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Asia-Pacific Network for Sustainable Forest Management and Rehabilitation

PROJECT PROPOSAL

Innovative Sustainable Forest Management Education in the
Asia-Pacific Region

Prepared by

Forest College Deans Meeting Mechanism in the Asia-Pacific Region

Beijing Forestry University

University of British Columbia

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General Information

<p>Project title: Innovative Sustainable Forest Management Education in the Asia-Pacific Region</p>		
<p>Project summary:</p> <p>The goal of this project is to improve the capacity of Sustainable Forest Management (SFM) in the Asia-pacific region and to facilitate the exchange of technologies and experiences in order to educate new generations of foresters in the APR. There are four primary outputs which will be generated from the project to achieve the following goals:</p> <ol style="list-style-type: none"> 1) The first output will be the development of six web-based courses for SFM, which will allow senior forestry students, young faculty and mid-career professionals to understand the issues and related knowledge and skills in SFM in the region. The online courses will also be made available through websites of FCDMM-APR and participating universities. All courses will follow a module-based format so instructors in any forestry education institution can easily incorporate the content into their own course teaching. 2) The second output will be the development of an online forum to allow students to directly interact with instructors and fellow participants, and will provide a venue for improved communication amongst practitioners. Through the online learning platform, professionals in the forestry industry and forest management officers can have the full access to the latest materials on the SFM, offering them a viable way to learn the latest theories and best practices of SFM and to apply these concepts in their daily work. 3) The third output will be the development on an on-site training package, which will enable participants to apply their newly acquired knowledge in controlled field situations. 4) The fourth output will be an International workshop on the Online Learning and Teaching the SFM. This workshop will serve 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. The workshop will help to expose the forestry education institutions to an innovative pedagogical method and will facilitate the adaptation of this technology in their teaching. <p>All these outputs will generate a long-term impact on the forestry education in the region and contribute greatly to the capacity building in SFM.</p>		
<p>Project executing agency: Forest College Deans Meeting Mechanism in Asia-Pacific Region</p>		
<p>Project duration: January 1, 2013-December 31, 2014</p>		
<p>Total budget (USD): 849,900</p>	<p>APFNet's grant (USD): 660,950</p>	<p>Counterpart contribution (USD) <i>(in cash and in kind):</i> 188,950</p>

Abbreviations and acronym

Acronym and Abbreviation	Full Name
APEC	Asia-Pacific Economic Cooperation
BFU	Beijing Forestry University, China
CU	Chittagong University, Bangladesh
CTLT	The Centre for Teaching, Learning and Technology, UBC
FCDMM-APR	Forest College Deans Meeting Mechanism in the Asia-Pacific Region
IPB	Bogor Agriculture University, Indonesia
IPFE	International Partnership for Forestry Education
IOF	Institute of Forestry at Pokhara, Nepal
KU	Kasetsart University, Thailand
SFM	Sustainable Forest Management
UM	University of Melbourne, Australia
UBC	University of British Columbia, Canada
UPLB	University of Philippines-Los Banõs, Philippines
UPM	Universiti Putra Malaysia, Malaysia
UP	University of Peradeniya, Sri Lanka
VFU	Vietnam Forestry University, Vietnam

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1. **Background and Rationale (max 1.5 pages)**

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. The principle of SFM has been included in various international and domestic policies, including Declaration on Climate Change, Energy Security and Clean Development by the 15th Asia-Pacific Economic Cooperation (APEC) Summit; The Guide for Sustainable Forest Management in China released by the State Forestry Administration of China; The new Indonesian Forestry Act; National Committee on Sustainable Forest Management in Malaysia; Manual from Indian Institute of Forest Management and the International Tropical Organization on operational criteria and indicators for SFM at forest management unit level in India.

The implementation of SFM varies among Asia-Pacific countries. This is partly due to the lack of scientific support, along with the fact that it is a rapidly development. Extreme poverty, together with complex ecosystems, growing demands for forest products and services, and the consequences of massive forest degradation are greatly hindering the adoption of SFM in Southeast Asia.

Based on the recent survey conducted by FCDMM-APR in the Asia Pacific Region, it showed that an appropriate forestry education and research are keys for the regional development. However, the surveyed universities are facing the several key issues, including lack of financial support and facilities, inappropriate curriculum design, decreasing enrollment, opportunities for hands-on experience and access to international education systems.

It believes that these problems can be addressed through the collaboration among the universities in the region, such as the exchange of experience, knowledge, and technology in forestry management education by bringing the professors and experts to work together in development of SFM courses and program; increase of faculty and students mobility through integrated courses and field learning;

development of a regional recognized core curriculum on SFM to allow students exchange freely among the universities in the region; and the enhancement of hands-on experience for forestry students by opening up the teaching facility to the students in the regions.

Asian countries 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. Lastly, 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 will cover the entire Asia-Pacific region. The web-based learning system will be 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 is to develop an on-line course-based education program, which includes six core courses on contemporary topics of SFM, with online video lectures, online field trip, course materials, assignments, case study, student challenges, and learning assessments. This is a teamwork project and will bring 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.

2. Project Goal and Specific Objectives

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.

Specifically, the project has the following objectives:

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

3. Expected Outputs

The project will generate the following outputs.

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

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. The development of the core courses will bring the experts of the SFM in the AP region working together, and contributing their knowledge on SFM.

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

The online forum will allow for direct interaction with instructors and fellow participants and provide a venue for improved communication amongst practitioners.

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

The package of an on-site training for participants to get experience either in N. America, China or Southeast Asia will 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.

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

The conference will serve 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.

After the completion of the project, the online courses will still be made available through websites of FCDMM-APR and participated universities. All courses follow a module-based format so instructors in any forestry education institutions can easily incorporate the content into their own course teaching. Through the online learning platform, professionals in forestry industry and forest management officers can have the full access to the latest materials on the SFM. It will offer a viable way for them to learn the latest theories and good practices of SFM and apply in their daily work. The conference will help to expose the forestry education institutions to an innovative pedagogical method and will facilitate the adaptation of this technology in their teaching. All these outputs will generate a long-term impacts on the forestry education in the region and contribute greatly to the capacity building in SFM.

4. Main Activities Plan

FCDMM-APR is the umbrella framework for promoting SFM teaching, research and training in the region. Drawing on the member's rich experience in SFM, together with current research projects on SFM in the Asia-Pacific region, this proposed project is going to develop an innovative pedagogical method to convey the knowledge of SFM and related issues to various forestry stakeholders in Southeast Asia, through the combination of web-based learning, onsite training, and sharing of

results.

(1) Activities that contribute to the output 1

An innovative package of themes regarding SFM and related issues will be designed using visual technology applications with web-based learning. The six courses will be accomplished through online video lectures, course materials, lecture assignments, online field trip, case assignment and case study, and student challenges, and learning assessments, which are delivered by the Faculty of Forestry at participated universities, live discussion forum and Q&A sessions where participants can ask questions and discuss issues with their fellow students and instructors, and video conferencing.

A1.1. SFM curricula development for APR

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 will be responsible for his course curricula development in consultation with the experts in the participating university.

Person in charge/ Lead Institute: Six leading professors (Dr. John Innes/UBC; Dr. John Pulhin/UPLB; Dr. Honsy El-Lakany/UBC; Dr. Christopher Weston & Dr. Thomas Baker/University of Melbourne; Dr. Wan Razali/UPM; and Dr. Youqing Luo/BFU)

Participants: University of British Columbia (UBC), Beijing Forestry University (BFU), University of Putra Malaysia (UPM), University of Melbourne (UM), and University of Philippines-Los Banõs (UPLB)

Methods: Innovative course development for online learners

Location: UBC, BFU, UPM, MU, UPLB

A1.2. Course module template development

For unified and standardized the 6-course material development, the Centre for Teaching, Learning and Technology (CTLT) at UBC has undertaken the development of the module template with 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.

