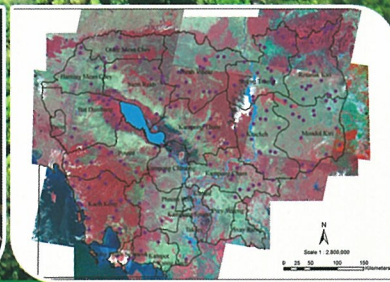




TECHNICAL REPORT

ITTO PROJECT PD493/07 Rev.1 (F)

**“STRENGTHENING CAPACITY OF FOREST LAW
ENFORCEMENT AND GOVERNANCE IN CAMBODIA”**



Forestry Administration of Cambodia

JUNE 2012



TECHNICAL REPORT

ITTO PROJECT PD 493/07 Rev.1 (F)

**“STRENGTHENING CAPACITY OF FOREST LAW
ENFORCEMENT AND GOVERNANCE IN CAMBODIA”**

Forestry Administration of Cambodia

JUNE 2012

TECHNICAL REPORT

Project Number : PD 493/07 Rev.1 (F)

Title of the Project : Strengthening Capacity of Forest Law
Enforcement and Governance in Cambodia

Host Government : Royal Government of Cambodia

Executing Agency : Forestry Administration

Project Coordinator : EANG SAVET

Starting Date : January 2009

Duration : 36 months

Project Extension : 6 months (without additional funds)

Project Technical and Scientific Staff

Project Coordinator and main staff:

1. Mr. Eang Savet
2. Ms. Hau Sovanmony
3. Mr. Sron Sophal
4. Mr. Loung Chantanaroth
5. Ms. Lam Sokuntheara

National Consultants

1. Mr. Soun Sovann
2. Mr. Pin Phany
3. Mr. Ouk Kim San
4. Mr. Chornng Tol
5. Mr. Pak Chealy
6. Ms. Sar Sophyra

International Consultants

1. Ms. Maria Victoria Icasiano Dioko
2. Mr. Menelio G. Manny Media
3. Dr. Ismail Roslan
4. Mr. Mikael Kamp Serensen
5. Dr. Hiras P. Sidabutar

Implementing Institution

- Forestry Administration
- # 40 Preah Norodom Blvd, Phnom Penh, Cambodia
- Tel/Fax: 855-23-212201

Place and date of publishing the report: Phnom Penh, August 2012

Table of Contents

Preface	i
Acknowledgements	ii
List of Abbreviation and Acronym	iii
Summary	iv
Introduction	1
Methodology	2
Optional methodology	2
Applied methodology	2
Presentation of data	4
Output 1: Appropriate facilities in place	4
Output 2: Forest law enforcement training implemented	5
Training need assessment	5
Development of training program	7
Training of trainers	9
Training of FA staff	9
International training	9
Effective monitoring and documentation of illegal forest practices	10
Forest patrolling procedures	10
Pocket field guide on monitoring and documentation of forest practices	11
Case Tracking System (CTS)	11
Satellite imagery studies	16
Effective judicial processing	23
Establish coordination meeting with Royal Prosecutor	23
Provide training on legal procedures to Forestry Administration staff	24
Provide legal assistance to Forestry Administration	25
Effective extension function	27
Provide forest law and regulations extension to stakeholders	28
Prepare extension materials	29
Analysis and interpretation of the data and results	33
Appropriate facilities in place	33
Forest law enforcement training implemented	33
Effective monitoring and documentation of illegal forest practices	34
Effective judicial processing of forest crime cases in place	36
Effective extension function	36
Conclusions	38
Recommendations	40
Implication for practice	41
Annexes	
Annex 1 Questionnaire for the assessment of training needs	
Annex 2 Questionnaire for the assessment of training subjects	
Annex 3 Check-sheet used in the field ground truthing survey	
Bibliography	

Preface

The forests of Cambodia cover more than half of the country's total land area and are a significant renewable natural resource of the country. These forest ecosystems occur at varying altitudes under differing climatic conditions representing a valuable natural resource for the country. The forests not only play an important role in protecting the balance of natural ecosystem and environmental quality, but they are also of critical importance to the socio-economic development of the country.

In this context, the Royal Government of Cambodia (RGC) has embedded reform of the forestry sector within the Cambodian National Strategic Development Plan (NSDP) 2009-2013. Under the policy of the fourth legislature, six activities need to be implemented in order to ensure sustainable forest management and eternity environmental protection thereby contributing to national economic development and the use of forests to improve the livelihoods of people living in rural areas. The Forestry Administration (FA) as professional forestry institution has been given the task of implementing the RGC's policies on forest reform, especially to improve the forest management efficiency and good forest governance.

However, with the present status of Cambodian forestry reform it is still along way to accomplish the forestry reform. ITTO has been a partner to the FA by supporting the Strengthening Capacity of Forest Law Enforcement and Governance project. This project directly addressed the needs identified by the FA staff themselves, whom had recognized the necessity to improve the forest law enforcement in order to enable them to effectively suppress illegal forest activities.

This Technical Report presents the outcomes of the aforementioned project that has been successfully implemented by FA. The publication was compiled and published by the FA with the financial support of ITTO. The FA is strongly convinced that this project has substantially contributed to the enhancing FA's capacity in forest law enforcement and therefore, will play an essential role in achieving the forestry reform objectives.

On behalf of the FA, I would like to express our profound gratitude to ITTO, for its excellent partnership with the FA and to the Governments of Japan, the United States of America, Australia and Republic of Korea for their funding support. Special thanks should also go to Dr. Hwan Ok Ma, the ITTO Projects Manager for his continued support during the entire course of the project implementation.

Phnom Penh, 30 June 2012

CHHENG KIMSUN

The Delegate of the Royal Government of Cambodia
Chief of Forestry Administration

Acknowledgements

We acknowledge with sincere appreciation and gratitude the invaluable contribution and support of numerous government and non-government agencies, different forest stakeholders, funding donor governments, executing and cooperating agencies, in making possible the successful completion of the Project, entitled "Strengthening Capacity of Forest Law Enforcement and Governance in Cambodia"

We are particularly indebted to Mr. Emmanuel Ze Meka, Executive Director of the International Tropical Timber Organization (ITTO), the Governments of Japan, U.S.A, Australia and Republic of Korea for providing the financial support and thereby allowing the project to become a reality. We also like to thank the ITTO Reforestation and Forest Management Project Manager, Dr. Hwan-Ok Ma for his technical and operational advices during his regular visits to and attendance of the Project Steering Committee meetings. Our special thanks should also go to Mr. Shigato Ikeda of Forestry Agency of Japan, Mr. Mishinichi TAMAMITSU of Japan Embassy, Mr. Junhani Platt of the USA Embassy, Mr. Yong-Shin Kang of Republic of Korea Embassy, Mr. SATO Takayuki as Chief Advisor to the CBFS II, Mr. Hiroshi Nakata of JICA and Technical Advisor to Forestry Administration who had provided give invaluable comments and advises during the PSC meetings.

We are also very thankful to the former and present leadership of the Forestry Administration, Ministry of Agriculture, Forestry and Fisheries of Cambodia for their interest in and support to the project implementation. Specially, we would like to express our gratitude to the former Director General of the Forestry Administration, Excellency Mr. Ty Sokhun; Excellency Mr. Chheng Kim Sun, Delegate of the Royal Government of Cambodia; Director of Forestry Administration, Ms. Ou Syrita; Mr. Sear Ra, Mr. Ung Sam Ath, Deputy Directors of Forestry Administration; Excellency Mr. Tim Sypha, Director of Legislation and Law Enforcement Department, Dr. Sokh Heng, Acting Director of Forest and Wildlife Research and Development Institute for their valuable assistance and support during the various stages of project implementation.

We are also very thankful to Excellency Mr. Hy Sophear, Secretary of State of Ministry of Justice and Excellency Mr. Phov Somphy, Director General of Ministry of Justice for their valuable assistance in providing the lectures on Criminal Code and Procedure of Criminal Code to the Forestry Administration Staff.

We also would like to express our deep appreciation to the national, international consultants and project staff: Mr. Soun Sovann, Mr. Pin Phany, Mr. Pak Chealy, Mr. Chornng Tol, Ms. Sar Sophyra, Ms. Hau Sovanmony, Mr. Sron Sophal, Mr. Ouk Kim San, Mr. Loung Chantanaroth, Ms. Lam Sokuntheara, Mr. Neth Chantha, Ms. Maria Victoria Icasiano Dioko, Mr. Menelio G. Manny Media, Dr. Ismail Roslan, Dr. Hiras P. Sidabutar, Mr. Mikael Kamp Serensen, Mr. Ly Choubeang, Mr. Tep Nheata, Mr. Dy Sokom and Mr. Soy Sarith for their unrelenting dedication and tireless work that had greatly contributed to the successful implementation of the project.

Our final thanks should go to those who shared their insights, wisdom, and expertise during the series of consultation dialogues, discussions, workshops and trainings. In particular, we are highly indebted to the Governors and Deputy Governors of Kratie, Pursat, Kampong Thom and Preah Sihanouk Provinces, DANIDA, Wildlife Alliance, GRAS, JICA, Chief and Deputy Chief Governor of Chhlong, Prek Prasob, Santuk, Sandan, Prey Nup, Kampong Seila, Phnom Kravanh and Krakor Districts, Kbal Bei Community Forestry, O Baktra Community Forestry, O Baktra primary school and other persons and institutions who also had contributed and provided inputs to the project implementation.

List of Abbreviation and Acronym

BB	Bamboo
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CTS	Case Tracking System
DF	Deciduous Forest
EF	Evergreen Forest
ERDAS	Earth Resources Data Analysis System
ESRI	Environment System Research Institute
ETM+	Enhanced Thematic Mapper Plus
FA	Forestry Administration
FAO	Food and Agriculture Organization of the United Nations
FLEG	Forest Law Enforcement and Governance
GIS	Geographic Information System
GISTDA	Geo-Informatics and Space Technology Development Agency
GRAS	Geographic Resource Analysis and Science
GPS	Global Position System
HQ	Headquarters
IFOV	Instantaneous Field of View
ITTO	International Tropical Timber Organization
JICA	Japan International Cooperation Agency
MF	Mangrove Forest
NF	Non-Forest
OF	Other Forest
PD	Project Development
PIR	Preliminary Investigation Report
PMT	Project Management Team
PPD	Pre Project Development
RGC	Royal Government of Cambodia
RMS	Root Mean Square
RP	Rubber Plantation
SE	Semi-Evergreen Forest
SOP	Standard Operating Procedures
SPSS	Statistical Package for the Social Sciences
TM	Thematic Mapper
UTM	Universal Transverse Mercator
WE	Wood and Shrub Land Evergreen
WD	Wood and Shrub Land Dry

Summary

ITTO-assisted project PD 493/07 Rev. 1 (F) "Strengthening Capacity of Forest Law Enforcement and Governance in Cambodia" was an institutional capacity building initiative implemented from January 2009 to June 2012. Its specific objectives were to strengthen capacities for forest law enforcement and governance, and to develop tools to enable effective suppression of illegal forest activities. The development objective of the project was to contribute to implementation of the government policy platform in combating illegal logging, forest land clearing and land encroachment in order to manage and use forest resource in a sustainable manner. The expected outputs of the project were i) appropriate facilities available, ii) forest law enforcement training implemented, iii) effective monitoring and documentation of illegal forest practices, iv) effective judicial processing, and v) effective extension function.

Planned activities of the project, 17 in total, had been fully executed to deliver defined outputs. Purchased and installed equipment and facilities have enabled the FA Cantonments in four provinces to effectively monitor and document forest crimes; implementation of the training program had trained 25 trainers of forest law enforcement, and 245 FA staffs on the conduct of forest patrolling and documenting forest crimes; guidelines on forest patrolling, CTS operation have been developed and tested; national forest cover status in 2010 has been assessed; over one thousand forest crime cases occurring in 2009-2011 period had been reviewed by the Forestry Administration with the assistance of national legal consultant; 270 FA staffs had taken part in the consultative meetings with prosecutors and judges in four provinces; and 1,227 stakeholders had participated in the extension workshops organized in four provinces.

Defined outputs of the project had been delivered and the specific objectives achieved within the sanctioned project budget US \$ 561,195 by ITTO and US \$ 123,167 by the Royal Government of Cambodia (RGC); by achieving the specific objectives, the project intervention has been able to strengthen the capacity of the Forestry Administration in forest law enforcement. It is strongly recommended to replicate the project intervention to other provinces as well, taking the rich forest resource provinces as the priority in order to safeguard the remaining forests from illegal activities. Without replicating the project intervention to other provinces, sustainability of the remaining forests is under threat in light of the threatening current rate of deforestation.

1. Introduction

Cambodia is blessed with a relatively rich forest resources, with an estimated area at 10.7 million hectares based on the assessment of national forest cover change in 2006 by the Royal Government of Cambodia (RGC), which was around 59% of the land area of the country. The forest cover comprises evergreen forest, semi-evergreen forest, deciduous forest and other forest (Forestry Administration, 2008). The forests also provide a number of valuable non-wood resources such as rattan, bamboo, resins, palms, fruit trees, and medicinal plants. They not only play an important role in protecting the environment, but they are also of critical importance to the socio-economic development of the country. However, the forests are under threat by the rampant illegal forest activities brought about by the inadequate forest law enforcement and governance in the country.

