

Economic Importance of Non-Timber Forest Products

Prom Tola, Seng Kimsay, Sean Prum, Run Vanny, Vong Touch
with Arlynn Aquino



CASE STUDIES ON RESIN AND RATTAN IN KAMPONG THOM PROVINCE, CAMBODIA

Economic Importance of Non-Timber Forest Products

Case Studies on Resin and Rattan in Kampong Thom Province, Cambodia

Prom Tola, Seng Kimsay, Sean Prum, Run Vanny, Vong Touch
with Arlynn Aquino

August 2010

**Economic Importance of Non-Timber Forest Products:
Case Studies on Resin and Rattan in Kampong Thom Province, Cambodia**

Prom Tola, Seng Kimsay, Sean Prum, Run Vanny, Vong Touch
with Arlynn Aquino


The NTFP Exchange Programme (NTFP-EP) for South & Southeast Asia in cooperation with the Cambodia NTFP Working Group, appreciates the generous contribution of the following to this research: Oxfam GB and Forestry Administration (FA) of Cambodia. The findings, interpretations and conclusions expressed in this report are the sole responsibility of NTFP-EP and do not necessarily represent or reflect the policies and position of the contributing organizations.



We encourage the use of this report for research and non-profit program development purposes provided that the source is acknowledged. Chapters of this publication or the publication in whole may not be reproduced or used in any form by any means – graphic, electronic, mechanical, recording, taping, web distribution or information storage retrieval systems – without the written permission of the publisher. For permission, contact:

Non-Timber Forest Products Exchange Programme for South & Southeast Asia

	<p>92 Masikap Extension Barangay Central, Diliman, Quezon City, 1100 Philippines Tel. +63 2 929 3665; Telefax: +63 2 426 2757 Email: info@ntfp.org; URL: www.ntfp.org</p>
---	--

	<p>Cambodia NTFP Working Group #10Eo Street 420, Sangkat Boeung Trabek, Khan Chamkarmon, Phnom Penh, Cambodia Tel.: +855 23 727407; Email: ntfp_epc@online.com.kh</p>
---	---

Photos: Sean Prum, Prom Tola, Femy Pinto, OGB and NTFP-EP

Table of Contents

List of Acronyms and Abbreviations	v
Acknowledgment	vi
Executive Summary	ix
Introduction	1
Objectives of the Study	1
Methods of the Study	2
Limitations of the Study	5
Discussion of Findings	7
Policy Development and Framework for Forest Products in Cambodia	7
Case Studies on Total Economic Value of Resin, Rattan and Bamboo Trade in Kampong Thom Province	11
Provincial Government Revenue from NTFPs	12
Resin Trade in Community Protected Area Prasat Tbeng Korng	12
Rattan Trade in Damnak Traseng Community Forestry	15
Bamboo Trade: Sre Ksach Village, Sandan District	21
Economic Sensitivity Analysis	21
Total Economic Valuation of Rattan in CF Damnak Traseng Community	21
Total Economic Valuation of Resin in CPA Prasat Tbeng Korng	26
Conclusions and Implications of the Study	32
References	35
Annexes	36
Questionnaire A	36
Questionnaire B	38
Questionnaire C	40
Terms of Reference for the Study	44

List of Tables

1	Criteria for site selection	2
2	Theoretical definitions of forest values	3
3	Key stakeholders interviewed per selected NTFP	4
4	Guidelines and cost estimates for CF establishment	8
5	Official fee rates for selected forest products	9
6	Trend in NTFP production and trade in Cambodia	11
7	Records of NTFP production in 2007 and 2008 in Kampong Thom	12
8	Financial analysis per resin tapper	13
9	Financial analysis per trader and CBO	14
10	Financial analysis per resin wholesaler	15
11	Total households and rattan collection per household in Danmak Traseng (2009)	17
12	Rattan production and village income per year	17
13	Financial analysis per rattan transporter	19
14	Number of households processing rattan in three villages of Baray District, Kampong Thom Province for finished product processing	20
15	Financial analysis per small-scale rattan processor	20
16	Financial analysis of cassava plantation in Meanrith Commune, Sandan District	25
17	Summary of TEV scenario analyses of rattan production	26
18	Financial analysis for logging of resin trees	30
19	Summary of TEV scenario analyses of resin production	30

List of Acronyms and Abbreviations

AFD	Action for Development
CBO	Community-Based Organisation
CCF	Commercial Community Forestry
CF	Community Forestry
CFMC	Community Forestry Management Committee
CFO	Community Forestry Office
CPA	Community Protected Area
CSPPM	Civil Society and Pro-Poor Market
D & D	Decentralisation and Deconcentration
ELC	Economic Land Concession
ESSD	Environment Support and Social Development
FA	Forestry Administration
FGD	Focal Group Discussion
MAFF	Ministry of Agriculture, Forestry and Fisheries
MoE	Ministry of Environment
MoP	Ministry of Planning
NFP	National Forestry Programme
NGO	Non-Governmental Organisation
NRMLP	Natural Resources Management and Livelihood Project
NSDP	National Strategy for Development Programme
NTFP(s)	Non Timber Forest Product(s)
NTFP-EP	Non Timber Forest Product-Exchange Programme for South & Southeast Asia
OGB	Oxfam Great Britain
PF	Partnership Forestry
REDD	Reducing Emissions from Deforestation and Forest Degradation
TAF	The Asia Foundation
TEV	Total Economic Valuation
TWG F&E	Technical Working Group for Forestry & Environment
WCS	Wildlife Conservation Society

Acknowledgment

The authors are grateful to the many people who provided inputs, comments and suggestions in support of this study.

In conducting the research, valuable inputs were provided by more than 100 resin/rattan processors, wholesalers, traders; resin tappers and rattan collectors; community-based organisations; government officials from the Forest Administration and Ministry of Environment; and local and international NGOs currently working on livelihood and forest resource management. Without their willingness to share information and engage in extensive interviews about their businesses, project activities, and policy and regulatory issues related to forest management and trade, it would have been impossible to produce this study.

Likewise, the authors deeply appreciate the advice and recommendations by the following people during the initial stage of the study: Ms. Amy Maling of the WWF Greater Mekong Cambodia Country Programme for her invaluable advice and guidance; Mr. Francis Perez, Mr. Joel Rodriguez and other staff of Oxfam Great Britain in Cambodia for their analytical support, comments and critiques on the early drafts; and the senior staff of the Forestry Administration: Mr. Lao Sethaphal, Dr. Pak Canada, Mr. Long Ratanakoma and Mr. Phan Kamnap for their active support in designing the general research framework.

The technical advice on the economic analysis of this report provided by Ms. Arlynn Aquino, NTFP-EP Regional Enterprise Development Coordinator, is very much appreciated by the authors. Without her contribution, it would have been impossible to produce the entire study. Special gratitude is also given to Ms. Femy Pinto of NTFP-EP for her guidance, advice and supervision to ensure the success of the entire research project.

The authors acknowledge the valuable field assistance and logistical support of Mr. Sok Khim, staff from Oxfam GB, and partners: AFD and ESSD in Kampong Thom Province.

It is hoped that the subsequent discussions and future awareness on Total Economic Valuation of NTFPs among the different stakeholders can lead to further policy improvements and sustainable benefits for the forest-dependent communities in Cambodia.

*Prom Tola, Seng Kimsay, Sean Prum, Run Vanny and Vong Touch
Phnom Penh, August 2010*

សេចក្តីសង្ខេប

អនុផលព្រៃឈើ បានដើរតួនាទីយ៉ាងសំខាន់ក្នុងការជួយដល់ជីវភាពរស់នៅរបស់សហគមន៍មូលដ្ឋាន ដែលពឹងអាស្រ័យលើធនធានព្រៃឈើ ក៏ដូចជាប្រភពនៃសេដ្ឋកិច្ចជាតិ ជាពិសេសចូលរួមចំណែកដល់ ការកាត់បន្ថយភាពក្រីក្រនៅកម្ពុជា។ ក្នុងស្ថានភាពបច្ចុប្បន្នដែលធនធានព្រៃឈើកំពុងទទួលរងនូវការបាត់បង់ និងអថរលំនៅ ប្របពេលនឹងតម្រូវការមានការកើនឡើងទាំងក្នុងស្ថានភាពសេដ្ឋកិច្ច ក៏ដូចជាក្នុងតំបន់ធនធានអនុផលព្រៃឈើបាន និងកំពុងប្រឈមបញ្ហាជាច្រើន ដែលទាមទារឱ្យអ្នករៀបចំគោលនយោបាយត្រូវតែធ្វើការពិចារណា និងគិតគូរពីផលប្រយោជន៍នីមួយៗនៃសហគមន៍។

គោលបំណងនៃការសិក្សា

គោលបំណងសំខាន់នៃការសិក្សាគឺធ្វើការវិភាគ និងចងក្រងទុកជាឯកសារនូវសារៈប្រយោជន៍នៃអនុផលព្រៃឈើ ដោយប្រើប្រាស់ករណីសិក្សាលើផលិតផលជាក់លាក់នៃសហគ្រាសដែលមានស្រាប់ដូចជា ៖ សហគ្រាសកែច្នៃក្រូច/ល្អិត ឬស្រូវ និងសហគ្រាសដឹកជញ្ជូន នៅក្នុងខេត្តកំពង់ធំ។ ការសិក្សានេះមានសារៈសំខាន់ ដល់ដែកក្នុងកំណត់ និងវាយតម្លៃលើផលប្រយោជន៍នៃគោលនយោបាយច្បាស់លាស់មួយដើម្បីឱ្យ អ្នករៀបចំគោលនយោបាយ ឬច្បាប់ គិតគូរពិចារណានៅក្នុងការរៀបចំផែនការយុទ្ធសាស្ត្រ ការបង្កើតទម្រង់ ការការងារ និងការអភិវឌ្ឍលើធនធានអនុផលព្រៃឈើនាពេលអនាគត។ អាទុសាសន៍ដែលដក ស្រង់ចេញពីការសិក្សានេះនឹងជំរុញឱ្យមានការកែលម្អផលប្រយោជន៍របស់សហគមន៍ ទាក់ទងនឹងការប្រើប្រាស់អនុផលព្រៃឈើ ការគ្រប់គ្រងប្រកបដោយនិរន្តរភាព និងការពង្រឹងការទំនាក់ទំនងសហគ្រាសក្នុងការ អភិវឌ្ឍន៍អនុផលព្រៃឈើនៅកម្ពុជា។

វិធីសាស្ត្រ

កិច្ចពិភាក្សាពិគ្រោះយោបល់ដោយមានការចូលរួមមួយបានរៀបចំឡើង ដើម្បីកំណត់នូវអនុផលព្រៃ ឈើជាក់លាក់សម្រាប់ការសិក្សានេះ ដោយធ្វើការពិភាក្សាជាមួយសហគ្រាសសំខាន់ៗរួមមាន ការិយាល័យ សហគមន៍ព្រៃឈើនៃនាយកដ្ឋានព្រៃឈើនិងសហគមន៍ព្រៃឈើ នៃរដ្ឋបាលព្រៃឈើ អង្គការអុកស្វាម អង់គ្លេសដែលជាដៃគូសម្រាប់សិក្សាស្រាវជ្រាវនេះ។ ជាលទ្ធផល ករណីសិក្សាលើសហគ្រាសអនុផលព្រៃឈើ ចំនួនបីត្រូវបានជ្រើសរើសជាមុនសម្រាប់នៅខេត្តកំពង់ធំ នោះគឺករណីសិក្សាពីសហគ្រាសដឹកជញ្ជូន សហគ្រាសកែច្នៃក្រូច/ល្អិត និងសហគ្រាសកែច្នៃស្រូវ។ ប៉ុន្តែជាពុំបានដោយមានតែផលិតផលពីប្រភេទតែប៉ុណ្ណោះ ដែលបានត្រូវបានរាប់បញ្ចូលនៅក្នុងការសិក្សានេះគោលគឺ ផលិតផលដឹកជញ្ជូនដែលយកចេញពីសហគមន៍តំបន់ ការពារធម្មជាតិ ប្រាសាទវត្សរ៍និង និងផលិតផលផ្កា ដែលយកចេញពីសហគមន៍ព្រៃឈើដំណាក់ត្រសែង។ ដោយឡែកចំពោះផលិតផលឬស្រូវវិញ ត្រូវបានជំរុះចោលវិញកំឡុងពេលនៃការសិក្សា ដោយសារ មិនមានធន ធានគ្រប់គ្រាន់នៅក្នុងព្រៃ។

ការពិភាក្សាតាមក្រុមចំណាប់អារម្មណ៍ និងការសិក្សាស្រាវជ្រាវសំខាន់ៗ នៅក្នុងរាជរដ្ឋាភិបាល វិស័យ ឯកជន ក្រុមអ្នកប្រមូលអនុផលព្រៃឈើ ត្រូវបានយកមកប្រើជាឧបករណ៍ក្នុងការប្រមូលព័ត៌មានស្តីពីការអភិវឌ្ឍ សហគ្រាសដែលគ្រប់គ្រងដោយសហគមន៍ កែច្នៃក្រូច/ល្អិត ឬស្រូវ និងដឹកជញ្ជូន។ ចំពោះទិន្នន័យដែលមានស្រាប់ ដូចជាស្ថិតិផ្នែករដ្ឋាភិបាល គោលនយោបាយទាក់ទងនឹងការប្រើប្រាស់ និងដឹកជញ្ជូនអនុផល

ព្រៃឈើ សហគ្រាស សហគមន៍កំណត់ត្រាខាងវិស័យឯកជន និង ឯកសារពាក់ព័ន្ធផ្សេងៗទៀតពីរដ្ឋបាលព្រៃឈើត្រូវបានយក មកពិនិត្យ និងសម្រេច។

ការសិក្សាបានអនុវត្តវិធីសាស្ត្រដោយមានការចូលរួម ជាពិសេសការសិក្សាលើទិដ្ឋភាពរួម និងទស្សនៈ វិស័យរបស់សហគមន៍ទាក់ទងនឹងផលប្រយោជន៍ផ្នែកសេដ្ឋកិច្ចរបស់ រដ្ឋ និង ដីទឹក។ បានរៀបចំសិក្សាសាលា ចំនួនពីរលើកជាមួយគ្នាជាក់លាក់ពីសំខាន់ៗ ដើម្បីបញ្ជាក់ និងធ្វើឱ្យស៊ីជម្រៅ ចំពោះការវិភាគគិតជាឧបករណ៍ ចាំបាច់ដែលបានប្រើប្រាស់ដើម្បី នៃលទ្ធផល ពិសេស ការវិភាគលើការយល់ដឹងផ្នែកសេដ្ឋកិច្ច។ តំលៃសេដ្ឋកិច្ចសរុប ពីសារៈសំខាន់ផ្នែកសេដ្ឋកិច្ចនៃផលិតផលផ្កា និង ផលិតផលដឹកជញ្ជូន នៅខេត្តកំពង់ធំ។

លទ្ធផល ការសន្និដ្ឋាន និង អនុសាសន៍ លក្ខណៈទូទៅនៃវិស័យអនុផលព្រៃឈើ

សារៈសំខាន់នៃការរួមចំណែកផ្នែកសេដ្ឋកិច្ចរបស់អនុផលព្រៃឈើលើការប្រកបរបរវិញ្ញាណវិភាគរបស់ ប្រជាសហគមន៍មូលដ្ឋានដែលពឹងផ្អែកលើព្រៃឈើតែត្រូវបានគេមើលរំលងពីសំណាក់អ្នកពាក់ព័ន្ធ និងអ្នកមានវិសាលភាពចង់គ្រងគោលនយោបាយ គួរកត់សំគាល់ផងដែរថា ព្រំដែនកំណត់នៃការប្រកបរបរវិញ្ញាណវិភាគវិភាគសហគមន៍

