AFoCO

2016

ANNUAL REPORT
LANDMARK PROGRAM

CONTENTS

Introduction to the Landmark Program

The region of the Association of Southeast Asian Nations (ASEAN) lost about 5.4 million ha of forest cover between 2005 and 2010, and the degradation of natural forests has continued apace (FAO, 2011). It has also been estimated that a large portion of greenhouse gas emissions stem from land-use changes. Deforestation is concerned with the unsustainable exploitation of forests by entrepreneurial and industrial concessioners. In this context, the prevention of deforestation and forest degradation in a sustainable manner is one of the top priorities of countries in the ASEAN region.

The ASEAN Vision 2020, clearly recognizing the importance of the forestry sector, calls for the promotion of the forestry sector as a model for sustainable development by harmonizing environmental, social, and economic policies among the 10 ASEAN Member States (AMS). AMS have made efforts to protect forests and control the rate of exploitation of natural resources while addressing the need for capacity building in the forestry sector for sustainable development in the region. However, they continue to face difficulties due to a lack of long-term and fundamental support in improving human and institutional capacity to improve the management of natural resources and environment.

In order to address these regional issues, the Republic of Korea (ROK) proposed a long-term regional cooperation program as a key project of the ASEAN-Korea Forest Cooperation (AFoCo) under the Agreement between the Governments of the Members of the ASEAN and the ROK on Forest Cooperation, which was entered into force on 5 August 2012.

Following the approval by the 3rd Session of the Governing Council held on 18 October 2013 in Singapore, the 10-year Landmark Program was launched in 2014 with a total budget of USD 15 million. In 2015, the total budget of the Landmark Program was increased from USD 15 million to USD 16.6 million through voluntary contributions from the Republic of Korea. The Landmark Program is a regional program with long-term goals and activities implemented under a holistic approach of "Restoring Degraded Forests in Southeast Asia as a Model for a Greener Asia". The program will provide a practical model for forest rehabilitation in the region and narrow the technical gap among AESAN Member States.

The Landmark Program is focused on the sustainable and harmonious development of ASEAN Member States under the framework of the Initiative of ASEAN Integration. For this purpose, the program aims to strengthen the capacity of scientific assessment and management of regional forestry-related issues as well as address the demand for academic research opportunities in the Southeast Asian region, while contributing to the sustainable socio-economic development of local communities by raising public awareness and increasing participation on the conservation and management of forest ecosystems, giving priority attention to Cambodia, Lao PDR, Myanmar and Viet Nam (CLMV countries).

Program Overview

Title: “Restoring Degraded Forests in Southeast Asia as a Model for a Greener Asia: Capacity Building on Forest Restoration and Sustainable Forestry”

Total Budget: US$ 16.6 million for 10 years

Main Component

Component 1: Establishment of AFoCO Regional Education and Training Center
Component 2: Development of Education and Training Programs for Capacity Building
Component 3: Restoration of Degraded Forest Regions
Component 4: Development of Advocacy Activities.

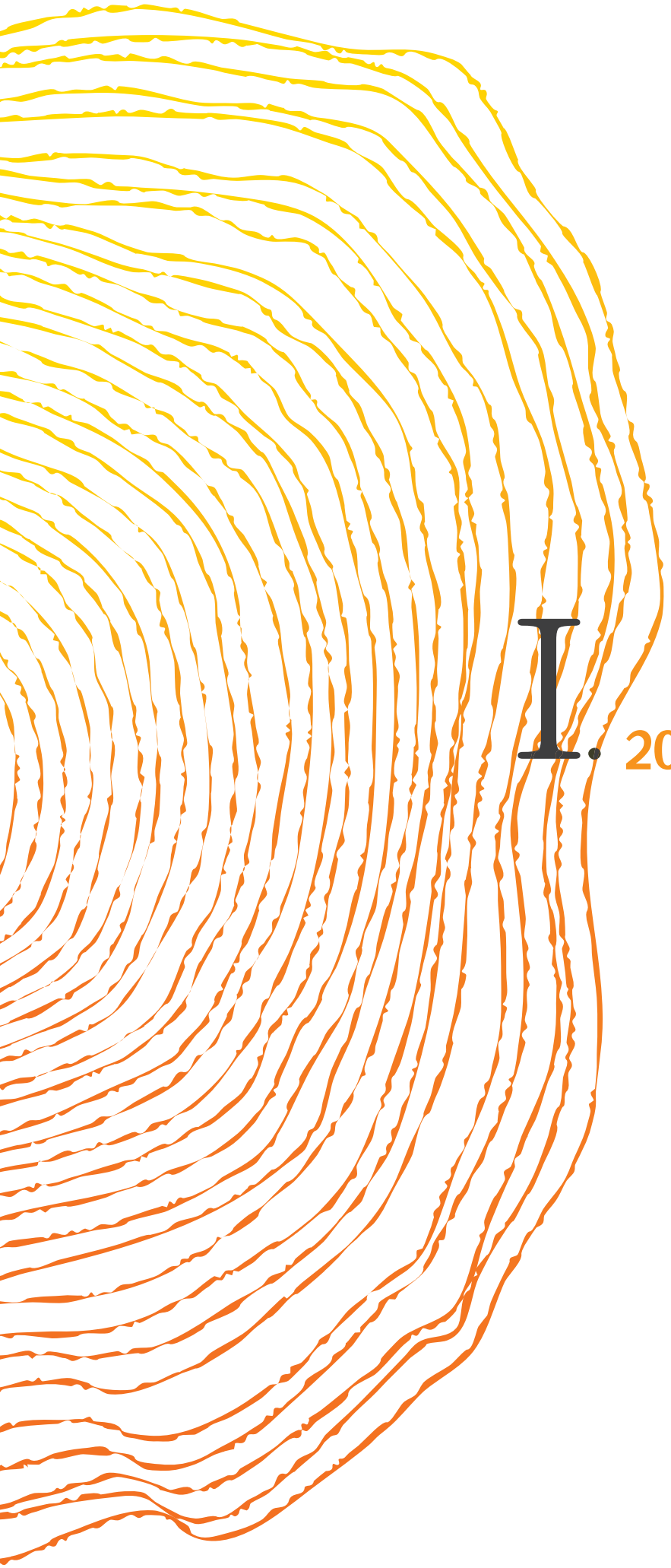
Organizational Structure

1. Secretariat

Position	Assigned Task
Project Manager	Management of all four Components
Project Manager for AFoCO RETC	Component 1
Project Manager for Education & Training	Component 2
Project Manager for Restoration Projects	Component 3

2. Implementing countries

Country	Position / Team	Assigned Task
Myanmar	Project Director and Project Team (Forest Department)	Establishment of AFoCO RETC
Cambodia	National Project Director and Project Team (Institute of Forest and Wildlife Research and Development under Forestry Administration)	Restoration of degraded forest regions
Lao PDR	National Project Director and Project Team (Department of Forestry)	Restoration of degraded forest regions
Viet Nam	National Project Director and Project Team (Viet Nam Administration of Forestry)	Restoration of degraded forest regions



I. 2016 SUMMARY

Component 1.
Establishment of the AFoCO Regional Education and Training Center

In 2016, 51.5% of the RETC building construction has been completed under the architectural construction sector and the basic plan for the equipment provision and operation for the RETC has also been developed. The summary of the component is as below.

Table 1. Summary of main activities performed in 2016

Month	Main Activities
January	Development of the AFoCO RETC identity design including signage
	3rd Steering Committee Meeting in Bangkok, Thailand
	Completion of piling work for the building foundation
February	Technical Meeting with the Forest Department of Myanmar (FD)
	Completion of the building foundation work
March	Technical Meeting with the Forest Department of Myanmar (FD)
April	Development of the draft plan for the RETC landscaping
May	3rd Working Group Meeting
	1st Consultation Meeting on construction management
June	Provision of wooden materials for the RETC construction by the FD
July	Development of the exhibition hall design
	Development of the FF&E procurement plan
	Technical Meeting with the Forest Department of Myanmar (FD)
August	Completion of the foundation work for main excess roads
September	2nd Consultation Meeting on the construction management
October	Technical Meeting with the Forest Department of Myanmar (FD)
November	4th Steering Committee Meeting
	Completion of the main structural framework
	Termination of the RETC construction contract as of 17 November
December	Technical Meeting with the Forest Department of Myanmar (FD)

Component 2.

Development of Education and Training Programs for Capacity Building

The Landmark Training Courses organized five short-term training courses targeting governmental officials in a forestry sector. The Landmark Scholarship Program offered scholarships to three grantees– one recipient for the Doctoral degree program recipient and two recipients for the Master's degree program. The three scholarship recipients have commenced their studies in the spring semester of 2016.

Table 2. Summary of main activities performed in 2016

Main activities
1) Landmark Training Courses (5 Short-term) - Sustainable Forest Management Policy - Forest Fire Sciences and Management in 21st century for Training of Trainers - Promoting Effective Participatory Forest Management - Learning Lessons from Asia's National Forest Rehabilitation Experiences - REDD+ and Forest Governance for Training of Trainers 2) Landmark Scholarship Program (LSP) - Operation of 2015/2016 LSP - Selection of 5 candidates for 2017 LSP - Signing of MOU with Seoul National University

Table 3. Summary of training courses in 2016

No	Date/ Vanue	2016 Training Courses (Co-organized with Secretariat)	Num. of Participants (Num. of Countries)
1	Mar. 14-18/ Indonesia	Sustainable Forest Management Policy (Perhutani, Indonesia)	27 (9)
2	May 23-27/ Thailand	Forest Fire Sciences and Management in 21st century for Training of Trainers (Royal Forest Department, Thailand)	51 (10) ** inc. 30 Thai fire rangers*
3	Aug. 15-19/ Thailand	Promoting Effective Participatory Forest Management (RECOFTC – The Center for People and Forests, Thailand)	24 (8)
4	Sep. 26-30/ ROK	Learning Lessons from Asia's National Forest Rehabilitation Experiences (1-day workshop with Research Center for Advanced Forest Technology, Korea)	31 (9)
5	Oct. 10-14/ ROK	REDD+ and Forest Governance for Training of Trainers (1-day workshop with National Institute of Forest Science,Korea)	25 (7)
Total			**158**

Component 3.
Restoration of Degraded Forest Regions

As the first year of implementation, Component 3 began with the 1st Project Steering Committee Meeting with a technical workshop on 19 January 2016 in Bangkok, Thailand, aiming at introducing the projects to all member countries as well as providing a general discussion ground for forest restoration projects. From January to December 2016, all activities of each country as well as summary on the plantation area are described as below.

Table 4. Summary of main events preformed in 2016

Main events
1) 1st PSC Meeting and Technical Workshop, 19 January 2016, Bangkok, Thailand
2) Inception Workshop for the project in Viet Nam, 18 March 2016, Thai Binh, Viet Nam
3) Inception Workshop & Technical meeting on financial reporting system for the project in Cambodia, 27-28 May 2016, Siem Reap, Cambodia
4) Inception Workshop & Technical meeting on financial reporting system for the project for the project in Lao PDR, 30-31 May 2016, Vientiane, Lao PDR
5) Technical meeting on financial reporting system for the project in Viet Nam, 27 June 2016, Ha Noi, Viet Nam
6) Technical Meeting for Internal Monitoring and Evaluation for the project in Cambodia, 26-27 September 2016, Siem Reap, Cambodia
7) Study tour to the ROK for the project in Lao PDR, 1-8 October 2016, Republic of Korea
8) 2nd PSC Meeting in Lao PDR, 5 December 2016, Vientiane, Lao PDR
9) 2nd PSC Meeting in Viet Nam, 6 December 2016, Ha Noi, Viet Nam
10) 2nd PSC Meeting in Cambodia, 8 December 2016, Siem Reap, Cambodia

Table 5. Summary of plantation area in 2016

Country	Location	Total Project Area (Total Plantation Area) (ha)	Cumulative Area of plantation (ha)	Planted area of plantation in 2016 (ha)
Cambodia	Siem Reap	248 (48)	10	10
Lao PDR	Paksong	600 (200)	0	0
	Sangthong	3,020 (649)	0	0
Viet Nam	Thai Binh	960 (160)	40	40
TOTAL		4,828 (1,057)	50	50

As Lao PDR combined the project titles in two project sites into one unified title, the titles and main themes of three projects are finalized as follows.

Table 6. Titles and main themes of the restoration projects

Country	Title of the Project	Main Theme of the Project
Cambodia	Establishment of the Forest Genetics Center for Restoration of Major Timber Species in Cambodia	Forest rehabilitation through a long-term genetic improvement of major timber species
Lao PDR	Village-based forest rehabilitation in Lao PDR	Forest rehabilitation based on village forestry
Viet Nam	Rehabilitation and Development of Mangrove Forest Ecosystem in Thai Binh Province, Viet Nam	Rehabilitation of mangrove forest

Component 4.
Development of Advocacy Activities

Activities under Component 4 are categorized into three main types: 1) promotional activities of the landmark program, 2) publications on the accomplishments of the landmark program, and 3) establishment of the AFoCO RETC. Throughout a year, the information and publication materials of the Landmark Program were provided to member countries, in order to effectively communicate and exchange opinions with the member countries as well.

Table 7. Summary of activities performed in 2016

Main activities
1) Promotion of Landmark Program Activities - 13 AFoCO website updates - 50 updates on social networking service - 1 news article 2) Publications on accomplishments of Landmark Program - 2016 Annual Plan - 2015 Annual Report - 5 training textbooks - Promotional leaflets 3) Development of AFoCO RETC website

II. ACTIVITIES OF EACH COMPONENT

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

Component 1 of the Landmark Program consists of three implementation sectors as follows: 1) Architectural Construction; 2) Equipment Provision, and; 3) AFoCO RETC Operation & Management. Main activities by each sector are described in Table 1-1.

Table 1-1. Activity description by implementation sector

Implementation sector	Main activity
1. Architectural construction	Structural work Architectural work Mechanical and electric work Annexed building construction Design changes Construction management
2. Equipment Provision	Furniture, fixture & equipment Signage system Exhibition hall design
3. AFoCO RETC Operation & Management	RETC organizational structure Staffing for the RETC operation Official meetings for project implementation

1.1 Architectural Construction

The RETC construction was scheduled to be completed by the end of October this year. However, the total progress rate of the RETC construction in 2016 is 51.52 % as shown by Table 1-2 and Table 1-3. The construction delays were caused by various factors including unexpected extreme hot weather during the summer season and extra work for the rainy season in Myanmar, but the main cause was the delay in the sub-contract order for construction materials due to the construction company's lack of financial.

Table 1-2. Total construction progress by the date of contract termination

Month		Progress Rate (%)					
		Planned		Actual		Delay	
		Monthly	Total	Monthly	Total	Monthly	Total
2015	Nov.	1.48	1.48	1.48	1.48	0	0
	Dec.	1.33	2.81	1.48	2.96	0	0
2016	Jan.	4.01	6.82	5.06	8.02	0	0
	Feb.	5.98	12.8	3.08	11.1	2.9	1.7
	Mar.	7	19.8	3.68	14.78	3.32	5.02
	Apr.	6.17	25.97	3.08	17.86	3.09	8.11
	May	6.88	32.85	3.85	21.71	3.03	11.14
	Jun.	11.09	43.94	5.16	26.87	5.93	17.07
	Jul.	13.6	57.54	6.89	33.76	6.71	23.78
	Aug.	18.03	75.57	4.96	38.72	13.07	36.85
	Sep.	16.6	92.17	6.06	44.78	10.54	47.39
	Oct.	7.83	100	5.49	50.27	2.34	49.73
	Nov.*			1.25	51.52		48.48

* As of 19 November 2016

Table 1-3. Summary of the construction progress by unit process

Unit Process	Proportion	Total Progress Rate	Achievement (% of the proportion)
Temporary Work	1.14	1.14	100
Architectural Work	36.22	17.81	49
Structural Work	16.41	16.26	99
Mechanical Work	19.23	5.73	30
Electric Work	18.11	3.91	22
Miscellaneous Work	8.89	6.67	75
Total	100	51.52	

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

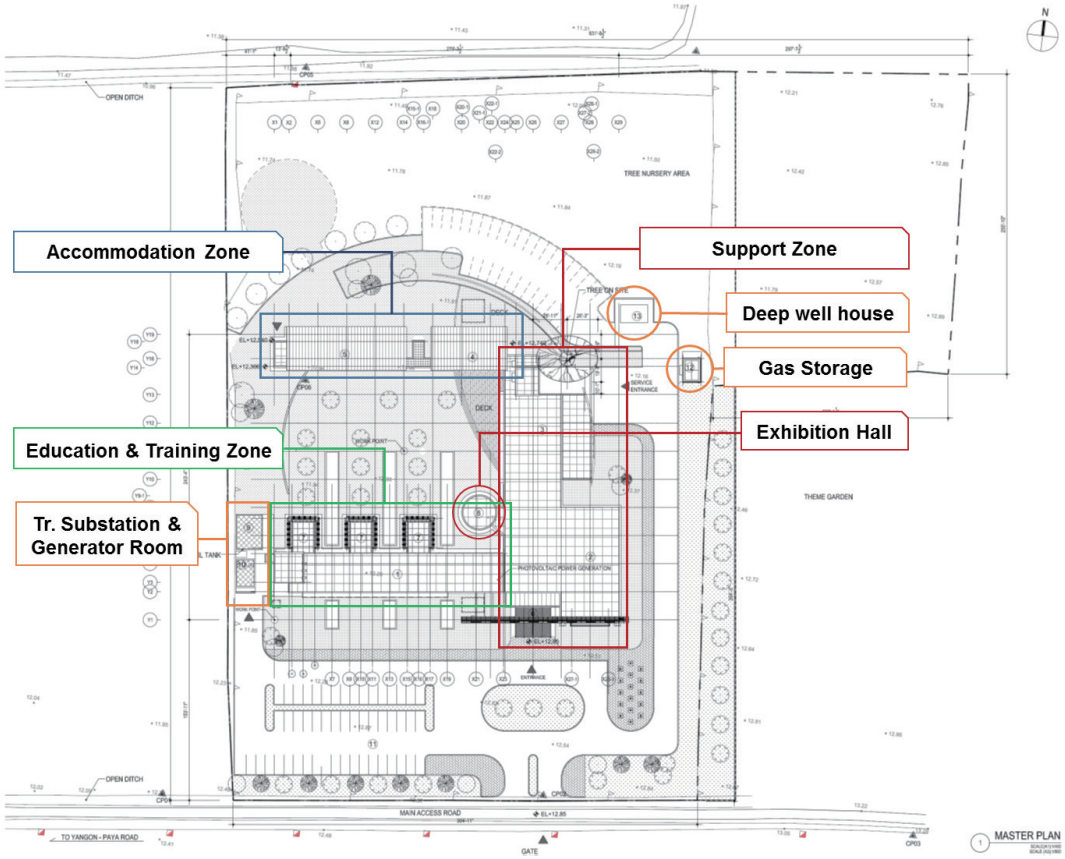


Figure 1-1. Design master plan for the RETC construction

Figure 1-2. Panoramic view of the RETC construction status

Figure 1-3. Details of the current status of the RETC construction progress (top: Education & Training zone; middle: Support zone; bottom: Accommodation zone)

As the construction company failed to provide any acceptable action plans to catch up on the time lost due to the construction delay and to manage the costs accordingly within the scope of the contract conditions, it was decided that the existing contract for the RETC construction be terminated and a new construction company be selected thereafter for the completion of the RETC construction. The new construction company is scheduled to be selected by Limited Competitive Bidding based on Pre-Qualification (PQ) process by the end of February 2017. Details of each construction process are summarized as follows.

