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*Asia-Pacific Network for Sustainable Forest Management  
and Rehabilitation*

# COMPLETION REPORT

Innovative Sustainable Forest Management Education in  
the Asia-Pacific Region

November 1, 2013-December 31, 2015

Forestry College Deans Meeting Mechanism in the Asia-Pacific Region

Beijing Forestry University

March, 2016

## BASIC INFORMATION

Project Title(ID)	Innovative Sustainable Forest Management Education in the Asia-Pacific Region (2013P2-FCDMM)		
Supervisory Agency	APFNet		
Executing Agency	Beijing Forestry University (BFU)		
Implementing Agency	University of British Columbia (UBC); University of Melbourne (UM); University of Philippines-Los Ban ãs (UPLB); University Putra Malaysia(UPM)		
Date of Project Agreement: 1/11/2013-31/10/2015			
Duration of implementation: November /2013-December/2015, <u>25</u> months			
Total project budget(in USD)	777,900.00	APFNet assured Grant (in USD)	551,950.00
Actual project cost(in USD)	790,138.58	APFNet disbursed Grant(in USD)	441,560.00
Disbursement Status		Date of disbursement	Amount(in USD)
Initial disbursement		03/2014	220,780.00
Second disbursement		04/2015	220,780.00
Balance to be disbursed			110,390.00
Reporting Status		Schedule <sup>1</sup> implementation	Project progress status <sup>2</sup>
First reporting (period covered: 11/2013-06/2014)		On track	Satisfactory
Second reporting (period covered: 11/2013-12/2014)		On track	Satisfactory
Third reporting (period covered: 12/2014-06/2015)		On track	Satisfactory
Final reporting(period covered: 11/2013-12/2015)		On track	Satisfactory

<sup>1</sup>Schedule <sup>1</sup>implementation status could be on track/behind/ahead of schedule

<sup>2</sup>Project progress status could be ranked as satisfactory, dissatisfactory, moderately satisfactory, moderately dissatisfactory

## List of Project Steering Committee

No.	Name	Title	Agency	Role in PSC
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2	Dr. John Innes	Dean	Faculty of Forestry, University of British Columbia, Canada	Head
3	Dr. Bambang Saharjo	Dean	Faculty of Forestry, Bogor Agricultural University, IPB, Indonesia	Member
4	Dr. Chris Weston	Dean	School of Land and Environment, University of Melbourne Australia	Member
5	Dr. Do Anh Tuan	Deputy Dean	College of Forestry, Forestry University of Vietnam, Vietnam	Member
6	Dr. Faridah Hanum Ibrahim	Dean	Faculty of Forestry, Putra University of Malaysia, Malaysia	Member
7	Dr. George Hopper	Dean	College of Forestry Resource, Mississippi State University, USA	Member
8	Dr. Keshab Datt Awasthi	Dean	Institute of Forestry at Pokhara, Nepal	Member
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## **Abbreviations and acronyms**

<b>Acronym and Abbreviation</b>	<b>Full Name</b>
<b>APEC</b>	<b>Asia-Pacific Economic Cooperation</b>
<b>APFECM</b>	<b>Asia Pacific Forestry Education Coordination Mechanism, this is the new name of FCDMM-APR</b>
<b>APFNet</b>	<b>Asia-Pacific Network for Sustainable Forest Management and Rehabilitation</b>
<b>BFU</b>	<b>Beijing Forestry University, China</b>
<b>CTLT</b>	<b>The Centre for Teaching, Learning and Technology, UBC</b>
<b>FCDMM-APR</b>	<b>Forestry College Deans Meeting Mechanism in the Asia-Pacific Region</b>
<b>MOOCs</b>	<b>Massive Open Online Courses</b>
<b>SFM</b>	<b>Sustainable Forest Management</b>
<b>UBC</b>	<b>University of British Columbia, Canada</b>
<b>UM</b>	<b>University of Melbourne, Australia</b>
<b>UPLB</b>	<b>University of Philippines-Los Banõs, Philippines</b>
<b>UPM</b>	<b>University Putra Malaysia, Malaysia</b>

## **Executive Summary**

The overall goal of the project is to improve the capacity in sustainable forest management (SFM) in the Asia-Pacific region by using an innovative pedagogical method to convey the knowledge of SFM and related issues to various forestry stakeholders through the combination of web-based learning, onsite training, and sharing of results and experience. The main achievements are as the following:

Six core courses had been developed. Each course features self-directed learning with course content as open education resources for the Asian-Pacific region. The entire or 'parts of' each course can be re-purposed in current and other courses and programs. It supports flipped, blended, and online teaching approaches. It builds the foundation to potentially new Certificates, Diplomas and Master in SFM programs. The learning modules in each course typically consist background information, video lectures, supplemental readings, and self-directed teaching and learning activities in forms of self-tests, self-directed reflection questions, and/or self-directed discussion forums.

The online learning platform had been developed which allows participants self-learning the six courses directly from the internet for 24-hour access worldwide. The functions of the platform include information browsing, course list, course learning, online registration, study resources, course forum, assignment release and submission etc. The course forum function allows participants direct interacting with instructors and provide a venue for improved communication amongst practitioners.

Websites for hosting the six online courses were launched in October, 2014. All six courses were built on the course blog sites by Nov 2015. The Open edX platform was chosen for APFECM (Asia Pacific Forestry Education Coordination Mechanism) certificate program in Nov 2015. The current self-directed learning courses will be upgraded to certificate courses to be hosted on the Open edX platform.

An on-site training package for online instructors has been developed. The on-site training enables participants to apply their newly acquired knowledge in controlled field situations.

Forestry College Deans Meeting Mechanism in the Asia-Pacific Region (FCDMM-APR) hosted a side event “Innovating forestry education and training: effective learning in the new era” at XIV World Forest Congress 2015 in Durban, South Africa in September 2015; another side event “Regional Forestry Education Resources Sharing and Mutual Course Recognition” at the Asian Pacific Forestry Week 2016 in Philippines on February 2016, both events aimed to promote Innovative Sustainable Forest Management Education in the Asia-Pacific Region to participants both in and outside the Asia-Pacific region. The conferences were held to showcase the achievement of the project and also served as a platform for the exchange and discussion of new approaches, technologies, concepts, and case studies in online learning.

Potential beneficiaries of the project are forestry practitioners and policy makers in the Asia-Pacific region. The project developed not only six core forestry courses, but also an on-line education model which can be readily adapted by any education institutions in APFNet membership economies.

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## **1. BACKGROUND AND INTRODUCTION**

### **1.1. Project context**

The Asia-Pacific region is home to 60% of the world's population. The region accounts for over 40% of the global economy and has an estimated 70% of the global poor. Sustainable development in this region is crucial to maintaining or improving the livelihood of its people. SFM is an effective way to achieve the balance between environmental, economic and social considerations necessary for sustainable development.

However, Asian economies are lack of a systematic training system to promote SFM. This, in turn, limits their capacity to undertake SFM in the field. In addition, lack of an academic platform for knowledge transfer and exchange regarding SFM is believed to be another major impediment hindering the further development of SFM in the entire Asia-Pacific region. A holistic and comprehensive academic platform aimed at helping senior forestry students, young faculty and mid-career professionals to acquire knowledge of SFM and related issues is desirable and particularly important. In addition, lack of a network for interaction in the Asia-Pacific region is thought to restrict the dissemination of knowledge related to SFM and its application. It is difficult for forestry stakeholders in this region to meet frequently and discuss newly emergent global issues because of the geographic distances involved. Consequently, a network providing an opportunity for live communication would be highly valuable.

The project covered the entire Asia-Pacific region. The web-based learning system designed by members of FCDMM-APR through the leading professors and its international network to the universities outside of AP Region, UN organizations and international NGOs. The intent was to develop an on-line course-based education program, which included six core courses on contemporary topics of SFM. This was a teamwork project and had brought expertise from the whole region to work together and contribute their knowledge into the courses.

A traditional pedagogical method (i.e., solely face-to-face meetings) could be used to achieve the same goal. However, given the time-consuming and geological constraint nature of such a delivery method, the lack of flexibility and its high cost, a methodology based on a large component of online learning was judged to be considerably superior.

## **1.2. Project goal(s) and objectives**

### **1.2.1 Project Goal**

The overall goal of the project is to improve the capacity in SFM in the Asia-pacific region by using an innovative pedagogical method to convey the knowledge of SFM and related issues to various forestry stakeholders through the combination of web-based learning, onsite training, and sharing of results and experience.

### **1.2.2 Project Objectives**

Specifically, the project has the following objectives:

- To build the core courses of SFM education which will provide the basis for developing a widely adopted core curriculum of SFM in the region.
- To create a platform for exchanging ideas and experiences on educating the new generation of foresters in the APR;
- To facilitate the collaborations on forestry education between developed economies and less developed economies;
- To help promote reforms in forestry education in the APR and build a model for sharing the results.

## **1.3. Project expected outputs and outcomes**

The project generated the following outputs.