លើសពីសហគមន៍ព្រៃឈើ និងសហគមន៍តំបន់ការពារធម្មជាតិ ដូច្នោះព្រំដែនកំណត់នោះ ក៏ហួសពីគ្រប់ទំណាក់កាលនៃការគ្រប់គ្រងសហគមន៍ព្រៃឈើ និងសហគមន៍តំបន់ការពារធម្មជាតិ។ តែពោះជា យ៉ាងណាត្រូវតែពិចារណាចំពោះការអភិវឌ្ឍន៍គោលនយោបាយនៃការប្រើប្រាស់អនុផលព្រៃឈើ និងការតម្រូវការប្រកបរបរវិញ្ញាណវិភាគស្ថិតនៅក្នុងគ្រប់ទំណាក់កាលដ៏ទូលំទូលាយសម្រាប់ការអភិវឌ្ឍសហគមន៍ និងការ គ្រប់គ្រងព្រៃឈើប្រកបដោយនិរន្តរភាព។

ការគ្រប់គ្រងទិន្នន័យលើវិស័យព្រៃឈើត្រូវបានកែលម្អ ពីព្រោះការកត់ត្រាផលិតផលអនុផល ព្រៃឈើត្រូវបានបញ្ជាក់តែពីតំលៃផលិតកម្មអនុផលព្រៃឈើ របស់សហគ្រាសអាជីវកម្មតែប៉ុណ្ណោះ ដែលតម្រូវឱ្យបង់កំរៃផ្លូវការ។ ការកែលម្អប្រព័ន្ធចង់គ្រងឯកសារនេះ អាចនឹងមានឥទ្ធិពលជាវិជ្ជមានដល់ការចូលរួមចំណែក ពិតប្រាកដចំពោះការគិតគូរពី វិស័យព្រៃឈើនៅថ្នាក់ជាតិ។

ទាក់ទងនឹងបញ្ហានេះ ដំណើរការនៃការប្រមូលអនុផលព្រៃឈើកំរៃផ្លូវការ និងតម្រូវការផ្នែកច្បាប់ សម្រាប់ធានាផលរកជាប់ប័ណ្ណ និងការអនុញ្ញាតដឹកជញ្ជូន មានភាពសំបាប់ និងពិតជាពិបាកទទួលយកបានម្យ៉ាងវិញទៀតអាចនាំឱ្យមានការកើនឡើងនូវ ភាពមិនអាចទទួលបានផលលទ្ធផល នៅក្នុងអាជីវកម្ម។ គោរពតាមដំណើរការវិជ្ជមាន និងវិសហមជ្ឈការ ការប្រមូលទិន្នផលព្រៃឈើត្រូវតែអនុញ្ញាតឱ្យផ្នែក និងទណ្ឌរដ្ឋបាលព្រៃឈើសាមី ជាអ្នកយកពន្ធពិការប្រមូលផលព្រៃឈើ ហើយរក្សាទុកមួយភាគណាមួយនៃចំនួនកំរៃបង់ពន្ធសម្រាប់ការគ្រប់គ្រងព្រៃឈើ។

ការវិនិច្ឆ័យនៃការប្រកាសសេដ្ឋកិច្ច

តំលៃសេដ្ឋកិច្ចសរុប គឺជាឧបករណ៍សំខាន់មួយ ដែលជួយអ្នកចង់ក្រង គោលនយោបាយ និងអ្នកធ្វើផែនការ ការធ្វើសេចក្តីសម្រេចចិត្តបានល្អប្រសើរលើ ការអភិវឌ្ឍគោលនយោបាយសេដ្ឋកិច្ច និងការធ្វើផែនការ ប្រើប្រាស់ដីធ្លី។ ការវាយតម្លៃសេដ្ឋកិច្ចសរុបកាន់តែខ្ពស់ក្នុងការសិក្សានេះ មានន័យថាមានការ ផ្តល់ជម្រើសមួយ សម្រាប់ការអភិវឌ្ឍ ការប្រកបរបរចិញ្ចឹមជីវិត ដោយសហគមន៍ ដែលអាចធ្វើសមាហរណកម្មការចែករំលែកដែល មានលក្ខណៈសមភាព និងមានការចែករំលែកធនធានព្រៃឈើលក្ខណៈយូរអង្វែង ការគ្រប់គ្រងធនធាន ដោយនិរន្តរភាព និងអាចចូលរួមចំណែកក្នុងការកាត់បន្ថយការបំបាត់ឧស្ម័នផ្ទះ កញ្ចក់។

លទ្ធផលការណែនាំសិក្សាពីរបៀបផ្សេងគ្នានៅខេត្តកំពង់ធំ ស្នើឡើងថាគោលនយោបាយ សេដ្ឋកិច្ចសរុបនៃការអភិវឌ្ឍ ការប្រកបរបរចិញ្ចឹមជីវិត ការអភិរក្ស ការប្រមូលផល អនុផលព្រៃឈើដោយចីរភាព ដូចជាផ្លោ និងជីវចីកតិវិធីជា មានសារៈសំខាន់ខ្ពស់ជាការផ្តល់ដីព្រៃដើម្បីកាប់ឈើ និងការផ្តល់ដីព្រៃសម្រាប់ ធ្វើការដំណាំកសិកម្ម ឬផ្តល់ដីសម្បទានសេដ្ឋកិច្ចសម្រាប់ដាំដំណាំអាកាស្យា និងការយកកំរិតផ្ទុកលើសលុប។ ទាំងឈុតធានាផែនការ ផ្តល់ដីព្រៃសម្បទាន សេដ្ឋកិច្ចធ្វើការអាកាស្យា និងការកាប់ព្រៃឈើ ផ្តល់តំលៃទាបបំផុត ពីព្រោះ វាអាចត្រូវបានចាត់ការវាយតំលៃសរុបសេដ្ឋកិច្ចក្នុងការអភិវឌ្ឍមុខរបរ និងសេវាកម្មបរិស្ថាន។ ម្យ៉ាងវិញទៀត វាកាន់តែធ្វើឱ្យមានការយល់ដឹងបន្ថែម ទៀតដល់ការបែងចែកធនធានព្រៃឈើដែលមានស្រាប់ ដើម្បីកែលម្អការប្រកប របរចិញ្ចឹមជីវិតតាមបែបប្រជាប្រិយរបស់ប្រជាពលរដ្ឋនៅមូលដ្ឋាន និងធានាឱ្យ សមភាពនៃការចែករំលែកធនធាននៅក្នុងចំណោមសមាជិកសហគមន៍។ លើស ពីនេះទៅទៀត ឈុតធានាទាំងនេះ អាចជួយកែលម្អសមភាពសង្គមក្នុងការ បែងចែកធនធាន ហើយធានាគុណភាពរវាងការ ដាក់ទុនវិនិយោគលើ អនុផលព្រៃឈើដោយចីរភាព និងការការពារធនធានសម្រាប់ក្មេងជំនាន់ក្រោយ។ កិច្ចការនេះត្រូវធ្វើ ឱ្យស្របគ្នានឹងកម្មវិធីជាតិនៃផែនការយុទ្ធសាស្ត្រអភិវឌ្ឍន៍របស់ សហគមន៍ ឆ្នាំ២០០៩ ដល់២០១៣ ដែលបញ្ជាក់ ពីការតាំងចិត្តក្នុងគ្រប់គ្រងធនធានដោយចីរភាព និងការការពារបន្ថយការគ្រិក្រ។

តំលៃសេដ្ឋកិច្ចសរុប តែផលិតផលផ្តល់

ការប៉ាន់ប្រមាណចំណូលដែលបានមកពីការប្រមូលផ្តល់មានចំនួន ៦០០ ដុល្លារអាមេរិកក្នុងមួយគ្រួសារ (៣០០,០០០ដុល្លារ/៣៧៧១១២៦)។ គិតជាសាច់ប្រាក់ផ្តល់ដល់ប្រជាជនតំលៃសំខាន់មួយដើម្បីកែលម្អ ប្រាក់ចំណូលរបស់សហគមន៍មូលដ្ឋាន។ ការកែច្នៃផ្តល់ផលិតផលសហគមន៍ផ្តល់ នូវតំលៃបន្ថែមដ៏មានសារៈសំខាន់ ចំពោះវិស័យព្រៃឈើ គឺមានការកើនឡើង កង្ការកសិកម្មនៃការដាំ និងការស្វែងរកប្រាក់ចំណូល ហើយនិងកាត់បន្ថយ សំណាមកលើធនធានធម្មជាតិ។ ការអភិវឌ្ឍន៍ការប្រកបរបរចិញ្ចឹមជីវិត និង ការអភិរក្សជាជម្រើសទី២ ការប្រមូលផលផ្តល់ប្រកបដោយនិរន្តរភាពជាសេណា វ៉េយ៉ូទី២ ដែលមានតំលៃខ្ពស់លើបំផុតផល តំលៃសេដ្ឋកិច្ចសរុប។ ការយក កំរិតផ្ទុកការជាឈុតធានាទី៣ បញ្ជាក់ពីការដាក់កំរិតការបង់ពន្ធជាផ្ទុក គួរតែកាត់បន្ថយផលតំលៃសេដ្ឋកិច្ចសរុប វាយតំលៃសេដ្ឋកិច្ចសរុបលើការ

ផ្តល់ព្រៃសហគមន៍សម្រាប់ធ្វើចំការ ដំណាំអាកាស្យា ហើយ ឬការផ្តល់ដី សម្បទានសេដ្ឋកិច្ចជម្រើសទី២ ដែលនាំឱ្យទទួលបានផលទាបបំផុត និងតំលៃជា អវិជ្ជមានដល់ការវិនិយោគ ពីព្រោះវាត្រូវ តែទូទាត់មកវិញនូវឥទ្ធិពលផ្ទុយ ស្របនឹងការប្រកបមុខរបរ និងបរិស្ថាន។ ដូច្នេះការផ្តល់ធនធានព្រៃឈើឱ្យ សហគមន៍គ្រប់គ្រង គួរតែជាជម្រើសដ៏ប្រសើរ សម្រាប់ការប្រមូលផលផ្តល់ ដោយចីរភាព ការអភិវឌ្ឍន៍មុខរបរ និងការអភិរក្សព្រៃឈើ។

តំលៃសេដ្ឋកិច្ចសរុប លើផលិតផលផ្តល់

ជីវចីកតិវិធីលម្អយ៉ាងសំខាន់ក្នុងការបង្កើនប្រាក់ចំណូលរបស់សហគមន៍ មូលដ្ឋាន។ ការប្រមូលផលជីវចីក តំលៃផ្នែកហិរញ្ញវត្ថុប្រមាណជា ១៥០ដុល្លារអាមេរិក ក្នុងមួយគ្រួសារ។ សហគមន៍មូលដ្ឋានចង់ការពារ អភិរក្សដីព្រៃឈើ និងព្រៃ សហគមន៍ ដើម្បីឱ្យពួកគាត់ អាចបន្តដាំជីវចីកសម្រាប់ប្រើប្រាស់នៅក្នុងស្រុក បានយូរអង្វែង។ ថ្មីៗនេះតំលៃជីវចីកថយចុះជាខ្លាំង ដោយសារការថយចុះនៃ ការនាំចេញជីវចីកទៅទៀត រៀងរាល់ថ្ងៃ ដូច្នេះប្រាក់ចំណូលនេះ ស្ទើរតែជា សហគមន៍មូលដ្ឋានបានរកចំណូលបានពី ៧០ ទៅ ៨០ ភាគរយ នៃតំលៃជីវចីក សរុប នៅខណៈដែលវិស័យឯកជនអាចរកចំណូលបានពី ១០ ទៅ ២០ភាគរយ។ គុណភាពនេះត្រូវបានរាប់បញ្ចូលទាំងប្រដីកដីព្រៃ និងការបង់ប្រាក់ប្រាក់ផ្សេងៗ អ្នក ប្រើប្រាស់ជីវចីកភាគច្រើនជា អ្នកនេសាទត្រី ពួកគាត់មានទទួលបានចំណាយថ្លៃដល់ ដើម្បីបានជីវចីក ពន្លឹក តែចំពោះយ៉ាងណាតំលៃនេះ មិនអាចលើសតំលៃវិកល ដែលជាផលិតផលផ្តល់នូវនោះទេ។

ការអភិវឌ្ឍមុខរបរ និងការអភិរក្សជាជម្រើសទី១ ដែលមានតំលៃខ្ពស់ជាង គេផ្នែកសេដ្ឋកិច្ច បើប្រៀប ធៀប ទៅនឹងតំលៃបង់ពន្ធស្វយសារតាមផ្លូវការ ដែលជា សេណាវ៉េយ៉ូទី២ ហើយការផ្តល់សហគមន៍ តំលៃការពារ ធម្មជាតិ ទៅជាការកាប់ឈើ ទៅវិញទៅមកជាសេណាវ៉េយ៉ូទី៣ ។ តំលៃសេដ្ឋកិច្ចសរុបនៃការកាប់ព្រៃឈើ បានផ្តល់ លទ្ធផលតំលៃទាបបំផុត សឹងតែមិនអាចទូទាត់ ជាមួយតំលៃជាការអភិវឌ្ឍន៍មុខរបរ និងសេវាកម្មបរិស្ថាន។ ដូច្នេះ សេណាវ៉េយ៉ូទី១ គឺជាជម្រើសដ៏ប្រសើរដែលវាអាច ធ្វើឱ្យមានការចុះស៊ីវិលក្នុងការវិនិយោគនៃ ការអភិវឌ្ឍ មុខរបរ និងការអភិរក្ស ព្រៃឈើ។

ស្រដៀងទៅនឹងផលិតផលផ្តល់ផែរ ដោយជម្រើសទី១នេះ អាចចូលរួម ចំណែកយ៉ាងសំខាន់ក្នុងលើកកម្ពស់សេដ្ឋកិច្ចនៅជនបទ និងការកាត់បន្ថយការគ្រិក្រ ហើយនិងអាជ្ញាធរកែលម្អសមភាព នៃការចែករំលែកធនធាន និងការបែងចែក ផលប្រយោជន៍ដល់ប្រជាសហគមន៍អ្នកប្រើប្រាស់ព្រៃឈើ។ ការដាំជីវចីកបញ្ជាក់ថា មិនអាចធ្វើឱ្យខូចខាតដល់ដើមដីនោះទេ បើប្រសិនបើការប្រើប្រាស់នោះស្របទៅ តាមគោលការណ៍និរន្តរភាព។ ដើមជីវចីកអាចនៅរស់បានរយៈពេល ពី៦០ ទៅ ៧០ ឆ្នាំ។ ជម្រើសនេះ បង្ហាញពីទិន្នផលខ្ពស់របស់ប្រសើរច្រើន សម្រាប់អ្នកចង់ក្រង គោលនយោបាយក្នុងការ លើកកម្ពស់ ផលិតផលអ្នកក្រីក្រជនបទ និងការកាត់ បន្ថយភាព គ្រិក្រ ដែលធ្វើឱ្យប្រជាសហគមន៍អាចធានាបាននូវការ កាន់កាប់ផ្ទៃដី ព្រៃឈើ ពិសេសការកាន់កាប់ប្រែប្រួលភាព ការគ្រប់គ្រងព្រៃឈើដោយ សហគមន៍ ប្រកបដោយនិរន្តរភាព។

Executive Summary

The Non-Timber Forest Product (NTFP) sector contributes to livelihood development and poverty reduction in Cambodia. However, despite being a prime source of livelihood and income among local communities, the economic contribution of NTFP in the national account is often overlooked by policy makers.

Objectives of the Study

The overall objective of the study was to document and analyse the economic importance of NTFPs by using case studies on product-specific enterprises, namely: rattan, bamboo and resin in Kampong Thom Province. The study would be significant in identifying and assessing specific policy options for consideration by policy makers in their strategic planning, framework formulation and further development of NTFPs. The recommendations generated by the study are geared towards improving the benefits of the community from NTFP utilization, sustainable forest management and multi-stakeholder engagement in the NTFP sector development in Cambodia.

In particular, the study is significant to forest managers, policy makers and community-based enterprises in terms of the application of Total Economic Valuation (TEV) as a method for analyzing the economic importance of NTFPs and in presenting different management options using various TEV scenarios.

Methods of the Study

In order to identify the specific NTFPs for the study, a participatory consultation was conducted with

key multi-stakeholders in the community, and partners such as the Community Forestry Office of the Department of Forestry Affairs and Community Forestry of the Forestry Administration, and Oxfam Great Britain.

