Capacity Development Implementation

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Capacity Development, Demonstration projects and Group activities

Demonstration Projects

Analyze basin water cycle

Group Activities

Set up an application objective

Capacity Development

Support implementing application

Activity Summary

ORGANIZATION	NAME OF TRAINING
ICHARM/PWRI	Hydrologic Modeling and Flood Runoff Analysis & Forecasting with IFAS
JAXA	Mini Project
	Sentinel Asia System Operating Training
University of Tokyo EDITORIA	Web-based In-situ Data Loading, Quality Control, Mata data Registration
	Distributed Hydrological Modeling
	Land Data Assimilation System (LDAS)
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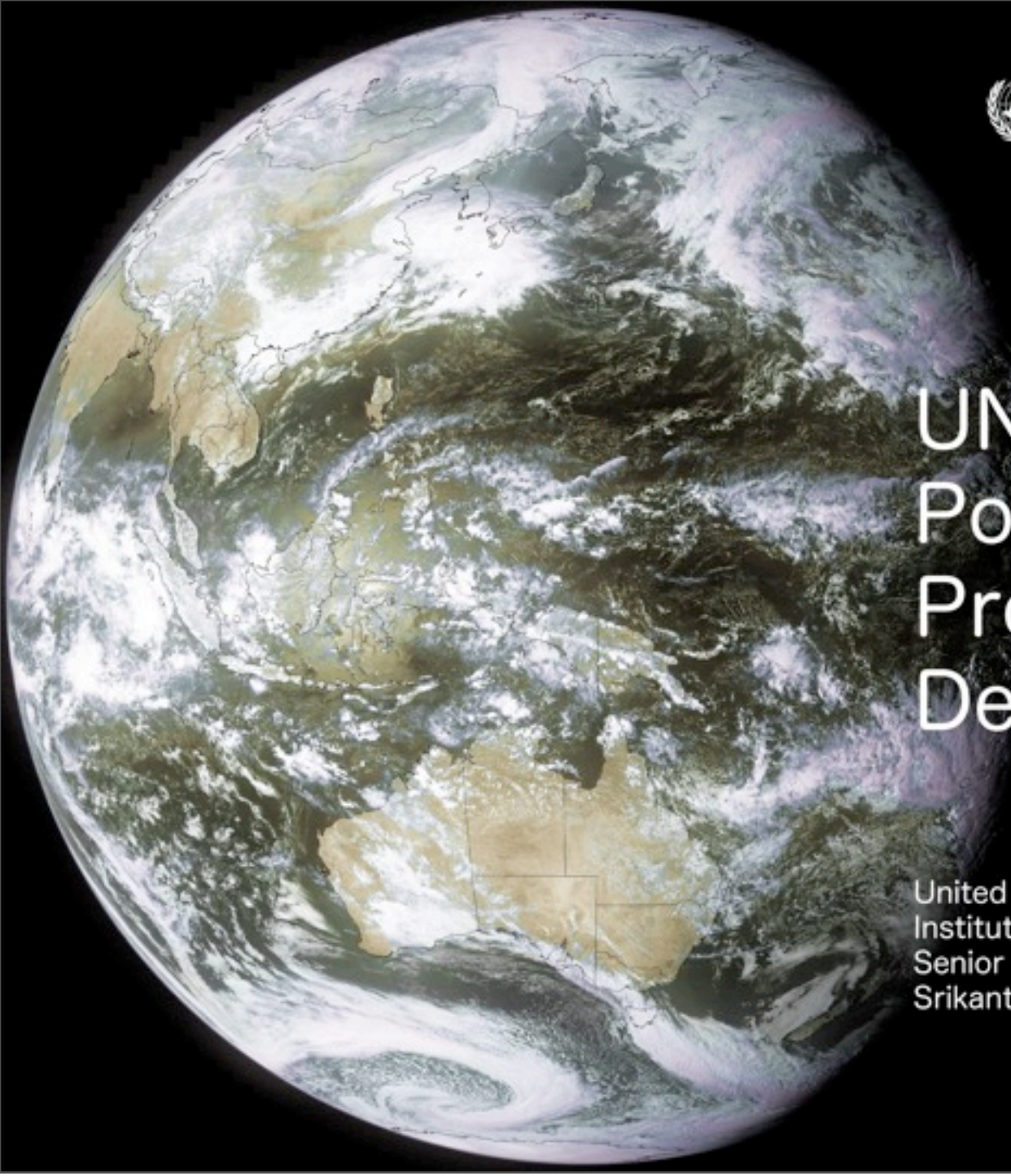
	Flood Inundation Modeling
	Flood Loss Estimation

Outline

- Recent Capacity Development Activity of UNU (15 min)
  - Building Resilience to Climate Change - I (15 units x 2)
  - Web tutorials
- Capacity Building at JAXA (15 min)
  - JAXA's capacity building activities with focus on WRM" （10min); Yoko Inomata
  - ADB technical assistance projects for Bangladesh,Vietnam and Philippines"(5min): Chu Ishida
- Capacity Building at ICHARM (10 min) : Fukami
- Calendar of events for 2011
- AWCI participation



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UNU-ISP Postgraduate Programme Description

United Nations University
Institute for Sustainability and Peace
Senior Academic Officer
Srikantha Herath

Role of Higher Education in Adapting to Climate and Ecosystems Change

2009 June Conference in Tokyo

- Important topic (two presidents, VP, Deans)
- Lack of HR and Resources - share efficiently
- Do not limit to climate change
- A broader framework