### **(1) Output 1: Development of six core SFM courses**

**Expected outcomes:** Six core SFM courses with Web-based studies allow for a broad spectrum of curricula design and enable helping senior forestry students, young faculty and mid-career professionals to take the courses flexibly, depending on

the time they have available and their progress through the material.

**Outcomes:** The six developed courses are listed in the follows.

Course 1 “Sustainable Forestry Management in a Changing World” developed by Dr. John Innes (UBC).

Course 2 “Governance, Public Relationship and Community Development” developed by Dr. John Pulhin and Dr. Rex Cruz (UPLB).

Course 3 “International Dialogue on Forestry Issue” developed by Dr. Honsy El-Lakany (UBC)

Course 4 “Restoration of Degraded Forest Ecosystems and Forest Plantation Development” developed by Dr. Christopher Weston & Dr. Luba Volkova (UM).

Course 5 “Sustainable Use of Forest Goods and Services” developed by Dr. Wan Razali and Dr. Awang Noor Abd. Ghani (UPM).

Course 6 “Forest Resource Management and Protection” developed by Dr. Youqing Luo & Dr. Yong Liu (BFU).

Atypical course contains 4-6 modules, each module has approximately 9-12 hours of work. For each self-directed learning module, it typically consists of background information, online video lectures, supplemental readings, self-directed teaching and learning activities in forms of self-tests, self-directed reflection questions, and/or self-directed online discussions.

## (2) Output 2: Development of an online learning platform

**Expected outcomes:** A website was developed for both FCDMM and the project. The overall structure was determined to coordinate with the style of FCDMM-APR’s mission and configurations were made to facilitate the platform of the six online courses.

**Outcomes:** A website has been built for FCDMM and also to hold the six online courses which allow for 24-hour access worldwide. The online learning platform, included in the website, allows participants self-learning the six courses directly from the internet. The functions of the platform for 6 courses include information browsing, course list, course learning, online registration, study resources, course forum, assignment release and submission etc. The course forum function allows

participants direct interacting with instructors and provide a venue for improved communication amongst practitioners.

### (3) Output 3: Development of an on-site training package with options

**Expected outcomes:** A package of an on-site training for online course instructors and course developers to get experience either in N. America, China or Southeast Asia was expected to be developed from the project. Participants can benefit from this onsite training by networking with their fellows as well as instructors. The field study will enable participants to apply their newly acquired knowledge in practice situations.

**Outcomes:** A package of an on-site training for participants to get experience in Canada was developed from the project. The training focused on SFM and included training agenda for the six online courses, field study of preparing for climate change in UBC forest, learning Digital Media Technologies in CTLT, on-site training at Pacific Forestry Centre, Malcolm Knapp Research Forest, Macmillan Provincial Park, Cheakamus Community Forest, Western Forest Product, and Stanley Park.

### (4) Output 4: International Conference on Online Learning in Forestry Education

**Expected outcomes:** The conference served as a platform for the exchange and discussion of new approaches, technologies, concepts, and case studies in online learning conducted throughout the Asia-Pacific region.

**Outcomes:** Two international conferences were hosted by FCDMM-APR and APFECM, a) a side event “Innovating forestry education and training: effective learning in the new era” at XIV World Forest Congress 2015 in Durban, South Africa in September 2015; b) side event “Regional Forestry Education Resources Sharing and Mutual Course Recognition” at the Asian Pacific Forestry Week 2016 in Philippines on February 2016. Both events aimed to promote Innovative Sustainable Forest Management Education in the Asia-Pacific Region to participants both in and outside the Asia-Pacific region. These side events also provided a platform for the communication among forest educators from all over the world to touch upon global hotspot issues of forestry education.

## 2. PROJECT IMPLEMENTATION

### 2.1. Project schedule and implementation arrangements

A Project Agreement was signed between APFNet and Beijing Forestry University (BFU) in November 2013, followed by four Project Sub-agreements between BFU and UBC, UM, UPM, UPLB to develop six online courses with funding support from the Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet). All the project implementation activities were followed the project work plan signed with APFNet in Project Document. The detailed implementation by outputs and activities is as the following:

#### 2.1.1 Development of six core SFM courses

**Project schedule:** The six courses were developed in end of December 2015.

**Implementation arrangements:** Based on the review and the result of a survey conducted by FCDMM in May 2012, the six key courses have been proposed and leading professors for the courses have been confirmed. Therefore, each leading professor for the six-core courses was responsible for his course curricula development in consultation with the experts in the participating university.

The first year of the project was devoted to the following activities: 1) leading professors' attendance to a training-workshop on online course development at the University of British Columbia in Vancouver, Canada in May 2014; 2) module preparation; 3) actual module writing; 4) video shooting, and 5) module production.

The second year of the project was devoted to post-production/editing, critiquing by technical experts and practitioners, refinement.

To unify and standardize the 6-course material development, the Centre for Teaching, Learning and Technology (CTLT) at UBC undertook the development of the module template which includes online video lectures, course materials, lecture assignments, online field trip, case assignment and case study, and student challenges, and learning assessments, as well as parameters for quality requirement.

The course leading professors and staffs went to the University of British Columbia, Canada from May 12-16, 2014 to attend the writers' training workshop.

This enabled the various course writers to have a common understanding of the modules that should be prepared, minimize overlaps among the six courses, get familiar with curriculum mapping and preparation, and learn about online video production and post-production, all geared to ensure the relevance and high quality of the different courses to be developed.

In order to write an updated and appropriate module, readily available references and on-line materials and videos relevant to the courses were collected and reviewed. Relevant literature was synthesized and appropriate online videos were selected and incorporated in the modules to motivate interest and enhance the learning process of future students of the course.

The course coordinators were responsible for developing the course and running it. He/she decides the overall structure of the course after consulting the participated instructors and discussing it in the workshop. Participated instructors contributed lectures, videos of field trip, and case studies to the course. The central support for project management and pedagogical guidance were provided by UBC CTLT to ensure the courses are developed following course design principles and best practice criteria for quality online learning within the committed timeline. The web production of the six courses was conducted by the UBC CTLT to ascertain the quality of the course package and cross-platform usability.

Five out of six core sustainable forest management courses have been completely 100% done with one left 20% behind due to unexpected change of course development team issues (Details See Table1).

Table 1. Output1 Completion by IAs

Course	IA	Completion(%)
Sustainable Forestry Management in a Changing World	UBC	100
Governance, Public Relationship and Community Development	UPLB	100
International Dialogue on Forestry Issue	UBC	100
Restoration of Degraded Forest Ecosystems and Forest Plantation Development	UM	100

Sustainable Use of Forest Goods and Services	UPM	80
Forest Resource Management and Protection	BFU	100

UPM only finish 80% of its responsible course “Sustainable Use of Forest Goods and Services” so far, which including most of the word document, Power Point materials for lecture videos. But videos shooting and their post-production are remaining to be done. It is guaranteed that the whole course development work will be finished before end of 2016.

### 2.1.2 Development of an online learning platform

**Project schedule:** The online learning platform was developed in end of December 2015.

**Implementation arrangements:** A website and a platform for hosting the six online courses were built. The website also served as a communication and information exchange window for APFECM, the platform hosted the six online courses to facilitate learning activities by the students. BFU established a development team to carry out the works. The team members included leading professor who is responsible for the online course, computer technicians from Campus Information Center (BFU), internet technology development engineers (Hong Cheng Education Group). The development procedure included planning, information collecting, research & development, and test. The developed website and platform have also been tested by students from BFU. All the problems raised by students were solved properly.

### 2.1.3 Development of an on-site training package with options

**Project schedule:** An on-site training package with options was developed by September, 2015.

**Implementation arrangements:** According to A three-day extensive training workshop on online course development conducted in May 12-16, 2014 in UBC, Canada and a training in a side event during the XIV FAO World Forestry Congress in South Africa in September 7-11, 2015. An onsite training packaged was developed.



The training materials were incorporated with the 6 courses materials with local forest management practices to broaden participants' knowledge of SFM and related issues as well as applying their knowledge in the field. Details See Attachment: APFNet online training Agenda.

#### 2.1.4 International Conference on Online Learning in Forestry Education

**Project schedule:** An International Conference on Online Learning in Forestry Education was hold in end of 2015.

**Implementation arrangements:** The conference was original planned to be held at Beijing, China, independently. However, after discussed with APFNet and steering committee members of FCDMM-APR, it was believed that hosting a side event at XIV World Forest Congress and a side event at Asian Pacific Forestry Week could better extend our online courses and SFM education concept to entire Asia-Pacific region and even the world.

Therefore, “Innovating forestry education and training: effective learning in the new era” was convened as a side event during the XIV FAO World Forestry Congress in South Africa in September 7-11, 2015 to showcase the achievements of the project. The event provided a channel for forestry professionals and practitioners to learn and benefit from the online education, with an explicit focus on the entire Asia-Pacific region. All forestry stakeholders, including representatives of government, industry, research societies and forest managers and local communities had been encouraged to participate in the conference.