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

1.1.1 Structural Work

Foundation work (underground structural work)

- Production of foundation piles

The building foundation of the AFoCO RETC is designed to be a piled foundation system consisting of 285 reinforced concrete piles. All foundation piles were directly produced at the construction site in accordance with the design specifications modified as 1 single pile in length of 12m (300mm x 300mm x 1,200mm with a bearing capacity of 700kN). During this period, the inspection test on the compressive strength of the concrete used for pile production was conducted with the Construction Manager in attendance. All tested samples satisfied the required standard after 7 days of casting in the construction site.

Figure 1-4. On-site production of foundation piles

- Installation of pile foundations

All piles were sequentially driven into the ground through the hydraulic press-in driving method from the 28th day after pre-casting. Prior to the pile driving, test piling was conducted at the 3 target driving locations in order to measure pile penetration and rebound movement. The final penetration depth for pile driving was determined to be 9 m on average from the test results. The in-situ static load test for the foundation piles was also carried out for 3 sample piles by loading a maximum of 200% of the designed compressive load capacity (70 tons) to examine the ultimate load bearing capacity and all tested piles satisfied the design specifications. A total of 285 foundation piles were installed in accordance with the foundation design from 16 January 2016 ~ 2 February 2016.

Figure 1-5. Pile driving for building foundation

Figure 1-6. In-situ static load test for the foundation piles

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

- Ground beam installation and backfilling

Excavation work for the installation of the building foundation was carried out immediately after the completion of the pile driving. Footings and ground beams to link the piles as a platform for above ground construction were installed after the pile capping was carried out during this period. The foundation work was completed by backfilling the foundation bed with excavated soil.

Figure 1-7. Excavation and pile capping

Figure 1-8. Footing and ground beam installation and backfilling for foundation

Structural framework (above ground structural work)

- Re-bar work and concrete form installation

Structural framework began with the re-bar fabrication and concrete form installation for the 1st floor slab of the Accommodation zone. The pre-inspection of reinforcing material was carried out based on the material certificate provided by supplier, and the visual inspection for conformance to the size specifications of the drawings was also carried out upon the material delivery to the site. Wooden formworks coated with form-release agent were used for concrete forming. All rebar intersections were tied in place before the completion of formwork, and spacer blocks were placed at regular intervals to maintain the reinforcement in its correct position. Post-placement inspections on dimensions for the reinforcement and formwork were carried out prior to concrete casting. Re-bar fabrication and concrete form installation for the RETC main buildings has been completed in this year.

Figure 1-9. Re-bar fabrication and concrete form work

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

- **Concrete casting**

The AFoCO RETC is designed such that expansion joints are placed at the reentrant corners, separating whole building into 3 functional zones in order to prevent damages from expansion and contraction due to the thermal load by changing environment. Therefore, concrete casting was carried out separately for each functional zone. Concrete casting was also carried out separately for the slab and columns of each floor in the same building. Slump test was done before the placement of concrete for every concrete casting, and immersion vibrator was used for the compaction of freshly placed concrete so as to ensure that the formwork is completely filled and entrapped air is completely expelled.

Figure 1-10. Concrete casting and compacting

Concrete casting for the RETC main buildings has been completed exclusive of the exhibition hall roof parapet. Concrete casting for the main frameworks was conducted for each functional zone as the schedule shown by Table 1-4.

Table 1-4. Summary of the concrete casting work for each functional zone

Completion Date	Description	Target Zone
9 March	1st floor slab	Accommodation zone
11 March	1st floor columns	Accommodation zone
22 March	1st floor slab	Training & Education zone
30 March	1st floor columns	Training & Education zone
5 April	2nd floor slab	Accommodation zone
21 April	2nd floor columns	Accommodation zone
28 April	2nd floor slab	Training & Education zone
5 May	1st floor slab	Support zone
16 May	2nd floor columns	Training & Education zone
24, 27 May	1st floor columns	Support zone
15 June	Roof slab	Training & Education zone
23 July	2nd floor slab	Support zone
9 August	2nd floor columns	Support zone
22 August, 5 September	Roof slab	Support zone
3 November	Roof slab	Accommodation zone

1.1.2 Architectural Work

Masonry work for walls

- Brick and plastering work

The AFoCO RETC is designed to be a Beam and Column structure consisting of non-load bearing brick walls. Air-dried mud bricks are the most common masonry unit in Myanmar. However, all walls of the AFoCO RETC, exclusive of the below grade masonry walls (Guide wall), consisted of cement bricks (230x100x70mm) to enhance the strength and stability of walls and resistance to air humidity as well. Material inspection was carried out based on the material certificate on compressive strength provided by supplier with visual inspection. Before plastering work on masonry walls, all connections between concrete framework and masonry walls were underpinned by metal lath in order to prevent cracks on the plastered wall surface. 70% of the total masonry and plastering work has been completed for the RETC main buildings.

Figure 1-11. Below grade masonry work for Guide wall

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

Figure 1-12. Masonry work for walls

Figure 1-13. Plastering work on masonry walls

- Waterproofing work

Cement-based liquid waterproofing method was applied for the floor and necessary concrete joints. Davco K11 Slurry was applied in a single coat and double coats (1kg/m^2/coat) for the slab waterproofing at the 1st and 2nd floors respectively. Waterproofing work for the floor of toilets and corridors in the Education & Training zone and the 1st floor of the Accommodation zone including underground exterior concrete joints of septic and water tanks has been completed in this year.

- External civil work

As a soft ground collapse occurred early in the rainy season due to the operation of heavy equipment, soil replacement and aggregate packing were conducted for the main access road within the construction site as extra civil work for the RETC construction concurrently with basic ground leveling work for the future external civil work.

Figure 1-14. Aggregate packing for main access road within the construction site

- Wood processing

As the Myanmar side agreed to provide wooden materials for the RETC construction in the 2nd Steering Committee Meeting held on 14 May 2015 in Nay Pyi Taw, the Forest Department of Myanmar (FD) has provided a total of 103 tons of wooden materials (68 tons of wood log and 17 tons of sawn timber-equivalent to 35 tons of wood log) as their in-kind contribution. These wooden materials have been processed for exterior louver systems for meeting rooms and dormitory corridor, exterior deck attached to the dining hall, and interior louver for the conference hall wall finishing. 52% of the total necessary sawing lumber, which meets the design specifications, has been secured as summarized in Table 1-5. As an alternative to the shortage of sawing lumber shown in the Table 1-5, it has been decided to convert the current sawing lumber processed for the meeting

room louver system to the exterior wood deck and conference hall interior louver including stage flooring after reprocessing them together with other wood residues, and to substitute the wood louver for the meeting rooms with aluminum steel louver in accordance with the original design.

Table 1-5. Detailed status of wood processing work

Description	Secured Amount (ton)	% of Necessary Amount
Front Façade	3.44	100
Louver for Dormitory Corridor	5.41	100
Louver for Meeting Rooms	15.40	47
Exterior Wood Deck	11.88	5.4
Interior Louver for the Conference Hall	6.02	86

1.1.3 Mechanical and Electric Work

Mechanical work

- Plumbing and firefighting system

46% of the total plumbing work has been completed, including the underground piping for water supply from the water tank to main buildings, under slab plumbing for water distribution and drainage, and sanitary plumbing within the walls for toilets (except the 2nd floor of the Accommodation zone). HDPE pipes (Pressure rating: PN16) were used for the main water supply system from the water tank of the deep well house, including firefighting system. PPR pipes (Pressure rating: PN 1.25~1.6) and uPVC pipes (Standard: TIS 17-2532, Class 8.5, Pressure rating: PN0.85) were used for under slab and toilet sanitary plumbing respectively. All plumbing materials were approved to be used after inspecting the quality test reports and certificates. Pressure leak tests for plumbing were separately conducted for each functional zone.

Figure 1-15. Sanitary plumbing for main buildings

Electric work

- Electrical piping and sub-main cabling

Electrical conduit systems for wiring have been completed for all functional zones except the 2nd floor of the Accommodation zone. uPVC conduit pipes (20~25mm in diameter) and fittings were used for the electrical conduit systems and all systems were embedded in the concrete framework or masonry walls. Under slab electrical conduit system was completed for all functional zones. Approximately 60% of total electrical receptacles have been installed and 10 % of total cable running work has been completed this year.

Figure 1-16. Electrical piping and sub-main cabling

1.1.4 Annexed Building Construction

The AFoCO RETC includes following 4 annexed buildings as shown by the design master plan in Figure 1-17: 1) Deep Well House attached to water tank; 2) Gas Storage Building; 3) Transformer Substation, and; 4) Generator Room. The structural and masonry work for the Deep Well House and Gas Storage building has been completed this year. The 200m^3 water tank for domestic water use and the firefighting system was constructed under the Deep Well House.

Figure 1-17. Water tank and Deep well house construction

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

1.1.5 Design Changes

Changes in the structural design

It was decided to change the structural design for the roof slab of the Accommodation zone in terms of the construction period and cost (Value Engineering, VE). The roof structure of the Accommodation zone has been changed from its gabled slab structure to flat slab with single slope. The related column structure has not been changed in accordance with the careful review on its structural safety.

Figure 1-18. Design change in the roof structure of the Accommodation zone

Changes in the architectural design

The religion room located next to the resting room on the 2nd floor of the Support zone in the original design has been relocated to the conference hall, and its door schedule was also changed as shown by Figure 1-19. Wall between the resting room and the religion room has been removed, and these two unit was integrated to be a community room with a function of small library. Fitness room was also enlarged by integrating with library as shown by Figure 1-20.

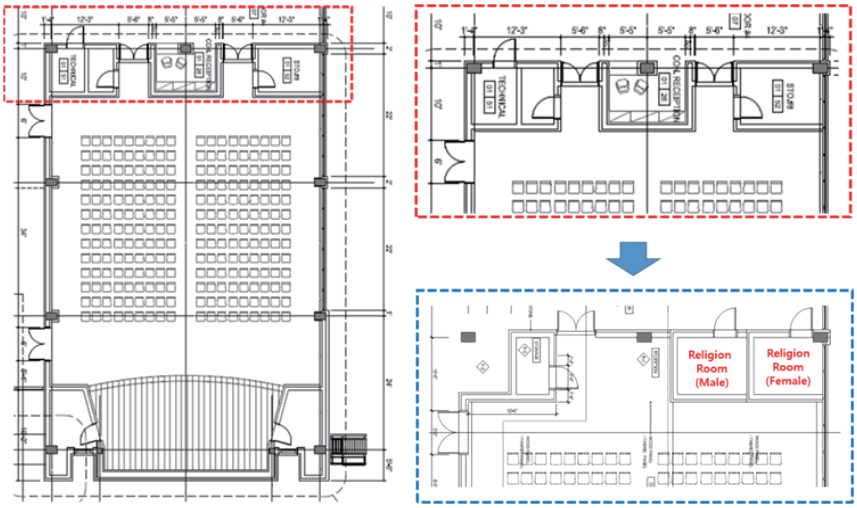


Figure 1-19. Design changes for the relocation of the Religion rooms to the Conference Hall

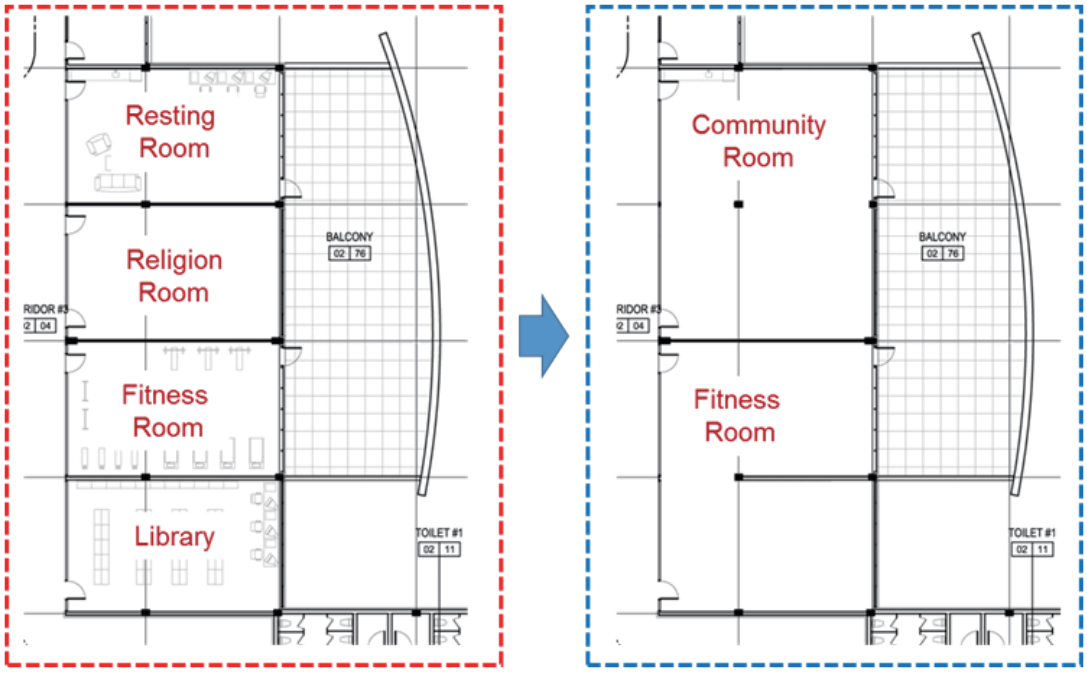


Figure 1-20. Design changes in the Support zone space program

1.1.6 Construction Management

All construction materials with pre-inspected qualification certificates and/or test reports were subjected to visual inspections prior to use after delivery to the construction site. On-site inspection of construction work for conformance to design drawings was carried out with the Construction Manager in attendance, and the construction company was required to submit the relevant inspection reports for approval on major construction processes such as re-bar fabrication and concrete casting. Inspections on the input status of manpower and construction equipment were carried out on a daily basis. Construction progress reporting was made by the construction company on a weekly and monthly basis, and the consultation meeting on the construction management was held on every Thursday at the RETC Field Office.

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

1.2 Equipment Provision

The Landmark Program will provide the RETC with the necessary equipment and support for the operation of education and training programs. This will include Furniture, Fixture & Equipment (FF&E), signage system and the establishment of the exhibition hall, as well as a high-occupancy vehicle (HOV). As the construction has been delayed, actual procurement of all target equipment will be made after the completion of the RETC construction next year.

1.2.1 Furniture, Fixture & Equipment (FF & E)

A detailed list of specifications of the FF & E items has been developed in consultation with the Construction Management agency. However, due to the construction schedule delay, the FF&E procurement schedule has also been postponed to the next year. The Secretariat will select an eligible supplier via Open Competitive-Lowest Price Bidding with the Lump-sum delivery method and a total of 154 FF&E items excluding general electronic appliances will be procured from Korea. General electronic appliances will be directly purchased in Myanmar for local warranty service.

1.2.2 Signage System

Design specifications for the RETC identity and main signage system have been developed. This includes the primary logo with its applicable modifications and identity design guidelines for interior and exterior signage system including PR kits. The detailed signage schedule, which includes specific locations its location and spacings, based on design specifications including its procurement plan will be developed in next year.