Three product-specific case studies on rattan, resin and bamboo enterprises were pre-selected in Kampong Thom Province. However, only two products were finally accounted in the study, namely: resin products from the Community Protected Area of Prasat Tbeng Korng, and rattan products from the Community Forestry in Damnak Traseng. Bamboo was dropped during the course of the field research due to the unavailability of this resource in the forests of Dang Kambet commune, Sandan District.

The main tools used to collect primary data on community-based enterprise development of rattan, resin and bamboo were focus group discussions and key informant interviews with representatives of government, private sector and NTFP collectors' group. Secondary data, such as government statistics, policies relevant to NTFP utilization and transport, community enterprise/private sector records, and other relevant documents from the Forest Administration, were reviewed and synthesized.

The research adopted a participatory approach, especially in getting the views and perspectives of the community regarding the economic benefits of rattan and resin. To validate and deepen the analysis of findings, particularly the economic sensitivity analysis, two workshops were conducted with key stakeholders.

TEV is the main tool used to analyse the economic importance of rattan and resin in Kampong Thom Province.

Findings, Conclusions and Implications of the Study

NTFP Sector in General

The important economic contribution of NTFPs on the livelihoods of local forest dependents is often overlooked by many stakeholders and policy makers. Notably, the extent of NTFP utilization for community livelihoods goes beyond the boundaries of community forestry and community protected areas, and in such cases they fall outside the scope of the existing CF/CPA management frameworks. Therefore, there is a need to consider NTFP policy development and livelihood support within the wider framework of sustainable forest management and community development.

Database management of the forestry sector has to be improved because the recorded production of NTFPs reflects only the volume of NTFP production of business enterprises that are subject to pay formal fees. Improving such documentation may positively impact on the real contribution of the forestry sector in the national account.

In relation, the process of formal fees collection and the legal requirements for securing license and transport permit are complicated and extremely difficult to comply with; thus, may lead to increasing trade inefficiency.

With respect to Decentralisation and Deconcentration processes, the forest tax collection should allow provincial offices to charge forest fees for forest products collection and keep some portion of the fees for forest management.

Economic Sensitivity Analysis

TEV is a key instrument that helps policy-makers and planners make better and informed decision on economic policy development and land-use planning. Higher TEV in this study means providing an option for community-based livelihood development that integrates equitable and long-term sharing of forest

resources and sustainable resource management; and, considers contributing to climate change mitigation.

The economic sensitivity analysis used the highest possible costs and the most modest benefits possible under different forest management options. This follows the cautious principles of valuation wherein the values presented and used are prudent and objective rather than optimistic and subjective.

Results of the two different case studies in Kampong Thom suggest that the TEV scenarios of livelihood development and conservation, and sustainable harvest of NTFPs, such as rattan and resin, are significantly higher than the other scenarios of granting forestland to logging, and to agricultural plantation and/or ELC for cassava plantation; and of imposing formal fees. Both the TEV scenarios of logging and granting forestland to cassava plantation turned out to have the lowest values because they may need to offset the TEV of livelihood development and environmental services. Therefore, it makes more economic sense to allocate for the existing forest resources to eventually improve the livelihoods of local people and ensure the equitable sharing of resources among community members. Moreover, these scenarios can ensure the balance between sustainable livelihood investment on NTFPs and resources protection for future generations. This is aligned with the National Strategy Development Programme of the Government for 2009 to 2013, which highlights the commitment for sustainable resource management and poverty reduction.

TEV of Rattan Products

The collection of rattan is estimated at US\$600 per household (US\$300,000/3 villages/annum). Financially, rattan contributes a significant value to improve the income of local community. Local processing of rattan provides a significant value-addition to the forestry sector. It increases employment opportunities and income generation, and reduces the pressure on the natural resources.

Livelihood development and conservation (scenario 1) and sustainable rattan harvest (scenario 2) have the highest TEVs. Informal fee collection (scenario 3) and the imposition of formal taxes indicate double burden to rattan economic actors, and reduce the TEV of rattan. The TEV of granting community forestry for cassava plantation and/or economic land concession (scenario 4) turned out to have the lowest value for investment because it has to compensate for the adverse impact on livelihood and environment. Therefore, the granting of forest resources for community management would be a better option for sustainable rattan collection, livelihood development, and forest conservation.

TEV of Resin Products

Resin contributes significantly in improving the income of local community. Financially, the collection of resin is estimated to be US300 per household. Local communities are eager to protect and conserve the forest land and community forest to enable them to continue to tap resin in the future for domestic use.

Recently, the price of resin has been reduced significantly due to a decrease in the volume of resin export to Vietnam. As reported, local community earns around 70% to 80% of the total value of resin, while the private sector earns 10% to 20%. The balance goes to transport cost and fees.

The consumers, mostly fishermen, are willing to pay double the price in order to access the resin products to caulk boats, but not to exceed the cost of substitute products like varnish.

Livelihood development and conservation (scenario 1) has a significantly higher economic value compared to the value of imposing formal fees (scenario 2), and granting it to CPA for logging activity (scenario 3). The TEV of logging turned out to be the lowest value and would, most likely, offset the values of livelihood development and environment services. Therefore, scenario 1 is a better option as it harmonises alternative livelihood development and forest conservation.

Similar to rattan, scenario 1 would significantly contribute to rural economy and poverty reduction, and would help improve the equitable sharing of resources and benefits among forest-dependent communities. It also indicates that resin tapping, if done in a sustainable manner, would not damage the tree. As such, resin trees will continue to grow for the next 60 to 70 years. This scenario further implies that a more desirable option for policy-makers in promoting pro-poor products and in reducing poverty is to allow the communities to secure tenure over forest areas, particularly under community based sustainable forest management arrangements.



Introduction

The Non-Timber Forest Product (NTFP) sector contributes to livelihood development and poverty reduction in Cambodia. However, despite being a prime source of livelihood and income among local communities, the economic contribution of NTFP in the national account is often overlooked by policy makers.

Forest-dependent communities collect different species of NTFPs from different types of forest management areas, such as production forests, protected areas, and community forests, in order to support their livelihood, income and domestic consumption. Majority of NTFPs are actively and informally traded within the country to meet the domestic demand. They are also exported to neighboring countries and regions.

Studies of the WWF Greater Mekong Cambodia Country Programme (WWF) in 2008 and the Non-Timber Forest Products-Exchange Programme for South and Southeast Asia (NTFP-EP) in 2009 have shown that majority of NTFPs, particularly resins, are informally traded in Vietnam and other neighboring countries. As they are traded and exported as raw materials, they provide little added value to the forestry sector and the national economy as a whole. Moreover, financial value-based approach is often used in accounting the traded value of NTFPs. This means, non-market values such as cultural and heritage consideration, environmental significance, and other value addition which are part of the total economic valuation of NTFPs, are highlighted less, if not ignored, by policy makers and macro-economic planners.

Objectives of the Study

The overall objective of the study was to document and analyse the economic importance of NTFPs using case studies on product-specific enterprises, namely: rattan, bamboo and resin in Kampong Thom Province.

The study would be significant in identifying and assessing specific policy issues from selected case studies for consideration by policy makers in their strategic planning, framework formulation and further policy development for NTFPs. The proposed concrete reforms/improvements generated by the study are geared towards improving community benefits from NTFP utilization, management and sustainability of forest resources, and multi-stakeholder engagements (e.g., private sector, government agencies, and local communities) in the development of the NTFP sector in Cambodia.

Specifically, the study aimed to:

- 1) Identify the economic importance of major NTFPs at the community and industry levels in Cambodia.
- 2) Identify and measure the specific benefits derived from NTFP utilisation by the communities, government agencies and private sector.
- 3) Analyse the specific roles, conditions and results of actual utilisation of NTFPs for subsistence and trade or marketing.
- 4) Provide scenarios and options for policy makers in designing and adopting sustainable forest management where the total economic value of NTFPs are important considerations for planning interventions or in making quality decisions.

Methods of the Study

This study was jointly administered by the NTFP-EP and Oxfam Great Britain (OGB), with funding support from the latter. The research participants were invited as agreed with Forestry Administration (FA), NTFP-EP and OGB. Field work was conducted between December 2009 and January 2010.

The study adopted a participatory approach in formulating the research design and framework, thematic focus, and questionnaires; in analysing the data; and, in writing the whole report. The research team involved three (3) key staff from the Forestry Research Institute and Wildlife and Department of Forestry Affairs and Community Forestry, two (2) staff from the different local NGOs partners of OGB in Kampong Thom Province, and one (1) researcher from NTFP-EP.

In order to identify the specific NTFPs for the study, participatory consultation was conducted with

key multi-stakeholders including those from the Community Forestry Office (CFO) of the Department of Forestry Affairs and Community Forestry, and OGB. As a result, three product-specific case studies on rattan, resin and bamboo enterprises were pre-selected in Kampong Thom Province.

The following criteria were used in the final selection of sites where rattan, resin, and bamboo¹ enterprises would be studied: (i) large-scale production and contribution to improve the economic condition and livelihoods of local communities, (ii) the different management scenarios of NTFPs, (iii) availability of the products in the community, (iv) the increasing interest of policy makers especially of FA on policy development on NTFPs and community forestry, and (v) interest of community-based organisations (CBOs) on enterprise development initiatives. Table 1 highlights the main criteria for site selection.

Table 1. Criteria for site selection

Criteria	Prasat Tbeng Korng Community (CPA)	Damnak Traseng Community (CF)	Dang Kambet Community
1) Volume of product	Significant volume for the community	Significant volume for the community	Significant volume but will be waiting for 2 years to harvest
2) Management of forest	Boeung Per Wildlife Sanctuary is a Protected Area under the Ministry of Environment	Community Forestry is under the Forestry Administration	Production Forest (Prey Lang)
3) CBO enterprise development	Present	None	None

¹ Bamboo products were eventually excluded from the study due to the lack of substantial wild bamboos in the target areas of Dang Kambet commune, Sandan District.

The main tools used to collect primary data from the field were focus group discussions (FGDs) and key informant interviews with key representatives of the government, private sector, and NTFP collectors' group or community-based enterprise development (rattan, resin, and bamboo) sector. Secondary data, such as government statistics, policies relevant to NTFP utilisation, transport, community enterprise/private sector records, and other relevant documents gathered from and in collaboration with the FA, were reviewed and synthesized.

Total Economic Valuation (TEV) is the core method used in analysing the economic importance of rattan, resin and bamboo products. Technical advice on TEV data analysis was provided by NTFP-EP using the TEV analysis in the Philippines where NTFPs were also subjected to TEV valuation (Arquiza 2008); the results of this analysis were used to lobby policy decision-makers to harmonise conflicting policies related to issuance of permits to indigenous communities to harvest and transport NTFPs. The

TEV discussed in this study is the sum of all types of use and non-use values of environmental goods and services gained from rattan in the CF Damnak Traseng Community and from resin in the CPA Prasat Tbeng Korng. Use values are composed of direct use values and indirect use values; while non-use values are composed of option values, existence values, and bequest values. Therefore, the mathematical formula describing Total Economic Value is as follows:

$$\begin{aligned}
 \text{Total Economic Value (TEV)} & \\
 &= \text{Use values} + \text{Non-use values} \\
 &= \text{Direct use values} + \text{Indirect use values} + \\
 &\quad \text{Option values} + \text{Existence values} + \\
 &\quad \text{Bequest values}
 \end{aligned}$$

The different “uses” or “values” included in total economic valuation are defined in Table 2.

Table 2. Theoretical definitions of forest values

Forest values	Definitions
Direct uses	Are those that are most obvious and could be exactly measured by monetary value. These are products that can be sold and bought in the market; hence, these are called market-based uses. Direct uses can either be consumptive or non-consumptive. Examples of direct uses of forest that are consumptive are timber and commercialised NTFPs (those that are sold), which are harvested or extracted from the forests. The non-consumptive uses are those that can be sold but do not require extraction, such as eco-tourism.
Indirect uses	Can be synonymous to “by-products” of the forest that are not traded in the market. These include the functions and services of forests such as clean environment, storm protection, disaster risk reduction, fresh air, etc.
Option values	Are the values set to keeping hope of being able to benefit from these resources in the future. For example, since most pharmaceutical products are developed from plant materials, there is hope that future medicines could be discovered and developed from forest sources.
Existence and bequest values	Are the benefits that people derive from the forest even though they never get to use or consume the resource. Existence values arise from the satisfaction of people knowing that the forest will continue to exist, while bequest values come up when people are satisfied knowing that the continued existence of the virgin forests will have future known or unknown benefits for others.

Source: Arquiza, Y. and Arlynn Aquino (2008)

In this study, different valuation methods were used to estimate the TEV of rattan and resin.

Damage cost avoided method and replacement cost method are used to estimate economic values based on the costs of avoided damages resulting from damaging the ecosystem and on the costs of replacing the services that would have been provided by the ecosystem. For example, the project costs of conserving biodiversity were used to estimate the value of biodiversity and avoiding loss thereof. The costs of establishing water systems were used if we were to replace the natural supply of freshwater from the watershed.

Transport cost method was used to estimate the value of ecotourism using the usual cost of travelling to and from the site by the tourists.

Contingent valuation method was used to estimate the value of the desire of the people to keep the forests intact for their good health and their lifetime connection to their forestland. This method was used in putting economic value on the willingness of the

people to keep a certain condition (or, in contrast, to avoid a certain condition); the value is contingent to the occurrence or non-occurrence of a particular scenario.

Productivity method was used to estimate the value of commercially marketed goods that may be produced using the forests. For example, the land may be valued using the value of the crops that could be planted to it such as cassava. Carbon credits, if and when these become marketable in the carbon market, may also be a basis of valuing the forests.

During the course of the participatory study, more than 100 private sector actors and local communities working on selected NTFPs were interviewed as shown in Table 3. Additionally, various key stakeholders involved in the selection of specific NTFPs were interviewed including those from the Department of Natural Resources and Protected Areas, Community Forestry of the Forestry Administration, WWF, and the Provincial Forestry Cantonment of Kampong Thom Province.

Table 3. Key stakeholders interviewed per selected NTFP

Key stakeholders	No. of informants/discussants		
	Resin product	Rattan product	Bamboo product
1) Community	1 FGD (20 persons)	1 FGD (32 persons)	1 FGD (15 persons)
2) CBO Enterprise Development	1 FGD (7 committees)	None	None
3) Private sector: traders and wholesalers	8	5	1
4) Processors	1	5	0
5) Consumers	7	10	5
Total	43	52	21



The research team in a focus group discussion with the community

Before finalizing the report, two series of workshops were conducted in order to validate the appropriateness of the research methods and the reliability of findings and recommendations of the study.

The first workshop on April 19, 2010 was an internal roundtable discussion on the preliminary findings of the study with the research team and colleagues from NTFP-EP, Oxfam GB and FA. The second workshop

on July 1, 2010 was both an internal and external roundtable discussion on the research findings.

These were among the specific recommendations of the key stakeholders during the workshops: to incorporate some key economic indicators such as watershed service in the final report; and to acknowledge other direct values of NTFPs within the CPA and CF study areas.

Limitations of the Study

The result of the study is based on the observation made within the research period and inferred using the current data (secondary and primary) in the same period.

The primary data used were all from the perspective of the community (e.g., that is why even though

the researchers think that spiritual values are also present, these are not seen as relevant by the community and therefore not given economic value). As such, the total economic values of rattan and resin were computed using the most quantifiable estimates based on the opinion of the research participants.



Discussion of Findings

A. Policy Development and Framework for Forest Products in Cambodia

Overview of the National Forestry Programme (NFP)

The NFP, under the direction and guidance of FA, is a key programme for forestry policy development in Cambodia. Its main purpose is to promote sustainable use and management of forest resources. The main strategy of NFP is to help local communities to sustainably manage and prioritise the use of forest resources to meet the needs of the present and future generations of Cambodians. The NFP also describes the sector's engagement from local to international levels.

A Technical Working Group on Forestry and Environment (TWG-F & E) was established in 2004 to formulate a four-year action plan and a one-year framework work plan and indicative budget for the NFP.

