the RFD should supplement its extension function through other stakeholders. The RFD should recruit and train voluntary farmers for forest extension at the Tambon level.

RFD to provide consultancy services to tree plantation farmers via the Internet: This will add to knowledge generation for farmers.

Recommendation 8: Strengthening private forest plantation cooperatives through transparent management

This deals with Interpreted Problems 9, 18, 19, 20 and 21. Nine actions are recommended.

Farmers share their problems within their private forest plantation cooperative: This self-consultation function would be beneficial, especially if RFD extension work is irregular.

Sanctions by cooperative members against members with overdue loans: Private forest plantation cooperatives play a significant role in making loans to their members, especially as government subsidies and financial institutions do not provide enough capital for farmers. Failure to repay loans should be prevented as much as possible. The private forest plantation cooperative can, with members' agreement, set and execute social sanctions, in addition to ordinary penalties due to the breach of a loan contract. For example, requiring a debtor to carry out voluntary work for the community or cooperative or making a special donation for a festival in the community, and so forth. Such social stigma may help to prevent defaulting on loans.

Holding a regular meeting for cooperative members regarding not only their problems and solutions but also organizational and financial management of their private forest plantation cooperative: Depending on the condition and capacity of each cooperative, regular meetings can be held monthly, bimonthly or quarterly. At such regular meetings, the committee should discuss not only members' problems and solutions but also organizational and financial management. Members will become familiar with managerial matters and can nurture their sense of ownership of their cooperative.

Cooperatives' needs for training and agricultural inputs from the RFD, other concerned agencies, PAOs and TAOs: Plantation cooperative committees should request their needs for training and agricultural inputs from the RFD, other concerned agencies such as the DOCP, Provincial Administrative Organizations (PAO) and TAOs, while extension officers of these institutions should give advice to the cooperatives. Government support should focus on technical expertise and agricultural inputs, not on subsidies.

RFD to hold periodic monitoring/consultation meetings with private forest plantation cooperatives: The RFD should continue supporting private forest plantation cooperatives, even when tree farmers have established their own private forest plantation cooperative. It is probably more convenient for RFD front-line extension officers to visit, monitor and give advice to the cooperatives than individual tree farmers.

Providing training courses on group/organizational formation, purposes and roles of a private forest plantation cooperative to members: It is crucial for cooperative members to have greater awareness of the purposes and roles of a private forest plantation cooperative to further enhance their livelihoods. In this regard, the RFD and DOCP should provide practical training courses on group/organizational formation and the purposes and roles of a private forest plantation cooperative to its members.

Providing training courses on management to committee members of private forest plantation cooperatives: Committee members of private forest plantation cooperatives should efficiently and effectively manage their cooperatives with transparency to gain members' trust and allow them to

become involved in various cooperative activities more dynamically. The RFD and DOCP should provide management training courses for committee members of private forest plantation cooperatives.

Provide training courses on accounting for committee members of private forest plantation cooperatives: Transparent accounting is always required. The RFD and DOCP should provide training courses on accounting for committee members of private forest plantation cooperatives.

RFD to provide training courses on care and management of planted trees to cooperative members: As indicated already, it is probably more convenient for RFD regional/provincial extension offices to contact a private forest plantation cooperative than individual tree farmers. RFD regional/provincial offices should provide training courses on care and management of planted trees, particularly long rotation trees, to cooperative members. Moreover, group practice during the training provides an opportunity to share their experiences among themselves, because they need to exchange their ideas and work together.

Recommendation 9: Strengthening wood-related industries

This deals with Interpreted Problems 14, 22 and 23. Five actions are recommended.

Building and utilizing a network among long rotation tree plantation farmers, wood-related manufacturers and researchers to commercialize materials/products made of wood residues:

Utilization of wood residues is crucial for strengthening the woodwork industry; more wood residue products should be generated and commercialized. The RFD and DOIP should support building a network among farmers, researchers and wood-related manufacturers to commercialize wood residue products.

Using organizations of wood product makers and wood handicraft workers to disseminate and share information on markets, particularly end-users' needs: Woodwork industries urgently need updated information on market to promote their products. It would be effective if organizations of wood product makers and wood handicraft workers, including their groups and cooperatives, disseminated and shared market information. The DOIP should utilize these organizations for information dissemination and sharing. Such information should include needs of end-users.

Provide training on design creation for wood products to wood product makers and wood handicraft workers: Good designs are essential for promotion of wood products. The DLSD together with skill training centres, with technical support from the RFD and DOIP, should provide training on design creation for wood products to wood product makers and wood handicraft workers. There should be a focus on creating original designs as popular designs become outdated.

Holding wood product fairs: In order to promote wood products, the RFD and DOIP together with wood manufacturers should hold wood product fairs. Successful identification of end-users would be a great advantage for wood manufacturers to consider their particular needs in product designs.

Providing educational opportunities and training on wood product creation to children and students: The DLSD together with various local schools and educational centres, with technical support from the RFD and DOIP, should provide educational opportunities and training on wood product creation to children and students. Local and highly skilled wood carpenters and woodworkers should be utilized as much as possible.

Framework for forest extension recommendations based on problem analysis

commendation	Action	Who can take action?	To which problem can the action contribute?
1. Strengthen execution of legislative mandates with a clear policy framework for RFD and concerned departments and institutions to promote long rotation tree plantations and wood-related industries	<ul style="list-style-type: none"> - Establishing a policy framework for RFD and concerned departments as well as institutions to promote long rotation tree plantations and wood-related industries - Formulate a Comprehensive National Extension Plan (CNEP) to support promotion of long rotation trees by the RFD and concerned departments using participatory techniques - Ensure implementation of the CNEP through a monitoring system and nationwide dissemination 	<ul style="list-style-type: none"> - RFD and stakeholder departments at the central level, such as the DOAE, DOCP, OLRA, LDD, CDD, DOIP, DLSD and OSMEP and BAAC 	<ul style="list-style-type: none"> - Local land condition is not examined for zoning of tree species - Zoning of land for tree species appropriate to local conditions as well as appropriate market information - MONRE's unclear plan for developing a forest extension programme - Multiple stakeholder departments approaching the same target groups and areas for promotion, due to no core implementation plan
2. Consolidating and utilizing a database on tree farmers	<ul style="list-style-type: none"> - Integrating data on tree farmers into a database for farmer registration 	<ul style="list-style-type: none"> - The RFD and DOAE at central and regional/provincial levels 	<ul style="list-style-type: none"> - RFD's tenure issues for long rotation tree plantations - RFD and management of tree farmers
3. Increase area with long rotation trees	<ul style="list-style-type: none"> - Encouraging more farmers to plant long rotation trees via incentives - Permitting new/other kinds of private land plots for planting of long rotation trees 	<ul style="list-style-type: none"> - The RFD at central and regional/provincial levels 	<ul style="list-style-type: none"> - Long rotation trees cover is not as expansive as it should be - Farmers' tenure issues
4. Strengthening RFD officers' capacity for extension work	<ul style="list-style-type: none"> - Earning farmers' trust via frequent RFD contact and disseminating accurate information to them 	<ul style="list-style-type: none"> - The RFD at regional/provincial level 	<ul style="list-style-type: none"> - RFD extension continuity - RFD front-line extension officers' extension skills

	<ul style="list-style-type: none"> - Developing and utilizing a network of resource persons in both government and private sectors to link farmers with stakeholders - Conducting OJT for RFD extension officers on monitoring farmers and providing technical advice - Extension skills to be a factor for RFD officers' promotion - Conducting a needs survey of RFD officers to formulate a capacity building programme - Providing RFD extension officers with technical training on forestry as well as farm management, according to the needs' assessment - Establishing a continuous management cycle of formulation, implementation and evaluation of training courses 		<ul style="list-style-type: none"> - RFD extension officers' decision-making skills - Lack of clarity in RFD training
5. Promoting planting of tree species appropriate to local land conditions	<ul style="list-style-type: none"> - Conducting training courses to RFD front-line officers on zoning - Implementing the zoning of land condition in a participatory learning manner with tree farmers - Providing good seedlings appropriate to local land condition to tree-planting farmers 	<ul style="list-style-type: none"> - The RFD at regional/provincial levels and DOAE at regional/provincial/district levels 	<ul style="list-style-type: none"> - Difficulty in promoting tree species appropriate to local condition without proper zoning
6. Strengthening farmers' livelihoods	<ul style="list-style-type: none"> - Promoting agroforestry among farmers with agricultural inputs 	<ul style="list-style-type: none"> - The RFD and DOAE at regional/provincial levels - The RFD and DOIP 	<ul style="list-style-type: none"> - Length of time for long-rotation trees to become commercial. - Wood residues are insufficiently utilized.

	<ul style="list-style-type: none"> - Conducting training/practice courses on agroforestry techniques for farmers - Building a stakeholder network to commercialize wood residue materials/products 		<ul style="list-style-type: none"> - Getting younger farmers interested in private tree plantation as a lucrative livelihood
7. Strengthening farmers' consultation networks	<ul style="list-style-type: none"> - Providing appropriate information for farmers - Optimizing farmers' communication with other stakeholders - Tree farmers' feedback to other stakeholders - RFD to encourage farmers to build a network among training participants - RFD to recruit and train forest extension farmer volunteers - RFD Internet services - Tree farmers' information exchange with counterparts for problem solving - Tree farmers to review problem-solving practices 	<ul style="list-style-type: none"> - Tree farmers (primary) - Traders (secondary) - RFD (secondary) - Officers of other concerned government departments (secondary) 	<ul style="list-style-type: none"> - Local politicians' low interest in tree plantations - Farmers' problems in finding appropriate consultants
8. Strengthening private forest plantation cooperatives through transparent management	<ul style="list-style-type: none"> - Farmers share problems with their private forest plantation cooperative - Setting and executing social sanctions among cooperative members for non-payment of loans - Holding a regular (such as monthly) meeting for cooperative members on problems/solutions, organizational and financial management - Requesting cooperative's needs for training and agricultural inputs from the RFD, other concerned departments, PAOs and TAOs 	<ul style="list-style-type: none"> - Cooperative committee members (primary) - Cooperative members, i.e., forest plantation farmers (primary) - The RFD and DOCP at regional/provincial levels - PAOs and TAOs - Other concerned government departments 	<ul style="list-style-type: none"> - RFD extension is not consistent - Capital from government and/or financial institutions is insufficient for farmers - Farmers' consultation issues - Some RFD officers have negative impressions of private forest plantation cooperatives. - Farmer loans from cooperatives

	<ul style="list-style-type: none"> -RFD to hold periodic monitoring/consultation meetings with private forest plantation cooperatives - Providing training courses on group/organizational formation and purposes and roles of a forest cooperative to members - Providing training courses on management to committee members of private forest plantation cooperatives - Providing training courses on accounting to committee members of private forest plantation cooperatives - RFD to provide training courses on care and management of planted trees for cooperative members 		
9. Strengthening wood-related industries	<ul style="list-style-type: none"> - Building and utilizing a network among stakeholders to commercialize wood residue materials/products - Utilizing organizations of wood product makers and wood handicraft workers to disseminate and share information on markets, particularly end-users' needs - Providing training on design of wood products to wood product makers and wood handicraft workers - Holding wood product fairs - Providing educational opportunities and training on wood products to students 	<ul style="list-style-type: none"> - RFD and DOIP - DLSD - Skill training centres - Schools at various educational levels 	<ul style="list-style-type: none"> - Wood residues made of wood chips and thinned trees are not exploited sufficiently - Wood product designs are neither well developed nor appealing to markets - Wood product makers and wood handicraft workers do not clearly identify their end-users or carefully consider needs of the end-users in their product designs - Skilled technicians for wood products are difficult to find, due to lack of training on wood products at schools of various education levels

Annex 1: Review of RFD training for forest plantation farmers

Background of the training courses

Under the Extension Programme Forest Plantation at Land of Farmers Receiving Self-Sufficient Right, the RFD with its Private Forest Plantation Division of the Forest Plantation Extension Bureau started in February 2008 to organize and implement a training course on ‘techniques for occupational forest plantation’ in order to allow training participants to understand the importance of agroforestry, implement and promote sustainable agriculture.

Implementation of the training courses

In addition, the RFD set subject topics, expected outcomes, as well as indicators for the training course. The expected outcomes were:

- People will increase their income due to agroforestry implementation;
- People will be able to make more use of timber without disturbing natural forests;
- Forest area will be increased;
- Knowledge on forestry will be promoted and disseminated to ordinary persons; as such sustainable forest management will be expanded.

The indicators were:

- More than 80 percent of the participants are satisfied with the training course;
- At least one training course on new sustainable forest management techniques will be conducted annually to benefit forest plantation farmers;
- Participants will use knowledge acquired in the training course according to their needs.

Concerning implementation of the training course, each of the RFD’s regional offices was requested to organize a committee not only to prepare, coordinate and carry out various activities for its own training courses (three-day course in 2008 and two-day course in 2009) but also to produce an implementation report.

The training courses delivered not only theoretical lectures but also field trips and practice. Topics for the theoretical lectures included:

- Extension Program for Forest Plantation at Land of Farmers Receiving Self-Sufficient Right with fund support;
- The new theory of agriculture and ‘sufficiency economy’;
- Agroforestry for sustainable agriculture;
- Planting and taking care of trees.

Topics for the field trips were:

- Field observation of a forest plantation with a forest-animals-plants system;
- Field observation of a forest plantation group and network for sustainable agriculture.

The 2008 course provided theoretical lectures and participatory practice on group formation as well as a field trip to a forest cooperative, while the training course in 2009 had group discussion regarding farmers’ obstacles and needs in building a forest plantation.

Outputs of the training courses

The training comprised 10 batches totalling 400 tree-planting farmers (40 participants each) of three provinces in 2008 and 30 batches totalling 900 tree-planting farmers (30 participants each) of 27 provinces in 2009.

In terms of benefits to the participants, more than 98 percent of those in 2008 felt “very good” or “good” about all the training topics. Similarly, 100 percent of the training participants in 2009 expressed either “very good” or “good” about various aspects of this course. Nevertheless, only 36 percent felt “very good” about the contents of this course, although 78 percent felt that the contents and their occupations were “very much” related.

Analysis on outcomes of the training course

Capacity building of RFD officers at regional offices

In connection with capacity building of RFD officers at regional offices, implementation of their training courses, as already pointed out, has provided them with very valuable opportunity to manage a training course. However regional offices could have modified the training to respond to needs of tree plantation farmers more effectively. As such this type of training should be continued. Emphasis on management cycles, i.e., plan-do-see, for a training course will strengthen their capacity to formulate and manage a training course beneficial to tree-planting farmers.

Moreover, through their contact and coordination with not only tree-planting farmers but also lecturers for the training course, the RFD officers at regional offices could develop and strengthen their network of resource persons.

When group discussions were conducted at the 2009 training course, each of the participants’ subgroups required a facilitator to stimulate their discussion. RFD officers can gain valuable experience as facilitators.

Expected outcomes

The assessment of the training course carried out at its conclusion addressed the efficiency of training implementation, but was not sufficient to identify outcomes. During monitoring, RFD officers should report progress in connection with the training course. If outcomes do not emerge as expected, the reasons for this should be explored. More importantly, obstacles should be analysed in case outcomes do not transpire as expected.

RFD response to farmers’ opinions

It is unclear what actions RFD officers have taken in response to ideas and opinions gathered from training participants through the group discussion in 2009. The RFD’s response is an important outcome of the training course. Response and reporting of action taken to training course participants are crucial for the RFD to earn trust among tree planting farmers.

Annex 2: Review of RFD training for private forest plantation cooperatives

Background of the workshop

Under the training course entitled “The Potential Development of Private Forest Plantation Cooperatives”, the RFD with its Private Reforestation Division of the Forest Plantation Extension Bureau held workshops pursuant to the Economic Tree Planting Promotion Project in June-July 2005. Private forest plantation cooperatives, which emerged in 1996, numbered 36 cooperatives and two groups as of 2005, had made slow progress, so workshops were held for committee members and members of the four private forest plantation cooperatives as well as forest extension officers in Nong Bualampoo, Srisaket, Tak and Lopburi provinces. The goal was to build understanding on cooperative business management and to formulate a clear business development plan.

Implementation of the workshop

The RFD appointed officers to organize a workshop steering committee and workshop facilitation team. The steering committee was required to improve the course, determine a syllabus, set dates and venue, consider lecture topics, select qualified instructors, set focus group selection criteria, formulate workshop preparation, direct and supervise the event and resolve problems. The workshop facilitation team was required to coordinate the workshop, issue official invitation letters, prepare documents and instructional materials and arrange transportation.

Lecture topics comprised: (i) potential development of private forest plantation cooperatives, (ii) knowledge of cooperative operation, (iii) book-keeping, (iv) development of private forest plantation cooperatives and (v) formulating a business plan; focus group discussion targeted: (a) formulation of a business plan and b) presentation of a business development plan. Expected outcomes were:

- Committee members and members of the four private forest plantation cooperatives and forest extension officers in the four localities attain better knowledge and understanding of private forest plantation cooperative management and enhanced ability to formulate a business development plan.
- Establishment of the first four private forest plantation cooperative centres as examples for others to follow and as learning centres for government officials and the general public in each region.

Outputs of the workshop

Because the target private forest plantation cooperatives were located in four provinces, the workshop delivered four classes, training 180 committee members, cooperative members and forest extension workers in total (45 participants in each of the four classes).

According to the workshop assessment, all the participants agreed that they had benefited from the workshop. More than 88 percent stated “very much” or “rather much”. Moreover, all the participants indicated that they would apply what they had learned.

Outcomes of the workshop

Capacity building of RFD officers at regional/provincial offices: While the workshop steering committee included directors of the four concerned RFD regional/provincial forest offices, it was not clear from the report on results of this workshop to what extent they were involved in the actual implementation of the workshop in their provinces. The participants’ list of the workshop facilitation team did not indicate any officers of these ranks. Instead, forest extension officers of their offices attended.

The forest extension officers, through constructive discussion with other workshop participants, i.e. committee members and members of private forest plantation cooperatives, had a good opportunity to note managerial needs. It is anticipated that they will support the cooperatives more closely and effectively.

RFD strengthening of stakeholder networks: With regard to strengthening a network with resource persons, RFD's steering committee and organizing team invited instructors from provincial cooperative offices as well as provincial cooperative auditing offices of the relevant provinces to the workshop. Because the workshop covered cooperative management issues, it was instructive for the committee members and cooperative members to learn from the instructors' lectures.

Forest extension officers should strengthen their networks with provincial officers from cooperative promotion and auditing offices. Furthermore, it would be worthwhile to invite other concerned authorities, including the BAAC, to this kind of workshop. This would give them valuable insight into problems, obstacles and operational directions of private forest plantation cooperatives. Cooperatives could also approach these organizations for business links.

Looking to the future: All the participants appreciated the workshop. One reason was the development of their own strategic plans, which they jointly formulated based on SWOT analysis.

On the other hand, it is too early to conclude if the workshop's objectives have been achieved. Time is needed to wait for results from strategic plan implementation. Without regular monitoring, it will be difficult for the RFD to recognize whether the private forest plantation cooperatives have been producing the expected workshop outcomes. In addition, during regular monitoring, the forest extension officers can consult closely with the cooperatives so that any constraints can be resolved.

Annex 3 : Review of Forest Extension and Recommendations

Prepared by
SongkramThammincha
National Forest Extension Expert

Background

The Royal Forest Department on behalf of the Government of Thailand and the Food and Agriculture Organization of the United Nations – FAO signed the agreement to undertake the **TCP Project “Participation of tree plantation farmers in sustainable forest management”**. The project was executed by the Royal Forest Department (RFD) with the aims to contribute to the diversification of livelihood options, improve microclimates and environmental sustainability, and increase domestically available wood supply.

Comprehensive stakeholder participation process was envisaged in order to review current situations, laws and regulations, and incentive systems, as well as to propose necessary measures to support tree farmers interested in growing long-rotation tree species. Tree farmers, wood processing entrepreneurs, market representatives, RFD staff and government officials from relevant agencies, NGOs and academia were involved in the process that included seven field-based surveys and regional workshops based on Participatory Rural Appraisal (PRA) methodologies. The field-based surveys and workshops were organized by the Lead National Consultant (LNC) selected on the basis of forest plantation type, existing incentives, cooperatives structure, and wood processing capacities. The National Workshop was organized at the end of the process in March 2011 for summarizing the findings and finalizing the recommendations for policy revision.

Scope of the Report

The report includes the review of extension services for tree plantation promotion provided by the RFD and other relevant organizations. Key problems and important issues addressed at seven Regional Workshops and at the National Workshop together with the results from seven field surveys are summarized and listed and recommendations made. The proposed development scheme for extension services is an essential part of the report.

Introduction

After the logging ban in 1989, the focus of forestry sector was on balancing supply for enacted to support reforestation by the private sector, by setting procedures for forest plantation owners to register and receive formal approval for felling trees, and to address harvesting and transport of timber as well as waiver of all royalty fees. However, the Act has many shortcomings including exclusion of some economically important plantation species, such as eucalyptus, neem, rosewood, and ironwood, as well as prohibitive regulations for registration and harvest permits on selected species including teak.

In the 1990s, RFD implemented the Private Reforestation Extension Project (PREP), through which funds were provided to smallholders interested in planting trees. From 1994 to 1998, farmers participating in the PREP received 3,000 baht/rai over five years in instalments. However, after six years, only 390,032 ha was planted despite target of 160,000 ha/year. The project has not yielded sustained results as farmers have largely resorted replacing planted stands with cash crops. The RFD also initiated the Fast Growing Trees Reforestation Project (1994-1998) which provided incentives

such as free fertilizer, seedlings, and low interest loans to promote conversion of cassava and rice fields to fast-growing trees surpassed its set target of 68,000 ha.

The main problems that led to the above situation lie in constraining regulations and lack of government's supporting mechanisms for planting, processing and marketing of long-rotation tree species. The regulations were once relevant in the historic context of controlling illegal logging from natural forests. However, now some of these regulations stand to hinder development of livelihoods and wood industry using long-rotation species.

During the past decade, various attempts have been made to promote tree planting on private land, but very limited success is achieved due to lack of continuous support. Some initiatives such as Tree Bank, CDM, Promotion of Tree Planting for Long-Term Capital, are on the process towards being materialized. The proposed actions from this FAO/RFD Project would be a driving force for future development of forest plantations in Thailand.

Review of Extension Services

Although the following Departments initiated tree plantation programmes in the past, even offering some incentives to farmers, but the targets and success were not as envisaged. In certain areas farmers converted their tree plantations to cash crops.

1. Royal Forest Department (RFD)
2. Department of Agricultural Extension (DOAE)
3. Cooperatives Promotion Department (CPD)
4. Agricultural Land Reform Office (ALRO)
5. Land Development Department (LDD)
6. Bank for Agriculture and Agricultural Cooperatives (BAAC)

These tree planting programmes failed to reach the targets due to the following problems identified by the Royal Forest Department.

- (i) Cancellation of planting areas due to floods, fires, unsuitability of land, lack of good maintenance, change of ownership, and poor intention of farmers.
- (ii) Lack of long-term financial arrangements, as BAAC provided the loan only for fast growing tree planting with maximum of 3 years rotation.
- (iii) Inefficiency of implementing organizations, particularly limit number of staff, problems of financial practices, law and regulation constraints.

The very weak points of tree planting promotion are poor extension mechanisms and inadequate extension resources, i.e. human, material and financial resources. There is no specific extension division or unit in RFD and DNP. The RFD's Forest Resources Management Office (FRMO) located in 19 provinces and some field units/projects may provide extension activities concerning forest nursery, seedling production, and tree planting on private land, as well as data and information about forestry and related issues. The Silviculture Research Division under the RFD Research and Development Office is a main source of knowledge on forest tree plantations and related fields. There four Regional Silviculture Centers with a total of 47 field stations. If extension services are well organized with full extension resources, these centers and field stations will be very efficient extension units for forest plantation establishment and management.

Key Problems and Recommendations for Actions

During seven field-based surveys and regional workshops, the participants, particularly tree plantation farmers, had addressed a wide range of problems about policy and legislation, plantation establishment and management, wood processing, quality of products, and marketing. Specific recommendations are given under each of the key problems relating to extension services as follows...

1. Plantation establishment and management

1.1 Supply of poor quality of planting materials resulting in poor growth

Recommendations:

- 1) RFD should provide the farmers with genetically improved planting materials from existing seed source areas, seed orchards, plus trees, as well as to expand these kinds of seed sources in order to fulfill future demand for good planting materials.
- 2) Large private plantation should be used as seed source area where trees with superior characteristics can be selected as plus trees. Since these plus trees should have well adapted to local environment, planting material will be subsequently more suitable. Plantation owners can earn more substantial income from selling of seeds and seedlings. Regional/provincial foresters can advice the farmers about plus tree selection, seed collection and classification, and seedling raising.
- 3) RFD's tree improvement programs should be strengthened and expanded to regional/provincial level for local foresters can obtain more knowledge and experience.

1.2 Lack of technical advice Plantation establishment and management

Recommendations:

- 1) RFD should provide tree plantation farmers with comprehensive manual for tree plantation establishment and management.
- 2) Regional/provincial extension officers should be provided with sufficient resources (financial and material) to run regular activities with farmers.

1.3 Lack of incentives and financial arrangements for promotion of tree plantation and lack of interest in planting long-rotation trees

Recommendations:

- 1) Plantation farmers should be provided with funds as done under Private Reforestation Extension Project (PREP) during the 1990s.
- 2) Farmers should be provided with some necessary farm inputs for which RFD can seek additional supports from DOAE, CPD, LDD, and ALRO.
- 3) RFD should help and facilitate the access to credits and loans provided by BAAC, DOAE, CPD, ALRO, and OSMEP.
- 4) Principles of PES (Payment for Environmental Services) should be introduced for farmers shall get the benefits from their tree plantation in regard to soil improvement, biodiversity development, improved microclimate, carbon sinks.

1.4 Lack of farmer organizations and their formal linkages among farmers and farmer cooperatives and with local authorities

Recommendations:

- 1) RFD should help establish strong linkages among tree plantation farmers to work in a more collective manner to enhance bargaining power. This should be done in close collaboration with DOAE.
- 2) Strengthening the performance of farmer groups and farmer cooperatives through close consultation with DOAE and CPD.

- 3) RFD should help facilitate the linkages between farmer groups and farmer cooperatives and local administrative organizations such as TAO and PAO for an access to resources as well as to be recognized by local politicians.

2. Inadequate extension services, lack of skilled extension officers and weak PR on promotion of tree plantations

Recommendations:

- 1) RFD should empower and strengthen extension services as separate unit with sufficient human, material and financial resources and close coordination of RFD's extension services at central and regional/provincial levels.
- 2) For enhancing the capability of extension officers there should be regular training of extension officers, ranging from basic, intermediate and advanced courses, and occasionally with refreshing training.
- 3) Extension officers should have an opportunity to expose themselves to wide variety of extension services as well as advance education.
- 4) Extension officers should receive special promotion on the basis of their Work load determined by number of farmers, areas and quality of plantations under their extension services.

3. Wood processing

3.1 Procurement and treatment of raw material - shortage, poor quality, either no or poor treatment of raw material.

Recommendations:

- 1) The Regional/provincial agencies of RFD should carry out detailed inventory of all
- 2) RFD should develop standard grading system for timber quality to be used as the basis for utilizing and pricing of wood raw materials.
- 3) RFD in cooperation with DOIP and academic institutions should provide technical assistance for construction of demonstration kiln for more efficient drying of wood and wood products.

3.2 Poor processing technology due to inefficient tools and machinery and no or very limited utilization of wood residues and small-sized timber.

Recommendations:

- 1) DOIP and RFD should provide technical assistance for renovation and efficiency improvement of tools and machinery, while DOAE does for community enterprise and CPD for wood processing cooperatives.
- 2) Technology for utilization of wood residues and small-sized timber should be introduced with assistance from DOIP, OSMEP, and academic institutions.
- 3) RFD should seek the supports from relevant agencies to organize training on maintenance of tools and machinery.
- 4) Soft loan and/or machine funds should be made available to entrepreneurs.

3.3 Product designs - shortage of designers, lack of knowledge on contemporary designs, no or very limit access to designs for middle- and high-end markets

Recommendations:

- 1) Art and design should be incorporated more in curricula at school level.
- 2) DOIP and DSD should take active roles in development of local designers.
- 3) TAO and PAO should provide financial assistance for local designers can access to experience advanced designs

- 4) There should be regular design contests at local and national levels, as well as the contests among young designers. .

3.4 Low quality of product, no value-added products, no proper treatment of raw material.

Recommendations:

- 1) There should be a dissemination of knowledge on treatment of raw material and products.
- 2) Financial support should be provided for investment on extending facilities in the wood processing plants.
- 3) Training on skill development should be organized.
- 4) Capacity building for local carpenters should be encouraged.

3.5 Human resources - Shortage of skilled workers

Recommendations:

- 1) There should be regular course on carpentry in primary and secondary schools to produce young carpenters through the supports of TAO, PAO. Skilled local carpenters should be involved as a volunteer trainer at school.
- 2) More carpentry courses should be incorporated in the curricula of technical, vocational, occupational, and community colleges.
- 3) Skills Development Center (SDC) of DSD in every province should seek cooperation with TAO and PAO and other related agencies to enhance the capacity of local workers to become local and overseas workforces.

4. No marketing strategy - No market linkages, low price of timber and timber products, no pricing mechanism.

Recommendations:

- 1) There should be central market for timber and timber products where sellers and buyers meet. The central market can be jointly organized by DIT, Chamber of Commerce, DOIP, and BAAC.
- 2) There should be guarantee-price systems for timber and timber products as that for farm products such as rice, cassava, corn.
- 3) DOIP of Ministry of Industry and Department of Export Promotion (DEP) of Ministry of Commerce should help facilitate export market for wood products.
- 4) Trade facilitation initiated by AMAF (ASEAN Ministers of Agriculture and Forestry) should be brought to proactive exercise for wood product marketing

5. Lack of Database on tree farmers and wood processing plants

Recommendations:

RFD should establish tree plantation farmer database system under close collaboration with DOAE at central and provincial levels where the data about farmers are recorded and regularly updated. Integration of RFD and DOAE databases would enable regional/provincial foresters and extension officers improve the efficiency of extension services.