Figure 1-21. Primary logo of the AFoCO RETC and its color codes

Figure 1-22. Interior signage systems for the AFoCO RETC

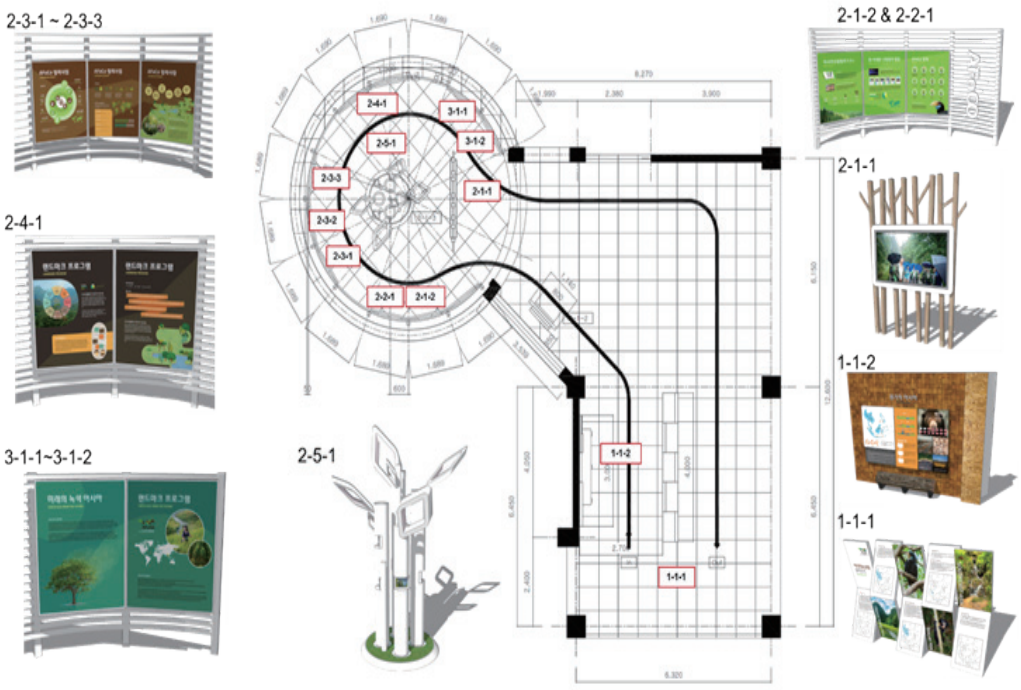
Figure 1-23. LED lighting front façade main signage (Left) and exterior signage system (Right)

1.2.3 Exhibition Hall Design

The exhibition hall design of the AFoCO RETC for a total floor area of 151m^2 has been completed. The RETC exhibition hall will be composed of 3 thematic zones: 1) Zone 1: Introduction to Asia's Forests; 2) Zone 2: Introduction to the AFoCO, and; 3) Zone 3: Towards a Greener Asia as shown by Figure 1-24 and 1-25. All items to be displayed in the Exhibition hall were designed as modular forms for easy shipping and assembly on site, and these items will be procured with other FF&E items from Korea.

Figure 1-24. Perspective of the Exhibition Hall

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)



Space program

Zone 1: Introduction to Asia's Forests		Zone 2: Introduction to AFoCO	
1-1-1	Asia's Forests	2-1-1	About AFoCO
1-1-2	Crisis in Forests of Asia	2-1-2 2-2-1	AFoCO Agreement History & Milestone
Zone 3: Towards a Greener Asia		2-3-1 ~ 2-3-3	AFoCO Activities (Cooperation Project)
3-1-1	Green Asia from the Future	2-4-1	AFoCO Landmark Program
3-1-2	Landmark Program for a Greener Asia	2-5-1	AFoCO Tree of Life

Figure 1-25. Floor plan and space program for the Exhibition Hall

1.3 RETC Operation & Management

The Landmark program has developed the RETC organization and operation strategy, including the Rules of Procedure (ROP) for the RETC operation and Staff Regulations, for the smooth launch of the RETC. The basic plan for organization structure and staffing of the RETC has been developed through close consultation with the FD this year.

1.3.1 Development of RETC Organizational Structure

In accordance with the agreement made at the 3rd Steering Committee (SC) Meeting held on 20 January 2016 in Bangkok, Thailand, the basic framework of the RETC administrative organization is as shown by Figure 1-26.

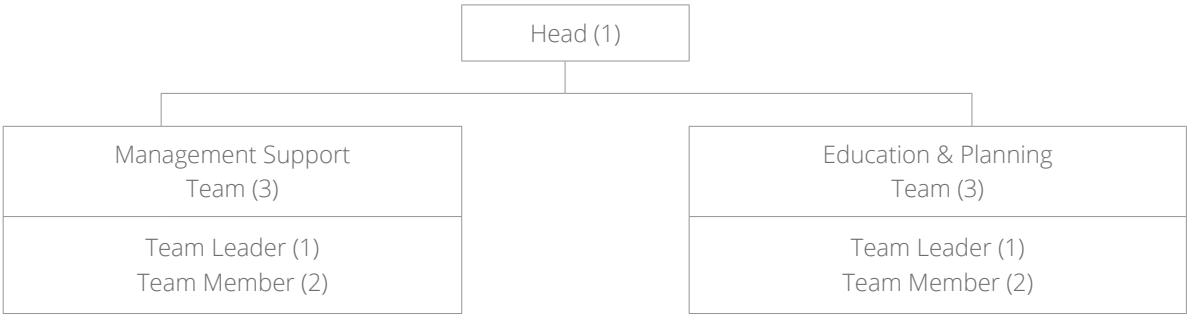


Figure 1-26. Basic framework for the RETC administrative organization

1.3.2 Staffing for the RETC Operation

The Steering Committee has agreed on the following staffing plan for the RETC administrative organization at the 4th SC Meeting held on 3 November 2016 in Nay Pyi Taw, Myanmar: 1) the FD will assign the Director of the Training and Research Development Division (TRDD) as a non-standing Head; 2) the Secretariat will dispatch the Team leader of the Education & Planning Team; 3) the FD will assign their current officials for other positions including the Team leader of the Management Support Team; and 4) the Team leader of the Management Support Team assigned by the FD will also serve as an Acting Head of the RETC. Detailed scope of necessary staffing in addition to the basic administrative organization will be further discussed with the FD during the next Working Group (WG) Meeting tentatively scheduled to be held on March 2017.

1.3.3 Official Meetings for Project Implementation

Steering Committee (SC) Meeting

The 3rd SC Meeting was held on 20 January 2016 in Bangkok, Thailand. The Project Manager for the AFoCO RETC updated the Meeting on the progress of the RETC construction, and CM agency reported to the Meeting on the detailed construction schedule. The Meeting also discussed the

1. Component 1: Establishment of the AFoCO Regional Education and Training Center (AFoCO RETC)

organizational and operational plan for the RETC and agreed with the organizational framework for the RETC operation. The 4th SC Meeting was held on 3 November in Nay Pyi Taw, Myanmar, in order to discuss the necessary measures to deal with the construction delay. The CM agency explained to the Meeting about the possible options, including the termination of the contract, and necessary measures within the scope of contract conditions to address the construction delay and contract breach of the construction company. The Meeting agreed that if the construction company will not provide any acceptable action plan for the compliance with the contract conditions, current contract for the RETC construction should be terminated. The Meeting also agreed on the staffing plan for the RETC administrative organization.

Working Group (WG) Meeting

The 3rd WG Meeting was held on 10 May 2016 at the RETC Field Office, Hmawbi T/S, Yangon, Myanmar. The Project Manager for the AFoCo RETC updated the Meeting on the progress of the RETC construction since the 3rd SC Meeting and draft plan for the RETC landscaping. The Meeting also discussed and agreed on the FF&E procurement plan and necessary administrative support from the Myanmar side for material importation including tax-related matters. The Myanmar side also agreed to provide some of the planting materials for the RETC landscape as their in-kind contribution to the project.

Figure 1-27. Presentation on the construction progress in the 4th SC Meeting

Other Project Meetings

Technical Meetings with the Project Management Team under the FD have been held on a monthly basis to review the project progress and discuss technical matters on project implementation including the follow-up status of the SC and WG Meetings. Two Technical Meetings hosted by the Director General of the FD were held on 8 February 2016 and 5 October 2016 in order to discuss the follow-up actions of the 3rd SC Meeting and the necessary measures to be taken to deal with the construction delay.

Figure 1-28. 3rd Working Group Meeting and Site visit

2. Component 2: Development of Education and Training Programs for Capacity Building

2.1 Landmark Training Courses

2.1.1 Activities of Each Training Course

A total of 5 training courses were organized in 2016 with 158 participants as planned as shown in Table 2-1-1.

1. Sustainable Forest Management Policy

- **Date : 14-18 March 2016**
- **Venue : Madiun, Yogyakarta, Indonesia**
- **Participants : 27 Participants**

Sustainable Forest Management (SFM) emphasizes the need to strike a balance between a sustained yield (timber and non-timber) and a sustained social-environment. Thus in SFM, the management of forests must involve the provision of various forest products (goods and services) to meet peoples' needs while improving social and environmental conditions.

The first Landmark Training Course in 2016 was based on the topic of "Sustainable Forest Management Policy". The Secretariat cooperated with Perhutani Indonesia to conduct a one-week workshop and field training course to share knowledge and experiences in practicing SFM at the state level. The training course was aimed at helping decision makers and site managers in South East Asia countries come up with new strategies for SFM best practices.

The training course, which consisted of lectures, field courses and field excursions, was targeted at providing trainees with an adequate understanding of SFM principles, while serving as a platform of communication for ASEAN Member States to share experiences on the development of forest resources management policies. In the training course, lecture sessions on SFM framework and indicators, community-based forest management, tree breeding, planting and tending systems, and harvesting systems were delivered.

Figure 2-1-1. Trainees during a lecture session (top) and a cultural trip to Prambanan Temple (bottom)

2. Component 2: Development of Education and Training Programs for Capacity Building

2. Forest Fire Management and Sciences in the 21 Century for Training of Trainers

- **Date** : 23-27 May 2016
- **Venue** : Bangkok, Thailand
- **Participants** : 51 Participants (including 30 Thai fire rangers)

Forest fire science is an essential component of cohesive strategy plans and an adequate understanding of the topic is vital to ensure the effective implementation of forest fire management plans. The knowledge and experiences gained from this training course can be subsequently shared and utilized to contribute to the improvement of forest fire management in ASEAN countries.

Jointly organized by the Secretariat and the Royal Forest Department of Thailand, this year's forest fire training course was primarily targeted at the training of trainers of forest fire management staff in ASEAN countries by equipping them with a better understanding of forest fire sciences, which includes topics on fire modelling and community-based fire management. Another key objective of the training course was to provide participants with an opportunity to learn about the best practices of forest fire management in countries around the world, and develop conceptual ideas based on advanced forest sciences for the formulation of guidelines on forest fire management.

Throughout the intensive 3-day training course, participants attended lectures and discussion sessions facilitated by international experts, and also embarked on a field visit to the Sungnoen National Reserves Forest. Lecturers from the United States, the Republic of Korea and Thailand introduced new perspectives on forest fire management through engaging and insightful lectures on the ecology, forecasting, management and suppression of forest fires.

Figure 2-1-2. Trainees listening attentively during a lecture session at Kasetsart University

Figure 2-1-3. Trainees during a fire fighting practice session

2. Component 2: Development of Education and Training Programs for Capacity Building

3. Promoting Effective Participatory Forest Management

- **Date** : 15-19 August 2016
- **Venue** : Bangkok, Thailand
- **Participants** : 24 Participants

For more than a century, governance for natural resource management, especially in forestry, has largely been based on centralized and top-down approaches, focusing primarily on resource conservation goals.

If local communities are allowed to participate in decision making processes and express their concerns and perspectives, it will empower them to make their own choices and help to increase the effectiveness of forest and natural resource management policy processes, national programs, and regulatory frameworks. Experience has proven that compared to decisions made by central authorities, the active engagement of local people in natural resource management decision making leads to more equitable benefit-sharing.

The Secretariat, in collaboration with RECOFTC, planned a 5-day customized course that covered key concepts and practices related to effective forest management, participatory processes and tools, and good forest governance. This training course included a 2-day field trip to a community forest in Thailand where participants practiced applying concepts and tools they learned during the classroom lecture sessions. This course aimed to provide a basic understanding of community forestry concepts and principles as well as to provide opportunities for trainees to learn how to use participatory tools and techniques in assisting local people to develop community forest user groups and forest management plans.

Figure 2-1-4. Trainees participating actively in group presentations and small group discussions

Figure 2-1-5. Trainees meeting the members of a local community during a field trip to Ban Huay Sapan Samakkee Community Forest in Kanchanaburi Province

2. Component 2: Development of Education and Training Programs for Capacity Building

4. Learning Lessons from Asia's National Forest Rehabilitation Efforts

- **Date** : 26-30 September 2016
- **Venue** : Seoul National University, Seoul, Republic of Korea
- **Participants** : 31 Participants

Forest cover is continuing to decrease and threaten people's livelihoods despite much effort in forest rehabilitation and restoration. Some Asian countries have developed national rehabilitation plans/programs to rehabilitate and restore forests over large areas. For example, large-scale afforestation in Korea in 1970s and in China and Viet Nam in 2000's contributed to slowing down of the rate of deforestation in Asia. However, massive forest losses are still ongoing in many countries in Asia.

In line with the goal of the AFoCO, the training course on national forest rehabilitation efforts aimed to share best practices on the management of and policies related to national forest rehabilitation in Asia, as well as to discuss challenges faced in previous experiences to guide on-going and future rehabilitation efforts.

Through this training course, trainees gained a comprehensive understanding of forest rehabilitation policy and management, as well as silviculture techniques for sustainable forest management. The training course also provided trainees with an insight into Korea's national forest rehabilitation policies and international best practices of forest rehabilitation. In addition to lecture sessions as well as field trips to the Korea National Arboretum and the Forest Practice Research Center, participants also participated in a one-day Workshop on Silviculture for Sustainable Forest Management, which was jointly organized with the Research Center for Advanced Forest Technology (RCAFT).

Figure 2-1-6. Trainees listening to the guide at the Forest Practice Research Center

Figure 2-1-7. Trainees attending the workshop on Silviculture for Sustainable Forest Management

2. Component 2: Development of Education and Training Programs for Capacity Building

5. REDD+ and Forest Governance for Training of Trainers

- **Date** : 10-14 October 2016
- **Venue** : National Institute of Forest Science, Seoul, Republic of Korea
- **Participants** : 25 Participants

Reducing emissions through deforestation and forest degradation, commonly known as REDD+ (Reducing Emissions from Deforestation and Forest Degradation in developing countries, as well as conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries), is a global mechanism that aims to mitigate climate change by providing compensation to developing countries to protect their forests. Since there are considerable forested areas in either deforested or degraded conditions, there is significant potential for REDD+ activities and the conservation of existing forest areas.

Korea has developed several curriculums and teaching materials for REDD+ capacity building targeted at developing countries in the tropics. As compared to other middle power countries, Korea is able to play an important role in REDD+ capacity building because of its unique experience – Korea has been recognized as one of the most successful cases of reforestation in the world, and the government-led reforestation policy was a major factor that led to the success of reforestation programs in Korea.

This training course focused on "Technical Aspects Involved in Developing REDD+ Projects", as well as "REDD+ Safeguards and Stakeholder Engagements". The objectives of the training course were to share best practices on REDD+ and relevant forest governance as well as to provide practical REDD+ guidelines. The course provided participants with a comprehensive understanding of REDD+ and relevant forest governance issues and guided them in the identification of potential country-specific strategies of REDD+ awareness development.

Trainees participated in a 5-day course which consisted of 3 components – the field trip component, a 2-day intensive classroom learning component, as well as an international workshop. As part of the field trip component, trainees visited two REDD+ implementation sites in Korea – the Seoul Metropolitan Government-Kumho Tires "Carbon Offset Forest" project site, as well as the Incheon Metropolitan City-Korea Rail Network Authority "Green Forest" project site. Finally, participants attended the International Workshop on REDD+ and Forest Governance on the last day of the training course.

Figure 2-1-8. A trainee from Laos presenting on behalf of his group members during the interactive classroom session

Figure 2-1-9. Trainees during a field trip to a project site in Incheon

Figure 2-1-10. Moderators and panelists during one of the discussion sessions at the International Workshop on REDD+ and Forest Governance

2. Component 2: Development of Education and Training Programs for Capacity Building

2.2 Landmark Scholarship Program

2.2.1 2016 Landmark Scholarship Recipients

In 2016, the Landmark Scholarship Program offered scholarships to three grantees – one recipient for the Doctoral degree program recipient and two recipients for the Master's degree program. Each year, the Secretariat announces the list of universities that applicants can apply to and one of the general requirements is that the applicant must be a citizen of one of the AMS in order to be eligible to apply for the scholarship program.

The results of the 2016 Landmark Scholarship Program were announced in November 2015 and the three scholarship recipients have commenced their studies at their respective universities in the spring semester of 2016. In order to congratulate our scholarship recipients, official certificates were given out to each recipient at a Certificate Ceremony held on 17th June 2016 at the Secretariat's office.

The three outstanding recipients are:
Mr. Nhem Sareth from Cambodia (Doctoral degree program at Kongju National University), Mr. Somsanouk Pathammavongsa from Laos (Master's degree program at Kangwon National University), and Mr. Thant Sin Aung from Myanmar (Master's degree program at Chungbuk National University).

Figure 2-2-1. 2016 Scholarship Award Ceremony (17 June 2016)

Figure 2-2-2. Mr. Nhem Sareth, Mr. Thant Sin Aung and Mr. Somsanouk Pathammavongsa (from the top)

2. Component 2: Development of Education and Training Programs for Capacity Building

2.2.2 Essays from the 2016 Scholarship Recipients

1. Nhem Sareth

- **Country : Cambodia**
- **Studying : Kongju National University**
- **Major : Forest Management (Forest Policy) in Ph.D.**

I have always set ambitious goals to obtain a higher and competitive international degree, and enhance my professional skills, knowledge and practices on emerging global issues related to the environment, forest policy and governance, community forestry management, and climate change. Also, I have seen that environment and sustainable forest conservation has been discussed nationally and globally. Luckily, I have heard about Landmark Scholarship Program during my work with UNDP-Cambodia and Forestry Administration, where we have been implementing Cambodia' National REDD+ Program. I was inspired by the goal of this scholarship program "Restoring Degraded Forest in Southeast Asia as a Model for Greener Asia" with the aim of promoting capacity building in the forestry sector amongst AMS.