Person in Charge: Chris Crowley
Instructional Designer/Project Manager, UBC CTLT

Methods: Integration of video lectures, course materials, students assessment, challenges into the courses.

Location: UBCCTLT

A1.3. Workshop on online course design

The UBC will lead the effort to develop an online course template. The professors who lead the development of online courses will get together at UBC to receive the training on web-based course development. In the workshop, the content and format for each course will be thoroughly discussed to assure that they are built at the same level following a uniform style. During the workshop, each leading professor will present his/her course development outline. The three things will be focused for the curriculum development evaluation and cooperation: 1) avoid the overlay of each courses, 2) the depth of each courses, and 3) interconnection of each course. The copyright issues will also be emphasized in the workshop.

Person in charge/Lead Institute: Dr. Guangyu Wang/UBC

Participants: UBC, BFU, UPM, MU, UPLB

Methods: Two-day extensive training and one-day discussion

Location: Vancouver, Canada

A1.4. Development of six online courses

The six courses (3 credits per course) potentially under consideration are:

- Sustainable Forestry Management in a Changing World

Course Coordinator/Lead Institute: Dr. John Innes/UBC

Participants: BFU, Kasetsart University (KU), Chittagong University (CU), Bogor Agriculture University (IPB)

- Governance, Public Relationship and Community Development

Course Coordinator/Lead Institute: Dr. John Pulhin/UPLB

Participants: UBC, UPM, IPB, KU, CU, UPLB

- International Dialogue on Forestry Issue

Course Coordinator/Lead Institute: Dr. Honsy El-Lakany/UBC

Participants: UM, IPB, KU, CU, Vietnam Forestry University (VFU)

- Restoration of Degraded Forest Ecosystems and Forest Plantation Development

Course Coordinator/Lead Institute: Dr. Christopher Weston & Dr. Thomas Baker/University of Melbourne

Participants: UBC, BFU, IPB, KU, CU, Institute of Forestry at Pokhara (IFP)

- Sustainable Use of Forest Goods and Services

Course Coordinator/Lead Institute: Dr. Wan Razali/UPM

Participants: IPB, KU, CU, UM, UBC, University of Peradeniya (UP)

- Forest Resource Management and Protection

Course Coordinator/Lead Institute: Dr. Youqing Luo/BFU

Participants: UBC, UM, IPB, KU, CU, IFP, UPLB

All courses will be developed by the lead institutes separately but following a uniform format. A course contains 4 modules. Each module will require approximately 9-12 hours of work. It will be consisted of online lectures, lecture assignments, videos of field trip, case studies, case assignments, and student works. An example can be found from the website www.forestry.ubc.ca. The course coordinators are responsible for developing the course and running it. He/she will decide the overall structure of the course after consulting the participated instructors and discussing it in the workshop. Participated instructors will contribute lectures, videos of field trip, and case studies to the course. Post-processing of six courses will be conducted by the UBC CTLT to ascertain the quality of the course package and cross-platform usability.

A1.5. Course assessment and testing

The completed course package will be delivered to all participated universities to get the initial assessment and test. Necessary modifications on contents and technical aspects of the courses will be made based on the received feedbacks.

Person in charge/ Lead Institute: Dr. Guangyu Wang/UBC

Participants: BFU, UM, UPLB, UPM, IPB, CU, IFP, KUFF, UP, VFU

Location: Varied

(2) Activities that contribute to the output 2

An online learning platform will be constructed and hosted by FCDMM-APR. The online learning and discussion on these hot topics in SFM will lead to boarder participation from interested groups throughout the regions. The rich information built-up around the themes and SFM related learning materials also enrich the Network engagement on SFM in the region.

A2.1 Course website planning and design

A website for hosting the six online courses will be designed. In addition to normal internet browsing and downloading functions, some social networking techniques such as discussion boards, Twitter, and others will be embedded in the system to allow for more interactive learning. Resources that enlarge the learning of the courses will also be included in the system.

Person in charge/ Lead Institute: Dr. Junchang Liu/BFU

Participants: UBC

Location: Beijing, China

A2.2 Website construction

The website will be built and put on the server to allow for 24-hour access worldwide. Hardware includes server towers and separate internet connection line will be purchased and installed to provide the high-speed access to course contents.

Person in charge/ Lead Institute: Dr. Junchang Liu/BFU

Location: Beijing, China

A2.3 Website operation

Daily operation and maintenance of the website will be conducted by IT manager. The manager will also respond to requests from the course coordinators and users. User statistics will be tracked. All interactions and feedbacks will be kept and analyzed later.

Person in charge/Lead Institute: Dr. Junchang Liu/BFU

Location: Beijing, China

A2.4 Website assessment and optimizing

The website will be assessed by all participants. Suggestions fro improvement

will be obtained from all instructors and users. Any technical glitch will be smoothed out at this stage.

Person in charge/Lead Institute: Dr. Junchang Liu/BFU

Participants: UBC, UM, UPLB, UPM, IPB, CU, IFP, KUFF, UP, VFU

Location: Beijing, China

A2.5 Online forum construction and operation

An online forum for SFM education will be constructed in parallel with the course website. The online forum will provide a platform for stakeholders in forestry to share their experience and views on SFM in APR. Discussion topics and invitations will be sent out regularly to subscribed viewers to facilitate discussions. Well-known international experts and administrators will be invited frequently to hold online meeting with concerned citizens.

Person in charge/Lead Institute: Dr. Junchang Liu/BFU

Location: Beijing, China

(3) Activities that contribute to the output 3

Focused onsite training will be held after the online courses are completed. It will take the forms of a thematic training program, field study and workshop.

A3.1 Designing onsite training materials

The training materials will be 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.

Person in charge/Lead Institute: Dr. Guangyu Wang/UBC

Participants: BFU, UM, UPLB, UPM

Location: Vancouver, Canada

A3.2 Integrated onsite training package

The onsite training will be held in 4-week period in the form of 1+2+1, with the first one-week study at home country on preparing course material, and second two week in Canada (UBC) for a two-week training. The training will focus how to use the 6 online courses materials, and also combine with local knowledge of strategic forest management planning, policymaking and governance through a series of seminars,

field studies and discussion. The fourth week will be in China (BFU/APFNet) for a final project paper, presentations and assessment, which may be able to combine with the international conference. The trainees will showcase their achievements and serve as moderators to increase the publicity of the project in the conference.

Person in charge/Lead Institute: Dr. Junchang Liu/BFU, Dr. Guangyu Wang/UBC

Participants: Young faculties selected by participated universities

Location: Vancouver, Canada; Beijing, China

(4) Activities that contribute to the output 4

A4.1 Organize international conference

Lastly, an international conference will be held to showcase the achievements of the project. The event will provide 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 will be encouraged to participate in the conference.

Person in charge/ Lead Institute: Dr. Junchang Liu/BFU, Dr. Guangyu Wang/UBC

Participants: All forestry stakeholders in the APR

Location: TBD, synchronize with the APEC meeting in 2014

The logical relations between the adjacent activities are shown in figure 1.