6. Role of women group - Empowerment of women groups

Recommendations:

- 1) Enhancement of women group capability in wood processing, handicrafts and marketing of products through training on skills development by DOIP, DSD; on entrepreneurship by DOIP, CPD; on marketing by DIT, DEP, BAAC; on community enterprise by DOAE

- 2) Women groups in wood processing and marketing can involve in other groups like farmer housewife groups of DOAE for more opportunity for livelihood development.
- 3) TAO and PAO should give proactive supports to the women groups to strengthen local social and economic linkages.

7. Utilizing ASEAN Economic Community (AEC) 2015 for single market and production base with free mobilization of goods, services, skill workforce, investment and capital.

Recommendations:

- 1) Improvement of productivity, production and capital management, and business operations to enhance competitive advantage through assistance from RFD, DOAE, CPD (upstream), DOIP, OSMEP, (midstream), and BAAC, DBD, DEP, DFT (Department of Foreign Trade), DTN (Department of Trade Negotiations).
- 2) Developing human resource potentials, particularly skill workers and technicians, through DSD, DOIP, academic institutions.

General Recommendations: Proposed Development Schemes for Forest Extension

1. Organizational Arrangements

- (i) To undertake extension works efficiently the Royal Forest Department should establish new four divisions: North, Northeastern, Central and Southern Divisions or units to directly link to extension service of the regional offices. The extension services of the central and regional offices should be provided with adequate human, material, and financial resources.
- (ii) Farmers' and manufacturers' organizations (Groups, networks. Cooperatives, Enterprises) should be initiated, if not already established, and organized with the assistance from RFD and other relevant agencies.
- (iii) RFD's cooperation with other agencies concerned with tree planting should be established for formal cooperation with relevant agencies, organizations and groups to coordinate and undertake extension services.

2. Financial Arrangements/Assistance

- (i) Financial arrangements including in-kind assistance are driving force for mobilizing promotion for tree plantation and wood processing plant development. In this context provisions should be made for Tree Planting Fund, Credit and Loan at nominal interests and Payment for Environmental Services (PES). The frameworks and practices of PES projects in China, Costa Rica, Vietnam, and India can be good lesson learned for the future of PES in Thailand.

3. Human Resource Development

- (i) RFD should organize regular trainings on different aspects at different levels, with the cooperation from relevant departments and agencies., for the following target groups. The trainings should be organized on regional basis, for which each batch includes participants from RFD division, FRMO, and selected agencies.
- (ii) Capacity building on extension services for the staff of Regional Silviculture Centers (RSC) and Silviculture Field Stations (SFS) is very essential as these units are the first stop for the tree plantation farmers to seek necessary extension assistance on tree plantations and wood processing plant establishment and management. Regular Training programmes should be organized for them by various concerned departments. Wood processing workers and local labor should also be included in these training programmes.

4. Mass Communication

- (i) RFD should seek cooperation from mass media of radio and TV networks to launch regular program on forest extension.

- (ii) Extension materials should be produced in the form of printing materials, CD/DVD and also hosted on the website.
- (iii) RFD Extension Services must be equipped with Mobile Extension units in both central and regional offices.
- (iv) RFD Extension Services should be incorporated in Farm Clinic Mobile of the Department of Agricultural Extension (DOAE).
- (iv) Mobile units of the Regional Office of RFD should pay quarterly visit to each province and organize National, Regional and Provincial annual seminars.

5. Research and Development

The current problems and constraints which affect forestry research in Thailand are still along the line with those presented in the Thai Forestry Sector Master Plan in 1993. Nearly 20 years have passed; these problems and constraints still remain with additional problems after restructuring of forestry administration in 2002. Some of the main problems affecting forestry research are: Lack of fund and funding continuity, Poor incentives and motivation for staff, Appointment of government officers not based on academic background, Inadequacy of research efforts, Lack of specific institutions responsible for forestry research, Lack of coordination of research efforts at the national level, Poor library and information services, Poor extension and technology transfer activities, and Poor cooperation between the state and private sectors.

- (i) A National Forestry Research and Development Institute should be established in collaboration of Royal Forest Department, Department of National Parks, Wildlife and Plant Conservation, Department of Marine and Coastal Resources, and Kasetsart University Faculty of Forestry. The Institute should be supported by National Research Council of Thailand, National Science and Technology Development Agency, Thailand Research Fund, and Local academic institutions. To address the regional forestry problems the Institute should have four Regional Forestry Research Institutes in Northern, Northeastern, Central and Southern regions.
- (ii) Considering the current research needs the research should be prioritized under the broad areas of research such as Tree plantation development, Agroforestry for efficient land use, Suitable species for particular wood processing industry, Wood energy, Development of machinery and tools for logging and transportation, and Tree plantation capability for pollution mitigation and carbon sequestration.
- (iii) The RFD should establish Demonstration/Model plantations and wood processing plants for demonstration and training in northern, northeastern, central and southern regions.

6. Proposed Forest Resources Management for Sustainable Economy

- (i) Planting: commercial tree species: Zoning, Good planting materials, Financial and taxation incentives
- (ii) Pre-harvesting: management of commercial trees: Thinning and pruning, Utilization of small timber
- (iii) Post-harvesting: development and management of production factors: Guaranteed price, Transportation and product distribution
- (iv) Manufacturing and value-adding: Commercial data center, Development of wood processing, Quality development for export, Branding of products, Certification of product standards.
- (v) Trade: development of marketing system: Enhancement of competitiveness, E-commerce,
- (vi) Research and Development: Problem-based research, Research-based knowledge, Knowledge-based technology, Technology transfer, Innovation.

Chapter 4.

Forest Industry Promotion and Marketing in Thailand

- Nikhom Laemsak

Summary

Wood is an essential natural resource for sustaining rural people's livelihoods. It is utilized as a green material for house construction, furniture making, other wood products and energy for home use. Moreover, it is used by small and medium enterprises (SMEs) to manufacture numerous products. Currently, the potential for wood production in Thailand has decreased rapidly and has now reached a non-self-sufficient level, resulting in considerable amounts of imported wood and wood products. Consequently, there is an urgent need for the promotion of timber production in private plantations, the timber processing industry and marketing of wood products. The TCP Project 'Participation of Tree Plantation Farmers in Sustainable Forest Management' was executed by the Royal Forest Department (RFD) with the main goals of contributing to the diversification of livelihood options, improving environmental sustainability and increasing available wood supply in domestic markets by supporting enabling environments for planting, harvesting and processing of long rotation tree species.

The main objective of the project was to review the current status of the forest industry and marketing of forest products. Formerly, Thailand was one of the leading exporters of wood. The study showed that after the logging ban in 1989, the imported volume of forest products increased continuously. In 2008, the total import value of logs, sawntimber, wood products, pulp and paper and charcoal to Thailand was approximately US\$2 658 million. Exported finished wood products were valued at approximately US\$3 513 million. Goods generated from the secondary processing of wood include: furniture, plywood and veneer, particle board, fibreboard, pulp and paper, and fuelwood and charcoal.

Promotion and incentives have been provided by the government in its drive to make Thailand one of the largest furniture production centres in the Association of Southeast Asian Nations (ASEAN) region. Total wood furniture exports in 2007 were worth 45 724 million baht (US\$1 524 million). The export of furniture and parts was one of the fastest growing export sectors in Thailand in the 1990s and continued growing until 2005. The manufacture of rubberwood furniture and parts is the fastest growing subsector within the furniture industry accounting for 60 percent of total wooden furniture exports. About 1.6 million cubic meters of sawn rubberwood are used annually in furniture manufacture. The main markets for wooden furniture are the United States and Japan, both of which are growing markets for rubberwood furniture. The United Kingdom, Australia, Canada, Malaysia and Germany are other important markets.

At present, there are 21 and 14 plywood and veneer factories, respectively. Most plywood factories produce veneer by themselves. These factories have been facing a shortage of plywood and high cost of production. Some factories import logs for veneer production and re-export or overlay on wood products. Thailand is a net importing country for plywood and veneer. In the wood composite board sector, the particle board industry currently has 20 factories with a total capacity of 3.0 million cubic meters, using rubberwood and bagasse as the main raw material. It began production in Thailand in 1958. Export of particle board in 2008 accounted for 8 586 million baht. The sector also produces fibreboard (hardboard and medium density fibreboard [MDF]): raw materials used are eucalyptus, rubberwood, acacia and bagasse. Demand for wood composites is expected to grow as they substitute for scarce sawlogs and plywood, and there is a consistently growing demand for end-user products.

The pulp and paper industry in Thailand has significantly improved over time as a result of economic growth as well as the price uptrend in the industry globally. Total pulp and paper capacity was calculated at 4.9 million tonnes but production has generated 5.3 million tonnes and consumption 5.9 million tonnes. In the pulp industry, the total production capacity for short fibre pulp was 1.1 million tonnes; over 90 percent was eucalyptus pulp. Pulpwood for fibre consumption in Thailand has been calculated at approximately 6.0 million tonnes; 100 percent of imports comprise long fibre.

Among rural Thais, fuelwood and charcoal are still the main energy sources in the household. The household sector uses about 20 million tonnes of wood annually for fuelwood and charcoal, but wood supplies from around the house (from home gardens, woodlots and public forests) are able to fill the demand. Commercial charcoal is usually produced in brick beehive kilns. Eucalyptus and rubberwood are the main sources for charcoal production.

The National Forest Policy was promulgated in 1985 for long-term forest resource management and development. The policy promoted the wood industry through government and private reforestation that supplied wood for domestic consumption, industries and export. The policy also supported community forests and plantations on government land and farmlands; moreover it promoted wood factories and pulp mills and utilization of wood residues.

However, the Forest Acts have not been very supportive of wood industries. Their main concern has been protecting forests from felling and illegal logging. The Acts have generally controlled wood factories, adversely affecting their business.

In order to review current regulations and incentive systems and to propose necessary measures to support tree farmers interested in growing long rotation tree species, a comprehensive stakeholder participation process was envisaged. Farmers, processors, market representatives and relevant government officials from different institutions participated in the process that included seven field surveys and regional workshops based on participatory rural appraisal (PRA) methodologies. The field surveys and workshops were organized in seven regions selected on the basis of forest type, existing initiatives, cooperative structure and processing capacities. One national workshop was organized towards the end of the process in Bangkok for summarizing the findings and to finalize the recommendations for National Forest Policy revision.

Problems and issues related to tree farming, wood processing and marketing of timber and wood products were identified by the participating stakeholders, including tree plantation farmers, wood manufacturers, provincial officers, provincial industrial council and forest officers at the workshops in seven different parts of Thailand during September to November 2010. Group discussions were held in three groups of tree plantation farmers and manufacturing/marketing/extension agencies. The final recommendations drafted in the plenary discussions are listed below.

1. The RFD in cooperation with the Department of Industrial Promotion (DOIP) and academic institutions should establish a demonstration model for integrated wood processing plants, which should be used for training purposes.
2. The government should establish a Machine Renovation Fund managed by the Ministry of Industry, Ministry of Energy, Ministry of Finance and Board of Investment (BOI), Bank of Agriculture and Agricultural Cooperatives (BAAC) and SME Bank. The funding agencies should provide long-term and soft loan/credit. Upgraded machinery and tools will generate enhanced efficiency and a better management system.
3. The RFD in cooperation with the DOIP should establish training centres for skilled workers and carpenters with proactive curricula that respond to trainees' needs. The trainers should be invited to give hands-on training to stakeholders in their own manufacturing units.

4. The RDF in cooperation with alliance partners should establish a Central Market fully equipped with information/communication technology (ICT). All tree farmers and SME owners should have access to the market that will offer standard prices for their products.
5. The Department of Export Promotion (DOEP) should promote linkages for timber and wood products in international markets with high potential for SMEs. The RFD should help them obtain green certification at low expense.
6. The DOEP, Community Development Department (CDD) and RFD should formulate the strategy for promoting timber and wood products from farmers' tree plantations in domestic markets, i.e. developing a green and low carbon society. The strategy should be implemented nationwide.

1. Background

Wood is an essential natural resource for sustaining rural people's livelihoods. It is utilized as a green material for house construction, furniture making, other wood products and energy for home use. Moreover, it is used by small and medium enterprises (SMEs) to manufacture numerous products. Currently, the potential for wood production in Thailand has decreased rapidly and has now reached a non-self-sufficient level, resulting in considerable amounts of imported wood and wood products. Consequently, there is an urgent need for the promotion of timber production in private plantations, the timber processing industry and marketing of wood products. The TCP Project 'Participation of Tree Plantation Farmers in Sustainable Forest Management' was executed by the Royal Forest Department (RFD) with the main goals of contributing to the diversification of livelihood options, improving environmental sustainability and increasing available wood supply in domestic markets by enabling environments for planting, harvesting and processing of long rotation tree species.

In order to review current regulations and incentive systems and to propose necessary measures to support tree farmers interested in growing long rotation tree species, a comprehensive stakeholder participation process was envisaged. Farmers, processors, market representatives and relevant government officials from different institutions participated in the process that included seven field surveys and regional workshops based on participatory rural appraisal (PRA) methodologies. The field-based surveys and workshops were organized in seven regions – by the Lead National Consultant (LNC) – selected on the basis of forest plantation type, existing incentives, cooperatives' structure and wood processing capacities. A national workshop was organized at the end of the process in late March 2011 to summarize the findings and finalize the recommendations for National Forest Policy revision.

Project activities were designed to enhance enabling environments for planting, harvesting and processing of long rotation tree species. The anticipated outputs of the project are:

- 1) Existing situation reviewed, relevant regulations and incentive systems for planting of long rotation tree species drafted through wide stakeholder consultation for endorsement by the Ministry of Natural Resources and Environment (MONRE);
- 2) Existing situation reviewed, relevant regulations and incentive systems for the development of wood processing industries sourcing long rotation tree species drafted through wide stakeholder consultation for endorsement by MONRE;
- 3) Gaps in training and extension services identified to advance planting and industrial development for long rotation tree species; and
- 4) Capacity of RFD officers enhanced, particularly with regard to policy review and incentives' system development for market-based tree planting promotional activities, through on-the-job training.

Scope of the report

The main objective of the project was to review the current status of the forest industry and marketing of forest products in Thailand. Key problems and important issues addressed at seven regional workshops and at the national workshop together with the results from seven field surveys are summarized with recommendations.

2. Introduction

The Kingdom of Thailand is located in the southeastern part of continental Asia, bordered by Myanmar, the Lao People's Democratic Republic, Cambodia and Malaysia. It has a land area of 51.3 million hectares and a population (in 2010) of 68.1 million. Thailand is divided into five regions; Northern, Northeastern, Central, Eastern and Southern, with a total of 77 provinces and 716 districts; each district is further divided into subdistricts (tambons).

Estimates of forest cover include 15.9 million hectares and 19.0 million hectares. A change in the methodology used to estimate forest cover led to a significant increase in reported forest cover between 1998 (13.0 million hectares) and 2000 (17.1 million hectares).

Deterioration of Thai forests

The country has been rapidly losing its forests to agriculture and other land uses. In 1961, they covered 53.3 percent of the land area. In 1998, they covered only 25.3 percent and then increased to 33.1, 32.7 and 33.3 percent in 2000, 2004 and 2009, respectively. In addition, many are now seriously deficient in growing stock and in biodiversity.

Deforestation has affected agriculture, energy production, transportation, industry and human settlements. As the topsoil from the hills is washed off into the rivers, flooding becomes more serious after heavy rains and water shortages become more common during prolonged dry periods.

After a devastating flood wiped out two villages in 1988, public opinion pressed the Royal Thai Government (RTG) to impose a total ban on logging in 1989. But the ban stopped the legal domestic supply to wood processing plants leading to imports of logs and widespread illegal logging.

The 40 percent forest cover goal and reforestation

The RTG has attempted to rehabilitate forest resources. Forest policy determined the official goal of at least 40 percent national forest cover but the present forest area is only 33.3 percent; a massive reforestation exercise would be necessary to address the deficit of 6.7 percent or 3.4 million hectares.

Wood and wood products: perspective

Formerly, Thailand was one of the leading exporters of wood. The study showed that after the logging ban in 1989, the imported volume of forest products increased continuously. In 2008, the total import value of logs, sawntimber, wood products, pulp and paper and charcoal to Thailand was approximately US\$2 658 million. Exported finished wood products were valued at approximately US\$3 513 million.

Table 1 shows the import/export of wood product commodities from 1998 to 2008.

Table 1. The import/export of wood product commodities in million baht, 1998-2008
(US\$1.00 = 30 baht)

	Roundwood and sawnwood		Wood products & wood furniture		Wood pulp, paper & paper board		Wood energy (fuelwood, charcoal)	
Year	Import	Export	Import	Export	Import	Export	Import	Export
1998	8 920	2 577	1 404	25 540	22 407	23 316	12	52
1999	11 283	4 108	1 299	29 383	24 314	25 159	24	61
2000	14 516	5 233	1 938	34 938	33 298	30 678	64	20
2001	15 267	5 517	2 337	37 991	32 795	32 490	57	39
2002	16 408	7 131	2 700	41 197	34 599	29 949	34	48
Avg./year	13 279	4 913	1 936	33 810	29 483	28 318	38	44
2003	17 750	9 192	3 199	20 641	42 576	34 075	55	61
2004	21 864	11 945	5 150	46 779	41 396	34 036	-	-
2005	24 411	11 374	5 526	49 289	52 620	40 127	75	35
2006	18 860	13 087	4 918	46 119	53 321	45 600	108	29
2007	15 942	12 354	6 669	45 724	56 984	47 235	133	81
2008	16 333	11 169	6 936	42 298	55 796	45 789	195	147
Avg./year	19 193	11 520	5 399	34 093	50 448	41 143	113	70

Source: Royal Forest Department

The industrial utilization of wood in Thailand has been more efficient via integration as depicted in Figure 1.

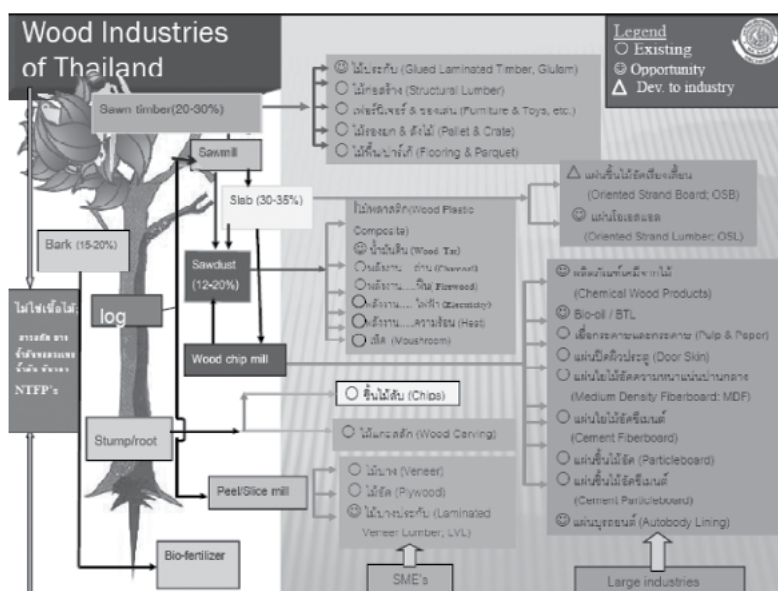


Figure 1. The industrial utilization of wood in Thailand

Thai wood product resources

There are two important resources for wood industries in Thailand:

Natural forests

Forest cover in Thailand comprises tropical evergreen, mixed deciduous, dry dipterocarp, pine and mangrove forests. The remaining 33.3 percent of forest area is natural conservation forest. At present, wood as raw material is imported from neighbouring countries such as Malaysia, Myanmar, Lao PDR, Cambodia and Indonesia and from other countries in North America, Africa, Australia and Europe.

Forest plantations

Reforestation in Thailand dates back to 1906 when teak was planted by foreign concessionaires. From 1906 until 1960 small areas were planted annually. The reforestation programme gradually expanded after 1961 mainly in the northern and northeastern regions. The government proceeded with forest plantation for the wood industry after promulgation of the Forest Plantation Act 1992. Since then reforestation increased substantially, especially by the private sector.

Eucalyptus

Planted by the government project: Eucalypt plantation was started to restructure farmers' production with other fast growing trees such as *Acacia mangium* to substitute for four economic crops – rice, cassava, coffee and pepper. This achieved 108 800 hectares during 1994-1996.

Planted by the private sector: Wood-based industry investors focused on producing paper pulp, wood chips and wood-based panels; there are only four major company groups that planted on their own land and via the farmer contracting system. In 2010, the Advance Agro Alliance, SCG, Panchapol and Vanachai groups planted approximately 800 000 hectares. At three to five years, pulpwood was harvested and sent to factories at an average price of approximately US\$30-40 per tonne depending on the log diameter. In 2004-2006, the Ministry of Agriculture and Cooperatives encouraged farmers to plant eucalyptus, especially in agroforestry systems.

Teak

The RFD conducted a project on Farmer Extension for Forest Plantation for five years (1991-1995). The next phase (1999-2005) extended the target to 1.28 million hectares. During 1994-1996 teak was planted on 88 000 hectares.

The government emphasized economic and indigenous forest tree species in the first phase and eucalyptus was promoted on half of the area in the second phase. The Forest Industry Organization (FIO), a state enterprise, holds the largest area of planted teak in the north of Thailand. In 2011, part of these teak plantations was certified by Forest Stewardship Council (FSC).

Rubberwood

In 2010, Thailand had the second highest area of planted rubberwood in the world (2.8 million hectares), exceeded only by Indonesia (3.4 million hectares). Rubberwood is grown for latex (Thailand exported 2.74 million tonnes in 2009, top-most in world ranking); it is planted in the south (83 percent), east (13 percent) and northern and northeastern regions (4 percent).

Rubberwood provides standard latex from 25-year-old trees that are then cut as part of the replanting programme. The RTG established the Rubberwood Planting Aid Fund in 2011 which paid 11 000 baht/rai¹ (US\$2 290 per hectare) for replanting. Each year the cutting target is 56 000 hectares, which supplies 250 cubic meters of wood per hectare. Approximately half is sawnwood to be used mainly for furniture production and the rest is tops and branches with residues from sawmills to be used for wood-based panels and fuelwood. Rubberwood is used to produce furniture, toys, particle board, MDF, parquet flooring, frames, charcoal and so forth.

In the past wood was sourced from natural forest but now most of the natural forest is reserved for environmental services. Thus current sources of wood are imported wood, rubberwood and wood from plantations. Thinning from plantations occurs at three to seven years. These are small logs with 3-6 inch diameter and a small portion of heartwood with low strength. The wood is highly susceptible to insects and fungus. The cutting time of this juvenile wood should be extended or it should be used as raw material for wood composites.

3. Processing, utilization and marketing of wood and wood products

Primary processing

Sawing

At present, most government-sanctioned sawmills are closed because of the logging ban. However, 500 sawmills are still active. The government sawmills were almost exclusively rubberwood sawmills using bandsaws in order to enhance lumber yield.

Wood preservation

Generally, wood from fast growing trees is protected from destructive agents via non-chemical or chemical treatment.

- Non-chemical: Soaking in running water, boiling in water, heat treatment, etc. to prevent insect borers.
- Chemical: Brushing or spraying, dipping, soaking, etc. with chemical solutions (e.g. copper chrome arsenic for exterior use and boron compound or Pyrethroid for interior use).

Secondary processing

Furniture and joinery products

Furniture

The Thai furniture industry has three sectors: export production, domestic market production and non-recorded production for local and national markets.

Expansion is export driven. Promotion and incentives have been provided by the government in its drive to make Thailand one of the largest furniture production centres in the ASEAN region. Total wood furniture exports in 2007 were worth 45 724 million baht (US\$1 524 million). The export of furniture and parts was one of the fastest growing export sectors in Thailand in the 1990s and continued growing until 2005. In terms of value, growth was about 10 percent *per annum*. It is expected that the

¹ 1 hectare = 6.25 rai.

upward trend in the furniture industry will continue slowly. The manufacture of rubberwood furniture and parts is the fastest growing subsector within the furniture industry. Rubberwood furniture accounts for 60 percent of total wooden furniture exports. About 1.6 million cubic meters of sawn rubberwood are used annually in furniture manufacture.

The main markets for wooden furniture are the United States and Japan, both of which are growing markets for rubberwood furniture. They accounted for about 60 percent of furniture exports in 2005 but this gradually declined until 2010. The United Kingdom, Australia, Canada, Malaysia and Germany are other important markets. Prospects in domestic markets are rather good because of the gradually increasing purchasing power of the Thai people, the growth in the construction sector which implies increased demand for furniture and consumer preference for wooden furniture.

Joinery and other wood conversion

This industry comprises a wide range of enterprises such as parquet floor, door, window frame, kitchen cabinet, wood utensil and wooden toy manufacture. The values of exports of converted wood products have experienced an upswing.

Plywood and veneer industry

Currently there are 21 and 14 plywood and veneer factories respectively. Most plywood factories produce veneer by themselves. These factories have been facing a shortage of plywood and high costs. Some factories import wood for veneer production and re-export or overlay it on wood products. About 75 percent of the plywood consumed is used in construction, 20 percent in furniture manufacture and 5 percent for other uses such as containers and advertising boards. There has been an increasing scarcity of veneer compounded by high prices. Thailand is a net importing country for plywood and veneer.

Wood composite boards

Particle board

The particle board industry in Thailand started in 1958. The larger factories have been established since 1986. At present, there are 20 particle board factories with total capacity of 3.0 million cubic meters, the main raw material being rubberwood and bagasse. In 2008, exports of particle board amounted to 8 586 million baht. Production capacity has been on the rise, focusing on export.

Fibreboard

There are two types of fibreboard production in Thailand: hardboard and MDF. Raw materials comprise eucalyptus, rubberwood, acacia and bagasse. The annual production capacity is around 2.0 million cubic meters by 11 factories. Exports of fibreboard were worth 8 055 million baht in 2008. There is an increasing preference for fibreboard over particle board.

Cement board

Wood-Wool Cement Board, the first plant in Thailand, was established in 1956 using *Tetrameles nudiflora* as raw material. Capacity is about 1 000 tonnes/year. The second and third plants produced wood cement particle board (using the dry process) from eucalyptus. In 2000-2005, wood cement fibreboard (wet process) for exterior sidings was launched successfully.

Demand for all wood composite boards is expected to grow for a number of reasons, mainly as substitutes for scarce sawlogs and plywood, and because of growing demand by end-users.

Pulp and paper industry

In 2003 the pulp and paper industry in Thailand was boosted by national economic growth as well as the global uptrend in price adjustment. The total pulp and paper capacity was calculated at 4.9 million tonnes but production generated 5.3 million tonnes and consumption accounted for 5.9 million tonnes.

Pulp industry

In 2009, total production capacity for short fibre pulp was 1.1 million tonnes; over 90 percent was eucalyptus pulp. Pulpwood use for fibre consumption was about 6.0 million tonnes. In 2004-2008, domestic pulp consumption was estimated to grow 6 percent annually in line with growth in the paper industry. Thailand imported 100 percent of long fibre. Recycled paper consumption increased in response to higher utilization of Kraft paper and paperboard. In addition, environmentally friendly products have played an important role in stimulating the use of recycled pulp.

Paper industry

Kraft paper has experienced increased domestic demand. Printing and writing paper demand was driven by the export sector and the boom in publishing and advertising sectors. As a result, per capita consumption of paper also continued to grow.

Fuelwood and charcoal production

Modern energy sources such as petroleum products are increasingly being used in the daily lives of Thai people. Among rural Thais, however, fuelwood and charcoal are still the main energy sources in the household. The household sector uses about 20 million tonnes of fuelwood and charcoal annually, but wood supplies from around the house, (from home gardens, woodlots, and public forests) are able to fill the demand. Commercial charcoal is usually produced in brick beehive kilns. Eucalyptus and rubberwood are the main resources for charcoal production. However, good quality charcoal also comes from mangrove forest, but quantities are declining due to destruction of the forest. Minimum charcoal consumption annually is approximately 3 million tonnes. Demands for charcoal and charcoal briquettes for export have gradually increased. In addition, wood pellets are also in higher demand in the Asian export market.

4. Future prospects and strategy

Hardwood sawmilling

In the present situation and with the present structure, it is difficult to find much specific strength in the industry. The only aspects which can be considered as strengths are the knowledge of local conditions and markets. The biggest weakness of the industry is the limited and insecure log supply from both domestic and foreign sources. The structure of the industry is also weak, with too many small and inefficient sawmills. Technically the mills have not been adapted to the present log supply which reduces the recovery rate and overall efficiency. Yet, the industry cannot invest to modernize itself under the present insecure log supply situation.

Rubberwood sawmilling

The greatest strength of the rubberwood sawmilling industry is its domestic raw material base, which still allows it to expand. The industry also has a relatively long history in the country, which allows it to have a good understanding of the processing requirements of rubberwood. There is a ready market for sawn rubberwood, and competition is lower because it is grown extensively in only a few countries. In addition, sawmills can now utilize other plantation-grown species.

The principal weakness is the poor technical standard of the small mills. Another is the insecure log supply during the rainy season due to the inadequate road network and remote location of many of the plantations. In addition, since 2002, the sharp increase in latex price has had a negative impact on log supply.

Plywood and veneer manufacture

The strengths and weaknesses of the plywood industry are the same as those of the hardwood sawmill industry. In addition, the whole existence of the plywood industry is dependent on import duty. In the future, only modern and efficient mills can be internationally competitive, and only if raw material can be procured at reasonable cost. Small logs from plantation-grown species are also used to produce veneer and plywood.

Manufacturing of furniture and joinery products

The production technology varies greatly from completely manual, to mechanized production lines employing computerized numerically-controlled machine units. Rubberwood furniture and kitchen cabinet factories tend to be more modern than the traditional furniture factories. Vertical integration which improves wood raw material usage is common, and many factories also produce goods other than furniture components.

The Thai furniture industry still has potential for substantial growth because rubberwood is increasingly accepted in the international market, and rubberwood resources allow a considerable expansion of sawnwood, and therefore of furniture production. However weaknesses still exist.

The scarcity and high cost of traditional furniture species, such as teak and rosewood, threaten the existence of the old backbone of the Thai furniture industry.