The NFP consists of six major programmes, namely: (i) Forest Demarcation aims to demarcate the forest estate across Cambodia by using the provision of the Sub-decree 53 on Procedure for Establishment, Classification and Registration of Permanent Forest Estate, and the Forestry Law of 2002; (ii) Sustainable Forest Management targets concession allocation, determination of annual allowable cuts and estimation of growing model; (iii) Community Forestry aims to contribute to livelihood development and decentralization of forest resource management; (iv) Forestry Law Enforcement and Governance is a response to the commitment in the national and regional cooperation on illegal trade and logging, especially to work closely with ASEAN country

members to address forest degradation and loss of biodiversity; (v) Forestry, Climate Change and Innovative Financing aims to support the inclusion of greenhouse gases (GHG) emission reduction through forest conservation and avoid deforestation in post-Kyoto regimes while Reduced Emissions from Deforestation and Forest Degradation (REDD) is being piloted and expanded in the country; and, (vi) Capacity Development and Research aims to strengthen forestry extension services for a more improved and more effective delivery of national and sub-national forestry services.

Among the six programmes, the Community Forestry (CF) programme is important in developing policies supportive of the livelihoods of local forest dependents, especially on NTFP collection. At the programme and operational framework level, CF has contributed towards achieving the goals and objectives of the NFP, especially in addressing and responding to participatory and sustainable forest management, to ensure the livelihood improvement of local communities and equitable sharing of benefits among them.

The Government aims to expand CF up to 2.2 million hectares nationwide by 2030 to contribute to poverty reduction by increasing the level of community-based sustainable natural resource management and by improving the livelihoods of forest-dependent communities through the collection of forest products and NTFPs.

Table 3 indicates the timeframe for CF approval and registration by the Ministry of Agriculture, Forestry and Fisheries (MAFF), and the FA cost estimation for CF establishment following the 11 steps as stipulated in the Community Forestry Guidelines.

Table 4. Guidelines and cost estimates for CF establishment²

Steps for CF Establishment		Estimates by CFo/FA	
		No of days	Total (US\$)
Step 0	CF area identification	10	1,800
Step 1	CF formulation	20	3,600
Step 2	Information collection (PRA and others)	40	7,200
Step 3	Develop CF Management Committee	15	2,700
Step 4	Develop internal rule of CFMC	15	2,700
Step 5	Boundary demarcation and planning (conflict resolutions and pools installation)	60	10,800
Step 6	CF regulations	15	2,700
Step 7	CF agreement	10	1,800
Step 8	CF Management Plan (inventory, report writing)	100	18,000
Step 9	Enterprise/Livelihood	-	-
Step 10	CFMP implementation	-	-
Step 11	Monitoring and evaluation	20	3,600
Total		305	54,900

Source: Forestry Administration (2010)

Based on the FA database, one CF establishment and registration would take about 6 months to finish. The expenditure per CF site is estimated around US\$ 55,000. The livelihood and enterprise development component for CF establishment, which is an important part and core community incentives for forest products development, has yet to be developed.

Overview of the National Government Revenue and Regulation on NTFP Trade and Export

This section describes the formal process to comply with the regulation for trading NTFPs, the revenue collection process of local and national governments on forestry products including NTFPs, the estimated amount of forest charges, and the amount of formal and informal exports per year.

1. Official Regulation on NTFPs Trade and Export

According to a study conducted by NTFP-EP (2009) on the resin trade chain analysis:

“The harvest, stocking, trade, and export of NTFPs can involve numerous permits and licenses (see Articles 25 and 26 of the Forestry Law of 2002). As noted previously, under Article 40 of the Forestry Law, local communities have “customary user rights” to harvest NTFPs (including resin) without a permit. However, in cases where these communities want to sell NTFPs to a third party (e.g., trader or wholesaler), a transport permit is required and fees may be imposed (Article 25.A.4 and 40.B.5). In effect, since nearly all resin is traded to a third party (except for a small fraction used in villages for traditional purposes such as torches), the resin collected by local communities is

² Based on NTFP-EP interview with the Chief of Community Forestry Office at the time of publication, the cost estimates for the CF establishment is relatively higher compared to estimates for other projects, e.g., UNDP REDD project.

almost always subject to a transport permit and associated formal fees. In addition to the transport permit, resin wholesalers must hold a permit to stock and distribute resin (Article 25.A.8) and exporters must obtain an export license (Article 25.A.11).

"Determining which offices within MAFF and the FA are responsible for authorising and issuing permits and licenses is not clear. The Forestry Law provides for the establishment of the "Forest Administration". This is to be "the government institution for implementing the management of forest and forest resources. The Forest Administration shall be organised as a direct, vertical structure divided into the following hierarchical levels: central level, regional inspectorates, cantonments, divisions, and triages" (Articles 6.A and 6.B). Elsewhere in the

law the authority for approving and issuing permits and licenses is assigned to the Minister of MAFF, Director of the Forest Administration, Cantonment Chiefs, and Division Chiefs, with no mention of "regional inspectorates" and "trriages" (see Article 26)"

In the Guidelines on Official Fee Rates for Forest Products (2000), MAFF establishes fees for the transport of 71 types of forest products, including resin, rattan and bamboo. According to the guidelines, forestry officials should assess the fee to be paid and provide the transporter an invoice, which the transporter then pays directly at the National Bank of Cambodia. Fees collected are then accounted at the National Treasury. Five percent of the total fees collected should be allocated for forest management.

Table 5. Official fee rates for selected forest products

Type of forest product	Unit	Total fee (US\$/unit) ³
Resin	1 ha = 60 kg	4.73
Bamboo (stem diameter >5 cm)	1 tonne	3.94
Bamboo (stem diameter <5 cm)	1 tonne	2.63
Rattan	1 tonne	65.63

Source: Ministry of Agriculture, Forestry and Fisheries (2000)

Based on the current official permitting and licensing system of Cambodia, analysis of relevant articles of the Forestry Law, and Guidelines on Formal Fee Rates for Forest Products, the official requirements for resin stocking, transport and export can be summarized as follows:

Stocking permit: In applying for a stocking permit, resin wholesalers must estimate the amount of resin that they plan to stock over the course of one year. Currently, permits approved by FA are submitted to MAFF. Technical support may be requested by

MAFF from FA. Under the forthcoming Forest Administration, the Cantonment Chief will have the authority to issue this permit (Article 26.C.2).

Transport permit: Presently, the transport of resin within a province neither requires approval of the cantonment nor official payment. But the transport of resin across provinces within Cambodia requires approval of the cantonment and a transport permit from the FA in Phnom Penh. A fee of US\$0.08 per kg of resin must be paid to the National Bank of Cambodia and the National Treasury; FA

³ A total fee is equal to the transport fee plus a five percent forest management fee.

issues a formal invoice. If the area is a community forest, a transport quota permit authorised by the Cantonment Chief is required (Article 26.C.4).

Export license: To export resin currently requires approval from the cantonment, a transport permit from FA, and approval of an export license from the Ministry of Commerce and Council of Ministers. In addition to US\$0.08 per kg, the exporter will be charged a 'service fee' equal to one percent of the total value of the resin exported plus a royalty fee. Under the FA, export of resin will require an export license authorised by the Minister of MAFF, following approval from the Royal Government of Cambodia (office not specified) (Article 26.A.2). Other requirements include a transport permit and "permit or visa on the export-import license" from the Director of the Forestry Administration (Article 26.B.5).

2. The Process of Formal Fees

By law, forestry charges and tax collection are handled at the national level. Forest triage, division, cantonment, inspectorate, and central FA issue licenses and transport permits for private business at the provincial level. Business people are responsible for paying royalty taxes and premiums to the National Treasury and the National Bank of Cambodia.

In some cases, based on the field survey conducted in Kampong Thom Province, the provincial cantonment also collects formal fees from NTFP provincial wholesalers. Fees collected are reported annually and sent to the central FA, then finally passed onto the National Treasury and the National Bank of Cambodia.

The forestry cantonment does not directly receive the fees. This implies that local institutions may not have a share in the fees, which are particularly allocated for cantonment administration or forest management purposes.

According to the regulation on charging formal fees,

five percent of the total fees charged will be utilised for forest management. However, there is no clear mechanism on how collected fees are plowed back for forest management at the local level.

3) Production and Revenue Collection from Trade and Export of NTFPs

According to forestry statistics, the trading of NTFPs, including resin, rattan and bamboo, only slightly contributes to the economic development and livelihoods of forest-dependent communities. To some extent, the Government revenue collection from NTFPs is poorly recorded. It appears that the statistics does not include formal fees from NTFPs which are paid to the National Treasury. Therefore, this discounts the contribution of NTFPs to the national revenue.

In 2008, the liquid resin trade in Cambodia was estimated at 2,378 tonnes. It appears that the figure reflects the annual domestic consumption of resin to caulk boats. NTFP-EP (2009) estimated that the amount of resin used for caulking boats in Cambodia was roughly 3,000-4,000 tonnes.

The national statistics from FA and MAFF indicates there is no recent data for processed NTFPs exported to the regional and international markets. However, a study by NTFP-EP (2009) on the trade chain of resin products in Cambodia suggests that there is a substantial production, at least of resins, for export to neighboring countries.

In the case of rattan, the national production figures may also have been consistently underreported over the last number of years. As shown in Table 6, there was no rattan production and trade in 2008. But a recent report of WWF (2010) indicates that rattan companies/enterprises generally consume 390 tonnes annually for rattan furniture/handicraft production, primarily for domestic consumption. This is estimated to be equivalent to US\$21,600 a year in royalty fees.

Table 6. Trend in NTFP production and trade in Cambodia

Forest Products	2004		2005		2006		2007		2008	
	Prodn (tonne)	Value (US\$)	Prodn (tonne)	Value (US\$)	Prodn (tonne)	Value (US\$)	Prodn (tonne)	Value (US\$)	Prodn (tonne)	Value (US\$)
Rattan	147	9,188	4.5	281	40	2,500	125	7,813	0	0
Liquid Resin	683	53,786	185	14,569	1,494	117,653	1,567	79	2,378	187,268
Solid Resin	0	0	0	0	0	0		0		0
Small Bamboo	0	0	0	0	0	0				
Bamboo	1,634	6,128	558,56	209,460	3,280	12,300	2,916	10,935	1,460	5,475
Total	2464	69,102	189.5	224,310	4814	132,453	4608	18,827	3,838	192,743

Source: Forest Administration Statistics (2007) and MAFF (2009)

4. Informal Trade of NTFPs

Informal trade is presented as having a significant economic value to rural economy as it improves the income of forest-dependent communities. It presents TEV and volume of trade as much more than the figures reflected in the national statistics.

According to a resin study of NTFP-EP (2009), the production of resin in Cambodia is estimated at 11,000-18,000 tonnes annually. Majority of these are exported to neighboring countries, such as Vietnam, Lao and Thailand.

As compared to the national statistics in 2008, the informal trade of resin is significantly higher by about 5-7 times. Likewise, a study by WWF (2007) on Cambodian rattan and supply chain survey in the provinces of Koh Kong, Kratie and Battambang indicates that domestic trading and export of rattan contribute significantly to the rural economy. The rough figure for rattan export to Thailand was estimated at 485 tonnes in 2006.

B. Case Studies on Total Economic Value of Resin, Rattan and Bamboo Trade in Kampong Thom Province

Kampong Thom Province is located in the central region of Cambodia. Adjacent to Tonle Sap Great Lake and lowland forests, Kampong Thom is rich in natural resources that support the livelihoods of local communities.

The forest cover in Kampong Thom is about 70% of its total land area. More than 60% of the total population in Kampong Thom depend mainly on forest products for household consumption and income generation.

Based on livelihood analysis and resource mapping conducted by OGB, NTFP-EP and local NGOs, as well as from a series of community based NTFP enterprise development capacity building workshops in 2009⁴ and the FA database, there are three main NTFPs used for trade and household consumption. These are resin, rattan and bamboo. The market value of these products is seen at varying

⁴ "From Forest to Market" Workshop conducted in October 2009 by OGB and NTFP-EP; Resin Enterprise Scanning conducted in February 2009; and Resin Enterprise Development Workshop conducted in Kampong Thom in June 2009, which was supported by FA, ITTO, OGB and NTFP-EP.

proportions in terms of volume and importance to different stakeholders along the trade chain. The main stakeholders benefiting from these products are the local forest dependents, national/local government and the private sector.

1. Provincial Government Revenue from NTFPs

The Provincial Forestry Cantonment and the General Department of Natural Resources and Protected Areas of the Ministry of Environment (MoE) are mandated to conserve, protect and manage the

forestry resources and the Boeung Per Wildlife Sanctuary in Kampong Thom Province. The Forestry Cantonment plays a key role in law enforcement and in implementing the regulation for trading forest products, including resin, rattan and bamboo.

Table 7 shows that the recorded production of NTFPs reflects only the volume of NTFP production of business enterprises that are subject to pay formal fees. This indicates that NTFP production is poorly recorded.

Table 7. Records of NTFP production in 2007 and 2008 in Kampong Thom

NTFPs	Total production in 2007	Total production in 2008
Resin	N/A	50 tonnes
Rattan	20,000 stems	50,000 stems
Bamboo	N/A	30,000 stems
Pole	N/A	19,000 poles

Source: Field Survey (2009)

In contrast, the informal trade of NTFPs in Kampong Thom presents a significant volume and value of trade. According to NTFP-EP (2009), despite the forest being affected by illegal logging, Economic Land Concessions (ELCs) and alternative livelihoods, the resin products derived from Kampong Thom is estimated at 1,000 tonnes.

2. Resin Trade in Community Protected Area (CPA) Prasat Tbeng Korng

2.1. Background

Located in Sakream commune in Prasat Balang District, CPA Prasat Tbeng Korng was established in 2006 with support from the Action for Development (AFD) and MoE. There are 11 villages consisting of 897 households that are members of CPA. Seven committees have been formed and are now managing the CPA. To date, the CPA is still

awaiting registration at the MoE. The total CPA area is estimated at 11,738.21 hectares.

The main objective of CPA establishment is to protect the natural resources and to utilise the resources in a sustainable manner. Under the Civil Society and Pro-Poor Market (CSPPM) project funded by the UK Department for International Development (DFID) and Danish International Development Authority (DANIDA), AFD and OGB, Community-Based Enterprise Development has been initiated as an option to provide incentive for economic development in the target areas to complement resource protection, management and rural livelihood.

In 2009, thirty community members formed a resin producers' group to purchase resin products from resin tappers who are members of CPA. Six out of 11 villages within the CPA are resin tappers and



Resin products for caulking boats and for producing resin torches at Stong District Town, Kampong Thom Province

collectors of solid resin. Based on estimates, resin production through tapping in this area is estimated at 50 tonnes per annum. In practice, each resin tapper is able to collect 500 kg of resin per annum depending on the number of resin trees in the forest.

Therefore, resin tapping activity is a livelihood that provides main income for forest-dependent communities. Table 8 reveals that for every tonne of resin collected, a resin tapper can earn US\$300.

Table 8. Financial analysis per resin tapper

		US\$ per tonne
Revenue per tonne of resin		375
Less: Production and operating costs		67.90
Food	5.36	
Transportation	62.50	
Gross income before fees		307
Less: Fees		-
Formal fees	-	
Informal fees	-	
Net wage income per tonne		307

Source: Field Survey (2009)

2.2. CBO Resin Enterprise Development

To date, CBO through the support of CSPPM has a small grant from OGB and AFD. The grant is used as start-up capital for purchasing resin products from its members; for processing resin products including sorting and grading; for making torches; and for transporting the products directly to the wholesaler's place at Stong District town to reduce the layers of business transactions. The purchase price reflects the market price as compared to traders and wholesalers who provide credit loan to resin tappers, but buy the products at discounted rates.

The main challenge so far for CBO is complying with the requirements for licensing and transport of resin, which set a barrier for trading activity. Unfortunately, the law and regulation for license and transport permit application are subject to different interpretations by various stakeholders.

2.3. Benefits of the Private Sector from Trade of Resin Products

There are two main market actors who play a significant role in resin business in CPA Prasat Tbeng: the resin traders and the wholesalers. They

purchase resin to support domestic use in Kampong Thom Province.