The main problems identified by completed pre-project PPD 128/06 Rev.1 (F) entitled "Strengthening Capacity of Forest Law Enforcement and Governance in Cambodia" was the decline in total forest cover of about two million hectares in the last two decades. The main causes of the deforestation and forest degradation were identified as forestland clearing and land encroachment for agriculture purposes, illegal logging, improper management of concession areas, protected areas and non-concession areas, limited reforestation activities, population pressure and poverty. Indeed, these causes were observed on the ground; but they were actually the consequence of a rooted, hidden problem. Upon retrospect, thorough discussion and brain-storming, the stakeholders were able to identify the driving forces of the problem which were the weak forest law enforcement by the government and the lack of needed tools and facilities for enforcing forest laws and regulations. Therefore, the key problems addressed by the project were "weak capacity in forest law enforcement and governance, and lack of tools and facilities to suppress illegal forest activities".

To help strengthening the capacity of the FA to enforce forest laws, an ITTO-assisted project PD 493/07 Rev. 1 (F) entitled "Strengthening capacity of forest law enforcement and governance in Cambodia" had been developed and fully implemented. This project was a follow up to the pre-project PPD 128/06 Rev.1 (F). It had been implemented from January 2009 to June 2012. The development objective was to contribute to implementation of the government policy platform in combating illegal logging, forest land clearing and land encroachment in order to manage and use the forest resources in a sustainable manner. The specific objectives of the project were to strengthen the capacity of forest law enforcement and governance and to develop tools to enable effective suppression of illegal activities. The project was basically an institutional capacity building through increased facilities and training. Five outputs had been defined namely i) appropriate facilities available, ii) forest law enforcement training implemented, iii) effective monitoring and documentation of illegal forest practices, iv) effective judicial processing, and v) effective extension function. In order to deliver the outputs, 17 activities corresponding to the indirect causes of the problem were planned and fully executed.

This report is intended to be used as a reference for forest law enforcement. It is expected that the knowledge and experience gained from the project implementation will help develop appropriate measures and means to enable FA to effectively suppress illegal forest activities. The technical report is also available on the project website: <http://www.twgfe.org/itto>.

2. Methodologies

2.1. Optional methodology

The key problem addressed by the project was the weak capacity of the Forestry Administration in FLEG. Consequently, the specific objectives of the project were defined as “to strengthen capacity of FA in FLEG and to develop tools to enable effective suppression of illegal forest activities”. In order to achieve the specific objectives, five outputs were to be delivered; two outputs under the first specific objective and three outputs under the second specific objective. In total, 17 activities were to be implemented in order to deliver the planned outputs and to achieve the specific objectives.

At second thought, it was unnecessary to define two specific objectives. In fact, lack of tools is one of the main causes of the problem addressed by the project. The specific objective of the project could have simply been defined as “to strengthen the capacity of FA in FLEG”. This specific objective could have been achieved through delivery of only three outputs namely: i) increased availability of needed resources, ii) effective conduct of monitoring, documentation and judicial handling of forest crimes, and iii) increased support of stakeholders. About 10-12 activities would be needed to deliver the outputs and achieve the specific objective.

Under the optional methodology, the cause-effect relationship could be more clearly comprehended, the vertical logic would be stronger, the project intervention would be more relevant to solve the problems at hand and to achieve the specific objective. That is to say that the optional methodology would have achieved the specific objective more effectively.

2.2. Applied methodology

The methodology actually applied in achieving the specific objectives of the project can be summarized as follows:

- The key problem addressed by the project was fixed or given; it was identified during the pre-project phase through the interviews of 570 stakeholders comprising 270 FA staffs and 300 stakeholders of different groups. The key problem identified was “weak law enforcement capacity of FA” as defined in the project document
- During the project formulation stage, the key problem was thoroughly analysed. Five main causes of the problem identified were: i) lack of facilities, ii) insufficient FLE trained staff, iii) insufficient monitoring, iv) ineffective judicial procedures, and v) limited rural participation
- Corresponded to the main causes of the problem, five project outputs were defined, namely: i) appropriate facilities in place, ii) forest law enforcement training implemented, iii) effective monitoring and documentation of illegal forest practices, iv) effective judicial processing, and v) effective extension function.
- Each of the outputs would be achieved through execution of the pertinent activities as follows:

Output 1: Appropriate facilities in place

- ✓ Identify and purchase required equipment
- ✓ Install equipment

Output 2: Forest law enforcement training implemented

- ✓ Evaluate existing program
- ✓ Train trainers
- ✓ Train staff
- ✓ Conduct international dialogues

Output 3: Effective monitoring and documentation of illegal forest practices

- ✓ Develop patrolling procedures
- ✓ Prepare pocket guides on monitoring and documentation of illegal forest practices
- ✓ Update and maintain Case Tracking System (CTS)
- ✓ Conduct satellite imagery studies
- ✓ CTS data collection and entry

Output 4: Effective judicial processing

- ✓ Establish coordination meetings with Royal Prosecutors
- ✓ Provide training on legal procedures to local FA staff
- ✓ Provide legal assistance for FA

Output 5: Effective extension function

- ✓ Provide forest laws and regulations extension to stakeholders
- ✓ Prepare extension materials

- The hypothesis made was “proper execution of the activities will deliver the outputs which in turn will achieve the specific objectives and contribute to the development objective”
- Achievements of the project intervention were assessed using the logical framework as contained in the project document; results of the assessment were used to accept or refuse the hypothesis made
- Data collection was carried out by the project staffs or by the consultants assigned to assist in the execution of the respective project activities.

3. Presentation of data

The data collected during the implementation of individual activities are presented by order of output in the subsequent sections thus correspond to the outputs defined in the project document.

3.1. Output 1: Appropriate facilities in place

The FA cannot operate to suppress illegal forest activities without appropriate facilities. While government departments are often under resourced, there are certain facilities that are required to get any job done. In the case of forest law enforcement, the staff tasked to carry out the enforcement must have the means to conduct patrols, the equipment necessary to collect evidence, and the ability to use that equipment. In addition, any staff in duty must be able to function in a manner that protects their personal safety.

Under completed pre-project PPD 128/06 Rev. 1 (I), two stakeholder surveys on FA's need for resources were conducted through interviews of 226 people. The surveys disclosed that most of the FA offices were lacking operational facilities including photocopier machines, vehicles, computer plus printer sets, lcoms, GPS, cameras and motorcycle. The findings of the surveys were used as the basis for purchasing the operational equipments and facilities, in light of the available project funds. The items that had been planned to be purchased and actually purchased are as listed in Table 1.

Table 1. Planned and actual purchase of equipment and facilities

No.	Item	Planned purchase	Actual purchase
1.	Vehicle 4 WD	1	1
2.	Motorcycle	2	4
3.	Desktop computer	16	21
4.	Notebook	2	2
5.	Printer	2	14
6.	Photocopy machine	1	1
7.	GPS	21	32
8.	Radio communication	21	21
9.	Video camera	1	1
10.	Camera	3	14
11.	Voice recorder	1	1
12.	Desk	7	7
13.	Meeting table	1	1
14.	Chair	17	17
15.	Cabinet	4	4
16.	LCD projector	1	1
17.	Fax-phone machine	1	1
18.	Wall screen projector	1	1
19.	Cable printer	-	1
20.	Connector network	-	1
21.	Memory stick	11	11
22.	Flash drive	-	13
23.	Dry cell battery	-	4
24.	Scene of satellite imagery	18	19
25.	Set of solar panel	-	7

As shown in Table 1, particular such equipment and facilities as motorcycle, desk computer, printer, GPS, camera, flash drive and solar panel had been over-purchased. The quantities actually purchased were based on the apparent, actual need. The deviation in the procurement of equipment and facilities, however, did not significantly alter the budget allocation and had posed no problem to the financing of individual activities. Beside, the deviation had been duly reported to and endorsed by the Project Steering Committee.

3.2. Output 2: Forest law enforcement training implemented

Based on the information collected through to the two surveys and two national workshops under pre-project PPD 128/06 Rev.1 (F), the main problem facing forest management in Cambodia was the decline in total forest cover of about two million hectares in the last two decades. The main causes of the deforestation and forest degradation were identified as forestland clearing and land encroachment for agriculture purposes, illegal logging, improper management of concession areas, protected areas and non-concession areas, limited reforestation activities, population pressure and poverty. These causes were in fact the result of weak law enforcement and governance by the FA. There were five main causes of the weak law enforcement identified which included lack of facilities, insufficient training of staff on forest law enforcement, insufficient monitoring, ineffective judicial procedures and limited rural participation.

3.2.1 Training need assessment

To improve the capacity of forest law enforcement, project PD 493/07 Rev. 1 (F) has conducted a number of self-assessments. Two studies were carried out in 2009 in order to identify the FA staff to be trained and the topics needed for training. The first study by Mr. Pin Phanny (2009) resulted in a report entitled "Evaluation of Existing Human Resources of Local FA for the Training Needs". During this study, 466 people of eleven target FA Cantonments were interviewed to evaluate training need. Based on the information gathered it was disclosed that 99.80% of the interviewees expressed the need for capacity improvement through comprehensive training as shown in Table 2.

Table 2: Training needs as expressed by interviewees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	.2	.2	.2
	Yes	465	99.8	99.8	100.0
	Total	466	100.0	100.0	

The survey also disclosed that 78.10% of the interviewees expressed the need for training at FA Triage level, 13.50% expressed the training at FA Division level, 7.50% expressed the need for training at FA Cantonment level; only 0.90% expressed the need for training at FA Inspectorate level as shown in the Table 3.

Table 3: Level of FA staff in need of training

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid FA Inspectorate	4	.9	.9	21.9
FA Cantonment	35	7.5	7.5	7.5
FA Division	63	13.5	13.5	21.9
FA Triage	364	78.1	78.1	100.0
Total	466	100.0	100.0	

The survey report also recommended the FA to conduct training for trainers on forest law enforcement. These trainers would then be responsible for providing training to staff of FA Divisions and FA Triages, thereby reducing cost in hiring outside trainers. In addition, the report also recommended that the following subjects be included in the training program:

- Monitoring, investigating and collecting information on forest crimes;
- Analyzing and verifying collected information;
- Planning and conducting measures for prevention and suppression of illegal activities;
- Use of GPS and forest maps;
- Procedures for filing complaints in courts regarding forest crimes; and
- Elucidation of the existing judicial process.

The report further suggested that additional survey on essential topics for improving the capacity of local FA staff be conducted. In April 2009, Mr. Suon Sovann was assigned to conduct such a survey wherein the survey team met with 156 FA staff. The information collected through questionnaires and analyzed using SPSS software suggested that the necessary subjects to be included in the training program were:

- Code of criminal procedure
- Procedures for suing to all levels of courts and closing forest offense cases
- Use of GPS and maps
- Conflict management and forest offense resolution
- Procedures for investigation, intelligence, arrest and evidence confiscation
- Procedures for data collection and confiscation of encroached and grabbed forest lands
- Preparation of forest offense prevention and suppression plans
- Procedures for preparation of forest offense filing and documentation
- Wildlife identification
- Procedures for preparation of forest offense's preliminary investigation report
- Communication skills
- Laws on forestry
- Procedures for forest offence evidence management and returning transportation means
- Wild flora and fauna trade in accordance with CITES provisions, and
- Land laws.

To strengthen the capacity of forest law enforcement and governance, it was indispensable to develop a training program to guide in the training of FA staff. The essential elements of such a training program should include the objectives, expected results and resource persons of the training as highlighted below.

Objectives

The objectives of the training program were to guide trainees:

- To learn the fundamental laws and other regulations for forest law enforcement
- To understand the Cambodian judicial system
- To understand the proper procedures for searching, investigating, filling cases for courts, reporting, preparing the prevention and suppression plans, preserving and resolving of evidence
- To be familiar with the different existing networks on cross-border issues such as illegal logging as well as illegal trade of timber and wildlife
- To know the procedures for proper harvesting and its monitoring
- To understand the differences between endangered, rare and common species, and how to identify them.

Expected Results

At the end of the training program, the trainees were expected to gain the following knowledge and skills:

- Improved knowledge on forestry laws, other relevant laws and regulations
- Effective conduct of searches, investigations, intelligences, reporting and documentation
- Upgraded general knowledge on prohibition of forest harvesting, wildlife hunting, transporting and trading of forest products
- Improved knowledge on the use of GPS and maps in identification of forest offense location
- Upgraded skills on conflict management and resolution, and communication; and
- Better knowledge on document management.

Resource persons

For the training program to be efficient and effective, it was necessary to employ professional resource persons from the FA as well as other ministries and institutions such as the Ministry of Land Management, Urban Planning and Construction, Ministry of Environment, Ministry of Justice and International Experts.

3.2.2 Development of training program

Results of the training need assessment can be summarized as follows:

- To train 773 local FA staffs whose knowledge on forest law enforcement was rated medium level to down, for improving their capacity
- At least 20 capable staffs of FA (1 staff of Central FA, 4 staffs of FA Inspectorate, and 15 staffs of FA Cantonments) should be trained as trainers of forest law enforcement

- in order to reduce training cost in the long-term by not employing outside trainers which at the same time, would increase capability of FA human resource
- Each training course should include both theory and practice and have at least two weeks duration to allow the participants to comprehend the theory and gain full understanding on the application of the theory
 - To ensure field applicability of the skills taught, the training is best organized at Cantonment or Division level
 - Topics of the training courses should include forest laws and other relevant laws and regulations, such as criminal procedural code and strategies for prevention and suppression of illegal activities. Examples of such strategies are:
 - Strategy for monitoring, investigating and collecting information
 - Strategy for analyzing, verifying and reporting the information collected
 - Strategy for planning and conducting prevention and suppression of illegal activities on the scene, and
 - Strategy for filing cases of forest offense and resolving the cases through the courts in accordance with existing criminal procedural code
 - In order to ensure suitability of the training program to the need of the forestry sector for forest law enforcement, the national and international experts who are responsible for developing and implementing the training program should:
 - Conduct survey to collect additional important information on essential topics needed for improving capacity of local FA staffs
 - Consult with relevant experts of the Forestry and Wildlife Training Center and other concerned entities of the FA about the specifications of training topics and trainers as well as the development and the implementation of the training program
 - Due to the fact that nearly 90% of local FA staffs have poor knowledge on legal procedures, a legal consultant should be assigned to assist FA and prosecutors in the proper processing of forest crime cases.