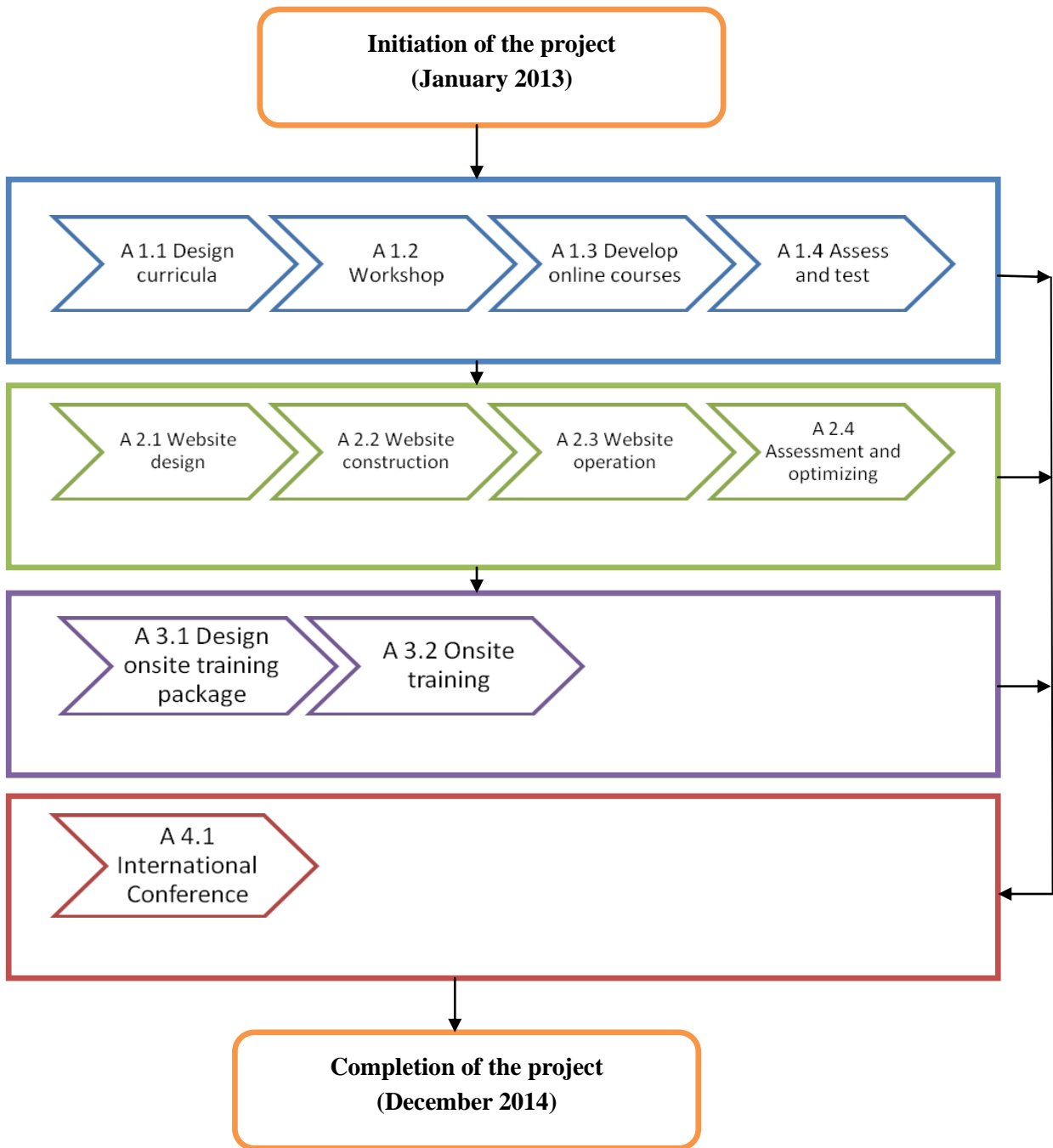


Figure 1. Flow chart of project activities

5. Project management structure

The project will follow a hierarchical management format. The project steering committee will be consisted of the eight steering committee members of FCDMM-APR (list included in Annex F) and a liaison from the APFNet. The responsibility of the steering committee is to oversee the implementation of the project. The steering committee reports to the APFNet. The project management

board is responsible for all management matters of the project. The project management board handles the communication with the APFNet. The lead institutes directly communicate with the project management board. In each activity, the lead institute makes administrative and financial arrangements with other participated institutes and is held responsible by the project management board for the successful implementation of the activity. The overall structure of the management is shown in figure 2.

