



Collaborative research on forestry education after the global pandemic: the role of the AP-FECM Office, UBC

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THE UNIVERSITY
OF BRITISH COLUMBIA
Faculty of Forestry

Outline

Background: AP-FECM and Innovative Sustainable Forest Management Education Project

Challenges and Opportunities during the COVID

Our Solutions

Outcomes and Lessons

Future Proposal for Online Education among AP-FECM members



Background

- Proposed during the First Forestry College Deans Meeting in the Asia Pacific region in 2011
- A joint educational online program under the framework of Asia Pacific Forestry Education Coordination Mechanism (AP-FECM)
- UBC Forestry, BFU, UM, UF, UPLB, UBC CTLT.....

Leading organization

UBC Faculty of Forestry

Sponsor

The Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (*APFNet*)



Vision

- Develop a regionally recognized core curriculum aimed at senior forestry students, young faculty and mid-career professionals to acquire knowledge of SFM.
- Exchange knowledge and technology in forestry management education by bringing the professors and experts to collaborate in developing SFM courses and programs.





Innovative Sustainable Forest Management Education Project

Goals and objectives

- Goal 1: Build 15 high quality SFM online courses
- Goal 2: Create a platform for exchange of ideas and experiences on SFM education
- Goal 3: Provide a foundation for regional universities to further develop online SFM Master's certificate and degree programs
- Goal 4: Further increase equity in forest education by providing more open educational resources.

Innovative Sustainable Forest Management Education-Phase I

Self-Directed Online Distance Education Courses

Phase I (2013-2016)

Universities

- Australia, Philippines, China, and Canada

Five Self-Directed Online Distance Education Courses

- Developed self-directed learning courses with course content as open education resources for senior students and practitioners in Asian Pacific Regions.
- Created the basis for leading to a credentialed degree in Forestry
- Attracted more than 3300 users from 91 economies

Innovative Sustainable Forest Management Education-Phase II

Executive Summary

Phase II (2018-2021)

- Universities: Australia, Philippines, China, Canada, and U.S.
- Have course content as open educational resources
- Add graded assessments
- More focused on the tropical forest sustainable management
- Create an online distance education certificate program
- Build the foundation for a potential Master degree program
- Created a platform for collaboration across the world to promote student mobility, research cooperation and mutual course articulation and recognition etc..

Phase I and Phase II Courses List

Phase I Courses Upgrading		Phase II Courses Development	
FODE001: Sustainable Forest Management in a Changing World	UBC	FODE004: Sustainable Use of Forest Ecosystem Services and Community Livelihoods	UPLB
FODE002: Forest Governance, Public Relations, and Community Development	UPLB	FODE007: Silviculture, Plantation Design and Management	BFU
		FODE008 (I): Tropical Forests Ecology (I): Structure and Composition of Tropical Forest Ecosystems	UBC
FODE003: International Dialogue on Forestry Issues	UBC	FODE008 (II): Tropical Forests Ecology (II): Ecological Processes in Tropical Forests	UBC
FODE005: Restoration of Degraded Forest Ecosystems & Forest Plantation Development	UM	FODE009: Geomatics in Forestry (Data Collection and Measurement)	UBC
		FODE010: Climate Modelling and Forest Application	UBC
FODE006: Forest Resource Management and Protection	BFU	FODE011: Conservation in Asia: Challenges and Opportunities	UBC
		FODE012: Urban Forestry in the Asia Pacific Region	UBC
		FODE013: Carbon and REDD+ Forest Measurement and Reporting (UM)	UM
		FODE014: Natural Forest Management in the Tropics	UF



**Challenges and
Opportunities during the
COVID Pandemic**

Challenges during the COVID Pandemic

Challenges to Forestry education in general

- Closure of on-campus teaching
- Faculty frustration

Challenges to course design and development

--Difficulty in communication

- No meeting in person
- Delay of response

--Delay in course development

- Stressful situation of the COVID-19 pandemic
- Transition to online teaching of all partner universities
- Reduced productivity of course development teams
- Delay in the release of project funding