Manufacture of composite boards

Technology used in the manufacture of particle board and fibreboard is modern. However, some mills use second-hand machinery. Also, rubberwood resources in the south present prospects for future growth. However, the rapid expansion of the production capacity of panel product mills will likely bring fierce competition for market share and wood raw material. The over-capacity has forced mills to export. An added threat to the competitiveness of locally produced panels is the high price of adhesives. The mills are based on plantation wood to be obtained from the open market.

Manufacture of pulp and paper

The pulp and paper industry in Thailand is privately owned, and the paper mills are located mainly within 100-150 kilometers of Bangkok. Originally, the main reason for their concentration was that most mills were dependent on the use of recycled fibre as raw material and therefore needed to be within reasonable reach of the main population. Furthermore, the converting industries and other end-users were located in the environs of Bangkok. The strengths of the industry are short fibre supply from eucalyptus and the weakness is no long fibre supply.

Wood energy

There are other uses for woodfuel in Thailand apart from traditional cooking fuel. Owing to the environmental impacts of fossil fuels and rising oil prices, wood can serve as an alternative substitute for energy. The Master Plan of Substituted Energy deems more than 3 000 MW could be met by wood biomass by 2020. The plan also considers wood to produce liquid fuels.

Policy and legislation

The National Forestry Policy and legislation have the following main objectives:

1. To stop the destruction of the remaining natural habitats and biodiversity.
2. To rehabilitate deteriorated watersheds.
3. To promote social justice and equity in forest-based rural development.
4. To meet most of the national needs for forest-based products from domestic sources.
5. To help to increase the incomes of rural communities and strengthen the national economy.
6. To support international efforts to control global warming.

The specific policies on forest-based industries are:

- (i) The state has promoted rural industries and processing based on non-wood forest products.
- (ii) The country aims for self-sufficiency in most wood-based products.
- (iii) Export of roundwood has been banned.
- (ix) Processing and in-country transport of raw materials and products has been deregulated.
- (x) Effective safeguards have been adopted by existing and new industries to protect the environment.

National Forest Policy

The National Forest Policy was created in 1985 for long-term forest resource management and development. The policy aimed to enhance the wood industry through government and private sector reforestation to supply wood for domestic consumption and to promote exports. The policy also enhanced community forestry as well as plantation reforestation on state and farm land. Moreover, it promoted the utilization of wood residues in wood factories and pulp mills.

The Forestry Sector Master Plan

The Forestry Sector Master Plan was formulated during 1990-1993 with technical assistance from the Government of Finland. The plan indicated the approach for promoting rural industries, non-wood forest products and reforestation as a source of wood. The strategy emphasized that there was a shortfall of raw materials from the management of forest plantations, community and private forests at that juncture.

The Forestry Act

The government originally promulgated the act to prevent illegal logging and other violations. The act has generally controlled wood factories with a negative effect on business. The Forestry Act 1941 has remained stagnant for 70 years; the Forest Plantation Act 1992 was promulgated to promote forest plantations and protect investors' rights.

Funding support

The government launched a funding support policy for forest plantations and a farmers' extension programme. The National Rubberwood Policy committee took responsibility for the rubberwood industry and promoting rubberwood products for domestic consumption and export. The Rubberwood Replanting Aid Fund consented to 11 000 baht/rai (US\$2 290/hectare) within seven years for the replanting programme.

One Tambon, One Product

RTG launched the 'One Tambon, One Product' or OTOP campaign to promote specific indigenous products. Wood and non-wood forest products are famous items in this respect.

Wood-based products standard

Almost all wood-based products meet the specifications of the Thai Industrial Standard Institute (TISI) Ministry of Industry and the National Bureau of Agricultural Commodities and Food Standards (ACFS), Ministry of Agriculture and Cooperatives.

Certified forests

More than 20 000 hectares of planted forests have been certified by the FSC as being under sustainable forest management, which addresses the economic, social and environmental functions of forests. The number of certified forests has increased in response to consumers' demands in rapidly developing markets.

6. Field surveys and workshops on forest industry promotion and marketing of long rotation tree species

A comprehensive stakeholder participation process was envisaged in order to review current regulations, incentive systems and propose necessary measures to support tree farmers interested in growing long rotation tree species. Farmers, processors, market representatives and relevant government officials from different institutions were involved in the process that included seven field surveys and regional workshops based on PRA methodologies. The field surveys and workshops were organized in seven regions selected on the basis of forest type, existing initiatives, cooperative structure and processing capacities. One national workshop was organized towards the end of the process in Bangkok for summarizing the findings and to finalize the recommendations for policy revision.

Problems and issues related to tree farming were identified by stakeholders through field surveys and workshops organized by the LNC in seven different parts of Thailand during September to November 2010 following the methodology given below.

The field survey used PRA techniques to interview the stakeholders. Subsequently, workshops were organized at seven different locations attended by stakeholder representatives. Field survey results were presented for feedback and modifications. Group discussions were held among three groups of tree plantation farmers, manufacturing and marketing and extension agencies. Recommendations were drafted during the plenary session.

Periodic wrap-up meetings were also organized to monitor results and streamline the procedure.

Survey and workshop details

- (i) Lopburi and Saraburi. Field survey: nine participants; workshop: 31 participants.
- (ii) Nakhonrachasima and Burirum. Field survey: six participants; workshop: 31 participants
- (iii) Nongbualumphu and Udonthani. Field survey: ten participants; workshop: 31 participants
- (iv) Nakhonsawan and Kumpangphet. Field survey: ten participants; workshop: 31 participants
- (v) Chiengrai and Phayao. Field survey: ten participants; workshop: 44 participants
- (vi) Nakhon Si Thammarat and Suratthani. Field survey: ten participants; workshop: 44 participants
- (vii) Bangkok, Patumtani, Nontaburi, Chachengcho and Nakhonnayok. Field survey: ten participants; workshop: 44 participants

7. Recommendations

Wood processing/utilization

Problem: Wood processing plants

- (i) Tree plantation farmers' wood processing factories should be permitted on the basis of raw material from tree plantations.
- (ii) Medium- and large-scale tree plantation farmers who own more than 20 rai will establish their own wood manufacturing plants using their planted wood and that bought from neighbouring plantations

Recommendations: Allow the establishment of appropriate processing plants. The RFD in cooperation with the DOIP and academic institutions should establish demonstration models of integrated wood processing plants for training purposes.

Problem: Obsolete machinery

- (i) Upgrading of equipment used in wood manufacture is needed. Long-term loans for modern equipment should be provided in the context of tree plantation projects.

Recommendations: The state should establish a machine renovation fund managed by the Ministry of Industry, Ministry of Energy, Ministry of Finance and BOI, BAAC and SME Bank. Funds provided may be long term and with very soft loans/credit.

Problem: Training needs

- (i) There should be training centres at the subdistrict level to address the problem of lack of skilled carpenters.
- (ii) Wood furniture makers and interior designers need to broaden their skills to appeal to wider markets (not just the domestic market).
- (iii) There is a need for training on wood products and design for wood industry workers.
- (iv) Standards for wood products should be established for wood from sustainably managed plantations.
- (v) There is high turnover rate and migration of wood workers and carpenters.

Recommendations: The RFD in cooperation with the DOIP should establish appropriate training centres with proactive curricula.

Marketing

Problem: Central market/distribution channels

- (i) There is lack of information on how and where to sell wood; there should be a central market that farmers can trust.
- (ii) There should be local market places for tree farmers where timber buyers and sellers can meet directly without interference by intermediaries. There should be a standard quotation price for wood from the central market.
- (iii) Information centres and the central market should have sophisticated ICT support to assist farmers.
- (iv) Intermediaries keep the price of wood low in the domestic market. As such, farmers opt to avoid tree felling. Intermediaries are involved in price fixing to their advantage.
- (v) Cooperatives offer low prices for wood. The central market price should be the standard price for plantation timber.
- (vi) There should be standard pricing for tree plantations similar to that of rice, rubber and other agricultural commodities.
- (vii) There should be an estimated economic value for standing trees. These values to be used for valuation of tree plantations and pricing of timber.
- (viii) The price of timber varies due to the quality of wood, difficulty in wood cutting and piling and the distance for timber transportation.

Recommendation: The RFD in cooperation with alliance partners should establish a central market that provides ICT support for farmers. All farmers should have access to standard product prices.

Problem: International market

- (i) Large-scale tree plantation farmers would like to export teak wood from their own plantations as done by the FIO.
- (ii) Export promotion needed for timber and wood products from tree plantations.

Recommendation: The Department of Export Promotion (DOEP) should develop better linkages for timber and wood products on the international market; this will help to promote SMEs with high potential. The RFD should help them obtain green labeling for their products at low expense.

Problem: Promote the domestic market

- (i) Wooden furniture and other products should be promoted in domestic markets.
- (ii) There should be wider promotion of products delivered by small-scale plantations.

Recommendation: Strategy formed and implemented.

Chapter 5.

Formulation of a new National Forest Policy addressing Issues that made the 1985 Forest Policy ineffective

- J. K. Sharma & K. Pragtong

Summary

The current National Forest Policy (NFP) of Thailand declared in 1985 is a major policy document in the sector's history. There were many expectations from the NFP for a time when anthropogenic pressure on forests was enormous – settlements inside the reserved forest areas besides illegal cutting and trade of timber resulting in large-scale deforestation. However there were inadequacies in the NFP and it became outdated quickly due to some major changes such as a logging ban and altering the forest area under conservation and economic forests. In addition to the existing forest legislation, the Forest Act 1941 (amended 1989), which of course did not have the philosophy of the NFP and the Tree Plantation Act (Re-Afforestation Act) promulgated in 1992, which was to have strongly supported the Forest Policy despite its bias for a reforestation drive to increase forest, had no beneficial effects. This was primarily because of the contradictions in both the acts, and the Tree Plantation Act, instead of promoting tree cultivation, created numerous obstacles/problems in the form of mandatory licences that discouraged people from growing trees on private lands and utilize them in small and medium enterprises.

This necessitated a major revision of the NFP to make it environmentally- and people-friendly as well as addressing the current needs of forestry in the country.

In the Policy Vision, the proposed Forest Policy shall contribute towards maintaining and managing the required forest cover of the country, national security, securing environmental benefits, reducing carbon emissions, enhancing the quality and health of forests and wildlife in line with scientific principles, while meeting the livelihood aspirations of forest-dependent communities and farmers, forest-based industries and the social, cultural, environmental and economic well-being of the people of Thailand in the future.

1. Introduction

The NFP is an expression of the national will with regard to the forestry sector. It reflects the national values and is the mechanism by which the government ensures that society gets what it wants from the sector. The NFP also provides directions to national forestry institutions, in both public and private sectors. It forms the basis for legislation.

When a policy no longer reflects the values, needs and aspirations of society, it ceases to be relevant and must be updated. Implementation of policy needs a legal basis; when policy changes, the laws may no longer be consistent with the policy, and must be amended. Assessment of the NFP and legal framework is therefore an important part of the planning process.

Forestry sector planning necessarily starts from a consideration of land use, because forestry and agriculture are the two largest land-using sectors. In the absence of a national land-use policy the 1985 NFP is used as a *de facto* land-use policy.

Since the establishment of the Royal Forest Department in 1886, various efforts have been undertaken to conserve the forests and forest biodiversity of Thailand. The early policies were focused on the problem of excessive, unregulated teak harvesting. Selective harvesting of the trees was allowed from the very beginning and continued until logging was banned. Reforestation was initiated in 1906 and was widely practiced by 1910. However, up to the present time, the area reforested under this policy has only been about 3 million *rai*.¹

Forest policies were given due consideration in all National Economic and Social Development Plans, started in 1961, recognizing that forest resources are directly and indirectly beneficial to economic and social development. In the 4th National Economic and Development Plan (1976-1981), strong emphasis was given to conserving at least 40 percent of the total area of the country under forest cover. Due to political, economic and social pressures, the goal was not realized. The target was once again highlighted in the seventh five-year plan (1992-1997).

In 1985, national forest policy was formulated that differed from previous policies. It emphasized interagency cooperation, involvement of the private sector, improved and flexible administration and so forth. In 1987, The Royal Forest Department (RFD) classified the mangrove land-use zone and established urgent strategic management measures for mangrove forests and coastal resources, including coral reefs. Other policy measures include the nationwide ban on logging in 1989, outcomes of the first conference on Biodiversity in 1989 and the initiation of forest zoning in 1989.

However, the logging ban that came after the NFP had already been announced made the policy redundant. Similarly, the proportion of forest under economic and conservation forests was also amended giving more emphasis to conservation in the wake of forest resources depleting at an alarming rate. What was more important was that the NFP did not address the growing demand for fuelwood and timber in the country and livelihood issues of the rural poor. In addition, some of the forest legislations such as the Forest Act and Tree Plantation Act did not support the NFP well and at times contradicted each other.

The TCP project, TCP/THA/3203: Participation of Tree Plantation Farmers in Sustainable Forest Management, executed by the RFD with the support of the Food and Agriculture Organization of the United Nations (FAO) aims to contribute to the diversification of livelihood options, improve environmental sustainability and increase domestically available wood supply through creating enabling environments for planting, harvesting and processing long rotation tree species; it recommended suitable amendments in the NFP and the forest laws in order to achieve these objectives.

With this in view, the 1985 NFP is reviewed identifying shifts over the years and its inadequacies while justifying the need for a revised Forest Policy considering the changed forestry scenario in the country almost three decades after the NFP was enunciated.

2. Review of the National Forest Policy 1985

2.1 Background and context

In the contexts of conserving natural forests, checking forest degradation and improving wood supply after the logging ban, the NFP needs reviewing to enhance natural resources and the involvement of people and industry in private forest management. The NFP has made adequate provisions for

¹ 1 hectare = 6.25 *rai*.

private/public participation in forest management, improving tree cover and generating wood/timber resources for supporting wood-based industry. However, this philosophy is not reflected in the underlying legislations as they were enacted much earlier than the NFP. The Plantation Act, promulgated after the NFP and which was designed to help people in re-afforesting degraded forest lands became a law that restricted people in cultivating and utilization of trees. Such restrictions only reflect weakness in the system.

Even some of the favourable clauses in the Plantation Act could not encourage people to adopt tree cultivation in private lands, mainly because of unresolved land rights/tenure issues.

In order to advance the cause of sustainable forest management, several important issues need to be addressed. Like all countries, Thailand must develop a forest policy and associated legislation in conjunction with a raft of other policy initiatives. Forest policy cannot survive in isolation. Consideration must be given to a holistic approach to land and forest resource management which provides for the needs of the people while at the same time ensuring the long-term sustainability of the resources.

The approach taken can vary according to circumstances, but some fundamental principles apply. They include: the active participation of all stakeholders and the principle that all concerns should be noted and acted upon (failure to do this results in an 'us and them' situation in which the 'losers' refuse to accept the decisions taken); equity for all and an honest, open, auditable process of policy development; security of land tenure (to provide an incentive for resource users to consider the long-term effects of their practices and whether they are sustainable); an provision of alternative options from which economic wealth can be generated (including alternative wood and non-wood resources and alternative methods of utilizing them).

Concomitant is the urgent need for research into all of the issues facing the forestry sector. Forest ecology and management; economics; sociological impacts; soil, water, environmental and ecological conservation/protection issues; livelihoods of rural people; and fuelwood and timber requirements are but a few of the matters to be addressed. In common with other countries, there is an ongoing need for education and training and extension, both within the forestry sector and for the wider population.

Even with the best intentions in formulating and implementing a policy and the associated legislation, there will always be a requirement for surveillance and enforcement. This can only work in the long term if the underlying policy and laws being enforced are equitable and just.

2.2 Evolution of the National Forest Policy

Since the establishment of the RFD in 1896 until the imposition of the logging ban, Thailand promulgated four main forest policies. The Forest Protection Act of 1913 set out principles for the long-term exploitation of forests benefiting the state.

The early period of forest development up to 1932, under the absolute monarchy system, consisted of exploitation of natural forests only. Little was done to formulate policy as little need was perceived. A Forest Department was established and perhaps the most far reaching decision was to vest all forest land within the purview of the king. Several other reforms included the introduction of a teak management system and the initiation of forestry training.

The period from 1932 through to 1956, considered to be the crisis period, saw the introduction of the Forest Reserve Act and the Forest Act. Subsequent acts were either supplementary or amendments to them. These acts were modelled on the British management system being used in neighbouring Burma (Myanmar). They focused on the needs of the government and not of the people. In fact, in

the case of reserves, they could be gazetted but could not be de-gazetted even if it was shown that de-gazetted would benefit the people. People occupying land without official title (i.e. all the rural poor) had no rights to the land.

This situation created some of the problems faced today where people with no legal access to the land they need for their subsistence simply encroached into reserves with little or no interest in the long-term protection of the forest. Today most reserves previously set aside have been destroyed or severely degraded by this process, mainly due to anthropogenic pressure. The start of the modern era after 1956 witnessed the training of foresters abroad and the initiation of the country's first full-scale inventory.

The First National Economic and Social Development Plan (NESDP) in 1961 aimed to protect 50 percent of Thailand's area as forests. The use of the concession system was re-introduced in 1965 with control to be spread over a number of stakeholders. In reality the loggers and the Forest Industry Organisation had control over the forests. The forests were rapidly over-cut and degraded. The second NESDP (1967) reduced the area to be protected to 40 percent.

In 1975, access to nearly 75 percent of the forest was limited, officially to protect the forest but probably to curb insurgency as well. In an attempt to unify forestry policy in Thailand, the Forest Department established a committee in 1982 to draft a national policy. The process was detailed with extensive public hearings and input. The policy was approved by the cabinet in 1985. This policy covered most aspects of concerns in forestry prevailing at that point of time. In the period of the 5th NESDP (January 1985), the cabinet approved the appointment of the National Forest Policy Committee. The committee was assigned to draft a National Forest Policy and operational plan and submit to the cabinet within one year. The cabinet approved the National Forest Policy on 3 December 1985.

Finally, the first formal National Forest Policy was 'announced' in 1985 – emphasizing economic or production forests and conservation or protected forests. It divided the 40 percent of land under forests into 25 percent for economic forests and 15 percent for conservation forests. At least 160 000 hectares were to be maintained as mangroves. Insurgents encouraged continued cutting of the forest, partly to fund their activities. However, due to various pressures, in particular the devastating floods in southern Thailand (1988), the Royal Thai Government (RTG) officially cancelled all concessions and imposed a 'total logging ban' in natural forests in January 1989. Since then, the NFP has been amended to encourage forest protection. In 1991, conservation forests were gazetted to cover 27.5 percent of Thailand's total land area. However, considerable areas of conservation forest exist only on paper.

2.3 The National Forest Policy 1985

NFP goal: One of the main goals was the revival of the target to maintain 40 percent of the area of the country under forest cover of which 15 percent would be designated protected forest and 25 percent as commercial forest. Over the years, there have been changes in the forest policy of the RTG according to five-yearly NESDPs. For example the aforesaid figures were changed later into 25 percent protected forest and 15 percent as commercial forest after the 1989 logging ban.

Principles of the NFP: The policy seeks to establish long-term coordinated management of forest resources alongside other natural resources. Within the concept of management there exists the concept of perpetual benefits to people, maximizing national social, economic and environmental benefits, while at the same time ensuring national security.

Within the NFP there is recognition of the need to retain forest for the protection of soil and water resources. This requires management of issues such as fires, shifting cultivation and forest clearance by rural people.

Other sections deal with research, education, enforcement of forest law, efficiency of timber production and control of corruption. This last point may be the Achilles heel of the process if not well controlled.

Reforestation and afforestation are seen as important initiatives required for supplying future wood needs. This part of the NFP encourages the private sector to become involved in tree planting projects for both domestic and export supply. There is even recognition that wood energy substitution for fossil fuel could reduce the country's dependency on oil imports.

NFP statements/guidelines: To achieve long-term and coordinated national forest administration and development and for better understanding between state and private sectors, the NFP states that:

1. Long-term guidelines for forest management and development shall be established to maximize national social and economic benefits and national security, with sufficient measures provided for environmental protection. Emphasis shall be placed on harmonized utilization of forest resources and other natural resources.
2. Roles and responsibility sharing among various government agencies and the private sector in forest management and development shall be promoted.
3. National forest administration shall be re-organized in line with the changing quality and quantity of forest resources and environment.
4. Forty percent of the country area shall be kept under forests. The forest area shall be divided as follows:
 - 4.1. *Protected forest: 15 percent of the country area shall be kept as protection forests for nature conservation, recreation and environmental quality protection.*
 - 4.2. *Production forest: 25 percent of the country area shall be designated as production forest to produce timber and other forest products.*
5. Public and private sectors together shall develop and manage the forest area to achieve the objective of providing perpetual direct and indirect benefits to the country.
6. Science and technology to increase the efficiency of agricultural production shall be enhanced to reduce the risk of the forest being destroyed to increase agricultural land.
7. The state shall establish a forest development plan as part of the natural resources development plan in the National Social and Economic Development plan to harmonize mutual utilization action between forest resources and other natural resources.
8. Efficiency in timber production shall be increased through appropriate forest management techniques using both selection and clear cutting systems. In the clear cutting system, the cleared area shall be replanted immediately.
9. To conserve and protect the natural environment, the state shall accelerate the city planning process and designate specific areas for forest residential, rural and agricultural areas in each province to prevent forest land encroachment.
10. A National Forest Policy Committee shall be established under the Forest Acts for policy formulation, supervision and management of national forest resources.
11. The state shall undertake extension programmes to create public awareness, instil positive attitude and propagate proper skills on judicious forest use, as opposed to the negative effects of forest destruction and wasteful use of forest resources.
12. The state shall promote reforestation by the public and private sectors for domestic industrial consumption. Export of wood and wood products shall be encouraged. Community forestry such as reforestation on public land by the private sector, tree planting on marginal agricultural land and establishment of forest woodlots for household consumption shall also be promoted.
13. The state shall encourage integrated wood utilization and pulp and paper industries to realize the whole-tree utilization concept.

14. Amendment of Forest Acts shall be made to support efficient forest resources conservation and utilization.
15. Forest research shall be carried out in collaboration with universities and educational institutions concerned.
16. Wood energy as a substitute of fossil energy shall be promoted through energy plantations.
17. Any land with slopes of 35 percent or more on an average shall be designated as forest land. No title deed or land-use certificate under the Land Acts shall be issued for land of this category.
18. Explicit guidelines shall be established to deal with various forest degradation problems, e.g. shifting cultivation, forest fires, forest clearing by hill tribe minorities, etc.
19. Measures on enforcement of law and penalty codes shall be specified and respective due processes shall be established. Measures shall also be devised to penalize corrupt government officials and influential persons.
20. Incentive systems shall be established to promote reforestation by the private sector.
21. Human resource and rural settlement planning must be in conformity with national natural resources management and conservation plans.

It should be noted that while the NFP addresses many of the wood-related issues facing forestry, it is light on the non-wood and non-commercial timber issues. Non-wood and non-commercial wood matters are uppermost in the minds of those who rely on the forest for their daily needs. In particular the issue of fuelwood is of considerable concern given the volume consumed and the impact its collection can have on the remaining forests, and on the daily lives of those involved.

The NFP also did not meet the requirements of other sections and goals of government. These include the mining sector, the need for national security, the rapid expansion of the construction industry and supporting the furniture industry. In general this results in conflicts of objectives and interests. For example, the furniture industry requires a supply of quality logs while at the same time the government has banned logging of natural forests. This encourages either the import of logs or lumber or the illegal cutting of local forests. In reality both occur and thus work against the stated policy aims of government, namely protection of remaining forest and reducing the need to import resources.

The document is weak in terms of coordination and clarity. In addition there are some important omissions and there is a lack of priority setting.

Provisions for tree farming: The NFP has made adequate provisions for private/public participation in forest management, improving tree cover and generating wood/timber resources in the country for supporting wood-based industry, as evidenced by the following policy statements:

2. *Role and responsibility sharing among various government agencies and the private sector in forest management and development shall be promoted.*
5. *Public and private sectors together shall develop and manage the forest area to achieve the objective of providing perpetual direct and indirect benefits to the country.*
12. *The State shall promote reforestation by the public and private sectors for domestic industrial consumption. Export of wood and wood products shall be encouraged. Community forestry such as reforestation on public land by private sector, tree planting on marginal agricultural land and establishment of forest woodlot for household consumption shall also be promoted.*
19. *Incentive systems shall be established to promote reforestation by the private sector.*

2.4 Additional major policy guidelines issued in NESDPs

The National Forestry Plan is an integral part of the National Social and Economic Development Plan. It is perceived as part of an overall economic development programme of which forestry is a part.

In addition to the NFP, major policy guidelines for management of natural resources during the Seventh Plan period emphasized upgrading of the administrative and managerial capability of the sector to ensure that the natural resources indeed serve as a basic means of livelihood of the rural people, and will remain as part of the national heritage for later generations, and as a foundation for sustainable development.

Following the 1985 NFP and supported by the seventh NESDP (1992-1996), a Draft Forest Plantation Act was prepared and discussed at length in order to solve the legal problems constraining forest plantations by the private sector. This draft was accepted by the legislature in February 1992. In principle, the new Forest Plantation Act provides that:

- People can plant forest tree species on both private and government land. Application for such land use should be submitted for approval and registration. The ownership of the plantations can be transferred to another person and the new owner can be registered. Owners can harvest timber and other forest products, and transport and trade the products freely from plantation areas. The Forest Officer in charge must be informed of logging activities so that he can issue a permit within 15 days.
- No logging fees or payment for harvesting of forest plantation products will be charged, either on private or government land.

The seventh NESDP, following the imposition of the logging ban, reversed the allocations to 25 percent of conservation forests and 15 percent of economic forests to emphasize conservation objectives. The most recent NESDP still maintains 40 percent as forest land. This figure does not correspond with the real situation. The latest information and data derived from remote sensing and government sources indicate that forest cover in Thailand declined from 53.3 percent of the total land area in 1961 to 25.28 percent in 1999. However, forest lands outside forested areas are still recognized as state forests by Forest Acts, although they may have no trees. FAO (1999)² estimates place forest cover at only 22.8 percent in 1995.

Conservation measures have consequently played a major role in Thailand's forestry policy, especially after 1989. Since then, officially designed conservation forests have increased rapidly, and now comprise up to 79 percent of the country's total forest area. Protected forests total 40.5 million hectares, including both the core conserved forests (34 percent) and additional conservation areas, such as forest reserves, forest lands awaiting reserve status, botanical gardens and designated forest lands still under cabinet resolutions. The core legally-designated conservation areas are national parks, wildlife sanctuaries, forest parks, non-hunting areas, watersheds (Class 1) and mangrove-conserved forests (declared by cabinet resolution), which total 17.4 million hectares.

Some of the policy decisions made in the seventh NESDP regarding forestry also contributed towards making the NFP redundant. In fact the NFP is the major instrument which provides the overall philosophy of the development of the sector, giving necessary directions. If these directions are changed every five years then the sanctity of the original NFP document is lost. Some of the noticeable shifts in forest policy due to recent developments are described in the following section.

2.5 Noticeable shifts in forest policy priorities due to recent developments

The following overriding developments that have taken place in the government's initiatives during the past three decades have indicated a clear shift in priorities over the 1985 Forest Policy.

² FAO (1999). State of the World's Forests. Rome, Food and Agriculture Organization of the United Nations.

Ban on logging of natural forests (imposed in 1989): While the ban on logging was imposed partly because the Forest Department had lost effective control over logging, this also clearly indicated that forest conservation and protection were given priority in forest management by the government. While imposing this ban, which was made permanent during 1992, no new policies were devised to fill the gap in wood/timber requirements of the industry.

Increased emphasis on conservation forestry in national planning: The NFP had a target to maintain 40 percent of land under forest cover of which 15 percent would be designated protected forest and 25 percent commercial forest. These figures were later changed into 25 percent protected and 15 percent commercial forest area, which indicated the government's emphasis on conservation forestry. No indications were given on how this could be achieved as over time forest cover had been depleted to a great extent (see Section 3.8).

Ban on commercial-scale forest plantation development on state forest land: The private sector was given permission to establish forest plantations on "degraded forest lands" (sic) already allotted to them by the Forest Department. However, there was conflict with the farmers who had already occupied these lands for livelihood purposes. Ultimately, the government imposed a ban on commercial-scale forest plantations on government forest lands.

Restructuring/re-organization of the Royal Forest Department: Due to change in the undeclared forest policy of the government, the need to meet wood requirements and emphasis on forest conservation the Royal Forest Department was divided into four separate divisions, each having separate missions. This restructuring created confusion and the link with the provincial forest administration was lost, especially the extension structure providing technical assistance to farmers. In the present scenario the farmers seek this technical assistance from agricultural extension staff.

2.6 Some of the contributing factors for the NFP's lack of success

1. **No clear priorities:** The policy statements did not set clear priorities for the administrative and implementing agencies to follow. This left the agencies in a position to set their own priorities, which may not always have been consistent with national values.
2. **Implementing instruments not harnessed to policy execution:** The NFP has remained as an isolated expression of some 20 mandates, which are not mutually interlinked to regular operations involving the forest. This makes the policy ineffective.
3. **No accountability in the implementation of the NFP:** There is no allocation of accountability for the planning and management of some of the important benefits which are derived from forests, such as conservation of biodiversity and production of wood.
4. **Unrealistic key policy statements:** The target of "40% forest cover" (sic) in practice was very unrealistic as it was not based on any logical framework analysis.
5. **Strong emphasis on the commercial use of forestry:** The importance of the forest in supporting the needs of millions of people was not adequately addressed. Nor was the potential of forests to contribute to improving the living standards of forest inhabitants considered important.
6. **Up-to-date information not used to analyse the forestry situation:** The information used for developing the NFP was not up to date and did not take into account what Thai society wanted from forests and how forests could support people's livelihoods.

2.7 Inadequacy of the National Forest Policy

In spite of statements to the contrary, the current NFP appears to be more focused on the immediate issue of forest protection than the longer term issue of sustainable development of forest resources. Contemporary thinking holds that protection of forest is more achievable if the stakeholders can see the benefits that forest protection can provide them. The concept of protecting forest resources for

their intrinsic values is more associated with educated urban people (often from other countries) who do not rely on the forest or the land it occupies for their daily existence.

Overall, the result of this focus is that the NFP is not achieving the stated objectives as there is opposition to it, both deliberate and unintentional, and there are insufficient human and financial resources to fully implement it.