Findings of the training need assessment had enabled the project to develop a sound training program that comprised four modules, namely:

1. Specialized training related to forestry issues (harvesting, wildlife identification, CITES and other cross-border issues)
2. Fundamental procedures in dealing with forest offenses (searches, intelligence, evidence gathering, and filling in documents for the court and Central FA)
3. Fundamental laws involved in law enforcement (forestry law, land law, code of criminal procedure, protected area law and other laws and regulations)
4. Specialized skills (communication, negotiation, conflict management and resolution, GPS and map reading and document management)

The trainings were conducted at the Forest and Wildlife Training Center in Phnom Penh, Cambodia to all levels of FA staff including Central FA and Local FA (Inspectorates, Cantonments, Divisions and Triages), not only concerning theory but also practical field work.



Photos 1-4. Conduct of the training course on forest law enforcement

3.2.3 Training of trainers

In total, 20 trainers on forest law enforcement had been trained under the project; they were selected from the senior staff of Central FA, FA Inspectorates and FA Cantonments.

3.2.4 Training of FA staff

In total, FA staff at different levels that had been trained were:

- 256 staff on forest law enforcement aspects
- 270 staff on crime codes
- 19 staff on use of computerized forest crime data base systems (CTS)

3.2.5 International training

The project had provided support to:

- 15 Chiefs of FA Cantonments to attend the ASEM Conference on “forest product trade and forest governance” in Phnom Penh
- Project Coordinator to attend the workshop on technology that promotes transparent timber trade in Asia and the Pacific Region held in Kuala Lumpur on 27-29 July 2011

3.3. Effective monitoring and documentation of illegal forest practices

The staff surveys conducted during the implementation of the pre-project identified limitation in forest crime monitoring. Accordingly, the project has developed procedures and guidelines as the tool for supporting FA staff to effectively conduct monitoring of forest operations.

3.3.1 Forest patrolling procedures

Illegal forest activities are usually the result of inadequate law enforcement such as inability to respond rapidly to forest crimes; insufficient facilities; inadequate ability and number of staff; insufficient public participation in forest management leading to a lack of trust between forest users and authorities and ineffective judicial procedures. All these issues have to be addressed tactically, strategically and simultaneously, in order to develop an effective and responsive law enforcement system for the forestry sector.

Patrolling is a tactic to detect forest crimes and help enforce forest laws by ensuring that enabling conditions for sustainable forest management are in place in the whole country. Through elimination of illegal forest activities, and by investigating and prosecuting perpetrators irrespective to those who conduct forest crimes will help the country to sustain the forest resources that provide substantial benefits to the local communities.

Through forest patrolling, activities on illegal logging, wildlife hunting, land grabbing and encroachment practices, will be suppressed and in turn will bring the market for forest products back to the ordinary demand-supply mechanisms, which will provide competitive advantage to the companies complying with the forest laws.

The patrolling procedures will also help forest rangers strengthened forest law enforcement in the whole country in the following ways:

- Enforce forest measures in order to reduce logging damage,
- Ensure that local people have the rights to use forest resources for family consumption,
- Understand procedures for solving forestry crime, and
- Obtain more information on the impact of logging on biodiversity, and identify and protect high conservation value forests.

The forest patrolling procedures that have been developed through internal meetings and brainstorming of FA officials and staff have four main elements, namely: i) patrolling operations, ii) equipments and facilities required for patrolling, iii) investigation, planning and suppression; and iv) case follow up.

The forest patrolling procedures that have been developed and trained to FA staffs are available at the project website: <http://www.twgfe.org/itto/publication.html>

3.3.2 Pocket field guide on monitoring and documentation of forest practices

The pocket field guide on monitoring and documentation of illegal forest practices have been developed by compiling the main articles from forestry laws, land laws, criminal codes, criminal code procedures and government orders related to forestry sector for purpose of strengthening and improving capacity of FA staff to conduct effective documentation and monitoring of illegal forestry practices in the field. It is also available on the project website: <http://www.twgfe.org/itto/publication.html>

3.3.3 Case Tracking System (CTS)

The System

The system was initially developed under the Project UNTS/CMB/001/DFI in year 2000. The system was based on the US Forest Service's experience, with the main objective to provide the FA management with a means to identify and implement law enforcement activities by appropriately recording and analysing incidents involving violations on forestlands and protected areas.

The system uses the Microsoft Access as the database software. One of the main advantages of using Microsoft Access is that it facilitates for integration with other Microsoft products such as Word, Excel, email, etc.

The system can be divided into three components:

- a. CST2 - The system software which include various look-up tables;
- b. CST-be - The data in the form of records
- c. FCCTS - The list of users or workgroup

CST2 is the main body of the system; it was developed using Microsoft Access and the micro and coding are written in Visual Basic.

CST2-be is the table of the database created by the data entry.

Table 4: Main data tables in the case tracking system (CTS)

Table Name	Description	Number of Data Items
PIR	Preliminary Investigation Report data	45
Person	People involved in cases	26
Impound	Items impounded by officials	6
Vehicle	Vehicles involved in cases	10

A number of look-up tables were prepared to aid in the entry of data. These included tables to store case codes, sub codes, nationalities, provinces, districts, and other often used in data entry. After the main data form had been programmed and its related data tables were designed, a series of general reports were prepared. This included a basic report designed to reproduce the data entered on the PIR form as closely as possible. Reports prepared at this stage included lists of people involved in cases, vehicles involved, property impounded, and a basic list of cases by types.

A selection menu has been designed, to allow users to decide what data are to be extracted for reports. The user can determine dates between which reports are to be selected, as well as limiting reports to a province, district, type, sub-type, and type of premise.

Implementation of user-level security

Security was implemented using the user-level security features built into Microsoft Access. This includes the ability to set different user access levels. Different groups of users can be defined, with new users allocated to groups with the desired permissions. Table 5 shows the user permission groups included in the case tracking software. Figure 1 depicts the user security features.

Table 5: User security levels included in case tracking system (CTS) software

Security level	Actions possible
Full Permissions	Can add new users, change anything.
Full User	Can run all menu items, can make changes to some tables, forms, and reports. Can access personal details.
Restricted	Can run data entry and most reports. Cannot access personal details
Read Only	Can read data, but cannot change data. Can run most reports, but cannot see personal details.

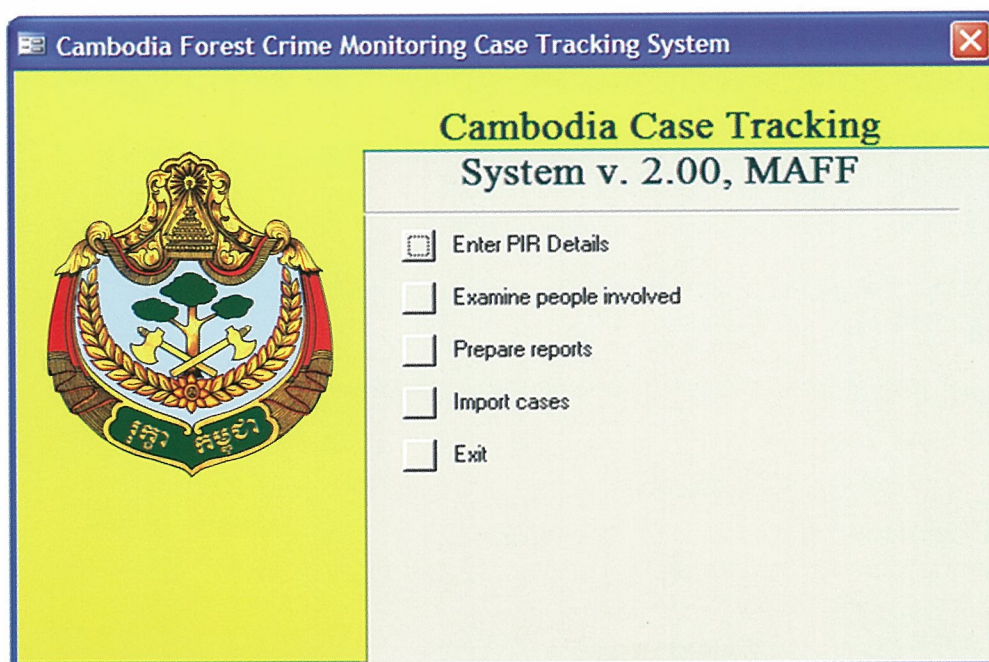


Figure1. User-level security features

Update and maintenance of the existing data base system

After reviewing the current database, a few changes and adjustments have been made to ensure that the system works smoothly, as follows:

a. Improve and refine the interface for data entry

The original interface for the current system was seen to be so gloomy; it had the features that did not differentiate the inputs from the labels.

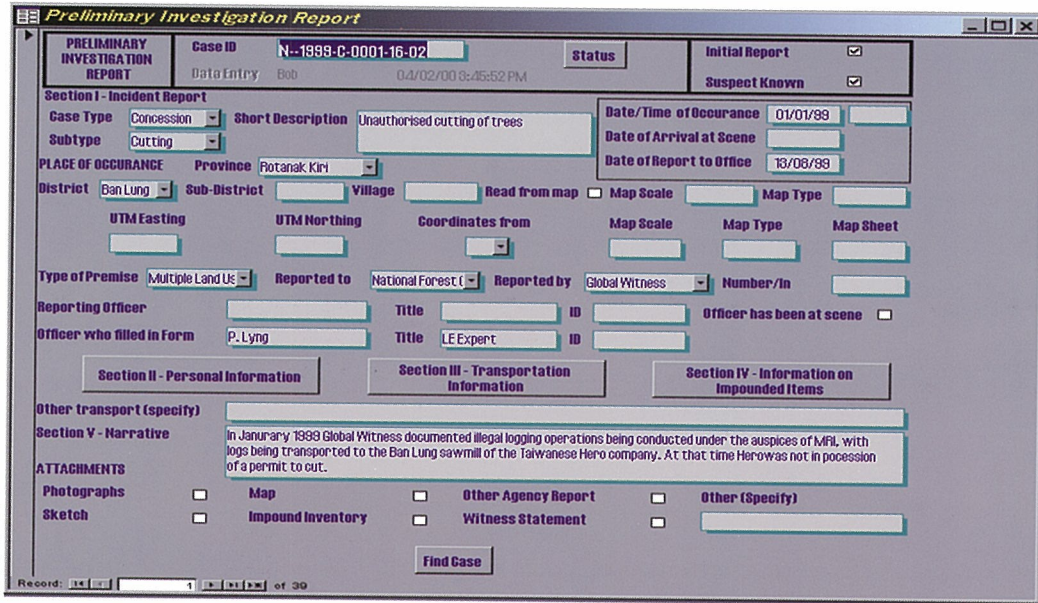


Figure 2. Interface for the system before improved

In the refined system, the choice of color was given a greater priority. It gives contrast view about the label and the input data. The shadow in the form was eliminated and the input data can be viewed clearly. The interface for the system in the provinces and at FA headquarters is shown in Figures 2 and 3.

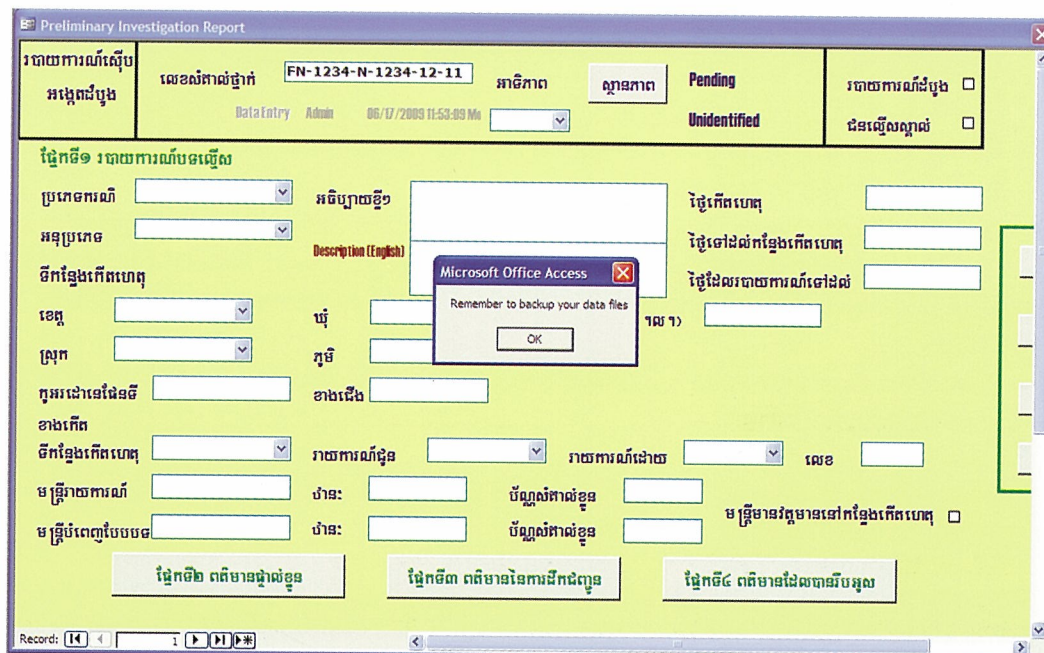


Figure 3. Interface for the system after improved in Khmer

Figure 4. Improved interface for the CTS in English

b. Improved various functions

- The date for extract data system and the function in CTS2 had been made consistent. This was necessary because under the system, the date used in the extract system was different from the date used in CTS2. As the result, the number of records from extract database system and the CTS2 were different. A common date is now being used for both CTS2 and the extract system which will produce the same number of records.
- The function of find/edit was refined and appears clearly in the system.
- The function of delete a case/record, i.e. Case_ID, was installed in the system. The system is now able to delete a Case_ID and its related records in all its linked tables.
- Two fields are added in table "PIR" to facilitate the columns for narrative and short description in Khmer.

c. Install a computerized data base system to systematically categorize and track forest crimes reported in other 15 computers

The system was installed on 15 computers, one each, in the four FA Cantonments and eleven FA Divisions in the four provinces (Kratie, Kampong Thom, Pursat and Preah Sihanouk) of the project sites.