Interactions between climate change, biodiversity and desertification

Impact of climate change on biodiversity

Climate change could alter distribution of species and their habitats and lead to migration of plants and animals if there are corridors

Role of biodiversity in climate change mitigation and adaptation

Forest and biodiversity sequester carbon and affect local climate

Biodiversity ensures ecosystem resilience to climate change

Impact of Climate change on desertification

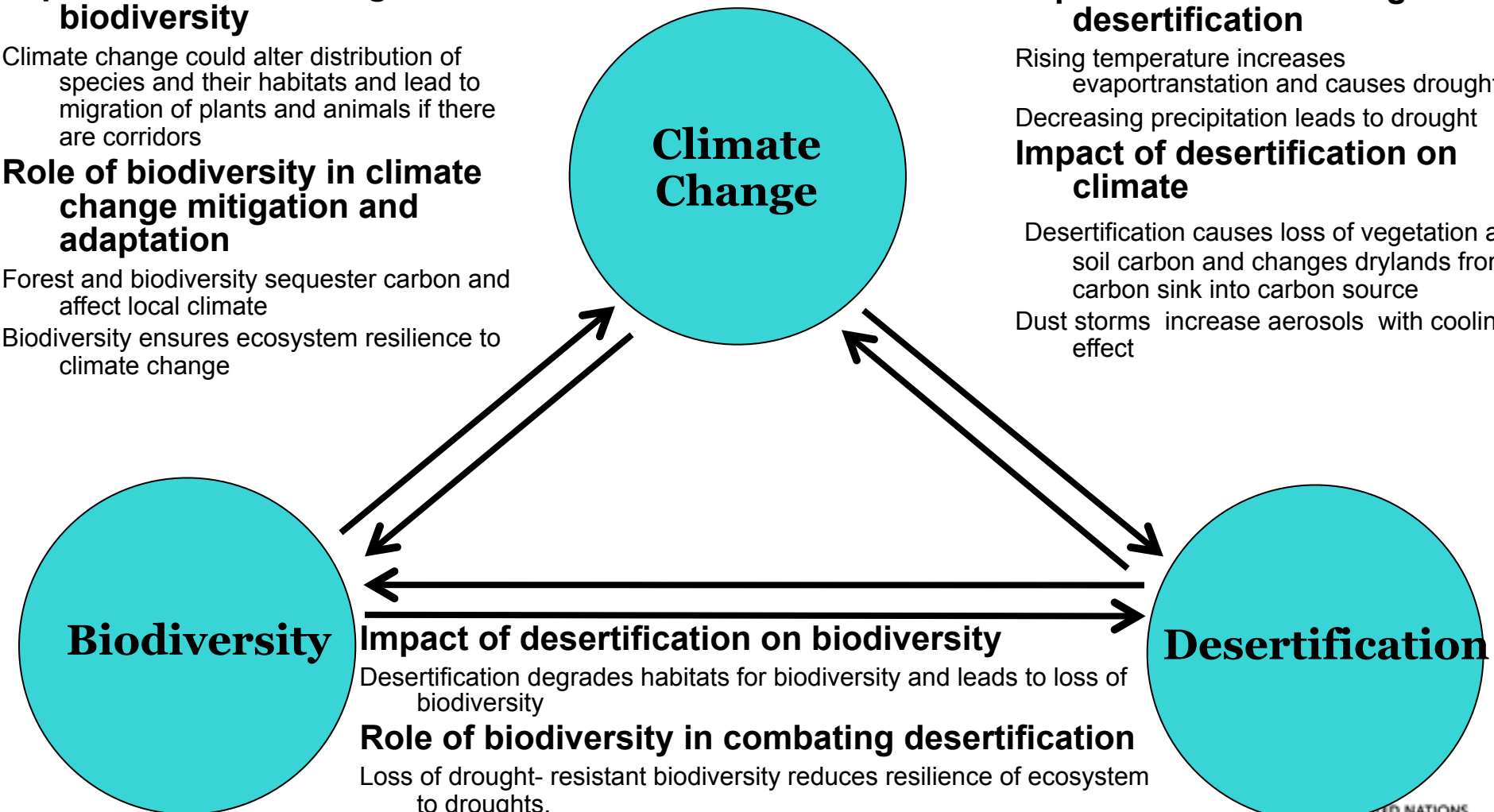
Rising temperature increases evaportranstation and causes drought i

Decreasing precipitation leads to drought

Impact of desertification on climate

Desertification causes loss of vegetation and soil carbon and changes drylands from carbon sink into carbon source

Dust storms increase aerosols with cooling effect



Impact of desertification on biodiversity

Desertification degrades habitats for biodiversity and leads to loss of biodiversity

Role of biodiversity in combating desertification

Loss of drought- resistant biodiversity reduces resilience of ecosystem to droughts.

Vegetation protects soil from erosion and stabilizes slopes from landslides.