The Community Forestry Bill, pending for almost two decades which could not be implemented due to the several constraints, could have provided a boost to tree planting and wood production for households and industry. Neither did the forest legislations enacted reflect the true spirit of these policy statements. The legislations still operational, viz. The Forest Act 2484 (1941; latest amendment 1989) and National Reserved Forest Act 2507 (1964) were promulgated long before the NFP. This is one reason why these forest acts do not comply with the NFP.

There are three crucial areas related to NFP inadequacies that can be pointed out:

1. Deforestation with all its negative impacts and loss of forest cover continue because root causes have not been addressed.
2. The country's household and industrial wood demand has not been met in a sustainable manner and import of timber continues to increase.
3. The conflicts over forest land use by many types of illegal occupants of state forest land remain unresolved, thereby exacerbating land degradation and fuelling social tensions.

The NFP does not address the millions of farmers who have illegally occupied forest land. They perceive that clearing forest land for agriculture enables them to make a claim on land rights but planting of forest trees on such forest land would only weaken their hold on the land and probably reduce their chances of obtaining legal rights over this land; moreover they would not have any rights on trees grown by them. In this situation, the farmers are reluctant to grow forest trees on such forest land which total millions of rai. Neither the National Reserved Forest Act nor the Plantation Act make it clear whether the occupants of the National Forest Reserves should be evacuated or allowed to stay for an indefinite period and make use of the land for their livelihood.

Before attempting to amend/revise the relevant forest acts, the NFP should be revised to reflect the present forestry scenario in the country and address the three crucial areas and other inadequacies mentioned above.

3. The need for a new forest policy

3.1 Recommendation

Revise the NFP to reflect the present forestry scenario in the country. It should lay emphasis on conserving the remaining forests; reducing forest degradation; conserving forest biodiversity; increasing the forest cover of the country by promoting community forestry and private forestry; and increasing fuelwood and timber resources to meet the demands of rural people and timber-based small- and medium-scale wood processing and furniture industries.

In view of this recommendation and other such recommendations from similar reports on forest policy review, forest extension, status of wood-based industry, law and legal issues mentioned by the TCP project that is concerned about the efficacy of the current policy, the NFP has been revised.

A draft of the proposed National Forest Policy is given below for discussion in an appropriate forum.

DRAFT

NATIONAL FOREST POLICY, 2011

ROYAL THAI GOVERNMENT

Ministry of Natural Resources and Environment

(Amendment widedated.....of National Forest Policy of 3 December 1985)

1. PREAMBLE

In the Resolution of the Cabinet dated 3 December, 1985, the Royal Thai Government in the erstwhile, Ministry of Forest....., Royal Forest Department enunciated a National Forest Policy to achieve long-term forest resource development and conform to other natural resources development as a guideline for mutual understanding and commitment of the State and Private Sectors in the country.

Some of the following overriding developments in the Government's initiatives during the past three decades have indicated a clear shift in priorities over the 1985 Forest Policy: (i) Ban on logging of natural forests (imposed in 1989); (ii) increased emphasis on conservation forestry in national planning; (iii) ban on commercial-scale forest plantation development on state forest land; and (iv) restructuring/re-organization of the Royal Forest Department. These developments have made the current Forest Policy irrelevant.

Over time, forests in the country have suffered serious degradation and depletion. This is attributable to relentless pressures arising from ever-increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures; and diversion of forest lands to non-forest uses without ensuring essential environmental safeguards; and the tendency to look upon forests as revenue-earning resource.

Besides, the Forest Policy was not successful in addressing the root causes of deforestation, the growing imbalance in demand/supply of industrial wood and woodfuel, illegal operations in forest harvesting and the livelihoods of people and their land tenure rights. As a result the degradation continued which led to the logging ban in 1989. The 1985 Forest Policy has remained as an isolated expression of some 20 mandates which are not mutually interlinked to regular operations involving the forest. Some of the contributing factors for the lack of success of the Forest Policy are: (i) No clear priorities and directives for the administrative and implementing agencies to follow; (ii) implementing instruments not harnessed to policy execution; (iii) no accountability in the implementation of the Forest Policy; (iv) unrealistic key policy statements (the target of "40% forest cover" in practice was very unrealistic); (v) strong emphasis on the commercial use of forestry; and (vi) up-to-date information not used to analyse the forestry situation taking into account what Thai society wanted from the forests and how forest could sustain people's livelihoods.

In these contexts there is a need to review the situation and to evolve, for the future, a new strategy of management, conservation and sustainable utilization of natural resources. It has thus become necessary to review and revise the National Forest Policy.

2. POLICY VISION

Thailand is a country with a high population density and well distributed population. The lives of the people and the forests are closely intertwined, mainly in the highlands. It is not possible to separate

forests and people. The rural people are dependent on forests for their livelihood needs to a large extent while urban people are more dependent on the goods and services that forests provide. Any effort to manage and conserve forests must, therefore, be from the point of view of the rural population and society at large and take into account their interests and needs.

The health of the forest is directly linked to environmental processes on local, regional and international scales and affects the social, cultural and economic well-being of all concerned. Scientific forest management will bring together diverse values that ensure the conditions that lead to ecosystem health, social and cultural well-being and economic robustness. The ecosystem approach to management will be adopted aiming at biodiversity conservation and sustainability. The value of the economic and environmental benefits provided by the tree cover inside and outside the forest will be given paramount importance.

People will be involved in the management of human-induced forests in private lands by promoting tree cultivation in a major way. Thus timber resources will be strengthened, meeting the ever-increasing demand for wood as timber and fuel and reducing the imports of timber. The Laws and Regulations pertaining to forests and land rights of farmers will be revisited and amended to make them people-friendly, effective, realistic and implementable, avoiding contradictions, duplicity and vagueness.

The old status of the Royal Forest Department will be revitalized by bringing back the erstwhile organizational structure which was more functional and practical. Forest personnel, the custodians of forests, will be equipped with the latest techniques in forest management, conservation, forest extension and infrastructure support for forest protection. A mind-set change will be implemented so that forestry personnel work for society. The forest managers and decision makers will be accountable to the public. Scientific management of the forests will be strengthened with the support of forestry education and technologically advanced forestry research by establishing forestry training schools and a much-needed forestry research institute in the country.

All of these elements will contribute towards maintaining and managing the required forest cover of the country, national security, securing environmental benefits, reducing carbon emissions, enhancing the quality and health of forests and wildlife through scientific principles, while meeting the livelihood aspirations of the forest-dependent communities and farmers, forest-based industries and the social, cultural, environmental and economic well-being of the people of Thailand in the future.

3. POLICY OBJECTIVES

The basic objectives that should govern the National Forest Policy are:

- 3.1 The principal aim of the National Forest Policy shall be to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which is vital for sustenance of all life forms, be they human, animal or plant. The derivation of direct economic benefit must be subordinate to this principal aim.
- 3.2 Preservation and restoration of the ecological balance that has been adversely disturbed by serious deforestation of the forests in the country through scientific management.
- 3.3 Conserving and preserving the remaining natural forests of the country with their vast variety of flora and fauna, which represent the unique biological diversity and genetic resources of the country; providing sound and scientific management in wildlife sanctuaries and national parks for conserving biodiversity and wildlife.
- 3.4 Increasing substantially the forest/tree cover in the country through natural regeneration and

massive reforestation/afforestation programmes, especially in private lands with people's and industry's participation.

- 3.5 Checking soil erosion and denudation in the watershed/catchment areas of rivers, lakes, reservoirs in the "interest of soil and water conservation, for mitigating floods and droughts and for the halting of siltation of reservoirs.
- 3.6 Meeting the livelihood requirements of rural populations by providing fuel-wood, charcoal, fodder, minor forest produce and small timber for handicrafts through community forestry programmes.
- 3.7 Meeting timber requirement of SMEs and wood-based industries through cultivation of long-rotation trees in farm and private lands to make the country self-sufficient in timber needs.
- 3.8 Increasing the productivity of plantation forests through intensive forestry research to meet the essential national needs of people and wood-based industry.
- 3.9 Encouraging efficient utilization of forest produce, minimizing waste and maximizing substitution of wood.
- 3.10 Amending the Laws and Regulations pertaining to plantation forestry and land rights to make them people-friendly, thus promoting reforestation programmes in the country.
- 3.11 Through women's empowerment, creating a massive people's movement for achieving these objectives and minimizing pressure on existing forests.

4. POLICY GUIDELINES/STATEMENTS

4.1 Essentials of forest management

- 4.1.1 The State shall establish a Forest Development Plan as part of the natural resources development plan in the National Social and Economic Development Plan to harmonize synergy between forests and other natural resources.
- 4.1.2 Long-term guidelines for forest management and development shall be established to maximize national, social and economic benefits and national security, with sufficient measures provided for environmental protection. Emphasis shall be placed on harmonized utilization of forest resources and other natural resources.
- 4.1.3 All the national reserved forests and forest lands shall be fully protected and their productivity improved through scientific management.
- 4.1.4 Forest cover shall be increased on hill/mountain slopes, in watershed/catchment areas of rivers, lakes and reservoirs and ocean shores and through assisted natural regeneration, enrichment planting and reforestation techniques.
- 4.1.5 A complete inventory of animal and plant biodiversity shall be undertaken and rare, endemic and endangered species identified for in situ and ex situ conservation.
- 4.1.6 For the conservation of total biological diversity, the network of national parks, sanctuaries, biosphere reserves and other protected areas should be strengthened and extended adequately and managed scientifically.
- 4.1.7 The State and Private Sectors shall develop and manage forest areas to achieve the objectives of providing perpetual direct and indirect benefits to the country.
- 4.1.8 Efficiency in timber production shall be increased through appropriate forest management techniques in private lands, wastelands and community lands to attain self-sufficiency.

- 4.1.9 Since woodfuel and charcoal continue to be the predominant source of energy in rural areas, the programme of afforestation/reforestation shall be intensified with special emphasis on augmenting woodfuel production in community forests to meet the requirements of rural and urban people.
- 4.1.10 Wood energy as a substitute for fossil energy shall be promoted through energy plantations in the Private Sector to reduce the import of crude oil.
- 4.1.11 Minor forest produce, which provide sustenance to the rural population and to other communities residing in and around forests, shall be protected, improved and their production enhanced through sustainable techniques with due regard to generation of employment and income.

4.2 STRATEGY

4.2.1 Area under forests

For environmental stability at least one-third of the total land area of the country shall be brought under forests/retained under forest or tree cover. In the hills and mountainous regions, a minimum of two-thirds of the area shall be under forest cover in order to prevent landslides, floods, soil erosion and land degradation and to ensure the stability of the fragile ecosystem.

Of the total forest cover, 25 percent shall be Protected Forests for conservation of environment and research; and the remainder shall be designated as Production Forests to produce timber and other forest products.

4.2.2 Reforestation/afforestation, community forestry and farm forestry

- 4.2.2.1 The State shall promote reforestation by the public and private sectors for domestic and industrial consumption. Export of wood and wood products shall be encouraged. Community forestry such as reforestation on public land by the Private Sector, tree planting on marginal agricultural land and establishment of forest woodlots for household consumption shall also be promoted.
- 4.2.2.2 To conserve and protect the natural environment, the State shall encourage forest/tree planting in designated places in residential, rural, agricultural and industrial areas under State/corporate, institutional or private ownership in each province to check soil erosion, improve the microclimate and for aesthetic value.
- 4.2.2.3 The State shall encourage integrated wood using and pulp and paper industries to realize the whole-tree utilization concept.
- 4.2.2.4 Land laws should be so modified wherever necessary so as to facilitate and motivate individuals and institutions to undertake cultivation of long rotation trees in farmlands and other private lands. To encourage such tree planting, appropriate regulations should govern the felling, transporting and processing of trees grown on private holdings.

4.2.3 Rights and concessions

- 4.2.3.1 The rights and concessions, including grazing, should always remain related to the carrying capacity of forests. The capacity itself should be optimized by increased investment, silvicultural research and development of the area. Stall-feeding of cattle should be encouraged.
- 4.2.3.2 The holders of customary rights and concessions in forest areas should be motivated to identify themselves with the protection and development of forests from which they derive benefits. The rights and concessions from forests should primarily be for the bona fide use of the communities living within and around forest areas.

4.2.4 Diversion of forest lands for non-forest purposes

- 4.2.4.1 Forest land or land with tree cover should not be treated merely as a resource readily available to be utilized for various projects and programmes, but as a national asset which needs to be properly safeguarded for providing sustained benefits to the entire society.
- 4.2.4.2 Diversion of forest land for any non-forest purpose should be subject to the most careful examinations by experts from the standpoint of social and environmental costs and benefits. Construction of roads, dams and reservoirs, mining and industrial development and expansion of agriculture should be consistent with the needs for conservation of trees and forests. Projects which involve such diversion should at least provide in their investment budget funds for regeneration/compensatory afforestation.
- 4.2.4.3 Beneficiaries who are allowed mining and quarrying in forest land and in land covered by trees should be required to repair and revegetate the area in accordance with established forestry practices. No mining lease should be granted to any party, private or public, without a proper mine management plan appraised from the environmental angle and enforced by adequate machinery.

4.2.5 Wildlife conservation

- 4.2.5.1 Forest management should take special care of the needs of wildlife conservation, and forest management plans should include prescriptions for this purpose. It is especially essential to provide for “corridors” linking the protected areas in order to maintain genetic continuity between artificially separated sub-sections of migrant wildlife.

4.2.6 Deforestation from encroachment, fires and grazing

- 4.2.6.1 Encroachment on forest lands has been on the increase. This trend has to be arrested and effective action taken to prevent its continuance. There should be no regularization of existing encroachments.
- 4.2.6.2 The incidence of forest fires destroys standing trees, natural regeneration and wildlife on a large scale. Special precautions should be taken during the fire season. Improved and modern management practices should be adopted to deal with forest fires.
- 4.2.6.3 Grazing in forest areas shall be discouraged and regulated. Special conservation areas, young plantations and regeneration areas shall be fully protected. Grazing and browsing in forest areas need to be controlled.

4.2.7 Forest-based industries

For meeting the shortfall in wood resources the Government has to encourage the Private Sector to invest in forest plantations. Promotions to grow trees should be conducted at the grassroots level and more incentives should be provided. The incentives may not necessarily be financial *per se* but may also include the following:

- i. Secured land rights for tree cultivation and utilization;
- ii. Favourable and simplified legislation for cultivation, harvest, transport and utilization in lumber/sawmills;
- iii. Declaring trees in agriculture fields as agricultural produce like rubberwood;
- iv. A proactive Extension Service to provide genetically superior planting stock and technical guidance in tree cultivation and its utilization;
- v. Training in skills development for the utilization of wood;
- vi. Financial incentives such as availability of credit/loans at nominal interest rates and subsidies;
- vii. Assistance in marketing of wood products.

4.2.7.1 As far as possible, a forest-based industry should raise the raw material needed for meeting its own requirements, preferably by establishment of a direct relationship between the factory and the individuals/farmers who can grow the raw material by supporting the individuals with inputs including credit, constant technical advice and finally harvesting and transport services.

4.2.7.2 Farmers shall be encouraged to cultivate long rotation trees in farmlands for timber production for their own purpose as well as for industry and shall be allowed to process the timber in SMEs owned by them; appropriate incentives shall be given to the farmers for cultivation of trees.

4.2.7.3 Enable an economically viable and efficient forest-based industry aimed at adding value to forest products and build capacity of Private Sector and rural communities to utilize, process and market forest products; SMEs of wood-processing industries shall be promoted and the quality of their products improved through training and value addition; Marketing of their products shall be promoted through incentives and market linkages

4.2.7.4 No forest-based enterprise, except that at the village or cottage industry level, shall be permitted unless it has been first cleared after careful scrutiny with regard to assured availability of raw material.

4.2.7.5 Forest-based industries must not only provide employment to local people as a priority but also involve them fully in raising trees and raw-material.

4.3 Forest extension

4.3.1 For promoting cultivation of long rotation tree species forest extension services shall be strengthened and modernized. The forest extension officers, mainly young forestry graduates, shall be trained in forest acts and regulations and technical expertise on cultivation and management of tree plantations, processing of timber, marketing, etc. in training centres.

- 4.3.2 Some of the progressive farmers in each Tambon shall also be trained as Forest Extension Assistants who shall address immediate requirements of farmers.
- 4.3.3 Modern central forest nurseries shall be established in different regions to provide healthy and genetically improved planting stock to farmers and individuals and government plantation programmes to ensure high yields from plantations.

4.4 Forestry education

- 4.4.1 Forestry shall be recognized both as a scientific discipline as well as a profession. Universities and institutions, dedicated to the development of forestry education, shall formulate curricula and courses for imparting academic education and promoting postgraduate research and professional excellence, keeping in view the human resource needs of the country. The young forestry graduates with technical skills shall be employed in the Royal Forest Department, wood-based industries, teaching and training schools.

4.5 Forestry research

- 4.5.1 So far no due importance has been given to forestry research in the country. With the increasing recognition of the importance of forests for environmental health, carbon sequestration, energy and employment, emphasis must be laid on scientific forestry research, necessitating adequate strengthening of the research base as well as new priorities for action.
- 4.5.2 A Forest Research Institute at the national level and four Regional Forestry Research Centres shall be established to undertake forestry research on priority areas of research in the country to serve the needs of the Royal Forest Department, wood industry and farmers.

4.6 Re-organization of the Royal Forest Department

- 4.6.1 The Royal Forest Department is one of the oldest forest departments in Southeast Asia. A decade ago its organizational structure was dismantled and divided into four separate departments. This reorganization not only brought administrative delays and inefficiency but also dissatisfaction among the staff. The original structure of the Royal Forest Department shall be reinstated and strengthened.
- 4.6.2. For providing regular technical training to forest officers/staff to make them as some of the best forestry professionals, Forest Training Schools shall be established and such training made compulsory for all – the existing staff and new incumbents.
- 4.6.3 The Royal Forest Department shall coordinate all the activities in the country with regard to tree cultivation in private and farmlands with all the other departments and agencies undertaking tree planting. The Royal Forest Department shall provide necessary technical advice and genetically improved planting material according to the requirements of all the concerned agencies

4.7 Forest survey and database

Inadequacy of data regarding forest resources (forest area, density classification, age and species-wise plantations, forest plantations in private lands, biodiversity and wildlife, demand and supply of wood, type and capacity of wood-based industries, etc.) is a matter of concern because this creates a false

sense of complacency. Priority needs to be accorded to completing the survey of forest resources in the country, province-wise, on scientific lines and to updating information. For this purpose, periodic collection, collation and publication of reliable data on relevant aspects of forest management needs to be improved with recourse to modern technology and equipment.

4.8 Legal support to policy implementation

- 4.8.1 A National Forest Policy Committee shall be established for policy implementation and overseeing appropriate amendments in laws and regulations to make them people-friendly, promoting forestry activities in the country.
- 4.8.2 For reflecting the philosophy of the National Forest Policy, appropriate legislative amendments shall be made in the Forest Act, Tree Plantation Act and other relevant acts to make them less cumbersome and more people-friendly with less or only a few one-stop permissions required and removing conflicts and contradictions with regard to tree cultivation on private lands.
- 4.8.3 Problems relating to land use/tenure/legal rights shall be addressed adequately in a time-bound manner to reflect the policy guidelines of promoting tree cultivation and tree utilization.

4.9 Financial support for forestry

The objectives of this revised National Forest Policy cannot be achieved without the investment of financial and other resources on a substantial scale. Such investment is indeed fully justified considering the contribution of forests in maintaining essential ecological processes and life support systems and in preserving genetic diversity. Forests should not be looked upon only as a source of revenue. Forests are a renewable natural resource. They are a national asset to be protected and enhanced for the well-being of the people and the nation.

Chapter 6.

Amendments in Acts Governing Land Rights to Promote Tree Plantations by Farmers on Farms/Private Lands in Thailand

- J.K. Sharma & N. Khamhirun

Summary

Land-use rights of farmers in Thailand have become a complex problem due to ad hoc government policies implemented under different schemes from time to time to suit/address a particular situation prevailing at a given time. Unless this situation is reversed, policy suggestions for tree promotion by farmers will not have any significant effects. Legally allowing farmers to have rights to control and manage degraded re-afforested lands that they occupy will be a step in the right direction for the encouragement of private forestry in line with the philosophy of the National Forest Policy 1985.

The necessary amendments in laws and cabinet decisions with respect to problems related to land-use rights are numerous and not a permanent solution; farmers will continue to have differing status under different land codes/schemes and permits required under various provisions of the law will result in disparity. In order to prevent such conflicts, it will be important to clarify and guarantee the basic rights of all the indigenous farmers by law, give tenure status over land to the local community, and providing chances to participate in decision-making processes in the interests of transparency. The rights of people should be clearly defined and settled permanently.

As it is not possible to uproot/mobilize the millions of people who have been occupying forest lands legally or illegally for a long time, it is recommended to grant them one-time amnesty as done during 1971 and to give them legal rights and tenureship for cultivation and utilization of forest resources.

It is recommended to effect one-time legalization for people with unresolved land rights in degraded or re-afforested forest lands and allot the land on lease for 40 years with the right to cultivate and harvest forest tree species and trade in them with appropriate but simple restrictions to maintain the ecology and landscape.

1. Introduction

Why does the relationship between land tenure and tree tenure matter? All too often, both scientists and practitioners of natural resource conservation consider land and tree tenure as being identical. The fact that land and trees can be controlled, owned and used distinctly is mostly neglected. The most often cited relationship between land and tree tenure stems from the assumption that security of land tenure is needed to provide the motivation for planting slow-maturing trees whose benefits accrue to the planter only after a certain time period. Land and forest degradation is often seen as the result of insecure property rights, because incentives for land improvement, soil conservation, forest protection or tree planting are missing. Earlier studies have suggested that rules for land rights and tree tenure affect the preservation, protection and planting of trees. Having rights to trees or controlling the land on which they are planted is crucial to reaping the benefits from afforestation.

Another relationship has often been overlooked: not only does land and tree tenure affect tree planting, tree planting itself can significantly influence the evolution of tenure systems and even enhance security

of land tenure. It is evident that access to land and forest resources under different tenure regimes affects the livelihoods of people who depend on those resources. Land and tree tenure determines who will benefit from and who will be adversely affected by forest policies and forest or agroforestry projects. Land and tree tenure also provides the framework for conflict-solving mechanisms in natural resource management. Lacking recognition of the interaction between land and tree tenure has often resulted in misshaped policies, failed projects and interventions with unexpected outcomes.

2. Review of land tenure systems and farmers' rights in Thailand

2.1 People's settlements in national forest reserves and land rights/tenure

Land rights and legislation controls over landownership have been a significant factor in the accelerated depletion of forest resources in Thailand. For the first half of the century these issues may have been less important, given the rather low population-land ratio and slow commercial growth. In the period after the Second World War, however, the more aggressive policy of legislative control over land contributed to illegal occupation and use of land, particularly forest lands. The events following the promulgation of the 1954 Land Code and the rather ambiguous provisions for its implementation have encouraged the taking over of underdeveloped or unoccupied land.

In public or state land, especially in national forest reserves, land rights have been given to squatters/encroachers in the form of land-use permits. The government permitted squatters to occupy land in national forest reserves to claim cultivation rights to 2.4 hectares of land, and to lease from the Royal Forest Department (RFD) any additional area, up to a combined total area of 8 hectares. This type of document cannot be used as collateral for a loan or as a guarantee. Farmers with unresolved land rights who have settled in re-afforested areas are allowed to grow the trees but cannot harvest them. Hence, the first major hurdle in promoting tree cultivation and its utilization is the farmers' land rights issues.

Since the 1980s the failure of the state to protect forests simply by designing these areas in a top-down approach as national forest reserves became obvious. Besides the fact that policy-makers did not recognize the interaction of the productive, environmental and social functions of forest, another conflict regarding land rights and the conversion of forest land into agricultural land came on the agenda of political discussion. About 48 percent of the total land area designed as national forest reserves, including areas with special protection status such as national parks, wildlife sanctuaries or watershed areas is under the administration of the RFD/Ministry of Natural Resources and Environment (MONRE). Of this area most probably only one-third actually may be designated as 'forest' in a real sense, while at the same time about one-third of Thailand's cultivated area is located within national forest reserves, sustaining around 8-15 million people in about 150 000 villages with predominantly insecure settlement and use rights for the land they are living on.

In 1994, 13 areas in northern Thailand were designated as national parks. This number had increased to 20 national parks and wildlife sanctuaries by 1998. Overnight, hundreds of local communities living in these areas became illegal residents, and many of them were forced to move out.

Tenure security, as perceived by farmers, is crucial for investments such as tree planting. This should not be seen as an argument against land titling, which can be justified in regions where land values are high and villagers need formal titles to prevent encroachment from outsiders. However, overemphasizing land titling as a recipe to solve all problems of tenure insecurity can be dangerous. Problems of non-owners such as tenants might not be tackled by land-titling programmes. There were some cases where Thai farmers sold their newly obtained land titles and encroached other forest areas.

The failure of the forest protection strategies of the government and the RFD is obvious while pressure on politicians is increasing to settle the land rights problem. This reflects, on the one hand, the hope to solve the dilemma between land and forest tenure issues and forest protection objectives; on the other hand, the different interests, hopes and objectives regarding the land tenure issue, resource use and forest protection clash heavily in public debates and social conflicts.

2.2 National Forest Policy and national forest reserve regulations and allocation of land-use rights

The rapid depletion of forests urged the government to change its forest policies. With the beginning of the 1960s, forest protection strategies moved from pure management of forest concessions to a centrally planned demarcation of forest reserves and protected areas.

Within the framework of the Forest Reserve Act (1964) the RFD started to establish 'National Forest Reserves' despite the fact that parts of these areas had been used for agriculture for decades. Demarcation of forest reserve areas encompassed many established villages and farmlands and consequently could not prevent further encroachment by migrant settlers or illegal loggers. Instead, farmers living and farming in these areas became illegal settlers practically overnight. In some cases farmers even took part in demarcating National Forest Reserves only to realize afterwards that they had helped to make themselves illegal settlers. By 1988, 5 000 villages, which account for 21 percent of all villages in the northeast were located in National Forest Reserve areas.

The National Forest Policy (NFP) and Forest Reserve Act and Land Code Act: The RFD, with a history of more than 100 years, has played a crucial role in both land rights and forest policies that are closely interlinked in major parts of Thailand. Since its establishment in 1896 with the aim to organize teak logging concessions in northern Thailand, the NFP has been adjusted and formulated in reaction to changing social and political conditions of the country. The history of the RFD shows the close linkages between deforestation and strategies for forest protection on the one hand and unsolved land rights and forest rights issues on the other.

The Forest Protection and Reserve Act of 1938 and the Forest Act of 1941 were major national forestry policy measures safeguarding the state's interests by setting aside forest land for the purpose of exploitation and explicitly separating forests and people by law. At that time, however, local conflicts rarely occurred as forests and agricultural land were still abundant and population densities remained low. By 1953 about 60 percent of Thailand's area was forested. The evolution of the Thai Forest Policy until 1989 can roughly be distinguished into four phases (Pragtong and Thomas 1990)¹:

Phase 1 (1896-1953) – forest harvest in the national interest: During the first half of the twentieth century, the main focus of national forest policy was on the regulation and control of forest exploitation by extending logging concessions. Forest ownership was formally claimed by the central government with the administration vested in the RFD. The relationship between governmental forest offices and local people was reduced to the provision of employment for local labourers who helped in all forest-related activities.

Phase 2 (1954-1967) – state allocation of land for economic development: National forest policy was strongly influenced by the shift from state control over forest land to the allocation of land to farmers in order to foster economic development by emphasizing agricultural land use. The Land Act promulgated in 1954 provided the basis for most land classifications and the distribution of land. With the first Five Year Plan some important forest policies and legislative acts were established, even though those policies were not particularly underscored in the plan.

¹ Pragtong, K. & Thomas, D. 1990. Evolving management systems in Thailand. In Mark Poffenberger (ed.), *Keepers of the Forest, Land Management Alternatives in Southeast Asia*. Kumarian Press, USA.

The policies were far from being consistent; on the one hand, the focus was on forest protection, on the other hand, the government emphasized annual timber output and export. During this second phase, conflicts on land and forest ownership between the government and local communities emerged. Free access to timber for rural households was more or less abolished with the 1960 Forest Act revision. The Reserved Forest Act, passed in 1964, gave the government more freedom in designing and declaring National Forest Reserves without taking into account traditional local settlement schemes and legal land claims secured by former laws and regulations.

Phase 3 (1968-1980) – the vanishing forest frontier: The vanishing forest frontier was marked by two contradictory forest policies implemented during that time: (1) the re-implementation of a long-term concession system and (2) the encouragement of permanent settlements in National Forest Reserves and other areas.

In order to support national economic development efforts and mobilize national forest resources, the government paved the way for the implementation of a nationwide scheme to re-establish concession systems based on 30-year rotation terms that were suspended during the Second World War. Under this programme more than 500 concession areas were certified covering nearly 40 percent of the country's land area, therefore exceeding the actual existing forest cover by far. Explanations of the reasons for the sharp increase of settlements and agricultural areas go beyond the growing population pressure. Agricultural development set up to support overall economic development played a crucial role in the ongoing destruction of forest resources. Moreover, national forest policies encouraged farmers to settle in National Forest Reserves (NFRs) through several programmes like the Forest Village projects or the S.T.K. projects, which involved issuing land certificates in NFR areas.

Other factors that affected forest policies during this phase were political instability within Thailand (military coups) and between Thailand and neighbouring countries during the 1970s. To fight communist infiltration through the forests, rural settlements were encouraged in remote border areas. Infrastructure was considerably improved to better control remote areas. Driven by security and stability interests, the Ministry of Interior granted legal rights to settlements within NFR areas providing them with governmental services and infrastructure. All these factors led to a sharp increase in settlements in NFR, without taking into account special protection status like national parks or concession areas. By 1980, nearly 36 percent of the country had been designed as NFRs, covered by concessions, whereas the actual forest cover had been reduced to only about 32 percent (17 percent in the northeast and 54 percent in the north).

Phase 4 (1981-1988) – forest and land policy in transition: With the return of more political stability, rapid industrialization and dynamic economic growth characterized the development path, before the financial crisis in 1997 led to a severe setback. The dramatic loss of forest resources, expansion of agriculture, growing conflicts over forest, land and other natural resources were declared a national issue as reflected by several development plans. Forest policy focused on issuing of land certificates within NFRs but at the same time starting to controversially suppress locals in protected areas in the name of environmental protection. During this phase, private business became increasingly involved in reforestation activities, mainly with fast growing trees such as eucalyptus designed for the timber, paper and pulp industry.