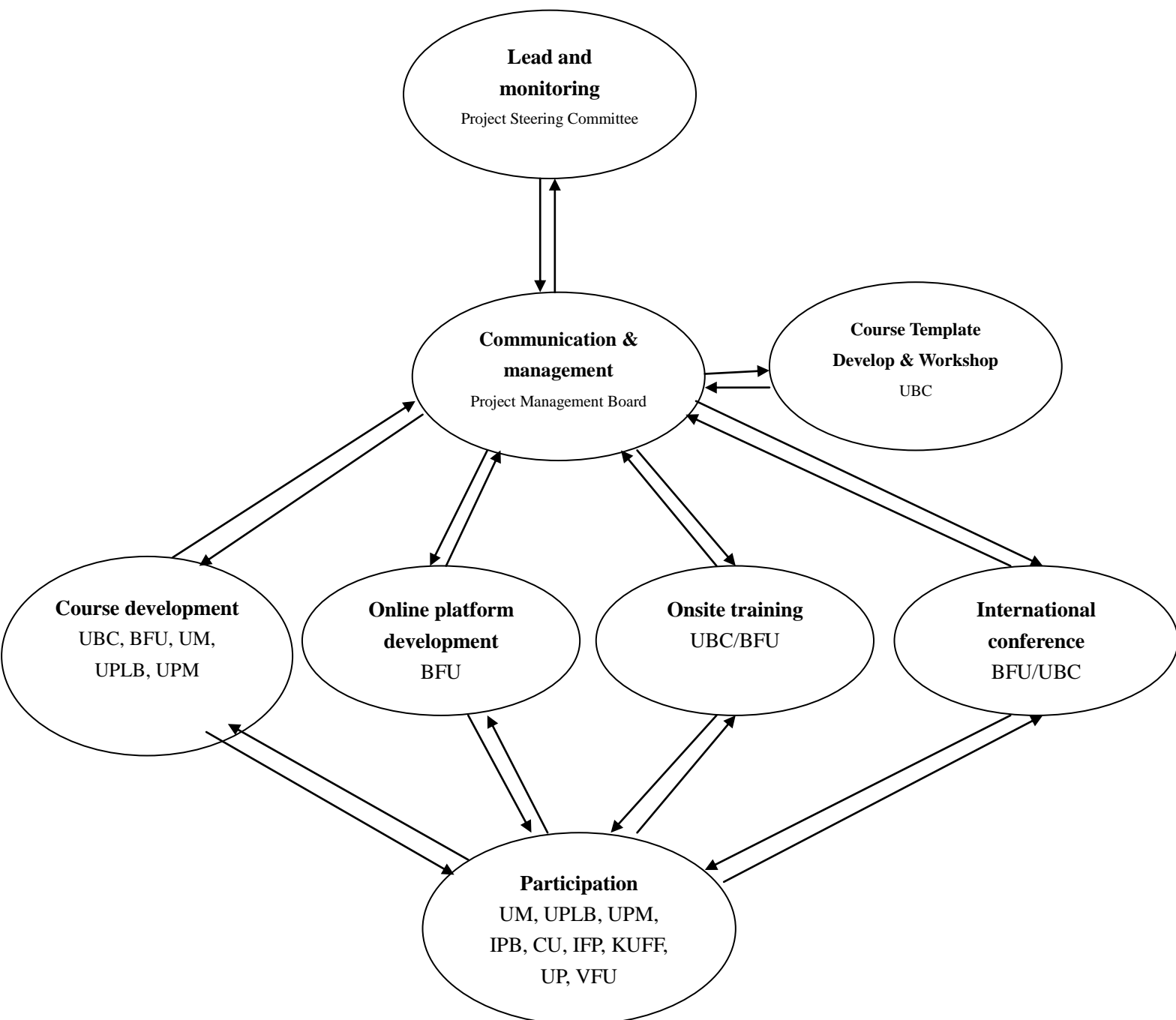


Figure 2 The management structure of the project

6. Project financial management procedure

As a key university in the AP region, each organization has a well-established financial management and internal auditing system to deal with a large amount of the research and education funding. Such as UBC, the funding will strictly follow the financial management procedure as outlined in the UBC Policy #87 – Research, Section 3: Administration of Trust Funds, and Policy #90 – Over-Expenditure on Research and Specific Purpose Trust Project/Grants. Grant and contract funds are held in trust by the University and are not the property of any individual. Expenditures that do not conform to contract budgets may not be accepted when the account is audited following termination of the contract. Grantees may then be held responsible. Purchases of equipment and supplies must be made through the University Purchasing Office. None may obligate the University for the purchase of goods or services. All equipment so purchased is the property of the University.

The total of the counterpart fund has already exceeded 20%, and it has not yet included faculty contribution, otherwise it will be easier surpassed 40% of the matching funding. The administrative staff cost which includes allowance for the project director and project coordinator, the salary for the project technical manager, and the consultation fee are listed in the budget sheet, which all combine less than 20 % of the total cost. The cost for staff has been integrated into the production cost based on actual working days for the project and their work performance. For more detail, please see the Annex D and E.

7. Project reporting, monitoring and evaluation

The project quality assurance system will be rigorously followed the management structure (Figure 2): APFNet <-> FCDMM-APR <-> Project Management Board <-> Project Implementing bodies. The project performance will be monitored and measured regularly to identify variances from the program plans. Project

coordinators and hired financial experts will monitor the progress and outcome of the project, the expenditure, quality, communication, staffing, and risks of the project.

Three on-site monitoring will be carried out during the course of the project. An initial monitoring will be performed approximately six months after the beginning of the project. The monitoring will be conducted by the project coordinator and the financial management specialist. The participants will be required to spend at least 30% of the budget and produce at least 20% of the expected outputs. An intermediate monitoring will be performed at approximately one-year after the beginning of the project. It will be carried out by the project coordinator and the financial management specialist. The participants will be required to spend a minimum of 60% of the budget and produce no less than 50% of the expected output. The final monitoring will be performed approximately one month in advance of the completion of the project. The monitoring will be conducted by the project management board and the financial management specialist. At this stage, all participants will be required to fully execute the budget and achieve all targeted outputs.

The two lead institutes, BFU and UBC will be subject to all three on-site monitoring events. Other participating institutes will be subject to the initial monitoring and the final monitoring. If any significant problems arise during the course of the project, additional monitoring will be performed with the approval of the project management board.

All participants are also required to produce quarterly progress reports and provide prompt answers to the inquiries from the project coordinators, the project management board, and the funding agency. The project management board will appoint a communication manager who serves as the liaison between the program management board and participants. He will be responsible for handling all internal and external communications.

8. Project publicity and dissemination

The publicity and dissemination of the results of the project will be handled by the FCDMM-APR Coordination Office and the participated institutes. The major activities include the maintenance of the project websites, production of dissemination materials, contact with press, and dissemination events in regional and international channels.

The outputs of the projects will be hosted on FCDMM-APR's website, with links on websites of APFNet and all 11 participating universities. FCDMM-APR's website will also contain news, progresses, and monthly reports of the project. The project will also produce brochures, project fact sheets, short videos and press articles throughout the implementation of project. These materials will be delivered to the forestry and education related conferences, relevant newspapers, and new media channels such as Youtube, Facebook, and Twitters. The FCDMM-APR is also planned to hold side meetings during the International Forestry Week and other conferences to publicize the project. Finally, The International Conference on On-line Learning in Forestry Education will be held at the end of the project. The conference will be a major event to showcase the outputs of the project and share the experience with a global audience.

The project will develop an on-line education model which can be readily adapted by any education institutions in APFNet membership economies. Detailed technical instructions and easy-to-use template will make available freely to all interested parties. Also the final report will contain a through analysis of the experience in developing and implementing a multi-partner project. The information will be valuable for developing trans-boundary collaborations in the future.

9. Project sustainability and risk analysis

SFM is widely recognized as an effective means for forest to adapt to climate change and to achieve a dynamic balance between environmental, economic and social aspects. It is therefore a common goal for various forestry stakeholders to pursue. However, given the rapidly changing and increasing expectation of the good and services from forests from stakeholders , it is extremely difficult for forestry managers

to keep up with the evolution of the core values of forest management. This project assists in better understanding SFM and other related newly emergent issues of concern. The project addresses the sectoral strategy as specified in the goal of APFNet: "enhancing capacity building and strengthen information sharing on sustainable forest management in the forestry sector". In 2012, APEC leaders in their joint declaration clearly stated the support for "...efforts to enhance the mobility of students, researchers, and education providers within APEC through the development of higher education cooperation". The proposed project will benefit from this strong political support and in turn, contribute significantly to realize that goal.

Major outputs of the project will be 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, under the support of APFNet and BFU, 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 will be structured based on module, which allow each university to integrate the course material into their current teaching, or customized with local materials into their education curricula. Which means the project will be able to sustain and enrich/contribute from participated universities.

Besides the support of the APFNet, the FCDMM-APR will actively seek education grants from international organizations such as TNC, FAO, and ITTO to update the contents of the developed courses and develop new courses. The goal in the next five years is to develop a master-degree program on SFM based on these online-courses and onsite trainings, which is credited by all participated universities. The main uncertainties that might impede the achievements of the project objectives is that practitioners and policy makers may not use the information that is made available to them. Several measures have been taken to address this issue. The project enrolled the best forestry universities in the region to lead the development of the courses. Forestry colleges and universities in the region have been consulted to identify the knowledge and tools needed most in SFM education. They are also

invited to contribute in different ways to the course development. Finally, the provision of training and promoting efforts will be very important to increase the adoption of the online courses in higher education as well as continuing education.