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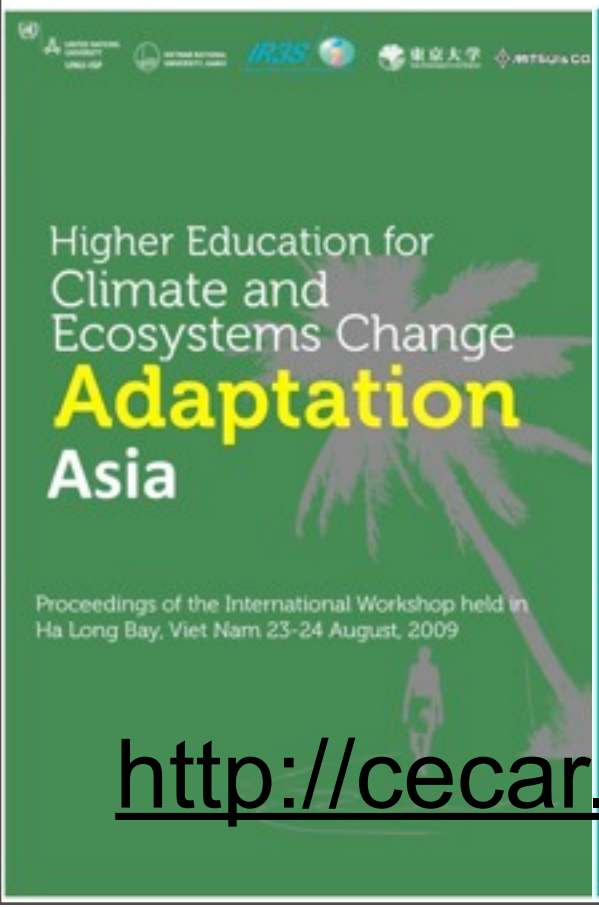
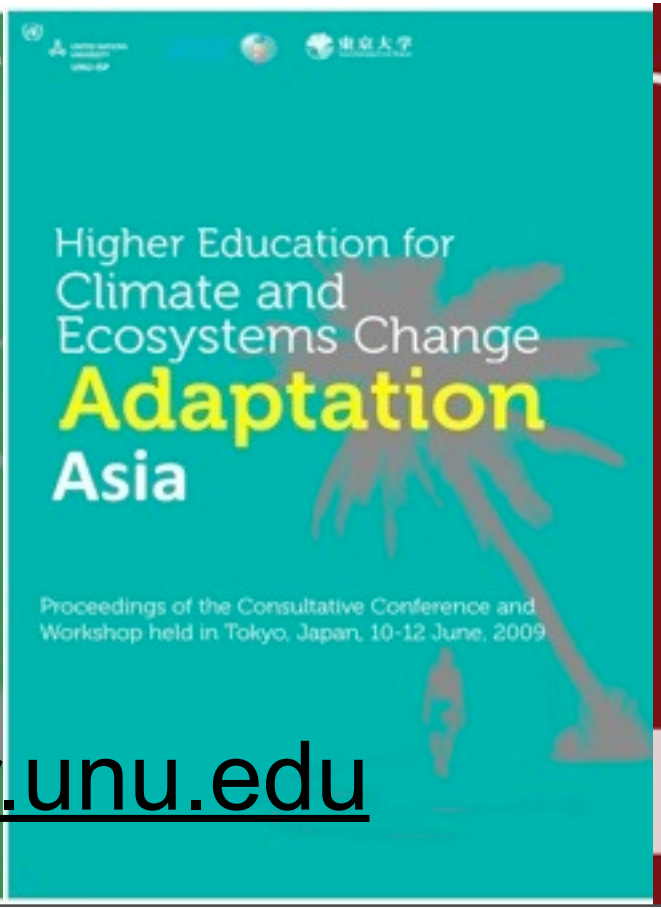
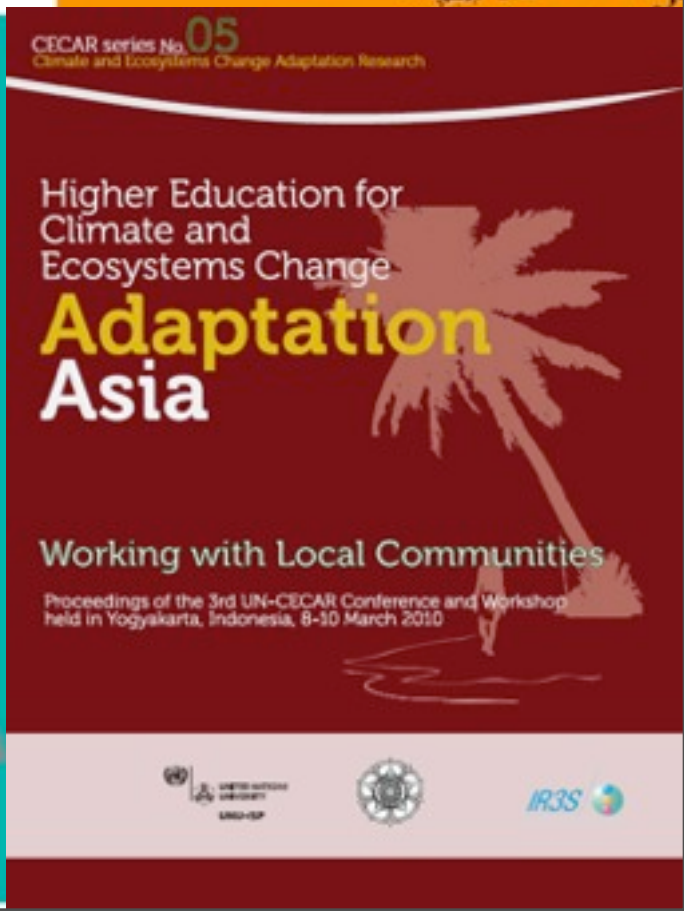
Establish a University Network: Climate and Ecosystems Change Adaptation Research







http://cecar.unu.edu

Actions

- Curriculum Development
- Joint Research Project Development
- Needs Assessment (4 countries)
- **Curriculum Development**
  - Three Themes:
    - **Science of Climate and Ecosystems Change**
    - **Adaptation and Mitigation**
    - **Impacts and Vulnerabilities**
  - Each theme will have
    - Fundamental, Specialized and Cross-Cutting themes
  - Three task forces produced 8, 7 and 6 course syllabi