2.3.1. Resin Traders and CBO

In Sakream commune, there are 5-10 resin traders. The CBO operates their business in 9 resin villages. Resin wholesalers in the Stong District town lend money to most resin tappers in order to regulate the supply of products from the source.

Each trader is able to purchase 2-5 tonnes of resin products per annum. Bulk of the capital is provided by wholesalers. The field survey indicates that because the CBO offers fair price to tappers, all prices offered are standard among traders and CBOs. As a new establishment, CBO purchases only one tonne of liquid resin and transports the product to the wholesalers in the Stong District town.

Table 9 shows the total fees collected informally by different institutions. At least five (5) check points have reportedly collected informal fees from Sakream commune to Stong District town. The informal fees presented a significant amount (US\$0.03/kg) that affected trading activity. However, as it is almost 50 percent below the formal fees payment (US\$ 0.08/kg), the traders opted to pay informal fees instead.

Table 9. Financial analysis per trader and CBO

		US\$ per tonne
Revenue per tonne of resin		550
Less: Production and operating costs		428.57
Purchase of resin	375	
Transportation	71,429	
Bag and plastic	0.36	
Gross income before fees		121.43
Less: Fees		35.71
Formal fees	-	
Informal fees	35.71	
Net profit per tonne		85.71

Source: Field Survey (2009)

2.3.2. Resin Wholesalers

There are about 10 resin wholesalers that operate their business in Kampong Thom Province. Six (6) of them are located in Stong District town.

The purchasing capacity of wholesalers varies from 20 tonnes to 200 tonnes per annum. Most wholesalers in Stong District town purchase resin from Sakream commune or CPA Prasat Tbeng through traders. Usually, they provide credit loans to traders to pass

onto tappers in order to regulate the resin supply from the source.

As shown in Table 10, most wholesalers pay formal fees for patent. But they do not pay a formal fee of US\$0.08/kg as the formal fees imposed by Forest Administration because they dare not transport resin across the province. Most resin products are sold to fishermen. However, a small amount for informal fees is collected to pay various government institutions in the town, including the police, Military Police, FA and MoE.

Table 10. Financial analysis per resin wholesaler

		US\$ per tonne
Revenue per tonne of resin		625
Less: Production and operating costs		562.20
Purchase of resin	550	
Transportation	10.13	
Bag and Plastic	2.08	
Gross income before fees		62.80
Less: Fees		5.17
Formal fees	2.50	
Informal fees	2.67	
Net profit per tonne		57.63

Source: Field Survey (2009)

2.3.3. Resin Consumers

Fishermen are the primary resin consumers. They often purchase resin from wholesalers, estimated at 5-10 kg every six months in order to caulk boats. The study suggests that fishermen would be willing to pay double or triple the price in the future if resin would become a scarce resource. However, they dare not pay a price higher than what is currently being offered. They would rather get substitute products for resin, like chemically-treated varnish, for caulking a boat.

3. Rattan Trade in Damnak Traseng Community Forestry

3.1. Background

Damnak Traseng Community Forest was established in May 2006 through the assistance and facilitation of the Environment Support and Social Development (ESSD) in collaboration with the Triage of Forest Administration in Prasat Sambor District, Kampong Thom Province. The proposed total area claimed by CF is estimated at 3,398 hectares in 3 villages: Svay,





Woman processing rattan (Snol) for making bookshelves in Ksach Laet Village, Damnak Commune, Baray District, Kampong Thom Province

Thmai and Sroeng villages, but the CF has not been approved by the provincial cantonment⁵.

In the organisational structure, there are five (5) Community Forestry Management Committees (CFMC), one of which is the women's committee. To date, 728 households are CF members, 50% of them are women. CF establishment aims to protect the forestry resource and wildlife, and secure the right to access and/or control over the natural resources to support community livelihoods.

3.2. Forest Resources and Livelihoods

Damnak Traseng Community boundary is located in a semi-evergreen and evergreen forest which is rich

in biodiversity and commercial timber, as well as NTFPs. The local community often collects NTFPs for household consumption and for trading to earn income. These NTFPs include all kinds of rattan, mushrooms, wild fruits and vegetables, firewood and honey. Rattan is mainly harvested for sale because majority in the community depends on rattan to earn income.

Per FGD with some CF members in Damnak Traseng, about 70% of the households in the villages of Sroeng, Svay and Thmey collect rattan for sale. Most of them fall in the categories of poor and very poor households.

⁵ At the time of publication, the 3,398 hectares has been divided into three CFs, namely: CF Damnak Trasaeng in Thmai village, CF O'Paong in Sroeng village, and CF O'Paong Dey Krahom in Svay village. The total number of CF-member households in the 3 CFs remains the same at 487 households. As of September 2010, three CF agreements have already been submitted by the provincial cantonment to MAFF for approval.

Table 11. Total households and rattan collection per household in Danmak Traseng (2009)

Villages	Total no. of households	No. of households engaged in rattan collection
Sroeung	140	97
Svay	130	91
Thmai	217	152
Total	487	341

Source: Field Survey (2009)

3.3. Rattan Collection and Income of CF members

Rattan collection is a prime source of income for local community. Based on FGD, 30% of rattan collection is derived from the CF areas of about 3,339 hectares, while 70% comes from a 10,000 hectares FA production forest adjacent to the CF.

There are various types of rattan species available inside the CF and adjacent to the CF; however, only three types are utilised for trade, namely: *Snol* or *Pdao Reussey* (*Myrialepis paradoxa*), *Som* (*Daemonorops jenkinsiana*), and *Lapeak* (*Calamus salicifolius* Becc.). *Som* is now a rare resource in the target villages. *Snol* is the most popular for trade to date, especially for

processing and producing furniture to support the increasing demand of consumers in other cities and urban areas. *Lapeak* canes are collected mainly for handicrafts (e.g., baskets and mats), which are sold domestically.

The market demand for *Snol* started 4 to 5 years ago. This encouraged local villagers to collect them for trading. *Snol* collection is done during wet and dry seasons. It usually requires 12 trips per year to the collection site, which is 8-9 km away from the village. Each trip is about 7-10 days in both CF areas and FA production forest. The annual income from the collection of rattan products is described in Table 12. A total of US\$ 198,900 is earned from 2,284 tonnes of rattan, which is around \$87 per tonne.

Table 12. Rattan production and village income per year

Name of village	Total no. of households collecting rattan	Volume of production collected per year (Krapeu)	Village income earn per year (US\$)
Sroeung	97	8,148	56,745
Svay	91	7,644	53,235
Thmei	152	12,768	88,920
Total	341	28,560 krapeu or 2,284 tonnes	198,900

Source: Field Survey (2009)

Rattan products contribute a significant income to support the livelihood of local forest dependents. Based on estimates, if collectors make 12 trips per year to collect rattan, one trip alone can earn them almost US\$50 on the average. Each household can

earn a total of US\$ 600 per year, which is above the national poverty line. In total, the value of financial trade for the three villages is estimated to be almost US\$ 200,000 per year.



3.4. Sustainability Indicator for Rattan Collection

The livelihood of CF members is derived not only within the CF areas, but even beyond the demarcated boundaries. But some concerns have been raised on the sustainability of rattan collection outside the CF areas. Local community collecting rattan from the FA production forest is likely to practice rent seeking without adapting sustainable harvest methods. For instance, they collect all sizes of rattan even those which do not meet the marketable yield, and they sell mixed sizes of rattan to traders. The marketable yield of rattan is characterized as 3-5 years old growth with green stem, and 6-10 meters long. However, the collection of rattan products beyond the CF areas suggests that NTFPs primarily contribute and support the livelihoods of local forest dependents.

3.5. Benefits of the Private Sector from Rattan Processing

In the study site, the market actors in the rattan trade, from the community (as the primary source)

to the market end, are the rattan collectors, village traders, transporters, wholesalers, small-scale processors and consumers.

3.5.1. Village Traders

A village trader can collect 300-500 *krapeu* of rattan (*Snoi*) per year. Traders provide credit to rattan collectors from US\$9.46-11.83 per person in order to regulate the supply of rattan products, especially to ensure the exclusive selling of rattan to traders. Transporters and/or wholesalers provide credit to traders who aggregate the rattan products that they buy from the collectors.

The study suggests that all credits provided to rattan traders are not always charged an interest rate. As such, the traders are like employees of the transporters/wholesalers, and they can only earn a profit margin of US\$0.25 per *krapeu* or US\$3.13 per tonne of rattan (*Snoi*).

3.5.2. Transporters and/or wholesalers

The wholesalers mobilize financial resources to

directly engage in trading activity with village traders. They collect rattan from village traders with the use of a truck which can carry 30 *krapeu* of rattan products per trip.

From the district town of Kampong Thmar of Baray District, the transporters can only spend a one-day trip to Damnak Traseng Community Forestry at Prasat Sambor District. In practice, most rattan (\$*no*l)

products would be sold to small-scale processors or to a family processor in a village in Baray District, especially to process rattan for supporting domestic demand for furniture in urban areas, particularly in Phnom Penh.

Table 13 illustrates a financial analysis of rattan trade from Damnak Traseng Community to Baray District.

Table 13. Financial analysis per rattan transporter

		US\$ per tonne
Revenue per tonne of rattan		203
Less: Production and operating costs		150
Purchase of rattan	131	
Transportation	12.50	
Labour	6.25	
Gross income before fees		53.12
Less: Fees		20.83
Formal fees	-	
Informal fees	20.83	
Net profit per tonne		32.29

Source: Field Survey (2009)

The profit margin per tonne is estimated at US\$32.29 while the farm gate price per tonne is at US\$131. Interestingly, the wholesalers and/or transporters may not necessarily pay formal fees of about US\$63 per tonne to comply with the license and transport permit. Instead they choose to pay an informal fee of about US\$21 or only about 30% of the total formal fees.

3.5.3. Small-scale Processors

Wholesalers and/or transporters sell the rattan harvested from the CF area to small-scale processors in Ksach Laet, Damnak, and Kou villages in Baray District, which are located along or close to National Route No.6. Majority of the households in these

villages engage in rattan processing in addition to rice farming. The processing activity just started 4-5 years ago while they were learning the skills from peer educators. Some of these educators were previously employed in a medium rattan processing business in Phnom Penh.

Table 14 indicates that rattan from the CF area is also a source of income for almost 600 small-scale processors who mainly purchase rattan from transporters/wholesalers to make furniture at the village level. The total furniture produced per annum from these villages utilise about 2,168 tonnes of rattan, which are mostly supplied by Damnak Traseng CF members in Prasat Sambo District.

Table 14. Number of households processing rattan in three villages of Baray District, Kampong Thom Province for finished product processing

Total volume of rattan produced by the CF				2,284 tonnes
Volume of rattan from CF that is supplied to 3 villages in Baray District				2,168 tonnes
Village	Total number of households	Number and % of households processing rattan	Processed products per year (in tonnes)	
Ksach Laet	400	240 (60%)	768	
Damnak	300	150 (50%)	600	
Kous	250	200 (80%)	800	
Volume of rattan from CF that is supplied to other destinations				116 tonnes

Source: Field Survey (2009)

Based on interviews with small-scale processors, they sometimes reject rattan products that are not yet mature because these are difficult to process. Consumers refuse to buy materials which are not yet ideal for collection because they rot easily and cannot be used for a longer period. To date, only 60 % of rattan from CF areas are suitable materials for furniture.

Majority of small-scale processors also transport and sell rattan furniture to urban areas like Phnom Penh, Kampot, Battambang, and even at Kratie, Stung Treng and Mondulokiri Province. Rattan furniture is rarely sold to local traders because the price offered is significantly lower than the retail price in urban areas.

A small-scale processor can produce 80 bookshelves in 2-3 days (family-based production) and they can

sell these directly in Phnom Penh within a week's time. They are able to process rattan products at least 10 months a year. Each month they are able to produce 160 bookshelves by utilizing 400 kg of rattan raw materials. The profit margin earned for every unit of bookshelf is estimated at US\$1.88. Therefore, at 2.5kg of rattan per bookshelf, the producer earns US\$750 for every tonne of rattan material used.

Some small-scale processors reported that most of their time is spent in rattan processing so they are not able to do fishing in the Tonle Sap Great Lake. The rattan processing work seemingly reduces the pressure on the fishery resources of the Lake. Table 15 itemises the sales, costs and profit of manufacturing rattan bookshelves for one tonne of rattan, which is equivalent to 400 bookshelves.

Table 15. Financial analysis per small-scale rattan processor

		US\$ per tonne
Revenue per tonne of rattan		1,250
Less: Production and operating costs		492
Purchase of rattan	203	
Nail	31.25	
Varnish	17.50	
Paint	25	
Food	105	

Table 15. (continuation)

		US\$ per tonne
Gasoline	110	
Gross income before fees		758
Less: Fees		-
Formal fees	-	
Informal fees	-	
Net profit per tonne		758

Source: Field Survey (2009)

3.5.4. Rattan Consumers

Consumers in Phnom Penh often purchase furniture from small-scale processors who sell on retail price. They are willing to pay a maximum of US\$5 for a bookshelf. However, having modern technology and innovative processing of furniture would be a competitive advantage as majority of the small-scale rattan processors, to some extent, are lagging behind in producing good quality and artistic furniture.

4. Bamboo Trade in Sre Ksach Village, Sandan District

Sre Ksach Community, located in Dang Kambet commune of Sandan District, was established in 2009. There is one village consisting of 69 households that are members of CF. The CF area is 93 hectares.

The main objective of CF establishment is to conserve the forest resources and sustainably utilise the resources for the next generation. There are 7 CF committees; two of them are women committees. CF Sre Ksach is still awaiting the approval of the provincial forestry cantonment. OGB is the main NGO supporting the CF.

Most of the people depend mainly on forestry resources to support their livelihood and household consumption. Four years ago, bamboo products were the main NTFPs for sale. Unfortunately, in 2007, all bamboos died due to old age, thus only

fruits and flowers were produced in the community.

To date, a substantial volume of bamboos have grown back along the river banks and CF areas. But most of them are still young, small, and not yet commercially attractive. Therefore, the team decided to drop bamboo from the study.

C. Economic Sensitivity Analysis

TEV is the main tool used to analyse the economic importance of rattan and resin commodities.

1. TEV of Rattan in CF Damnak Traseng Community

Rattan is the main commodity derived from CF Damnak Traseng. The community collects rattan for trading.

Based on the market characteristics and livelihood development, as well as conservation purpose and policy development for NTFPs, this study categorized four main scenarios for the TEV analysis of rattan, namely: (1) Livelihood development and conservation, (2) Impose sustainable harvest of rattan products, (3) Impose formal fees on rattan production, and (4) Grant all CF areas (3,398 hectares) and production forest (10,000 hectares) to agricultural plantation and/or ELC.

1.1. Scenario I: TEV based on livelihood development and conservation

This scenario took into account the alternative livelihood development within the CF areas. The detailed description is as follows:

TEV of rattan in 13,398 hectare (CF+ Production Forest)
= Use Value + Non Use Value

where:

a) Use Value of rattan in 13,398 hectares (CF+ Production Forest) = Direct Use+ Indirect Use

b) Non-Use Value of rattan in 13,398 hectares (CF+ Production Forest)= Option + Existence + Bequest Values

1.1.1. Use Value

a) **Direct Use:** There are three values identified for the direct use of rattan products:

Producer surplus (PS) in selling rattan is the difference between the total revenues received by the producers and processors and the total variable costs (including informal fees charge) of producing rattan. The gross margin per tonne of rattan is estimated at \$758 (see Table 15) and the annual rattan collection is at 2,284 tonnes. Therefore, the producer surplus of market-end rattan processing is equal to US\$1,731,558 per year.

Producer surplus in using rattan for house construction (HC) is based on the field study report that most of the houses in the local community are constructed using both wood and rattan materials. Rattan is processed as wall panels for houses, as well bookshelves which are sold in the market. Based on an FGD with CPA members, some wall panels for houses may need 0.1 tonne of rattan products, which would have a producer surplus of US\$ 1.50. Therefore, on the average, the rattan processed as wall panels is estimated to be US\$34,260 at 2,284 tonnes.