Our opportunities during the COVID pandemic

- Worldwide transition from the long-lasting mode of in-person based teaching into online learning.
- Share our experience with quality online course development and implementation for new opportunities
- Repurpose the existing high-quality online OER (open educational resource) courses
- Provide the support and resources to multi-cultural students
- AP-FECM/UBC's vision to support the AP-FECM member universities



**Solutions adapting to the
COVID pandemic**

Solutions adapting to the COVID pandemic

- AP-FECM has been working with the UBC Faculty of Forestry, the UBC Centre of Teaching and Learning Technology, Beijing Forestry University and many organizations to offer more than 15 open-access online courses.
- Course repurpose, and specific delivery models were made to adapt to the new challenges.
- Online Teaching/Learning Lecture Series has also been launched for faculty members around the Asia Pacific region.



**Outcome 1:
SFM repurposed OER
courses implementation**

SFM online courses implementation

Acknowledgement: Funded by APFNet and UBC

<u>Offerings Before Pandemic</u>
2016
2017
2018
2019

Typically, one subject + 100-200 students



Offerings during Pandemic

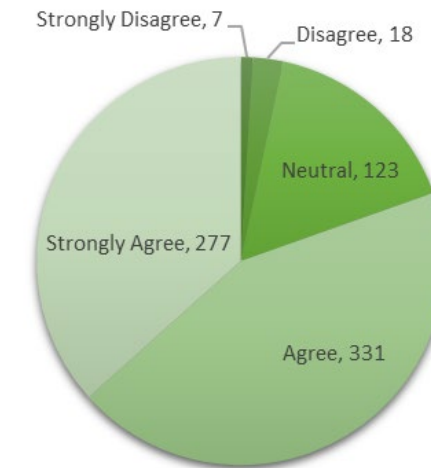
Feb-April 2020 in China

1,565 students 32 universities from China: Undergraduate students, Graduate students, Professionals

Sep-Dec 2020 in AP region

1,224 students from 135 Universities from Asia Pacific Region: Undergraduate students, Graduate students, Professionals.

Overall Student Satisfaction



80.5%

of the after-course survey respondents on average answered "agree" or "strongly agree" to liking the online courses

Virtual Summer Camp from UBC Forestry (Focus on the Asia Pacific Region) 2020-2022

2020.7 One package: Forest Management and the Effects of Carbon (>50 students)


2021.7 Three packages : (>120 students)

- Forest Management and the Effects of Carbon
- Natural Resources Management and Monitoring in Canada
- Bio-based Renewable Materials and Energy

2022.7 Four packages : (>200 students)

- Forest Management and the Effects of Carbon
- Natural Resources Management and Geospatial Analysis
- Bio-based Renewable Materials and Energy
- Urban Forestry





**Outcome 2:
Establishment of the AP-FECM
Course Completion Certificate
&
UBC's Graduate Certificate
Programs**

2.1 AP-FECM Course Completion Certificate program

- Students who complete the online courses receive a certificate issued by the AP-FECM Executive Office