While the on-line course has not yet been formally offered for the benefit of the general public, it has started to increase recognition that APFNet has played an important role in forestry education. The presentation in the Durban World Forestry Congress in September 2015 where the initial outputs of the project were presented to an international audience has also gained attention in terms of the APFNet's contribution in supporting innovative and collaborative initiative with potential international impacts such as the present on-line course in sustainable forest management. Such prominent impact of APFNet will even broaden once the course

has been fully completed and officially offered to interested groups and stakeholders.

To conclude the project and plan future actions of the Forestry College Deans' Meeting, the 4<sup>th</sup> Asia-Pacific Forestry Education Coordination Mechanism (AP-FECM) Meeting was convened in Philippines on February 24<sup>th</sup>, 2016, as a side event of Asian Pacific Forestry Week 2016. With over 50 representatives from major local forestry universities, colleges, governmental and non-governmental organizations, research institutes present at the meeting, speakers touched upon topics of challenges and opportunities or forestry education in the Asia-Pacific region, talked about forestry collaborative education program sore in the region and shared successful experience of diversified joint programs. While presenting a vision for long-term development of Asia-Pacific Forestry Education Coordination Mechanism, steering committee members of the mechanism exchanged views on the next stage of the Project and put forward proposals for future activities such as Survey of Forestry Education, development of a forestry expert database, AP-FECM certificate program and Green Camp for forestry college students in the region. All these activities were believed to have originated from the project and will provide complementarities for its promotion and implementation in the long run.

## 2.2. Project resources and costs

The total fund from APFNet was \$551,950.00, which was to be disbursed in three times by 40%, 40% and 20%. The initial and second disbursements of \$441,560.00 have been complete, with the balance of \$110,390.00 to be disbursed as below.

Universities	Initial disbursement(40%) <b>completed</b>	Second disbursement(40%) <b>completed</b>	Third disbursement(20%) <b>unfinished</b>	Total
BFU	70,832.40	70,832.40	35,416.20	177,081.00
UBC	90,446.80	90,446.80	45,223.40	226,117.00
UM	19,833.60	19,833.60	9,916.80	49,584.00
UPLB	19,833.60	19,833.60	9,916.80	49,584.00
UPM	19,833.60	19,833.60	9,916.80	49,584.00
<b>Total</b>	<b>220,780.00</b>	<b>220,780.00</b>	<b>110,390.00</b>	<b>551,950.00</b>

The overall budget of the Project is USD 777,900.00, the budget of the funds

appropriated by APFNet is USD 551,950.00, the actual expenditure is USD 506,845.00 and the surplus is USD 45,105.00; the budget of the self-raised fund is USD 225,950.00, the actual expenditure is USD 244,900.52, paying extra USD 18,950.52 than the budget. The specific details of the budget are showed as in Annex B. The EA and IA worked closely to monitor the expenditure and all the project funds were used according to the AWP to contribute to the smooth project progress on schedule.

### 2.3. Procurement and consultant recruitment

During the project implementation, a number of assets were purchased, they were directly contributed to the achievement of project goals and objectives. The list of fixed assets purchased with APFNet grant are shown in the table below.

Fixed assets	size	set
Multifunction office machine	HP M1536dnf	1
Desktop computer	Dell 3020MT	1
Office table	2400*1200*750	1
Office sofa	2250*880*750	1
Television	Hisense LED 55K20JD	1
Archives Cabinet		4
Chair		18
Side table		1

The list of consultants, tasks, and types of outputs are shown in the table below.

Activity	Consultant	Tasks and function	Output
Activity 2.2 Activity 2.3	Chris Crowley, The Centre for Teaching, Learning and Technology at UBC;	Website construction and operation	web production of the six courses
Activity 1.5	Hailan Chen, The Centre for Teaching, Learning and Technology at UBC.	Course assessment and testing	Finalized six online courses
Activity 2.1	Guohua Huang, Campus information center at	Design and develop website	Website of FCDMM-APR

	BFU		
Activity 2.5	Jie Zhou, Hong Cheng Education Group	Online learning platform development	Online learning platform

#### **2.4. Monitoring & evaluation and reporting**

The project quality assurance system was rigorously followed the management structure: APFNet<->FCDMM-APR<-> Project Executing Agency<-> Project Implementing Agencies. APFNet, as the funder of this project, is also served as Supervisory Agency (SA) of the project. The responsibility of FCDMM-APR was to monitor the project management and to act as a consult group to help solve technique problems. The Executing Agency directly communicated with the Supervisory Agency. Biannual and annual progress reports had been prepared and submitted to APFNet on schedule.

#### **2.5. Dissemination and knowledge sharing**

The outputs of the project have been hosted on FCDMM-APR website and APFECM website developed by BFU and UBC, respectively. The project had been packaged as the first self-directed online courses and promoted in the FAO World Forestry Congress in South Africa in September of 2015 and in the Asian Pacific Forestry Week in Philippines on February 2016. The promotion events had attracted experts, students and young professionals to learn innovative forestry education and training methods in the Asia - Pacific region as well as the global experience and explore the potential for up-scaling the success of regional forestry education partnerships and training experiences.

The self-directed online courses and APFECM Certificate have been officially promoted during the APFW in February 2016 in Philippines.

### **3. PROJECT PARTNERES' PERFORMANCE**

#### **3.1. Performance of Supervisory Agency (if any)**

The Supervisory Agency (SA), Forestry College Deans Meeting Mechanism in the Asia-Pacific Region, has been very supportive during the implementation of the project. It mainly provided administrative supports as follows: i)to monitor the project management board and to act as a consult group to help solve technique problems, ii)keeping necessary communication with APFNet, iii)attending/presiding over workshop.

#### **3.2. Performance of Executing Agency**

The Executing Agency (EA), Beijing Forestry University (BFU), was responsible for implementation of the project. It handled the communication with the APFNet and reported regularly. In each activity, the EA made administrative and financial arrangements with Implementation Agencies (IAs) and was responsible for the successful implementation of the activity.

#### **3.3. Performance of Implementing Agency (if any), consultants (technical assistants), contractors, and suppliers**

##### **3.3.1 Implementing Agencies**

Following the timetable of sub-agreements and Work Plan between the EA and IAs, all project teams except UPM worked closely in concerted efforts to guarantee the project progress on schedule (Details See Table1).During the project, all implementing agencies reported to the EA in a consistent frequency and have submitted their respective biannual and annual progress reports for FCDMM-APR Coordination Office's approval.

UPM is left behind the project schedule due to its frequent personnel shifts and un-expectable emergencies. Yet, UPM has promised to make up for what is left behind and would guarantee a duly completion of its project course.

### 3.3.2 UBC CTLT

The Centre for Teaching, Learning and Technology (CTLT) at UBC provided the central support for project management and pedagogical guidance to the development of the courses. The course development followed a modified ADDIE (Analysis, Design, Develop, Implement, Evaluate) instructional systems design model. It ensures that the courses are developed following course design principles and best practice criteria for quality online learning within committed timeline. Quality criteria and product specifications were given to course materials, video lectures, and assessment strategies. To standardize the course flow and format, UBC CTLT developed and provided customized course content templates for Course Welcome, Course Overview, Course Modules, and Course Assessment/Assignment Descriptions for each course. Course quality enhancement reviews were encouraged and conducted for each course upon the completion of course development using a quality checklist provided by UBC CTLT. The web production of the six courses was also conducted by the UBC CTLT to ascertain the quality of the course package and cross-platform usability.

### **3.4. Performance of APFNet**

APFNet has provided assistance in, i) timely support and clear guidance for project implementation and management, ii) guaranteeing the timely disbursement and reimbursement of APFNet's grant, iii) keeping necessary communication with project executing agency and partners in proper facilitation in undertaking project activities and project dissemination, iv) external evaluation of the project during the project implementation and provide feedbacks in to the next phase project planning and management, and v) approving or denying any revision request proposed by the EA.

## **4. PROJECT PERFORMANCE**

### **4.1. Project achievements**

The major achievements of the project are the six online courses and an online platform. Six core courses are online based and easy to be learn at anywhere and anytime. Each course features self-directed learning with course content as open education resources for the Asian-Pacific region. The entire or 'parts of' each course can be re-purposed in current and other courses and programs. It supports flipped, blended, and online teaching approaches. It builds the foundation to potentially new Certificates, Diplomas and Master in SFM programs. The learning modules in each course typically consist background information, video lectures, supplemental readings, and self-directed teaching and learning activities in forms of self-tests, self-directed reflection questions, and/or self-directed discussion forums.

The online learning platform allows participants self-learning the six courses directly from the internet for 24-hour access worldwide. The functions of the platform for 6 courses include information browsing, course list, course learning, online registration, study resources, course forum, assignment release and submission etc. The course forum function allows participants direct interacting with instructors and provide a venue for improved communication amongst practitioners.

From to the above description, we can see that the achievements of the project fully meet the project goals and objectives. The two major achievements of the project are giving as follow.