The program itself will benefit my professional career and research purposes. I will mainly be focusing on forest policy analysis, REDD+ politics and impacts, climate change mitigation, land tenure, community forest management, and rights of indigenous people and their roles in sustainable forest management in Cambodia and other ASEAN countries, respectively. Additionally, the Landmark Program provides support for international opportunities to present my research topics in various countries to other scientists, researchers and policy makers. South Korea is world model in forest restoration. Additionally, Kongju National University's facility is great and supportive for students. The study and research materials are available for students. Noticeably, I have been inspired by my professor and of course, he is my supervisor. He works so hard and gives a lot of advice to me and to other students so that we use the knowledge and skills to help our countries. I would like to express my sincere gratitude to the staff and management team of the ASEAN-ROK Forest Cooperation Secretariat and I would also like to sincerely thank the Forestry Administration, UNDP-Cambodia, and Kongju National University, for offering this opportunity to me.

2. Somsanouk Pathammavongsa

- **Country : Laos**
- **Studying : Kangwon National University**
- **Major : Forest Growth and Yield in MSc**

Nowadays, the world is immense efforts have been dedicated to promote forest plantation and restoration and the prevention of forest degradation. It is important to reduce damage to natural forests, increase forest land areas and forest cover to maintain the health of our natural ecosystems. Landmark Scholarship Program is the development of education and training program for capacity building of foresters and researchers who will lead sustainable forest management and restoration of degraded forest in the region. It provides a practical model for forest rehabilitation applicable to the Asian region while contributing to the narrowing of the developmental the gap among ASEAN Member States. This is one of the main reasons that I applied for the Landmark scholarship program and also this program is related with my job at the Department of forestry, Ministry of Agriculture and Forestry in Lao PDR.

I am very happy that I received the scholarship award from the Secretariat because sustainable forest management and forest plantation development in the Republic of Korea is based on very advanced technology. I hope that I can benefit and learn a lot of knowledge on sustainable forest development through this scholarship program. Also, I can learn and exchange experiences and ideas about forest management, traditions, and cultures with many international students and Korean students in my University.

I do expect that after I graduate from the forestry course, I can make use of the new technical skills and experiences from forest management in Korea to develop my work in my country. It will also benefit local staff, farmers, private companies, people, students, aid organizations and government departments who are interested in my research.

Finally, I would like to say thank you to Secretariat for offering this scholarship to me. This opportunity can enable me to upgrade my skills and educate me about sustainable forest management in Korea.

2. Component 2: Development of Education and Training Programs for Capacity Building

3. Thant Sin Aung

- **Country : Myanmar**
- **Studying : Chungbuk National University**
- **Major : Forest Ecology in MSc**

One of the environmental problems we are facing today is the increase in carbon dioxide in the atmosphere and its potential effect on the climate. The Landmark Program is one of the programs trying to mitigate the effects of climate change. This program includes a capacity building program which supports students in the forestry field to study in Korea. Working at the Ministry of Natural Resources and Environmental Conservation in Myanmar, I was very interested in and applied to the program when it was announced that the Secretariat is accepting applications for the 2016 Program.

It is a great pleasure to be selected as one of the 2016 scholarship recipients. In Korea, we can exchange different cultures with Korean people and students as well as other international students. We can also gain many forestry and environmental related knowledge, studying at the advanced universities in Korea, which can be applied to improving forestry sectors in our respective countries. Therefore, I believe that the Landmark Graduate Scholarship Program is a fruitful program that can contribute to creating Southeast Asia as a model for a greener Asia.

2.2.3 Selection of 2017 Landmark Scholarship Recipients

An Evaluation Committee Meeting, organized by the Secretariat, was held on 23 June 2016, and five recipients were selected from a pool of eight outstanding applicants from Cambodia, Laos, Myanmar, the Philippines, Thailand and Vietnam. All applications to the scholarship program underwent a selection process where they were evaluated based on a strict selection criteria focusing on applicants' study and career plans, work experiences, language proficiency, personal essays, and awards and publications. In the Spring Semester of 2017, the five scholarship recipients will start their studies in their respective universities.

Table 2-2-1 List of 2017 Scholarship Recipients

Scholarship Recipient	Country	MSc/ PhD	University
Ms. Siriluck Thammanu	Thailand	PhD	Seoul National Univ.
Mr. Aung Aung	Myanmar	MSc	Chungnam National Univ.
Ms. Baisone Inthirath	Lao PDR	MSc	Yeungnam Univ.
Ms. Ma Carmina M. Canua	Philippines	MSc	Dongguk Univ.
Ms. Tran Thi Mai Anh	Vietnam	MSc	Kookmin Univ.

2. Component 2: Development of Education and Training Programs for Capacity Building

2.2.4 Other Events

■ Committee Meeting for Landmark Scholarship Program

The first Committee Meeting for the Landmark Scholarship Program was held on 21 October 2016 during the Korea Forest Society Conference in Yesan-gun, Chungnam-province. This Committee Meeting was to share information on the Program, and discuss certain issues with current and future supervising professors. The Secretariat will continue to hold the Committee Meeting every year in order to improve the implementation of the program, as well as to maintain a high level of mutual understanding between supervising professors and scholarship recipients.

■ 2016 Annual Meeting for Landmark Scholarship Program

The 2016 Annual Meeting for the Landmark Scholarship Program was held on 19 December 2016 at the Secretariat. The Secretariat invited all scholarship recipients to share their experiences in 2016 and graduating candidates presented on their respective theses, while the other recipients presented on their academic progresses. The Landmark Team also explained the main changes in the rules and regulations of the Landmark Scholarship Program to be applied from 2017 onwards. Lastly, the Secretariat congratulated the two scholarship recipients, who are going to complete their academic journey in February 2017 - Mr. Neab Keng from Cambodia and Mr. Vo Trung Kien from Viet Nam. These two graduate candidates will be the first graduates of the Landmark Scholarship Program.

Figure 2-2-3 2016 Annual Meeting for Landmark Scholarship Program (19 December 2016)

■ Signing of MOU

Since the Landmark Program was launched in 2014, the Secretariat has signed a total of 8 Memorandums of Understanding (MOUs). The Secretariat and the College of Agriculture and Life Sciences (CALS) of Seoul National University, the 9th partner university, completed the signing of Memorandum of Understanding (MOU) by circulation on 30 December 2016. Following this MOU, the Secretariat will cooperate with the CALS in order to strengthen the implementation of the Landmark Scholarship Program as well as other cooperative activities.

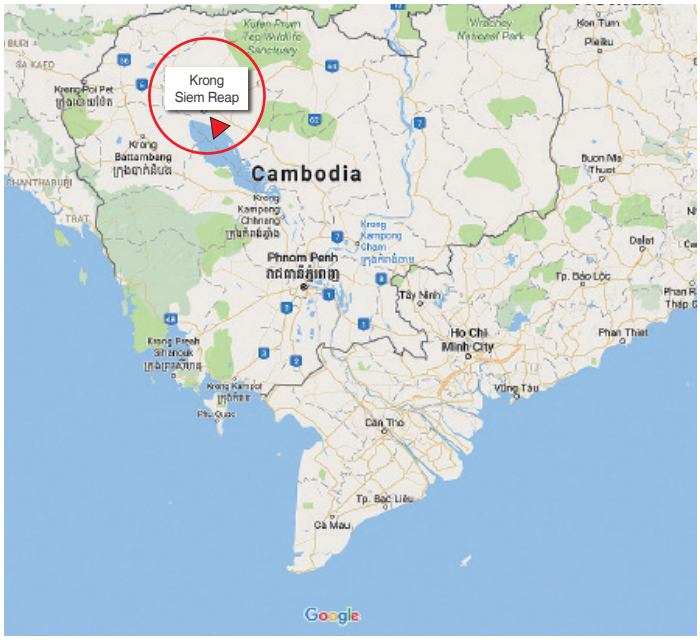
Table 2-2-2. List of MOUs signed between the Secretariat and Partner Universities

No.	Partner University	Signatory	Date of Signing
1.	Yeungnam University	Dr. Hadi S. Pasaribu (ED) and Dr. Noh Seok Kyun (President)	26 Mar. 2014
2.	Kongju National University	Dr. Hadi S. Pasaribu (ED) and Dr. Kim Changho (Acting President)	2 Dec. 2014
3.	University of Seoul	Dr. Hadi S. Pasaribu (ED) and Dr. Lee Kun (President)	17 Dec. 2014
4.	Kangwon National University	Dr. Hadi S. Pasaribu (ED) and Dr. Shin Seungho (President)	15 Jun. 2015
5.	Chungbuk National University	Dr. Hadi S. Pasaribu (ED) and Dr. Yun Yeopyo (President)	9 Jul. 2015
6.	Chungnam National University	Dr. Hadi S. Pasaribu (ED) and Dr. Jung Sangchul (President)	9 Jul. 2015
7.	Kookmin University	Dr. Hadi S. Pasaribu (ED) and Dr. Yu Jisoo (President)	19 Nov. 2015
8.	Dongkuk University	Dr. Hadi S. Pasaribu (ED) and Dr. Han Taesik (President)	30 Dec. 2015
9	College of Agriculture and Life Sciences (CALS) of Seoul National University	Mr. Choi, Jun-Seok (AED) and Mr. Jyung Chyul-Young (Dean of the CALS)	30 Dec. 2016

3. Component 3. Restoration of Degraded Forest Regions

3.1 Establishment of Forest Genetics Center for Restoration of Major Timber Species in Cambodia

- Project duration : 10 years (2016-2025)
- Project budget : USD 1,500,000
- Project site : Khun Ream, Siem Reap Province, Cambodia
- Project area : 248 ha
- Implementing agency : Institute of Forest and Wildlife Research and Development (IRD) under Forestry Administration (FA) of Cambodia



3.1.1 Overview

The main activities that were completed in this period include:

1) Plantation
   : Plus tree selection and seed collection
   : Seed germination of plus trees
   : Vegetative propagation test
   : Production and maintenance of seedlings in nursery
   : Layout research blocks and sub-plots of progeny test and clonal seed orchard
   : Land preparation and plantation (10ha)
2) Protection
   : Silviculture management (200ha)
   : Maintenance of fireline/firebreaks

3) Promotion and public awareness
: Signboards
: 3 site visits from the Ministry of Agriculture, Forestry and Fishery (MAFF), Asian Development Bank (ADB) and Prek Leap National School of Agriculture
4) Capacity building
: Training program for new FA officers
: Training program for university students
5) Project management
: Arrangement and procurement of materials
: Project monitoring/field follow up

3.1.2 Inception Workshop

Figure 3-1-1. Inception workshop in Cambodia

A workshop was organized in Siem Reap province to disseminate information about project implementation to the key stakeholders. The aim of this workshop was to present the overview, objectives and progress of the project. Besides functioning as a dissemination workshop, it also served as a forum for the sharing of the preliminary results of the project activities, and also the challenges that have occurred during the project implementation period. In addition, it is also a place to share information on the importance of conserving forest genetic resources. A total of 48 participants representing different stakeholders (national and provincial FA staff, CF committees, local authorities, representatives of the Secretariat, Royal University of Agriculture, Royal University of Phnom Penh and Prek Leap National School of Agriculture) attended the inception workshop.

3. Component 3. Restoration of Degraded Forest Regions

Figure 3-1-2. Field visit to Khun Ream research station

The participants visited the Khun Ream research station after the presentation to observe the progress of implementation, ongoing forest experiments, forest restoration techniques, infrastructure developed within the research station, etc. The participants also planted seedlings at the memorial tree planting before leaving.

3.1.3 Plantation Activities

Selection of plus trees

This activity was conducted with additional funding from the National Institute of Forest Science (NIFoS) of the ROK under the Research Agreement between IRD and the NIFoS. The project has completed the identification of plus trees that will be used as mother trees for the project. 300 trees were identified and three major timber species were selected for progeny testing and seed orchard establishment: ***Dalbergia cochinchinensis, Pterocarpus macrocarpus*** and ***Dipterocarpus intricatus***. These timber species are located in 8 provinces: (1) Takeo, (2) Siem Reap, (3) Kep, (4) Battambang, (5) Pursat, (6) Kampong Speu, (7) Kompot and (8) Kampong Som provinces. The assessment team conducted field surveys and data collection of the mother trees in these provinces. All necessary information on each plus tree was recorded and stored in the database. The data includes (1) date of seed collection; (2) coordinates of the identified plus tree; (3) estimated age of plus tree; (4) diameter of plus tree; (5) height of plus tree; (6) crown of plus tree and (7) health of the plus tree.

Figure 3-1-3. Plus tree identification and marked

The identification of plus trees was a critical component of the project as it is a starting point for the tree breeding activities of the project. The seed collection for the three target species, ***P. macrocarpus, D. cochinchinensis*** and ***D. intricatus*** were completed. The objective of the assessment is to identify 100 plus trees per target tree species (300 plus trees in total) across all ecological zones in Cambodia. The 300 plus trees were identified as mother trees so that the seeds from these 300 plus trees will be collected and germinated for the establishment of the progeny test plantation and seed orchard. The identification of the mother trees was based on the Danish International Development Agency (DANIDA) project report on the natural distribution of key timber species of the country. In this project, the selection of the plus trees (mother trees) is based on the superior phenotypic characteristics of the trees, such as diameter, height, crown, and health.

The assessment team conducted field data collections/surveys in 8 potential provinces including Preah Vihear, Siem Reap, Kratie, Mondulkiri, Pursat, Kampong Speu, Koh Kong and Kampot provinces. These provinces were selected based on "DANIDA" Cambodia Tree Seed Project's Forest Gene Conservation Strategy; Part A: Conservation of Forest Genetic Resource, 2003" The team has extended the seed collection work into more provinces to explore additional superior plus trees and its genetic diversities. These provinces are: Takeo, a province bordered to Kampot; Kampong Soam, a province bordered to Kampot and Koh Kong; and Battambang, a province bordered to Pursat.

Based on meetings and discussions with several key informants in each province during field data collections, the team learned that there are slight variations in the actual season of flowering, fruiting and seed collection as compared to the DANIDA study. The differences were observed in ***P. macrocarpus*** only and the other two plant species ***(D. cochinchinensis*** and ***D. intricatus***) were observed to have the same season of flowering, fruiting and seed collection as the DANIDA study. For ***P. macrocarpus,*** the change was observed in the seed collection schedule, meaning that seed collection begins from October.

During collection, all the necessary information for each plus trees was recorded. The label bears the following information:

- Date of seed collected;
- GPS coordinates;
- Estimated age;
- Diameter;
- Height;
- Crown; and,
- Health.

The project team noted the need to conserve the identified plus trees especially in pagodas and inside community forestry areas. The intervention needs include educating the people on the importance of the plus trees.

3. Component 3. Restoration of Degraded Forest Regions

Establishment and progeny test plantation

- Seed collection

The project Team collected seeds from the mother trees since some of the seedlings were not sufficient to cover the second site. About a hundred plus trees were identified and the relevant data was collected in the provinces (Table 3-1-1). All necessary information on each plus tree was recorded and stored in the database. After the completing the profiling of plus trees, the "Plus Tree Data Collection Book" is due for publication as part of the technical cooperation between the Secretariat and NIFoS.

Table 3-1-1. Seed collection from plus trees

Province	Number of mother trees where seeds were collected		
	D. cochinchinensis	***P. macrocarpus***	***D. intricatus***
Siem Reap	2	18	53
Kampot	-	4	-
Kep	-	5	-
Kampong Speu	60	-	-
Pursat	23	34	37
Takeo	-	4	-
Kampong Soam	-	40	-
Battambang	16	-	-
Preah vihear	-	-	10
Total Mother Trees	**101**	**105**	**100**
Total Provinces	4	6	3

Figure 3-1-4. Plus tree identification, marked and seed collection

Figure 3-1-5. Collecting seeds from identified mother trees

3. Component 3. Restoration of Degraded Forest Regions

- Production and maintenance of seedlings

The collected seeds were sown in Khun Ream nursery. It was observed that the germinative energy of two species, ***D. cochinchinensis*** and ***P. macrocarpus***, were stable, while ***D. Intricatus*** showed a poor germination and survival. The long drought may have affected the growth cycle of the seedlings. It was decided that the germination and sowing of ***D. intricatus*** would be postponed since the seeds would only be available by end of April or May.

Figure 3-1-6. Seedlings produced and maintained in the nursery

The seedlots were labeled for their origin and the number of each mother tree, which includes the date of seed treatment, seed sowing, and transplanting to the plastic bags. The sown seedlings were maintained by regular watering. All seedlings were monitored and recorded regularly. The overgrown trees were changed to the bigger plastic bag to support their growing and all the broken labels were removed and placed with the new one. The number of seedlings of each plus tree are shown in Table 3-1-2.

Table 3-1-2. Germination of the collected seeds

Species	Pursat	K. Speu	Siem Reap	Preah Vihear	BtB	K. Som	Kompot	Kep	Takeo	Total
D.cochinchinensis	14,185	27,828			4,832					46,845
P.macrocarpus	1,552		1,550			3,255	290	258	335	7,240
D. intricatus	1,338		2,503	675						4,516
Total	15,075	27,828	4,053	675	4,832	3,255	290	258	335	58,601

Planting design and layout for progeny test and seed orchard

The first 15-ha of Progeny test and seed orchard were establised.

The layout of blocks and sub-plots were completed, and Four blocks measuring (180 x 150) m and 1,200 plots measuring (6 x 15) m were established the boundary of blocks were demarcated by installing poles around each block and for the plots. A buffer zone was established to minimize the problems of contamination by pollination from the progeny test plantation and the other plantation around to the seed orchard. The replica site (another 15 ha) will be established in Chan Sor forest reserve in 2017.