Curricula Development

- 2 detailed courses were developed by the consortium of universities (taking modules from 21 syllabi)
- Peer review process
- Course testing - UNU with invited faculty and invited students: Both Natural Science and social science backgrounds
- Release of courses for use by member institutions
- 1st batch from 13th September to 1 October: with different disciplinary background
  - 33 students; 2 courses, 2 credits (2 weeks)
  - Hands on (1 week), WRF, GIS

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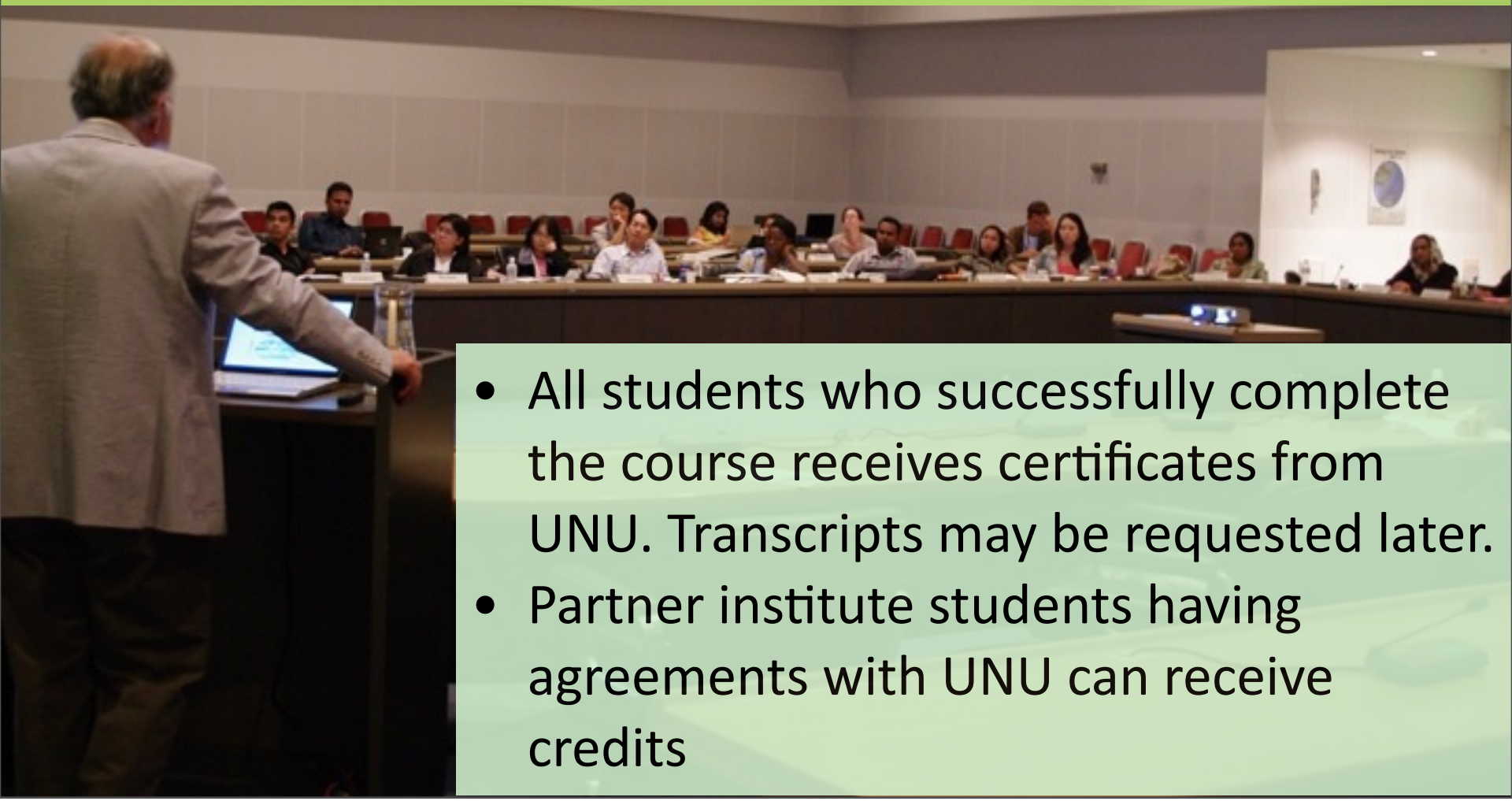
- **33 participants from 19 countries**
  - Australia (1)
  - Bangladesh(1)
  - Cambodia (3)
  - China(1)
  - Guinea-Bissau(1)
  - India(1)
  - Indonesia(1)
  - Iran(1)
  - Japan(1)
  - Korea (1)
  - Malaysia (2)
  - Nepal (2)
  - Nigeria (1)
  - Peru(1)
  - Philippines(3)
  - Sri Lanka(3)
  - Thailand(3)
  - USA(2)
  - Vietnam (2)

- Equivalent to 15 instruction sessions - 30 hrs. of teaching
- 2 mid course assessments/course
- Final exam and a paper



- All students who successfully complete the course receives certificates from UNU. Transcripts may be requested later.
- Partner institute students having agreements with UNU can receive credits

Week I - Science, Impacts and Vulnerability

- **LECTURE I: Introduction to the Programme**
  - Programme overview & philosophy
  - Context of the UNFCCC and IPCC
- **LECTURE II: Weather, climate & atmospheric processes**
  - Fundamental concepts
  - Weather & climate mechanisms
  - Structure and composition of the atmosphere
  - Components of weather & climate systems
  - General circulation of the atmosphere