Consumer surplus (CS) is the maximum amount that buyers are willing to pay for rattan products minus what they actually pay. Based on the study of the end-market in Phnom Penh Capital, the consumers are willing to pay a maximum price for a rattan bookshelf at US\$5 per bookshelf so the difference between the maximum willingness to pay of US\$5 and the actual price of US\$ 3.125 is US\$ 1.875. Based on an interview with processors, one tonne of rattan can be processed for 400 bookshelves. Therefore, 2,284 tonnes of rattan have a total consumer surplus value of US\$1,713,000.

Therefore, the Direct Use Value of rattan

$$\begin{aligned} &= PS + HS + CS \\ &= 1,731,558 + 34,260 + 1,713,000 \\ &= US\$ 3,478,818 \end{aligned}$$

b) **Indirect Use Value:** There are two Indirect Use Values of rattan identified in the CF Damnak Traseng, namely:

Healthy environment for human health (HEHH): Per FGD result, all community members want to protect the forest to be healthy, to have a recreational site, and to develop their livelihood. The value of a protected forest for healthy environment was estimated based on what would be spent to protect the forest. The cost for the establishment and legalisation of CF is about US\$ 55,000 (see Table 4). In addition, law enforcement needs to be done, which includes patrolling and reporting to local FA of illegal activities.

Based on community experience, patrolling can be done once a week by a group of 10 persons. Food and other expenses for each person per day is roughly US\$1.5. Additionally, the administrative cost for reporting to local FA is estimated at US\$ 20 per month. The total expenditure for both patrolling and reporting of illegal activities to local FA is about US\$6,000. Consequently, the total cost for patrolling and reporting, as well as legalisation of CF per year, is roughly estimated at US\$56,000.

Therefore, the Bequest and Existence Values

$$\begin{aligned} &= \text{KFL} + \text{CC} \\ &= 294,763 + 8,059 \\ &= \text{US\$ } 302,852 \end{aligned}$$

b) Option Value (OV)

Ecotourism (ET): Kampong Thom Province consists of the famous Hindu complex temple which was constructed in the 6th century. Based on the 2009 data from the Provincial Department of Tourism, 5,137 foreign tourists and 13,000 local tourists visit the complex temple annually. On the average, each foreign tourist spends at least US\$ 1,000 for international travel (cost of round trip plane ticket) and US\$ 40 for local travel (round trip) from Phnom Penh to Kampong Thom.

Per interview with the local tourist authority, about five (5) percent of foreign tourists have possibly visited far beyond the complex temple for ecotourism, e.g., to see the forest managed by local communities and the community livelihoods from the forest. There is likelihood that they would visit the CF site and the livelihoods of local community near the complex temple like CF Damnak Traseng. Therefore, with \$ 1040 travel cost for an average of 257 tourists, their estimated contribution to the ecotourism site in CF Damnak Traseng is US\$ 267,124.

Additionally, based on an interview with the local community and local tourist authority in Prasat Sambo Prey Kuh, most local tourists rarely go beyond the complex temple for eco-tourism and explore the livelihoods of local community near the temple. About one percent of 13,000 local tourists visited the CF site for eco-tourism. Therefore, the estimated contribution of local tourists with a \$40 travel cost is US\$ 5,200

The CF Damnak Traseng is located near the complex

temple. Using a conservative estimate, if both foreign and local tourists would potentially visit CF for eco-tourism, this would bring the economic value of ecotourism to about US\$ 272,324 per year.

Therefore, the Non Use Value

$$\begin{aligned} &= \text{KFL} + \text{CC} + \text{ET} \\ &= 294,763 + 8,059 + 272,324 \\ &= \text{US\$ } 575,146 \end{aligned}$$

Consequently, the TEV of rattan

$$\begin{aligned} &= \text{Use Value} + \text{Non-Use Value} \\ &= 3,647,524 + 575,146 \\ &= \text{US\$ } 4,222,670 \end{aligned}$$

1.2. Scenario 2: Impose sustainable harvest of rattan products

Only 60% of rattan products from Damnak Traseng are mature enough to meet the marketable yield. The consumers and processors put pressure on the producers to harvest good quality of rattan from the forest, especially to ensure that the product is mature enough for processing and can be kept and used for a longer period.

The current production harvest is 2,284 tonnes per year so if sustainable harvest would be imposed, the harvest rate would jump to 120% in the following years. Consequently, the total rattan production for imposing sustainable harvest method would be roughly 2,741 tonnes per year. In this connection, there would also be a significant increase in the producer's surplus and consumer's surplus.

Assuming that all other values are constant, except for the consumer's surplus and the producer's surplus which have a higher rate of rattan harvest/production: The total direct use value of US\$ 3,478,818 would increase to \$4,174,581. This would

⁶ For every 100 poles harvested from the forest, only 60 are good rattan and 40 are usually rejected by the buyers because there are immature poles, which should have been left uncut in the forest until the next harvest. Since this has already been practiced for some time, say only half of the 40 immature poles, i.e., 20 poles, will be saved until the next season, so the total harvest now becomes 120. If cutters will now cut only 60% (sustainable harvesting) of the rattan poles, the new harvest volume would now be 72 (120 x 60%), which is 120% of the original 60 poles sold.

bring the TEV to US\$ 4,918,433.

1.3. Scenario 3: Impose formal fees on rattan production

The formal fees imposed by FA and MAFF for rattan products are estimated at US\$63 per tonne. However, all rattan trade actors do not pay the formal fees. Instead, they usually pay informal fees, estimated at US\$20 per tonne, which is significantly lower than the formal fees along the trade route.

Assuming that there are formal fees imposed on the producers: The producers would need to spend US\$43 more per tonne just to cover the formal fees. By this, the producer surplus will be lower (by \$97,070 for 2,284 tonnes) and the new direct use value will become \$3,381,747. The TEV is therefore \$4,125,600.

1.4. Scenario 4: TEV based on granting all CF areas and production forest to agricultural plantation and/or ELC for cassava plantation

Assuming that all 13,398 hectares under CF areas and production forest are granted to agricultural plantations and/or ELC for cassava plantation: Based on the economic analysis conducted by the research

team on a medium-scale agricultural plantation, land owners are either rich persons from the community or provincial residents in Kampong Thom. The size of cleared land area in nearby CF would therefore vary from 10 to 50 hectares. The owners of these areas have cleared the forestland and converted it to cassava plantation. They use their own capital investment to purchase and clear forestland and employ local people as labour force to work and plant cassava in their farms. However, they did not invest in infrastructures such as roads, schools and other facilities for local community use.

Cassava plantation was selected in this scenario because the soil condition and the sandy-loam type of soil in the study areas are suited for cassava plantation. Added, nearby areas are mainly cultivating and growing cassava.

The financial analysis in Table 16 indicates that the farmers that grow cassava in Meanrith Commune of Sandan District in 2009 would generate a net revenue of US\$105 per hectare. In the case of cassava plantation, all forest lands will be cleared so that all livelihood development and other uses and non-use value will become zero.

Table 16. Financial analysis of cassava plantation in Meanrith Commune, Sandan District

Item	Number	Unit	Unit cost (R/Unit)	Total cost/ha (R)	Total cost/ha (US\$)
Purchase sapling	1000	Sapling	300	300,000	75
Land clearing	1	Hectare	400,000	400,000	100
Ploughing	1	Hectare	160,000	160,000	40
Planting	1	Hectare	420,000	420,000	105
Harrowing	1	Hectare	400,000	400,000	100
Total investment cost	1	Hectare	–	1,680,000	420
Production	7,000	Kilogram	–	–	–
Selling price	300	R/kg	–	–	–
Gross revenue			–	2,100,000	525
Net profit			–	420,000	105

Source: Field Survey (2009)

Net Revenue from Cassava (NRC5V)
 = (net profit/ha) x (total hectare)
 = 105 x 13,398
 = US\$ 1,406,790

However, clearing of forestland for cassava plantation would impact on livelihood development of local forest dependents and would deteriorate environmental services.

1.5. Summary of TEV Scenario Analyses of Rattan Production

Table 17 indicates that the highest and the second highest of TEV values are those of scenario 2 and scenario 1, respectively. The third highest value goes to scenario 3 while the lowest TEV is that of scenario 4.

Table 17. Summary of TEV scenario analyses of rattan production

TEV scenarios	Description	Value (US\$/Year)
Scenario 1	Livelihood development and conservation	4,222,670
Scenario 2	Impose sustainable harvest (120% regrow for following year)	4,918,433
Scenario 3	Impose formal fees	4,125,600
Scenario 4	Granting all CF areas and production forest in Damnak Traseng to agricultural plantation and/or ELC for cassava plantation	1,406,790

2. Total Economic Valuation of Resin in CPA Prasat Tbeng Korng

Resin is the main commodity derived from CPA Prasat Tbeng Korng. This product is being tapped by majority of the poor households to support their livelihoods.

Based on the market characteristics and livelihood development, as well as the conservation purpose and policy development for NTFPs, this study categorized three main scenarios for TEV analysis of resin products, namely: (1) Livelihood development and conservation, (2) Impose formal fees on resin products, and (3) TEV based on granting all CPAs (11,738 hectares) to logging activity.

2.1. Scenario 1: TEV based on livelihood development and conservation

This scenario has taken into account the alternative livelihood development within the CF areas. The detailed description is as follows:

TEV of resin in 11,738 hectares
 = Use Value + Non Use Value

where:

a) Use Value of Resin in 11,738 hectares
 = Direct Use + Indirect Use

b) Non Use Value of Resin in 11,738 hectare
 = Option + Existence + Bequest Values

2.1.1. Use Value

a) **Direct Use:** There are four values identified for this scenario, namely:

Producer surplus (PS) in selling resin is the difference between the total revenues received by the producers and the total variable costs (including informal fees charge) of producing resin. The gross margin of resin products from tapper to end-market is estimated to be at US\$ 307 per tonne (see Table 8). The total annual production is estimated at 50 tonnes. Therefore, a producer surplus of market-end resin is equal to US\$ 15,357 per year.

Producer Surplus in producing varnish for houses (VH) is based on the field study report that resin products, aside from being sold in the market, are also used as varnish material for houses. On the average, the resin processed as varnish material produces US\$500 producer surplus per tonne. Therefore, a total production of 50 tonnes of varnish is estimated at US\$ 25,000 producer surplus.

Producer surplus in producing household torches (TM): Resin produces torches for starting fire for cooking and as lighting at night time. One torch is made of 0.5 kilogram of resin, which has producer surplus value of US\$ 0.5. Therefore, a total of 50 tonnes of resin used as household torches has an estimated value of US\$ 25,000.

Consumer surplus (CS) is the maximum amount that buyers are willing to pay for resin products minus what they actually pay. Based on the study at market-end in Kampong Thom, fishermen use resin for caulking a boat, and the consumers are willing to pay a maximum of US\$ 1.50 per kilogram of resin products while the actual price is US\$ 0.75 per kilogram; the difference therefore is US\$ 0.75. A total of 50 tonnes of resin would have an estimated consumer surplus value of US\$ 37,500.

Therefore, the Direct Use Value
 = PS + VH + TM + CS
 = 15,357 + 25,000 + 25,000 + 37,500
 = US\$102,857

b) **Indirect Use Value:** There are three indirect use values identified in the CPA Prasat Tbeng Korng:

Healthy environment for human health (HEHH): Per FGD result, all community members want to protect the forest to be healthy, to have a recreational site, and to develop their livelihood. To achieve all this, the cost of CF establishment and legalisation is about US\$ 55,000 (FA, 2010). In addition, law enforcement needs to be done, which includes patrolling and reporting of illegal activities to local FA.

Based on community experience, patrolling can be done once a week by a group of 10 people. Food and other expenses for each person per day is roughly US\$ 1.5. Additionally, the administrative cost for reporting to local FA is estimated at US\$ 20 per month. The total expenditure for patrolling and reporting the illegal activities to local FA is about US\$6,000. Consequently, the total cost for patrolling and reporting, as well as the legalisation of CF is roughly estimated at US\$56,020 per year.

Natural disaster risk reduction (NDRR): Without the forest, the risk associated with storm devastation would increase. Hence, if the forest would not be logged, the benefit would accrue to 487 households in the CPA Prasat Tbeng Korng.

Experience from the Ketsana storm that devastated Kampong Thom in 2009 revealed that each household may need a relief assistance of at least US\$ 200 to be able to recover their livelihood activities and to repair their houses. Consequently, the benefit that would accrue to a total of 897 households by keeping the forest intact to reduce risk from storm is estimated at US\$ 179,400.

Biodiversity conservation (BC): The CPA is under MoE Protected Areas, therefore, it would benefit from biodiversity conservation value. Based on the available 2009 data from WWF in Mondulkiiri Province, the management cost of conservation per hectare ranges between US\$1.88 to 2.51 per hectare over a 5-year planning period. The average cost of forest conservation is US\$ 2.195 per hectare. Estimatedly, the value of conserving an 11,738 hectares CPA in Damnak Tbeng Korng would be about US\$ 25,765 per year.

Freshwater supply (FS): Local community can access drinking water for both people and animals, and irrigate their agricultural land for as long as the forest provides protection for the watershed. Unfortunately, only access to drinking water was valued as data on agricultural production was not available.

According to the provincial Department of Rural Development in Kampong Thom, to access drinking water in case of water shortage or drought, there would be a need to build a water well using drilling rig equipment. One water well for 15 to 20 households costs around US\$ 500-600. In this regard, the average cost for constructing water wells that can support all in the CPA community of 897 households-members would be about US\$ 28,191.

Therefore, the Indirect Use Value of resin product
 = HEHH + NCRR + BC + FS
 = 56,020 + 179,400 + 25,765 + 28,191
 = US\$ 289,376

Therefore, Use Value of resin
 = (PS + VH + TM + CS) + (HEHH + NCRR+BC+FS)
 = (102,857) + (289,376)
 = US\$ 392,233

2.1.2. Non Use Value for Resin in 11,738 Hectares

a) **Bequest and Existence Values:** There are two values identified as bequest and existence values for rattan in a 13,398 hectares of CPA Prasat Tbeng Korng, namely:

Keep the forest for life (KFL): Per FGD with CF members, all community members want to keep CPA for a life time instead of logging or selling it to other people. In this regard, let us assume that all community members are 18 years old, while the life expectancy for man and woman in Cambodia is about 50 and 55 years old, respectively. On the average, the life expectancy is therefore 52.5 years old. So, the number of average years to live between 18 to 52.5 years is 34.5 years old. The average income in Cambodia is about US\$ 600. Consequently, the total benefit to keep the forest for a life time in CPA Prasat Tbeng Korng for at least one member for each of the 897 households is estimated at US\$ 538,200 per year.

Carbon credit (CC): The study suggests that FA, especially the provincial forest cantonment, wants

to keep forest for carbon credit benefit. The CF-REDD project in Cambodia, established in 2004 at Oddar Meanchey Province, is being implemented by FA and PACT in collaboration with CDA, a local NGO. The total area of CF-REDD is 67,000 hectares. The future benefit of carbon credit will be harvested in the eleventh year of the project. The project assumes that if carbon is priced between US\$ 5-7, then the total benefit in the eleventh year will be between US\$ 282,5000 and 515,000. Hence, based on extrapolation from 67,000 to 11,738 hectares, the yearly benefit in the future from carbon credit would be about US\$ 6,351.

Therefore, the Bequest and Existence Values
 = KFLT+CR
 = 538,200 + 6,351
 = US\$544,551

b) Option Value (OV)

Ecotourism (ET): Similar to a community with rattan products, resin tapping activity in CPA is accessible from the Prasat Sambo Prey Kuh complex temple (20km). The CPA Prasat Tbeng Korng has a great potential for ecotourism development because a portion of the temple is part of Beng Per Wildlife Sanctuary under MoE jurisdiction. Therefore, the benefit from ecotourism is assumed to be equally the same for the community with rattan products.

Based on the available 2009 data on tourist development from the Provincial Department of Tourism, 5,137 foreign tourists and 13,000 local tourists visit the complex temple annually. On the average, each foreign tourist would spend at least US\$ 1,000 for international travel (cost of round trip plane ticket) and US\$ 40 for local travel (round trip fare) from Phnom Penh to Kampong Thom.