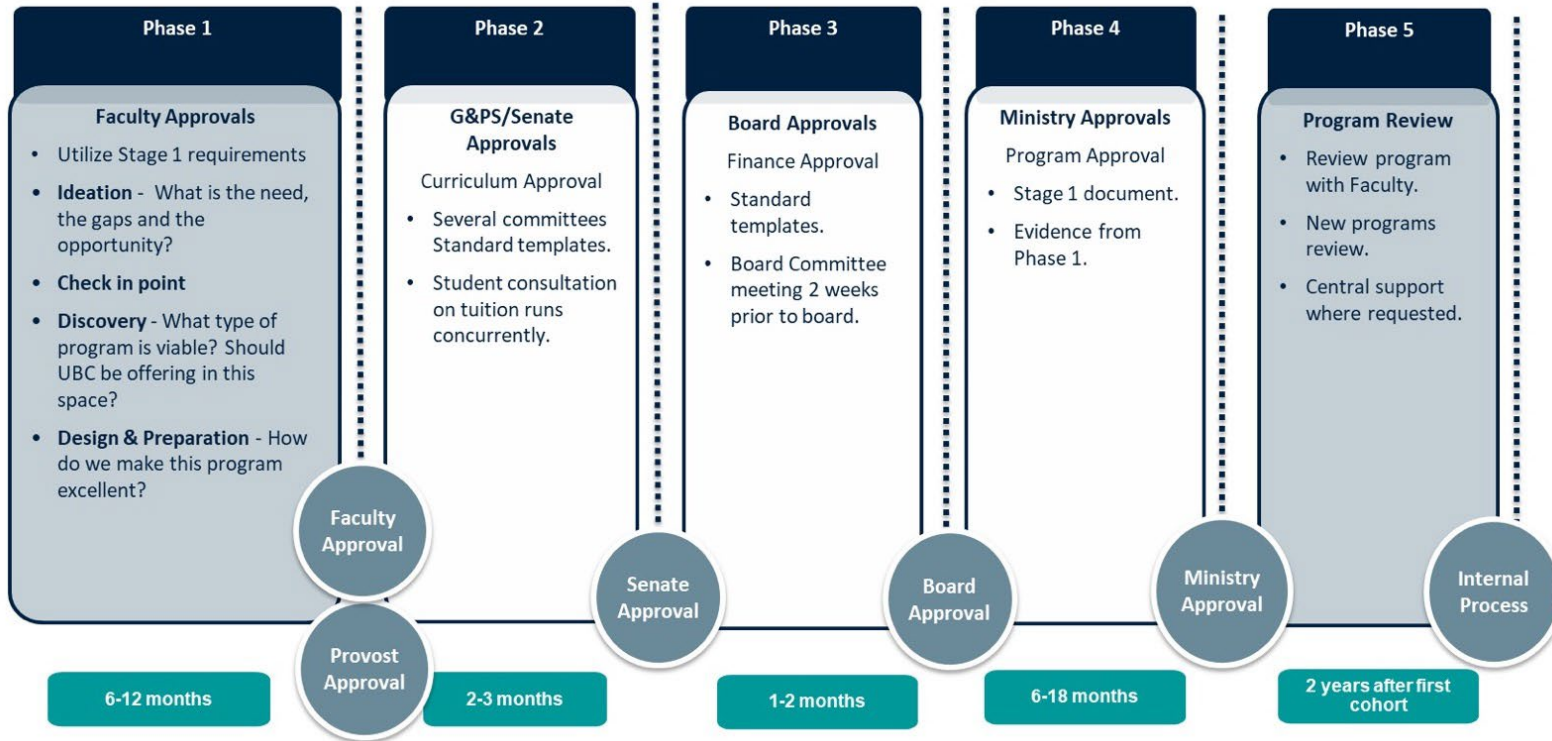


The AP-FECM Sustainable Forest Management Certificate

2.2 UBC Certificate Credit Program

---Online Graduate Certificate in Forest Management and Conservation

UBC Credit Programs Approval Process



<https://academic.ubc.ca/vpa-initiatives/new-program-proposals/credit-programs-approvals-process>

The screenshot shows the UBC Faculty of Forestry website. The main heading is "Online Graduate Certificate in Forest Management and Conservation". Below the heading, it states: "Fully customizable for your convenience, this fully digital program can be completed by professionals working full time within 1-2 years." There is a button that says "APPLY FOR THIS CERTIFICATE PROGRAM".

The page also includes a navigation menu with options like ABOUT, PROGRAMS, PEOPLE, RESEARCH, NEWS, ALUMNI, GIVING, and STUDENTS. Below the main heading, there are sections for "What is the Graduate Certificate in Forest Management and Conservation (GCFMC?)", "Courses and Timeline", "Tuition and Fees", and "Admission Requirements".

