Development of a manual for rubber plantation owners and rubber wood consumers in Thailand for obtaining international forest management certification

K Duangsathaporn*, P Prasomsin, Y Omule, K Palakit, and P Lumyai,

Department of Forest Management, Faculty of Forestry, Kasetsart University, Bangkok, Thailand 10900

*Corresponding author: fforkcd@ku.ac.th

Abstract Currently, the export situation of rubber wood products in Thailand is at a high risk of price and market competition. All relevant organizations in Thailand hope to solve these problems sustainably. One of the important ways is to increase the value of rubber wood products and marketing channels for exporting to more countries besides China. However, Thailand still faces a significant obstacle to the export of rubber wood products, that is, most of the rubber plantations have not yet been certified for international forest management. Forest certification is one mechanism to prevent and manage global environmental problems including air, soil, water, biodiversity and the reduction of forest areas. Previous research [1] indicated that most rubber plantation owners and rubber wood consumers in Thailand did not fully understand the principles, criteria, and indicators of the Forest Stewardship Council (FSC), and that in Forest Management (FM) certification auditors need to process a request for Corrective Action Requests (CARs) or suspend certificates in some cases. Therefore, this research aimed to develop an appropriate manual for rubber plantation owners and rubber wood consumers in Thailand for obtaining the FSC standards. Secondary data of the forest management certification system at the international level, including organizations, certification process, and FSC certification standards, were analysed and related to data at the national level (i.e., laws, regulations and status of rubber plantations in economic, social and environmental dimensions). The consistency and limitations of FSC principles, criteria, and indicators in certificates issued in Thailand were also analysed. A manual, with recommendations for compliance with FSC standard, was developed. It consists of five chapters: 1) FSC definition; 2) FSC scoping; 3) FSC evaluation and surveillance; 4) FSC scoping assessment; and 5) implementations in accordance with FSC standards. This knowledge had been shared through workshops with the rubber plantation owners, rubber wood consumers, staff of the Rubber Authority of Thailand, and other organizations. In total, over 150 people attended the workshops in the following locations: Songkla, Surat Thani, Rayong, and Bangkok. The workshops aimed to develop the participant skills to request for FSC: FM certification.

1. Introduction
Thailand is currently having problems with the export of rubber wood products that are related to price and market competition, yet the rubber plantation area tends to increase all the time. All relevant government and private organizations in Thailand hope to solve these problems sustainably, for both wood and latex products. One of the important solutions is to increase the value of rubber wood products...
and marketing channels for exporting to more countries besides China, such as European countries, the United States and Japan. However, Thailand still faces a significant obstacle to the export of rubber wood products, that is, most of the rubber plantations have not yet been certified for international forest management, namely forest certification, which is one mechanism to prevent and manage global environmental problems including air, soil, water, biodiversity and the reduction of forest areas.

Forest certification can be divided into two categories, namely, the Forest Management (FM) and Chain of Custody (CoC), with the certifying organizations such as Forest Stewardship Council (FSC) and Pan European Forest Certification (PEFC). Based on FSC [2], only 11 private sector organizations and state enterprises were successfully certified FSC: FM, covering only 0.411 percent of rubber plantations in Thailand [2]. From the previous research [1], most rubber plantation owners and rubber wood consumers in Thailand did not understand enough about the principles, criteria, and indicators of FSC: FM certification, and that auditors need to process a request for Corrective Action Requests (CARs) or suspend certificates in some cases. Therefore, this research originated from the research plan titled “the Formulation of Policy Recommendations for the Potential Development of Rubber Plantation Owners and Rubber Wood Consumers in Thailand for Obtaining International Forest Management Certification”, which was supported by the National Research Council of Thailand (NRCT) and the Thailand Research Fund (TRF) in the fiscal year 2016. The research aims to develop an appropriate manual for rubber plantation owners and rubber wood consumers in Thailand for achieving the Forest Stewardship Council (FSC) standards.

2. Methodology
This research included (1) the drafting of a manual of rubber plantation owners and rubber wood consumers in Thailand for obtaining the Forest Stewardship Council (FSC) standards, and (2) knowledge transfer to rubber plantation owners and rubber wood consumers in different regions of Thailand, with appropriate manual adjustment after training.

A draft manual was prepared based on secondary data on the structure of the international FM certification system, such as the relevant system organizations, the FSC certification process (consisting of Principles, Criteria, and Relevant Indicators), as well as compiling data on Thailand's FM certification associated with FSC certification standards, such as laws, regulations, and status of rubber plantations in terms of economic, social, and environmental dimensions. The manual was considered an important tool for internal audit by the rubber plantation owners and rubber wood consumers in Thailand for obtaining the FSC standards.

The draft manual was introduced through workshops to rubber plantation owners and rubber wood consumers in Thailand for obtaining the Forest Stewardship Council (FSC) standards. The workshops were held in four different regions of Thailand and involved a total of approximately 150 participants. Finally, the draft manual was then appropriately improved based on the experimental results of the training and the recommendations of the training participants.