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Week I - Science, Impacts and Vulnerability

- LECTURE III: Climate Change
- LECTURE IV: Observed Climate Change & Impacts including Extreme Events
- LECTURE V: Scenarios for Future Impact Assessment
- LECTURE VI: Vulnerability & Risk
- LECTURE VII: Resilience, Risk Management & Development Planning
- LECTURE IX: Climate Change Impacts & Adaptation in Flood Disaster Risk Management
- LECTURE X: National Plans for Adaptation
- LECTURE XI: National Plans for Adaptation
- LECTURE XIII: Climate Projections & Uncertainty Major Sources of Uncertainty in Climate Projections
- LECTURE XIV: Climate, Uncertainty, & Risk Management

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Week II - Approaches to Adaptation

- LECTURE I: Extreme Events
- LECTURE II: Climate Change Impacts: Society in Regional & Local
- LECTURE III: Harmony & Sustainability: Engaging in Global Change through Harmonious Adaptation in Asia
- LECTURE IV: Basic Understanding of Key Concepts
- LECTURE V: Global and Regional (supra national) Scales Analysis of Context (problems & policies) socio-cultural, economic, political, etc.
- LECTURE VII: National and Local Scales Analysis of Context (problems & policies) – Socio-cultural, Economic, Political, etc
- LECTURE VIII: Mitigation & Adaptation Practices and Resilience in Urban Areas, Cities and Towns
- LECTURE IX: Mitigation and Adaptation Practice: Case Study in Rural Areas
- LECTURE X: Mitigation & Adaptation Practices and Resilience in Coastal Areas and Small Islands
- LECTURE XI: Community Development
- LECTURE XIII: Community Engagement Practices
- LECTURE XIV: Lesson Learnt from Practical Works

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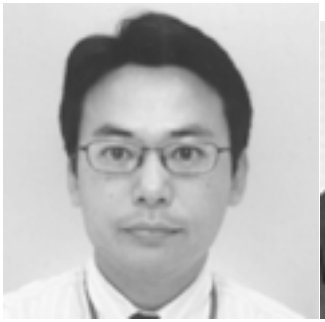
Lecturers