The concern about deforestation became a nationwide issue and even caught the attention of the world in November 1988 when a flood in southern Thailand claimed over 100 lives. In public opinion, this catastrophe was linked to encroached and deforested watershed areas. The incident led to the decision of the government to implement a nationwide ban on all logging activities.

Land policies and landownership/use rights in Thailand: Until today, only private or state ownership of land is legally recognized in Thailand. Private tenure regimes in agricultural land reflect strong

social disparities: on the one hand, influential social groups control large land resources; on the other hand, the vast majority of the rural population has limited and insecure access to land.

In Thailand, currently landownership rights have four categories under land owned privately, where land titles can be issued in four forms:

1. Title Deed (full ownership);
2. Certificate of Utilization (put land to use);
3. Pre-emptive Certificate (temporary occupation of land); and
4. Claim Certificate (made use of land prior to 1954).

Agriculture Land Reform and Land Code Act 1954: The state's land policies have focused on different, in some cases even conflicting, strategies. Fuelled by the ideology of controlling people and resources, policy measures were used to foster development, to deal with social conflicts or, more recently, as an instrument to deal with environmental problems. This was reflected in a series of land codes with different terms and conditions under which land could be owned or requirements for obtaining legal titles. Conflicts between different land codes, but also between land codes and traditional or informal land tenure systems were common. All these factors, together with slow implementation, facilitated illegal occupation of land, widespread sharecropping arrangements with limited use rights for tenants, encroachment on NFRs and destruction of forest resources.

Agriculture Land Reform Act 1975(amended in 1976 and 1989): From a historical perspective it becomes clear why, taking into account the complexity of dealing with landlessness and tenure insecurity, most land reform programmes have been more concerned with tenancy or farm size issues rather than with details of access to land and forest. Pressure on agricultural land resources has always been released by expanding into forested areas, assuming the relative abundance of natural forests. Only in the last three decades, closing land and forest frontiers resulted in political protest, leading to the Agricultural Land Reform Act in 1975. The Act was amended in 1976 and 1989. The Act gives full authority to the Agricultural Land Reform Office (ALRO) to utilize the National Reserved Forest land for agricultural purposes with ownership vested with ALRO. However, the competent officials under the Land Code shall have the power to issue title deeds of land belonging to ALRO as requested by ALRO as evident from the relevant sections of the Act given below. This was clearly in contradiction with the provisions of the NFP and conservation of forest land and stability of environment.

Chapter 3: Agricultural Land Reform Implementation of the Act Section 26 (4) states:

“If the land is in a national reserved forest, and the Council of Ministers has a resolution to implement agricultural land reform in any part of the national reserved forest, when the ALRO decides that agricultural land reform shall be implemented in any plot of land within such area, the Royal Decree designating the Land Reform Area shall effect revocation of the said plot as being the national reserved forest and the ALRO shall have the power to use such land for agricultural land reform without having to proceed with revocation under the law on National Reserved Forests;”

“To facilitate agricultural land reform implementation in accordance with (4), the competent officials under this Act shall be the competent officials under the law on National Reserved Forests and shall have the power to lease out the national reserved forest lands and the land rent received shall be remitted to the Agricultural Land Reform Fund.”

Further, according to Section 36 Bis. of the Act states: “All parcels of land or immovable property acquired by the ALRO under this Act or acquired by other means with the objective to benefit agricultural land reform shall not be classified as the Ratchaphatsadu land and the ALRO shall have ownership thereof for the purpose of agricultural land reform.”

“The Competent officials under the Land Code shall have the power to issue title deeds of land belonging to ALRO as requested by the ALRO.”

Although there is a provision in the Act that such land will not be sold to any other person (see below Section 39 under Chapter 3 of the Act), it is understood that many people have already sold their land after ten years stating that the land is unproductive. This has further complicated land rights issues. Section 39 states:

“The land whereof the right is acquired by a person through agricultural land reform shall not be divided or the rights on such land shall not be transferred to other persons except by devolution to his statutory heirs or transfer to a farmer institution or to the ALRO for the purpose of agricultural land reform; provided that it shall be in accordance with the rules, procedures and conditions prescribed in the Ministerial Regulations.”

The Land Code: Current land policies have their roots in the most comprehensive land law, the Land Code, B.E. 2497 which was formulated in 1954 and later amended in 1999. However, it was not until 1961 that it came into force due to inadequate administration and the persistence of traditional land tenure systems in remote areas. The 1954 Land Code recognized a number of different land titles ranging from full legal ownership to no more than limited usufruct rights. Its critics argue that it encourages clearance of forest by recognizing three steps of land acquisition: occupancy, use and legal ownership.

As land titles were only allocated on land not declared as NFRs, land policies did not focus on solving or even understanding land and forest tenure problems within these reserves where traditionally most land acquisition took place. Hence, the most serious and intractable tenure problems have occurred in NFRs, which account for about 40 percent of the country's area.

Under the Land Code Act the RFD transferred about 40 million *rai*² of degraded NFR forest already encroached for legal settlement of farmers in 69 provinces. Of this, 37 million *rai* of forest land was allotted to farmers; about 1 million *rai* of land was irrigated and the remainder, in uplands, was rainfed. Once the land was allotted and registered in the name of the farmers they had the right to grow crops and cultivate trees and use them. The farmers were required to pay only the local tax for the land.

As stipulated by the law, the land could not be sold to others for at least ten years. But most of the farmers had already sold the land illegally on the pretext that it had become unproductive and infertile. These people who had bought the land had no titles in their name yet and had no rights over the land. They could cultivate the trees but were not allowed to utilize them.

Now people are demanding compensation for vacating this land and transferring to forest using the argument that what they invested in the land should be compensated. The Land Reforms Department is considering compensation for the last ten years but it has not received government approval yet. If the farmers do not have land rights due to illegal occupation then compensation becomes an opaque issue.

Special Land Certificates: Forest Village Program (FVP) and the National Forest Land Allocation Program (NFLAP): In the 1970s, the Thai Government tried to solve the problem of the illegal settlers by granting them amnesty and by authorizing the RFD to launch programmes in order to improve the management of NFR areas. In 1975, the Forest Village Program was implemented, followed by the National Forest Land Allocation Program with the well-known S.T.K. use certificates ('right to harvest') starting in 1979. Both programmes granted land-use rights to previously illegal forest residents. Despite these efforts, villagers and outsiders continued to encroach on or degrade forest. Land distribution per farm was strictly limited which did not match economic requirements. Farmers

² 1 hectare = 6.25 *rai*.

were not allowed to transfer use or ownership rights on land, so more productive farmers did not have the opportunity to develop their holdings. Many farmers tried to claim forested land by clearing it in the hope that they would qualify for these programmes.

In order to solve land tenure problems within these areas, the government added a number of Special Land Certificates to the complex array of extant land titles. The most prominent examples were the S.T.K. land title and the FVP, both initiated and implemented by the RFD. However, instead of solving land rights problems and protecting the remaining forest areas, these programmes actually led to additional land tenure insecurity and further forest clearance. This was due to constraints in the implementation and the overall framework of these programmes, namely limitations in farm size, an array of land certificates that confused recipients and limited implementation facilities.

The implementation of the FVP and NFLAP created a 'magnet effect', bringing about massive immigration of landless households to the project areas. But most of these new households were not granted land-use rights because they lacked the required qualifications. Most of the landless became wage labourers in cash crop production, while some engaged in illegal logging activities, taking advantage of a loophole in the forest law that allows timber cutting for domestic use, particularly for house construction. In fact, many migrants made a business out of cutting timber from the reserved forest and building rough-framed houses without complete walls, floors or roofs. According to the law, these houses could be legally disassembled and sold, if they had been standing for two years.

Earlier, Land Title Certificates were awarded in the NFR in many parts of the northeast. It is not surprising that villagers persisted in claiming and clearing previously unused land. The land rights and legislation controls over landownership have been a significant factor in the accelerated depletion of forest resources in the northeast.

The National Reserved Forest Act created some confusion with the 1954 Land Code, which had been until then the legal basis for land legislation. This Land Code followed the usual process in land acquisition beginning with forest clearing and occupancy of land followed by legal documents which recognized the use of this land (the S.K.1 Certificate was the most important in this category) finally providing full ownership rights. There is evidence that the 1954 Land Code encouraged clearing of forest land.

The 'Kor Jor Kor' resettlement scheme: The controversies between the RFD policies of zoning forest areas in a top-down approach on the one hand, and the perception of landownership of people living partly in the commercial reforestation areas on the other hand, culminated in the Kor Jor Kor Project. Although people living in NFRs generally were aware that the forest belonged to the state, they had developed their own locally-accepted rules and regulations over decades for landownership, land and forest use. Thus, local communities had tried to create a legal basis for their livelihoods, taking advantage of the state's weak law enforcement. The recent enactment of the state's legal system has been regarded by local people as a case of superimposing an enforced state property regime on the existing customary tenure regime. The existence of two conflicting tenure regimes created more insecurity of tenure in frontier areas resulting in intensive overuse of the land and further encroachments.

As the state tried to establish the reforestation programmes in NFRs it had to undertake massive relocation of settlers living within these areas. As most of them did not hold land titles or other land certificates they were considered illegal encroachers. Therefore, eviction was used as a legal measure to acquire new land for reforestation purposes. In June 1990, the Thai parliament passed a bill, called Land Distribution Programme for the Poor Living in Degraded National Forest Reserves in the Northeast of Thailand with the goal of relocating 2 500 villages in 352 NFRs in the northeast

by 1996, aiming at providing 1.44 million hectares for commercial eucalyptus tree plantations. It was envisaged that, after a successful pilot phase in the northeast, the programme would be adopted in other parts of the country. Implementation began in the autumn of 1991 with strong assistance by the military.

In July 1992 the Kor Jor Kor scheme was finally stopped by the government following nationwide protests. Whereas some farmers were allowed to return to their homes, others had to stay in their new settlements because their homes had been destroyed and their land had already been used by other occupants, e.g. illegal farmers or private forest enterprises, or retained by local officials. One of the main reasons for the sudden breakdown of the Kor Jor Kor scheme was the growing socio-political awareness within the population and the northeastern Thai farmers' protest march towards Bangkok

3. Present status of land-use rights requirements in different forest acts with regard to cultivation and utilization of trees

The following categories of farmers with different land rights are found in forest and non-forest areas; thus there are disparities among the farmers regarding the utilization of land that they occupy to cultivate trees:

Non-forest areas – private holdings with legal rights and title deeds.

Forest areas – NFRs and re-afforestation forests:

1. Farmers with legal rights and title deeds (under the Land Reform Settlement Act/Land Code Act);
2. Farmers with no legal rights and title deeds who bought the land from farmers allotted lands under the Land Code Act – 'owned' land (without title);
3. Farmers with no legal rights and title deeds – rented land (no written contracts);
4. Farmers in NFRs – encroached land with no legal rights;
5. Farmers under the Land Distribution Programme for the Poor Living in Degraded National Forest Reserves in the Northeast of Thailand;
6. Farmers allotted lands under the FVP and the NFLAP – Special Land Certificates and S.T.K. land title;
7. Farmers granted legal rights for settlement within NFR areas providing them with governmental services and infrastructure by the Ministry of Interior due to security reasons; and
8. Farmers under the influence of NGOs - Northern Development Foundation and Kor Jor Kor resettlement-scheme.

Different types of existing land rights in re-afforested degraded forest lands are shown in Figure 1.

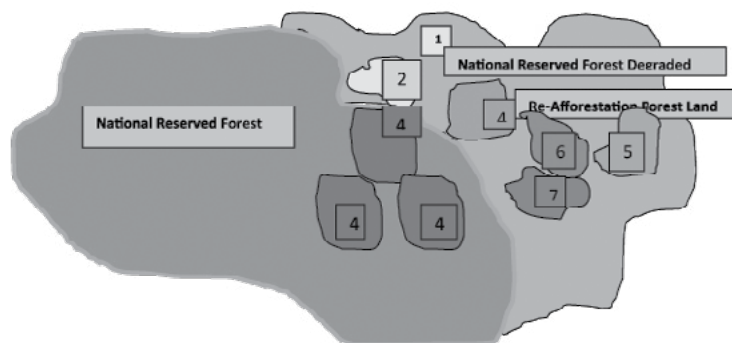


Figure 1. Different types of land rights in NFRs and re-afforested land

3.1 Re-Afforestation Act and National Reserved Forest Act and issue of land rights

A comparison of these two legislations with respect to provisions of land rights is given in Table 1 and Table 2. Farmers need permission, evidence and registration if the land is to be utilized for tree cultivation under the National Reserved Forest Act; while under the Re-Afforestation Act the land needs to be registered. However land rights conditions/pre-requisites need to be fulfilled to accomplish these requirements. This is the major bottleneck that hinders farmers due to unresolved land rights under different categories of the Land Code Act, which prohibits/restricts farmers from utilizing their trees and is a disincentive for tree cultivation. Under this situation unless the issue of land-use rights is resolved favourably, any effort to promote tree cultivation in private lands will be futile.

Table 1. Land rights requirements and permissions required in different forest acts in Thailand with regard to cultivation of trees

Requirements	Re-Afforestation Act BE 2535	National Reserved Forest Act BE 2507
Land rights to grow trees/ reforest the land	1. Registration for re-afforestation (i) Land deed/exploitation certificate (ii) Official certificate as per Land Code possession/exploitation under the Land Reform Scheme for the Agriculture Code (iii) Evidence of permission, land lease or land lease purchaser under the Land Reform Scheme for the Agriculture Code (iv) Permission under the National Reserved Forest Act	1. Permission under the National Reserved Forest Act 2. Permission to exploit and inhabit under the Land Reform Scheme (20/30 rai) (i) Permission shall not be allowed for holding of the land deed acquired in accordance with the Land Code. (ii) Permission will not be allowed to any other person other than the grantee to exploit such land

4. Moving beyond sectoral approaches in land resource tenure

Agricultural policies and allocation of agricultural land differ from forest legislation and forest allocation. Successful natural resource management to involve all stakeholders calls for a holistic approach in agricultural, forest and environmental policies. Only if these policies are consistent and transparent, can they provide a basis for the sustainable use of agricultural land, trees and forests by multiple users. Harmonizing agricultural and forest policies, however, will not be sufficient to reduce deforestation, induce tree planting and protect the remaining forests. As long as the growing rural population relies exclusively on agricultural land and forest resources for securing their livelihoods, prospects for sound natural resource management remain dim, no matter how tenure arrangements are shaped. The creation of off-farm opportunities in rural areas – whether in ecotourism, small-scale industries or other sectors – has to be given high priority in the national agenda to absorb the abundant labour force and to release the pressure on forest and other natural resources.

In the contemporary situation of rapid population growth, an expanding cash economy and a growing scarcity of land, there is an urgent need to clarify land legislation. Unless many of the problems surrounding land rights are resolved in an equitable and efficient manner, solutions to Thailand's problems of forest depletion will remain elusive.

In Thailand, formulation of land tenure policy and forest policy is the task of different government departments in different ministries. In general, there is no coordination among these organizations.

However, at least some parts of many forest protection zones are under cultivation by farmers. On the other hand, there is an increasing tendency to plant trees on agricultural land as demonstrated by the plethora of complex agroforestry systems and fruit tree plantations throughout the region. Therefore, the sectoral approach is completely out of date and needs to be discouraged in the government's policies.

5. Problems due to unresolved land rights: issues identified during the field surveys and workshops

The following legal issues in key problem areas of land use/tenure were identified during stakeholder workshops; they are experienced by farmers cultivating trees on private lands and SMEs of wood processing industries.

5.1 Important sections of the Forest Act and Tree Plantation Act applicable for long rotation tree plantations

Land that can be registered for tree plantation under **Section 4** of the Tree Plantation Act B.E.2535 shall have to belong to one of the following categories:

- (i) Have a land deed or exploitation certificate under the Land Code;
- (ii) Have evidence of permission, land lease or land lease purchase in a land reform scheme under the Land Reform Scheme for the Agriculture Code;
- (iii) With an official certificate, may receive a land deed or exploitation certificate in accordance with the Land Code, or possession or exploitation of such land under the Land Reform Scheme for the Agriculture Code or the Land Classification for Vitality Code;
- (iv) Have permission issued in accordance with the National Reserved Forests Act, to allow any person to replant trees in such therein under Section 16 in the second paragraph or allow reforestation in a deteriorated forest under Section 20; and
- (v) Being reforested by a public body or government agency.

In **Section 4 (1)** of the Forest Act B.E. 2484, 'forest' means land which has not been taken up or acquired by any other means under the Land Law. The five types of land which can be registered for the tree plantation are divided into:

- (i) Land which has a land deed or exploitation certificate under the Land Code;
- (ii) Degraded land (the land of Section 4 in articles ii-v is not land acquired under the Land Law).

In **Section 3** of the Tree Plantation Act B.E.2535, '**Tree Plantation**' means the surface of land which has been registered under **Section 5** to replant and improve the trees which are reserved tree species under the Law on Forests. 'Wood' means the tree which is grown, or the replacement trees, the uses and benefits from wood and also includes use for other purposes.

Thus the two types of reserved tree species which are grown and improved, and the replacement trees can be registered for tree plantation under the Tree Plantation Act B.E.2535.

In **Section 6** of the Forest Act B.E. 2484, reserved tree species are divided into two categories:

- **Category (A)** Ordinary reserved tree species are timber species for logging for which permission must be obtained from the Competent Officer or which are granted concessions under this Act.
- **Category (B)** Special reserved tree species are those comprising rare species, or need to be preserved, for which logging permission cannot be granted unless special permission is obtained from the Minister.

In **Section 7** teak and yang (*Dipterocarpus* sp.) trees in forests throughout the Kingdom are reserved tree species under Category (A). **Other species in the forests**, which are to be reserved in any locality and under any category, shall be prescribed by a Royal Decree to that effect. So teak and yang in the land which has the title deed or the utilization certificate under the Land Law or on degraded land are all reserved tree species; logging needs permission from the Competent Officer.

5.2 Problems related to land use/rights

1. Problem: Reserved trees that are grown on land with Por. Bor. Tor. 5 receipts cannot be registered for tree plantations under the Tree Plantation Act B.E. 2535

Legal implications: Por. Bor. Tor. 5 is the local development tax receipt known in the past as ‘dokya taxation’ which is not a document of land right under the Land Code. From its condition shall be considered to be the degraded land and not covered land which shall be filed for registration as the tree plantation under the Tree Plantation Act B.E.2535.

The letter of the Ministry of Interior dated 25 February B.E. 2534 to the governor of each province concerning the land survey for paying the local development stated to form the committee to inspect the land without the document of land right or the land without any tenure which already had Por. Bor. Tor. 5. If that land is in national reserved forest scheme or public benefit or land reserved for animals, the list of land (Por. Bor. Tor. 5) shall be repealed and the assessment of local development tax also abstained to protect the land in national reserved forest scheme, animal field, or public benefit from a person putting in a claim for that land.

The reserved tree is grown in the land which has Por. Bor. Tor. 5 and the government have given subsidy of 3,000 baht per rai. The government should seek the farmers to file a certificate of the land registration for reforestation under the project on promoting tree plantations by farmers (Sor. Gor. 3 & 4), the request of logging under **Section 11 of the Forest Act B.E. 2484 is likely to be sufficient.** The reserved tree is grown in the land which has Por. Bor. Tor.5, and the Government has not given any subsidy of 3,000 baht per rai. If the grown timber is allowed to be registered as a tree plantation under the Tree Plantation Act B.E.2535, this will be the channel for the farmers to claim such land that can lead to widespread deforestation. **This should not be allowed.**

Amendment/Action Required

The short term solution to the problem could be addressed as follows:

- (i) The Government/ RFD should comply with the farmers’ request to file a Certificate of the land registration for reforestation under the project on promoting the farmers to raise tree plantations (Sor. Gor. 3 and 4) and for logging under Section 11 of the Forest Act B.E. 2484.

The long term solution to the problem is as follows:

- (i) Repeal of the Cabinet Resolution dated 8 September B.E. 2533 of the tree plantation waiver of private sector under Cabinet resolution dated 15 May B.E. 2533.

Or

- (i) MONRE to consider the regulations, solutions or conditions in permitting tree plantation for the private sector according to the Cabinet Resolution dated 14 September B.E. 2536 and permitting the tree plantation farmers to access the benefits in the reserved forests according to Section 16 bis. and Section 20 of the Reserved Forest Act B.E. 2507.

2. Problem: Reserved trees which are grown in the land having Nor. Sor. 3 overlapping with the National Reserved Forest area and the government has subsidized 3,000 baht per rai.

Legal Implications

In such cases, where the reserved trees are grown in the land having Nor. Sor. 3 overlapping with the national reserved forest area and the Government have subsidized 3,000 baht per rai the Council of State interpreted that Nor. Sor. 3 were issued wrongfully and Director-General of the Land Department shall not revoke the license at all. Supreme Administrative Court gave a decision that issuing of an administrative order was clearly erroneous and in violation of the Law.

For the utilization certificate (Nor. Sor. 3) pursuant to Section 58 in the first paragraph of the Land Code B.E. 2497 as amended by Section 6 of the Act (No. 4) B.E. 2528 prohibited a walk survey in the permanent forest under the Cabinet Resolution. Also, Section 14 of the National Reserved Forests Act B.E. 2507 prohibits any person to hold or possess land, make a construction....If having issued the Utilization Certificate (Nor. Sor. 3) in the permanent forest area under the Cabinet Resolution or National Reserved Forests that shall be contrary to the Land Code B.E. 2497 and the National Reserved Forests Act B.E. 2507, which shall be considered as an administrative order issued erroneously and in violation of the law. **So the Utilization Certificate (Nor. Sor. 3) above shall not apply.**

The farmers shall file a certificate of land registration for reforestation under the project on promoting tree farm plantations (Sor. Gor. 3) and the handbook of procedures with promotion of farmers in developing tree plantation (Sor. Gor. 4) and for the **request for logging under Section 11 of the Forest Act B.E. 2484.**

Amendment/Actions Required

No action is required as the existing provisions in the laws are adequate to address the problem.

3. Problem: Reserved trees which are grown in the National Reserved Forests under section 16 bis in the second paragraph and already obtained the license of Sor. Tor. Gor. from RFD cannot be registered as a tree plantation under the Tree Plantation Act B.E. 2535.

Legal Implications

Under Section 4 of the Tree Plantation Act B.E.2535, the land which can be registered shall have to be one of the lands as the following (4) having permission issued in accordance with the National Reserved Forests Act, to allow any person to replant trees in such therein.

RFD Regulations on permitting to utilize or live in land within the National Reserved Forests B.E. 2548 (under section 16):

Chapter 1, any person asking for the permission, under Article 5 should ask for access to utilize or live in land within the National Reserved Forests and should file the application in the concerned province where the forest area is located or office determined by RFD according to Por. Sor. 21 (for individual or general corporate).

Chapter 4, any person asking for the permission after the original license expired ..., under Article 19, the licensee or applicant shall have to file an application under Article 5 to the Provincial Governor who shall order the officers to inspect the area in order to get the current information with the auditor of the licensee that have been duly complied with the conditions or not. Then the Provincial Governor shall consider and offer the opinions to Director- General of RFD. Article 20 ...in the case could not allow the applicant to utilize the provisions under this Chapter with any reason, the licensor shall have to inform the reason to the applicant without delay.

If the license of the plantation under the improvement scheme of National Reserved Forests under Sor. Tor. Gor. is still valid, the trees planted in that area can be registered for the tree plantation under section 4 of the Tree Plantation Act B.E.2535.

That cannot bring the trees planted in the forest under the permission of Sor. Tor. Gor., recognizing that the license of applying the national reserved forests area is expired. So the applicant shall have to file a request to the officers according to RFD regulation on permitting to utilize or live in land within the national reserved forests B.E.2548 in Article 5. When the new permission based upon Sor. Tor. Gor. 1 Kor. or Por. Sor. 23 is obtained then the trees planted in the reserved forests area can be registered for the tree plantation under Section 4 of the Tree Plantation Act B.E.2535.

Amendment/Action Required

The applicant shall have to file a request under the existing RFD Regulations on permission to utilize or live in land within the National Reserved Forests B.E.2548 in Article 5.

4. Problem: Trees which are grown in the land under the Land Reform Scheme of Agriculture Code or the Land Classification for Vitality Code cannot be brought under Tree Plantations.

Legal Implications

Under Section 4 of the Tree Plantation Act B.E.2535, the land which can be registered for the tree plantation under this Act shall have to be one of the lands as the following:

1. Having an official certificate, may receive a land deed or exploitation certificate in accordance with the Land Code, or possession or exploitation of such land under the Land Reform Scheme of Agriculture Code or the Land Classification for Vitality Code, therefore:
2. Section 4 of the Land Allocation for Livelihood Act B.E. 2511
3. Section 4 of the Land Consolidation for Agriculture Act B.E. 2517

Persons who have obtained the right in the land under the Land Allocation for Livelihood Act B.E. 2511 shall have: (i) A certificate showing the utilization in Nikhom Sang Ton Eng (Nor. Khor. 3), or (ii) A certificate showing the utilization in the Cooperative Estate (Gor. Sor. Nor. 5).

Persons who have obtained the right in the land under the Land Consolidation for Agriculture Act B.E. 2517 shall have: (i) An official certificate under the Land Consolidation for Agriculture Act.

Therefore, the two Acts shall have an official certificate, may receive a land deed or exploitation certificate in accordance with the Land Code.

For the reserved trees grown in these areas the following two conditions are applicable:

1. The reserved trees, which are grown in the land and having an official certificate may receive land deed or exploitation certificate in accordance with the Land Code, can be registered for the tree plantation under the Tree Plantation Act B.E. 2535.
2. The reserved trees, which are grown in the land under Article 1, later for any reason the Land Consolidation does not meet the Land Allocation for Livelihood Act B.E. 2511 and the Land Consolidation for Agriculture Act B.E. 2517 failed or returned the area back to RFD or RFD asked to return back the area.

- (i) The reserved tree grown for **which the Government/RFD has subsidized 3,000 baht per rai**: The Government shall have to assist the tree plantation farmers by granting the request under Section 11 of the Forest Act B.E. 2484 through an application for issuing the certificate of the project on promoting the farmers to establish the tree plantation as per Sor. Gor. 3 and Sor. Gor. 4 for the request.
- (ii) The reserved tree grown for **which the Government/RFD has not subsidized 3,000 baht per rai**: If the damage was not caused by the tree plantation farmers but because the Government officials were unable to proceed with the land consolidation completion

for any reason, the Government shall have to provide appropriate assistance to the tree plantation farmers on a case by case basis. If the tree plantation farmers violate the law by changing the land, the tree plantation farmer has to suffer for that.

Amendment/Action Required

No action is required as the existing provisions in the laws are adequate to address the problem.

5. Problem: To Register trees, which are grown in the Land Reform Scheme under the Agriculture Act B.E. 2518, as the tree plantation under the Tree Plantation Act B.E. 2535.

Legal Implications

Under Section 4 of the Tree Plantation Act B.E.2535, the land which can be registered as tree plantation under this Act shall have to be “A land in a Land Reform Scheme under Agriculture Code having evidence of permission, land lease or land lease-purchase”.

The letters or the important documents under section 4 (3) of the Land Reform Scheme for Agriculture Act B.E. 2518 that the long rotation reserved trees can be registered for the tree plantation under the Tree Plantation Act B.E. 2535 are as follows:

- Letter of granting for utilization Sor. Por. Gor. 4-01, Sor. Por. Gor. 4-01 Gor., Sor. Por. Gor. 4-01 Kor
- Lease contract
- Lease-purchase contract
- Land compensation contract

The long rotation reserved trees cannot be registered as the tree plantation under the Tree Plantation Act B.E.2535 because they are not in the rules above that is probably a mistake on the part of the government officials to issue the above letters.

Later, if such area was allocated over the scope which the Royal Decree declared to be land reform scheme and the granting letter repealed or people may have misunderstood that the occupied area will be the land reform in the future by any reason. So, this may separate the issue of the reserved timber plantation that has not got the possession right under the Land Reform Scheme for Agriculture Act B.E. 2518 as follows:

1. The reserved tree grown for **which the Government/ RFD has subsidized 3,000 baht per rai**: The Government shall have to assist the tree plantation farmers by granting the request under Section 11 of the Forest Act B.E. 2484 through an application for issuing the certificate of the project on promoting the farmers to establish the tree plantation as per Sor. Gor. 3 and Sor. Gor. 4 for the request.
2. The reserved tree grown for **which the Government/RFD has not subsidized 3,000 baht per rai**: If the damage was not caused by the tree plantation farmers but because the Government officials were unable to proceed with the land consolidation completion for any reason, the Government shall have to provide appropriate assistance to the tree plantation farmers on case to case basis. If the tree plantation farmers violate the law by changing the land, the tree plantation farmer has to suffer for that.

Amendmen/Action Required

The Tree Plantation Act B.E. 2535 should be amended to allow the farmers to register trees, which are grown in the Land Reform Scheme under the Agriculture Act B.E. 2518, as the tree plantation under the Tree Plantation Act B.E. 2535.

6. Problem: (a) People who are allowed to utilize or live in land within the National Reserved Forest scheme cannot bring the trees planted in the permitted area to be registered as tree plantation under the Tree Plantation Act B.E.2535.

- (b) People who are allowed to utilize or live in land within the National Reserved Forests related to mineral mining under the law on mineral resources with a term of not more than ten years by obtaining the forest clearing license cannot bring the trees planted in the utilized area to register for the tree plantation under the Tree Plantation Act B.E.2535.**

Legal Implications

Under Section 16 of the National Reserved Forests Act B.E. 2507, the Director-General may, with approval of the Minister, permit a person to utilize or live in land within any National Reserved Forest in the case as follows;

- (1) A period of such utilization or living is longer than five years but not more than thirty years. If permission is made to a government agency or other State enterprise under the law on budgeting procedure, permission fee may be exempted or reduced, wholly or partly, as appropriate;
- (2) Such utilization related to mineral mining under the law on mineral resources and a period of such utilization is not longer than ten years. In this case, such person shall not apply for a license to collect forest product and shall not pay royalty for forest product under this Act for mineral, kaolin or stone, as the case may be.