<https://forestry.ubc.ca/programs/certificate/forest-management-conservation/courses-and-timeline/>

Program Requirements:

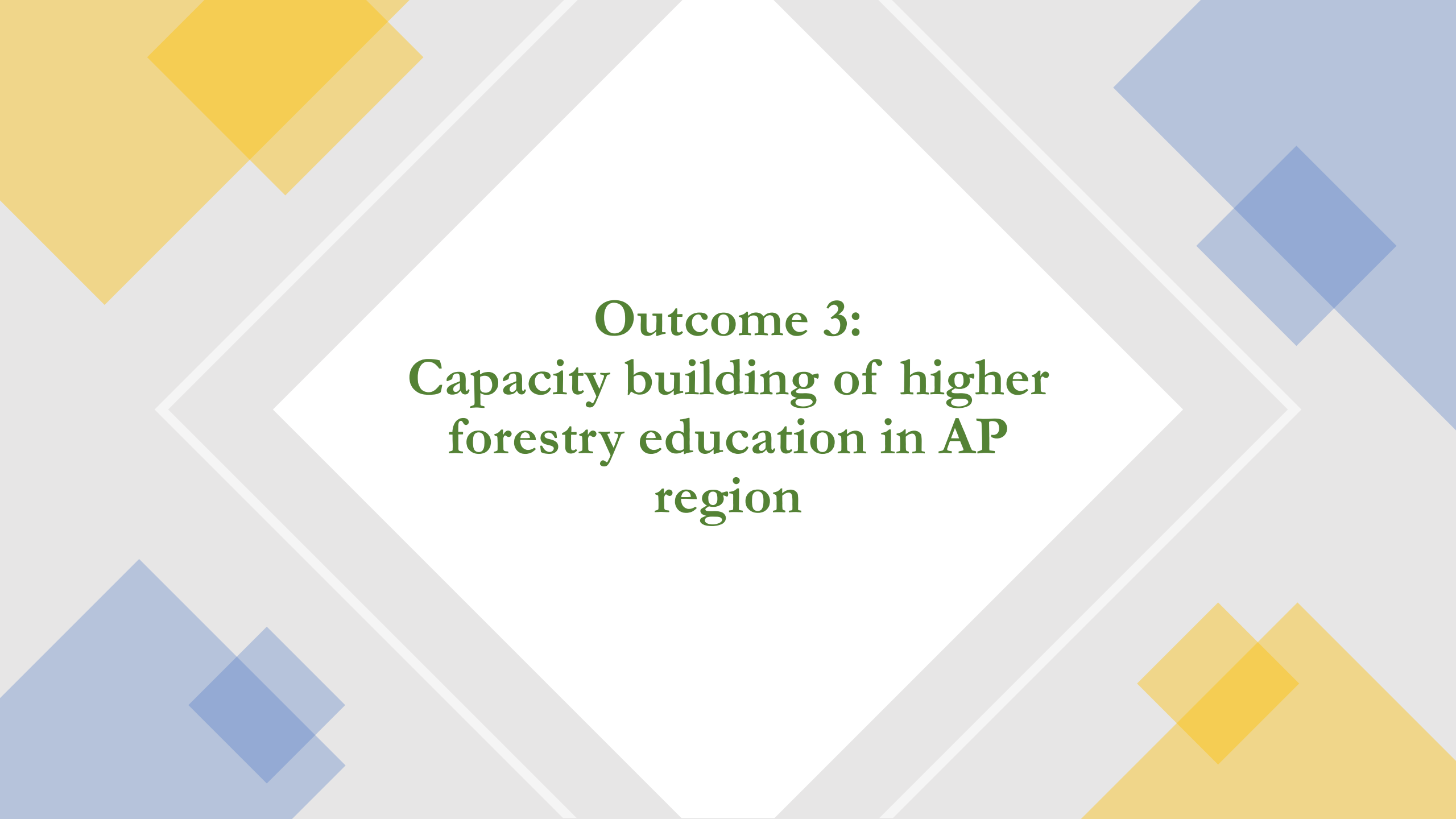
Students must complete 15-credits (5 courses) in a maximum of two years.