Changes to the system that need to be installed in these provinces are as follows:

- The interface is to be performed in Khmer language.
- Most of data to be entered is still in English except in two labels: short description and narrative. These two labels will have both English and Khmer; the provinces will enter in Khmer while the FA HQ will give the translation in English.
- The Table CTS_be is left empty for the province.
- At the end of the month, the data entered will be sent to FA HQ for update.



Photo 5. Training on CTS to FA staff



Photo 6. Check FA staff work on CTS at Kampong Thom province

In the period from 2009 to 2011, a total of 4,148 cases of forest crime had been detected and entered to the date base systems at four offices of FA Cantonments and eleven Division Offices. Figure 5 shows the number of forest crime cases by province.

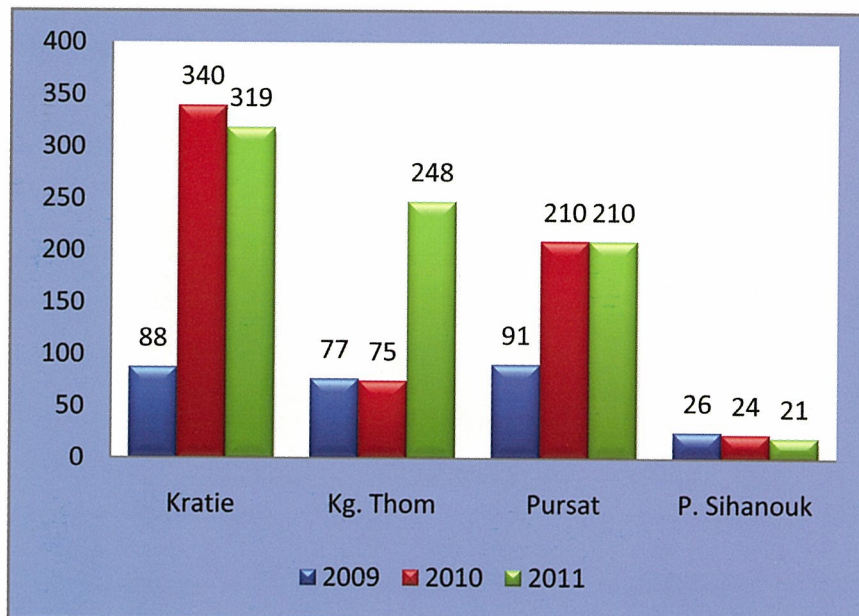


Figure 5. Number of forest crime case by province, 2009-2011

3.3.4 Satellite imagery studies

i. Landuse classes defined

The 2010 forest cover study classified landuse into 10 classes; the 2005/06 study used only 8 classes of landuse. Two more classes were included in the recent study; they are mangrove forest and rubber plantation. The 2010 study used landuse class definition produced by FAO as shown in Table 6.

Table 6. Classification scheme for the 2010 forest cover assessment

Land cover class	Description
Evergreen forest (EF)	Areas covered by trees maintain their leaves during the hold year.
Semi-evergreen forest (SE)	Contain variable percentages of evergreen and deciduous trees.
Deciduous forest (DF)	Comprise dry mixed deciduous forest and Dry Dipterocarp forests
Other forest (OF)	This land cover type includes re-growth, stunted forests, inundated forest and forest plantation. For example : inundated forest, Melaleuca leucadendron,, secondary growth forest and various plantation forests like Tectona Grandis as well as Acacia and Eucalyptus species, but excluding ochards
Wood and shrub-land evergreen (WE)	Areas dominated by evergreen woodland with a height less than 5 meters
Wood and shrub-land dry (WD)	Areas dominated by deciduous woodland with a height less than 5 meters.
Bamboo (BB)	Areas dominated by bamboo
Non forest (NF)	Areas with a non-forest cover
Mangrove forest (MF)	Areas dominated by Mangroves i.e. coastal salt tolerant species
Rubber plantation (RP)	Areas currently supporting, and areas reserved for, rubber plantation

ii. The satellite images

Landsat 7 ETM was used in the 2005/06 forest cover study; for the 2010 study, Landsat 5 TM was used instead because the former image had suffered from a malfunction due mainly to the occurrence of black stripes or gaps on the image. Landsat 5 TM was ordered from GISTDA (Geo-Informatics and Space Technology Development Agency) of Thailand, 19 scenes in total; the scenes covered the entire country. The Landsat 5 TM specifications are depicted in Table 7 and their coverage is shown in Figure. In practice, 15 scenes were sufficient as they have covered the entire land area of Cambodia. However, 19 scenes were ordered because 4 scenes were annoyed by cloud and fog. Geographic coverage of the images is as shown in Figure 6.

Table 7. List of Landsat 5 TM images

No.	Path/Row	Data of acquisition
1	124/51	04-February-2010
2	124/52	04-February-2010
3	125/50	11-February-2010
4	125/50	26-January-2010
5	125/51	11-February-2010
6	125/51	27-February-2010
7	125/52	09-December-2009
8	126/50	18-February-2010
9	126/51	30-November-2009
10	126/52	14-January-2009
11	126/53	10-January-2009
12	127/50	06-February-2009
13	127/50	25-February-2010
14	127/51	25-February-2010
15	127/52	09-February-2010
16	127/52	05-January-2009
17	127/53	05-January-2009
18	128/50	28-November-2009
19	128/51	28-November-2009

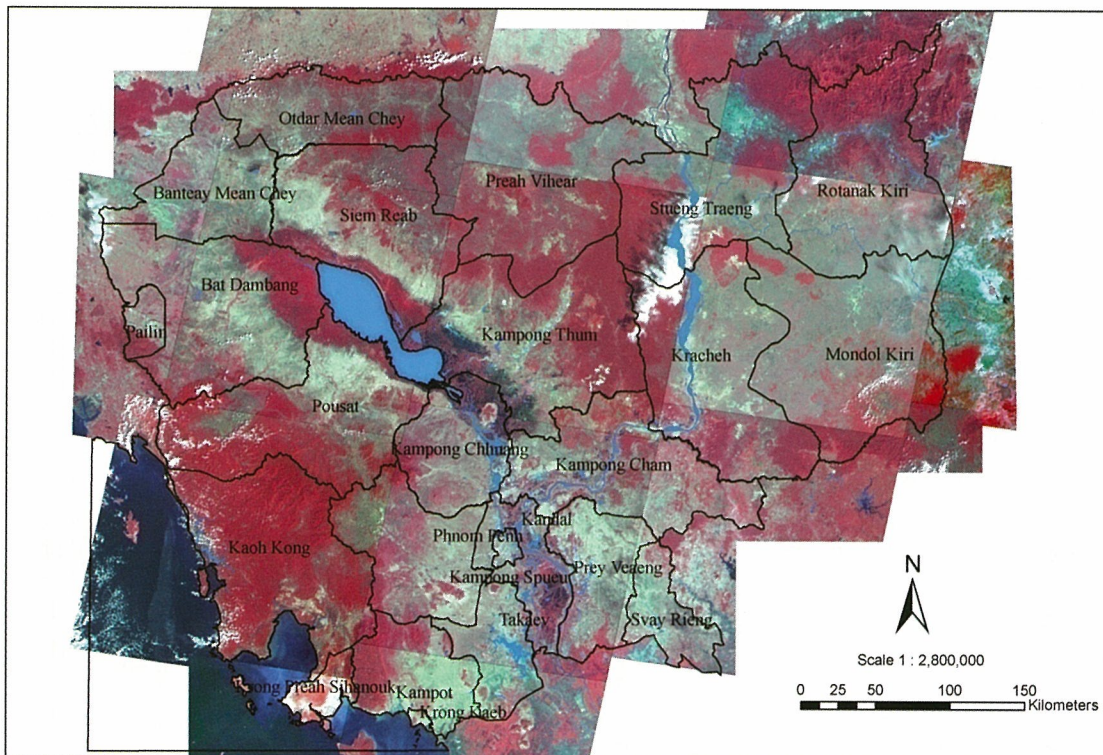


Figure 6. Geographic coverage of the satellite image Landsat TM 5

iii. Assessment procedures and techniques

The methodologies adopted in the 2010 forest cover assessment were those introduced by Congalton & Green (1999, 2009) which are the most common used procedures and techniques for accuracy assessment of maps derived from remote sensing. Those who interested in detailed procedures and techniques applied in the 2010 forest cover assessment are advisable to consult with the relevant reports by Chealy Park & Sophyra Sar (2010) and Tottrup Christian & Sorensen, Mikael K (2010).

The 2010 forest cover assessment was tasked to the GIS and Remote Sensing specialist of FA with the technical assistance of GRAS A/S of the Department of Geography, University of Copenhagen Denmark, particularly in accuracy assessment of the mapped forest cover derived from the satellite images. The assistance included development of sampling strategy, collection of data from sample points and analysis of the results.

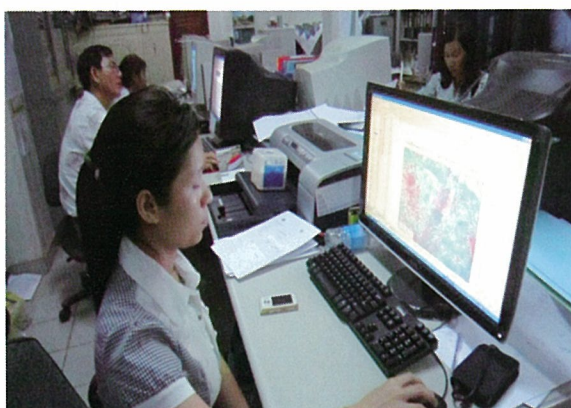


Photo 7. Image processing



Photo 8. Verifying forest cover classification

iv. Results of the forest cover assessment

a. Status of forest cover in 2010

Results of the 2010 hectares or 57.07 percent of Cambodia land area was 10,363,789 as shown in Table 8. According to Table 8, the total area of forest cover in 2010 was 57.07% of total land area and comprised 24.68% deciduous forest, 19.27% evergreen forest, 7.02% semi-evergreen forest and 6.1% other forests. Non-forest classes represented 42.93% of total country's land area. The 2010 forest cover map is depicted in Figure 7.

Table 8. Cambodia forest cover status in 2010

No.	Forest types	Area	
1	Evergreen forest	3,499,185	19.27
2	Semi-evergreen forest	1,274,789	7.02
3	Deciduous forest	4,481,214	24.68
4	Other forest	1,108,600	6.1
Total forest land		10,363,789	57.07
5	Non-forest	7,796,885	42.93
TOTAL AREA		18,160,674	100

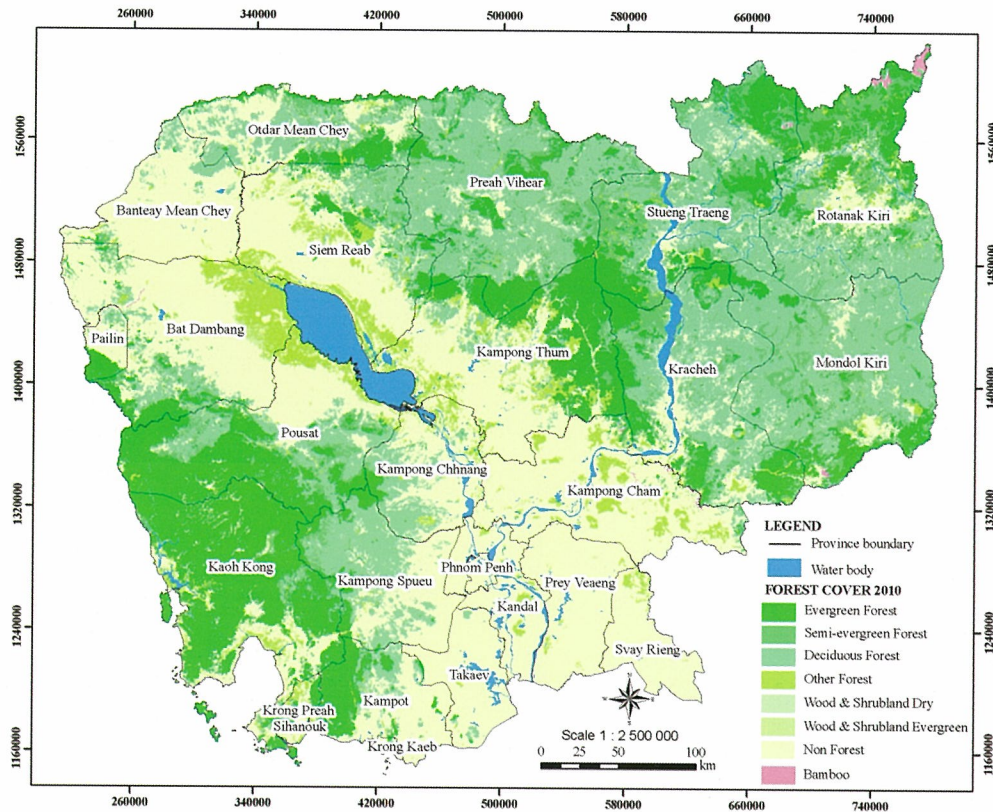


Figure 7. Cambodia Forest Cover Map in 2010

b. Forest cover changes

From 2006 to 2010

Comparing the forest cover data on 2006 to 2010 indicated that forest cover was declined from 59.09% in 2006 to 57.07% in 2010. The loss of 2% in forest cover is equivalent to 366,993 hectares as shown in Table 9. The decline in forest cover mostly occurred in the north-western part of the country, i.e. in the provinces of Battambang, Oddar Meanchey, Siem Reap and Banteay Meanchey; and north-eastern part of the country, i.e. Ratanakiri, Seng Treng, Kratie, Kampong Thom and Preh Vihear provinces. Deciduous forests represent the largest landuse change at 1.16% of total land area, equivalent to 210,885 hectares, followed by evergreen forest. The loss in forest cover was due to conversion to other non-forest uses or no forest type. Consequently, the greatest increase of land use class between 2006 to 2010 was on the non-forest type.