#### **4.1.1 Six SFM online courses**

Six online courses on SFM were developed, each course includes the following files:

- 1) Course Structure
- 2) Start Here Pages
- 3) Course Overview Pages
- 4) Course Schedule
- 5) Course Syllabus

- 6) Module I Pages
- 7) Module II Pages
- 8) Module III Pages
- 9) Module IV Pages (some courses have more Modules)
- 10) Course Website Tour

Each Module contents 3 to 6 topics and each topic contents 4 to 6 lecture videos of 10-15 minutes each:



Leading professor John Innes in lecture videos of Course 1 “Sustainable Forestry Management in a Changing World”



Leading professor Juan Pulhin in lecture videos of Course 2 “Governance, Public Relationship and Community Development”

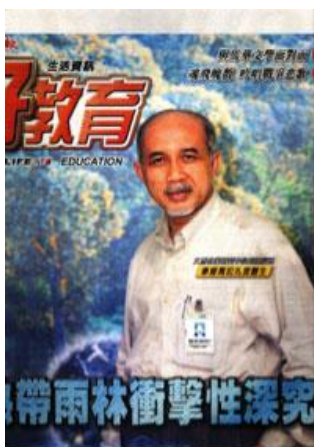




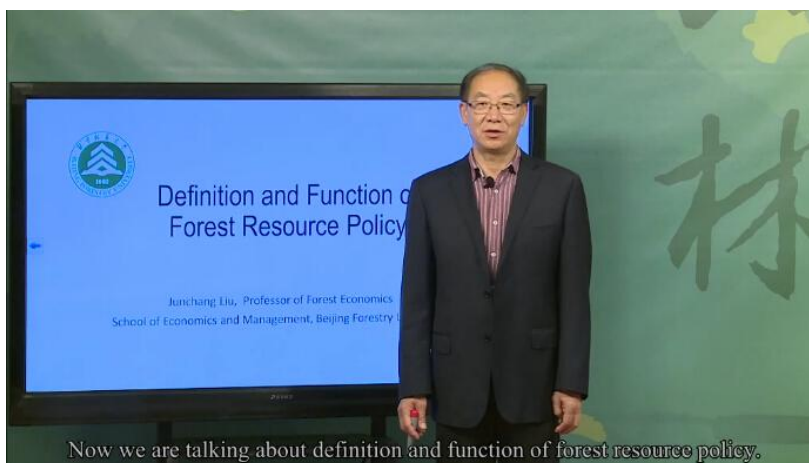
Leading professor Hony El-Lakanyin lecture videos of Course 3 “International Dialogue on Forestry Issue”



Leading professor Christopher Weston and Luba Volkova in lecture videos of Course 4 “Restoration of Degraded Forest Ecosystems and Forest Plantation Development”



Leading professor Wan Razali in lecture videos of Course 5 “Sustainable Use of Forest Goods and Services”



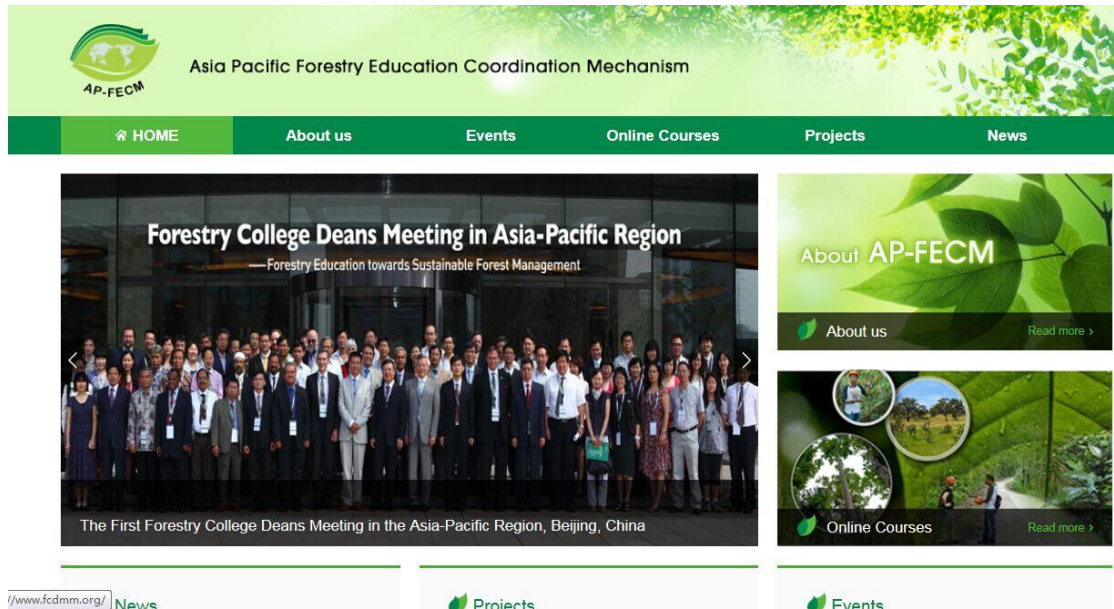
Leading professor Yong Liu and professor Junchang Liu in lecture videos of Course 6 “Forest Resource Management and Protection”

#### 4.1.2 An online learning platform

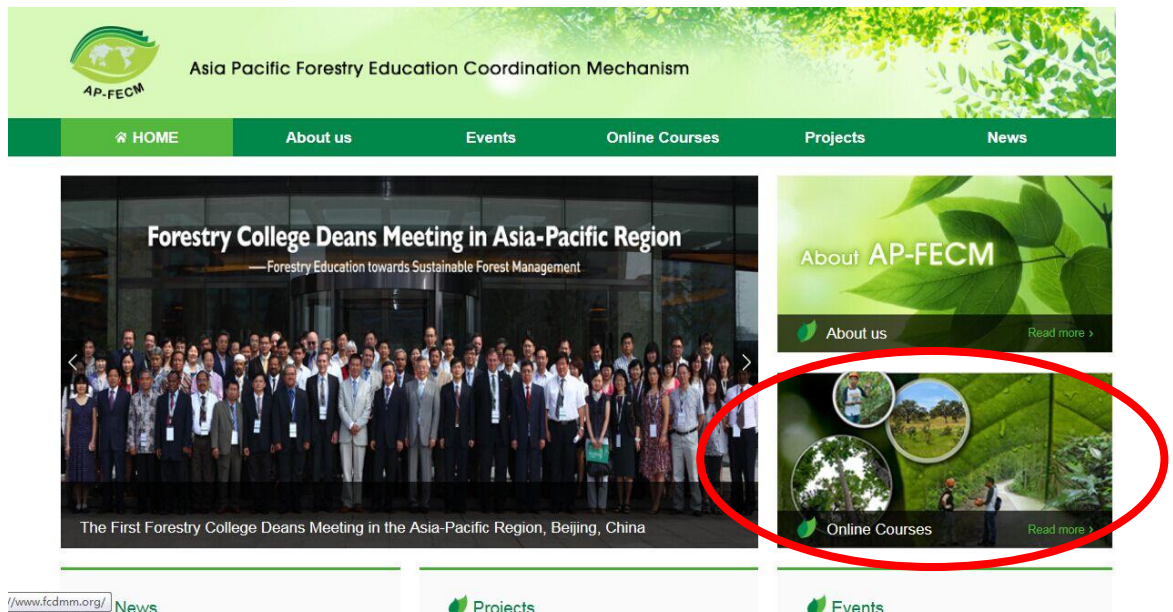
The functions of the platform for 6 courses include information browsing, course list, course learning, online registration, study resources, course forum, assignment release and submission etc. The course forum function allows participants direct interacting with instructors and provide a venue for improved communication amongst practitioners.

# Process diagram of Learning Platform

- a. Click <http://www.fcdmm.org/> to enter into the homepage of AP-FECM.



- b. On the homepage, click the picture on the lower right corner.



Online Courses

**Sustainability Forest Management in a Changing World**  
The course provides an overview of the criteria and indicators that are used worldwide to guide sustainable forest management practices and explains how these will vary in a changing climate.

[Start learning](#) [Course forum](#) [Homework](#) [Resources](#)

**Governance, Public Relationship and Community Development**  
This course highlights the importance of understanding and effectively managing the social or human dimension of forestry as a requisite to achieving the goal of sustainable forest management.

[Start learning](#) [Course forum](#) [Homework](#) [Resources](#)

Click 'register' and fill in personal information as required.



**User Register**

User name:

Length must be between 3 characters and 20 characters.

Email address:

Password:

Must be between 6 characters and 18 characters.

Confirm password:

[Register >](#)





Online Courses

**Sustainability Forest Management in a Changing World**  
The course provides an overview of the criteria and indicators that are used worldwide to guide sustainable forest management practices and explains how these will vary in a changing climate.

[Start learning](#) [Course forum](#) [Homework](#) [Resources](#)

**Governance, Public Relationship and Community Development**  
This course highlights the importance of understanding and effectively managing the social or human dimension of forestry as a requisite to achieving the goal of sustainable forest management.