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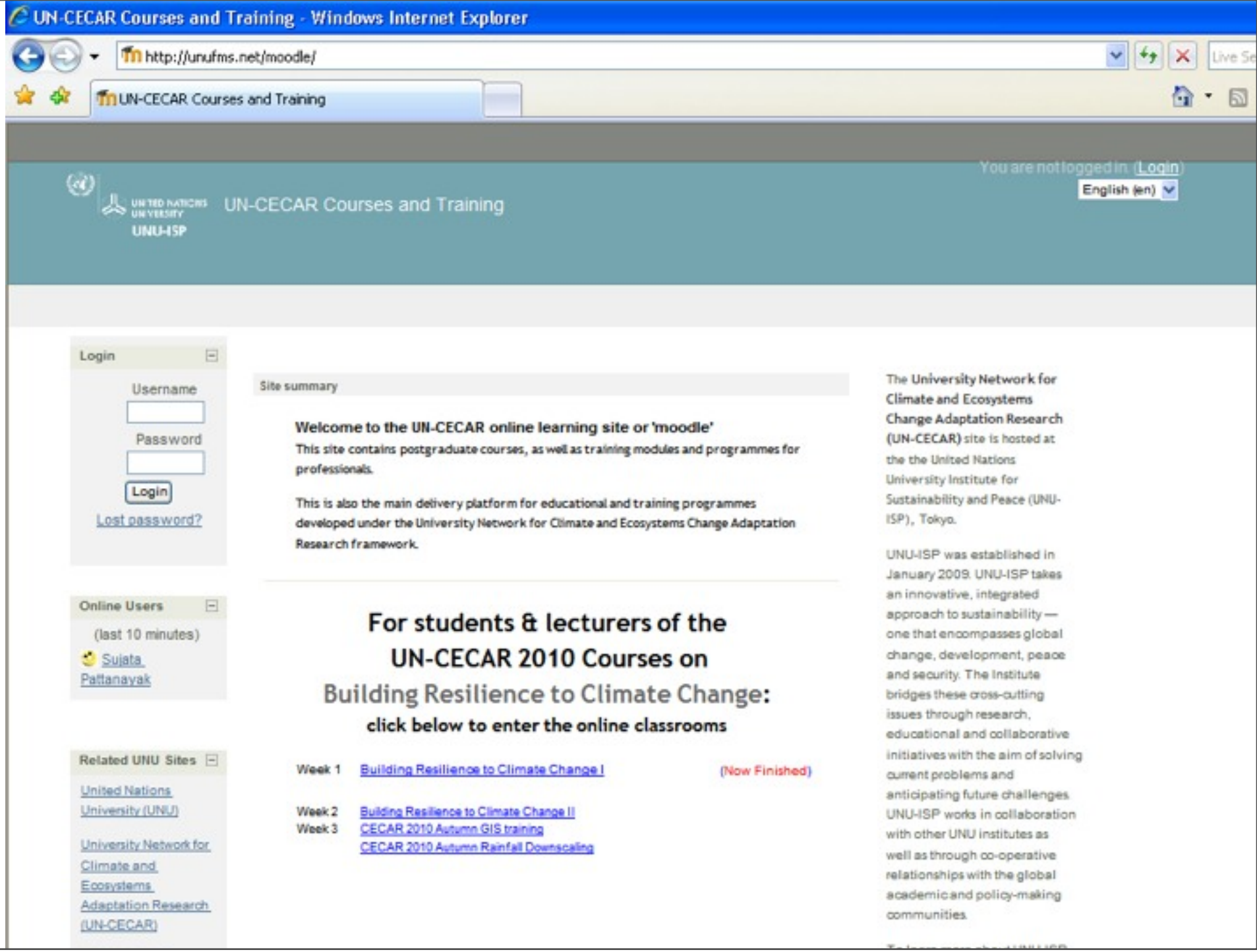
UN-CECAR Courses and Training - Windows Internet Explorer
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UN-CECAR Courses and Training
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English (en)
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Login
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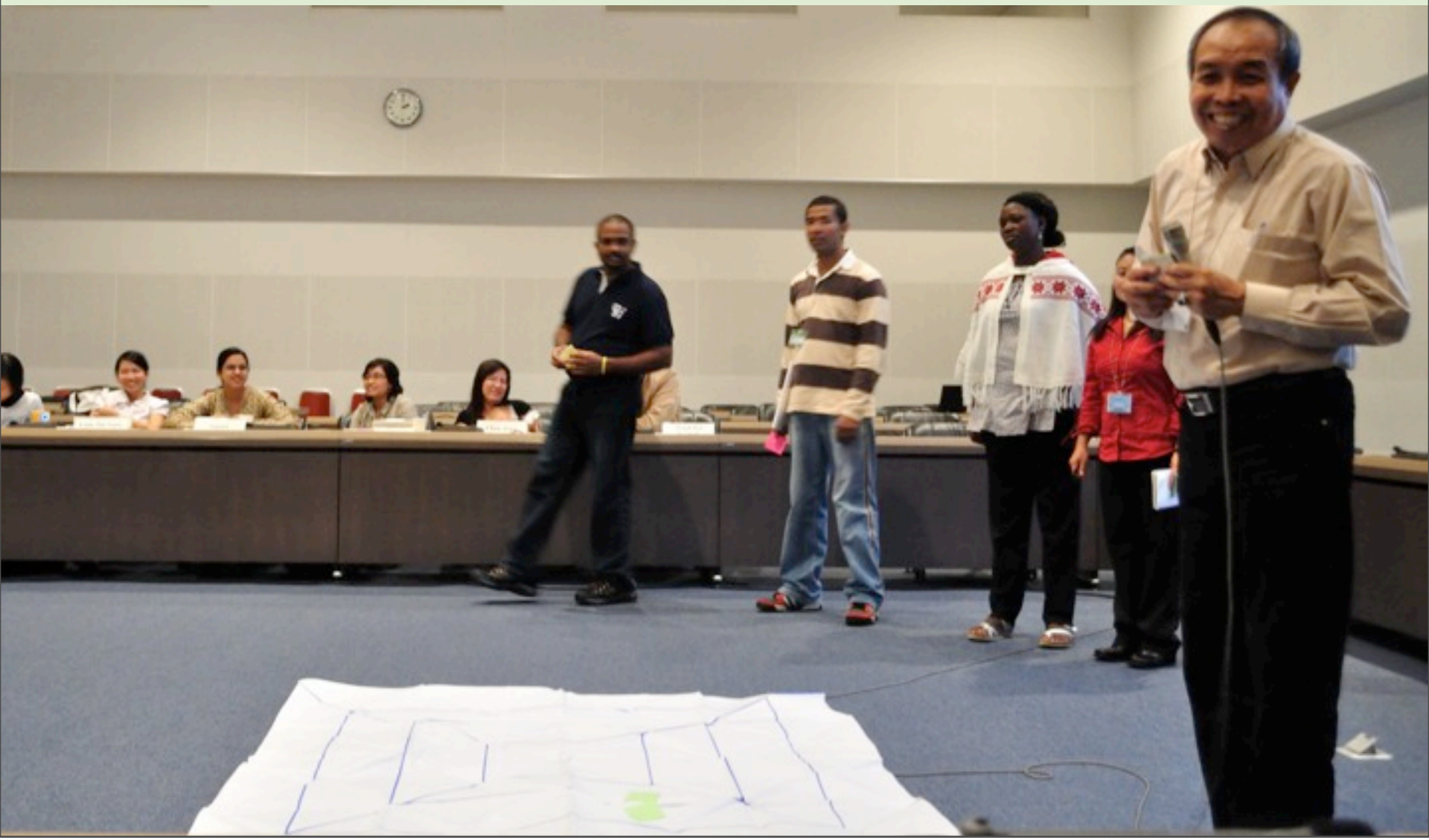
Login
Lost password?
Online Users
(last 10 minutes)
Sujata Pattanayak
Related UNU Sites
United Nations University (UNU)
University Network for Climate and Ecosystems Adaptation Research (UN-CECAR)
Site summary
Welcome to the UN-CECAR online learning site or 'moodle'
This site contains postgraduate courses, as well as training modules and programmes for professionals.
This is also the main delivery platform for educational and training programmes developed under the University Network for Climate and Ecosystems Change Adaptation Research framework.
For students & lecturers of the
UN-CECAR 2010 Courses on
Building Resilience to Climate Change:
click below to enter the online classrooms
Week 1 Building Resilience to Climate Change I (Now Finished)
Week 2 Building Resilience to Climate Change II
Week 3 CECAR 2010 Autumn GIS training
CECAR 2010 Autumn Rainfall Downscaling
The University Network for Climate and Ecosystems Change Adaptation Research (UN-CECAR) site is hosted at the the United Nations University Institute for Sustainability and Peace (UNU-ISP), Tokyo.
UNU-ISP was established in January 2009. UNU-ISP takes an innovative, integrated approach to sustainability — one that encompasses global change, development, peace and security. The Institute bridges these cross-cutting issues through research, educational and collaborative initiatives with the aim of solving current problems and anticipating future challenges. UNU-ISP works in collaboration with other UNU institutes as well as through co-operative relationships with the global academic and policy-making communities.