Table 9. Forest cover change in 2006-2010 period

No.	Forest types	Forest cover area				Change	
		2006		2010		2006-2010	
		Ha	%	Ha	%	Ha	%
1	Evergreen forest	3,668,902	20.2	3,499,185	19.27	-169,717	-0.93
2	Semi-evergreen forest	1,362,638	7.5	1,274,789	7.02	-87,849	-0.48
3	Deciduous forest	4,692,098	25.84	4,481,214	24.68	-210,884	-1.16
4	Other forest	1,007,143	5.55	1,108,600	6.1	-101,457	0.56
Total forest land		10,730,781	59.09	10,363,789	57.07	-336,993	-2.02
5	Non-forest	7,429,893	40.91	7,796,885	42.93	336,992	2.02
TOTAL AREA		18,160,674	100	18,160,674	100		

The data on forest cover in Table 9 clearly indicate that the rate of deforestation between 2006 and 2010 was 0.5 per annum. The change in forest cover in 2006-2010 is pictured in Figure 8.

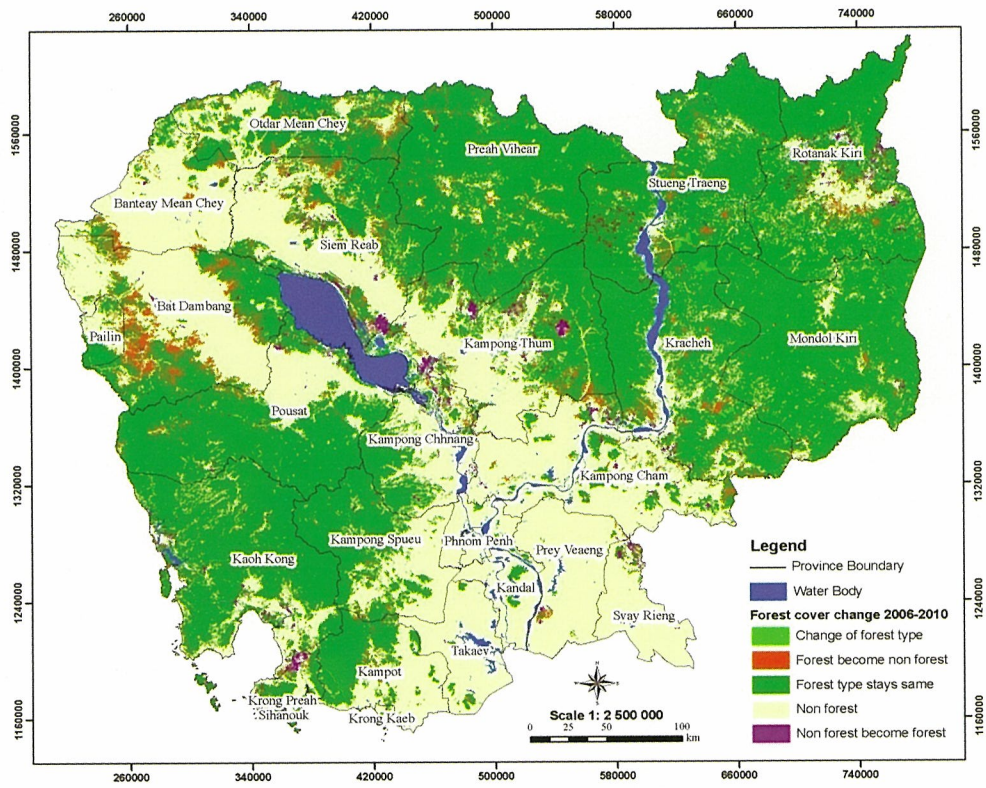


Figure 8. Forest Cover Change Map 2006-2010

From 2002 to 2010

Available data indicated that the forest cover in 2002 was 61.15% of the total land area of Cambodia. Comparing the figures of forest cover in 2002 and 2010 indicated that the loss of forest cover in 2002-2010 period was 740,502 hectares in total, representing 4.08% of total land area. Therefore, the annual rate of deforestation during the 2002-2010 period was

0.5%, pretty much the same as that rate in 2006-2010 period. The changes that occurred to different forest types in 2002-2010 are shown in Table 10. The change in forest cover in 2012-2010 is shown in Figure 9.

Table 10. Forest cover change by forest type in 2002-2010

No.	Forest types	Forest cover area				Change	
		2002		2010		2002-2010	
		Ha	%	Ha	%	Ha	%
1	Evergreen forest	3,720,493	20.49	3,499,185	19.27	-221,308	-1.22
2	Semi-evergreen forest	1,455,183	8.01	1,274,789	7.02	-180,394	-0.99
3	Deciduous forest	4,833,887	26.62	4,481,214	24.68	-352,673	-1.94
4	Other forest	1,094,728	6.03	1,108,600	6.1	13,872	0.08
Total forest land		11,104,291	61.15	10,363,789	57.07	-740,502	-4.08
5	Nom-forest	7,056,383	38.85	7,796,885	42.93	740,502	4.08
TOTAL AREA		18,160,674	100	18,160,674	100		

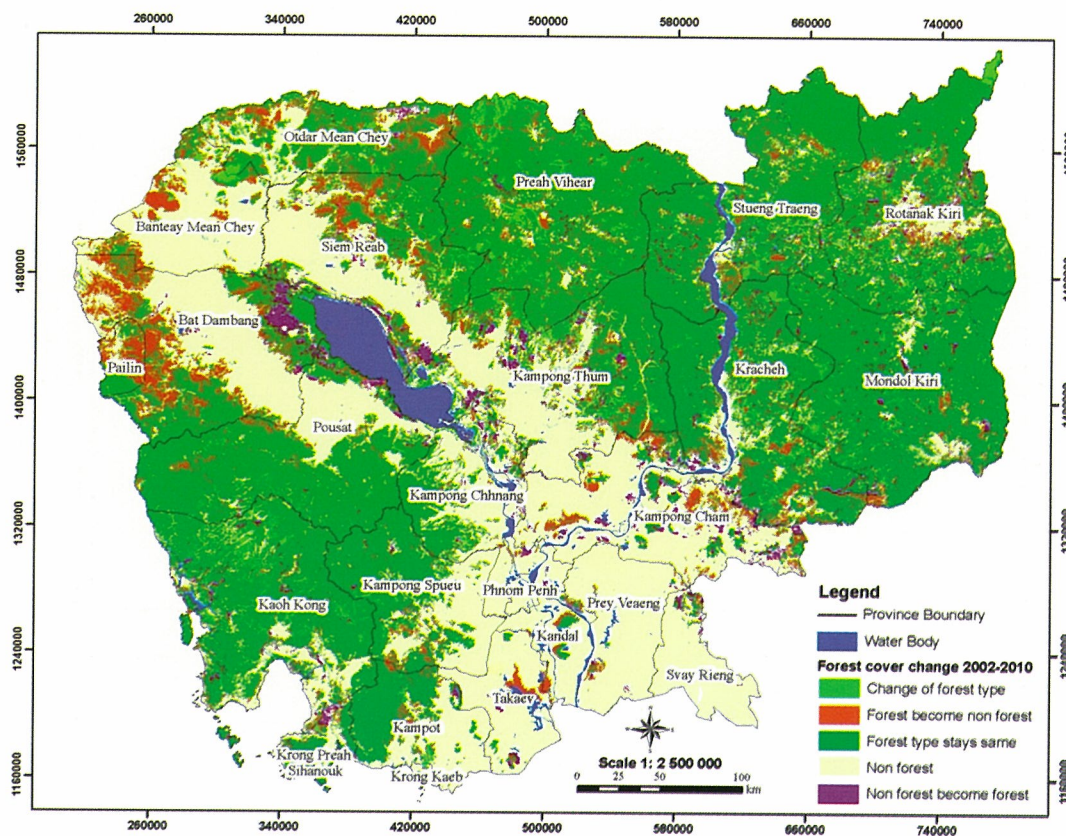


Figure 9. Forest Cover Change Map 2002-2010

The most significant changes in forest cover were deciduous forests, followed by the evergreen forests, which is similar to that situation in the 2006-2010 period. The status of forest cover in 2002, 2006 and 2010 is depicted in Table 11 which indicates the steady

increase in non-forest class area or continued conversion of forest to other, non-forest uses. Status of forest cover in 2002-2010 is depicted in Figure 10.

Table 11. Forest cover areas in 2002, 2006 and 2010

No.	Forest types	Forest cover area					
		2002		2006		2010	
		Ha	%	Ha	%	Ha	%
1	Evergreen forest	3,720,493	20.49	3,668,902	20.2	3,499,185	19.27
2	Semi-evergreen forest	1,455,183	8.01	1,362,638	7.5	1,274,789	7.02
3	Deciduous forest	4,833,887	26.62	4,692,098	25.84	4,481,214	24.68
4	Other forest	1,094,728	6.03	1,007,143	5.55	1,108,600	6.1
Total forest land		11,104,291	61.15	10,730,781	59.09	10,363,789	57.07
5	Non-forest	7,056,383	38.85	7,429,893	40.91	7,796,885	42.93
TOTAL AREA		18,160,674	100	18,160,674	100	18,160,674	100

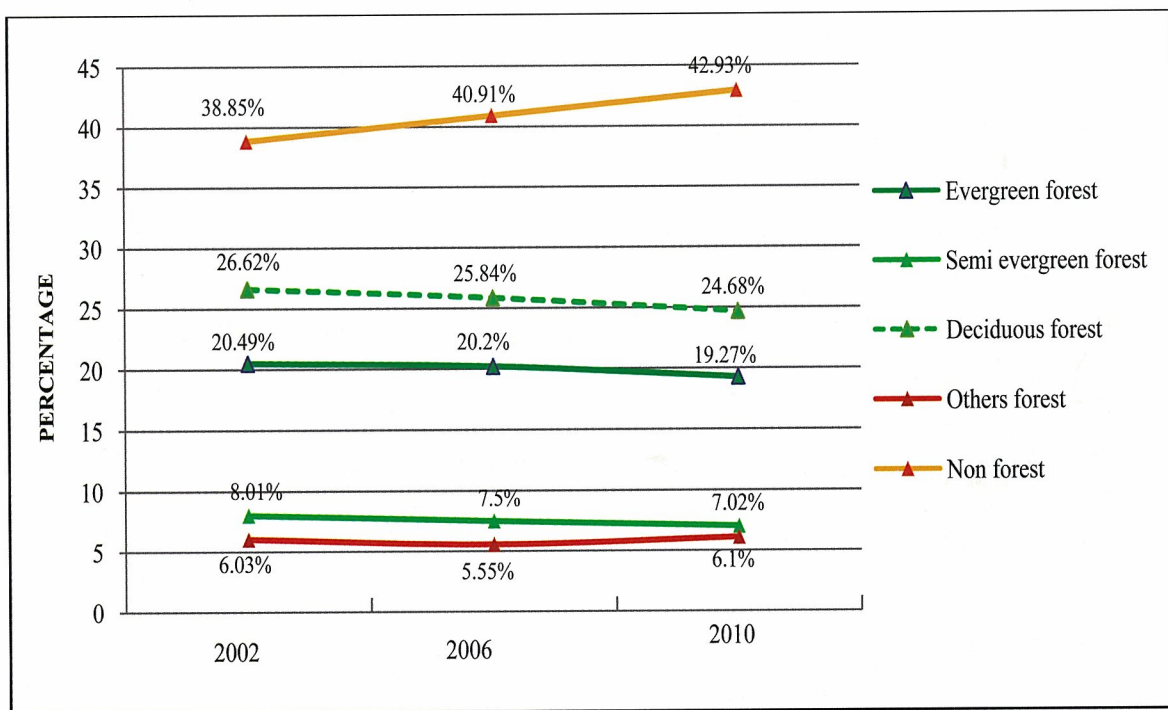


Figure 10. Comparison between forest cover type in year 2002, 2006 and 2010

3.4. Effective judicial processing

Based on the information collected through the interview of 570 people during the implementation of the pre-project it was found that ineffective judicial processing was a limitation of forest law enforcement. In order to improve the effectiveness of judicial process, the project had conducted three main activities, namely:

- 1) Establish coordination meeting with Royal Prosecutors;
- 2) Provide training on legal procedures to FA staff; and
- 3) Provide legal assistance to FA in judicial processes

3.4.1 Establish coordination meeting with Royal Prosecutors

In order to improve collaboration with provincial courts at the four provinces of project sites, four coordination meetings have been conducted between FA Cantonments and Royal Prosecutors and Judges of Pursat, Kratie, Kampong Thom and Preah Sihanuk provinces with a total of 115 FA staffs taking part in the meetings. The objectives of the meeting were:

- To solve the problems on judicial processing of the forest crime cases that had been sent to the courts by FA Cantonments
- To request the Royal Prosecutors and Judges to provide training on procedures for law enforcement and forest crime case filing and handling
- Strengthen collaboration between FA and Judicial Courts in law enforcement



Photo 9. Meeting at Kratie Province



Photo 10. Meeting at Kampong Thom Province



Photo 11. Meeting at Pursat Province



Photo 12. Meeting at Preah Sihanouk Province

As the result of the above meetings, a total of **539** forest crime cases have been completed and closed in four provinces (Kampong Thom-161 cases, Pursat-139 cases, Kratie-218 cases and Preah Sihanouk-21 cases).