[Start learning](#) [Course forum](#) [Homework](#) [Resources](#)

Click 'login' after completing the registration.



## User Login

User name:

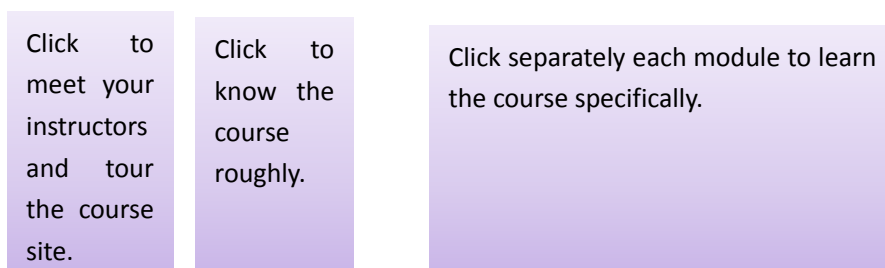
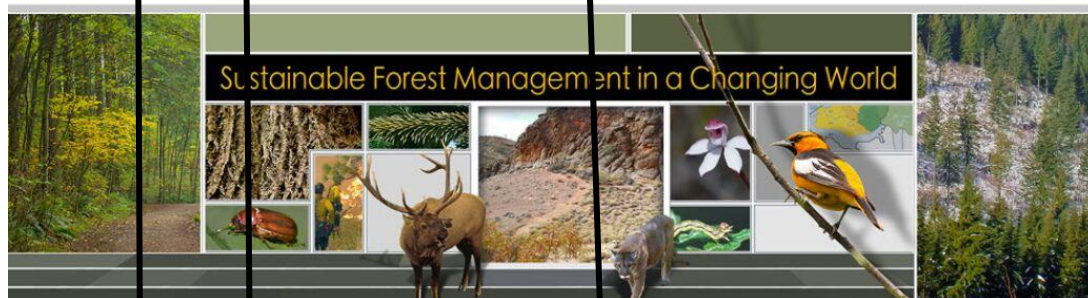
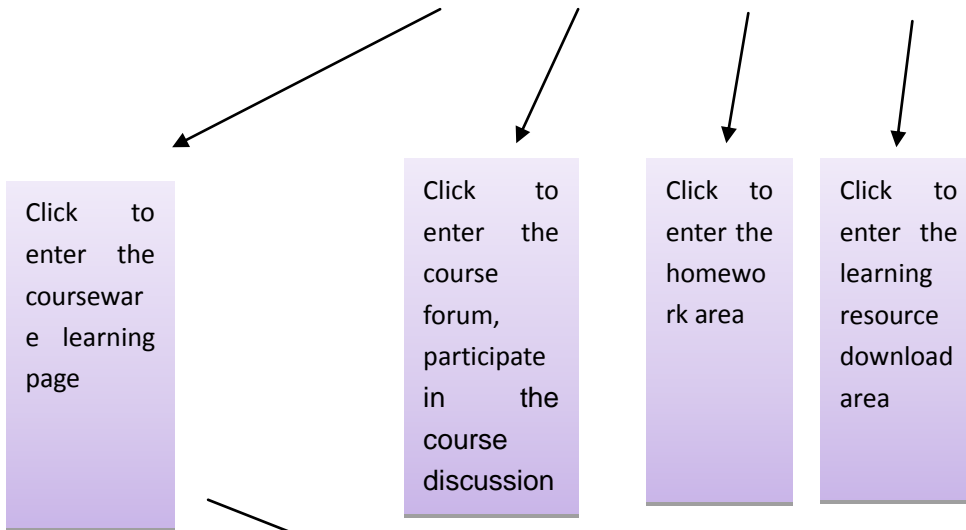
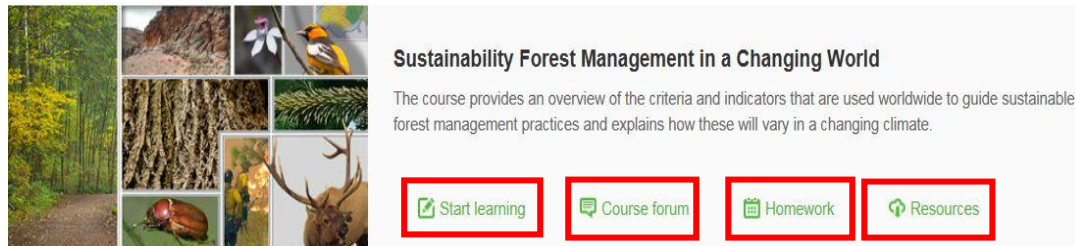
Password:

Type the user name and password to enter learning.

[Login >](#)

[Register now](#) | [Forgot Password](#)

c. Curriculum learning flow chart (taking course 1 as an example).





**Course 1: Sustainable Forest Management in a Changing World, John Innes, Dean, Faculty of Forestry, University of British Columbia**

Curriculum learning flow chart for other five courses are the same as above.

Official website for the courses has been set up by February of 2016 and the six self-learning online courses and one APFECM Certificate demo course have been promoted and showcased during the APFW in February 2016.

#### **4.2. Project Impacts**

Potential beneficiaries of the project are forestry practitioners and policy makers in the Asia-Pacific region. As indicated earlier, while the course has not yet been officially offered to its target clientele, it has stirred up the interest of the participating universities and the audience during the Durban World Forestry Congress and the Philippines Asian Pacific Forestry Week side events on the potential of alternative form of learning such as on-line course in educating the students and relevant stakeholders about SFM. The positive feedback from the audience of the Durban and the Philippines side events indicates the initial positive impact of project to the global forestry community concerned about forestry education. This entire project once offered on-line will certainly contribute to the regional discussions and concerns about the forestry sector. It will be essential to encourage local and international participation in regional and global issues in the forestry sector.

The project was selected by the CNIE adjudication committee as the Winner for

the 2016 CNIE-RCIE Award in the category of Excellence and Innovation in the Integration of Technology in Educational Practices/Collaboration. The CNIE (Canadian Network for Innovation in Education) is a professional organization for Instructional Design and Educational Technology. The award highlights the tremendous work and collaboration among the five universities sponsored by APFNet.

Our courses are accepted by edX, which is a great success and honor. Because edX offers free online courses and classes found from the latest MOOC and from the world's best universities including MIT, Harvard, Berkeley, UT and others.

This project greatly promoted online forestry education in China. With the experience of implementing this project successfully, BFU led the establishment of “Network Alliance of Online Curriculum Resources in Chinese Forestry Universities” in 2014, including more than ten forestry universities in China.

Major forestry colleges and universities in the Asia-Pacific region are unified throughout the development of the six courses, which further strengthened the multilateral cooperation among those institutions. Quality resources, personnel and facilities were efficiently utilized to optimize the course structure, module design and compatibility of all the courses from different universities, which also promote the collaborations of those universities to a new high.

Thanks to the course development, all the participant universities have had a better understanding of MOOCs and the informatization of those universities was also tremendously reinforced in terms of online course development and application of MOOCs facilities. This will definitely give a rise to the modernization of forestry education in the Asia-Pacific region and the regional resource sharing for the benefits of forestry college students.

Some of the top forestry instructors were gathered to develop the six online courses touching upon frontier forestry subjects in the Asia-Pacific region. In addition to their outstanding academic capacity, the instructors are now further equipped with modernized and interactive teaching technique in the atmosphere of online course platform, which will distinguish them from their peers especially in the age of MOOCs.



Ever since the project was launched in 2013, the participant universities have made all their efforts to make the project known to the outside world in many significant international occasions, such as the Asia-Pacific Week in New Zealand 2013 and Philippines 2016, as well as World Forestry Congress in South Africa 2015. Now the project Innovative Sustainable Forest Management Education in the Asia-Pacific Region sponsored by APFNet is continuously drawing attention not just in the Asia-Pacific region but also from other parts of the world, which will make the project a specific example of modern forestry education in the way of MOOCs.

### **4.3. Sustainability**

Major outputs of the project are the core courses for SFM education, online learning platform, and online forum. All these outputs will be kept open to general public after the completion of the project. FCDMM-APR now is called APFECM, under the support of APFNet, is capable to keep the materials online. All participated universities will also make all or partial of the course package available through their websites. The courses are structured in learning modules, which allows each university to be able to integrate the course materials into their current teaching, or to customize them with local materials to fit into their own education curricula which means the project will be able to sustain in and be enriched by participated universities.

We have also been promoted these six online courses as the first forestry multinational multi-university collaboration on self-directed online courses with course content as open education resources and further upgrade them to the APFECM certificate program. A close system with more sophisticated learning management functions using Open edX(MOOC) platform will be set up for certificate courses. For certificate courses, six more courses will be developed to be integrated with the current six courses to make it a complete certificate education system. Students need to be registered into the system and apply for the certificate from the university where they get registered.