Request for, and granting of, permission under the first paragraph shall be made in accordance with rule, procedure and condition specified by the Director-General which is approved by the Minister.

- (1) RFD regulation on permitting to utilize or live in land within the National Reserved Forest B.E. 2548 (under Section 16).
- (2) Article 5, any person who requests for access to utilize or live in land within the National Reserved Forest has to file an application to the concerned province where the forest area is located or office determined by RFD in accordance with Por. Sor. 20 (for government agencies or State Enterprises) or Por. Sor. 21 (for individual or general corporate).
- (3) Article 9, the permission related to mineral mining under the law on mineral resources... and may consider to permit... each area of not more than 300 rai for a period not longer than ten years.
- (4) Article 14, the permission for government agencies or other State enterprises on utilization for any purpose ... should define the purpose for which area is required... longer than five years but not more than thirty years at a time.
- (5) Article 15, the permission for other cases ... in case of the technical education, the course shall have to be approved in writing by the relevant government agencies. ...should define the purpose for which the area is required...shall be longer than five years but not more than thirty years at a time.

Under the Section 4 of the Tree Plantation Act B.E.2535, the land which can be registered as the tree plantation under this Act shall have to be one of the lands (4) having permission issued in accordance with the National Reserved Forest Act, to allow any person to replant trees in such area therein under Section 6 in the second paragraph.

Therefore, the rules related to application for the land which is planted with the reserved timber for registration as the tree plantation shall have to be declared as the improved area of National Reserved Forest in accordance with section 16 bis in the second paragraph.

So, it should be added in Section 16 (1). The utilization or living in land within the national reserved forests can apply for the long rotation trees for registration as the tree plantation under the Tree Plantation Act B.E.2535. For section 16 (2), the utilization of land for mineral mine should be permitted to apply for the forest clearing license under Section 54 of the Forest Act B.E. 2484 which has been made or has not done mining but planted with the long rotation trees, the land can be registered for tree plantation under the Tree Plantation Act B.E.2535.

Amendment/Action Required

- (i) The Cabinet Resolution should be amended.
- (ii) The additional amendment of the Section 4 of the Tree Plantation Act B.E.2535 should also include the Section 16 (1) and Section 16 (2) of the Forest Act B.E. 2484.

7. Problem: No permission is allowed for tree plantation or long rotation trees in degraded forest area under Section 20 of the National Reserved Forests Act B.E. 2507.

Section 20 of the National Reserved Forests Act B.E. 2507, in case where any National Reserved Forest is so deteriorated under section 16 (bis), the Director-General is empowered, with the approval of the Minister, to grant permission, in writing, to any person to carry out forest improvement or reforestation or replanting of the trees in such deteriorated land with the specified period of time and conditions as imposed in the permission, but in the case of the issuance of any permission exceeding 2,000 *rai*, the permission shall be granted upon the approval of the Cabinet.

Under Section 4 (4) of the Tree Plantation Act B.E.2535, the land which can be registered for the tree plantation under this Act shall have to be the land having permission issued in accordance with the National Reserved Forests Act to allow any person to replant trees in such therein under Section 16 in the second paragraph or allow to reforest in degraded forest under Section 20

The Cabinet Resolution dated 15 May B.E. 2533 suspended the permission to utilize the forest for the tree plantation of private sector temporarily. And directed the Working Group appointed by the National Forests Policy Committee to study to find out the control measures to ensure the practical compliance with the Policy on promoting the tree plantations of private sector.

Cabinet Resolution dated 8 September B.E.2535, with respect to the approval of utilization of forest for the tree plantation by the private sector, reconsidered the Resolution dated 15 May B.E. 2533 granting permission to the conditions that fully respect the following five criteria:

1. Being the tree plantation under the timber specie that specified in the Tree Plantation Act B.E.2535
2. Being the operation by the former possessor is longer than five years with proven evidence.
3. Being the change from agricultural activity or rice crop to agroforestry or tree plantation.
4. The operation of agroforestry or tree plantation is in accordance with Article 3 shall have the verifiable evidence that the operation in the area to ask for permission began explicitly.
5. Granting for utilization in the forest not exceeding 50 *rai* for each family.

The Cabinet Resolution dated 14 September B.E.2536 approved by the Resolution of the Committee on Economic Affairs Minister, which had the opinion that if the Cabinet Resolution dated 8 September B.E.2535 was repealed, it might lead to subsequent criticism. So it is appropriate to assign the Ministry of Agriculture and Cooperatives to determine the rules, procedures and conditions for the permission to the tree plantation of private sector in order to facilitate the benefits to the small farmers in the area, as the government has announced the policies to Parliament, and then propose the Cabinet to consider. So the Cabinet resolution dated 8 September B.E.2535 not been repealed till this time.

At present RFD has already applied the regulation on the permission to replant trees or reforest in the National Reserved Forest scheme B.E. 2548 (under Section 20) dated 17 January B.E. 2548.

Amendment/Actions Required

- (i) Repeal Cabinet Resolution dated 8 September B.E.2535; the tree plantation waiver of private sector under Cabinet Resolution dated 15 May B.E. 2533.
- (ii) Request MONRE to review the relevant Cabinet Resolution dated 14 September B.E.2536 permitting tree plantation by the private sector and also permitting the tree plantation farmers to access the benefits in the reserved forests according to Section 16 bis and Section 20 of the Reserved Forest Act B.E. 2507.

General Conclusions of Land Use/Tenure Issues

- (i) The reserved trees which are grown in (i) Land of Nikhom Sang Ton Eng or Cooperative Estate, (ii) Land of Sor. Por. Gor., (iii) Land having Por. Bor. Tor. 5, (iv) Land of Sor. Tor. Gor., and (v) Nor. Sor. 3 overlapping the National Reserved Forest Area, the Government subsidized 3,000 baht per *rai* in 5 years.
- (ii) The Government/ RFD should find out the way to assist the tree plantation farmers by granting permission under Section 11 of the Forest Act B.E. 2484.

- (iii) The Government/ RFD should allow the farmers to file a certificate of the land registration for reforestation under the project on promoting the farmers to the tree plantation (Sor. Gor.3) and the handbook of procedures on the project on promoting the farmers to the tree plantation (Sor. Gor. 4) for the request of logging under Section 11 of the Forest Act B.E. 2484.

6. Policy recommendations for addressing land-use/tenure problems and promoting tree farming

In Thailand, centralization by government of the natural resource management, including forest and its harmonization among the concerned departments/ministries is essential. Most problems have stemmed from the sectoral approach and absence of proper linkages and understanding of different mandates.

It is evident from Section 5 that farmers' land-use rights have become a complex problem due to *ad hoc* government policies implemented under different schemes from time to time to suit/address particular situations prevailing at a given time. Unless this is dealt with properly, policy suggestions for tree promotion by farmers will have no impact.

Legally allowing farmers to have rights to control and manage degraded re-afforested lands that they occupy will serve to encourage private forest plantations in line with the National Forest Policy 1985. This is possible through the STK land certificates issued by the RFD and ALRO usufruct certificates issued by the Agricultural Land Reform Office. However, the STK certificate provides little security, being temporary and non-transferable except by inheritance. The land remains the property of the government, and restrictions are imposed on landholdings and land use. In practice, farmers continue the practice of renting out or selling STK holdings regardless of law. The ALRO usufruct certificates are seen to be superior in terms of issues related to landholding size, indefinite tenure and credit and infrastructure.

The amendments suggested above in laws and cabinet decisions with respect to problems related to land-use rights are numerous and not a permanent solution as different farmer status will remain under different land codes/schemes; the permissions required under various provisions of the law will continue to result in disparity. In order to prevent such conflicts, it is important to clarify and ensure the basic rights of all indigenous farmers by law, give tenureship over land to local communities allow participation in decision-making process through transparent procedures. This should be done in perpetuity. It should be noted that the different rules to be followed under the National Reserved Forest Act and Re-Afforestation Act are complex and act as disincentives for farmers.

Since, it is impossible to uproot/ mobilize the millions of people who have been occupying forest lands either legally or illegally for a long time and under various categories, it is recommended to grant them a one-time amnesty as done in 1971 and follow up with the aforesaid legal rights and tenureship for cultivation and utilization of the forest resources they grow.

Certain restrictions should be imposed to maintain the forest landscape and ecology and ensure that land use is environmentally sustainable. For example: The land should be on a 40-year lease, that is extendable or transferable to next of kin in the event of death of the lessee with the restriction of growing forestry tree species only, and not rubber, besides agricultural and horticultural crops for sustenance and income.

Secure land tenure will generate confidence in the farmers, a sense of security and ownership, dismissing the stigma of being forest land 'encroachers'. Tenure security will facilitate and promote tree cultivation in farmlands and thus foster much needed increase in forest cover and sustainable forest management. Tree cultivation by farmers will also fill the wide gap in the demand and supply of indigenously grown timber that is urgently needed by SMEs and large timber and furniture industries.

The following mechanisms could help to resolve conflicts over tenure in forest lands and promote sustainable forest management.

- i. Apart from purely agrarian regions, private ownership rights and individual land-use rights should be limited to those forest areas that are not critical for water conservation and biodiversity protection and where viable agroforestry systems and small-scale tree plantations for production purposes can be established.
- ii. A minimum size for the allocated area has to be considered to enable smallholders to devote land resources to the planting of trees.
- iii. Reduction or the temporary waiver of land taxes during the phase of establishment can be considered to create additional incentives.
- iv. The degree of ownership and management rights of local communities should be guided by the degree of their dependence on forest resources. The concerned departments would have to give up their role as pure controlling agencies and have to become partners and moderators of an open decision-making process.
- v. At the national level, the political and legal prerequisites for community forestry and co-management systems have to be created. National laws have to provide a legal basis for forest agencies for the delegation of management rights to local communities and specific groups, such as women's forest management committees.
- vi. These more pluralistic approaches require the abolition of the sectoral approach in land tenure, agricultural and forest policies in favour of a holistic approach under the participation of all parties involved in the wider field of resource tenure.
- vii. Exclusively communal systems of forest management can be supported in those areas where the limits of the forest resource are clearly defined and where communities who are fairly homogeneous and relatively small depend directly on forest resources.

6.1 RECOMMENDATIONS

- (i) The Tree Plantation Act B.E. 2535 should be amended to allow the farmers to register trees, which are grown in the Land Reform Scheme under the Agriculture Act B.E. 2518, as the tree plantation under the Tree Plantation Act B.E. 2535.
- (ii) The additional amendment of the Section 4 of the Tree Plantation Act B.E.2535 should also include the Section 16 (1) and Section 16 (2) of the Forest Act B.E. 2484.
- (iii) Repeal Cabinet Resolution dated 8 September B.E.2535; the tree plantation waiver of private sector under Cabinet Resolution dated 15 May B.E. 2533.
- (iv) Review the relevant Cabinet Resolution dated 14 September B.E.2536 permitting tree plantation by the private sector and also permitting the tree plantation farmers to access the benefits in the reserved forests according to Section 16 bis. and Section 20 of the Reserved Forest Act B.E. 2507.
- (v) **Legalize the land rights of people with unsettled land rights:** Effect one-time legalization for people with unsettled land rights in degraded national reserved forest and re-afforested forest lands and allot 40 years for the land on lease with the right to cultivate, harvest forest tree species and trade with appropriate but simple restrictions to maintain the ecology and landscape of re-afforested degraded forests.

Table 2. Land-use rights requirements and permission needed in different forest acts regarding cultivation/utilization of trees

Requirements	Forest Act BE 2484	Re-Afforestation Act BE 2535	National Reserved Forest Act BE 2507
Land rights to grow trees/ reforest the land		<p>Registration for re-afforestation;</p> <p>Land deed/exploitation certificate;</p> <p>Official certificate according to the Land Code for possession/ exploitation under the Land Reform Scheme for Agriculture;</p> <p>Evidence of permission, land lease or land lease purchaser under the Land Reform Scheme for Agriculture;</p> <p>Permission under the National Reserved Forest Act;</p>	<p>Permission under the National Reserved Forest Act;</p> <p>Permission to exploit and inhabit under the Land Reform Scheme (20/30 rai):</p> <p>(i) Permission shall not be deemed necessary for holding of the land deed acquired in accordance with the Land Code.</p> <p>(ii) Permission will not be allowed for any other person other than the grantee to exploit such land.</p>
Rights/permission to cut, log, trade	<p>Obtain permission or concession;</p> <p>Obtain a licence – with the approval of the Minister, the Competent Officer may grant a monopoly on the condition that the licensee shall pay the monopoly fee;</p> <p>Obtain a licence – the Minister may grant a monopoly or concession for firewood or charcoal;</p> <p>The licensee/concessionaire shall inform the competent officer – entrance of implement, tool, vehicle, heavy equipment to be permitted in forest concession;</p> <p>Unless permission is specified in the licence – no licensee shall log out any timber which bears no impression of a hammer mark by the Competent Officer authorizing the logging; Log out timber up to permitted girth limit:</p> <p>(i) Logging of timber of any size (below the girth limit) – should bear the hammer mark of the Competent Officer.</p> <p>The licensee shall pay royalty:</p> <p>(ii) Advance royalty: 2 baht/log/tree.</p> <p>(iii) Logging of teak timber – royalty notified by the Provincial Government Board.</p> <p>(iv) Logging of timber for firewood or charcoal – no advance royalty required.</p> <p>The Advance royalty shall not be applicable to the licensee:</p> <p>(i) Where teak timber is logged out from land with a title deed in accordance with the Land Code for domestic purposes.</p> <p>(ii) Where yang timber is logged out on land with Nor. Sor. 3 Certificate or title deed in accordance with the Land Code for personal domestic purposes.</p>	<p>(i) A person having ownership, tenure or exploitation title on land – registration application for using the land for re-afforestation for trading (evidence of entitlement of land tenure, letter of ownership or tenure required).</p> <p>(ii) Before cutting/felling of timber acquired from re-afforestation – the plantation owner shall file an application/notice for a certificate.</p> <p>(iii) When cutting and felling the timber the plantation owner shall carry a re-afforestation certificate.</p>	<p>(iii) Permission shall be obtained for logging of forest products – granted by means of a notification by the Competent Officer – valid for not exceeding one year from the date of issue.</p> <p>(iv) Permission may be transferred upon approval.</p> <p>(v) Permission/person obtaining the permit shall provide his labourers, employees or representative with authenticating papers for carrying out the activity.</p>

Chapter 7.

Draft - PROMOTION OF TREE CULTIVATION IN NON-FOREST AREAS: PRIVATE, FARM AND COMMUNITY LANDS ACT

- J.K. Sharma & Narong Khamhirun

Summary

Forest laws that are currently relevant to promotion of tree cultivation on private land in Thailand are:

- a. Forest Act B.E. 2484 (1941; latest amendment in 1989);
- b. National Reserved Forest Act B.E. 2507 (1964);
- c. Forest Plantation Act/Reforestation Act B.E. 2535 (1992);
- d. Chain Saw Act B.E. 2545 (2002)¹.

From analysis of the 1985 National Forest Policy and the current forest laws in force it is evident that these instruments have become outdated and do not encompass the present forest scenario and people's requirements. Hence, they are no longer adequate for the development of the private forestry sector. These laws are highly restrictive, demanding multiple paperwork for approval and permission at every stage. In particular, when there is a need to increase forest cover in relation to environmental issues, backstopping the livelihoods of rural people and increasing the availability of wood for fuel and wood products, such restrictions obstruct the promotion of wood enterprises.

There are legal implications and provisions for some of the main issues and problems related to tree species and forest products; cutting/harvesting of timber; hammer marking; chainsaw use; transport of timber or forest products; lumber work; establishment of a lumber mill; and the export of logs/charcoal. These are detailed in this proposal along with amendments or actions required on the part of the government to address them.

In this context it is evident that several amendments will be required in all the existing laws on forest, which appear to be impracticable nowadays. But as these laws are already outdated and have lost their relevance such comprehensive amendments may be futile.

In addition, more amendments will be required when addressing the following recommendations from stakeholders' workshops:²

- Establish an institutional coordination mechanism for tree planting: The Royal Forest Department (RFD) to coordinate with other concerned departments/ministries/financing institutions that promote tree plantation;

¹

² B.E. = Buddhist Era.

Contained in the report: *Promotion of small and medium enterprises of wood processing industries in Thailand through sustainable forest plantations in private lands*. Part of the TCP/THA/3203 Project: Participation of Tree Plantation Farmers for Sustainable Forest Management.

- Decentralize the granting of permission/approval at the district level for enhanced convenience and efficiency;
- Tree cultivation on agricultural land should be treated in the same fashion as agricultural production;
- Remove restrictions on the growth of certain tree species on private land;
- Simplify procedures for cutting of trees and removal/transport of wood/logs;
- Major restrictions on the use of chainsaws to be removed;
- Establish an efficient and strong Forestry Extension Service in the RFD to provide one-stop technical support services/advice to farmers;
- Encourage the use of high quality certified seeds and genetically improved planting stock produced by the Silvicultural Research Division of the RFD for establishing private tree plantations to ensure high productivity;
- Establish Central Forest Nurseries using only certified seeds in each district and make registration of private nurseries mandatory;
- Promote standard management practices in private tree plantations for optimum yield to ensure good market value for the trees;
- Establish Demonstration Plantations for important tree species in farmers' fields in each district;
- Undertake skills development of long rotation tree farmers for livelihood security as part of extension services;
- Set up a Tree Planting Promotion Fund in the Bank for Agriculture and Agricultural Cooperatives (BAAC)/RFD for tree farming and supporting small- and medium-scale wood processing industries and marketing of their products;
- Fix a minimum support price for the timber of forestry species from private land/agricultural fields;
- Provide tax incentives and subsidies for tree cultivation on farmland;
- Impose stricter penalties for violating rules/regulations;
- The RFD should generate and maintain a district-wise database on tree plantations on private land and small- and medium-scale wood processing enterprises and their wood products;
- Define the duties and role of the RFD in promoting tree cultivation.

It is anticipated that even if these recommendations are addressed and the forest laws are amended appropriately it is unlikely that a people-friendly legal framework that promotes tree cultivation and wood-based enterprises will be achieved. The philosophy of the amended legislation should be of trust and not of mistrust; regulations should promote tree cultivation, be easy to understand and have fewer or no binding clauses/restrictions.

To accommodate all of these recommendations in the existing forest laws will not only involve major amendments but also be a major task. Moreover, the major concern of the stakeholders that only one law should be applicable will not be addressed. Hence, the only solution (also recommended) is to enact a separate law for promoting private tree plantations that incorporates the aforementioned recommendations. With this in view a draft for the 'Promotion of Tree Cultivation in Non-forest Areas, Private, Farm and Community Lands Act, B.E.' is proposed for discussion and further improvement, especially with regard to incorporating the provisions for utilization of timber.

1. Introduction

Although Thailand has imposed a logging ban since 1989, forest land is still subjected to continuing pressure and devastation. Demand for land for subsistence farming and other uses remains high. The shifting cultivation practised by hill tribes and refugees has degraded watersheds. The ban itself is not totally restrictive. It allows, for example, the felling and sale of trees in privately-operated forest plantations, harvests of designated species and trees which have been damaged by age or natural disasters, and the clearing of forests for infrastructure projects.

Official data reported by the Royal Forest Department (RFD) showed a significant decline in forest area losses following the ban. The rate of deforestation fell from 1.7 percent in the 1980s before the ban, to less than 0.3 percent after 1989 – a decline of nearly 86 percent below projected trend levels. The success of the ban, however, is not as clear as these numbers make it appear. Each year since the establishment of the ban, an average of over 300 square kilometres of forest has been cleared. In addition, the ban has been considerably less successful in slowing the volume of commercial wood removed from the forests. The estimated annual volume of commercial wood losses has fallen just 26 percent from projected trend levels since the ban.

Illegal logging is not a new phenomenon in Thailand. A ban on legal logging could only serve to increase the well-established demand for illegally procured logs. In 1980 the total illegal harvest was estimated to be twice the magnitude of the legal cut, and in 1991 it was believed to be more than six times as high. In some villages where government officials exercise their full authority, and where powerful political and business interests are absent or uninvolved, the ban has been successful in halting deforestation. In many areas, however, losses of legitimate logging employment and rising log prices have led to an actual increase in illegal cutting.

It is evident that the top-down government policy to protect and conserve natural forests has failed to obtain cooperation from the rural poor who live close to or within the forests. The forest laws in place have become outdated and have not served their intended purpose, especially after the logging ban. These laws have neglected the needs of rural people and forest encroachers who are destitute and have no rights to the natural resources, although others may exploit them officially. In this context it is imperative to review the forest laws and take corrective measure so that tree cultivation can be promoted to enhance the livelihoods of rural people and increase much-needed fuelwood timber resources in the country.

2. Review of forest legislations relating to long rotation tree plantations

The RFD was established on 18 September B.E. 2439 (1896).³ Prior to this, the Royal Announcement B.E. 2417 on Taxes of Teak and Non-Teak controlled logging operations. This Announcement, amended from time to time, was in effect until the new forest legislation was introduced. Presently, the following Forest Acts are used to manage and utilize the forest resources of Thailand:

- (i) **The Forest Act B.E. 2484** concerns logging operations and non-wood forest product (NWFP) collection; timber stamps; wood and NWFPs in transit; sawnwood control; forest clearing; miscellaneous activities; penal provisions; and transitory provisions.
- (ii) **The National Park Act B.E. 2504** covers the determination of national park land; national park committee establishment; protection and maintenance of national parks; miscellaneous activities; penal provisions; and transitory provisions.
- (iii) **The National Reserved Forests Act B.E. 2507** includes the determination of national reserved forest; control over and maintenance of the national reserved forest; penal provisions; and transitory provisions.
- (iv) **The Wildlife Preservation and Protection Act B.E. 2535** concerns general provisions; establishment of national wildlife preservation and protection committees; hunting, propagating, possessing and trading in wildlife, their carcasses and carcass products; importing, exporting and transport of wildlife and their products; wildlife check points; public zoos; wildlife hunting prohibited areas; officials' competence; penal and transitory provisions.

³

Subtract 543 to convert from Buddhist Era to Common Era.

- (v) **The Forest Plantation Act/Reforestation Act B.E. 2535** covers the determination of reforestation land; registration of private reforestation rights; ownership and exemption from royalty on forest products.
- (vi) **The Chain Saw Act B.E. 2545** restricts the use of chainsaws via licences valid only for an individual or a particular locality.

Earlier, the RFD was part of the Ministry of Agriculture and Cooperatives. However, after the reorganization of ministries under the Reorganization of the Ministries Act B. E. 2545, the RFD was divided into four units and transferred to the Ministry of Natural Resources and Environment:

- 1) Department of Royal Forest;
- 2) Department of National Parks, Wildlife and Plant Conservation;
- 3) Department of Marine and Coastal Resources; and
- 4) Office of the Permanent Secretary, Ministry of Natural Resources and Environment.

Therefore, the role of the RFD in the management of forest resources diminished. Under the restructuring the RFD was only responsible for enforcing the following legislations, which are also applicable to tree plantation in private lands:

- a. Forest Act B.E. 2484 (1941; latest amendment in 1989);
- b. National Reserved Forest Act B.E. 2507 (1964);
- c. Forest Plantation Act/Reforestation Act B.E. 2535 (1992);
- d. Chain Saw Act B.E. 2545.

2.1 Other laws, regulations, stipulations and ministerial regulations relating to long rotation tree plantations

In addition, the following legislations enacted by other ministries also govern/affect tree cultivation on farmlands:

- a. Land Code Act B.E. 2497;
- b. Ratchaphatsadu Land (State Land) Act B.E. 2518;
- c. Land Allocation for Livelihood Act B.E. 2511;
- d. Land Consolidation for Agriculture Act B.E. 2517;
- e. Land Reform Scheme for Agriculture Act B.E. 2518; and
- f. The Cooperatives Act B.E. 2542

3. Relevance of forestry legislations in relation to the National Forest Policy B.E. 2528 (1985)

Though numerous forest legislations have been enacted over the past century, they did not reflect the overall philosophy of the National Forest Policy (NFP) which came into effect in 1985. This resulted in inconsistencies between the NFP and forestry legislations.

Moreover, all three forestry legislations, i.e. the Forest Act, Tree Plantations/Reforestation Act and National Reserved Forest Act are unable to address the current problems of the forestry sector because they are either outdated (not reflecting the present forest scenario and people's requirements), contradictory or have highly restrictive regulatory provisions that fail to give any incentives to people to promote tree farming. Salient features of these laws that make them unfavourable to tree cultivation on private land are discussed below.

3.1 Restrictive regulatory legal provisions for tree farming and utilization of wood

Since the Forest Plantation Act, also known as the Re-Afforestation Act, became effective after the NFP it could have been used to promote tree cultivation by farmers and industry as envisaged in the Policy. This Act, which was supposed to encourage the establishment of forest plantations by the private sector, had so many restrictive regulatory provisions that instead of promoting people to grow trees in plantations it discouraged them. The Act concentrated more on registration of land, land rights, permission required for hammer marks as well as cutting and transporting logs from private and re-afforestation lands for utilization and trading. It did not permit the stakeholder to process wood by establishing a lumber mill. The cumbersome and time-consuming procedures demanded by the Act further discouraged farmers from cultivating trees on their lands.

Things were further complicated by the provisions of the Forest Act, commonly referred to as the Tree Act, dealing with reservation of tree species, concessions/monopolies/licences/permission/passes required (in addition to those included in the Forest Plantation Act) for hammer seal marks/cutting, transporting and converting the logs to lumber; such provisions are also applicable to wood from re-afforestation land and reserved forest land. While a farmer can grow and cut trees in line with the Re-Afforestation Act and Chain Saw Act, permission is necessary for transportation and sawmilling under the Forest Act. Such dichotomy further creates confusion, posing numerous practical problems for the tree farmer. Was it appropriate to make the same law, meant for concessionaires, loggers, haulers and large wood-based industries/factories applicable to farmers who grow trees on their fields and who want to utilize them for their own livelihoods?

Furthermore, some of the additional provisions in the Forest Act, which also govern tree cultivation and their utilization, are superfluous and contradictory, hindering the promotion of tree cultivation by farmers. This was very clear in the issues and problems raised by stakeholders during the workshops.

As many farmers have occupied Reserve Forest Lands (RFL) over the years, the National Reserved Forest Act also deals with the land rights, eligibility/ permission criteria for exploiting and inhabiting RFL. This Act is not comprehensive and hence relies on the other two acts for the cutting/harvesting and transporting of logs.

The Chain Saw Act B.E. 2545 was primarily introduced to control illegal logging. The Act stands on its own and restricts the use of chainsaws. How successful it has been in stopping illegal logging can be judged by the faster rate of forest depletion after its introduction; it has simply imposed more restrictions on poor farmers who want to grow trees and utilize them for their livelihoods.

It is plain that all the forest laws now enforced by the RFD restrict a person in one way or the other in his/her pursuit of tree cultivation and gainful utilization. The Forest Act and Reserved Forest Act were in force long before the NFP was promulgated in 1985. Earlier standard forest management was related to concessions, logging and lumber and so forth. These laws were enforced only to control such activities. It is understandable that they were designed to reflect the philosophy of the NFP to promote private forestry. However when such laws are in place that have mutual dependence for governing various activities how can people be expected to understand their complexities to help them promote tree cultivation?

From analysis of the NFP and the current forest laws in force it is evident that these instruments are no longer adequate for the development of the private forestry sector and to involve people in a significant way to cultivate long rotation tree species without bottlenecks and support the wood-based industry of the country.

For promoting private forestry and involving people in managing forests as envisaged in the proposed new Forest Policy, the Plantation Act has to be suitably amended to make it a comprehensive legislation that is people-friendly and promotes tree cultivation and forest-based industries in Thailand.

4. Legal issues and problems due to provisions in the forest acts: issues identified during field surveys and workshops

4.1 Tree species and forest products

ISSUE: Section 7 of the Forest Act B.E. 2484 (teak and yang trees in forests throughout the kingdom are reserved tree species under Category [A]), should be repealed

Legal implications/provisions

Aside from the conditions in Section 7 referred to above, other species in forests that are to be reserved under any category shall be prescribed by a Royal Decree.

Section 6 of the Forest Act B.E. 2484 states that reserved tree species under Category (A) are ordinary reserved tree species and for logging such species permission must be obtained from an official

Since the Tree Plantation Act B.E.2535 came into force, the difficulties in logging of teak and yang (*Dipterocarpus* sp.) should be eliminated. This is because the land has been registered under Section 5 to replant and improve the trees that are reserved tree species under the Law on Forests (grown or substituting for the uses and benefits from other wood). This means that teak and yang which are grown or serving as substitutes can be registered for tree plantation under the Tree Plantation Act B.E.2535, and hence there is no need to obtain permission for personal use under the stipulation issued under the Forest Act B.E. 2484 No. 17 (B.E.2530).

Hence there is no need to repeal Section 7 of the Forest Act B.E. 2484 in any way.

Amendment/action required: There is no need to repeal Section 7 of the Forest Act B.E. 2484. The existing regulations may be followed.

ISSUE: All trees, not only the reserved trees under the Law on Forests, can be registered for tree plantation under the Tree Plantation Act B.E. 2535

Legal implications/provisions

Under Section 3 of the Tree Plantation Act B.E.2535, ‘Tree Plantation’ means the surface of land which has been registered under Section 5 to replant and improve the trees which are **reserved tree species** under the Law on Forests. Hence, the tree species which can be registered for tree plantation under the Tree Plantation Act are only reserved tree species; teak and yang trees in the forests throughout Thailand are reserved tree species under Section 7 of the Forest Act B.E. 2484. Teak and yang whether on owned land under the Land Code or in the forest are reserved tree species that can be registered for tree plantation under the Tree Plantation Act.

Other species in forests that are to be reserved under any category shall be prescribed by a Royal Decree. So other reserved trees such as *Hopea odorata* Roxb., *Pterocarpus macrocarpus*, *Shorea talura* Roxb. etc. are only to be found in the natural forest and shall not be on owned land or covered by possessory right under the Land Code, and cannot be registered for tree plantation under the Tree Plantation Act.