One required (core) course, which must be completed in the first term:

❖ **FOPE 500: Sustainable Forest Management in a Changing World (Phase I)**

Students can then customize their certificate by selecting four additional courses that suit their unique interests, within the elective pool:

- FOPE 501: Geomatics in Forestry: Data Collection and Management (Phase II)
- FOPE 502: Introduction to Urban Forestry in the Asia Pacific Region (Phase II)
- FOPE 503: Climate Modelling and Forest Applications (Phase II)
- FOPE 504: Structure and Composition of Tropical Forest Ecosystems (Phase II)
- FOPE 505: Ecological Processes in Tropical Forests (Phase II)
- FOPE 506: Forest Conservation in Asia: Challenges and Opportunities (Phase II)
- FOPE 507: International Forestry Issues, institutions, and Multi-Lateral Agreements (Phase I)
- FOPE 508: Forest Ecosystem Services and Community Livelihoods (Phase II)
- FOPE 509: Plantation Design and Management (Phase II)



**Outcome 3:
Capacity building of higher
forestry education in AP
region**

3.1 Virtual seminar on strategies/techniques to cope with the Covid-19 pandemic

- Virtual conference was organized by the UBC Faculty of Forestry and AP-FECM EO in July 2020 with more than 30 participants
- AP-FECM’s action response to the COVID-19 pandemic
- Challenges and opportunities for regional forestry education within the context of COVID-19 were shared by the participants
- Novel forestry pedagogical and collaborative strategies to cope with the COVID-19 pandemic were discussed

Opening remarks

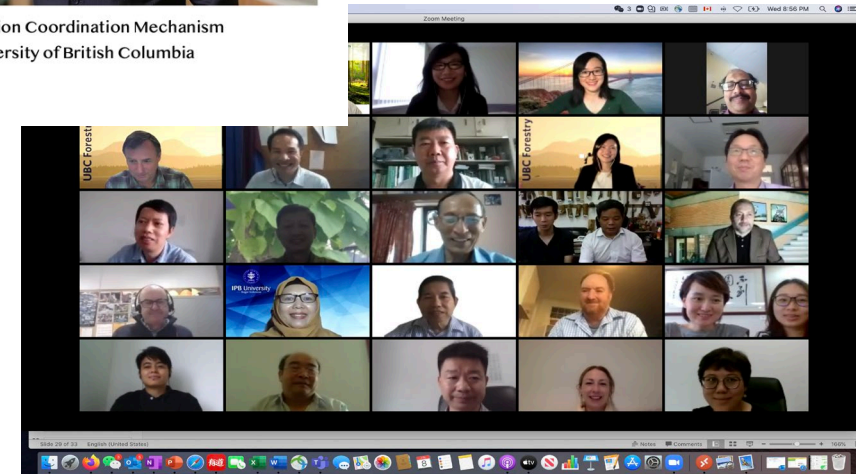
- Mr. Zhang Zhongtian, the Assistant Executive Director of APFNet