Annexes:

Annex A Project logical framework

Annex B Project work plan

Annex C Project budget by activity

Annex D Project budget by category

Annex E Project sites map and general information

Annex F Project executing agency general information

Annex G Curriculum Vitae of Project Management Board and Technical Assistance Partners

Annex A: Project logical framework matrix

	Intervention logic	Objectively verifiable indicators of achievement	Sources and means of verification	Assumptions/Risks
Goal	<i>Promote Sustainable Forest Management in AP Region in changing climate and society</i>	<i>SFM criteria and Indicators of the international, regional and national schemes.</i>	<i>Annual countries' reports released under Montreal Process or ITTO framework.</i>	<i>The risk is the counties that are not issued the annual reports. However, it's not unlikely since there are going international pressure for standardized the report</i>
Objectives	<i>Enhance SFM education in AP 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.</i>	<ol style="list-style-type: none"> 1. <i>The number of professionals has benefited from the program</i> 2. <i>The number of universities has involved with the program and benefited from the courses development</i> 3. <i>The number of professionals and students has used the online resources</i> 4. <i>The mutual recognition of the core courses among the universities in AP Region</i> 	<ol style="list-style-type: none"> 1. <i>Periodical reports of the project implementation</i> 2. <i>Forestry Dean's meeting</i> 3. <i>Online resources users and the users database</i> 4. <i>Registration for the training program</i> 	<i>The imbalance of social, economic and environmental development among the counties in the region could be an issue for the effectiveness of implementing the SFM practices in some undeveloped countries. However, we believe the resources can provide assistance for their long-term development.</i>
Expected outcomes/ outputs	<p><i>Output 1 Development of six core SFM courses: University of British Columbia (UBC)</i></p> <p><i>Output 2 Development of an online learning platform: Beijing Forestry University (BFU)</i></p> <p><i>Output 3 Development of an on-site training package with options: UBC</i></p>	<p><i>The videos and courses materials for the six core courses are ready for uploading online.</i></p> <p><i>Online interface development, website launch, and discuss forum organization</i></p>	<i>Materials, videos and the on-site training programs have been approved by FACMM-APR.</i>	<i>The biggest issue will be convincing practitioners and policy makers to use the information that is made available to them. The provision of training and promoting efforts will be very important.</i>

	<i>Output 4 International Conference on online learning in Forestry Education: BFU/UBC</i>	<i>Two training packages (North America and Australia) including study course syllabus, visit sites, learning materials.</i> <i>Evaluation of the courses materials and on-site training programs.</i>		
Activities	<i>Activity 1.1 SFM curricula design for Asia Pacific region UBC Activity 1.2 Template development Activity 1.3 Workshop online curricula course design UBC Activity 1.4 Video taping of selected courses Participated universities Activity 1.5 Course assessment and testing UBC and participated universities Activity 2.1 Course-based website planning and design BFU Activity 2.2 Website construction BFU Activity 2.3 Website operation BFU Activity 2.4 Website assessment and optimizing BFU Activity 2.5 Construct online forum BFU Activity 3.1 Designing onsite training materials UBC/BFU Activity 3.2 Integrating onsite training package UBC/BFU Activity 4.1 Hold the international conference BFU</i>	<i>The means are detailed in the accompanying budget sheet. Essentially, it involves a range of universities in the region together with specialized consultants for some international and regional agencies.</i>	<i>Activities currently underway represent those that the proponent is directly involved with, or have been informed about by project collaborators.</i>	<i>No preconditions have to be met, since the proponent is already working closely with all the project partners</i>

Annex B: Project work plan

Project Title: Innovative Sustainable Forest Management Education for the Asia-Pacific Region

Activity	Project year 1												Project year 2											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Output 1																								
Activity 1.1																								
Activity 1.2																								
Activity 1.3																								
Activity 1.4																								
Activity 1.5																								
Output 2																								
Activity 2.1																								
Activity 2.2																								
Activity 2.3																								
Activity 2.4																								
Activity 2.5																								
Output 3																								
Activity 3.1																								
Activity 3.2																								
Output 4																								
Activity 4.1																								

Annex C: Project budget by activity (This is an example of work plan for a 2-year project)

Expenses	Unit	Quantity	Unit Cost (USD)	Project Year 1		Project Year 2		Total
				APFNet Grant	Counterpart Fund	APFNet Grant	Counterpart Fund	
Output 1								
Activity 1.1 SFM curricula design for Asia Pacific region	Curricular	6	60000	40000	20000			60000
Activity 1.2 Template development, standardization and production	Template	1	55950	40950	15000			55950
Activity 1.3 Workshop online curricula course design	Workshop	1	58950	50000	8950			58950
Activity 1.4 Video taping and materials of selected courses, post production	Course	6	50000	180000	40000	80000		300000
Activity 1.5 Course assessment and testing	Course	6	5000			30000		30000
Subtotal								
Output 2								
Activity 2.1 Course-based website planning and design	Website	1	2000	2000				2000
Activity 2.2 Website construction	Website	1	35000	20000	15000			35000
Activity 2.3 Website operation	Website	1	40000			20000	20000	40000
Activity 2.4 Website assessment and optimizing	Website	1	5000			5000		5000
Activity 2.5 Construct online forum	Website	1	43000			23000	20000	43000
Subtotal								

Output 3								
Activity 3.1 Designing onsite training materials	Package	2	20000	15000	5000	15000	5000	40000
Activity 3.2 Integrating onsite training	Person	15	6000			70000	20000	90000
Subtotal								
Output 4								
Activity 4.1 Hold the international conference in China	Conference		90000			70000	20000	90000
Subtotal								
TOTAL				347950	103950	313000	85000	849900

Notes:

1. The budget should be based on realistic costs, and details should be provided on amount and sources of contribution;
2. All expenses should be adequately justified in the narrative sections of the project proposal;
3. Budget MUST be submitted in US Dollars.
4. Costs for project management staff employed in the project should only include salary. Per-diem, travel and accommodation expenses are suggested to be put in No 2. Travel Expenses.

Annex D Project Budget by Category

	# of units	Unit rate	Project Year 1		Project Year 2		TOTAL
			APFNet Grant	Counterpart Fund	APFNet Grant	Counterpart Fund	
1. Technical Assistance							
1.1 Course Development and management		30000	20000		10000		30000
1.2 Course module and template development	1	50000	50000				50000
1.3 Course production and Test	2	50000	60000	15000	20000	5000	100000
1.4 Website development	1	82000	22000	15000	25000	20000	82000
International consultants							
1.5 Course production and test	4	50000	120000	40000	40000		200000
Subtotal							
2. Demonstration set up/Case study/ Sub-contracts							
2.1 Onsite training materials development	2	22000	15000		7000		22000
2.2 Online learning forum	1	33000			23000	10000	33000
Subtotal							
3.Information/Training & workshops/ Dissemination							
3.1 Workshop for training course developers	1	45000	40000	5000			45000
3.2 On site training for instructors and young professionals	1	8000			70000	10000	80000
3.3 International Conference	1	8000			70000	10000	80000
Subtotal							