It is justifiable to amend Section 3 of the Tree Plantation Act B.E.2535 from: *'Tree Plantation' means the surface of land that has been registered under Section 5 to replant and improve the trees that are reserved tree species under the Law on Forests to 'Tree Plantation' to mean the surface of land that has been registered under Section 5 to replant and improve all trees.*

Amendment/action required: Section 3 under the Tree Plantation Act B.E.2535 needs to be amended from: *Tree Plantation' means the surface of land that has been registered under Section 5 to replant and improve the trees that are reserved tree species under the Law on Forests to 'Tree Plantation' to mean the surface of land that has been registered under Section 5 to replant and improve all trees.*

ISSUE: When transporting forest products acquired from the tree plantations such as all kinds of wild orchids, *Dracaena lourerii* Gagnep. or all types of charcoal, etc. for utilization or trade, carriers often have problems with authorities and are arrested

Legal implications/provisions

In the Tree Plantation Act B.E.2535 no mention is made of 'forest products'. The following amendment is needed: Section 3 of the Act should be amended as 'forest products' means under the law on forests anything that is grown, replanted and improved including charcoal made by individuals based on the land registered to the tree plantation under Section 5.

And,

Section....: Tree plantation farmers who need to move forest products for any purpose from the tree plantation shall have to comply with the rules, regulations and conditions prescribed by the Director-General with the Minister's approval.

Amendment/action required: The definition and the procedure for 'forest products' in the Tree Plantation Act, B.E.2535 should be amended by adding Section 3 as follows: Section 3 'forest products' means under the law on forests anything that is grown, replanted and improved including charcoal made by individuals based on the land registered to the tree plantation under Section 5.

And,

Section....: Tree plantation farmers who need to move forest products for any purpose from the tree plantation shall have to comply with the rules, regulations and conditions prescribed by the Director-General with the Minister's approval.

ISSUE: For the registration of a tree plantation or a request for cutting timber the owner shall file an application at the office of Aor. Bor. Tor.

Legal implications/provisions

Regarding RFD regulations on the registration of tree plantations and transfers in The Tree Plantation Act B.E. 2535, Chapter 1, Article 6 (2) reads: *registration for tree plantation for areas in other provinces shall be submitted to the Sheriff or Deputy District, who is the head of the District, through the Registrar.*

Regarding RFD regulations on the notification, certification notice for cutting in The Tree Plantation Act B.E. 2535, Chapter 1, Article 5 (2) – notification, certification notice for cutting timber derived from the tree plantation – reads: *for areas in other provinces or to notify the Sheriff who is the Assistant District Chief of District Local in which the tree plantation is situated.*

The two regulations state that the registration for the tree plantation and the request for cutting the tree plantation, in addition to Bangkok, shall be submitted to the District Officer or Assistant District who is Sub-District Chief in the area where the tree plantation is situated.

There are many Aor. Bor. Tor. offices. The complement of RFD forest officers is currently inadequate and not evenly distributed to take requests from the Office of Aor. Bor. Tor. There have been numerous complaints about apparently ignored requests to the district on a regular basis because no forest official was present and requests were passed on to other offices. This leads to delay for tree plantation farmers due to weak forest administration. It would be appropriate to file the request in the plantation's appropriate district until the improved/new organizational set up of the RFD is established.

Amendment/action required: The organizational structure of the RFD should be improved in line with the Improvement of the Ministries Act B.E. 2545. Then it would be possible to establish the Aor. Bor. Tor. office.

4.2 Lumber work

ISSUE: Allow lumber work at night or for day and night

Legal implications/provisions

Section 52 of the Forest Act B.E. 2484 states that “no licensee shall carry out the lumber work between sunset and sunrise, unless written permission has been obtained from the competent officer.”

The Act gives the exception that if the licensee has a real need, he/she can obtain permission from an official. In Bangkok he/she shall file a request to the Director-General of the RFD and to the Provincial Governor for other provinces. If verified that the licensee's request is justified and does not cause difficulty for people around the lumber mill, permission will be given.

There is no need to repeal the lumber work at night issue because the Law already allows the owners to file for permission. Officials should disseminate the provisions in the law to the owners.

Amendment/action required: Since the Law already allows the owners to file for permission to work at night, there is no need to repeal the existing provision of undertaking lumber work at night.

ISSUE: Tree plantation farmers can convert and sell timber without permission

Legal implications/provisions

The cutting or transporting of timber from tree plantations shall have to follow the steps of the Tree Plantation Act B.E.2535:

Under Section 10 the timber acquired from the tree plantation by the plantation owner may be cut or converted into lumber, traded in, held in his possession and may be transported through any Forest Check Point.

Under Section 11 before cutting timber acquired from the tree plantation, the plantation owner shall file a written notice and when certification has been issued by the official concerned, thereafter the plantation owner may start cutting.

For converting timber within the tree plantation as a necessity measure, there is no need to file for permission from an official; however converting for trade shall require permission for the establishment

of the lumber mill. Tree plantation farmers are not confident about converting wood from the forest as a livelihood means, because they are arrested frequently by officials.

Tree plantation farmers can convert the timber in the tree plantation without permission from an official except for trade where permission must be obtained from an official. If the lumber is to be transported, the tree plantation farmers shall have to provide a hammer mark on the timber to indicate ownership under the Sor. Por. 7 application form and the log list pertaining to the tree plantation for the official issuing the certification under Sor. Por. 15.

Government officials should disseminate provisions in the law thoroughly to tree plantation farmers and the officials concerned, in particular police officers, in order to alleviate the troubles of the tree plantation farmers.

Amendment/action required: The cutting or transporting of timber from the tree plantation shall comply with the Tree Plantation Act B.E.2535. In case the tree plantation farmer requires timber conversion within the tree plantation as a necessity, there is no need to file for permission from an official, except for converting timber for trade. In the latter case the farmer shall have to file for permission for the establishment of the lumber mill.

ISSUE: Landowners cannot convert their timber

Legal implications/provisions

Under Section 47 of The Forest Act B.E. 2484, The Minister shall have the power to determine any locality as a lumber control area. Such determination shall be notified in the Government Gazette. According to Section 48 of Forest Act B.E. 2484, within the lumber control area no person shall convert timber unless permission has been obtained from an official.

Hence, people cannot convert their timber although such timber is on their land except by obtaining permission from an official under Section 48 of the Forest Act B.E. 2484.

Officials should disseminate the meaning of the law to people concerned in order to eliminate any legal ignorance.

Amendment/action required: Under Section 48 of the Forest Act B.E. 2484, landowners cannot convert their timber, except by obtaining permission from an official.

ISSUE: The Forest Act B.E. 2484 should not be enforced for para rubber trees

Legal implications/provisions

According to the Forest Act B.E. 2484, under Section 47, the Minister shall have the power to determine any locality as a lumber control area by notification in the Government Gazette; under Section 48, within the lumber control area no person shall convert timber, establish a lumber mill, store lumber for trading or have in possession teak wood of whatsoever amount or other species of lumber exceeding 0.20 cubic metres, unless permission has been obtained from an official.

If para rubber trees are grown on own land or covered by the possessory right under the Land Code, the Forest Act B.E. 2484 is not relevant. Converting timber, establishment of a lumber mill, etc. within the meanings of Section 47 and Section 48 of the Forest Act B.E. 2484 shall be authorized by an official.

If para rubber trees are grown in the forest or an area under the Law of the Forest, in addition to complying with Section 47 and Section 48 of the Forest Act B.E. 2484, cutting, and transporting timber shall have to follow the Forest Act B.E. 2484, as the logging is done in the forest.

Officials should disseminate the provision of the Act to people concerning the difference of yang logging on owned land or under the possessory right under the Land Code and yang trees in the forest. In this context police officers often create problems for people involved regularly.

Amendment/action required: For para rubber trees that are grown on owned land or covered by possessory right under the Land Code, the Forest Act B.E. 2484 is not relevant; the conversion of timber, establishment of a lumber mill, etc., shall be authorized by an official within the provisions of Section 47 and Section 48 of the Forest Act B.E. 2484.

If para rubber trees are grown in the forest or an area legally determined to be forest, in addition to complying with Section 47 and Section 48 of the Forest Act B.E. 2484, for cutting and transporting of timber the Forest Act B.E. 2484 shall have to be followed.

ISSUE: Tree plantation farmers are afraid to convert the timber into lumber in the tree plantation due to lack of clear RFD regulations

Legal implications/provisions

Section 10 of the Tree Plantation Act B.E.2535 states that the timber acquired from the tree plantation by the tree plantation farmers may be cut or converted into lumber, traded in, held in his possession and may be transported through any Forest Check Point thereof except for establishing a lumber mill; it shall be in accordance with the prescribed Law on Forests.

The Tree Plantation Act, B.E. 2535 specified that tree plantation farmers can convert the timber in the tree plantation as a livelihood necessity. If the timber is converted in the tree plantation for trade, this will require the establishment of a lumber mill in compliance with the Law on Forests.

Although the tree plantation farmers can convert the timber in the tree plantation as a livelihood necessity, they still remain uncertain about doing this due to lack of clear RFD regulations; they fear repercussions from officials, in particular police officers, if they convert the timber without permission and possible lost time and money in courts. This context requires clear regulations from the RFD.

Thus the Tree Plantation Act, B.E.2535 should be amended to “converting the timber under the Section 10 shall be in accordance with the regulations laid down by the Director-General” which would be reasonable.

Amendment/action required: The Tree Plantation Act, B.E.2535 needs amending to include “converting the timber under Section 10 shall be in accordance with the regulations laid down by the Director-General”.

ISSUE: Requirement to attach a copy of the log list on timber converting and lumber holding with the licence

Legal implications/provisions

The Ministerial Regulation No. 25 (B.E. 2519) issued under the Forest Act B.E. 2484 on timber

converting and lumber holding states that the owners shall have to provide the log list of the timber yet to be converted, converted but not yet sold and converted to be or being sold for inspection by the officers.

Although the tree plantation farmers can convert the timber in the tree plantation as a livelihood necessity they are still uncertain about this due to unclear RFD regulations.

Amendment/action required: The RFD should clarify the details of the contents, such as the log list a tree plantation farmer is required to attach according to the Ministerial Regulation No. 25 (B.E. 2519) issued under the Forest Act B.E. 2484 on timber conversion and lumber stocking.

ISSUE: The licensee shall have to provide accurate log lists according to the real count/position every day; this period should be extended to seven days at a time

Legal implications/provisions

In Stipulation No. 18 (B.E. 2532) issued under the Forest Act B.E. 2484 on controlling the converting of timber in line with Chapter 1, Article 8, the licensee shall have to provide accurate log lists according to the real count every day. In the case of violations, the licence must be suspended.

The licensee will not be able to provide the log lists with accuracy each day because timber slab opening and sawing will have differing sizes according to the timber usage required. This is a complicated problem and poses the question of the appropriate supervising officer – should he/she be a forest officer, police officer or administrative officer? Therefore, allowing for more realistic log lists should be explored.

To eliminate problems and create fairness for the licensee the regulation should be amended to: “The licensee must provide the log list accurately every week according to the Ministerial Regulations”.

Amendment/action required: To eliminate such problems and create fairness for the licensee, the regulation should be amended to: “The licensee must provide the log list accurately every week according to the Ministerial Regulations”.

4.3 Establishment of a lumber mill

ISSUE: No permission granted for establishing a lumber mill/factory in the surrounding area of a forest buffer

Legal implications/provisions

There is no regulation/law in this case. It is the policy of the governor in some provinces such as Uthaitanee.

Considering that this is a good forest protection policy the provincial governor in each province should abide by it.

Amendment/action required: For the protection of the forest no lumber mill is permitted in the forest buffer zone.

ISSUE: Unable to file an application for establishing a lumber mill in Sor. Por.Gor. areas and cooperative estates

Legal implications/provisions

The RFD requires that for controlling the converting of timber under the Forest Act B.E. 2484, B.E. 2541 dated 2 October B.E. 2541, Chapter 1, for filing an application according to Article 7, the document for consideration, 7.5, there should be one of the following documents showing the rights of using the place for business pursuits: copy of the title deed, the pre-occupation certificate, Nor. Sor. 3, Sor. 3 Gor and the certificate of possessory right, which refer to the correct document under the Land Code.

Most tree plantation farmers live in Sor. Por. Gor. Areas and cooperative estates. However they have difficulties in filing an application for establishment of a lumber mill because these areas are incompatible with elements of the RFD regulation that states this must be done only on land under the Land Code.

The government/RFD should allow this for tree plantation farmers on Sor. Por. Gor. land and cooperative estates that are not adjacent or near to forests.

Amendment/action required: Tree plantation farmers should be permitted on Sor. Por. Gor. land and cooperative estates. Amend Regulation 7.5 on controlling the conversion of timber under the Forest Act, B.E. 2484/B.E.2541 dated 2 October B.E.2541 concerning the evidence of the land extended to Sor. Por. Gor. areas and cooperative estate to: “or the copy of public land owned legally excepting the boundary of such land situated near the forest”.

ISSUE: Licences issued by the forest administration for permission to establish lumber mills, for example, which are restricted to one year, should be amended to three to five years, equivalent to the permission given to an industrial factory

Legal implications/provisions

Regarding RFD regulations on controlling the converting of timber under the Forest Act B.E. 2484/B.E. 2541 announced on 2 October B.E. 2541, Chapter 11, Article 37.5 concerns the issuing of licences and Article 37.5.1 concerns the terms for licences to be not more than one year from the date of issuance.

Licence periods for lumber mills should be compatible with the periods for industrial factories. This would reduce constraints for owners. Also they may be defined as a local district or province if deemed necessary; it should be made at the discretion of the administrator of the RFD, whether they deserve or not.

Amendment/action required: Make appropriate amendment in Forest Act B.E. 2484/B.E. 2541 announced on 2 October B.E. 2541, Chapter 11, Article 37.5 on the issuing of licences and Article 37.5.1. xxxxx

ISSUE: Cannot change the layout of machinery in the lumber mill; this should be allowed without permission

Legal implications/provisions

In Stipulation No. 18 (B.E.2532) issued under the Forest Act B.E. 2484 on controlling the converting of timber according to Chapter 1, Article 12 in the second paragraph, the licensee shall have to provide the layout of the lumber mill showing a detailed list of equipment and capacity, saw tables,

sawing tools or appliances for converting the timber and accurate log lists. This must be presented and signed as evidence. This layout plan should be displayed with good visibility in the factory for which the license is obtained. If there is a violation under the second paragraph, the licence shall be suspended.

Sometimes the licensee may make alterations to the plan displayed for ease of use. In this case, the licence may be suspended.

In the list of equipment and capacity, if items for converting timber are of the same size and number, it is likely that the licensee will be permitted to move and rearrange them to facilitate activities.

Amendment/action required: The licensee should be permitted to move and rearrange items for converting timber provided they are of the same size and number.

ISSUE: The licensee shall have to open the factory entrance at all times of converting timber.

Legal implications/provisions

Regarding Stipulation No.18 (B.E. 2532) issued under the Forest Act B.E. 2484 on controlling the converting of timber according to Chapter1, Article 12 in the third paragraph the licensee shall have to open the factory entrance at all times of converting timber. If violation occurs the licence is suspended and renewal is withheld for one year to three years.

The opening of the factory entrance at all times of converting timber is intended for easy officer inspection purposes. But the current economic conditions makes it difficult as crime is rampant. The licensee has to increase awareness and expenses on security. This stipulation may be outdated and the provisions should be practical and not difficult for owners to implement.

Amendment/action required: The schedule for opening the factory should be stricter. In case of any inspection, when the officers show their identity cards, the factory entrance will be opened.

4.4 Cutting/harvesting of timber

ISSUE: Applying mutatis mutandis (necessary changes) for thinning/cutting timber without prior information of the cutting under Sor. Por. 13.

Legal implications/provisions

According to The Forest Act B.E. 2484 under Section 4(5) 'logging' means cutting, chopping, girdling, felling, lopping, sawing, splitting, hewing, reducing, digging out, hauling or howsoever extraction of timber. This applies to teak and yang which are reserved tree species and grown on land not in the forest. Under Section 6 reserved tree species are divided into two categories:

- Category (A): Ordinary reserved tree species are tree species for logging for which permission must be obtained from an official.
- Category (B): Special reserved tree species are those comprising rare species, or need to be preserved, for which logging permission cannot be granted unless special permission has been obtained from the Minister.

The Law on Forest indicates that for removal of teak and yang trees in the forests that are found on owned land or covered by possessory right under the Land Code, transport permission shall have to be obtained from an official.

For removal of other species, which are to be reserved, found on Sor. Por. Gor. land or cooperative estates the transportation requires permission from an official.

Thinning is also regarded as logging and also requires permission; *mutatis mutandis* cannot be applied without reporting of the cutting under Sor. Por. 13.

Understanding of this law should be disseminated thoroughly to those involved by officials.

Amendment/action required: Since thinning is logging for which permission has to be obtained, *mutatis mutandis* cannot be applied without reporting of the cutting under Sor. Por. 13.

ISSUE: In the Tree Plantation Act there is only procedure for cutting and transporting timber from the tree plantation

Legal implications/provisions

Under Section 10 of the Tree Plantation Act B.E.253 the timber acquired from the tree plantation by the plantation owner may be cut timber, or converted into lumber, traded, held in his possession and may be transported through any Forest Check Point; except for establishing a lumber mill, this shall be in accordance with rules prescribed by the Law on Forests. Section 13 specifies that the transported timber from the tree plantation shall bear hammer marks to identify the timber.

If the timber does not bear hammer marks, its source will be unknown and it will be difficult to prove that it came from private land.

In addition, for the cutting or transporting of timber for trade, permission is required to establish the lumber mill under Section 48 of the Forest Act B.E. 2484 and Section 10 of the Tree Plantation Act B.E.2535.

If the establishment of the lumber mill is not controlled, it could be used to convert timber in the natural forest affecting the right of converting timber in the tree plantation. But, if it is necessary to convert timber in the tree plantation, the tree plantation farmers can do so without permission.

The Tree Plantation Act B.E.2535 has 28 sections defining the procedure for tree plantation so ethical plantation owners can log correctly and quickly and do not have to comply with some sections of the Forest Act B.E. 2484. For lumber work the Forest Act is applicable.

Amendment/action required: The present regulations may continue in the Tree Plantation Act and Forest Act.

ISSUE: No guidelines for cutting timber from the tree plantation which has sprouted/been coppiced from the former cutting

Legal implications/provisions

The Tree Plantation Act B.E. 2535 does not address timber from the tree plantation that sprouts/has sprouted from the former cutting/stump. The coppiced wood shall not be registered for the tree plantation but officers should inspect and record this in the former letter of certification in the tree plantation registration (Sor. Por. 3). The procedure for cutting, converting and transporting shall comply with the Tree Plantation Act B.E.2535.

The government/RFD should inform forest officers and the tree plantation farmers of the provisions of the Act owing to sprouting/coppicing after the first cutting of trees in the future.

Amendment/action required: The RFD/government should make necessary guidelines/regulations for subsequent coppice growth and its harvest.

ISSUE: Under permission for cutting timber in a tree plantation, is there any provision for cutting of all trees?

Legal implications/provisions

There is no section in the Tree Plantation Act B.E.2535 providing that the cutting/felling in the tree plantation can apply to all trees.

Tree plantation farmers may ask for cutting/felling permission in the tree plantation only when the timber has grown to the approved size. Small timber cannot be cut/felled until it has reached appropriate size.

Amendment/action required: The tree plantation owners may acquire permission for cutting/felling in the tree plantations as and when necessary according to their requirements.

4.5 Transporting timber or forest products

ISSUE: The requirement for an invoice for transporting para rubber should be repealed

Legal implications/provisions

Under The Forest Act B.E. 2484 Section 4(2) ‘timber’ means teak and all other kinds of wood which are trees, brushwood, creepers.

Section 4 (7): ‘Forest products’ means all things that naturally exist in the forest; things which originate from, or are found in the forest by nature: (a) timber and all parts thereof...

Section 38: The provisions of this Part shall be applied to transporting timber or forest products after the timber that has been logged or forest products collected with permission and transported from place to place specified in the licence.

Section 39: Any person transporting timber or forest products shall have the transporting Invoice issued by an official in accordance with the terms specified in the Ministerial regulations.

Para rubber trees grown on owned land or covered by possessory right under the Land Code are not considered as trees in the forest. When cutting or transporting the para rubber trees the farmer shall not have to file for permission from an official so the transporting Invoice shall not be required.

Para rubber trees grown in the forest are considered to be forest timber; their cutting shall have to comply with the Law on Forests. So, the transported timber shall have the transporting Invoice under Section 39 of the Forest Act B.E. 2484.

Public officials should make people understand the provisions under the law so that plantation owners are not victimized, particularly by police officers.

Amendment/action required: The existing regulations shall apply for para rubber trees grown on owned land or covered by possessory right and para rubber trees grown in the forest.

ISSUE: For transport of equipment/inventions could the Receipt be used instead of the Implement letter?

Legal implications/provisions

The RFD announcement dated 16 November B.E.2534 states that when transporting equipment or inventions to any other area of the reserved tree plantation the Implement letter will be issued..

If the Receipt is used instead of the Implement letter there will be no control over the source of equipment or inventions. The Implement letter is better than the Receipt for reducing the problem of corruption among some owners.

Amendment/action required: The existing regulations are appropriate and should be continued.

ISSUE: Sor. Por. 15 should be issued with a validity of three to six months as the current period is too short

Legal implications/provisions

The RFD letter No. Tor. Sor. 1606.3/5567 dated 15 June B.E 2547 on the practice and procedure for transport of timber derived from the tree plantations under the Tree Plantation Act B.E.2535 states that “The Registrar has determined a term for Sor. Por. 15 of not more than three months in the case of the tree plantation farmers; in case they cannot transport all the timber from the tree plantation, Sor. Por. 15 is extended for another term of not more than three months”.

Determination of a term of using Sor. Por. 15 for not more than three months would be appropriate. If the farmers cannot transport all the timber, Sor. Por. 15 can be extended to three months for each term.

Amendment/action required: The existing regulations are appropriate and should be continued.

ISSUE: Tree plantation farmers who transport logs, lumber or inventions from the tree plantation have to provide a log list and attach a copy or photo of the certificate of notice for the officer receiving certification at the destination specified in Sor. Por. 13 and Sor. Por. 15. Further transport of timber to another place will require a copy of the new certificate of notice and log list to acquire another certificate.

This leads to complications and the officers in some areas may not allow the certificate by questioning the various conditions, so the tree plantation farmers cannot transport the logs, lumber or inventions.

Legal implications/provisions

Although the RFD regulation on transporting timber, lumber or inventions from the tree plantation (dated 8 September B.E. 2535) does not prescribe guidelines the reply of the query of the RFD to the Office of Nakhonsawan Forest Resources Management to the province officers can be implemented.

RFD letter No. Gor Sor 0710.5/13683 dated 30 June B.E.2541 on the consultation of the regulations under the Tree Plantation Act B.E.2535 to the Governor of Nakhonsawan Province indicates that the log list specified in Sor. Por. 13 and Sor. Por. 15 be terminated at the first point of transportation. Timber that has to be further transported to another place shall need a copy of the new Sor. Por. 13 and Sor. Por. 15 for receiving certification from the officer at the end of the specified destination. This procedure may be further circulated to the governor in each province for information and to order the officers concerned to conform with such practices.

The RFD regulation on transporting timber/lumber or inventions from the tree plantation dated 8 September B.E. 2535 should be amended. That is, the copy of Sor. Por. 13 and Sor. Por. 15 should not be terminated at the end of the first destination when further transportation is needed to another place. But Sor. Por. 13 and Sor. Por. 15 should be changed by an official seal and endorsement (signature) provided by an official specifying the new destination.

Amendment/action required: The RFD regulation on transporting timber/lumber or inventions from the tree plantation dated 8 September B.E. 2535 should be amended. That is, the copy of Sor. Por. 13 and Sor. Por. 15 should not be terminated at the end of the first destination when further transportation is needed to another place. But Sor. Por. 13 and Sor. Por. 15 should be changed by an official seal and endorsement (signature) provided by an official specifying the new destination.

4.6 The chainsaw

ISSUE: Allowing the chainsaw only in one area. Taking the chainsaw out of the district or province is not permitted

Legal implications/provisions

Under the Chain Saw Act B.E. 2545 Section 6, if a licensee requires changing the area or using a chainsaw to differ materially from conditions set forth in the permit according to Section 4 Paragraph 5, a licensee should adhere to the following rules:

1. Change of the area within the same province is allowed by submitting a license application to the Registrar of the chainsaw licensor.
2. For change of area to other provinces, a licensee shall submit the application to the Registrar of the chainsaw with the power in that province.

The Ministerial regulation specifies the procedures and conditions for permission to change the area of using chainsaws and permits, allowing the chainsaw out of the area, as of 23 May B.E. 2551. Article 5 addresses an application to take the chainsaw out of the area filed to the Registrar of the chainsaw. In case no information is received within 15 days from the date of submission of application to the Registrar of the chainsaw it is considered permissible so the applicant can take the chainsaw and use it in the requested area.

RFD officials should disseminate clear information pertaining to ownership and use of the chainsaw as well as the rules concerning movement of the tool outside its approved area.

Amendment/action required: The existing regulations are appropriate and should be continued.

ISSUE: Spare parts for the chainsaw are hard to find in the market

Legal implications/provisions

According to Section 4 of the Chain Saw Act B.E.2545 no person shall have, manufacture or import the chainsaw or its parts unless authorized by the Registrar of the chainsaw. Manufacture or import shall have to be authorized by the Registrar of the chainsaw only; use, manufacture or import of chainsaws are permissible in specific areas only.

The RFD should have details of the licensee who is allowed to have, manufacture or import the chainsaw. These should be posted at the local district and the provincial forestry offices for general information.

Amendment/action required: The regulations should be amended by giving authority to officers at the district or province level to permit farmers to buy spare parts.

4.7 The export of logs/charcoal

ISSUE: Logs from the forest cannot be exported

Legal implications/provisions

Logs of all kinds of timber species, except teak, can be exported by tree plantation farmers outside the Kingdom by obtaining permission from the Ministry of Commerce and a certificate from the RFD. The government has not paid any attention to exporting teak timber planted by tree plantation farmers. The government allows only the Forest Industry Organization (FIO) the monopoly to export teak. The tree plantation farmers should have the right to export teak outside the Kingdom in any form. The government should encourage the private sector to promote interest in planting more teak to earn more income.

Amendment/action required: The existing regulations are appropriate and should be continued; the provisions should be disseminated to tree plantation farmers.

ISSUE: Tree plantation farmers should be allowed to export charcoal outside the Kingdom

Legal implications/provisions

In the announcement of the Ministry of Commerce on exporting charcoal outside the Kingdom B.E.2549 Article 4, coal is a product which can be filed for export permission excepting activated charcoal, compressed charcoal and charcoal from materials other than wood such as coconut shell charcoal, fruit shell charcoal. Tree plantation farmers can file a request to the Ministry of Commerce for export and request a certificate from the RFD.

Amendment/action required: The existing regulations are appropriate and should be continued; the provisions should be disseminated to tree plantation farmers.

4.8 The marking hammer

ISSUE: Using one marking hammer in several tree plantations of the same owner

Legal implications/provisions

Section 9 of the Tree Plantation Act B.E.2535 determines that the plantation owner shall provide the marking hammer for his own timber acquired from the tree plantation in order to facilitate inspection by the officer to verify the origin of the tree (which tree plantation) and the owner.

If one marking hammer is used for several tree plantations belonging to the same owner, it will be difficult to verify the plantation origin of the timber. Using one marking hammer for one tree plantation should be easy and appropriate for the tree plantation owner and the officer.

Amendment/action required: The existing regulations are appropriate and should be continued; the provisions should be disseminated to tree plantation farmers.

4.9 General comments on amendments/actions required

Only some of the main issues and problems related to the provisions of forest laws for tree cultivation and utilization, raised during the workshops and field surveys, are highlighted giving their legal implications. The amendments or actions required on the part of the government to address these particular issues are based on the legal advice according to the existing regulations/provisions in the Forest Act and the Tree Plantation Act.

It is evident that for addressing these problems and issues in promoting tree cultivation in private non-forest lands, either quite a few amendments/actions will be required in all the existing laws on forest or else the status quo will remain. Even if some of the amendments are made this would not solve or appease tree plantation farmers as they require a comprehensive law covering all aspects of tree cultivation and utilization. Moreover, some of the existing regulations, especially in the Forest Act, have already become outdated because of the changed forestry scenario in the country; hence they have lost their relevance and it would be impractical to make comprehensive amendments which farmers could not understand and follow.

5. Recommendations of TCP projects on legal issues to promote tree cultivation in private lands

5.1 How to overcome legal constraints

Some of the recommendations contained in the report entitled *Promotion of small and medium enterprises of wood processing industries in Thailand through sustainable forest plantations in private lands* as part of the TCP/THA/3203 Project: Participation of Tree Plantation Farmers for Sustainable Forest Management based on legal issues and problems raised by workshop participants are outlined below. It is anticipated that if these recommendations are addressed appropriately this will not only provide a people-friendly and trusted legal framework but also promote tree cultivation and wood-based enterprises in Thailand.

5.2 Amend the Forest Plantation Act and Re-Afforestation Act

There is a need to amend the Forest Plantation Act and Re-Afforestation Act which do not reflect the Forest Policy for promotion of private forestry. All the provisions for cultivation and utilization of trees should be included in the same Act. The provisions under the Forest Act should not be applicable to private tree plantations.

The philosophy of the amended legislation should be of trust, and not of mistrust, and regulations should be such that they promote tree cultivation and are easy to understand and follow with less or no bindings/restrictions. The revised amended forest legislation should incorporate the following recommendations also listed in the Executive Summary of this document:

- Establish an institutional coordination mechanism for tree planting: The Royal Forest Department (RFD) to coordinate with other concerned departments/ministries/financing institutions that promote tree plantation;
- Decentralize the granting of permission/approval at the district level for enhanced convenience and efficiency;
- Tree cultivation on agricultural land should be treated in the same fashion as agricultural production;
- Remove restrictions on the growth of certain tree species on private land;
- Simplify procedures for cutting of trees and removal/transport of wood/logs;
- Major restrictions on the use of chainsaws to be removed;
- Establish an efficient and strong Forestry Extension Service in the RFD to provide one-stop technical support services/advice to farmers;

- Encourage the use of high quality certified seeds and genetically improved planting stock produced by the Silvicultural Research Division of the RFD for establishing private tree plantations to ensure high productivity;
- Establish Central Forest Nurseries in each district and make registration of private nurseries mandatory using only certified seeds;
- Promote standard management practices in private tree plantations for optimum yield to ensure good market value for the trees;
- Establish Demonstration Plantations for important tree species in farmers' fields in each district;
- Undertake skills development of long rotation tree farmers for livelihood security as part of extension services;
- Set up a Tree Planting Promotion Fund in the Bank for Agriculture and Agricultural Cooperatives (BAAC)/RFD for tree farming and supporting small- and medium-scale wood processing industries and marketing of their products;
- Fix a minimum support price for the timber of forestry species from private land/agricultural fields;
- Provide tax incentives and subsidies for tree cultivation on farmland;
- Impose stricter penalties for not obeying rules/regulations;
- The RFD should generate and maintain a district-wise database on tree plantations on private land and small- and medium-scale wood processing enterprises and their wood products;
- Define the duties and role of the RFD in promoting tree cultivation.