3.4.2 Provide training on legal procedures to Forestry Administration staff

To strengthen the capacity of FA in forest law enforcement there was a need to train FA staff on “Criminal Code” and “Criminal Procedure Code”. In total, there were **270** participants of these trainings comprising FA staff at the central and local levels including the Inspectorates. The trainers involved in the training sessions were appointed by the Secretariat of State and Directorate General of Justice. The subjects covered by the trainings included:

- ❖ **Cambodian Judicial System**
 - Courts of First Instance
 - Appeal Court
 - Supreme Court
- ❖ **Prosecution**
 - Role of prosecution
 - Prosecutors
 - Hierarchy of prosecution
 - Functions of general prosecutor attached to Supreme Court
 - Functions of general prosecutor attached to Appeal Court
 - Functions of prosecutor at Courts of First Instance
 - Powers of prosecutors and deputy prosecutors
 - Filing without processing
- ❖ **Investigating Judge and Investigation Chamber**
 - Assignment by court president
 - Distribution of case files by court president
 - Withdrawal of case files from investigating judge
 - Special composition of investigation chamber of Appeal Court
- ❖ **Judicial Police**
 - Mission of judicial police
 - Composition of judicial police
 - Coordination of judicial police
 - Supervision of judicial police
- ❖ **Judicial Police Officers**
 - Qualification of Judicial police officers
 - Judicial police officers
 - Disciplinary procedures
 - Disciplinary sanctions
 - Prohibition of judicial police officers
 - Territorial jurisdiction of judicial police officers
 - Mission of judicial police officers
- ❖ **Judicial Police Agents**
 - Qualification of Judicial police agents
 - Oath of judicial police agents
 - Mission of judicial police agents
 - Misconduct committed by judicial police agents during performance of duties

- Disciplinary sanction
- Accreditation of other civil servants and public agents
- ❖ **Judgment and appeal of judgment**
 - Judgment of Courts of First Instance
 - Types of judgment
 - Opposition against default judgment and time limit for opposition motion
 - Appeals against judgment and time period for appeal
 - Types of appeal judgment
 - Opposition against default appeal judgment and time period for opposition motion
 - Request for cassation to supreme court and time period for request for cassation
 - Time limit for writing briefs and extension
 - Motion for review of proceeding



Photos 13-16. Conduct of the training course on criminal procedure code

3.4.3 Provide legal assistance to Forestry Administration

To speed up the judicial process of forest crime cases, the project had engaged a national legal consultant to assist the central FA and FA Cantonments in four provinces of the project sites. As the result, a total of 1,001 cases of forest crimes cracked down during the project duration from January 2009 to December 2011 were reviewed in depth. After reviewing the cases, the consultant made the conclusions and recommendations as outlined below.

Conclusions

- i. Through the project implementation, the legal capacity of four FA Cantonments of Kampong Thom, Kratie, Pursat and Preah Sihanouk has been improved particularly in the preparation of the forest crime cases, and in their understanding on the daily duties. However, their knowledge on case preparation remains relatively limited in terms of legal basis, so it is necessary to provide additional legal opinion and training for them
- ii. There are still loopholes in some information used as the basis for making charges in filing forest crime cases
- iii. Cases can be well prepared only if the enforcing officers have adequate technical knowledge on how to conduct the investigation; legal knowledge is also a must especially of the Code of Criminal Procedure, which is a rule that guarantees successful legal investigation
- iv. Formats of minutes taking and recording the investigation should be sufficiently produced and all the information garnered during an investigation stage should be precisely recorded; otherwise, it will spoil the investigation efforts
- v. Enforcement of Articles 96 and 98 of the Forestry Law has not been smoothly conducted; conflict in their interpretation also exists
- vi. Perpetrators have committed the crimes in several different forms to disguise FA officers that take risk of losing their lives during each cracking down operation. The perpetrators have used violent actions like, in some cases, over speeding their vehicles to crash into the checkpoint posts of the officials, exchanging fires with the officials.

Recommendations

- i. Training courses on roles of judicial police officers as set forth in the Criminal Procedural Code of the Kingdom of Cambodia and other legal references should be organized for the FA officers in their roles as judicial police officers so that they are capable to properly identify crimes.
- ii. FA should work in good cooperation with prosecutors and general prosecutors to enhance effectiveness of the law enforcement to protect properties of the state and society as a whole, particularly, in filing an appeal against any court decision which acquits the defendants; because the appeal by the FA alone could not revise the penalty as laid out in the judgment, meaning that the proscribed penalty in criminal cases could only be revised through an appeal brought by prosecutors and general prosecutors.
- iii. A letter of request could be also made for intervention over the case to a prosecutor, general prosecutor or even to the Minister of Justice, to keep them informed of the progress of the case so that a representative from the prosecutor's office could file an appeal for protection of social order and of the state's interests.
- iv. Further training should be organized for the FA officers as to the roles and duties of judicial police as stated in the Code of Criminal Procedure which was recently passed

and entered into effect on August 2007, consequently leading to limited knowledge of and loopholes in the law enforcement.

- v. Further training should be offered to the FA officers on how to analyse and identify the forest-related crimes for the purpose of ensuring proper filing of the forest crime cases and accusation against the alleged crimes.
- vi. The FA should establish some additional formats to ensure collection of sufficient information such as forms of Listening to Witness Statements and Clarification etc.

A total of 1,001 cases of forest crime that occurred in 2009-2011 had been reviewed by the FA with the assistance of legal consultant. The main tasks of the legal consultant were:

- To review the existing cases of forest crime and provide the advise to FA for improving the cases;
- To advise on judicial matters affecting the project;
- To liaise with judicial officials and the courts for the cases that had been sent to courts;
- To assist the FA in defending cases in the provincial courts; and
- To provide legal counsel relating to actions to be taken by FA.



Photo 17. Legal Consultant meeting with FA staff



Photo 18. Reviewing forest crime case

3.5. Effective extension function

The staff surveys conducted during the implementation of pre-project identified local participation as a key element in improving forest law enforcement. The surveys also identified a need for improved working relationship with provincial governments and other government agencies. Moreover, the surveys also disclosed that 51 % of respondents noted the lack in extension of forestry laws and other regulations related to forestry sector to local communities and stakeholders. In this regard, the project has conducted two main activities namely to provide forest law and regulations extension to stakeholders, and to prepare extension materials.

3.5.1 Provide forest law and regulations extension to stakeholders

To encourage participation of local communities and stakeholders in forest law enforcement, the project has organized extension workshops at the provincial and districts levels in the four provinces (Kampong Thom, Kratie, Pursat and Preah Sihanouk) of the project sites. The objectives of the workshops were:

- To raise awareness on forestry law and relevant regulations to all stakeholder
- To encourage local communities and other governments agencies to participate in forest law enforcement

The extension workshops were attended by representatives of villages, communes, districts, provinces, government agencies, private sector, media, community forestry and NGOs. The speakers were from the Legislation and Law Enforcement Department of FA and made presentation on:

- Forestry Laws
- Regulations related to forestry sector such as:
 - Government Proclamation No. 01 Bro. Kor dated 25 January 1999 on Measure of Management and Suppression Anarchy in Forestry Sector
 - Government Proclamation No. 06 Bro. Kor dated 27 September 1999 on Measure to Combating Anarchy of Forest Land Clearing and Land Encroachment
 - Government Order No. 01 BB dated 9 June 2004 on Preventing, Suppressing and Eliminating Forest Cutting, Burning, Clearing and Occupying Forest Land
 - Government Order No. 02 BB dated 20 September 2006 on Management and Control of Chainsaw Utilization
 - Government Circular No. 02 Sar.Ro dated 26 February 2007 on Illegal Encroachment of State Lands



Photos 19-20. Extension workshop in Kratie Province



Photos 21-22. Extension workshop in Santuk District, Kampong Thom Province

The extension workshops also distributed extension materials to the participants such as the above mentioned documents, forestry posters, brochures, etc.



Photos 23-24. Extension materials were provided to participants at the workshop

3.5.2 Prepare extension materials

To improve knowledge of local people and stakeholders on forest law enforcement and SFM, the project has produced several extension materials such as:

- Development of project website wherein info in the project has been entered to; the address is <http://www.twgfe.org/itto>
- Flagging of forestry banners at strategic points in the four provinces



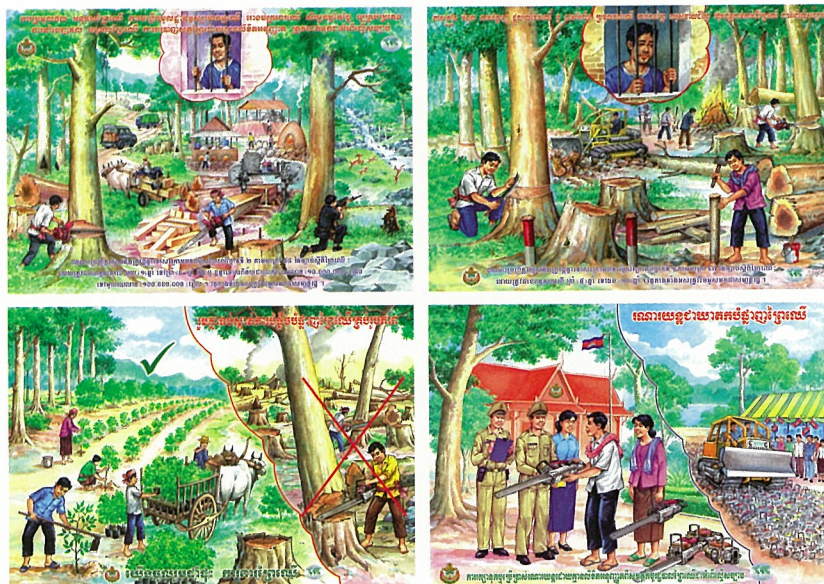
Photo 25. Forestry Banner in Kratie province



Photo 26. Forestry Banner in Preah Sihanouk province

- The four forestry posters to increase public awareness of illegal forest activities were:
 - “Stop destroying forests and participate in restoration and protection”
 - “Chainsaw is a Killer in destroying forests”
 - “Forest-Non Forest Harvesting, Establishment of Forest Industry, Sawmill, Handicraft, Kiln, Forest-Non Forest Export, Wildlife hunting without permit are illegal activities and the offenders shall be subject to the fines and penalties as state in article 98 of the forestry law”

- “Grid bark, poison, fell or uproot trees to collect stumps, clear forest and enclose it to claim ownership by illegal means, and the offenders shall be subject to the fines and penalties as stated in article 97 of the forestry law”.



Photos 27-30. Forestry Posters



Photo 31. Handing over of Forestry Poster to Monks at O Baktra Commune, Pursat Province



Photo 32. Meeting and distribution of extension materials to O Baktra Forestry Community, Pursat Province



Photos 33-34. Meeting and distribution of extension materials to Kbal Bei Forestry Community, Kampong Thom Province

In addition, different forms of materials have also been produced and disseminated to stakeholders which included:

- T-shirts with logos of ITTO, Forestry Administration and International Year of Forestry distributed to local people during the National Arbor Day, 9 July 2011, Kampot Province



Photo 35. T-shirts as an extension material

- Sign boards entitled “Prohibited forest land clearing and land encroachment” and provided to Community Forestry in Kampong Thom province



Photos 36-37. Sign boards placed at strategic points

- Comic book entitled “Forest and Our Future”



Photo 38. Handing over of comic books to FA staff at Pursat province

- Book notes and pens with logos of ITTO, Forestry Administration and International Year of Forestry produced and distributed to students at school and local people for environmental education



Photo 39. Book Note



Photo 40. Pen with Logo



Photo 41. Provide technical guidelines to FA staff at Pursat province



Photo 42. Provide book note and pen to students at the O Baktra Primary School, Pursat Province

4. Analysis and interpretation of the data and results

4.1 Appropriate facilities in place

The project had made available the various equipment and facilities as listed in Section 3.1, needed by the FA to suppress illegal forest activities. Procurement of such equipment and facilities was based on the results of the need assessment accomplished under completed pre-project PPD 128/06 Rev. 1 (F) involving **570** respondents. Procured equipment and facilities were installed at the provincial and local offices of FA in four provinces to support their operations in the suppression of illegal forest activities.