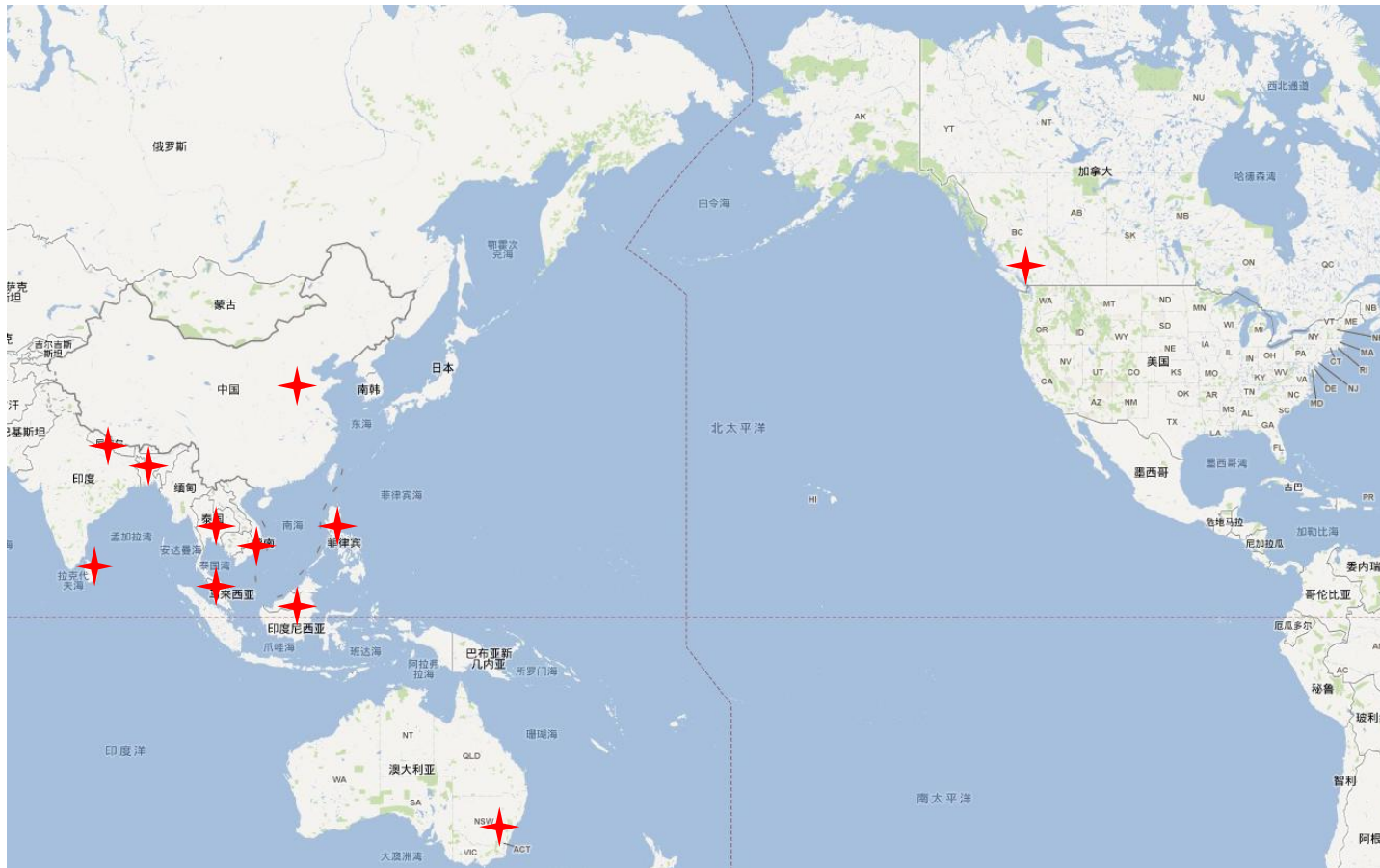
4. Procurement							
4.1 Computer Server					3000		3000
Subtotal							
5. Operating and Administration							
5.1 Office rental				5950		5000	10950
5.2 Local transportation costs			950	8000		5000	13950
5.3 Project Management Staff			20000	10000	15000	15000	60000
5.4 Office supplies & expenses (stationery, utilities, phone etc.)				5000		5000	10000
Subtotal							
6. Monitoring & Evaluation							
Internal Course quality control	6	5000			30000		30000
External Monitoring							
Subtotal							
TOTAL			347950	103950	313000	85000	849900

Notes:

1. The budget should be based on realistic costs, and details should be provided on amount and sources of contribution;
2. All expenses should be adequately justified in the narrative sections of the project proposal;
3. Budget MUST be submitted in USD.

Annex E Project sites map and general information

This part mainly presents the map and the current status of the project sites, including its size, forest type, the natural, socio-economic conditions as well as the land use status, potential demonstrative effect to other regions or economies.



The project has the participation of 11 universities in the APR. Its main coverage include East Asia, Southeast Asia, South Asia, Oceania, and North America. The red stars in the map show the locations of those 11 universities.

Annex F Capacity assessment of the project executing agency and partnership organizations

This part mainly presents the key information of the project executing agency and its partner organizations, including the name, mission, function, expertise area, operational time, staff number, implemented project quantity and main funding resource. In particular, the role and expectation of project executing agency and its partner organizations in the implementation of the project should be identified and ranked according to their importance and contribution to the project.

FCDMM-APR

Beijing Forestry University, China

University of British Columbia, Canada

University of Melbourne, Australia

University of Philippines-Los Banõs, Philippines

Universiti Putra Malaysia, Malaysia

Bogor Agriculture University, Indonesia

Kasetsart University, Thailand

Vietnam Forestry University, Vietnam

Chittagong University, Banglades

Institute of Forestry at Pokhara, Nepal

University of Peradeniya, Sri Lanka

FCDMM-APR

FCDMM-APR is the umbrella framework for promoting SFM teaching, research and training in the Asia-Pacific Region. It was formally established in 2011. The funding members of the organization include BFU, UBC, UM, UPM, UPLB, IFP, VFU, IPB, and Mississippi State University, all leading education institutions in the region. The coordination office of FCDMM-APR is located in BFU. It is managed by the steering committee with representatives come from the nine founding members. Dr. Youqin Luo and Dr. John Innes serve as co-chairs of the steering committee. FCDMM-APR enjoys wide support in the region. Delegates from 43 forest colleges, universities, training institutions, and organizations endorsed its establishment in the First Forest College Deans Meeting held in Beijing in 2010.

FCDMM-APR is leading the implementation of the project. It will oversee the implementation of the program. It will coordinate the actions of all participants and provide needed guidance on financial and project management matters. It will serve as the liaison between participants and APFNet.

Beijing Forestry University, China

Beijing Forestry University is one of the key universities directly under the administration of the Ministry of Education. It is a multi-disciplinary university which has 650 full-time faculty members, of whom 337 are full and associate professors. Among them, 141 are supervisors of Ph.D. programs and five are academicians of the Chinese Academy of Engineering. As one of the key national universities directly under the Ministry

of Education in China, Beijing Forestry University (BFU) provides advanced education in the studies of forestry and ecology. It was one of the first universities to be admitted into the "211 Project", a major project sponsored and funded by the Chinese government for the construction of 100 key universities in China in the 21st century.

BFU is leading the implementation of the project. It will oversee the development of the online courses and develop the online learning platform. It will run the onsite training jointly with UBC. It will also host the international conference to promote the project and increase the awareness of SFM education in the APR.

University of British Columbia, Canada

The University of British Columbia (UBC), established in 1908, is one of Canada's leading research universities and is consistently ranked among the top 40 in the world. The university attracts 54,000 students from across Canada and 140 countries around the world to two major campuses. UBC's forest education keeps pace with changing social values and an increasingly knowledge-based forest sector. UBC Forestry is educating a new generation of foresters, with approximately 500 undergraduate students and 250 graduate students enrolled at any given time. Programs offered are progressive and timely, covering topics like the biology of trees, innovative wood products and forest engineering, as well as ecological and cultural issues related to the forest. The UBC faculty is committed to meeting future challenges in forestry through in-depth, cutting edge research. UBC Forestry is a member of the Association of University Forestry Schools of Canada.

UBC is an leading institute in this project. It will assist BFU to develop the online courses and serve as the lead institute for developing two courses. It will also help BFU to run the onsite training and convene the international conference.

University of Melbourne, Australia

The University of Melbourne Department of Forest and Ecosystem Science (DFES) offers study in the topics of climate change mitigation, carbon accounting, bushfire science, water quality, ecosystem services, biodiversity, biosecurity, tree genomics, renewable resources, biomass energy, landscape restoration, sustainable forest management and forest operations, environmentally friendly wood products and much more. The Department of Forest and Ecosystem Science (DFES) is Australia's largest combined research, development and education provider dedicated to forests, forest products and forested landscapes. DFES academics contribute widely to the University's 'Melbourne Model' undergraduate degrees and carry ownership of the Master of Forest Ecosystem Science (by coursework), MFES. The MFES is also linked to the Australian National Forestry Masters' program (NFM). Research activities are driven by more than 50 scientists and support staff and a similar number of postgraduate research students. Project topics range from basic fundamental research to molecular/cell biology and stress physiology, over ecophysiology and studies of ecosystem processes, impacts of climate change, wildfire, water availability and quality as well as biosecurity issues and forest health, to directly applicable investigations into sustainable forest management, forest operations as well as research into forest and wood products.