To accommodate all of these recommendations in the existing forest laws will not only involve major amendments but also be a major task. Moreover, the major concern of the stakeholders that only one law should be applicable will not be addressed. Hence, the only solution (also recommended) is to enact a separate law for promoting private tree plantations that incorporates the aforementioned recommendations. With this in view a draft for the 'Promotion of Tree Cultivation in Non-forest Areas, Private, Farm and Community Lands Act, B.E.' is proposed for discussion and further improvement, especially with regard to incorporating the provisions for utilization of timber.

6. Proposed draft Act: Promotion of Tree Cultivation in Non-forest Areas, Private, Farm and Community Lands Act, B.E.

If there is genuine effort to promote tree cultivation on private lands, people-friendly legislation that is trusted is warranted. Once the people are given to understand the freedom of their rights in their own lands with respect to decision-making vis-à-vis growing, harvesting and transporting of wood this will boost tree cultivation in a significant way and provide much-required tree cover for the country.

An effective law should deal simply with the provisions of land-use rights, cultivation, logging, transport and utilization of timber so rules and regulations can be followed easily. As it will be the people's law, the duties of the RFD have to be specified in assisting and guiding at every stage to make the programme a successful venture.

With this in view a draft Act, Promotion of Tree Cultivation in Non-forest Areas, Private, Farm and Community Lands Act, B.E. is proposed for discussion and further improvement, especially incorporating provisions for utilization of timber.

The proposed draft Act takes in to account all the legal issues and problems raised by stakeholders as well as the recommendations contained in the report *Promotion of small and medium enterprises of wood processing industries in Thailand through sustainable forest plantations in private lands* as part of the TCP/THA/3203 Project: Participation of Tree Plantation Farmers for Sustainable Forest Management. It is hoped that this proposed Act which will go a long way in promoting tree cultivation on private lands in Thailand.

DRAFT

**PROMOTION OF TREE CULTIVATION IN NON-FOREST AREAS, PRIVATE, FARM
AND COMMUNITY LANDS ACT, B.E.**

BHUMIBOL ADULYADEJ, REX.

**Given on the.....Day of..... B.E..... ;
Being theth Year of the Present Reign.**

*An Act to promote cultivation of trees in Private, Farm, Community and Waste Lands
of Thailand, in order to increase availability of fuelwood and timber for small and medium
enterprises and other wood-based industries, to increase green cover, preserve biodiversity and
arrest soil erosion and contribute to environmental stability*

PREAMBLE:

WHEREAS, in order to increase the forest cover in the country, it is necessary to cultivate trees in Non-forest Areas, Private, Farm, Community and Waste Lands also;

AND WHEREAS, it is necessary to maintain environmental stability by the cultivation of trees in non-forest areas, private lands, farm lands;

AND WHEREAS, in order to meet the requirements of fuel, wood, fodder and small timber to the rural populations for their livelihood, it is necessary to promote cultivation of trees in all private, farm, community and waste lands of the country;

AND WHEREAS, for the constant supply of wood for small and medium enterprises and other wood-based industries, industrial growth and realization of maximum annual revenue in perpetuity, it is necessary to promote cultivation of trees in all non-forest areas, private lands and farm lands;

AND WHEREAS, cultivation of new trees is necessary for checking soil erosion and denudation in the catchment and watershed areas of rivers, lakes, tanks and canals and for mitigating floods and droughts;

AND WHEREAS, it is necessary to establish tree lands, wherever possible, for the amelioration of the people and for preserving climatic conditions and promoting the general well being of the people;

AND WHEREAS, the National Forest Policy of Thailand promotes tree cultivation in private, farm, community and waste lands in order to fulfil the needs enumerated above;

His Majesty Kingis graciously pleased to proclaim that:

Whereas it is expedient to have law on Tree Plantations in Non-forest areas, Private, Farm and Community lands;

Be it, therefore, enacted by the King, by and with the advice and consent of the National

Legislative Assembly in the capacity of the National Assembly, as follows:

SECTION 1. *Short title, Commencement, Extent and Application.-*

- 1.1 This Act may be called the Promotion of Tree Cultivation in Non-forest Areas, Private, Farm and Community Lands Act, B.E.
- 1.2 This Act shall come into force as from the day following the date of its publication in the Government Gazette.
- 1.3 It extends to the whole of Thailand.
- 1.4 It shall apply to all non-forest lands in the Country.

SECTION 2. *Definitions.-In this Act, unless the context otherwise requires,--*

- 2.1 “Government” means the Royal Government of Thailand;
- 2.2 “Forest” means a wood lot grown naturally;
- 2.3 “Tree Plantation” means a wood lot grown artificially by planting seedlings/ saplings;
- 2.4 “Non-forest land” includes all Private Lands, Farm Lands, Community Lands vested in or transferred to or purchased by individuals/companies or Government Institutions, enterprises, farmers’ cooperatives but does not include lands declared or deemed to have been declared as national reserve forest or any other forest land or under any law;
- 2.5 “Prescribed” means prescribed by rules made under this Act;
- 2.6 “Plant” means plant intentionally grown with purport to utilize its wood, Including plant intentionally grown for other purposes but its wood may also be utilized;
- 2.7 “Tree” means any woody plant, whether fruit bearing or not, and includes bamboos.
- 2.8 “Timber” means tree, including:
 - 2.7.1 Any part of tree, whether cut, chopped, sawed, flatted, spitted, trimmed, dug, pressed or done any manner whatsoever; and
 - 2.7.2 Transformed wood or invention, equipment or other material made by a plant or any part of a plant;
- 2.9 “Private Tree Plantation” means land registered under Section 4 for planting a tree species in private non-forest lands for own or commercial purpose;
- 2.10 “Tree Plantation Entrepreneur” means an individual, organization, enterprise, cooperative who owns land under his/her possession and wants to register for tree cultivation;
- 2.11 “Tree Plantation Promotion Fund” means a separate fund established by the government to provide financial support for the promotion of tree plantations in non-forest areas and private lands and small and medium enterprises of wood-based products;
- 2.12 “Seal” includes any sign or material made for timber stamping, imprinting or sealing using a hammer;
- 2.13 “Registration” means a document or an acknowledged certificate issued by the Competent Officer of the Forest Department with respect to the Tree Plantation giving the details of owner, land, tree species, year of planting, spacing, etc.;
- 2.14 “Tree Plantation Journal” means a document to be maintained by the owner of the plantation giving all the details such as land rights details, area of land planted, tree species giving date(s), spacing, forestry operations carried out as part of management practices, including thinning, etc.;
- 2.15 “Competent Officer” means a person appointed by the Minister for an execution of this Act;
- 2.16 “Registrar” means Director-General or a person appointed by the Director-General in the Bangkok Metropolitan Area, or Provincial Governor or a person appointed by the Provincial Governor in the province or district;
- 2.17 “Director-General” means Director-General of the Royal Forest Department;
- 2.18 “Minister” means Minister having charge and control for the execution of this Act.

SECTION 3. *Rights of owner of non-forest lands and criteria for Land Registration.—*

- 3.1 Every Tree Plantation Entrepreneur of non-forest land, private land, farm land having land-use rights/title deed shall be free to plant trees in his land, as may be appropriate and generally contribute to the increase of tree cover in his land, in addition to any crop he may have grown over such land;
- 3.2 Every department of the Government, state agency, state enterprise, public sector undertaking, farmers' cooperatives and non-governmental organization shall be free to plant trees in the non-forest lands owned, transferred or vested in them
- 3.3 Land to be registered as a Private Tree Plantation shall be one of the following lands:
 - 3.3.1 Land with ownership title or certificate for utilization under the Land Code;
 - 3.3.2 Land with official certificate which certifies that such land may be registered for ownership title or certificate for utilization under the Land Code due to the fact that it is possessed and utilized under the law on land consolidation for agriculture or the law on land allocation for livelihood;
 - 3.3.3 Land within the land reform area under the law on land reform for agriculture. In this case, evidence on permission, hire or hire-purchase is required;
 - 3.3.4 Land which is permitted under the law on national reserved forest or degraded forest land;

SECTION 4. *Registration of Land for Private Tree Plantation.-*

- 4.1 A tree plantation entrepreneur, individual or the organization, department, enterprise, farmers' cooperative who holds ownership, possessory right or right to utilize land under Section 3 may desire to utilize such land for Private Tree Plantation, may apply for land registration to the Registrar through the Competent Officers in the district and the province where the Private Tree Plantation is to be located, verifying the prescribed land-use rights in this Act, especially under Section 3, Sub Section 3.3.4.
- 4.2 The Registrar shall inform whether the registration is approved or not to the applicant within fifteen days as from the date of receiving an application under Sub Section 4.1.
- 4.3 The issuance of the Registration Certificate for Private Tree Plantation land shall be in accordance with the regulation specified by the Director-General.
- 4.4 If the result of consideration under Sub Section 4.1 is rejected, the applicant may appeal to the Minister within thirty days as from the date of acknowledgement of such result. The decision of the Minister shall be final.
- 4.5 A Tree Plantation Entrepreneur who desires to stop the tree plantation activity shall notify the Competent Officer and shall surrender the Seal in person to be destroyed in his/her presence and his/her Tree Plantation registration shall stand cancelled.
- 4.6 In the case where a Tree Plantation Entrepreneur has died or transfers ownership or possessory right in land registered for tree plantation to others, or a hire or hire-purchase contract between a Tree Plantation Entrepreneur and others is cancelled, a fresh request for tree plantation registration shall be made to the competent officer within one hundred and eighty days.
- 4.7 Rights and responsibility of a transferor shall be transferred to a transferee in accordance with the regulation specified by the Director-General.

SECTION 5. *Right to entry of the Competent Officer in the Private Tree Plantation.-*

- 5.1 The Competent Officer shall, for the purpose of giving technical advice, collecting forestry data and plant growth statistics, evaluating performance of Private Tree Plantation as per the provisions of this Act, shall have the power to enter into the Private Tree Plantation for investigation or giving necessary instructions or advice to the Private Tree Plantation Entrepreneur.
- 5.2 In exercising power under Sub Section 5.1 the Competent Officer shall show his/her official Identification Card to the Private Tree Plantation Entrepreneur or his/her authorized representative. In this regard, the Private Tree Plantation Entrepreneur or his/her authorized representative shall

have a duty to facilitate the Competent Officer as appropriate and provide all the necessary information sought.

SECTION 6. *Maintenance of a Tree Plantation Journal*

- 6.1 The Tree Plantation Entrepreneur shall maintain a Tree Plantation Journal separately for each Tree Plantation registered under his/her ownership. The Tree Plantation Journal, issued by the Registrar or any other Competent Officer, shall have a standard format prescribed by the Registrar giving all the relevant details such as land rights details, land registration, area of land planted, tree species giving date(s), spacing, forestry operations carried out as part of management practices, any inputs given such as manuring or fertilization, thinning carried out with date and volume of thinned poles, etc.
- 6.2 Whenever a Competent Officer inspects/visits the Tree Plantation, the Tree Plantation Journal shall be shown to him/her for recording his/her observations/ comments about the performance of the plantation or any other related matter
- 6.3 The Tree Plantation Journal shall be assigned a unique number which shall identify the Plantation Registration, District, Locality, Owner, etc.

SECTION 7. *Use of Hammer Seal. –*

- 7.1 A Tree Plantation Entrepreneur shall have a Seal to be used as a mark showing his / her ownership over timber from the Private Tree Plantation. Such Seal shall be used upon its registration.
- 7.2 A seal to be used for stamping, imprinting or sealing to timber cut or felled by a Private Tree Plantation Entrepreneur shall be certified by the Competent Officer representing the Registrar and there shall be a mark made by the Registrar thereon.
- 7.3 A Tree Plantation Entrepreneur who desires to cancel his plantation Seal shall make a written request to the Competent Officer and shall hand it over in person for demolishing the Seal in front of him.
- 7.4 If the Plantation Seal of a Tree Plantation Entrepreneur is damaged beyond repair or lost, the Tree Plantation Entrepreneur shall make a written request to the Competent Officer within thirty days as from the date of damage or loss of the Seal was noticed. In case of damage, the Seal shall also to be taken to be demolished in front of the Competent Officer along with the request application.

SECTION 8. *Use of Chain Saw. -*

- 8.1 The Chain Saw to be used by the Tree Plantation Entrepreneur for thinning and final timber harvest in his/her own tree plantations shall be registered by the Competent Officer in the District(s) where the tree plantation(s) are located and owned by the Entrepreneur.
- 8.2 There shall be no restrictions on the movement of the Chain Saw. In case it is required to take the chain saw to other area, the Tree Plantation Entrepreneur shall inform in writing to the Competent Officer in the District giving justifications for. In case no response is received within 15 days it shall be treated as the approval.
- 8.3. With regard to spare parts of the Chain Saw required for the Registered Chain Saw, the Tree Plantation Entrepreneur shall inform the Competent Officer in the District in writing for his information.

SECTION 9. *Right of the Owners to Cut, Remove and Sell Original Trees as Well as Its Coppice Growth.-*

- 9.1 Notwithstanding anything contained in any other law for the time being in force, The Tree Plantation Entrepreneur shall have the right to cut and transport any tree cultivated by him/her in the tree plantations cultivated/owned by him/her as per the records maintained in the Tree Plantation Journal and verified by the Competent Officer from time to time.

- 9.2 The details (date, number of trees, total volume) of thinning and final harvest shall be entered in the Tree Plantation Journal and duly verified and signed by the Competent Officer on site.
- 9.3 Before transporting the timber, all the logs shall be embossed with the Tree Plantation Seal. The Tree Plantation Entrepreneur shall file before the Competent Officer, having jurisdiction over the area, a declaration containing details such as Tree Plantation Registration, ownership details of land from which the trees are cut, tree species, number of trees, number of logs, quantity of timber and the place and purpose to which such timber is being transported, either directly or send it by registered post with acknowledgment due.
- 9.4 Every declaration filed under Sub Section (1) shall be acknowledged by the Competent Authority forthwith and a copy of the declaration so acknowledged shall accompany the timber during its transport:
- 9.4.1 Provided, that if the timber is transported from non-forest land within five kilometres from the reserve forest boundary, necessary inspection shall be conducted by the Forest Range Officer within 15 days:
- 9.4.2 Provided further, that if acknowledgment from the Competent Officer is not received within 20 days on receipt of the declaration, the same shall be deemed to have been received.
- 9.5 The cutting and removal of trees standing on non-forest areas, owned, controlled by state enterprise and government department or institution, and its disposal shall be governed by such rules, as may be prescribed.
- 9.6 All timbers originated from commercial forest plantation shall be exempted from royalty and forest maintenance fee under the Law on Forest.

SECTION 10. *Selling Logs, Timber to Another Party. -*

- 10.1 When timber/logs originated from a private tree plantation are sold to another party or saw mill, they shall have evidence showing legal acquisition under this Act in accordance with regulations specified by the Director-General.
- 10.2 A transferee, possessing timber/logs as under Sub Section 10.1, may trade, possess or take through forest station, but the conversion of such timber and logs shall be in accordance with the regulations specified under Section 11.

SECTION 11. *Conversion/Transformation of Timber Grown in Private Plantations and Establishment of a Lumber Mill/Timber Factory. -*

- 11.1 There shall be no restrictions on the conversion of timber either grown in the owner's registered private tree plantation or bought the timber from another party who owns a registered private tree plantation in the licensed lumber mill/timber factory already in existence before the enactment of this law.
- 11.2 The lumber mill owner shall keep all the records of timber, species, volume, source or origin, date timber transferred to the lumber mill/timber factory which shall be verified by the Competent Officer from time to time
- 11.2 For establishing the new lumber mill/timber factory, an individual, cooperative, enterprise, company, department, organization shall apply for a license.
- 11.3 An individual, cooperative, enterprise, company, department, organization who applies for license to establish a lumber mill/timber factory to transform timber by machine shall meet the following conditions:
- (i) Being the owner;
 - (ii) Adequate technical skills/training in lumber work and machinery;
 - (iii) Sound financial condition as evidenced by bank details/loan to purchase and maintain a lumber mill machinery and skilled and semi-skilled workers;

- (iv) Proof to indicate the source of timber, either through own registered tree plantation or bought from other owners of registered tree plantations;
 - (v) Any request for grant of license to establish a lumber mill was not rejected or the license of the timber mill was not revoked/ cancelled;
 - (vi) Not having been sentenced by the Court to a term of imprisonment.
- 11.4 After submitting an application under Sub Section 11.2, the Competent Officer shall grant the license within one month of submission, provided that all the requirements under Section 11.3 are fulfilled; in case the grant of license is refused by the Competent Officer, the applicant shall be informed of the reasons for refusal within 30 days of submission of application.
- 11.5 A licensee to establish transformed timber factory shall be responsible for all business related to timber transformation as licensed.
- 11.6 A licensee shall maintain a record of all the machineries, implements, their source of purchase, type of wood products processed and their quantities, transformed wood and their products sold which shall be verified by the Competent Officer from time to time.
- 11.7 No licensee shall transform timber between sunset and sunrise, except where written permission is granted by a Competent Officer.
- 11.8 A Competent Officer shall have the power to inspect timber transformation and the business of a licensee. The licensee shall facilitate and give all the required information to the Competent Officer.

SECTION 12. *Forest Trees Grown in Agricultural Lands be Treated as Agricultural Produce.-*

- 12.1 All forest trees belonging to any tree species when cultivated in agricultural lands/fields shall be treated as agriculture produce, like rubber trees;
- 12.2 All tree species cultivated in agriculture lands/fields being agriculture produce shall be eligible to all subsidies and tax benefits on par with other agriculture produce.

SECTION 13. *Promote Plantation Farmers' Cooperatives. -*

- 13.1 Formation of cooperatives of farmers for cultivation of forest trees shall be promoted for livelihood of farmers, availing benefits/incentives from BAAC, Village Fund, etc. and maintaining wood supply for wood processing industries for which the Department of Cooperatives (DOC) shall coordinate along with other departments such as Community Development Department (CDD), RFD and Department of Agriculture & Extension (DOA & E);

SECTION 14. *Tree Plantation Promotion Fund. –*

- 14.1 A Tree Planting Promotion Fund shall be established in BAAC for providing financial support to tree farming to be undertaken/promoted by any government department and supporting small and medium scale wood processing industries and marketing of their products.
- 14.2 All the eligible Private Tree Plantation Entrepreneurs shall be eligible for financial assistance at low and long term loans/credit.

SECTION 15. *Fixing of Minimum Support Price for the Timber of Forestry Species from Private Lands/Agricultural Fields*

- 15.1 To provide assurance to the farmers of a reasonable income from their tree plantations the RFD shall develop a mechanism to fix a minimum support price of timber of forestry tree species harvested from the farmers' fields every year depending upon the supply and demand situation.
- 15.2 The RFD shall develop criteria based on a field study on which the pricing system shall be based.

SECTION 16. *Duties of the Royal Forest Department.*—

- 16.1 Notwithstanding anything contained in any other law for the time being in force, the Royal Forest Department shall promote tree growth in non-forest areas and be responsible for,--
- 16.1.1 Coordination and providing technical guidance to other institutions/ organizations/ departments undertaking tree cultivation in the country;
 - 16.1.2 Development and maintenance of modern tree nurseries of superior planting stock at district and regional level, supply of seeds and saplings at reasonable prices to farmers, individuals and institutions, companies, who desire to plant new tree saplings or to replace trees which have been felled;
 - 16.1.3 Through Extension Service provide all technical and other assistance in planting trees, their management and harvesting and to impart knowledge about forest laws for various activities related to tree cultivation and its utilization;
 - 16.1.4 As part of Extension the RFD shall establish an Forest Extension Information Office in each district to provide one-stop services to farmers on improved planting stock and seedlings/seeds, tree cultivation, management of plantations, legal aspects, process of wood cutting, transportation, establishment of the wood processing plant, wood product stocking and marketing of products.
 - 16.1.5 Since cultivation of long rotation trees in farm land and private lands will not provide any intermediate income to farmers, except from thinning as part of Extension the RFD shall assist the farmers in developing their skills for income generation to support livelihood. This support could be from promoting cultivation and processing of either fruit crops like banana, pineapple, tamarind, jackfruit, etc. or skill development in handicrafts, carpentry, mushroom cultivation, edible bamboo shoot cultivation, cultivation of herbs/medicinal plants, etc. For this the government shall provide incentives and financial support.
 - 16.1.6 Organizing field demonstrations for the purposes of this Act and assisting individuals, private and public institutions in connection with the planting and management of tree plantations;
 - 16.1.7 To establish field demonstration trial plots of various tree species in different regions in farmers' fields;
 - 16.1.8 Getting the trees planted or transplanted which were removed or up rooted due to the construction of buildings, new roads or widening of existing roads or for safeguarding against danger to life and property;
 - 16.1.9 To ensure improved quality planting stock and high productivity of Private Plantations all the private forest nurseries shall be registered and they shall only use improved good quality certified seeds supplied by the RFD.
 - 16.1.10 Carrying out census of all the existing tree plantations and new plantations in all private lands and maintain up-to-date database at district, regional and central levels;
 - 16.1.11 Undertaking or executing such schemes or measures, as may be directed, from time to time, by the Government for achieving the objects of this Act.
 - 16.1.12 To exercise such other powers and perform such other duties as are laid down in this Act or the rules made there under.

SECTION 17. *Penalties.*—

- 17.1 Any person who obstructs or fails to render facility to the Competent Officer in an execution of his or her duty under Section 5 shall be liable to imprisonment for a term not exceeding six months, or to a fine not exceeding twenty five thousand Baht, or both.
- 17.2 Any person who stamps, imprints the Seal to express ownership on timber which is not originated from his/her Private Tree Plantation shall be liable to imprisonment for a term not exceeding one year, or to a fine not exceeding fifty thousand Baht, or both. The vehicle carrying such timber shall also be seized along with the timber which shall be marked as seized timber. The Competent Officer shall report the matter to the Director-General.
- 17.3 Whoever transports any timber contravening the provisions of Section 9 or files a false declaration shall be punishable with imprisonment for a term which may extend to six months or with fine which may extend to twenty five thousand Baht or both. The vehicle carrying such timber shall also be seized along with the timber which shall be marked as seized timber. The Competent Officer shall report the matter to the Director General.
- 17.4 All offences under this Act shall be cognizable.

SECTION 18. *Offences by Companies.*—

- 18.1 Where an offence under this Act has been committed by a company, organization, department, enterprise, every person who, at the time the offence was committed, was in charge of, and was responsible to the company, organization, department, enterprise for the conduct of its business, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:
 - 18.1.1 Provided that nothing in this Sub Section 13.1 shall render any person liable to punishment if he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence.
- 18.2 Notwithstanding anything contained in Sub Section 13.1, where any offence Under this Ordinance has been committed by a company, organization, department, enterprise, and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, organization, department, enterprise, such director, manager, secretary or other officer shall be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation.--For the purposes of this section,--

- (a) “company” means anybody corporate and includes a firm, society or other association of individuals; and
- (b) “director”,--
 - (i) in relation to a firm, means a partner in the firm;
 - (ii) in relation to a society or other association of individuals means the person who is entrusted, under the rules of the society or other association, with the management of the affairs of the society or other association, as the case may be.

SECTION 19. *Power to Make Rules.-*

- 19.1 The Government may, by notification in the Gazette, make appropriate rules and regulations for carrying out the purposes of this Act.
- 19.2 Every rule made under this section shall be laid, as soon as may be after it is issued or made, before the Legislative Assembly.

SECTION 20. *Power to Remove Difficulties.—*

- 20.1 If any difficulty arises in giving effect to the provisions of this Act, the Government may, by order published in the Gazette make such provisions, not inconsistent with the provisions of this Act, which appear to them necessary for the purpose of removing the difficulty.
- 20.2 Every such order made under this section shall, as soon as may be after it is made, be laid before the Legislative Assembly.

SECTION 21. *Repeal and Savings.—*

21.1 Sections.....of the Tree Plantation Act, B.E. 2535 (1992)

21.2 Sections.....of the Forest Act.....

SECTION 22.

The Minister of Natural Resources and Environment shall have charge and control for an execution of this Act, and shall have power to appoint a Competent Officer and issue a Ministerial Regulation for execution of this Act.

Such Ministerial Regulation shall come into force upon its publication in the Government Gazette.

Countersigned byPrime Minister

Selected Reference Material

- Banijbatana, D. 1962. Brief note on "Forests and forestry problems in Thailand". Royal Forest Dept., Ministry of Agric., Thailand.
- Brown, C. & Durst, P.B. 2003. *State of Forestry in Asia and the Pacific – 2003 status, changes and trends*. Bangkok, FAO-RAP.
- Enters, T., Qiang, M. & Leslie, R.N., eds. 2003. *An overview of forest policies in Asia*. Bangkok, FAO-RAP.
- Enters, T. & Durst, P.B., eds. 2004. *What does it take? The role of incentives in forest plantation in Asia and the Pacific*. Bangkok, FAO-RAP.
- FAO. 2000. Food and Agriculture Organization of the United Nations (FAO) & Regional Community Forestry Training Center (RECOFTC). 2000. *Decentralization and devolution of forest management in Asia and the Pacific*. Bangkok, FAO-RAP and RECOFTC.
- Forestry Statistics of Thailand. 1996. Bangkok, Thailand.
- Gartner, E.J.H & Beuschel, G.K. 1963. Thailand – Forest inventory of the northeastern region – Report to the government. EPTA Report No. 1692, FAO, Rome.
- International Tropical Timber Organization (ITTO). 2006. *Status of tropical forest management 2005*. Yokohama, ITTO.
- MAC. 1998. Ministry of Agriculture and Cooperatives. Ministry of Agriculture and Cooperatives Economic Policy Under the Economic Crisis Situation. Paper for a Public Hearing.
- Mahannop, N. 2004. The development of forest plantation in Thailand. In T. Enters & P.B. Durst, eds. *What does it take? The role of incentives in forest plantation in Asia and the Pacific*. Bangkok, FAO-RAP.
- Nalampoon, A. 2003. National forest policy review Thailand. In T. Enters. Ma Qiang & R.N. Leslie, eds. *An overview of forest policies in Asia*. Bangkok, FAO-RAP.
- Noochdumrong, N., Kalyawongsa, S., Noochadumrong, T. & Pragtong, K. 2001. Assessment of forest land use dynamics in Thailand. Research report submitted to National Research Council of Thailand.
- Ongprasert, P. N.D. *Forest management in Thailand*. Available at http://www.forest.go.th/forest19/forestfarm19/farm/web/images/stories/sheet1_1.pdf
- Phromlah, W. & Martin, P.V. 2011, *Reforming Governance for Sustainable Forest Management in Thailand*, Australian Centre for Agriculture and Law University of New England
- Pilian, C. & Pattaratuma, A. 2006. Opinions on the administrative problems after government reform of the Royal Forest Department's officials. *Kasetsart Journal: Social Sciences*, 27 (2): 294-306.
- Pipithvanichtham, P. 1997. Issues and Challenges of Ecotourism in the National Parks of Thailand. In Bornemeier, J., Victor, M. and P. Durst (eds.), *Ecotourism for Forest Conservation and Community Development*. Proceedings of an International Seminar held in Chiang Mai, Thailand, 28 - 31 January 1997. RECOFTC Report No. 15. RAP/FAO Publication: 1997/42. Bangkok, Thailand.
- Poffenberger, Mark (ed.). 1999. *Communities and Forest Management in Southeast Asia*. A Regional Profile of the Working Group on Community Involvement in Forest Management. Forests People and Policies. IUCN. Gland, Switzerland.
- Pragtong, K. 2000. Recent decentralization plans of the Royal Forest Department and its implications for forest management in Thailand. In *Decentralization and devolution of forest management in Asia and the Pacific*. Bangkok, FAO-RAP and RECOFTC.

- Pragtong, K. & David Thomas. 1990. Evolving management systems in Thailand. In Mark Poffenberger, ed. *Keepers of the forest, land management alternatives in Southeast Asia*. USA, Kumarian Press.
- RFD. 1999. Forest Protected Area. Royal Forest Department, Ministry of Agriculture and Cooperatives, Thailand.
- Sato, J. 1998. The Political Economy of Bufferzone Management: A Case Study from Western Thailand. In Victor, M., Lang, C. and J. Bornemeier (eds.), *Community Forestry at a Crossroads: Reflections and Future Directions in the Development of Community Forestry*. Proceedings of an International Seminar, held in Bangkok, Thailand, 17 - 19 July 1997. RECOFTC Report No. 16. Bangkok, Thailand.
- Smitinand, T., Santisuk, T. & Phengklai, C. 1980. The Manual of the Dipterocarpaceae of Mainland South-East Asia. Thai For. Bull. (Bot.) 12:1-133.
- Surasawadi, C. 2005. Royal Forest Department and Forest Management, Thais Paper for Workshop on Community Forestry Royal Forest Department.
- Suthisisinn, C. & Noochdumrong, A. 1998. Country Report: Thailand, FAO Corporate Document Repository: <http://www.decrep/003/x2649E00.htm>.
- Suwanarat, R. 2009. The Economic Tree Planting Promotion By Royal Forest Department, Thai Unpublished Paper. Royal Forest Department, Bangkok, Thailand
- Whitmore, T. C. 1975: Tropical rain forests of the Far East. Oxford: Clarendon Press.
- Yasmi, Y. 2010. *Forestry policies, legislation and institutions in Asia and the Pacific: trends and emerging needs for 2020*. Bangkok, FAO-RAP.