## **5. CONCLUSION, LESSONS LEARNED AND RECOMMENDATIONS**

### **5.1. Conclusion**

Six online SFM courses had been developed and an online learning platform for hosting the six courses was launched. EA and IA were take chance to showcase the achievement of the project and also served as a platform for the exchange and discussion of new approaches, technologies, concepts, and case studies in online learning during the two International conferences, namely XIV World Forest Congress 2015 in Durban, South Africa; the Asian Pacific Forestry Week in Philippines on February 2016.

### **5.2. Lessons learned and recommendations**

The international transfer of project funds was the major concern of this project. Participating universities had been suffering from extremely complicated investigations by both the bank and tax authorities as well as heavy loss (approximately 5%) in administrative charges and currency exchanges. Thus, APFNet would need to consider a better method to deliver project funding.

It is recommended that the person responsible for the course development should not be changed according to experience from UPM, otherwise the schedule of course development would be at the risk to be pushed to extend.

Throughout this project, much time and effort was consumed in coordination and communication among the participant universities, which posed heavy pressure upon the Executive Agency. Therefore, it is our recommendation that implementing institutions in similar projects in the future could initiatively exert more efforts to strengthen their communication.

## **6. Annexes**

Annex A. Project Implementation status

Annex B. Financial statement

Annex C. Project audit report

Annex D. 2-3 Feature stories from the project for promotion

Annex E. Photos, media clips and other materials used/available for project outreach

Annex F. The on-site training package

Annex G. Project outputs

## Annex A. Implementation status

<b>Project Objective/Outputs/Activities</b> (in line with PD/AWPs)	<b>Indicators</b> (in line with PD/AWPs)	<b>Baseline of activities</b>	<b>Progress made</b> (%completion of activities and degree of output/objective achievement)	<b>Appraisal time</b>	<b>Actual time</b>
Activity 1.1	SFM curricula planning for APR	NA	All curricula designs discussed and approved at the workshop in UBC May, 2014	End of March, 2014	May, 30, 2014
Activity 1.2	Course module template development	NA	Template development standards announced at the workshop in UBC May, 2014	End of March, 2014	May 30, 2014
Activity 1.3	Workshop on online course design	NA	Leading professors and staff of each course trained for course development at the workshop in UBC May, 2014	End of April, 2014	May 12-16, 2014
Activity 1.4	Development of six online courses	NA	90% Courses developed	End of June, 2015	February, 2016
Activity 1.5	Course assessment and testing	NA	all completed course packages had been done	End of September, 2015	February, 2016
Activity 2.1	Course website planning and design	NA	Website design completed in May, 2014	End of March, 2014	May, 30, 2014
Activity 2.2	Website construction	NA	Website construction completed in October, 2014	End of September , 2014	October, 30, 2014
Activity 2.3	Website operation	NA	All functional modules of the website being tested	End of November, 2014	December, 30, 2014

Activity 2.4	Website assessment and optimizing	NA	Some core configurations being optimized for the compatibility of all courses	End of December, 2015	December, 2015
Activity 2.5	Online forum construction and operation	NA	Online forum has been constructed and tested	End of December, 2015	December, 2015
Activity 3.1	Designing onsite training materials	NA	90% onsite training materials completed	End of August, 2015	December, 2015
Activity 3.2	Integrated onsite training package	NA	On-site training for online instructors have been carried out	End of September, 2015	February, 2016
Activity 4.1	Organize international conference	NA	Organized an international conference as a side event during the FAO World Forestry Congress in South Africa Organized an international conference as a side event during the Asian Pacific Forestry Week 2016 in Philippines on February 2016	End of September , 2015  End of February, 2016	February, 2016

## Annex B. Financial statement

Category  (base on approved AWP)	APFNet Grant				Counterpart contribution			
	Anticipated  A <sub>1</sub>	Actual  B <sub>1</sub>	Variance  C <sub>1</sub> (A <sub>1</sub> -B <sub>1</sub> )	Variance rate  D <sub>1</sub> (C <sub>1</sub> /A <sub>1</sub> *100 %)	Anticipated  A <sub>2</sub>	Actual  B <sub>2</sub>	Variance  C <sub>2</sub> (A <sub>2</sub> -B <sub>2</sub> )	Variance rate  D <sub>2</sub> (C <sub>2</sub> /A <sub>2</sub> *100%)
<b>Project staff cost</b>  (salary and regular allowance for project staff and management personnel, development of online courses, website and online learning platform)	138430.00	127147.32	11282.68	8.15	40170.00	51566.54	-11396.54	-28.37
<b>Consultants cost</b>  (local and international consultants' fees)	93500.00	91396.88	2103.12	2.25	37600.00	30622.82	6977.18	18.56
<b>Travel and related cost</b>  (air fare, local travel, per-diem and etc, including project personnel, consultants, guests and participants for project events )	118252.00	95619.97	22632.03	19.14	41570.00	45617.54	-4047.54	-9.74
<b>Meeting and training cost</b>  (venue, facility, hospitality, speakers/experts' fees , participants accommodation, meeting materials, etc)	95668.00	101381.20	-5713.20	-5.97	34802.00	38229.06	-3427.06	-9.85

<b>Field activities cost</b> (labor cost for local community planting, etc)	<b>42951.00</b>	<b>31097.08</b>	<b>11853.92</b>	<b>27.60</b>	<b>12598.00</b>	<b>13844.73</b>	<b>-1246.73</b>	<b>-9.90</b>
<b>Publication &amp; Dissemination cost</b> (formulation, editing, publishing of articles, reports, books and information products and organization of outreach activities, media activities)	<b>32250.00</b>	<b>29308.06</b>	<b>2941.94</b>	<b>9.12</b>	<b>6950.00</b>	<b>7599.10</b>	<b>-649.10</b>	<b>-9.34</b>
<b>Office Operation cost</b> ( project administrative management fee and administrative staff cost, lease/rental of office premises, office and facility maintenance, etc)	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		<b>40000.00</b>	<b>43980.60</b>	<b>-3980.60</b>	<b>-9.95</b>
<b>Monitoring, evaluation and audit cost</b>	<b>0.00</b>	<b>3000.00</b>	<b>-3000.00</b>		<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
<b>Miscellaneous</b> (Equipment; Experts' fee; Equipment maintenance and repair fee; etc.)	<b>30899.00</b>	<b>27894.49</b>	<b>3004.51</b>	<b>9.72</b>	<b>12260.00</b>	<b>13440.12</b>	<b>-1180.12</b>	<b>-9.63</b>
<b>Total</b>	<b>551950.00</b>	<b>506845.00</b>	<b>45105.00</b>		<b>225950.00</b>	<b>244900.52</b>	<b>-18950.52</b>	

**Note:** In the table, the variation rates of Travel and related cost and Field activities cost in the part of APFNet Grant above 10% are due to the uncompleted work of UPM; In the part of Counterpart contribution, the reasons that the variation rates of Project staff cost and Consultants cost exceeds 10% are the relatively high

expenditure of Project staff cost in each unit, without the third grant and Consultants cost spending more later.



## **Annex C. Project audit report**

This part has been provided to APFNet separately for financial checking.

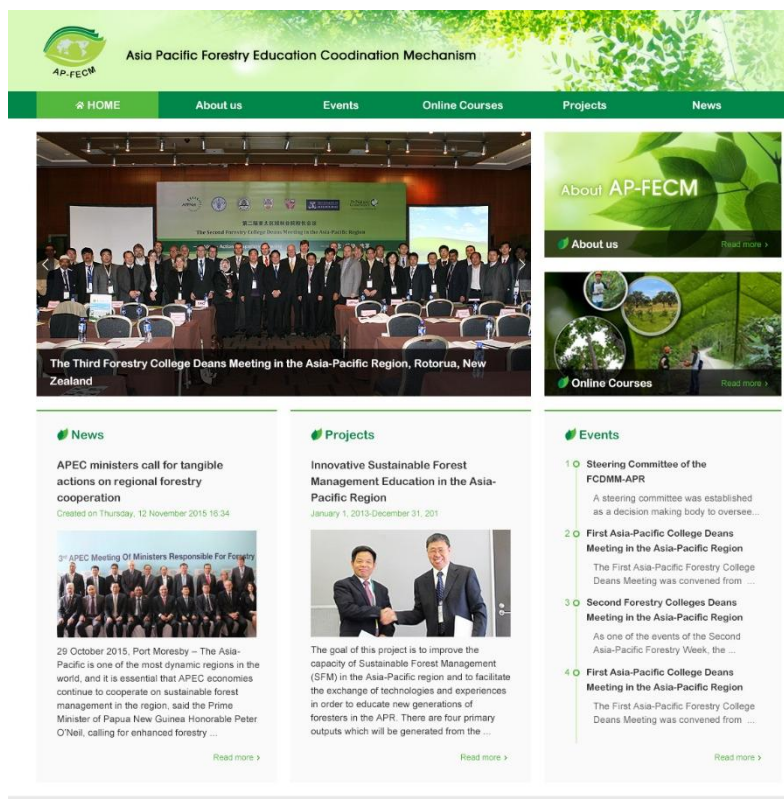
## Annexes D. 2-3 Feature stories from the project for promotion