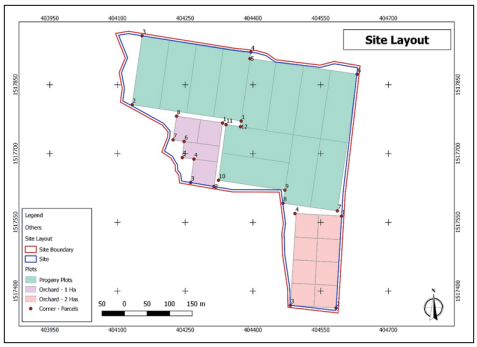


Figure 3-1-7. Site layout of progeny test plantation andseed orchard (15 ha)

Table 3-1-3. Summary of the design of progeny test plantation and clonal seed orchard

Plan tation	Design							
	Number of block	Number of plot	Plot size	Block size	Spacing between seedlings	Number of seedling per plot	Total number of seedling	Total area (ha)
Clonal seed orchard	3	12	50 x 50m 35 x 27 m	100 x100m	5 x 5m	100	1,200	3
Progeny test	4	1,200	6 x15m	180 x 150m	3 x 3m	10	12,000	10.8

Figure 3-1-8. Aerial view of newly planted progeny and seed orchard sites (15 ha)

3. Component 3. Restoration of Degraded Forest Regions

- Land preparation & plantation

The area was cleared of the debris before planting. By clearing the area, the seeds of other unwanted species were effectively removed to prevent them from colonizing the area in the future. Including the pathways/buffer, the total area that was cleared is approximately 17 hectares.

Figure 3-1-9. Planting the seedlings for progeny test

Different mother trees were randomly distributed across the experimental plots. A two-stage randomization was conducted: (1) random distribution of the species in each block and (2) random distribution of the mother tree in each plot. A total of 8 hectares were planted with 8,000 seeds of ***D. cochinchinensis*** and ***P. macrocarpus.*** The seedlings were planted with spacings of 3 x 3 m. The planting of 4 hectares of ***D. intricatus*** was postponed and will be conducted in 2017 since the seedlings of ***D. intricatus*** are still young not suitable for outplanting yet.

- Fencing, signboards & labelling

After the plantation activities, fencing of the area was completed to demarcate the area and protect the plantation from encroachment. The installation of signboards in the first site and 3 small boards for the progeny tests were completed. About 1,200 wooden poles were installed in the site for the labeling of each tree.

Establishment of clonal seed orchard

- Preliminary test for cutting and grafting

Prior to the main vegetative propagation for the clonal seed orchard, the project tested two types of vegetative propagation methods: cutting and grafting. This activity was conducted with additional funding from the NIFoS. The experts from the NIFoS gave demonstrations on various grafting and cutting techniques to the nursery staff .

Several media combinations were prepared for the cutting experiment. The project tried perlite, vermiculite and peat moss from Korea that was used for the cutting experiment. These germination media could not be found in Cambodia, so the project tested the use of alternative media as substitutes. The project team used sand, white stone, coconut dust, biochar (carbonated rice hull) and compost soil. Different combinations were developed for the germination media. This exploratory experiment aims to find out the dermination media that each species responded

well to. The soil media was sterilized for 10-15 minutes before being placed in the potting containers. The sterilization aims to kill any soil fungi or bacterial inoculum that may infect the cuttings. The media combinations are as follows:

1. Coconut dust + Sand + White stone
2. Coconut dust + Sand
3. Coconut dust + White stone
4. Sand + Bio char
5. Compost soil + Sand + White stone
6. Compost soil + White stone
7. Coconut dust + Perlite (Korea) + Vermiculite (Korea)
8. Bio char

Figure 3-1-10. Supplies and materials used in the experiment

The cuttings in this experiment were treated with hormones (ANNA from Korea and Liger root from Cambodia) beforebeing planted in the different types of soil media.

Figure 3-1-11. Soil preparation (mixing rate, soil sterilization and filling soil into black pot)

3. Component 3. Restoration of Degraded Forest Regions

Table 3-1-4. Survival (%) of cutting test

Vegetative Experiment	*P. macrocarpus*	*D. cochinchinensis*	*D. intricatus*
1.0 Treated with ANNA Hormone			
1.1 Cuttings with Leaflets			
Soil Media #1	0%	20%	0%
Soil Media #2	10%	0%	0%
Soil Media #3	70%	40%	0%
Soil Media #4	100%	20%	0%
Soil Media #5	100%	10%	0%
Soil Media #6	60%	60%	0%
1.2 Cuttings Without Leaflets			
Soil Media #1	10%	40%	0%
Soil Media #2	10%	40%	0%
Soil Media #3	90%	10%	0%
Soil Media #4	100%	0%	0%
Soil Media #5	80%	20%	0%
Soil Media #6	50%	60%	0%
2.0 Treated with Liger Root Hormone			
2.1 Cuttings with leaflets			
Soil Media #1	46.6%	46%	0%
Soil Media #2	40%	20%	0%
Soil Media #3	66%	13%	0%
Soil Media #4	33%	53%	0%
Soil Media #5	66%	13%	0%
Soil Media #6	60%	26%	0%
2.2 Cuttings Without Leaflets			
Soil Media #1	40%	46%	0%
Soil Media #2	46%	40%	0%
Soil Media #3	66%	13%	0%
Soil Media #4	60%	20%	0%
Soil Media #5	26%	40%	0%
Soil Media #6	46%	53%	0%
3.0 Treated with Liger root + Soil Media #7			
With leaflets	0%	100%	0%
Without leaflets	0%	100%	0%
4.0 Treated with Liger root + Soil Media #8	0%	0%	0%

Figure 3-1-12. Field grafting of *Dipterocarpus intricatus*

As there was available rootstock in the nursery, ***D. cochinchinensis*** and ***P. macrocarpus*** were tested several times for their suitability for grafting. The grafted seedlings were covered with a canopy to prevent desiccation. The grafting trial of ***D. intricatus*** was conducted in the field because of the unavailability of rootstocks. The suitable wildlings were used as rootstocks. The scions were collected from the around the research station and the seed source area. The scions were collected only for the exploratory experiment. The scions of ***D. cochinchinensis*** and ***P. macrocarpus*** were brought to the nursery and grafted to the rootstocks. They were also used as cutting materials. After ten (10) days, the survival rate of the plants in the grafting and cutting experiments were recorded.

The results showed that all the cuttings of ***D. cochinchinensis*** and ***D. intricatus*** died. The cuttings of ***P. macrocarpus*** developed young shoots, but its roots did not develop fully. For grafting, ***D. cochinchinensis*** and ***P. macrocarpus*** finally showed high survival rate, so that the project decided use grafting method for the two species.

3. Component 3. Restoration of Degraded Forest Regions

- Preparation of germination chambers for clone propagation

The preparation of canopy and gemination chambers for the asexually propagated seedlings was completed. In the forest site, two portable canopies made of plastic were prepared to hold the grafted seedlings. The purpose of the canopy is to protect the seedlings from desiccation.

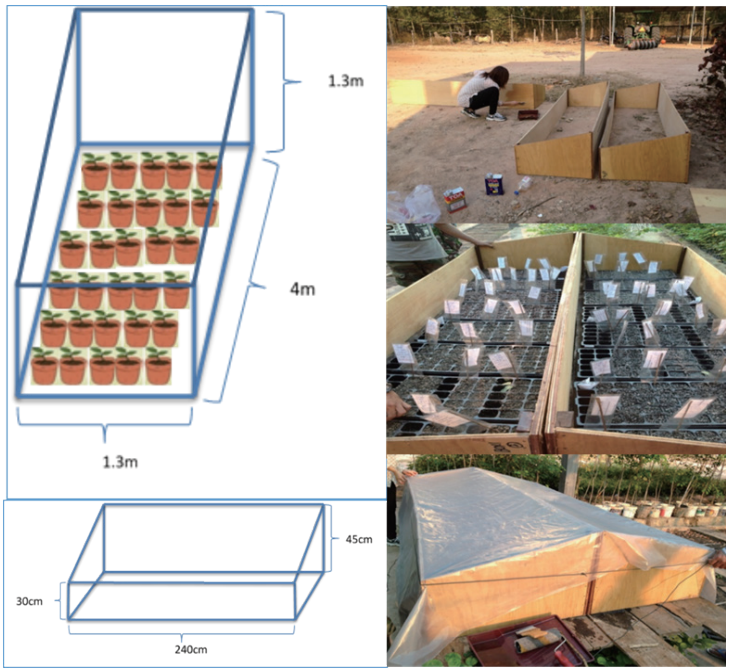


Figure 3-1-13. Preparation of the propagation chamber for cutting

Figure 3-1-14. Preparation of the canopy for the grafted seedlings

- Propagation of planting materials: seed & scion collection

The seed collection that were used for the production of rootstocks was conducted together with the seed collection activity for the progeny test plantation. The seeds were then germinated and grown in the nursery as rootstocks for the grafting.

Scions from the 37 plus trees of ***D. intricatus*** were collected for asexual propagation. The scions collected were between10 to 20 cm long. The collected scions were wrapped with moist cloth and wrapped with plastic to prevent desiccation. The collected scions were labeled with the date of collection, plus tree ID and location. The collected scions were placed in the ice buckets filled with ice to keep the temperature low and transported to the nursery immediately.

At the nursery, the collected scions were immediately grafted to minimize mortality. The collected scions were placed in the ice bucket while performing grafting operation to prevent desiccation. The scions, measuring 1-2 cm, were used for grafting to the rootstock, and cut 1-3 cm. above the root collar. The rootstocks of two species, ***D. cochinchinensis*** and ***P. macrocarpus*** were produced in Khun Ream nursery. However, ***D. intricatus*** seedlings were purchased from the FA nursery of the other province because of limited number of seeds for the production of the rootstock.

Figure 3-1-15. Collecting scions

3. Component 3. Restoration of Degraded Forest Regions

- Propagation of planting materials

The working group conducted the grafting of the collected scions. The scions (1-2 cm) were used for grafting to the rootstock (1-3 cm). The appropriate seedling stocks were selected for grafting. During the course of grafting, the scions were kept in the ice bucket. The team grafted 10-15 scions from each plus tree. The grafting of *D. cochinchinensis* and *P. macrocarpus* were completed. The grafting of seedlings was conducted at the nursery in Siem Reap and also in the central nursery. The seedlots of grafted seedlings were labeled with their origin and respective mother tree, and they were maintained by regular weeding and watering while being monitored for to gauge their survival rate.

Figure 3-1-16. Grafting of seedlings

Unlike two other species, the team has difficulty in producing grafted seedlings for *D. intricatus*. As recommended, the Project team tried grafting *D. intricatus* to *D. alatus* rootstocks, but it was unsuccessful. Following the recommendations of Korean experts, the project team tested the grafting of *D. intricatus* scions to the rootstocks of *D. alatus*. A total of 370 grafted seedlings were produced. Cuttings were also tested for *D. intricatus* but it was also unsuccessful. The project team will conduct further testing in 2017. Based on the results, the Project will use seedlings of *D. intricatus* instead of asexually propagated plans, and establish the seedling seed orchard.

Figure 3-1-17. Asexual propagation production of *D. intricatus*

- Planting design and layout

The clonal seed orchard cover 3 hectares. The layout of blocks and sub-plots had been completed. Three blocks (100 x 100 m), eleven plots (50 x 50 m) and one plot (35 x 77 m) were established. The boundary of the blocks was established by installing poles at the corners. The boundaries of plots were established by planting cassava.

- Land preparation and plantation

The land preparation was conducted together with the progeny test plantations. A total of 2 hectares were planted with 800 seedlings of two species, ***D. cochinchinensis*** and ***P. macrocarpus.*** The seedlings were planted with a spacing of (5 x 5m). But ***D. intricatus*** will be planted in the seed orchard next year to ensure that the seedlings will be ready for planting. Based on the technical meeting held on 26-27 September, 2016, the duplicate site for the clonal seed orchard will be established next year based on the results of the grafting or cutting experiments.

Figure 3-1-18. Tree planting of seed orchard

- Fencing, signboards & labelling

Fencing of the area was conducted together with the progeny test plantations. The fence consists of posts and double layer barbed wire to prevent the encroachment by domestic animals. 1 big signboard and 3 small boards were installed in the seed orchard block.

- Construction of canal & pong for watering

A small canal was dug inside the plantation to serve as a drainage system to reduce waterlogging. A pond (20 x 30 x 3 m) was also dug tocollect water during the rainy season. The water stored in the pond will be used as a source for watering purposes during the dry season. Another canal and pond will be constructed in the second site.

3. Component 3. Restoration of Degraded Forest Regions

Figure 3-1-19. Aerial view of constructed drainage canal

Figure 3-1-20. Constructed Pond

3.1.4 Forest Protection Activities

Silvicultural management of experimental forest

The project also maintains the experimental forest and the established Dalbergia plantation last year. The silvicultural management includes weeding, pruning, monitoring, and forest fires protection. Key activities were carried out as following:

- Maintenance of fireline/firebreaks;
- Conducted pruning in ***D. cochinchinensis*** plantation 10 hectares;
- Conducted pruning and tractor weeding in the memorial tree planting site 2 hectares;
- Conducted weeding inside and surrounding station campus; and,
- Patrolling and controlling forest plantation site.

Monitoring and maintenance activities were conducted. The project team focused on patrolling the plantation since last year due to El Niño. The long drought has threatened the plantations and the project staff needed to intensify its patrol operations. One experimental site (2.3 ha) of screening species plots has been damaged by forest fire.

Figure 3-1-21. Protection and silviculture activities conducted by the project

3. Component 3. Restoration of Degraded Forest Regions

3.1.5 Promotion and Public Awareness Activities

The project also accepted visitors in order to promote the disseminating information. The project implementation went well and the project attracted many visitors to the project site to learn on restoration techniques as well as to exchange experiences. Among many visits, the project wishes to pinpoint the few visits including:

- On 19 April, 2016, the minister of Ministry of Agriculture, Forestry and Fishery, the DG of Forestry Administration and officers visited the seed source area of Dalbergia and project sites;
- On 21 April 2016, a group from the Asian Development Bank (ADB) project visited the project site to learn about forest restoration and rehabilitation program under the government's forest restoration program; and,
- On 25 May, 2016, lecturers and students from Prek Leap National School of Agriculture visited the project site to observe the activities and researches conducted.

Figure 3-1-22. Project site visits

3.1.6 Capacity Building Activities

Training in Cambodia

IRD has arranged the training program for new FA officials. The training aims to provide participants with knowledge and information on: 1) responsibilities and management structure of each department under FA, and 2) project implementation under IRD.

A total of 30 participants attended the training. The training consisted of 2 sesssions. The first session of the training program was held from 12-16 September 2016 and the topic was about theories on Forest Restoration, progeny test, establishment and management of seed orchard, and project implementation at Khun Ream Forest Research Station in Siem Reap.

The second session involved field work from 18-24 September 2016. The training was linked with a field visit and practicum in the station. The purpose of the visit was to expose the participants to forest experiments, various forest restoration techniques and practical experiences. Furthermore, the project team was exposed to the sites and various activities, especially related with nursery operation and management.

Figure 3-1-25. Education and training program for new FA officials

3. Component 3. Restoration of Degraded Forest Regions

Korean expert's visit to Cambodia (additional fund from the NIFoS)

A Team of Korean experts visited the project site to provide guidance to the project staff, especially on vegetative propagation techniques. The experts also provided advice on the layout of the experimental plots.

Procurement of materials and equipment

The project team purchased the items as listed in the work plan in accordance with the bidding regulations of the government.

Table 3-1-6. List of materials and equipment

No.	List of items	Quantity	Location
1	Cannon Scanner 9000F	1	IRD
2	Brother Printer DCP-T700W	1	IRD
3	Copymachine Kyoceraecosys FS-6525MFP	1	IRD
4	Dell Desktop Computer Opteplex 3040 Mini Tower	2	IRD
5	Dell Laptop Latitude E7470	2	IRD
6	Nikon Camera D3200 Standard Package	1	IRD
7	Garmin GPS Map 64S	4	IRD
8	Telescope PF-65ED	2	IRD
9	HAGLOF Laser Vertex Hypsometer	1	IRD
10	Vernier Calipers	4	IRD
11	BOSCH GSA 1100 E Professional	5	IRD
12	AVR (UPS 600W Automatic Voltage Regulator)	2	IRD
13	Tent (4 Persons, one-touch)	4	IRD
14	Height-measuring rod	4	IRD
15	Grass Cutter Machine	10	IRD
16	Hyundai SANAFE 4WD	1	IRD
17	Honda Dream Mortobike	1	IRD

3.1.7 Project Management Activities

Technical meeting for internal monitoring and evaluation

"The Technical Meeting for Internal Monitoring and Evaluation for Landmark Program of Establishment of Forest Genetics Research Center for Restoration of Major Timber Species in Cambodia was organized from 26-27 September 2016 in Siem Reap, Cambodia". The Meeting was attended by project personnel, chaired by National Project Director (NPD) from Cambodia and a co-chaired by Project Manager for Restoration Project under Landmark Program (PMR) as the representative from the Interim Secretariat for AFoCO.

The Project Coordinator of Landmark Program reported to the meeting that 8 ha of the progeny test plantation (4,000 seedlings/4 ha/species) and 2 ha of the clonal seed orchard sites were accomplished during the late August 2016 with two of three target species of ***D. cochinchinensis*** and ***P. macrocarpus***. For the progeny test plantation, PMR, in prior discussion with experts in Korea, suggested the project team record the initial growth data. For the seed orchard of ***D. intricatus***, the Meeting agreed to establish the seedling seed orchard (SSO) in Siem Reap (1 ha) next year instead of the clonal seed orchard (CSO) upon results of grafting and cutting experiments consulted by the Korean experts through two training courses in Korea and Cambodia in 2016.