- Special emphasis on Community Based Adaptation Planning and Implementation. Tools and Methods:



- GIS applications for climate change analysis: training on WEB GIS (ARC Enterprise) and ARC GIS by ESRI, Redlands, USA.
- Rainfall downscaling with WRF. UNESCO-IHE

Future

- Course will be given one more time in UNU - April 2011 - request to AWCI
- Then it will be open to use by partner institutes in the region
- More courses being developed under UN-CECAR will be given in a similar manner in the future.

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Part II
Web Tutorials

- Progress since last meeting

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Plan for 2011

- Conduct several roving seminars for application in selected demonstration basins
  - Basic background to be covered through web tutorials
  - Local arrangements as part of the demonstration projects

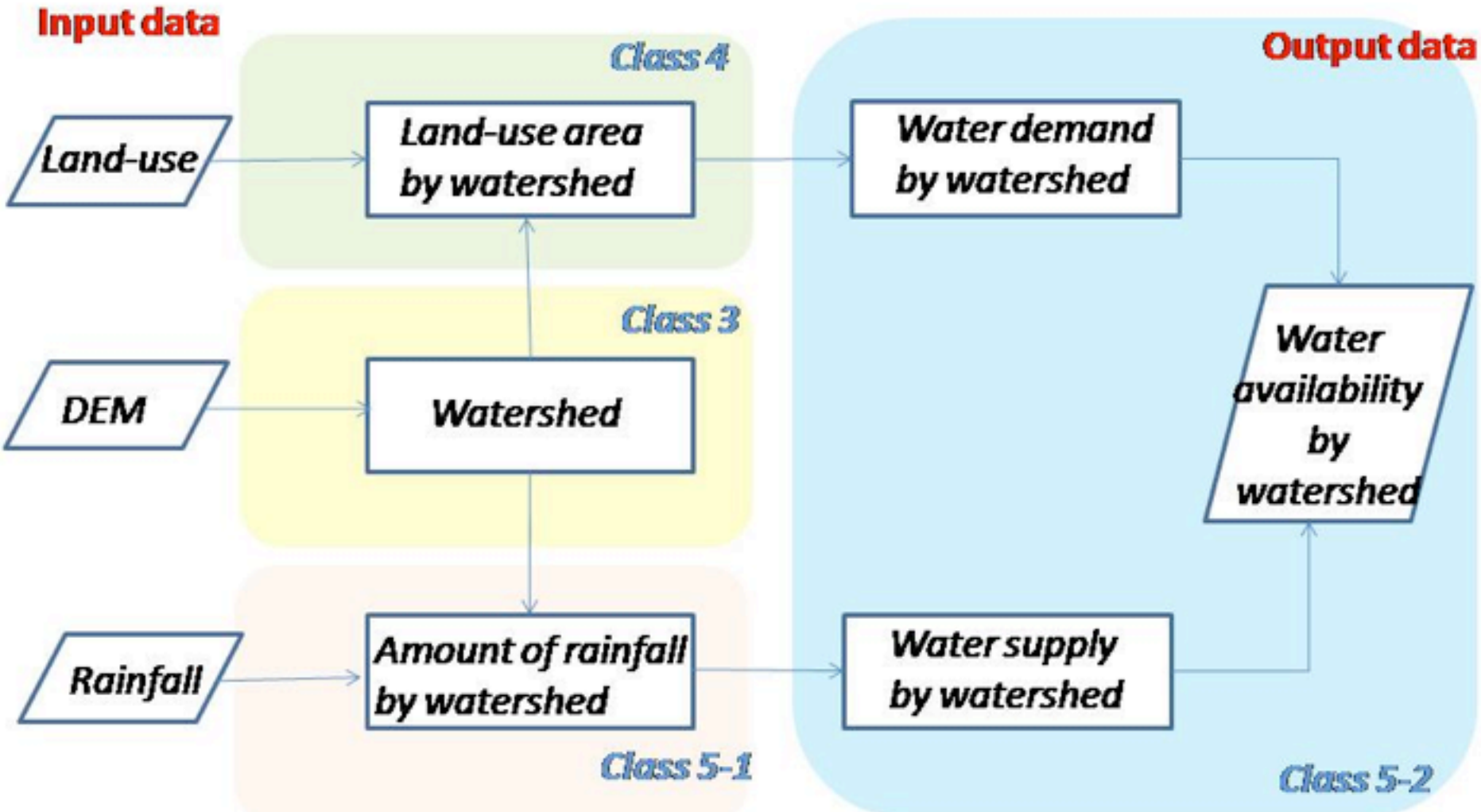
(from last meeting)