### 1. FCDMM-APR logo



### 2. Website of FCDMM-APR

<http://www.fcdmm.org>



Online Courses

Home > Online Courses



Sustainable Forestry Management in a Changing World

college: Dr. John Innes  
teacher: UBC



Governance, Public Relationship and Community Development

college: Dr. John Pulhin  
teacher: IPIR



International Dialogue on Forestry Issue

college: UBC  
teacher:



Restoration of Degraded Forest Ecosystems and Forest Plantation Development

college: Dr. Christopher Weston & Dr. Thomas Baker  
teacher: University of Melbourne



Sustainable Use of Forest Goods and Services

college: Dr. Wan Razali  
teacher: UPM



Forest Resource Management and Protection

college: Dr. Youqing Luo & Dr. Yong Liu  
teacher: BFU

### 3. Flyer of Innovation Sustainable Forest Management Education in the Asia-Pacific Region

**Innovative Sustainable Forest Management Education in the Asia-Pacific Region**

Innovative Sustainable Forest Management Education in the Asia-Pacific Region is the first multinational project launched by FCDMM-APR. Aimed at promoting sustainable forest management and resolving challenges in forestry sector of the APR, it is a web-based learning system designed by members of FCDMM-APR through the leading professors and its international network to the universities outside the region, UN organizations and NGOs. The intent is to develop an on-line course-based education system, which combines traditional pedagogical methods and modern educational technologies. This is a teamwork project and will bring experts from the whole region to work together and contribute their knowledge to the courses.



**Goal and Objectives**

Through the combination of web-based learning, onsite training as well as sharing of results and experience, the project is to convey the knowledge of SFM and related issues to various forestry stakeholders with the following objectives:

- BUILD the major courses of SFM education which will provide the basis for developing a widely adopted core curriculum of SFM in the region.
- CREATE a platform for idea and experience exchanges on educating the new generation of foresters in the APR.
- FACILITATE the collaborations on forestry education between developed economies and developing economies.
- HELP to promote reforms in forestry education in the APR and build a model for sharing the results.





**Forestry College Deans Meeting Mechanism in the Asia-Pacific Region**




## Forestry College Deans Meeting Mechanism in the Asia-Pacific Region

### Background

Forests play an important role in the Asia-Pacific region (APR). These forests serve more than half of the global population. Nevertheless forests in the region also face mounting challenges, such as decrease of forest areas, loss of biodiversity, damage of forest ecosystem and reduced stability and resilience. The Forest College Deans Meeting Mechanism in the Asia-Pacific Region (FCDDM-APR) is the outcome of the first Forest College Deans Meeting in the Asia-Pacific Region held during July 21-23, 2010 in Beijing. The meeting provided an opportunity for leaders of forestry education in the region to seek collaborative actions, apply innovative sustainable forest management (SFM) theory and technology to the classroom.

A suggestion was proposed during the meeting to create a mechanism for advancing forestry education in the region in a collaborative manner. Beijing Forestry University (BFU) was delegated to develop the mechanism with other forestry education institutions, education networks, and NGOs in the wake of the meeting. A steering committee was planned to guide this work.



### Mission

The mission of the FCDDM-APR is to promote forestry education in the region by strengthening cooperation and taking collaborative actions to contribute to the SFM in the region.

### Objectives

The FCDDM-APR is to work with as many partners as possible to build a platform for promoting strong collaborations in SFM education in the APR. The specific objectives of the mechanism include:

- To provide a platform for exchanging academic information and sharing education resources among the forestry universities and institutes in the region;
- To facilitate exchanges between advanced forestry education economies and less developed economies and promote access to the latest science and technology in SFM for less developed economies;
- To promote innovation and reform process in forestry education in the region and share the achievements;
- To improve the overall capacity in SFM in the region.



### Tasks

- To develop a model for training next-generation foresters who would be able to apply SFM knowledge to forestry management practices;
- To identify the key problems and issues of regional forestry education and further increase the overall education level in the APR;
- To seek cooperation areas with common interest in the region towards SFM, and plan collaboration programs

### Organization Structure

#### Steering Committee

A Steering Committee has been established as a decision making body to oversee the operation of the mechanism. All decisions will be based on consensus of the Steering Committee. At current stage, Beijing Forestry University and University of British Columbia are the chair and co-chair of the steering committee. The other members of the Steering Committee are Bogor Agricultural University, University of Melbourne Australia, Vietnam Forestry University, Universiti Putra Malaysia, Mississippi State University, Institute of Forestry at Pokhara, University of Philippines-Los Baños. The committee meeting is set to be held every year or every two years.



#### Coordination Office

A coordination office has been set up to implement the decisions made by Steering Committee and manage the daily work of the mechanism as well as assist coordination and communication among the members in accordance with the main missions of the mechanism. Beijing Forestry University hosts the Coordination Office and one coordinator is appointed to shoulder the responsibilities for daily operation of the office.

#### Membership Development

FCDDM-APR is open to all forestry universities, forestry colleges, and training centers/institutions in the region, as well as international organizations/NGOs who are engaged in promoting forestry education.

#### 4. International Workshop of Innovative Sustainable Forest Management Education in the Asia-Pacific Region

The workshop was held in May 12 to 15th, 2014 and organized by Faculty of Forestry, Centre for Teaching, Learning and Technology (CTLT), University of British Columbia (UBC). Participants included the five universities involved in the project of “Innovative Sustainable Forest Management Education in the Asia-Pacific Region”, However, University Putra Malaysia missed it because of visa problem.

The objective of the workshop is to discuss and conduct training on curriculum and program mapping, guideline and technologies of online course development, as well as on-location video production and demonstration.

On the opening ceremony, Dr. John W. Hepburn, Vice president of UBC, gave an opening speaking. He pointed out that this project is interesting and important for forest sustainable management in the Asia-Pacific region. He warmly welcomed all the participants. Dr. Youqing Luo, Vice president of Beijing Forestry University (BFU) also gave opening remarks. He briefly introduced the progress of the project, indicated that all implementing agencies have been providing strong support for the project since it was launched in New Zealand in November 2013, which has guaranteed its steady and stable progress. Through close communication and consultation with implementing agencies, all sub-agreements have been signed and the first disbursements of project grants have been transferred to all but one implementing agencies. Dr. Simon Bates. CTLT director and Dr. John Innes, Dean of

Forestry College have also given welcome speaking to all the participants.

Several activities have been carried out during the workshop, they are:

- a. Introduction to CTLT and its role in the project
- b. Sharing the online course success stories by two experienced teachers from Faculty of Medicine, and Faculty of Science, UBC.
- c. Curriculum Discussion and Mapping. The main focus are:
  - Avoiding the overlap of course content
  - The depth of each course
  - Interconnection of each course
- d. DIY / Camtasia Video Production training, it included:
  - PPT with voice over, screencast
  - PPT chunking for lecture capture
  - Output as mp4
- e. Copyright issue when developing online courses
- f. APFNet Course Development Orientation, it is focused on:
  - Course design guidelines
  - Framework of course design and structuring
  - LMS platform, templates, and tools
  - Demo module showcase (John and Hosny)
  - Pedagogical requirements (e.g. activities, assignments)
  - Technical specifications (e.g. text, doc, audio, video)
  - Timeline for the course development
  - Course materials need from each leading professor
- g. On-location Video Production Techniques
  - Pre-production: Planning and scripting
  - Production: Shooting techniques
  - Post-Production: Editing, voice over
  - Guidelines: Style, tech specifications, submission
- h. Preliminary discuss on website platform for the online resources
- i. Discussing on Logo designing for FCDMM

**The workshop was very successful. The achievements from this workshop are:**

- a. Courses articulation and matching: We found there are several overlaying and missing from the six courses. Dr. John Innes will provide a summary of the course matching and also the suggestion to each leading professor.
- b. Course templates: CTLT has developed a template that has been used in Dr. John Innes and Dr. Hosny El-Lakany's courses.
- c. The participants have learnt technologies for course development and on-location filming.

- d. All the presentation PPTs showed on the workshop were collected by Dr. Guangyu Wang and sent to the participants.



**Annexes E. Photos, media cliffs and other materials used/available for project outreach**



**International Workshop of Innovative Sustainable Forest Management Education in the Asia-Pacific Region** 1 Vice President Luo Youqing addressing the workshop opening ceremony; 2-3 indoor-training session; 4-5 On-site practices on UBC campus in workshop



**Innovating Forestry Education and Training: Effective Learning in the new era, side event of World Forestry Congress 2015 in Durban, South Africa**



**4<sup>th</sup> Asia-Pacific Forestry Education Coordination Mechanism Meeting, a side event of Asia Pacific Forestry Week 2016 in Clark, the Philippine**





Bioindicator trays



Video recording for course 1



**Video recording for course 2**



# Welcome video

## Welcome message

- Course objectives
- Course content
- Course structure and organization



Dr. Hosny El-Lakany  
Adjunct Professor, Forest Resource Management Department  
Faculty of Forestry, The University of British Columbia

## 1. The UN Food and Agriculture Organization (FAO)

- Working modalities
  - Creation and dissemination of information related to food, agriculture, and natural resources
  - Coordination of knowledge and dialogue facilitation among stakeholders (e.g. governments, academia, civil society, private sector, cooperatives, etc.)