UM is an important partner in this project. It will lead the development of one course and contribute to other courses. It will also help to design the onsite training package and contribute lectures to the training. It will also join the assessment and testing of the developed online learning platform.

University of Philippines-Los Baños, Philippines

The University of the Philippines Los Baños (UPLB) is a coeducational, publicly funded academic, research and extension institution, and is one of the six constituent universities of the University of the Philippines System. It started out as a College of Agriculture in 1909; and became a

full-fledged university in 1972. It has emerged as a leading academic institution in Southeast Asia. UPLB is dedicated to advancing knowledge and educating students in science, technology, agriculture, forestry, veterinary medicine and other areas of. UPLB is organized into nine colleges -- Agriculture, Arts and Sciences, Development Communication, Economics and Management, Engineering and Agro-industrial Technology, Forestry and Natural Resources, Human Ecology, Public Affairs, and Veterinary Medicine -- and two schools --Environmental Science and Management, and The Graduate School. Within these are degree-granting institutes, departments, programs, and divisions. In addition, a great deal of teaching, research and extension take place in interdisciplinary programs, laboratories, and centers whose works extend beyond traditional departmental boundaries. The UPLB Faculty and Administration consist of leaders in higher education, business and industry, science, engineering and other professions.

UPLB is an important partner in this project. It will lead the development of one course and contribute to other courses. It will also join the assessment and testing of the developed online learning platform.

Universiti Putra Malaysia, Malaysia

Universiti Putra Malaysia (UPM), is a research intensive public university located in central Peninsular Malaysia, close to the capital city, Kuala Lumpur. UPM is a research university offering undergraduate and postgraduate courses with a research focus on agricultural sciences and its related fields. UPM began its academic life in 1973 with three founding Faculties and a Division of Basic Sciences. The first class of 1,559 students were for the Bachelor's degree in Agriculture, Diploma in Home Technology, Diploma in Animal Health and Production, Diploma in Science with Education, and Preliminary Program. UPM now offers 73 Bachelor's degree programs, eight Diploma programs, and 12 Masters and Doctoral programs. There are 16 Faculties, eight Centers, six Institutes, two Schools, a University Park and a branch campus in Bintulu,

Sarawak.

UPM is an important partner in this project. It will lead the development of one course and contribute to other courses. It will also join the assessment and testing of the developed online learning platform.

Bogor Agriculture University, Indonesia

The vision of Bogor Agricultural University (IPB) is to become a leading research-based university in the world with the major competence in tropical agriculture, biosciences, and possessing entrepreneurial characteristics. As a leading higher education Institution in forestry in developing human resources who are capable to understand and develop science, innovation, technology and art, as well as developing policy concept for sustainable forestry development. The undergraduate program graduates Forestry Science Student offers majors in forestry management, forest resource technology, forest resource conservation and eco tourism, and silviculture. The students are allowed to select their minor in other faculties in IPB or other universities as a double major. IPB post graduate program offers programs on forestry management science, forest resources science and technology, fiber and composite technology, forest resource quality engineering and development, tropical biodiversity conservation, ecotourism and environmental service management and tropical silviculture. The faculty of forestry also offers professional training programs and advance course.

IPB is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

Kasetsart University, Thailand

Kasetsart University is a public university where bodies of knowledge and research potential have been continually accumulated for nearly

seven decades. Now, as a national research university endorsed by the Commission on Higher Education of Thailand with the vision to become “the world’s leading research university in agriculture, food, technology and innovation”, Kasetsart University is ready accomplish this goal by creating networks and partnerships with other world class universities. In 2010, Kasetsart University focused on internationalization as one of its major policies, initiating and conducting various academic collaborative activities with our partners worldwide. Exchange of faculty members, researchers, staffs, students, joint research, seminars, conferences and workshops, as well as other areas of interest are still our commitment to the global academic society.

KU is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

Vietnam Forestry University, Vietnam

Vietnam Forestry University is the leading training center in the national forest and has a renowned reputation for forestry research, education and training in Southeast Asia. Vietnam Forestry University was established on the basis of Forest Sciences and the mechanics of Forestry Hanoi Academy of Agriculture and Forestry. Once established, the training consists of three main branches: Forestry, Economics, and forest industry. In 1995 the school expanded to include the training of Ministry of Forestry (now the Ministry of Agriculture and Rural Development). This expansion brought in new industries and the establishment of the science of forestry education, forest resources and environmental management, processing of forest products, industry rural development, and business administration.

VFU is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

Chittagong University, Bangladesh

The University of Chittagong is a public university situated located in the suburban area of Hathazari Chittagong district, Bangladesh. The university was established in 1966, and is a multidisciplinary research university. The university ranks among the top public and private universities of Bangladesh. Currently, it is the third largest University in Bangladesh with more than 20,000 students and about 700 faculty members working in various departments, institutes and research centers. Most of them are highly qualified and trained with long teaching and research experiences. Among the faculty members 209 possess Ph.D., 22 have M.Phil., 61 have foreign Masters' degrees, while others possess local Degree Honors & Masters with outstanding performance.

CU is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

Institute of Forestry at Pokhara, Nepal

The Institute of Forestry (IOF) is the only institution in Nepal for training middle and high level professionals in forestry and natural resource management (NRM). The IOF expanded its training programs in 1981 to Pokhara where the infrastructure of the Central campus was developed with technical and financial assistance from the World Bank, International Development Agency (IDA), United States Agency for International Development (USAID) and the International Tropical Timber Organization (ITTO). The IOF offered a two year Certificate Level in Forestry, a 2 year Technical certificate in Forestry and a four year Bachelor of Science in Forestry. IOF has further grown and added a Master of Science in Forestry degree. The Institute of Forestry (IOF), of the Trivbuvan University, is the only institution in Nepal providing professional level training and preparing manpower in the field of forestry and related natural resources management.

IOF is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

University of Peradeniya, Sri Lanka

The University of Peradeniya is located in the Central Province of Sri Lanka, in Peradeniya. It consists of eight faculties, two Postgraduate Institutes, 10 Centers and 73 departments, with about 11,000 students. Major areas of teaching include Medicine, Agriculture, Arts, Science, Engineering, Dental Sciences, Veterinary Medicine and Animal Science and Allied Health Science. The university has eight academic faculties of study, containing 72 departments in total. In addition, the university has two postgraduate institutions and six affiliated centers. Post-graduate Institute of Science (PGIS) and Post-graduate Institute of Agriculture (PGIA) are the two postgraduate institutions established in the university. PGIS is a national institute established by the Ministry of Higher Education, Sri Lanka in 1996. PGIA was established in 1975 and offers three postgraduate degrees.

UP is an important partner in this project. It will contribute to the development of the courses. It will also join the assessment and testing of the developed online learning platform.

Annex G Curriculum Vitae of Project Management Board and Technical Assistance Partners

This part mainly presents the key information of the component of the project management board and technical assistance partners, and their responsibility, expertise filed and experience, which will contribute to the fulfillment of the project task.