Monitoring and evaluation

The project conducted two meetings to review and approve the Annual Work Plan and define the different activities. On 15 December 2015, the Project conducted a meeting on reviewing and revising 2016 Annual Work Plan of the project. The second meeting took place on 8 January 2016. The second meeting introduced the composition of the Project Steering Committee and Project Working Group. The meetings discussed the progress of implementing the annual work plan of the project and the locating of the site. The Project Working Group presented the issues related to the security of the project.

3.2 Village-based Forest Rehabilitation in Lao PDR

- Project duration : 10 years (2016-2025)
- Project budget : USD 1,500,000
- Project site : Paksong District, Champasak Province, and Sangthong District, Vientiane Capital, Lao PDR
- Project area : 3,620 ha
- Implementing agency : Department of Forestry (DOF), Lao PDR

3.2.1 Overview

The main activities that were completed in this period include:

1) Plantation
   : Establishment of Village Forest Development Groups (VFDGs)
   : Seed collection
   : Seedling production for ex-situ plantation
   : Survey and demarcation of project areas and preparation of ex-situ and enrichment plantation
   : Development of reforestation concept and related methodologies, including guidelines
2) Protection
   : Establishing of Village Forest Protection Groups (VFPGs)
   : Conducting Village Driven Forest Patrolling (VDFP) covering the whole project site

3) Promotion and public awareness
: Signboard
: Organize Arbor Day Events including awareness raising materials
Capacity building
: Conducting community consultation on seedlings production
: Organizing study tours for stakeholders at policy and managerial levels
: Organizing training courses for forestry sectors at implementation level
: Conducting village consultation for villagers' engagement in project implementation
: Organize various training modules for villagers
4) Project management
: Arrangement and procurement of materials
: Renovating/expanding field office and improvement of access roads
: Project monitoring/field follow up

3.2.2 Inception Workshop

Figure 3-2-1. The inception workshop

The inception workshop was held in Vientiane on May 30-31, 2016 (Figure 3-2-1). The main objective of the workshop is to introduce the project concept, framework and implementation arrangement in forestry sectors, local authority and stakeholders concerned, while announcing the official start of the project implementation. The workshop was chaired by Director General of Department of Forestry and attended by 44 participants from different divisions of the DOF, the representatives from the Interim Secretariat for AFoCO as well as Champasak and Vientiane Capital including Paksong and Sangthong districts. In addition, an expert of Saemaul Undong from the ROK was invited to give a special talk on the concept.

3. Component 3. Restoration of Degraded Forest Regions

3.2.3 Plantation Activities

Seed collection in Paksong & seedling production in Sangthong

In October 2016, about 25 kg of seeds of three (3) native tree species were collected, of which 15kg were ***Paramichelia baillonii***, 5kg were ***Persea kurzii*** and 5kg were ***Spondias axillaris***. The seeds also will be used for the seedling production for ex-situ conservation site in June 2017.

The contract agreement for seedling production in Sangthong was signed. The project staff signed a contract with Nalath DAFO's nursery at Nachalern Village. Based on the contract, 40,000 seedlings will be produced in 2017 and will be ready for planting in 5 ha of ex-situ plantation in June 2017. The price of seedlings was determined on the basic market price, which includes transportation of seedlings to the ex-situ planting areas, maintenance of seedlings after 6 months (up till they are 24 months old) in the nursery.

Table 3-2-1. Seedling production for the ex-situ conservation site in Sangthong

	Species	Price of seedlings* (Lao Kip)	Amount (Lao Kip)	Total price (Lao Kip)
1	***Pterocarpus macrocarpus***	4,000	10,000	40,000,000
2	***Tectona grandis***	4,000	10,000	40,000,000
3	***Afzelia xylocarpa***	4,000	10,000	40,000,000
4	***Hopea odorata***	4,000	4,000	16,000,000
5	***Dipterocarpus alatus***	4,000	3,000	12,000,000
6	***Sindora cochinchinensis***	4,000	3,000	12,000,000
Total			40.000	160.000.000 Kip

*Price of seedlings including transportation and maintenance up to 24 months in the nursery

Survey and demarcation of project areas

The ground survey and boundary demarcation of the project's rehabilitation sites in Paksong and Sangthong have been completed. In Paksong, between 15-26 June 2016, the project staff and villagers completed the ground survey and site demarcation for the ex-situ conservation and enrichment plantation. 19 GPS points have been marked on the ground and species richness in the rehabilitation sites were also recorded. 25 tree species with different diameter classes (10-19; 20-29; >30 cm) were recorded in the enrichment area. In December 2016, the project staff and villagers conducted demarcation of project areas with concrete posts (12x12x100 cm). 38 posts were demarcated mainly in areas where there are high encroachment risks.

Meanwhile, in Sangthong, the ground survey was conducted in 7-26 July 2016. The survey team comprised with 9 staff from DOF, 1 staff from Vientiane Provincial Forestry

Secticon (PFS) and 2 Sangthong DAFO, and 11 villagers from 4 villages (Nachaleaun, Taohi, Nong Boua, and Koy), totally 23 people. The main achievement of this survey is the demarcation of the project boundary (except ex-situ conservation area). 228 GPS points have been marked on the ground and 28 tree species with different diameter classes (10-19; 20-29; >30 cm) were recorded in the enrichment area. In November 2016, the project staff and villagers conducted the demarcation of project areas with concrete posts (13x13x100 cm). 70 posts were demarcated mainly in areas where there are high risks of encroachment, such as Nong Boua (8 points), Koy (21 points), Nachalearn (17 points), Taohi (14 points), and ex-situ plantation areas (10 points).

Figure 3-2-2. Rapid ground survey and demarcation with cement posts in Paksong

Figure 3-2-3. Rapid ground survey and demarcation with cement posts in Sangthong

3. Component 3. Restoration of Degraded Forest Regions

Establishment of Village Forest Development Groups (VFDGs)

Five VFDGs have been established in Sangthong and Paksong. Four of these VFDGs were established in Sangthong (Nachalerun, Koy, Nongboua, and Taohi), while one VFDG was established in Kongtoun and Bengkatoud in Paksong, with 73 members in total (Paksong – 44 members; Sangthong – 29 members). In 2016, Sangthong and Paksong's VFDGs did not sign any contract with the project staff for seedling production, and the initial discussion was made with VFDGs in Sangthong and Paksong. Based on the discussion, the VFDGs concluded to have a similar contract and condition with those one signed between the project staff and Nachalern nursery in Sangthong. Since the project intends to buy seedlings from villagers with market, a contractual agreement between the project team and producers shall be developed and registered in 2017.

3.2.4 Forest Protection Activities

Establishment of Village Forest Protection Groups (VFPGs)

The VFPGs in Sangthong and Paksong have been completely established. There five groups in total, of which four VFPGs are in Sangthong, namely Nachalerun, Koy, Nong Boua, and Taohi VFPG and one VFPG is in Kongtoun and Bengkatoud in Paksong. The main task of the VFPGs is to conduct forest patrols to protect forests from offenders. The VFPG will also act as local key informants who work with and feed information to official forest inspectors. Rules and regulations on management and works system of these groups will be developed by group committee members in 2017 and acknowledged by Sangthong and Paksong DAFO.

Conducting village driven forest patrol

In 2016, the project staff and VFPG members only conducted patrols in Paksong because of the late establishment of VFPG in both Paksong and Sangthong. In mid of December, the project staff and VFPG members (8 Members) conducted a forest patrol. This time of patrol focused on identification of patrol route and viewpoints. In 2017, the patrols will be conducted in a systematic manner, covering the whole project site, including the areas covered by forest plantation and enrichment plantation. More frequently, the patrols should be conducted during dry season where forest fire normally occurs.

Figure 3-2-4. Forest patrol by Village Forest Protection Groups (VFPGs)

3.2.5 Promotion and Public Awareness Activities

Organizing events for National Arbor Day

In 2016, tree planting ceremonies were organized thrice in Santhong and Paksong. The first ceremony was organized in Nachaleun Village of Sangthong District, Vientiane Capital on May 31, 2016 (Figure 3-2-5). The ceremony was attended by the representatives from the Interim Secriteria for AFoCO, government agencies in Sangthong district, youth organizations from DOF, students from Nachalern secondary school, and the local newspaper. The second planting ceremony was organized in the field office in Nachaleun Village of Sangthong District, Vientiane Capital on December 5, 2016. The ceremony was attended by the Project Steering Committee for the Village based Forest Rehabilitation in Lao PDR under the Landmark Program and was attended by government agencies from Sangthong district and DOF, Nachalern villagers, and a MAF correspondent. The third ceremony was organized in the field office at Kongtoun Village, Paksong District, Champasak Province, on December 28, 2016. The ceremony was attended by the DG of DOF, Paksong District Governor, and government agencies from DOF, Champask and Paksong district, Kongtoun villagers, and a MAF correspondent.

Figure 3-2-5. Tree planting ceremony in Nachaleun Village of Sangthong

3. Component 3. Restoration of Degraded Forest Regions

Signboards

A total of six signboards were installed. In Sangthong, four signboards were posted at each village of Nachalearn, Koy, Nong Boua, and Taohai to show important information on enrichment planting site and its boundary. The signboard titled "Forest Management and Development of (name of village)" showed the location of the project area and the different types of land use in each village. In Paksong, two signboards are ready to be posted Ban Kongtoun village and Beng Katoud village. The information in the signboard is the same as those used in Sangthong.

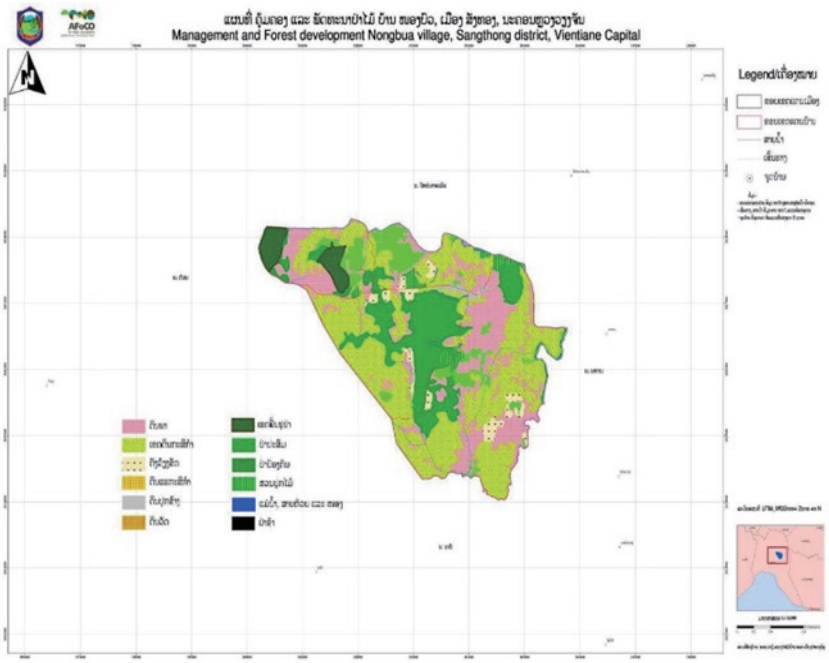


Figure 3-2-6. Signboards in Nong Buoa, Sangthong

3.2.6 Capacity Building Activities

Community consultation on seedling production

In 2016, three consultation meetings on seedling production were conducted (two meetings in Paksong and another in Sangthong). In Paksong, the 1st meeting was conducted at Kongtoun Village on 5 October 2016 and another meeting was conducted in late October. The meeting focused not only on the establishment of VFDGs but also on seedling production. The meeting was shared by the Deputy Head of Champasak Provincial Forestry Section (PFS) and attended by 40 participants from a different sector in Paksong District, representative from DOF including villagers from Kongtoun and Beng-Katoud Village. The villagers generally agreed to form a Village Forest Development Group. 33 people from 17 families were selected as members of this group. The mandates and working systems of this group will be discussed among their

members in order to prepare for the signing of a contract with the project team for seedling production, enrichment planting, etc. In Sangthong, the meeting was conducted in Nachalern Village of Sangthong in late October 2016. The meeting was to focus on the establishment of Village Forest Development Gruops (VFDGs) in Sangthong as well as seedling production. As a result, four VFDGs have been established.

Figure 3-2-7. Village consultation meetings to establish VFDGs

Study tours for stakeholders at policy and managerial levels

- Republic of Korea

The 1st study tour to Korea for stakeholders at the policy level was organized in October 2016. The main objective was to learn from the practical experiences related to the successful forest restoration of Korea. The study teams led by the DG of DOF visited various places in the Republic of Korea. The members of the study teams gave brief comments on the places they visited.

Figure 3-2-8. Interim Secretariat for AFoCO and Saemaul Museum

3. Component 3. Restoration of Degraded Forest Regions

Table 3-2-2. Brief comments from Lao PDR on the study tour

	Agency	Comments
1	Pohang Landslide Park	All study members were very interested in the development of erosion control technology and gained more information about Korea's rehabilitation and its key aspects from the presentation. Laos is mountainous, so erosion and landslides in mountains commonly occur during the rainy season. Moreover, flooding is a severe problem. The forestry sector in Laos lacks practical experiences on erosion control engineering and technologies and hence, knowledge on erosion control in forestlands learning at the center was important and useful information for the Laos officials.
2	Forest Medicinal Resources Institute	All study members were impressed by the ROK's investments in the Medicinal Resources Research Center and were interested in the present use and research trend of Non-timber Forest Products (NTFPs). Laos is rich in NTFPs and most of the forest dependent communities depend on NTFPs for food, medicine, and income generation. The government considers NTFPs as important resources for socio-economic development and does not allow the exportation of unprocessed medicinal plants and certain NTFPs. The Division of Village Forest and NTFPs management under the DOF is responsible for the strategic planning for NTFP management, but many NTFPs are lesser known. Cooperation with this Center to demonstrate cultural practices, storage and processing of certain NTFPs (wild ginseng in Sekong province) could be promoted in near future.
3	Baekdudaegan Arboretum	Most of study teams expressed keen interest in the Baekdudaegan National Arboretum's facilities. The technology and facilities used to preserve tree seeds from various sources was very interesting. The DG of the Department of Forestry highlighted that collaboration with this Arboretum can contribute to the preservation of certain indigenous tree seeds in Laos.
4	Saemaul Undong Center	The visit to the center gained much positive feedback from the study team. Most of the study members gained insight into ROK's departure from poverty through the three core values of the Saemaul Undong – "Diligence, Self-help, and Cooperation". Village-driven development through the villagers' spirit can lead to sustainable development not only in the forestry sector, but also in the rural economy sector. All PSC members supported the concept of the project "Village-based (driven) forest rehabilitation" in both sites.
5	Ha-neul-sup National Tree Burials	All study members showed interest in the method of generating public awareness on the provision of the funeral services where the bones and ashes of a dead body are buried within a forest.

- Thailand

The 2nd study tour to Thailand was organized for stakeholders at the managerial level from October 17-20, 2016. The study teams comprised of 13 people, of which 3 people were supported by the project. The main objective was to observe and learn lessons from selected community forest practices in Thailand. Participants gained insight into how forest resources are managed sustainably and observed how community forestry enterprises in Thailand operated and how their practices contribute to improving the livelihoods of communities. The study teams led by DDG of Department of Forestry visited various places in Thailand, such as local authorities and communities involved in Village Forestry Management and Social Foresty Model in Kanchanaburi.

Figure 3-2-9. Study trip to Thailand

Organizing training courses for forestry sectors at implementation level

In 2016, four training workshops were conducted for forestry sectors at implementation level for Sangthong and Paksong. The 1st training workshop was organized by the Department of Forestry (DOF) on July 12, 2016. The main objective of the workshop was to introduce the project concept, framework and 2016 Annual Work Plan (AWP) implementation arrangement for the forestry sector in Champasak and Vientiane as well as the Paksong and Santhong DAFO. The workshop was chaired by the Deputy Director General of DOF and attended by 18 participants from a different division of DoF, representatives from Champasak and Vientiane Capital, including Paksong and Sangthong districts. The following issues were agreed on in the meeting:

1. Name of project in Lao;
2. Organization structure of the project was integrated into the government policy, so called "Samsang (Three Pillars Development Policy)";
3. Field office is integrated into Village Administration Office and at least 1-2 forestry officers would be present in the office to advise villagers on the implementation of project activities; and,
4. Procedures to approve and transfer budgets to Paksong and Sangthong, as well as the development of activity and financial reports.

3. Component 3. Restoration of Degraded Forest Regions

The 2nd training workshop was organized in DOF on August 11-12, 2016. The main objective of the training was to strengthen the capacity of project staff on how to create budget plans, go through approval processes, as well as write activity and financial reports in accordance with the project's AWP 2016 and government instructions on financial management. The training was attended by a total of 22 participants from a financial management section of DOF (as resource persons) and staff of the Village Forest Division, project staff from Paksong and Sangthong, including field office staff.

The 3rd training workshop was organized by the DOF on November 21-25, 2016. The main objective of the training was to develop the capacity of project staff on village-based forest rehabilitation concepts and guidelines, particularly village nursery establishment and seedling production. The training workshop was attended by staff of the Village Forest Division, project staff from Paksong and Sangthong including field office staff. There was a total of 20 participants. The following issues were agreed on in the workshop:

1. Village temporary nursery is suitable for both sites;
2. The age of seedlings should be more than 1 year for enrichment planting and at least 6 months for ex-situ plantation;
3. The species should be matched with the sites and not limited to species that were identified in the project work plan, particularly for enrichment planting in both sites; and,
4. Capacity building for VFDGs on seedlings production is very important before signing a contract on seedlings production with each VFDG.