Based on an interview with the local tourist authority, five percent of foreign tourist possibly visited far beyond the complex temple for ecotourism. They may have visited CPA Prasat Tbeng Korng and the livelihoods of local community in the wildlife

sanctuary. Therefore a total value per annum for foreign tourist at \$1,040 travel cost for an average of 257 tourists is estimated at US\$267,124.

However, per interview in the local community and the local tourist authority in Prasat Sambo Prey Kuh, most local tourists rarely to go beyond the complex temple for eco-tourism and explore the livelihoods of local community near the temple. In this regard, it is assumed that there is only one percent of local tourists who would prefer to visit the CPA site for eco-tourism. Therefore, the total value for local ecotourism at \$40 travel cost for an average of 130 tourists would be US\$5,200.

The CPA Damnak Tbeng Korng is located nearby the complex temple. Given a conservative estimate that both foreign and local tourists would potentially visit CPA for eco-tourism, this would bring the total benefits of local community from ecotourism to about US\$ 272,324 US\$ per year.

Therefore, the Non Use Value
 = KFL + CR + ET
 = 538,200 + 6,351 + 272,324
 = US\$ 816, 875

Consequently, the TEV of resin
 = Use Value + Non-Use Value
 = 392,213 + 816,875
 = US\$ 1,209,108

2.2. Scenario 2: Impose formal fees on resin products

The formal fees which are imposed by FA and MAFF on resin products are estimated at US\$78.75. However, majority of resin market actors do not pay the formal fees. Instead, they usually pay around US\$20.82 for informal fees along the trade route, which is significantly lower than the formal fees.

Assuming that there are formal fees imposed on the producers, the producers would need to spend

US\$57.92 more per tonne just to cover the formal fees. By this, the producer surplus will be lower (by \$2,896 for 50 tonnes) and the new direct use value will become US\$99,961. The TEV is therefore US\$1,206,212.

2.3. Scenario 3: TEV based on granting all CPA area to logging activity

Assuming that all 11,738 hectares under CPA are granted to logging activity: Based on estimate, the sustainable production capacity or yield of a resin tree (60 centimeter in diameter) is 30-35 liter per annum (NTFP-EP, 2009), while the total production of resin tapped by communities is estimated at 50 tonnes or 50,000 liter per year. So the number of resin trees standing in the forest would be, on average, 1,547 trees within an 11,738 hectare of forest.

It is worthy to note that based on FGDs, all resin products and resin trees owned by communities are being collected from the CPA area. However, the research team was unable to verify or conduct an inventory to confirm this data. According to the Wildlife Conservation Society (WCS) working in the Seima Protected Forest, where there is evergreen forest the density of *dipterocarpus alatus* (resin tree) with 60 or greater than 60 centimeter in diameter is estimated at two (2) trees/hectare. The CPA is approximately between semi-evergreen and degraded areas so that based on estimates, it would have 0.13 tree/hectare. Resin trees are likely to thrive in this type of forest but probably in extremely low density.

According to the 2009 WCS estimate of transport distance and cost for movement of timber on various routes: To move one cubic meter log from the forest to the village/main road and from the main road to Phnom Penh would cost about US\$ 4.44 and 0.076 per km (paved road), respectively. The distance from the forest to the main road of Kamong Thom town is roughly 40 km; and from Kampong Thom town to Phnom Penh, about 168 km. Therefore, the total transportation cost to move one-cubic meter log

from the forest to Phnom Penh is around US\$ 189 per cubic meter.

Additionally, based on WCS estimate, the current logging operation uses simple technology whereby trees are felled and converted into boards using a chainsaw and then transported to the village by ox-cart. In this regard, there are variations in logging

costs. Despite the variation, the price range between US\$100/m³ to US\$110/m³ is reasonably consistent. It is therefore assumed that the average production cost⁷ would be US\$ 105/m³. As a result, the total financial net revenue for logging of resin trees within the CPA areas would be US\$ 985,915 as shown in Table 18.

Table 18. Financial analysis for logging of resin trees

Description	Number	Unit
Total resin tree in the target study (tree produced liquid resin 30-35 liter/tree (60 cm in diameter); and annual production is 50 tonnes	1,538	Tree
Average volume of resin tree logged (60 cm in diameter)	5.71	m ³ /tree
Total volume of resin tree logged	8,785	m ³
Transportation cost per m ³ from village to Phnom Penh	189	US\$
Transportation cost from forest to Phnom Penh	1,658,254	US\$
Production cost per m ³	105	US\$/m ³
Total production cost	922,385	US\$
Royalty fees per m ³	54	US\$/m ³
Total royalty	474,369	m ³
Total cost	3,055,008	US\$
Revenue per m ³ (Phnom Penh)	460	US\$/m ³
Total revenue (Phnom Penh)	4,040,923	US\$
Net revenue per m ³	112	m ³
Total Net revenue	985,915	US\$

Source: WCS (2009) and Field Interview (2009)

Logging of resin trees would affect livelihood development and environmental utility in the CPA site. In this regard, despite the positive value in the financial analysis, the TEV, especially as compared to scenario 1, would still show logging with the least value and therefore least desirable among the different options.

2.4. Summary of TEV Scenario Analyses of Resin Production

Table 19 indicates that the highest TEV value is given to scenario 1, second highest value to scenario 2, and the lowest value and negative value to scenario 3.

Table 19. Summary of TEV scenario analyses of resin production

TEV scenarios	Description	Value (US\$/Year)
Scenario 1	Livelihood development and conservation	1,209,108
Scenario 2	Imposing formal fees	1,206,212
Scenario 3	Granting all CPA in Prasat theng Korng and Production Forest to logging activity	985,915

⁷The cost items include labour, food, fuel, maintenance, tree purchased, and transport from forest to village.



Conclusions and Implications of the Study

General Conclusions

1. NTFPs contribute to the livelihood development of local communities. However their economic value contribution to policy development, national planning, and especially in the national account, is often overlooked by policy-makers.

2. NTFP collection and utilisation extend beyond the CF granted by Government to community forest management. In this context, there is a need to consider policies for sustainable NTFP utilisation beyond the current community forestry and community protected area management frameworks but rather strategically vis-a-vis sustainable forest management and community development.

3. Database management of the forestry sector has to be improved because the recorded production of NTFPs reflects only the volume of NTFP production of business enterprises that are subject to pay formal fees. Improving the documentation of NTFP production will positively impact on the real contribution of the forestry sector in the national account.

4. Formal fees collection and other legal requirements for securing license and transport permits are complicated and difficult to comply with; thus, may lead to increasing trade inefficiencies, such as informal fees collection or unrecorded payments and transport volumes.

5. Decentralisation and deconcentration processes have been streamlined for policy development in Cambodia by delegating more tasks and responsibilities for local management. Therefore, in terms of local forestry management, the collection of taxes should allow provincial offices to charge forest

fees for forest products collection and keep some portion of the fees for local forest management.

Conclusions on Economic Sensitivity Analysis

TEVs of NTFPs:

1. TEV is a key instrument that helps policy-makers and planners make better and informed decision for economic policy development and land-use planning. Higher TEV in this study means providing an option for community-based livelihood development using forest resources through equitable and long-term sharing of resources, and sustainable resource management, as well as contributing to climate change mitigation.

2. The result of the case studies in Kampong Thom suggests that the TEV scenarios for livelihood development and conservation, and sustainable harvest of NTFPs are significantly higher than the scenarios for logging of resin trees, and for granting forestland to agricultural plantation and/or ELC for cassava plantation.

3. Both the TEV scenarios for logging and granting forestland to cassava plantation turned out to have lowest values as these scenarios may need to offset the TEV of livelihood development and environmental services. Therefore, it makes more economic sense to allocate for the existing forest resources to eventually improve the livelihoods of local people, and ensure the equitable sharing of resources among community members. Moreover, these scenarios (livelihood development and environmental services) can help maintain the ecological balance and sustainable investment on NTFPs which is aligned with the direction of NFP for expanding the CF areas to 2.2

million hectares by 2030.

4. Based on the scenario of imposing formal fees, the collection process should be simplified or eliminated if necessary. Such recommendation is aligned with the Government policy of providing incentive for pro-poor trade which contributes to the poverty reduction strategy as stated clearly in the NSDP.

TEV of Rattan Products

1. Rattan contributes a significant value to improve the income of local community. The collection of rattan is estimated at US\$600 per household (US\$ 300,000/3 villages/annum). This implies that the annual income from rattan can help local community at the household level to rise above the poverty threshold. Local communities are eager to protect and conserve forest land and community forest for rattan collection in the future.

2. Small-scale processing of rattan for furniture provides significant value addition to the NTFP sector. Moreover, it creates employment opportunity for thousands of those in the fishing community that have now specialised in rattan furniture making. They derive the raw materials from the community forest. Interestingly, this economic activity has seemingly reduced the pressure on the fishery resource in the Great Lake as most fishermen turn to rattan processing to derive alternative income, which is almost equivalent to more than six (6) months employment.

3. Notably, rattan transporters and processors have regulated and ensured the sustainability of rattan resources in the forest. They put pressure on forest-dependent communities to collect only the mature plants instead of the young plants; otherwise, they refuse to pay and/or accept the product. Mature plants are needed to make good and durable rattan furniture which demands a high price in the market. In addition, imposing a sustainable harvest of rattan would help community increase their income for the following year because the amount of harvestable

products would have increased remarkably.

4. The second highest TEV is livelihood development and conservation (scenario 1), without imposing a sustainable harvest to adjacent areas. This scenario has significantly contributed to the rural economy and to poverty reduction which has been highlighted in the NSDP (2009-2013). Additionally, it has provided social and equity share among the forest-dependent communities over forest resource use. Forest resources will be beneficial to the future generation, especially if it addresses the NFP direction for CF area's expansion to 2.2 million hectares. The additional work on imposing sustainable collection in the adjacent areas would provide greater value for both livelihood development and conservation, and sustainable forest management.

5. The TEV for sustainable rattan collection (scenario 2) has the highest value. Deferring rattan harvest until the following year ensures a sustainable harvest of up to 120% of the total production. However, it has been applied only in 30% of community forestry areas since more than 70% of rattan production is collected from Production Forest of FA where rent seeking has been utilized in order to ensure the maximum production. Unsustainable collection method, to some extent, has been a gap for local community. Therefore, legitimising NTFPs for sustainable forest management is a crucial option for livelihood development of forest-dependent communities. In this regard, the key stakeholders in the forestry sector, especially FA and NGOs, should work hand-in-hand to provide the necessary support, including training and coaching for sustainable rattan collection along with the community's internal law enforcement to its CF members. By doing this, a win-win solution can be achieved to maximize the benefits to local communities and to meet sustainable forest management requirements as stated in the NFP.

6. Informal fee collection (scenario 3) and imposition of formal taxes are additional burdens to rattan economic actors, which reduce the TEV of rattan.

They pose considerable constraints in complying with the law and the bureaucratic regulations (e.g., application for license and transport), which may lead to an increased trade inefficiency.

7. The TEV of granting all CF to agricultural plantation and/or ELC (scenario 4) would be providing the lowest value for investment and to the environment. This scenario is seen as a short-term investment that could lead to biodiversity loss. Therefore, the TEV of granting forestlands to CF management is seen as a desirable option than granting it to cassava plantation and/or ELC.

TEV of Resin Products

1. Resin contributes significantly towards improving the income of local community. The collection of resin is estimated to be US\$300 per household. Local communities are eager to protect and conserve the forest land and community forest to enable them to continue to tap resin in the future for domestic use.

2. Recently, the price of resin has been reduced significantly due to a decrease in the volume of resin for export to Vietnam. As reported, local community earns 70% to 80% from the total value of resin, while the private sector earns 10% to 20%; the balance goes to transport cost and fees.

3. The consumers, especially the fishermen, are willing to pay double the price of resin, but not to exceed the cost of substitute products for caulking a boat (i.e., chemical varnish is now used by fishermen as the price of resin has increased substantially in recent years).

4. Scenario 1 indicates that resin is a prime commodity. It has a significantly higher economic value compared to the value of granting it to CPA for logging activity (scenario 3). The TEV of logging turned out to be the lowest value and would most likely need to

offset the values of livelihood development and environment services. Therefore, scenario 1 is a more desirable option because it harmonises livelihood development and forest conservation. Similar to rattan, this scenario would significantly contribute to rural economy and poverty reduction and would help improve the equitable sharing of resources and benefits among forest-dependent communities.

5. Scenario 1 also indicates that resin tapping, if done in a sustainable manner, would not damage the tree. Therefore, resin trees will continue to grow for the next 60 to 70 years (CDRI, 2002). It implies that a more desirable option choice for policy-makers in promoting pro-poor products and in reducing poverty, based on this scenario, is to allow the communities to secure tenure over forest areas, particularly under community-based sustainable forest management arrangements.

6. The TEV of granting CPA for logging activity (scenario 3) would provide the lowest economic value to the forestry sector. The benefits would not go to the local communities but rather to a private firm with a short-term investment. At the same time, it would affect biodiversity and ecological function.

7. The formal fees imposed (scenario 2) on resin products have lowered the TEV. Similar with rattan, the imposition of formal fees would become a barrier to trade and would increase trade cost along the trade route. With this scenario, it would become extremely difficult to comply with the law and regulations, especially to apply for license and transport permit.

References

- Arquiza, Y. and Arlynn A. (2008). Food, Shelter, Clothing and Cash: The Economic Importance of NTFPs in the Philippines, (NTFP-EP: Philippines).
- Bradley A. (2009). Communities and Carbon: Establishing a Community Forest-REDD: Project in Cambodia, (PACT and FA: Cambodia).
- Forestry Administration (2007). Forestry Statistics of 2006, (Phnom Penh: Cambodia) (Khmer Version).
- Forestry Administration (2006). Report on Annual Meeting 2006 and Planning for 2007, (Phnom Penh: Cambodia) (Khmer Version).
- Forestry Administration (2007). Report on Annual Meeting 2007 and Planning for 2008, (Phnom Penh: Cambodia) (Khmer Version).
- Forestry Administration (2008). Report on Annual Meeting 2008 and Planning for 2009, (Phnom Penh: Cambodia) (Khmer Version).
- Forest Administration (2008). Country Paper on Forestry Outlook 2020, (FA, Phnom Penh: Cambodia).
- Forest Administration (2009). Cambodia's National Forest Program, (Phnom Penh: Cambodia).
- Forest Administration (2010). Database on Community Forestry, (FA: Cambodia).
- Fraser Thomas Ltd. (2009, draft). Joint Appreciable of National Forest Program, Cambodia, (Ministry of Foreign Affairs: Denmark).
- International Timber Trade Organisation (2009). Socio-Economic Survey of Resin Products, (Forest Administration and ITTO: Cambodia).
- McGinley, John/Indochina Research (2007). WWF IKEA "Switch to Sustainable Rattan Harvest and Production: Cambodia Rattan Value and Supply Chain Survey and Research Report" (WWF: Cambodia).
- Ministry of Agriculture, Forestry and Fisheries (2009). Annual Report 2008-2009 and Planning for 2009-2010, (Phnom Penh: Cambodia) (Khmer Version).
- Prom Tola (2009). Beyond Subsistence: Trade Chain Analysis of Resin Products in Cambodia, (Non-Timber Forest Product-Exchange Program: Cambodia)
- Provincial Department of Rural Development (2009). Annual Statistic (Kampong Thom Province: Cambodia).
- Provincial Department of Tourism (2009). Annual Statistic (Kampong Thom Province: Cambodia).
- RECOFTC (2009). Quarterly Report 12: On the Implementation of the Japan Social Development Fund Grant for Capacity Building for Sustainable Forest and Land Management, (FA and RECOFT, and JICA: Cambodia).
- Royal Government of Cambodia (2009). National Strategic Development Plan Update 2009-2013: For Growth, Employment, Equity and Efficiency To Reach Cambodia Development Goals. (Royal Government of Cambodia: November 2009).
- Sotha Ros (2010). Report on Policy Gap Analsi on Rattan Trades in Cambodia (WWF: Cambodia).
- Technical Working Group on Forestry & Environment (2006). Forestry and Environment: Action Plan 2007-2010, (Supported by DANIDA: Cambodia).
- Wildlife Conservation Society (2009). Case Study of the Cambodia Timber Trade: Market Analysis for the Community Forestry Project, (WCS, FA, and DANIDA: Cambodia)

Annexes

Questionnaire A

Key Informant Interview: Forest Cantonment Interview Questionnaire (Resin, Bamboo and Rattan Products)

1. Background:

1.1. Name:..... Age:..... Sex:..... Position:.....

1.2. Address:.....

1.3. How long have been you working in this post?.....(Years)

1.4. How many technical staff are working in FA cantonment?

1.5. What are the main non-timber forest products in Kompong Thom?

1.6. What are the main forest products for home consumption and trade? In what year did NTFP collection start?

1.7. Who and how many people are collecting this NTFP?

1.8. What form of permits or rights or concessions do they have to harvest and transport this NTFP out of Kompong Thom?

1.9. What are the regulations and quotas imposed by FA cantonment for trading forest products in Kompong Thom?

1.10. How many types of forest products have been applied license and transport permit from FA cantonment in the last five years and now (2004-2009)? And how to proceed with the tax collection from the products?