The project management board include Dr. Youqing Luo (BFU), Dr. John Innes (UBC), Dr. Chruz Rex (UPLB), Dr. Christopher Weston (UM), Dr. Junchang Liu (BFU) and Dr. Guangyu Wang (UBC)

Dr. YOUQING LUO

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EDUCATION BACKGROUND

1982, BAgr., Forestry, Nanjing Forestry University, Nanjing, China
1985, MAgr., Forest Entomology, Beijing Forestry University, Beijing, China
2005, D.Sc., Forest Entomology, Beijing Forestry University, Beijing, China

PROFESSIONAL EXPERIENCE

1993: Associate Professor of Forest Entomology, BFU.
1995~ present: Professor of Forest Entomology, BFU.

ADMINISTRATION POSITIONS

2010-present. Vice president of Beijing Forestry University

2002~2010. Dean of Forestry College , BFU

2000~2002.Standing-Vice Dean of Biological Sciences and Technology College,
BFU

1996~2000. Director of Science and Technology Division of BFU

1993~1996. Vice dean of Forest Resources and Environment College, BFU

EXPERTIES

Forest protection, forest entomology, forestry education

PROFESSIONAL AFFILIATION

Standing-member of China Insect Society.

Member of Education Guidance Commission, State Forestry Bureau.

Vice director of Academic Commission of BFU

Member of experts committee on specialties and disciplines, Ministry of
education, P.R.C

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EDUCATION BACKGROUND

1979, BA, Geography, Cambridge University, UK
1983, MA, Geography, Cambridge University, UK
1983, Ph..D., Geography, Cambridge University, UK

PROFESSIONAL EXPERIENCE

1999~2010, Associate professor, Professor, Faculty of Forestry, University of British Columbia
1992~1999, Section leader, Swiss Federal Institute of Forest Snow and Landscape Research
1986~1992, Senior scientific officer, Forestry Commission, Great Britain.

ADMINISTRATION POSITIONS

2010~Dean, Faculty of Forestry, University of British Columbia

EXPERTIES

Sustainable forest management, forestry education

PROFESSIONAL AFFILIATION

Vice President for Policy of the International Union of Forest Research Organizations
Chair of Commonwealth Forestry Association
Member of British Ecological Society
Member of British Ornithologists' Union
Chair of the Commonwealth Forestry Association

Dr. REX VICTOR OAFALLAS CHRUZ

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EDUCATION BACKGROUND

1990, Ph.D., Watershed management, University of Arizona, USA
1981, MS, Forestry, University of the Philippines, Philippines
1978, BS, Forestry, University of the Philippines, Philippines

PROFESSIONAL EXPERIENCE

1994~, assistant professor, associate professor, Professor, College of Forestry and Natural Resources, University of the Philippines Los Baños

ADMINISTRATION POSITIONS

2012~, Chancellor, University of the Philippines Los Baños
2008~2012, Dean, College of Forestry and Natural Resources, University of the Philippines Los Baños
2000~, Director, Environmental Forestry Programme, College of Forestry and Natural Resources, University of the Philippines Los Baños
1994~2000, Director, Forestry Development Center, University of the Philippines Los Baños

EXPERTIES

Forest watershed management, Ecosystem management, climate change

PROFESSIONAL AFFILIATION

2000~, Board member of Forests and Natural Resources Research Society of the Philippines
2006~2007, President, Forests and Natural Resources Research Society of the Philippines

Also members of the National Research Council of the Philippines, the Philippine Forestry Education Network

Dr. JUNCHANG LIU

CONTACT INFORMATION

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EDUCATION BACKGROUND

1982, BS, Forest Economics, Beijing Forestry University, China.
1987, MS, Forest Economics, Lakehead University, Canada.
2005, D.Sc., Forest Economics, Beijing Forestry University, China.

PROFESSIONAL EXPERIENCE

1982~1987, Assistant Lecturer, Department of Forest Economics, Beijing Forestry University
1991~1999, Associate professor, School of Economic Management, Beijing Forestry University
2000~, Professor, School of Economic Management, Beijing Forestry University

ADMINISTRATION POSITIONS

1994~1999, Deputy dean, School of Economic Management, Beijing Forestry University
2000~2010, Dean, School of Economic Management, Beijing Forestry University
2010~, Director, Department of International Relation, Beijing Forestry University

EXPERTIES

Forest economics, forestry education

PROFESSIONAL AFFILIATION

Vice chairman of National Forest Statistics Committee

Member of the National Forest Economics & Management Academic Committee of Forestry

Universities and Colleges in China

Member of National Forest Academic Committee

Dr. GUANGYU WANG

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EDUCATION BACKGROUND

2009, Ph.D., Watershed management, University of British Columbia, Canada

1999, MBA, Marylhurst University, Oregon, USA

1983, BS, Forestry, Fujian Agriculture & Forestry University, China

PROFESSIONAL EXPERIENCE

2009~, Research Associate, Faculty of Forestry, University of British Columbia, Canada

2010~, Nanjing Forestry University, Adjunct Professor

2007~, Jiangxi Agriculture University, adjunct Professor

2008~2009, Research Fellow, Canadian International Council, Canada
2008~2009, Postdoc research fellow, Department of Forest Resources Management, UBC, Canada
2003~2008, Research Assistant, Department of Forest Resources Management, UBC, Canada
1998~1999, Intern, Oregon Department of Forestry & PNW US Forest Service, USA
1997~1998, Information Specialist, World Forest Institute, Oregon, USA

ADMINISTRATION POSITIONS

2010~, Director of Asian Strategies
2001~2003, CEO, Fujian Forestry Investment & Development Co. Ltd, China
1999~2003, Director, International Cooperation Division, Fujian Department of Forestry, China
1993~1997, Director, Senior Engineer, Fuzhou National Park, Fujian, China
1991~1993, Deputy Director, World Bank Plantation Project, Fujian State-owned forests Bureau, China
1988~1991, Chief, Planning & Financial Office, Fujian State-owned Forests Bureau, China
1983~1988, Deputy Chief, Forest Management Office, Fujian Department of Forestry, China

EXPERTIES

Forest policy, watershed restoration, remote sensing, sustainable forest management

PROFESSIONAL AFFILIATION

1999 ~2004, Fujian Silviculture Association, Vice Chairman
1996 ~1998, Fujian Forestry Assets Evaluation Association, Senior Evaluator
1999 ~ 2003, Forestry Society of Fujian Province, Board Member
1999 ~ 2003, Chinese Wood Distribution Association, Board Member
1996 ~ 1999, Fujian Economics Association, Board Member
1995 ~ 2003, Association of National Parks & Recreation, Board Member

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EDUCATION BACKGROUND

1990, Ph.D., Botany, University of Melbourne, Australia
1983, BS, Botany, University of Melbourne, Australia

PROFESSIONAL EXPERIENCE

1999~, Senior Lecturer, School of Forest and Ecosystem Science, The University of Melbourne
1991–1998, Lecturer, School of Forest and Ecosystem Science, The University of Melbourne
1988–1991, Research Forester, APM Forests, Morwell, Victoria

ADMINISTRATION POSITIONS

2004~2008, Coordinator of the Bachelor of Forest Science
Coordinator of the Master of Forest Ecosystem Science

EXPERTISES

Biogeochemistry and nutrient cycling in forest ecosystems, forest productivity and respiration fluxes of CO₂ from above and below ground

PROFESSIONAL AFFILIATION

2000~, Member, Parks Victoria Koala Technical Advisory Committee

2002~, International Reader: Australian Research Council

1991~2000, Member, Australian Forestry Council Research Working Groups

2010~, Member, Editorial Board Forestry, An International Journal of Forest Research

2000~2004, Deputy Chair, West RFA Sawlog Farming Steering Committee