Current Status

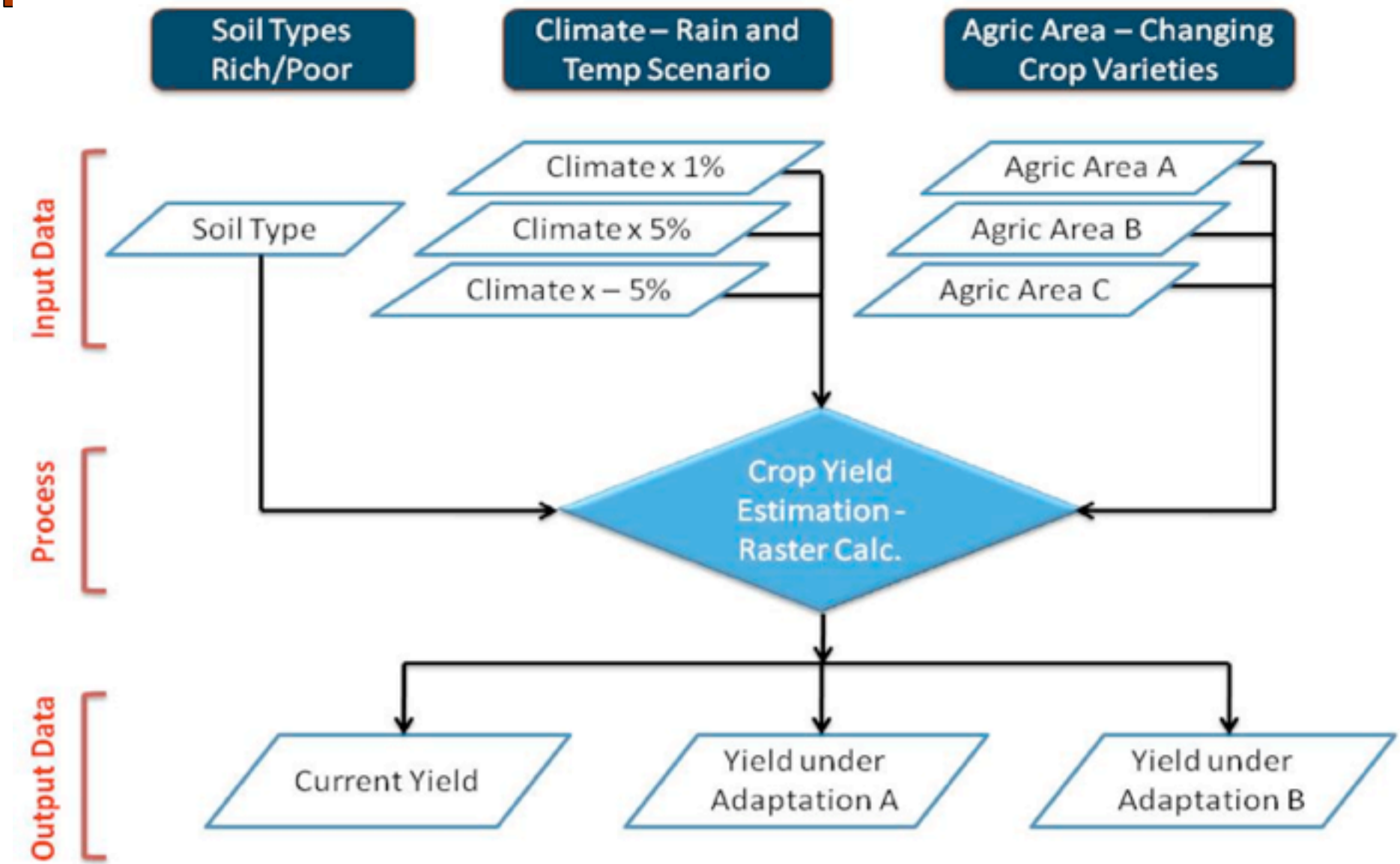
- Two application areas are under construction at the moment
  - Simple GIS applications for Water Resources assessment -- in collaboration with ESRI
  - Template for climate change impact assessment and adaptation strategy design: Based on outcomes of current research

GIS (1)

Outline of class 3-5



GIS (2)


Soil Types Rich/Poor
Climate – Rain and Temp Scenario
Agric Area – Changing Crop Varieties
Input Data
Soil Type
Climate x 1%
Climate x 5%
Climate x – 5%
Agric Area A
Agric Area B
Agric Area C
Process
Crop Yield Estimation - Raster Calc.
Output Data
Current Yield
Yield under Adaptation A
Yield under Adaptation B

CC Adaptation Framework

Weather downscaling and comparison with past observations

Simulation of floods Calibration and Verification

Future climate and impacts

Adaptation strategies

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CSDS-Training Template

This is a template of CSDS-Training that follow the process flow of the CSDS project given in the CSDS project page.

- Selection of past events.
  - For ***flood modeling group***, select about 2-3 past events having high resolution past rainfall.
  - For ***rice modeling group***, select about 3 sets of data each of about 5 days length from the season you have data for rice production verification. If you do not have this data select from global openly available rainfall time series data.
- Rainfall Downscale Model set up for the region for those events.
  - Simulate the Past events.
- Compare with observed data (if you have both temporal and spatial distributions, compare them in both spatial and temporal dimensions) and comment.
- If the agreement is not good, can you improve (high resolution input data, change of parameters or model domain.)
- Recheck observation and computation for acceptability.
- Set up impact models.
  - Flood model set up (***flood group***)
    - FMS and NK-GIAS framework set up | or similar flood modeling system.
    - Flood model simulation.
  - Rice model set up (***food group***)
    - DSSAT set up
    - Simulation
- Calibration of models.
- Verification accepted.
- Derive future weather projections.
- Simulate future conditions.
- Assess future impacts.
- Propose the adaptation measure(s).
- Model the impact of adaptation measure(s).
- Critically analyze adaptation impacts.

Implementation

- We will start testing the tutorials early next year
- As they are 'WIKI' based participants will be able to improve them
- They will be useful to shorten and improve the capacity development training programme
- Once the demonstration projects start, the available modules will be useful in implementing the projects.

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Thank You.

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