Opening Remarks

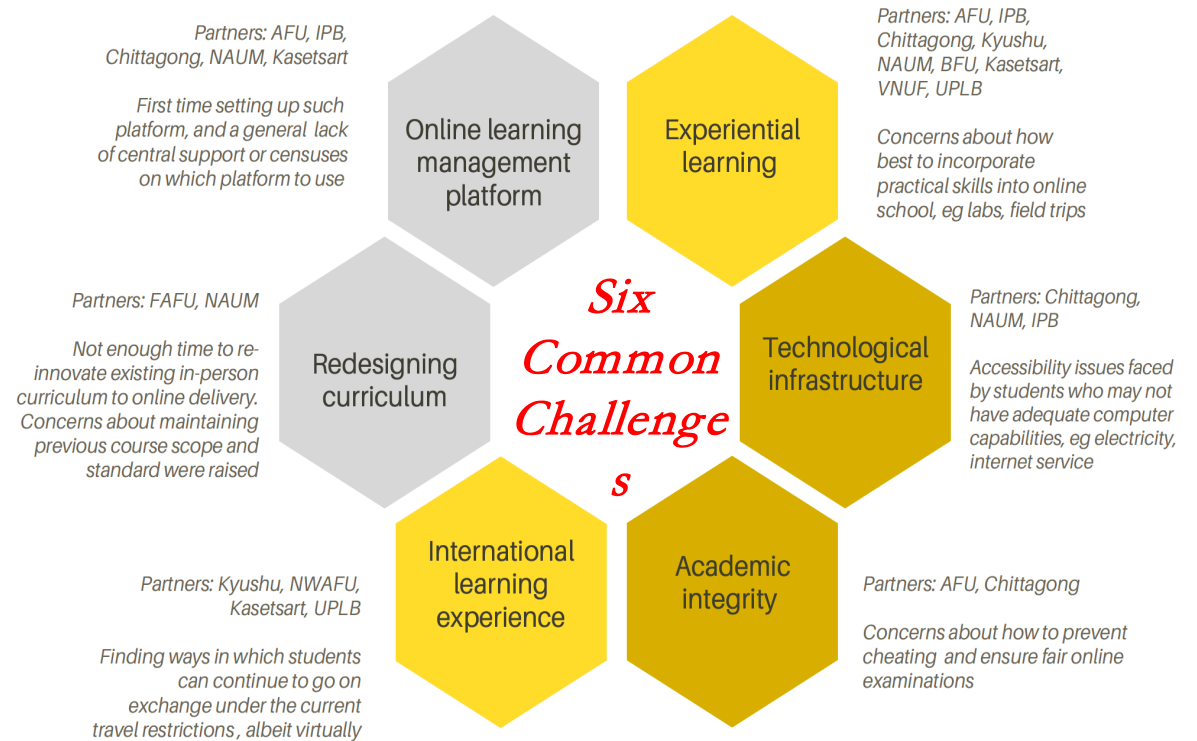


Chair, Asia Pacific Forestry Education Coordination Mechanism
Dean, Faculty of Forestry, University of British Columbia



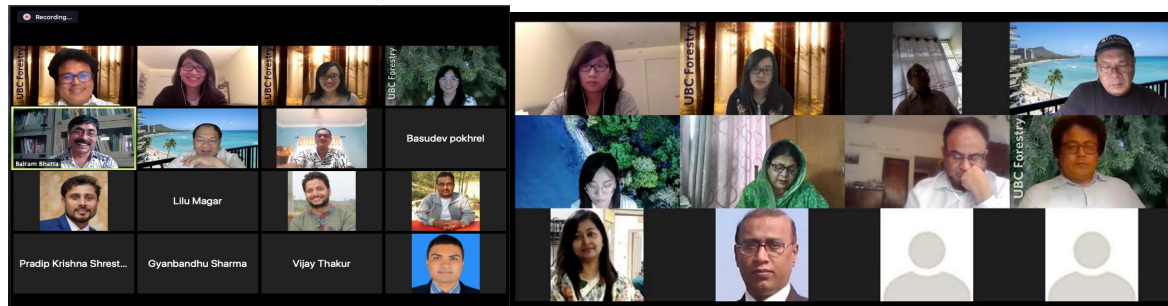
3.2 Dialogues with Educational Leaders (DEL) (Aug-Oct 2020)

- DEL series aims at identifying common key challenges to online teaching in forest education and potential areas for future collaboration
- From Aug-Oct 2020, total of 12 DEL sessions were held separately with each participating university
- Six common challenges to online teaching and five main areas for future collaboration were identified



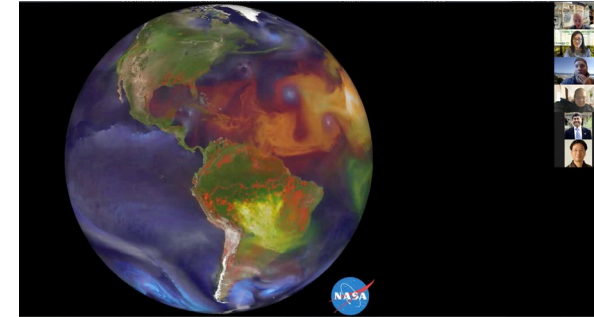
Five future collaboration areas

- Mutual course recognition
- Online course development
- Student and Faculty mobility
- Young Scientists Working Group
- Research on forestry education in Covid-19 pandemic