Availability of the operational equipment and facilities has now enabled the FA Cantonments and Divisions in the four provinces to monitor occurring forest activities and document forest crimes in a significantly more effective manner compared to the pre-project situation. As reported by the Chiefs of FA Cantonments in the four provinces, the incidence of illegal forest crimes had somewhat decreased towards end of the project implementation. Details on the reported incidence were not available yet to the author at the time this report was written but it shows the promising results of the project intervention.

The occurrence of illegal forest activities in Cambodia is the reflection of the state of forest law enforcement in the country. The stronger the capacity in law enforcement, the fewer the incidence of forest crimes is. One of the driving forces of the effectiveness of forest law enforcement is availability of operational equipment and facilities. In other words, delivered project output has been effectively utilized by the FA and contributed to achievement of the project objectives. It should be noted, however, that the equipment and facilities have been provided only to four out of **twenty-four provinces** of the country. Therefore, installed equipment and facilities is only a small fraction of the actual need. There is an urgent need to provide such equipment and facilities to other provinces of the country.

4.2 Forest law enforcement training implemented

FA staff training need was assessed by the two studies conducted under the project involving 622 respondents comprising 466 staffs of 11 FA Cantonments during the first study and 156 FA staffs during the second study. Among the important findings of the studies were: i) 99% of the respondents believed that more training of FA staff is required; ii) 98% of the respondents proposed to conduct comprehensive training on forest law enforcement, and iii) 66% of the respondents believed that training should take the form of on-site training.

Based on the results of the training need assessment, the training program that consisted of four modules was developed. The modules, together, captured the various aspects of forest law enforcement and reflected the different subjects recommended by the previous studies. The training modules have successfully used in the training of 245 FA staff at the Inspectorate, Cantonment, Divisions and Triage levels that the staffs are now able to conduct forest patrolling and documenting forest crimes in a more effective manner compared to the pre-project situation.

One of the determining factors of the FA capacity in enforcing forest laws is availability and sufficiency of trained personnel involved in the task. Operational equipment and facilities might be available but they are of no value if trained staffs are not available to operate them. Trained staffs are those personnel that have acquired knowledge and skills on the different

aspects of forest law enforcement including aspects of forest and forestry-related laws, forest patrolling, forest crime documentation, judicial handling of forest crime cases, etc.

Prior to developing an appropriate training program, training need was assessed by interviewing 570 FA staffs at different FA levels as discussed in the previous sections. Training of staff was implemented in accordance with the training program so developed. In addition, the project had also trained 20 FA staffs as the trainers in order to economize long-term training program and sent selected staffs to attend international forestry events for acquiring relevant experience in forest law enforcement initiatives.

At project completion, a total of 4,148 cases of forest crimes have been detected and properly documented by trained FA staffs in four provinces. In addition, around 24,615 hectares of forest land that hitherto was illegally occupied by individuals had been put back as permanent forest estate. These achievements would have not materialized had sufficient number of staff had not been adequately trained on relevant knowledge and skills.

Examination of the outcomes of individual activities on Output 3 as described above indicates that the output has actually been delivered. This achievement can only be expressed qualitatively because the indicators of the output presented in the logical framework matrix that was included in the project document are not at all measureable. In fact, this is one of the weaknesses of the project design; degree of achievement can not be assessed with precision. Despite this weakness, however, it is reasonable to conclude that training of FA staff had been successfully implemented as evidenced by the execution processes and outcomes of the activities on the training.

In conclusion, five project activities had been fully implemented and sufficient number of FA staffs trained on knowledge and skills relevant to forest law enforcement. The trained staffs are now able to conduct forest patrolling and document forest crime cases in an effective manner. That is to say that output of the project has been delivered and also directly utilized in the suppression of illegal forest activities.

4.3 Effective monitoring and documentation of illegal forest practices

In order to effectively monitor and document occurring illegal forest practices in the four provinces, it was necessary to develop the necessary tools. To facilitate adequate monitoring operations, a technical guideline on forest patrolling was developed. The guideline specifies the standard operating procedures (SOP) for conducting forest patrolling operations; what activities are to be performed and how to perform them, what resources are needed, are clearly presented in the guideline. FA staffs in the four provinces were also trained on the use of the SOP. The SOP was then applied in actual forest patrolling operations. Availability of equipment and facilities has enabled trained FA staff to use the SOP in a proper manner.

Beside the SOP of forest patrolling, a pocket guide for monitoring and documentation of illegal forest practices was also developed under the project. The pocket guide contains the main articles of existing forestry laws, land use laws, criminal codes and procedures as well as government orders. The main purpose of the pocket guide is to ensure full compliance of field operations to existing laws and regulations by allowing FA staff in duty to make reference to the guide whenever need arises in the field. In practice, the pocket guide prevents FA staff doing the forest patrol from making deviation from existing laws and regulation at all time.

Another tool that developed under the project was the Case Tracking System (CTS). The system, with the features as elaborated in Section 3.3, has been installed at four FA Cantonments and eleven FA Divisions in four provinces of the project sites. A total of 4,148 cases of forest crime detected during the forest patrolling operations in the 2009-2011 period had been entered to the system. In order to facilitate a proper operation of CTS, a technical manual was developed and sufficient number FA staffs were trained on the use of the manual. In fact, 28 FA staff had been trained on the operation of CTS under the project, allowing them to adequately document forest crime cases.

To facilitate development of a feasible and workable forest monitoring plan, an accurate forest cover map is unquestionably needed. When an out dated map is used, execution of monitoring plan may encounter serious problem in the field due to changes in forest cover. Indeed, forest cover change is occurring overtime in Cambodia due mainly to the rampant illegal forest activities. Assessments of forest cover of Cambodia were carried out back in 2002 and 2006. Therefore, it was considered necessary to do the assessment again in order to update status of forest cover and to produce reliable forest map that is also useful for the planning and operation of forest monitoring and patrolling, the essential elements of the cracking down of illegal forest activities.

For the assessment of Cambodia's forest cover, 19 scenes of satellite imagery were purchased and interpreted in two languages; results of the interpretation made were also verified through ground survey using random sampling measurement points. The verified image interpretation has been used as the basis for producing 3,000 copies of 2010 forest cover map; and the maps have been used in the implementation of activities on forest law enforcement in four provinces of the project sites.

Updating of the forest cover assessment is essential for the monitoring of the current status of forest resources and for providing basic information needed for the preparation of a strategic forest management plan. It also provides a benchmark indicator for achieving Goal 7 of the Cambodia Millennium Development Goals (CMDG). Results of the 2010 assessment indicate that the total forest cover declined from 59.09% in 2006 to 57.07% in 2010, equivalent to an average annual deforestation rate of 0.5% of the total country land area. This decline in forest cover means that an increase of 2.93% is required to meet the CMDG target of 60% forest cover by 2015.

The loss of forest cover is critical in such a fragile situation. The main reason for the decrease in forest cover is the increasing demand for land for agriculture, especially the conversion of forest land to Economic Land Concessions (ELCs). It is likely, therefore, that this trend will increase and the rate of decline in forest cover will accelerate. The current rate of planting of trees such as rubber, teak, acacia and eucalyptus will not compensate sufficiently the loss in forest cover to achieve the CMDG goal. Hence, in order to achieve 60% forest cover by 2015 (10,896,404 hectares), conversion of 532,615 hectares of non-forest land to tree plantations is definitely required.

By examining the processes of implementation of pertinent activities and results of the activities as elaborated above, one would conclude that effective monitoring and documentation of forest crime cases have been realized in the four provinces of the project sites. The exact degree of realization is, however, unclear because no measurable indicators were available in the project document to exactly measure achievement. In fact, this is the weak point of the project design that has to be removed from similar future projects.

In conclusion, the project output “effective monitoring and documentation of illegal forest practices” had been satisfactorily delivered through the full implementation of five project activities. The first activity had produced the SOP for forest patrolling; the second activity had developed the pocket guide for forest monitoring; the third and fifth activities had dealt with the CTS for forest crimes that allows proper documentation of forest crimes; and the fourth activity had successfully carried out the 2010 forest cover assessment. Therefore, this particular output has been fully delivered.

4.4 Effective judicial processing of forest crime cases in place

In order to perform judicial processing of forest crime cases, the fundamental conditions that has to be met are: i) the judicial institutions at different levels of government are supportive of the process; ii) sufficient FA staffs trained on special skills relating to legal procedures; and iii) provision of legal assistance to FA in the process.

As regards the support of judicial institutions, FA had organized four coordinative meetings between FA Cantonments with Provincial Royal Prosecutors and Judges in four provinces of the project sites which were attended by more than one hundred participants. During the meetings, the objectives of forest law enforcement were elucidated, well understood and consented to by the participants. In addition, the operational strategy to achieve the objectives was also formulated and agreed to by the parties involved. To support judicial processing of forest crime cases, 270 staff of FA at different levels have been trained on criminal codes and legal procedures.

With respect to legal assistance to FA in judicial processing of forest crimes, an experienced national lawyer was employed by the project as the legal consultant. The consultant had reviewed 1,001 cases of forest crime that occurred in 2010-2011 period and provided legal advices to FA on how to adequately handle their judicial processes. The review indicated that FA staffs were still in need of training on special knowledge and skills for proper handling of forest crime cases.

Data and information generated through execution of the activities relevant to judicial processing of forest crimes indicates that FA offices in four provinces have been able to handle the judicial processes in a more effective manner compared to the pre-project situation. However, measuring the level of effectiveness of the judicial process is problematic due to the absence of measurable appropriate indicators. Therefore, achievement concerning judicial process can only be expressed qualitatively. Available data and information generated through execution of the activities relating to judicial processing of forest crimes strongly suggest that Output 4 of the project has been delivered despite weakness in measuring such achievement in an accurate manner.

4.5 Effective extension function

Two planned activities pertaining to forestry extension had been fully implemented namely: to provide forest laws and regulations extension to stakeholders and to provide extension materials. Under the first activities, four extension workshops had been organized in eight districts, four provinces and attended by 1,227 participants representing different groups of stakeholders including local government, communes, communities, private sector and NGOs. During the workshops, the principal forestry laws and regulations were elucidated and relevant written materials handed out.

Under the second activity, different extension materials were produced and distributed to stakeholders in the four provinces of the project sites. The materials included banners, posters, brochures, comic books, book notes and pens. School students of different levels were among the primary targets of the extension work because creating awareness on SFM among young people was thought as having long-term implications to the conservation of forest resources.

The project has contributed to the enhancement of forestry program by implementing the relevant activities. It was the central premise of the project that in order any law enforcement initiative to be successful, it must be supported by stakeholders in general, local communities in particular. To this end, the project had organized extension workshops in four provinces of the project sites; the workshops were attended by some 1,227 participants representing such different stakeholder groups as local governments, local villages and communes, local private sector and NGOs alike. The topics presented to the workshops and discussed with the participants were forestry laws, the critical role of forest law enforcement in achieving SFM and potential benefits of SFM that accruable to Cambodian people in general, to local stakeholder in particular. The primary objective of organizing the workshops was to raise interest of stakeholders different extension materials in various forms as elaborated in the previous section of the report. The materials were written in Khmer and English, presented in a simple, easy to read format. Student of local school for instance, loved the book notes and pens because they were directly useful for schooling and contained valuable practical information. With the full implementation of two project activities, the outputs "effective extension function" was consequently delivered and contributed to achieving the specific objectives of the project.

5. Conclusions

Analysis of the data generated through the implementation of individual project activities indicates that all planned activities of the project, 17 in number, had been fully implemented and delivered five defined outputs. Consequently, the specific objectives have been achieved and shall be contributing to sustainable forest management in Cambodia. Delivery of the outputs and achievement of the specific objectives, however, must be interpreted with caution. This is because the achievements made could not be measured quantitatively. The logical framework presented in the project document could not be used to assess the extent to which the outputs and specific objectives have actually been achieved because the indicators of the outputs and specific objectives were not measurable.

While the indicators of Output 1 presented in the project document were also not measurable, planned purchase of equipment and facilities was quantitatively indicated in the yearly plans of operation in physical units. Therefore, achievement of Output 1 could be measured with precision by comparing the number of units actually purchased to the units planned to be purchased.

Despite the weakness in measuring the achievements as described above, the project has been smoothly implemented and successfully completed. All planned project activities had been executed to deliver defined outputs and achieved the specific objectives. Therefore, the hypothesis made "proper execution of the activities will deliver the outputs which in turn will achieve the specific objectives and contribute to the development objective" can be accepted. The smooth implementation of the activities was attributable to several factors including:

- Strong collaboration between the FA at different levels with the stakeholders in the four provinces of the project sites and with the partners, e.g. consultants and NGOs;
- Timely disbursement of funds by the ITTO;
- Clearly defined tasks of collaborating parties since the onset of project operations
- Ability of the Project Steering Committee to provide useful managerial and technical advices to the project management team; and
- Adequate monitoring of project field operations to ensure on-time provision of inputs in the right quantity and quality.