Types of products	2004-05		2005-06		2006-07		2007-08		2008-09	
	Quantity	Amount (R)	Quantity	Amount (R)	Quantity	Amount (R)	Quantity	Amount (R)	Quantity	Amount (R)
1. Timber										
2. Resin										
3. Rattan										
4. Bamboo										
5. Honey										
6. Others										

1.11. What is the main purpose of formal collection?

- 1.12. What % of local revenue is derived from collection of fees or taxes out of extracting resin product?
 - 1.13. Based on your experience, are there instances of non-payment of formal fees by forest product traders)? If so, what measures were taken to solve the problem?
 - 1.14. How would you describe the trend of NTFP tax collection in the last 5 years? Increasing?, Decreasing?, Same-same?
 - 1.15. Aside from selling resin, what are the other uses or benefits of resin in the livelihoods of the people and their way of life in general?
 - 1.16. Do you know of any possible benefits that the people may derive from resin in the future?
 - 1.17. Do you think it will be better to clear this forest and have it for other uses? Why?
2. What are the main constraints/challenges you face in forest product management and trade in Kompong Thom?
 - 1.
 - 2.
 - 3.
 - 4.
 3. How do you manage/overcome these constraints?
 - 1.
 - 2.
 - 3.
 - 4.
 4. What types of change would you like to see in the resin/NTFPs trade business in the future for Kompong Thom?
 - 1.
 - 2.
 - 3.
 - 4.

- 1.12. What % of local revenue is derived from collection of fees or taxes out of extracting resin product?
 - 1.13. Based on your experience, are there instances of non-payment of formal fees by forest product traders)? If so, what measures were taken to solve the problem?
 - 1.14. How would you describe the trend of NTFP tax collection in the last 5 years? Increasing?, Decreasing?, Same-same?
 - 1.15. Aside from selling resin, what are the other uses or benefits of resin in the livelihoods of the people and their way of life in general?
 - 1.16. Do you know of any possible benefits that the people may derive from resin in the future?
 - 1.17. Do you think it will be better to clear this forest and have it for other uses? Why?
2. What are the main constraints/challenges you face in forest product management and trade in Kompong Thom?
 - 1.
 - 2.
 - 3.
 - 4.
 3. How do you manage/overcome these constraints?
 - 1.
 - 2.
 - 3.
 - 4.
 4. What types of change would you like to see in the resin/NTFPs trade business in the future for Kompong Thom?
 - 1.
 - 2.
 - 3.
 - 4.

Questionnaire B

Focus Group Discussion: NTFP Collectors (Resin and Rattan Products)

A. Demographic information

Average number of people in the household and in the village

Average years in the village

Breakdown of ethnicity in the village

B. Employment

1. Main occupation

- Breakdown of main occupation

2. Secondary occupation

- Main secondary occupations (by percentage)
- Average number of secondary occupations – to show diversity of livelihood activities

3. Forest products for income and HH use

- Most important products for income
- Percentage of villagers that tap resin/rattan
- Most important products for household use/consumption
- What products do you produce and sell out of resin/rattan?
- For how much do you sell your resin/rattan (price per unit)?
- How many do you sell (volume per period of time)?
- What costs do you incur in producing and selling resin/rattan? (..to derive exact variable cost per unit of resin/rattan)
- Do you have any equipment or other gadgets or facilities for this? (suggesting investment)
- What % of your household income is derived from selling resin/rattan product?
- In your village, how many do you think are also producing and selling resin/rattan like you?
- Compared with these other collectors, are you a smaller or bigger producer than them?
- How many years have you been collecting resin/rattan?
- How would you describe the trend in the value of your resin/rattan collection in the last 5 years? Increasing? Decreasing? Same-same?

Questionnaire C

Key Informant Interview: Trader/Wholesaler/Processor Interview Questionnaire
(Resin and Rattan Products)

1. Background:

- 1.1. Name:..... Age:..... Sex:..... Marital Status.....
- 1.2. No. of household members:.....
- 1.3. Address:.....
- 1.4. Main occupation:.....
- 1.5. Minor occupation.....
- 1.6. How long have been you a resin/rattan trader?.....Years
- 1.7. What products do you produce and sell out of resin/rattan?
- 1.8. In your village/district, how many traders do you think are also buying and selling resin/rattan like you?
- 1.9. Compared with these other traders, are you a smaller or bigger producer than them?
- 1.10. How would you describe the trend in the value of your resin/rattan collection in the last 5 years?
Increasing? Decreasing? Same-same?
- 1.11. Do you know of any possible benefits that you may derive from resin/rattan in the future?

1.12. How many villages do you serve with your resin/rattan trade business?

Name of Village	Total production purchased (Kg/year)	Means of transportation
1.		
2.		
3.		
4.		

1.13. Who/where do you sell you resin/rattan products?

Name of wholesalers or others	Address	Hours to transport from your house to wholesalers	Means of transportation
1.			
2.			
3.			

1.14. Why do you sell to the wholesalers rather than sell directly to the exporter?

.....
.....

2. Resin/Rattan Pricing

- 2.1. What is the trend for resin/rattan production over the past five years?
 a. Are villagers providing more or less resin/rattan?.....
 b. Are there more or less traders in the resin/rattan business?.....
 c. Is the resin/rattan price is higher or lower?.....
- 2.2. Why does the price that you offer resin/rattan producers/collectors fluctuate (change) during the course of the year?
 a. Change in transport costs
 b. Quality of resin/rattan change
 c. Demand-driven shift (such as more demand by consumers at some time of the year)
 d. Supply-driven shift (such as greater resin/rattan production at some time of the year)
 e. Other reason
- 2.3. Why does the price at which you sell resin/rattan to the wholesaler fluctuate (change) during the course of the year?
 a. Change in transport costs
 b. Quality of resin/rattan change
 c. Demand-driven shift (such as more demand by consumers at some time of the year)
 d. Supply-driven shift (such as greater resin/rattan production at some time of the year)
 e. Other reason
- 2.4. Do you offer loans to resin/rattan tappers as part of your resin/rattan trade business? If yes, how may tappers do you make loans to?

Name of village	Number of tappers	No. tapper loan credit
1.		
2.		
3.		
4.		

- 2.5. What is the typical structure of these loan arrangements?

- 2.6. When do you typically offer loans?

- 2.7. How much time do borrowers have to pay back the loan (with cash? Resin/rattan? Others?)?

- 2.8. Do you charge an interest rate? What happens if people cannot pay back the loan?

3. Fees associated with business

- 3.1. What kinds of formal fees do you pay per trip from villages to the place of sale (formal fee are fees for which you receive a receipt)?

Kind of formal fees	Village.1		Village.2		Village.3		Village.4	
	D	W	D	W	D	W	D	W
1. License								
2.								
3.								

Note: please identify on the map the points where you pay each fee.

3.2. What kind of informal fee do you pay during trips from villagers to the place of sale?

Kind of informal fee	Village 1		Village 2		Village 3		Village 4	
	D	W	D	W	D	W	D	W
1. Local authority								
2. Checkpoints								
3.								
4. Other								

4. Economic analysis of resin/rattan business

Items	Variable	Village 1		Village 2		Village 3	
		W	D	W	D	W	D
Purchasing expense	Number of trips to the village						
	Number of liters purchased per trip						
	Price paid to villager for resin/rattan (riels per unit--30 liters?)						
Operating cost	Distance from the village to the main road (km)						
	Distance along main road to selling point (wholesaler, market, border)						
	Number of hours/total travel time						
	Wage of next best alternative job (riels/day)						
	Estimated labor costs per trip (riels)						
	Means of transportation						
	Liters of gasoline used for trip to/from village to selling point						
	Cost of gasoline per liter in that area						
Capital cost	How many years have the trader owned the transport?						
	Annual repairing cost						
	How many years until it will likely need to be replaced?						
	Capital costs (purchasing price of motor, car, truck) (\$)						
	Other capital equipment (resin/rattan containers and other equipment)						
	How often does equipment need to be replaced (years)						
Formal fee	How much does equipment cost to replace						
	Annual fees -- Transport license (riels)						
Informal fee	Other official fees -- tax per unit						
	Checkpoint fees per trip						
	Other informal fees						
	Selling price to wholesaler/trader/border (liter)						

5. Processing

5.1. What do resin/rattan consumers use resin/rattan for?

.....

5.2. Is processing needed to make different resin/rattan-based products?

.....

5.3. Do you process resin/rattan ? If no, why?

.....

5.4. Do you know anyone who processes resin/rattan in the area? What are the products?

.....

5.5. Why is processing is not done in your working area or your warehouse?

.....

6. Alternative Business

6.1. What would you do if the resin/rattan trade business did not exist?

.....

6.2. What daily could you earn from that alternative job?

.....

7. What are the main constraints/challenges you face in the resin/rattan trade business?

- 1.
- 2.
- 3.
- 4.

8. How do you manage/overcome these constraints?

- 1.
- 2.
- 3.
- 4.

9. What types of change would you like to see in your resin/rattan trade business in the future?

- 1.
- 2.
- 3.
- 4.

10. Economic questions

- Aside from what you are selling now, what are the other uses or benefits of resin/rattan/rattan in your livelihood and way of life in general?
- Do you know of any possible benefits that you may derive from resin/rattan in the future?
- If you can have your choice, would you rather have the forest and/or resin/rattan trees intact or sustained as it is now? If yes, (and as theoretical example only) what would approximate your willingness to give up the availability of the forest and/or resin/rattan/rattan trees? Is this as much as like having a new house, or buying a new car, etc.?
- Do you see your children, and their future children, utilizing resin/rattan also for their own livelihood? How important is this for them?
- How do you see your resin/rattan/rattan production progressing (or not progressing) in the next 5 years? Why and how? (suggesting policies that either support or impede development of this livelihood)

Terms of Reference for the Study

Research Outline for The Economic Importance of NTFPs in Cambodia:

Case studies of NTFP enterprises in Kompong Thom Province

Background

A number of efforts in different provinces on community based NTFP enterprise development has been ongoing within the last year. For instance, pilot community based NTFP enterprises in a few provinces such as Monduliri, Ratanakiri and Kompong Thom Provinces are being directly assisted by NTFP Exchange Programme (NTFP-EP) for South and Southeast Asia and Oxfam Great Britain (OGB). Likewise, the Forest Administration (FA) through the Community Forestry Office (CFO) and its ITTO-supported project on Sustainable Utilization of NTFPs, are also implementing activities in the same provinces. Collaborative activities, namely: information and research coordination and dissemination on resin value chain analysis (September 2008-February 2009), and joint organizing and facilitation of provincial overview workshops on community based resin / NTFP enterprise development in Monduliri (May 2009) and Kg. Thom provinces (June 2009) have been undertaken by NTFP-EP, FA/CFO, FA/ITTO NTFPs project and OGB.

In order to follow up concretely on the outcomes of these activities, NTFP-EP, OGB and FA/CFO agreed that a collection of case studies to illustrate the economic importance of NTFPs could facilitate future NTFP policy-related discussions. These future policy discussions together with concrete field-based technical support to community based NTFP enterprise initiatives may help to inform policy improvements and enforcement in the Cambodia forestry sector.

Funding support for case study research in Kg. Thom province has been committed by OGB. In this regard, the case studies will be initiated in this province with a view to possible collection of case studies in other provinces as resources would allow.

Study Objectives

The case study research seeks to document and analyze the economic importance of NTFPs through a selection of case studies on specific product-specific enterprises, namely rattan, bamboo and resin. Specific policy issues will be assessed from the cases and concrete reforms / improvements shall be proposed towards achieving improved community benefits from NTFP utilization, improved management and sustainability of forest resources, and improved multi-stakeholder engagements (e.g., private sector, government agencies, local authorities, etc) in the development of the NTFP sector in Cambodia.

Methodology

A case study team will be formed comprised of 1-2 representatives from NTFP-EP, FA, and OGB. Other research participants will be invited as agreed by OGB, NTFP-EP and the FA. Field work will be conducted mainly through focus group discussions and key informant interviews with representatives of government, private sector and NTFP collector group or community based enterprise. Secondary data will also be reviewed such as government statistics, policies relevant to NTFP utilization, transport, etc., community enterprise/private sector records and other relevant documents.

Scope of the Study

Three product focused case studies have been pre-selected on rattan, resin and bamboo enterprise activities in Kg. Thom Province. The criteria for final selection of which particular rattan, resin, bamboo enterprise will be studied shall be: engagement of multiple value chain actors (e.g., collector, trader, wholesaler), willingness of the key actors to engage in the case study research, operation within the last 2-3 years only. It has to be a most recent experience to allow for relevant analysis and formulation of recommendations for future action. The

coverage will be within Kompong Thom Province.

The scope of the case study will include:

- a. An identification and ranking of economically important NTFPs in Cambodia
- b. An analysis of the specific roles, conditions and results (actual experience) of utilization of the NTFP(s) – from subsistence, trade or marketing
- c. An identification and measurement of the specific benefits derived from NTFP utilization by communities, government agencies, private sector in each particular case. These benefits may range from revenues from permit and licensing fees, royalties/taxes, direct income, price mark-up, revenues from wholesale/retail, export revenue, undocumented charges, payments for environmental services, etc. These will be calculated based on a simple economic valuation method.

A provisional content outline of each product case study as follows:

- a. Description of enterprise operation
- b. Government benefits from the enterprise
- c. Private sector benefits from the enterprise
- d. Community benefits from the enterprise
- e. Economic valuation of NTFPs (done for each: rattan, resin, bamboo)
- f. Policy issues and recommendations

The research tools will be developed through a participatory process with the selected field team from the different participating agencies. The following are some guide questions for further development and discussion of the field research team.

- a. Identify the NTFPs (and their specific parts) that are utilized in Cambodia
- b. What are the common products derived from these NTFPs (e.g., food, crafts, medicine, natural dyes, etc.)
- c. Rank the NTFPs, (by NTFP, parts and products) from the most important to the least important.
- d. What benefits are derived from the direct use of NTFPs (by NTFP, parts and products)? Provide some details or examples of these benefits:
 - Direct consumption, i.e., quantity and frequency
 - Sale, i.e., volume, price and profit
 - Other revenues, taxes, royalties and other payments
 - Investments
 - Markets reached
 - Others?
- e. What are the local prices of marketed NTFPs?
- f. What are the indirect use values derived from current NTFP utilization and management. Give examples.
- g. What are the specific issues and concerns associated with the top 3-5 most important NTFP in each of the key stages of direct use:
 - Production/harvesting (e.g., transaction cost to avoid NTFP confiscation)
 - Trading / selling (e.g., transport permits, payment of royalties)
 - Product development and marketing (e.g., lack of market information)
 - Sustaining NTFPs (e.g., lack of monitoring, no reforestation, no data on resources, no boundary demarcation)
- h. Rank the issues according to most important to least important
- i. Compare the cost/surplus acquired by each actor (i.e., collector/producer, government, private sector) for positive and negative situations.
- j. What can be done to resolve the issues? What specific policy and practice recommendations can be made?



NTPP Exchange Programme
for South & Southeast Asia