3.3 Virtual lecture series on online teaching and learning (Sep-Nov 2020)

- Supported the teaching transition (from face-to-face to online) in the member universities
- Eight world-class scientists were invited to share their experience and expertise on online teaching and learning
- Received much praise and positive feedback from the audiences



Agenda		
Presenters	Organization	Title
Prof. Chris Cowley Prof. Hailan Chen	UBC CTLT	“Online Teaching Design, Development and Deliver: A case study from UBC CTLT”
Prof. Nicholas Coops	UBC Faculty of Forestry	“High-techs Application in the Online Courses Development”
Prof. Tony Bates	Contact North	“Leveraging Online Learning Not Only to Increase Access but Also to Develop New Skills”
Prof. Curtis Bonk	Indiana University	“How to Motivate and Retain Online Learners”
Prof. Jiyou Jia	Peking University	“Applying Artificial Intelligence to Enhance Online Learning”
Prof. Yong Liu	Beijing Forestry University	“Hybrid Teaching and Learning Mode During the Post Pandemic”
Prof. Steve Joordens	University of Toronto	“How to formally develop skills like critical and creative thought (and interpersonal communication) via online learning”

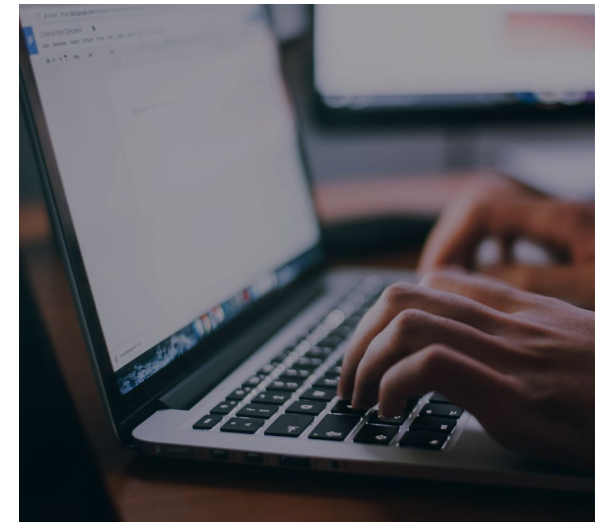


➤ Conclusions

- Integration of emerging educational technologies and pedagogies into the online courses;
- More than 130 universities were involved and over 70k OER users were achieved;
- The AP-FECM and UBC's Graduate Certificate programs were successfully established;
- Many praises and good feedbacks were received from the AP region.
- The platform for exchange of ideas and experiences on SFM education
- Forest education gaps were minimized....

➤ Lessons Learned

- A team-based approach;
- A mixed model of asynchronous and synchronous teaching;
- Students centered pedagogical model and learning activities;
- More supports for students who have special needs or difficulties in accessing high bandwidth technology;
- Further development of phase III and more courses development to adapt to changing context and need of forestry education.





**Future Proposal for Online
Education among AP-
FECM members**

Future Plan for Innovative Sustainable Forest Management Education in the Asia-Pacific Region

SFM online course development (Phase III)

- Proposed courses
 1. *Forest resources assessment*
 2. *Silvics and Silviculture*
 3. *Abiotic disturbances*
 4. *Biotic disturbances*
 5. *Biodiversity conservation and wildlife management*
 6. *Watershed management and forest hydrology*
 7. *Forest economics and planning*
 8. *Sustainable management of non-timber-forest-products (NTFP)*
 9. *Agroforestry*

Further Cooperation among AP-FECM members

- UBC Forestry will assist partner universities of repurposed OER courses
 - ***University academic degree***
 - ***Capacity building/training for mid-term career professionals***
- Instructor-led course delivery of repurposed OER courses by our summer programs



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Thank you
Any questions?

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