At project completion, the prevailing situation can be summarized as follows:

- Equipment and facilities needed to enforce forest laws have been installed and operational at the FA offices at different levels in four provinces, allowing a more effective monitoring and documentation of illegal forest activities compared to the pre-project situation;
- Implementation of the training program has improved the capacity of **245** FA staff at different levels to conduct forest patrolling and document forest crimes in a substantially more effective fashion compared to pre-project situation. Moreover, 16 FA staff have gained experience in FLEG problem solving through their attendance of relevant international workshops;
- FA staff at different levels and stakeholders alike have gained technical knowledge and understanding on forest law enforcement through the different technical guidelines on FLEG including the technical manual on CTS operation published and disseminated by the project. In addition, status of forest cover in the country in 2010 has been studied and properly mapped through interpretation of updated satellite

imageries. Please note that status of forest cover was not clear at the commencement of the project;

- At project completion 1,001 cases of forest crime that were occurred in 2010-2011 period had been reviewed by the FA with the assistance of legal consultants. Moreover, collaboration with Provincial Prosecutors and Judges in four provinces has been substantially strengthened through the coordinative meetings conducted under the project and 270 staff of FA at different levels have improved their capacity in suppressing forest illegal activities through the training sessions on criminal codes; and
- At completion of the project, forestry extension program has been improved significantly compared to pre-project situation. The improvement was attributable to the extension workshops held in four provinces and attended by 1,227 participants representing various stakeholder groups, publication and dissemination of attractive extension materials as well as production and distribution of appropriate banners, posters, brochures and other materials. That is to say that public awareness on the importance of FLEG initiatives at project completion has been significantly improved compared to pre-project situation.

Surely, capacity of the FA in forest law enforcement has been enhanced through the project intervention. It should be noted, however, that the project was implemented only in four out of twenty-four provinces of the country. It is true that particular outcomes of the project such as the forest cover maps and trainers of forest law enforcement will be also benefiting to other provinces, but the project intervention needs to be replicated to other provinces in view of enhancing the FA capacity in the entire provinces of the country.

6. Recommendations

The development and implementation processes of the project along with the data and information generated by those processes have been used as the basis for making the following recommendations.

- The adequate involvement of stakeholders in the project development process had resulted in a sound project design and relevant project intervention that planned project activities could be smoothly implemented with the full support of the stakeholders; the processes should be properly imitated in dealing with similar future projects;
- To be successful, any project of forest resource development and conservation should be developed and implemented in a collaborative manner involving not only forestry institutions but also other such agencies affecting forest resource management, e.g. local government units, land management offices, judicial courts, NGOs, etc.;
- Achievements of the project were, to a greater extent, very much dependent on the capacity of the project management team (PMT) to perform operational management of the project and capability of the Project Steering Committee (PSC) in providing the PMT with useful policy and technical advices that appointment of PMT and establishment of PSC are the matters that should receive due attention of the executing agency in similar future projects;
- The report by the Chiefs of FA Cantonments in four provinces on the declining incidence of forest crimes towards the end of the project is a clear indication of the enhanced capacity of FA in forest law enforcement in those provinces and it was attributable to the project intervention; it is therefore reasonable to strongly suggest that similar project intervention be replicated to other provinces of the country; and
- In replicating the intervention on forest law enforcement, priority should be given to those provinces with rich forest resources in order to first safeguard the remaining forest; in designing the intervention, due attention should be given to the lessons learned from the previous project that weaknesses are not carried over yet strengths are duly maintained.

7. Implications for practice

Among the practical significance of the project findings can be summarized as follows:

- The installment of solar panels in remote offices of FA has allowed those offices to operate computer system even under uncertain supply of electricity. Where electricity power supply is problematic, installment of solar panel system is worth considering to solve energy supply problem;
- The guidelines developed for forest patrolling and documenting forest crimes cases need to be fully tested in the field involving different environments that they can be appropriately refined and used effectively in other provinces at later stage;
- Training of trainers on forest law enforcement could meaningfully reduce cost of training in the long-run; thus development of powerful modules for such training is strongly advisable even in the absence of external funding source;
- The forestry extension material in the form of comic book, book notes and pens were adored by students of different levels because the materials provided direct benefits thus served as an incentive for the students to pay attention to. Likewise, to gain support of local communities to SFM, there is a need to introduce an appropriate incentive scheme for them, which may take different forms depending on the agreed upon format or characteristics of the local communities in question;
- The case tracking system (CTS) developed under the project and installed at the FA offices in four provinces has proved effective in documenting forest crime cases; to allow installment of CTS in other provinces, there is a need to further refine the software, develop appropriate SOP and train FA staffs on operating the system; and
- The forest cover maps produced under the project in 2010 are only two years old now. But forest cover is changing rapidly due to the widespread illegal forest activities that future assessment of forest cover needs to be carried out continuously within a short time interval to ensure conformity of mapped forest cover to reality.

ANNEX 1

Questionnaire for the assessment of training need

សេចក្តីណែនាំ

(Please use the sign ✓ in box and fill in the blanks)

1- Name of interviewee:, Age:years, Gender: Male Female,

Position:, Organization:

2- Ethnic: Khmer Other (specify).....

3- Religion: Buddhism Other (specify).....

4- Education: Illiterate Primary School Secondary School High School

5- Skill: Unskilled Technician Associated Degree Bachelor Degree

Master PhD

6- Foreign language: Read Write Speak

- English: Good Fair Poor Good Fair Poor Good Fair Poor

- French: Good Fair Poor Good Fair Poor Good Fair Poor

- Other (specify): Good Fair Poor Good Fair Poor Good Fair Poor

7- Computer skills: Very good Good Fair Poor

Briefly indicate the computer packages that you normally use: i.e. MS Word MS Excel

MS PowerPoint and Other (specify).....

8- Attending the previous training courses both in the country and abroad (Especially it is related to law enforcement):

Name of Training	Place	Year attended	Sponsor

9- Is your current job related to law enforcement or not? Yes No

10- Awareness of law enforcement: High Upper-medium Medium Low

11- Your experience in works related to law enforcement as the following:

a) - Investigating and collecting information on the forest offenses: Yes No

- Awareness: High Upper-medium Medium Low

b) Analyzing and verifying information on the forest offenses collected from various sources: Yes No

- Awareness: High Upper-medium Medium Low
- c) - Reporting the forest offenses: Yes No
- Awareness: High Upper-medium Medium Low
- d) - Planning to prevent and suppress the forest offenses: Yes No
- Awareness: High Upper-medium Medium Low
- e) - Using GPS and forest map: Yes No
- Awareness: High Upper-medium Medium Low
- f) - Preventing and suppressing the forest offenses on the scene: Yes No
- Awareness: High Upper-medium Medium Low
- g) - Filing the cases of the forest offenses: Yes No
- Awareness: High Upper-middle Middle Low
- h) - Resolving the cases of the forest offenses through the court procedures: Yes No
- Awareness: High Upper-medium Medium Low
- i) - Extending the knowledge about forestry and wildlife sectors: Yes No
- Awareness: High Upper-medium Medium Low
- j) - Relationship and cooperation with concerned parties in law enforcement: Yes No
- Awareness: High Upper-medium Medium Low
- 12- The need for the training courses: Yes No

13- Which level of the following local forestry administration staff should have first priority for training in order to improve the effectiveness of forest law enforcement? (Please choose only one)

- FA Inspectorate FA Cantonment FA Division FA Triage

14- Which place the training courses should be conducted?

- Central FA Local FA Other

15- If you have additional suggestions or recommendation for improving the effectiveness of forest law enforcement, please specify.

.....
 Thank you very much for your valuable time and important information sharing!

ANNEX. 2

Questionnaire for the assessment of training subjects

នៃនគរបាល

(Please use ✓ in and fill in the blank spaces)

I- GENERAL INFORMATION

1- Name of interviewee:, Age:.....years, Gender: Male Female

Position:.....,FA Triage:....., FA Division:.....

FA Cantonment:.....,FA Inspectorate:.....

2- Ethnic: Khmer Chinese Cham Other.....

3- Religion: Buddhism Islamism Catholic Other.....

4- General Education: Illiteracy Primary Secondary High School

5- Skill: Unskilled Technician Associated Bachelor Master PhD

II- LACK OF SKILLS IN LAW ENFORCEMENT

1- Work experience of law enforcement: High Upper medium Medium Low

2- Knowledge of law enforcement: High Upper medium Medium Low

3- Identify the lack of skill in law enforcement:
.....

III- TOPIC NEEDS FOR TRAINING

1- Law on Forestry:

- The need for training High Upper medium Medium Low

2- Code of Criminal:

- The need for training High Upper medium Medium Low

3- Procedures of investigation, intelligent, arrest and evidence confiscation:

- The need for training High Upper medium Medium Low

4- Procedures in preparation of forest offense's preliminary investigation report:

- The need for training High Upper medium Medium Low

5- Procedures in preparation of forest offense filling and documentation:

- The need for training High Upper medium Medium Low
- 6- Procedures in data collection and confiscation of forest land encroachment and grabbing
 - The need for training High Upper medium Medium Low
- 7- Procedures in forest offence evidence management and returning transportation means:
 - The need for training High Upper medium Medium Low
- 8- Procedures of suing to all levels of courts and closing forest offense cases:
 - The need for training High Upper medium Medium Low
- 9- Wildlife identification:
 - The need for training High Upper medium Medium Low
- 10- Wild flora and fauna are prohibited in trade by CITES:
 - The need for training High Upper medium Medium Low
- 11- Utilization of GPS and maps:
 - The need for training High Upper medium Medium Low
- 12- Preparation of forest offense prevention and suppression plans:
 - The need for training High Upper medium Medium Low
- 13- Forest offense document management:
 - The need for training High Upper medium Medium Low
- 14- Conflict management and forest offense resolution:
 - The need for training High Upper medium Medium Low
- 15- Communication skills:
 - The need for training High Upper medium Medium Low
- 16- Which place the training should be conducted?
 - Central FA Local FA Other.....

IV- REQUESTS

If any requests for further topics needed in training of law enforcement please state:

Thank you very much for your time and kind cooperation!

ANNEX 3

Check-sheet used in ground truthing survey

Feature ID		Date/Time	
GPS ID		Surveyor ID	
GPS Northing		Weather	
GPS Easting		Elevation/slope	
Photo No			
Class (1 ha)		Alt. class (20 ha unit)	
Certainty (high/low)		Stability (changes)	
Site description			
Dominant species			

Guide to filling out the form

- 1) Feature ID of the point - found in the shape file containing the test points
- 2) GPS ID of the coordinate (to double check with the reference coordinate). The point will be named xxxF where xxx is the feature ID of the sample point and F indicates it is a Field measurement.
- 3) Date and time of the field visit
- 4) Surveyor ID
- 5) Photo No: the file name of the photograph taken, along with the compass direction of the photograph.
- 6) Weather: brief note about the weather, e.g. sunny, cloudy, rainy, foggy
- 7) Elevation/slope – estimate the slope of the area in the field. The elevation can be extracted from a Digital Elevation Model.
- 8) Class (1 ha): the class that best describes a 100 x 100 m area around the point
- 9) Certainty of the field classification. For mixed classes or transitional classes it can be a problem assigning a correct label in the field and there for the certainty can be LOW. For uniform areas with little variation the certainty is HIGH.
- 10) Class (20 ha) the class that best describes the 20 ha polygon around the point.
- 11) Stability: likelihood of recent changes. E.g. if an area appears to be non-forest and it has of recent deforestation this is very important to note. This is also the case for secondary forests, where a site may have undergone a change since the Landsat image from evergreen to non-forest (cleared) to secondary forest (regrowth). Local people in the area may provide information on this. Put HIGH for no change likely, LOW for change likely
- 12) Description of the site – a sketch is always useful
- 13) Dominant species encountered at the site

BIBLIOGRAPHY

- Cambodia Forest Cover 2010, Phnom Penh, Forestry Administration- International Tropical Timber Organization-Danish International Development Agency, 2011
- CHEALY Park and SOPHYRA Sar, Consultancy Report on Satellite Imagery Study, Phnom Penh, Cambodia, 2010
- Code of Criminal Procedure, Phnom Penh, Ministry of Justice, 2007
- Code of Criminal, Phnom Penh, Ministry of Justice, 2010
- Completion Report, ITTO Project PD493/07 Rev.1 (F) "Strengthening Capacity of Forest Law Enforcement and Governance in Cambodia, Phnom Penh, 2012
- Cristian Tottrup and Mikael Kamp Sorensen, Quality assurance and product verification of the 2010 forest cover assessment in Cambodia, Institute of Geography, University of Copenhagen, 2010
- Forestry Statistics of Cambodia, Phnom Penh, Forestry Administration, 2010
- Forest Patrolling Procedures, Phnom Penh, Forestry Administration- International Tropical Timber Organization, 2010
- Forest Law Enforcement Pocket Field Guide, Phnom Penh, Forestry Administration- International Tropical Timber Organization, 2010
- Forest Law Enforcement Training Program, Forestry Administration- International Tropical Timber Organization, 2010
- ITTO Manual for Project Monitoring, Review, Reporting and Evaluation, third ed. Yokohama, International Tropical Timber Organization, 2008
- National Forest Program, Phnom Penh, Royal Government of Cambodia, 2010
- PHANNY Pin, Report on Existing Human Resources of Local Forestry Administration for The Training Needs, Phnom Penh, Cambodia, 2009
- Pre-Project Technical Report, ITTO project PPD128/06 Rev.1 (F) "Strengthening Capacity of Forest Law Enforcement and Governance in Cambodia, Phnom Penh, 2007
- ROSLAN, Bin Ismail, Consultancy Report on Cambodian Case Tracking System, Phnom Penh, Cambodia, 2009
- SOKUNTHEARA Lam, Consultancy Report on Legal Assistance to Forestry Administration, Phnom Penh, 2009, 2010 and 2011