Additionally, the training workshops were targeted at the Training of Trainers (TOT) on teaching techniques and contract development. It is important for the project staff when developing contracts with the VFPGs and VFDGs in Paksong and Sangthong. The five-day training course was held at Huapamom Forestry Training Center on 20-24 June. It aims to develop the capacity of extension staff on teaching and helping villagers in contract development (i.e. seedling production and tree planting, etc.). This training was jointly organized by Village Focus International and DOF with financial support from the Food and Agriculture Organization (FAO) and the Landmark Program.

Figure 3-2-10. Consultation workshop on the AWP 2016 implementation in DOF

Figure 3-2-11. Organization of Training of Trainers (TOT) at Huapamom Forestry Training Center

Village consultation for villagers' engagement in project implementation

The village consultation meetings on establishment of ex-situ plantation conservation and enticement planting in Santhong and Paksong were conducted. The main objective of the consultation was to obtain information on what, how and under what conditions village authority and villagers are willing to and decide to participate of ex-situ plantation conservation and enrichment planting activities. Two compensation options were raised during the meeting: 1) contract-based compensation and 2) compensation based on daily wage. Most members and villagers preferred a contract-based compensation method with close supervision by the project staff during implementation. As recommended by the villagers, land clearing and site preparation in 5 ha of ex-situ conservation in Sangthong and 10 ha in Paksong should be completed in February 2017 because of early onset of rain, particularly in the Paksong region.

Various training modules for villagers

Based on the village consultation meeting, on-the-job trainings on seedling production were conducted in Paksong and Sangthong. These trainings aimed to build the capacity of VFDGs on seed handling techniques, establishment of temporary nurseries, preparation of soil mixtures for sowing seeds, preparation of seed beds, etc. All trainees also received a certificate of completion after the training course. In Sangthong, a five-day training course was conducted in the last week of December 2016 at Nalath DAFO's extension center in Nachalern Village (Figure 3-2-12). The training was attended by a total of 20 participants, including the staff of DAFO Sangthong (as resource persons) and 5 members from each VFDG.

3. Component 3. Restoration of Degraded Forest Regions

Figure 3-2-12. Training on seedling production for VFDGs in Sangthong

In Paksong, a three-day training course was conducted at Paksong DAFO's extension center. The training was attended by a total of 29 participants, including one staff from DAFO Paksong (as resource persons) and 28 members of VFDGs.

Figure 3-2-13. Training on seedling production for VFDGs in Paksong

Development of reforestation concept and related methodologies

"Specific guidelines for Village-driven Forest Rehabilitation and the Project Monitoring and Evaluation (M&E) Framework" has been developed. The guidelines were comprised of four steps and each step showed implementing activities as follows:

Step 1: Development and approval of Village-based Forest Restoration and Management plan
- Activity 1: Feasibility study and preliminary defining of forest restoration area at village level
- Activity 2: Defining of restoration area, objectives and restoration approach
- Activity 3: Development of VBRFM plan
- Activity 4: Approval of VBFRM plan

Step 2: Arrangements for implementation of Village-based Forest Restoration and Management plan
- Activity 1: Propagandize for people participation, select and accept participants
- Activity 2: Assignment of village steering committee to manage forest restoration at village level
- Activity 3: Organize village forest restoration and management group at village level
- Activity 4: Capacity building for project team at district level and village steering committee
- Activity 5: Capacity building for village forest restoration and management group at village level

Step 3: Implementation of Village-based Forest Restoration and Management plan
- Activity 1: Seedling production
- Activity 2: Tree planting
  - 2.1 Defining of restoration area
  - 2.2 Land preparation for tree plantation
  - 2.3 Land preparation for enrichment planting
  - 2.4 Planting
- Activity 3: Tending operation and maintenance of plantation
- Activity 4: Forest protection

Step 4: Monitoring and assessment of implementation of Village-based Forest Restoration and Management plan
- Activity 1: Progressive monitoring
- Activity 2: Assessment of VBFRM implementation
- Activity 3: Recording and record keeping
- Activity 4: Reporting

In each main activity; there are prescriptions on (1) Objective, (2) Output, (3) Implementing approach, (4) Participants and responsibilities, (5) Tools and equipment required, and (6) Knowledge and skills required in implementation.

Procurement of materials and equipment

Following the government's procurement regulation, a procurement committee has been established and necessary office materials were purchased and distributed. The procurement of vehicles was delayed due to an improvement in import tax exemption.

Table 3-2-3. List of office materials

No	Description	Quantity
1	Desktop computer HP Pavilion 550-152L (N4R93AA#AKL)	4 Sets
2	Notebook Dell Inspiron N5459	7 Units
3	Printer SAMSUNG SL-C1810W	3 Units
4	Multifunction Copier (A4 + cartridge)	set
5	Individual working desks with arm chair	7 sets
6	Meeting tables with normal chairs	6 sets
7	LCD projector View sonic PJD5155	set
8	Camera Nikon D5500	Units
9	Individual working desks with arm chair	sets
10	Meeting tables with normal chairs	3 sets

3.2.7 Project Management Activities

Renovating/expanding field office and improvement of access roads

The field offices in Sangthong and Paksong have been renovated and constructed. The improvement of access roads to the ex-situ plantation site in Nong Buoa in Sangthong has also been completed.

In Sangthong, the field office was renovated in mid-November and officially opened on December 5, 2016. Subsequently, the renovation and utilization of the village office for the project authorized through an agreement with the Sangthong district governor, and the project provided construction materials such as cements, ceiling material, door and windows, bricks, electricity, etc.

In Paksong, the field office was constructed in Kongtoun. The construction was completed in mid-December and the field office was officially opened on 30 December 2016. Both district governors established a steering committee to follow up and facilitate the construction process, while ensuring transparency, accountability and effectiveness of the construction. The committee members comprised of representatives from the district cabinet office, the DAFO, and village organizations such as youth, women union, trade union, etc.

The improvement of existing access roads, which stretch for about 4 km from Nong Boua to the project site (ex-situ conservation plot), was completed. Based on the government's procurement regulation, the project staff signed a contract with a local construction company to improve the road conditions in December 2016. The company began work in the last week of December 2016 and will complete the work in the 1st week of January 2017.

Figure 3-2-14. Field office in Sangthong

Figure 3-2-15. Field office in Paksong

Figure 3-2-16. Condition of the road before improvement

Figure 3-2-17. Condition of the road after improvement

3. Component 3. Restoration of Degraded Forest Regions

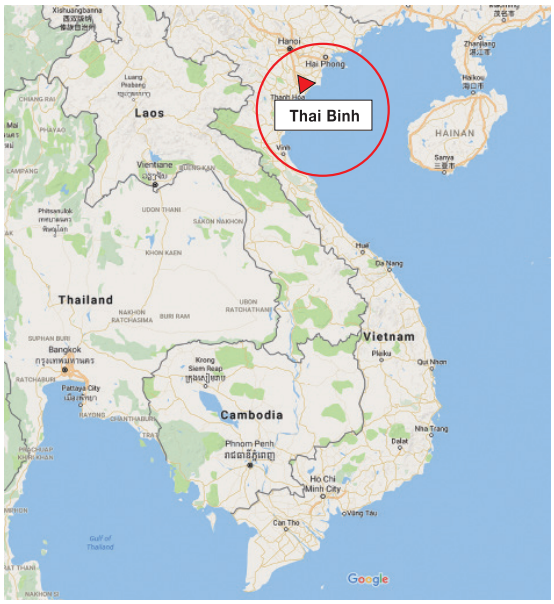
Project monitoring / field follow up

The annual review and planning meeting for project team was conducted in Sangthong and Paksong in December 2016 respectively. The meetings were attended by the project staff and head of VFPGs and VFDGs. In the meeting, the pending activities and issues in 2016 were discussed and carried over to 2017. The key challenge faced in 2016 in both sites was the lack of capacity of field staff and villagers to implement the project's activities in accordance with the project concept "Village-based or Village-driven", which involves direct participation by the communities. It is inevitable that some activities showed a slower than expected progress.

Figure 3-2-18. Annual review meeting in Sangthong

3.3 Rehabilitation and Development of Mangrove Forest Ecosystem in Thai Binh Province, Viet Nam

- Project duration : 10 years (2015-2024)
- Project budget : USD 1,500,000
- Project site : Thai Binh Province, Viet Nam
- Project area : 960 ha
- Implementing agency : Viet Nam Administration of Forestry (VNFOREST)



3.3.1 Overview

The main activities that were completed in this period include:

1) Plantation
   : Preparing forest status and project maps
   : Designing of new and supplementary plantation
   : Seedling production and plantation (40ha)
2) Protection
   : Protection for existing mangrove forest (800ha)
3) Promotion and public awareness
   : Signboards
   : Communication activities (T-shirts, eco-bags, calendars, etc.)
4) Capacity building
   : Organizing 2 training courses
5) Project management
   : Arrangement and procurement of materials
   : Establishing project offices in Ha Noi and Thai Binh
   : Project monitoring / field follow up

3. Component 3. Restoration of Degraded Forest Regions

3.3.2 Inception Workshop

To introduce the project to wide range of stakeholders as well as to discuss project implementation solutions, the inception workshop was held on 18 March 2016 in Thai Binh province. The workshop attracted the attention of 80 participants, the representatives of VNFOREST, RIFEE, provincial branches and agencies, People's Committees and forest protection groups of communes in the projects, and the representative of the Interim Secretariat for AFoCO. The Vice Chairman of Thai Binh People's Committee delivered opening remarks at the workshop and gave brief instructions on project implementation.

Figure 3-3-1. Inception workshop (left) and opening speech by Vice Chairman of Thai Binh People's Committee (right)

3.3.3 Plantation Activities

Preparing for forest status and project maps

9 sets of maps with the scale of 1/5,000 (including 1 set of maps of the land and forest status of the project site), 4 sets of maps of the forest status in the 4 communes and 4 sets of maps of the forest status and the project areas in 4 communes were produced. These maps were verified and appraised by RIFEE and approved on 21 October 2016.

Designing new planting and supplementary planting of mangrove forest

Technical designs and estimated budgets for the new planting (20 ha) and supplementary planting (20 ha) were prepared by a consultant, appraised by RIFEE and approved by VNFOREST on 21 October 2016.

Figure 3-3-2. Review of designs of new planting and supplementary planting of mangrove forest

New plantation

20 ha of mangrove forests (***Sonneratia caseolaris***) in Thuy Xuan Commune of Thai Thuy District (10 ha) and Dong Long Commune of Tien Hai District (10 ha) were newly planted with a density of 1,667 seedlings/ha. As planned in 2016, mangrove forests were scheduled to be planted in August and September, but this activity was postponed to the end of October and early November because the province was affected by three continuous and severe hurricanes between August and October. The check-and-acceptance of forest plantation would be carried out after 3 months of the planting date.

Figure 3-3-3. New planted mangrove forest in Dong Long Commune

Figure 3-3-4. New planted mangrove forest in Thuy Xuan Commune

3. Component 3. Restoration of Degraded Forest Regions

Supplementary plantation

20 ha of mangrove forests (*Sonneratia caseolaris*) were supplementarily planted in November 2016 in Thuy Xuan Commune of Thai Thuy District (10 ha) and in Dong Long Commune of Tien Hai District (10 ha) with a density of 600 seedlings/ha. The check-and-acceptance of this activity would be conducted in 3 months.

Figure 3-3-5. Supplementary planted mangrove forest in Dong Long Commune

3.3.4 Forest Protection Activities

800 ha of existing mangrove forests in the 4 communes involving in the project were protected. This is a very important activity of the project because the existing mangrove forests in Thai Binh province have been degraded in terms of area and quality. Given the importance of mangrove forest protection, the provincial PMB has signed on contracts on forest protection with the 4 communes involved in the project. The provincial PMB and provincial Forest Protection Department have frequently supervised, monitored and directed the 4 communes on the preparation of regulations on community-based forest protection.

Figure 3-3-6. Protection of mangrove forest by communal forest protection groups

3.3.5 Promotion and Public Awareness Activities

Active implementation of promotional activities yielded positive results in 2016:

- The project coordinated with central and provincial media agencies to produce a news segment on the project, and another news segment on roles of mangrove forests in coastal protection in response to climate change. These news segments were broadcasted on VTV2 and Thai Binh's radio and television broadcasting station;
- 4 project boards were installed at each of the 4 communes involved in the project;
- 4 posters introducing the project were designed and printed and have been placed at the People's Committee of each of the 4 communes; and,
- Other promotional merchandise such as T-shirts, eco-bags, pens and calendars were printed and distributed to stakeholders, especially the villagers in the 4 communes. The project name and logo of VNFOREST and the logo of the donor were printed on the products in order to raise awareness on the projects.

Figure 3-3-7. Project boards at communes

3.3.6 Capacity Building Activities

Organizing training courses

Two training courses on: 1) technical guidelines for plantation of mangrove species and 2) community-based mangrove forest protection were organized from 26-27 December 2016. There were a total of 50 participants to the training courses, including representatives from central PMB, provincial PMB, RIFEE and local communities of 4 communes involved in the project.

3. Component 3. Restoration of Degraded Forest Regions

Figure 3-3-8. Participants to training courses and field visit

Procurement of materials and equipment

As of 31 December 2016, the procurement of vehicles, including 1 car, 4 motorbikes and 1 speed boat, which will be handed over to the provincial PMB for use and management, was completed.

Table 3-3-1. List of project equipment and vehicles

No.	Equipment, vehicle	Quantity	Central PMB	Provincial PMB
1	Laptop	8	4	4
2	Desktop computer	4	-	4
3	Printer	2	-	2
4	Photocopy machine	1	-	1
5	Digital camera	2	1	1
6	Handheld GPS	6	2	4
7	2-eye binocular	6	2	4
8	7-seat car (4 WD type)*	1	-	1
9	Motorbike	4	-	4
10	Speed boat	1	-	1
11	Office furniture (desk, chair, filling cabinet, etc)	2 packages	1 package	1 package

3.3.7 Project Management Activities

Establishment of the central project management board (PMB) and the provincial PMB

The central PMB was established on 24 November 2015 in Ha Noi, and the provincial PMB was established on 7 January 2016 in Thai Binh.

Figure 3-3-9. Signboard of Central PMB (left) and the office of Provincial PMB (right)

National technical consultancy agency

Figure 3-3-10. Meetings among project staffs and villagers

According to project document approved by the Government of Viet Nam and the Government of the Republic of Korea, the Research Institute for Forest Ecology and Environment (RIFEE) was assigned as a national technical consultancy agency to provide technical support for project implementation. RIFEE is assist the central PMB to prepare the annual work plan, appraising technical designs for new planting, supplementary planting and protection of mangrove forests, re-checking sivilculture activities, preparing training materials, as well as supporting the central PMB to monitor and evaluate project activities.

4. Component 4. Development of Advocating Activities

4.1 Promotional Activities of the Landmark Program

4.1.1 AFoCO Website Updates

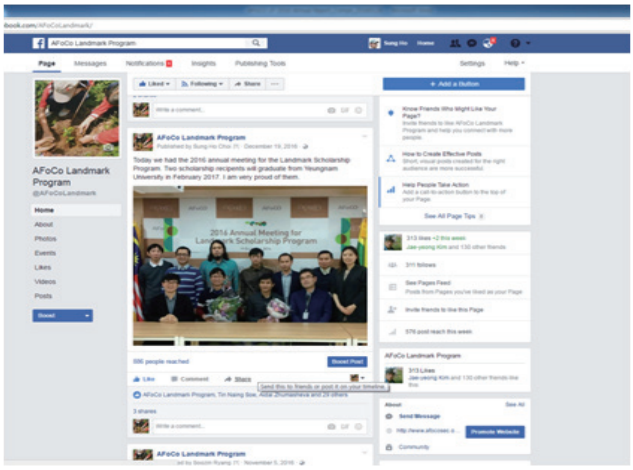
Activities of each component under the Landmark Program were implemented in accordance with the 2016 Annual Plan for the Landmark Program. A total of 13 notices on the activities of the Landmark Program were posted on the official website for AFoCO before and after the events to deliver information quickly and promote the Landmark Program. Following the full-scale launch of the restoration projects, the postings were focused on the training and education programs, the RETC construction and the restoration projects.

Table 4-1. Promotion of the Landmark Program activities on AFoCO website

No.	Date	Title
1	12 February	Landmark Training Course on Sustainable Forest Management Policy
2	14 March	Calling for Applicants: 2017 Landmark Scholarship Program
3	24 March	Inception Workshop on Mangrove Rehabilitation Project and Opening Ceremony of Project Offices in Viet Nam
4	12 April	Landmark Training Course on Forest Fire Sciences and Management in 21st Century for Training of Trainers
5	20 May	The 3rd Working Group Meeting for the Establishment of the AFoCO Regional Education and Training Centre (AFoCO RETC) in Myanmar under the AFoCo Landmark Program
6	27 May	Inception Workshop on the Restoration Project "Establishment of Forest Genetics Research Center for Restoration of Major Timber Species in Cambodia" under the Landmark Program
7	30 May	Inception Workshop on the Restoration Project "Village-Based Forest Rehabilitation in Lao PDR" under the Landmark Program
8	17 June	2016 Landmark Scholarship Program - Certificate Ceremony
9	28 June	Landmark Training Course on Promoting Effective Participatory Forest Management
10	26 August	Landmark Training Course on Learning Lessons from Asia's National Forest Rehabilitation Experiences
11	9 September	Landmark Training Course on REDD+ and Forest Governance for Training of Trainers
12	3 November	The 4th Steering Committee Meeting for the Establishment of AFoCO RETC in Myanmar under the Landmark Program
13	14 December	2016 Annual Meeting for the Landmark Scholarship Program

4.1.2 Social Networking Service

Landmark Program has been operating the social networking service, Landmark Program Facebook Group since 2014 to serve as a platform of communication for people who have an interest in the Landmark Program or who have similar areas of interest with the Landmark Program, while maintaining a social network. Since 2016, the activities of each component under the Landmark Program have been updated in real time on the social networking service. Members were able to contact one another and discuss issues of interest.