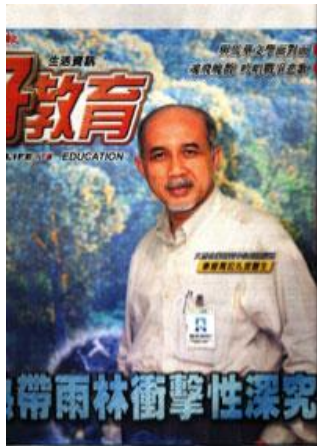
## C. Underlying causes of deforestation and forest degradation

Causes interrelated and often socio-economic in nature:

- Poverty
- Lack of tenure security
- Inadequate recognition of rights of forest-dependent people
- Undervaluation of forest products and ecosystem services



## Video recording for course 3



**TROPICAL FORESTS FOR MANKIND.....**

**WEATHER ACROSS THE USA**

**ENERGY & BIO-DIVERSITY SOURCES**  
**FOOD SECURITY & SUSTAINABLE LIVELIHOOD**   **EXPORT EARNINGS**

*With Knowledge We Serve*

**Figure 14: International Initiatives on Criteria and Indicators for Sustainable Forest Management**

■ Dry Zone Africa Process    ■ Tampopo Proposal    ■ African Timber Organisation Initiative  
■ Pan-European Forest Process    ■ Near East Process    ■ Regional Initiative for Dry Forests in Asia  
■ Montreal Process    ■ Legislative Process of Central America    ■ ITTO

*With Knowledge We Serve*

**#1. 21st CENTURY FORESTRY SCENARIO**

**???**

PFE's   **PLANTATION**   **AGRICULTURAL CROP**

**CELLULOSE FIBER**

*With Knowledge We Serve*

Video recording for course 4





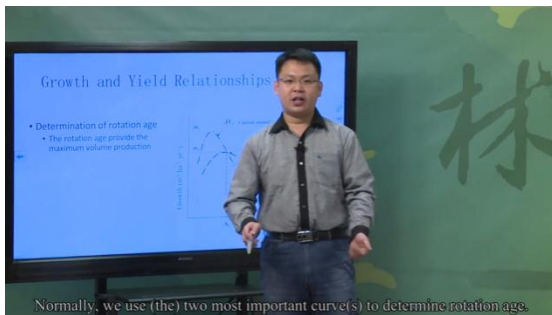
Video recording for course 5



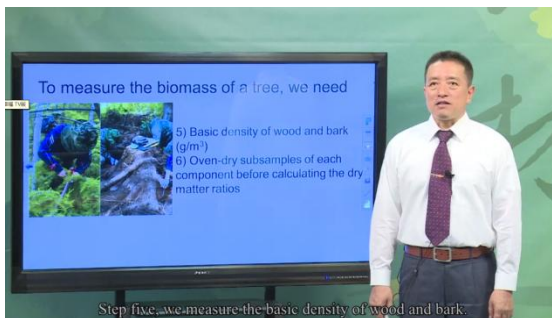
And in the past, silviculture also produced materials to support our civilization.



So that will cover the entire country, or cover the whole population.



Normally, we use (the) two most important curve(s) to determine rotation age.



Step five, we measure the basic density of wood and bark.

### 3 Invasive species in China

A sketch map of the distribution of 38 alien invasive species in China

**Rule:** According to the similarity of climate zone, the invaded route of forestry invasive species in China "run amuck like a crab".

the invaded route of forestry invasive species in China "run amuck like

### Forest fires and invasive plants

and setting the recovery and back to the beginning again.

### Components of forest resource policy

2. Forest management planning policy

Four features of the planning:

- Prepare detailed inventories
- Monitor the condition of the reserves
- Determine sustainable use level
- Prohibit use in specific areas wherever necessary to protect watershed and other resource

And how much you should leave for next generation?

### Criteria for Forestry Investment Decision

W. Li, Associate Professor of Forest Economics  
School of Economics and Management, Beijing Forestry University

I am going to talk with you about criteria for forestry investment decision.

### Stakeholders in Community Forestry

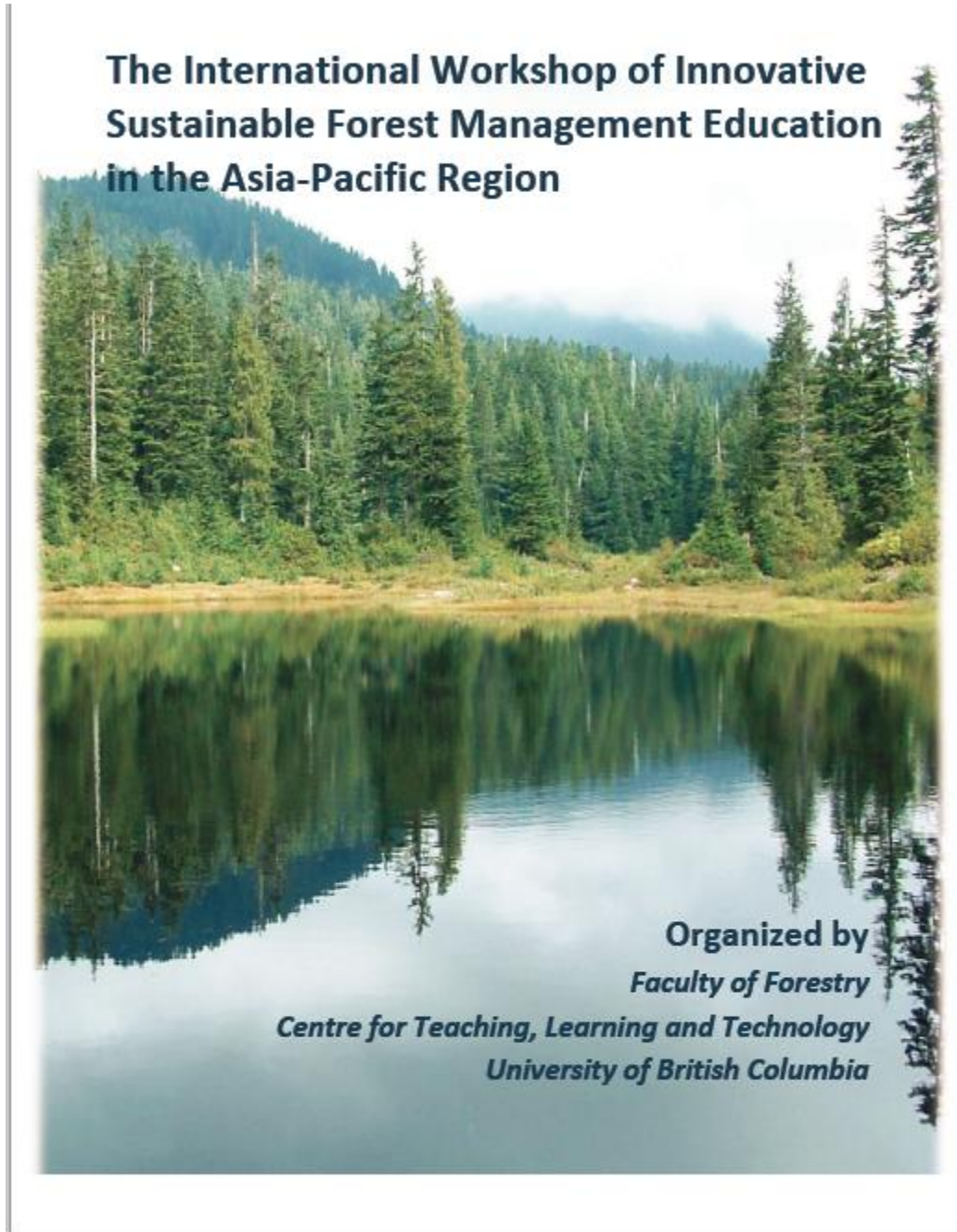
- Local Community
  - Local residents
  - Traditional authorities
  - Community based organizations (forest user groups etc.)
  - Community organizations (local schools)
- Government
  - State Government
  - Municipal Government
  - Department of Agriculture, Forestry, Environment etc. (country wide region specific)
- NGO's
  - Environmental conservation groups
  - Commercial forest industries
  - Industries related on forest (e.g. furniture products rather than wood, e.g. game meat)
  - Academic industry
  - Religious activities groups

First is local community.



## **Annexes F. The onsite training package**

Provide separately





## **Annexes G. Project outputs**

The word files of the six courses are provided separately.

The lecture videos and the completed course package as the major project outputs are available on server which is hosted by BFU (<http://www.fcdmm.org/>) and UBC (<http://apfecm.forestry.ubc.ca/sfm-online-courses/>).