3. Results and discussion
Forest Management (FSC-FM) Certification is a standard for sustainable forest management (SFM) in accordance with the guidelines of the Forest Stewardship Council (FSC). The FSC inspects the quality of forest management from forest plantation to production processes. Currently, the FSC standard version has changed from version 4 (FSC Principles and Criteria for Forest Stewardship; FSC-STD-01-001, V4-0 [3]) to version 5 (FSC Principles and Criteria for Forest Stewardship; FSC-STD-01-001, V5-2 [4]), which was released in July 2015. However, FSC standard version 5 has not yet been used for certification in Thailand, but it is preparing to use in the near future. Therefore, the analysis of the principles and criteria of the FSC certification system was conducted using Version 5 as the standard framework along with other relevant documents, including 1) recommendations, guidelines and other documents issued or certified by the FSC, 2) FSC standards, 3) standards for plant species, products and services, and 4) standards for various types of management units such as forest with small and low-
intensity managed forests (SLIMF), forest with large and high-intensity managed forests, and forest with conservation or protected purpose as approved by FSC.

We analysed the scope of the FSC standard in Thailand based on the following issues: 1) covering all management activities related to both inside and outside the management unit (MU), whether by themselves or by a sub-contractor, 2) the geographic area of certification within the management unit that is requesting forest certification, but some principles and criteria are certified beyond the scope of the management unit, 3) principles and criteria can be applied to all types of forests and sizes, including natural forests, plantations and other plant species, 4) management units in an agricultural production system will not be subject to principles and criteria unless they are covered by the conditions specified in the management plan, 5) products and services cover the production of timber and non-timber forest products, conservation, protection, ecological services and other uses, and which ecological services include carbon sequestration according to guidelines for global warming action, and 6) compliance with international and national laws and regulations. Comparison of the FSC versions 4 and 5 showed that the FSC Principles and Criteria in version 5 contains 10 principles and 70 criteria, which is an increase of 14 criteria from version 4, and therefore requires a stricter process to certify than the previous version.

The draft manual consisted of five chapters: 1) FSC definition, 2) FSC scoping, 3) FSC evaluation and surveillance, 4) FSC scoping assessment, and 5) implementation in accordance with FSC standards (Figure 1). The FSC definition described the definition of the FSC, the establishment of the FSC and the FSC’s commitment to promoting sustainable forest management, both socially, economically and environmentally. The FSC scoping was defined as the scopes of forest certification in six issues of the activities related to MU, the geographic area, types of forests and sizes, agricultural areas, products and services, and compliance with laws as described in the previous paragraph. The FSC evaluation and surveillance explained the procedures for requesting the forest certification and the timing of the main evaluation, surveillance, and Corrective Action Requests (CARs) improvements. The FSC scoping assessment composed of the name of the applicant, the geological area, types of forest certification and list of products and services. The last chapter of implementation in accordance with the FSC standard composed of desired characteristics, activities, and information, including lists of documents that must be prepared to support the FSC certification.

Figure 1. Manual of rubber plantation owners and rubber wood consumers in Thailand for obtaining international forest management certification.

The knowledge in the manual had been transferred to the rubber plantation owners, rubber wood consumers, staff of the Rubber Authority of Thailand, and other organizations in four workshops in Songkla, Surat Thani, Rayong, and Bangkok and involving over 150 participants. The aim of the workshops was to develop the participant skills on how to prepare to request for FSC: FM certification (Figure 2). The workshops not only provided knowledge and guidance on how to use the manual in the
meeting room, but field trips to test the manual in the rubber plantation also helped workshop participants better understand how to use the manual. Questions, suggestions, and difficulty in understanding the draft manual derived from the workshop were used to improve the manual and make it more appropriate and clear. Examples of the improvements were changing the table which explained the appropriate personal protective equipment (PPE) in each of the activities to be images, for easy implementation, and increasing the font size to make it easier to read. All participants and the relevant organizations shall receive the revised manual by mail at the end of the research project.

Figure 2. Workshop and field trip to examine the draft manual.

4. Conclusions
In this research, we have developed a manual for rubber plantation owners and rubber wood consumers in Thailand for obtaining the Forest Stewardship Council (FSC) standards based on the principles and criteria of the FSC certification and other relevant documents. The draft manual has five chapters: 1) FSC definition, 2) FSC scoping, 3) FSC evaluation and surveillance, 4) FSC scoping assessment, and 5) implementations in accordance with FSC standards. The draft manual was shared with a total of over 150 participants including rubber plantation owners, rubber wood consumers, staffs of the Rubber Authority of Thailand, and other organizations in different regions of Thailand, and a manual adjustment was done after the training. At the end of the research project, the revised manual will be delivered to all participants and relevant organizations.

5. References
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Acknowledgement
This research was funded by the Thailand Science Research and Innovation (TSRI: RDG61T0006). We also thank the valuable staff from the Laboratory of Tropical Dendrochronology (LTD), Faculty of Forestry, Kasetsart University, for data preparation, collection and analysis.