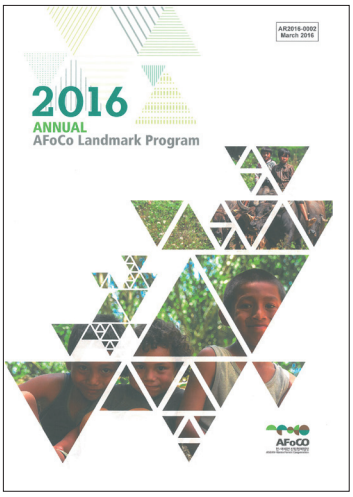
4.1.3 News Article

A study tour, as a part of the Landmark Program's restoration project in Lao PDR, was organized from 3-8 October 2016 to provide attendees with more knowledge on advanced forest restoration techniques. The local newspapers reported that the delegates from Lao PDR plan to apply the knowledge and skills learned through ROK's successful forest restoration experiences to guide forest restoration in their home country. The article increased awareness and enabled the general public to obtain information on the Landmark Program.

4.2 Publications on the Accomplishments of the Landmark Program

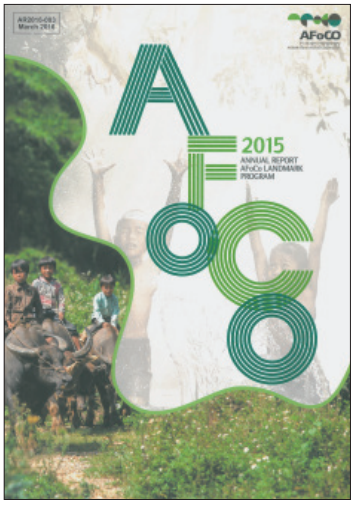
4.2.1 2016 Annual Plan

The 2016 Annual Plan for the Landmark Program was published in March 2016 and was distributed during the events to promote the Landmark Program. This annual plan included the objectives, implementation procedures and operation plans of the activities under the Landmark Program for 2016.



4.2.2 2015 Annual Report

The 2015 annual report for the Landmark Program was published in March 2016 and it was disseminated during the events to promote the Landmark Program. This annual report included the objectives and activities of each component under the Landmark Program for 2015.



4.2.3 Training Materials

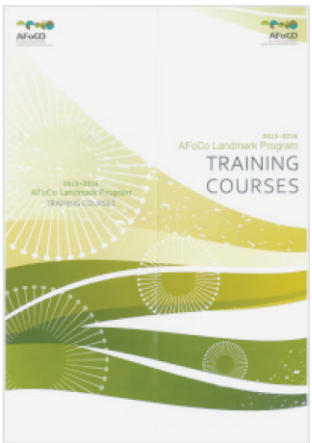
In accordance with the 2016 Annual Plan for the Landmark Program, five Landmark Training Courses were held in three member countries to build the capacity of the forestry sector in member countries. Five training textbooks were published to introduce the training topics during each training course, and to share information and knowledge after the training course.

Table 4-2. 2016 Landmark Training Courses

No.	Title	Time	Venue
1	Sustainable Forest Management Policy	14-18 March	Indonesia
2	Forest Fire Sciences and Management in 21st century for Training of Trainers	23-27 May	Thailand
3	Promoting Effective Participatory Forest Management	15-19 August	Thailand
4	Learning Lessons from Asia's National Forest Rehabilitation Experiences	26-30 September	ROK
5	REDD+ and Forest Governance for Training of Trainers	10-14 October	ROK

4.2.4 Promotional Leaflets

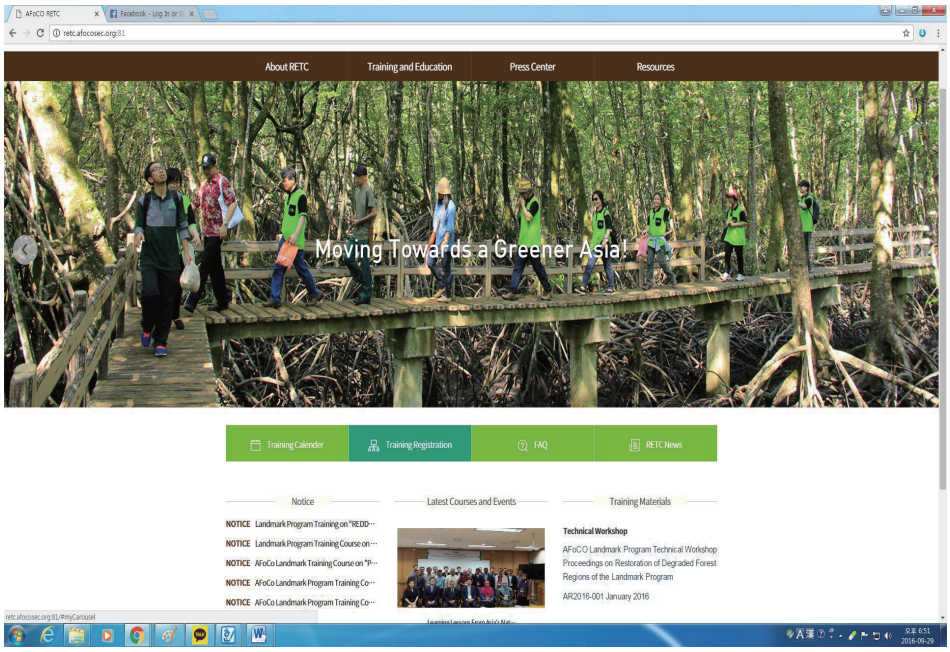
A total of three leaflets for the Landmark Program were printed in March and December 2016. They have been distributed to the member countries at various events to promote the Landmark Program Training Courses as well as the Landmark Scholarship Program.



4. Component 4. Development of Advocating Activities

4.3 Development of AFoCO RETC Website

According to the 2016 Annual Plan for the Landmark Program, the AFoCO RETC website was developed by a web developer in September 2016. The Landmark Program has started operating the website, which will be used to promote AFoCO RETC-related activities including training courses, communicate and interact with the member countries as well as the communities residing near the AFoCO RETC, and provide an online training course registration service.



III. EVALUATION AND RECOMMENDATIONS

Component 1. Establishment of the AFoCO Regional Education and Training Center

As of November 2016, the construction progress rate of the AFoCO RETC is 51.5% although the construction was supposed to be completed at the end of 2016. Although the construction delay was partially due to unexpected extreme weather conditions (El Niño) during the summer season, as well as the need to carry out extra work to repair the excess road in the construction site during the rainy season, the main cause of delay is the termination of the contract with the construction company due to its breach of contract. The company did not fulfil their contractual obligations completely, and this resulted in delays in the supply of the construction materials. Eventually, the Steering Committee decided to terminate the contract and find a new construction company. Accordingly, activities such as the procurement of equipment for education and training courses and scientific research, and the development of the main framework for RETC operation and management were not achieved.

In order to complete the construction in a timely manner and improve the management strategy, the following recommendations are proposed:

1. Selection of a suitable construction company

- Considering that there are various risk factors in overseas construction projects such as host government–related risks and contractor's lack of experience, which can adversely affect project costs and schedules, it is important to select experienced construction companies.

- To verify and ensure the eligibility of the selected construction company, more rigorous analysis and evaluation of the submitted technical proposals, including the bill of quantities submitted by bidders, should be conducted during the bidding evaluation process for the selection of the construction company.

2. Need for dedicated construction management (CM)

- In terms of construction management (CM), more active support from the CM head-quarters is important to compensate for the inexperience of the construction manager as well as to rectify mistakes made by the construction manager working at the field, especially in the case of overseas construction projects.

- The CM agency should undertake necessary measures for more a comprehensive and systemic management of the construction process, including increasing the effectiveness of direct inspection and reporting from the headquarters of CM.

3. Considering local conditions when providing equipment

- The equipment purchased should not only meet the relevant equipment quality standards, but also take into consideration the distinctive weather conditions of Myanmar. Domestic regulations and procedures should also be taken into account during the management of equipment purchase and procurement procedures such as shipping, transportation, customs clearance, logistics and installation.

To establish an effective management infrastructure for the implementation of capacity building activities before the start of the RETC operation in 2018, furthermore, there are two issues to address.

1. Finalize staff assignment for the AFoCO RETC

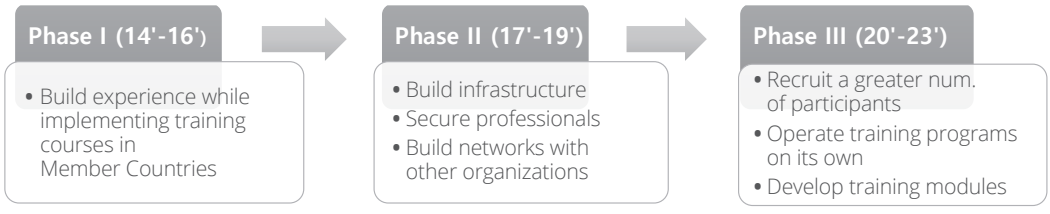
- As the center will be officially launched in 2018, the assignment of staff for the AFoCO RETC should be completed before the first quarter of 2018. It is requested that experts from the FD of Myanmar, who can facilitate and plan the training courses, be assigned as team members of the education and planning team.

2. Develop education and training programs for the AFoCO RETC

- Three categories of education and training programs are proposed in order to increase the efficiency and productivity of the training center: short-term trainings and long-term trainings targeting government officials, community development trainings targeting local communities, as well as customized trainings based on requests from member countries.

- Based on the experiences gained from the implementation of training courses from 2014 - 2016, we found out that management efficiency can be enhanced by narrowing down the scope of training subjects to focus on three thematic topics – Community Based Forest Management (CBFM), Forest Rehabilitation and Forest Fire Management.

- In particular, regarding the implementation of the short-term training courses, three strategic phases in the implementation of education and training programs are suggested as follows:



Component 2. Development of Education and Training Programs for Capacity Building

■ Landmark Training Courses

In 2016, a total of 5 training courses were organized as planned. The training course structures and plans were all developed by the Secretariat with advice from domestic and international experts. This indicates that the Secretariat has built up its experience and established itself as a professional training organization. For the further improvement of the Landmark Training Courses, there are a few recommendations based on this year's experiences – 1) design training courses effectively, 2) organize training courses systematically, and 3) manage participants appropriately.

1. Design training courses effectively

- Before the training starts, the Secretariat should have enough communication with trainees on their backgrounds and expectations on the training courses to design effective training courses.

- If possible, the Secretariat will try to organize several online and offline meetings with the trainers so that they can prepare their lectures and materials to suit the capabilities and needs of their trainees.

2. Organize training courses systematically

- The Secretariat will need to have professional advice from technical experts and professionals to organize more systematic training courses in the future.

3. Manage participants appropriately

- In order to invite suitable participants, the Secretariat needs to be equipped by more detailed information on the training courses, including the required background and level of participants.
  Developing challenging assignments can help to deal with free-loaders trainees whose main objectives to attend the course is not for training.

- The Secretariat will continue to update and share news related to the Landmark Program with the pastparticipants to maintain lasting work relationships and networks in the region.

Landmark Scholarship Program

In 2016, a total of 5 new scholarship recipients were selected and they commenced their studies in Korea in March 2017. Based on several discusssion sessions with the current and new recipients as well as their supervising professors, there are three recommendations to improve the quality of the scholarship program – 1) improve recipients' learning on the coursework, 2) continue close communication with the recipients and their professors, and 3) select suitable recipients.

1. Improve recipients' learning on the coursework

- The Secretariat recognized that some universities deliver their curricula only in Korean. In this regard, the Secretariat will inform future scholarship recipients in advance, of the main language of instruction used in each university so that they can make more informed decisions when choosing their desired universities. For the current recipients, the Secretariat will request their supervising professors to provide supplementary lectures in English before/after classes should the recipients require them.

- The Secretariat will also consider potential on introducing optional 1-year Korean language training programs prior to the start of the degree program.

2. Continue close communication with the recipients and their professors

- The Secretariat will hold meetings with recipients every semester and with professors every year to understand their issues and gather recommendations on how to improve the Landmark Scholarship Program.

- After graduations, the Secretariat will maintain contact with the graduates by getting updates on their information and sending them news on the Landmark Program on a regular basis.

Component 3.Restoration of Degraded Forest Regions

The restoration projects under Landmark Program consist of of two parts: 1) plantation establishment and 2) capacity building for government officials of various levels, local people, and students. In 2016, most of activities in the three countries have been implemented as planned, although it took some time to finalize the procedures related to project operation and management as it is the first year of implementation. The implementing agencies, provincial and communal authorities have successfully facilitated the implementation of project activities.

Based on various documents from the three implementing countries in 2016, the key issues and challenges as well as the respective recommendations are summarized as follows:

1. Addressing the country's needs and adapting to suit its circumstances

- For bearing the country's ownership of the project, there is a need to understand the country's rationale behind the implementation of the project and its perspective of the project, in order to adapt the project implementation to suit the country's needs. In case of Lao PDR, from the central to district level, there was a strong and unified voice towards income generation in forestry sector. Through the concept of village-driven forest rehabilitation, the project was able to effectively establish communication channels to engage stakeholders at all levels, and gain strong support from village head and villagers in the areas surrounding the project sites.

- A flexible approach towards project management that takes into account the circumstances of each project is required. In 2016, long processing times for internal procedures were observed in three countries. A longer time required for appraisal has partially affected the progress of project activities, such as the establishment of the field office, procurement of materials and equipment, plantation establishment, etc. On some occasions, an additional two or three months of time was needed to conduct the result-based payment system for planting activities.

2. Establishing a network for technical cooperation

- There is a need to establish a channel to effectively links the project staff and the Secretariat in order to improve and address technical matters during project implementation. For instance, the project in Cambodia was faced with various technical matters this year, since it was their first time building a clonal seed orchard. Understanding the need to enhance technical knowledge on clonal seed orchards, Cambodia and the Secretariat embarked on a cooperative program with the National Institute of Forest Science, ROK, to learn from the institution's advanced

techniques and seed orchard management.

- It is crucial to establish partnership with experts in countries to tap on their firsthand experience in dealing with local issues. Considering the importance of technical approaches towards mangrove reforestation in Viet Nam, for example, the Research Institute for Forest Ecology and Environment (RIFEE) took on the role of a national technical consultancy and assisted in the project by providing technical expertise and support for the implementation of project activities. To do so, all activities such as the development of the annual work plan and mapping and plantation design, establishment of community patrol for mangrove forest, as well as the detection of the survival rate of planting seedlings were regularly monitored and assessed appropriately.

- It is also important to conduct on-site trainings and consultations for project staff at district and/or provincial level due to their limited skills and information as compared to the staff of the central government. There is a need to strengthen the capacities of field officers in this aspect in order to ensure the timely submission of reports to the NPD.

3. Ensuring strategic planning for monitoring and evaluation

- It is recommended to establish a periodic monitoring system and/or organize regular site visits together with the Secretariat in order to achieve more effective project management and maintain regular communication with project implementing agencies.

- It is also vital to develop project-specific indicators to gauge the tangible outputs. In the case of Lao PDR, the project committee developed the guidelines in 2016 and is planning to apply it at each project site in 2017. At the same time, indicators for the livelihood improvement of local communities should be developed as well.

4. Working towards sustainable management beyond the project

- It is necessary to establish a web-based archive system to store all project documents in an organized manner allow the conveniently retrieval of documents whenever needed

- Participation in international conferences is also desirable as it helps to widen networks and serves as platforms to share knowledge, while also providing opportunities to promote the Landmark Program.

- 'Exit-strategies', a planned approach to terminating a project and ending involvement in a way that will maximize benefit/minimize damage, should also be considered.

Component 4. Development of Advocating Activities

Activities of Component 4 have been carried out according to the 2016 Annual Plan for the Landmark Program. The activities of the Landmark Program were promoted through the official AFoCO website, social networking service and the local newspaper. The social networking service, the Landmark Program facebook group, promoted the Landmark Program's activities effectively without any budget input. The accomplishments of the Landmark Program were published as planned. The AFoCO RETC website was developed in 2016 and has been in operation since September 2016. In this regard, on the basis of the 2016 Annual Plan for the Landmark Program, Component 4 has achieved the goals set out in 2016.

To further improve Component 4 activities, recommendations based on the past year's experiences are proposed as follows: 1) a systematic approach can be adopted to ensure effective promotion of project activities, and 2) a database can be created to enhance the dissemination of information on the Landmark Program.

1. Systematic approach for promotion of project activities

- The Secretariat should assign a staff to be in charge of the promotion of project activities and develop a detailed strategy for the promotion of the Landmark Program.

- The Secretariat should link the AFoCO RETC website to the websites and portal sites of other organizations, and expand the membership base on the current social networking service to diversify and maximize opportunities for the promotion of the Landmark Program.

2. Creation of database to enhance dissemination of information

- The Secretariat should introduce a computer database system to accumulate and store all data collected from Landmark Program-related resources, in order to effi ciently manage the data ob- tained from Landmark Program-related activities.

- The Secretariat should allow the public to access to all materials as long as they abide by the rules and regulations of the Secretariat.

- The Secretariat should increase the number of publications on the various accom plishments of the Landmark Program to share more knowledge and information with other relevant stakeholders.

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<Asian Forest Cooperation Organization (AFoCO)>

AFoCO is a regional forestry organization in Asia. Under the broader scope of achieving sustainable forest management and addressing the impacts of climate change, AFoCO aims to strengthen regional forest cooperation, undertake diverse forestry projects and translate sound forest policies and proven technologies into practical actions, with a mission to rehabilitate degraded forest land and prevent deforestation.