

# Capacity Development Implementation

Srikantha Herath

Institute for Sustainability and Peace

United nations University

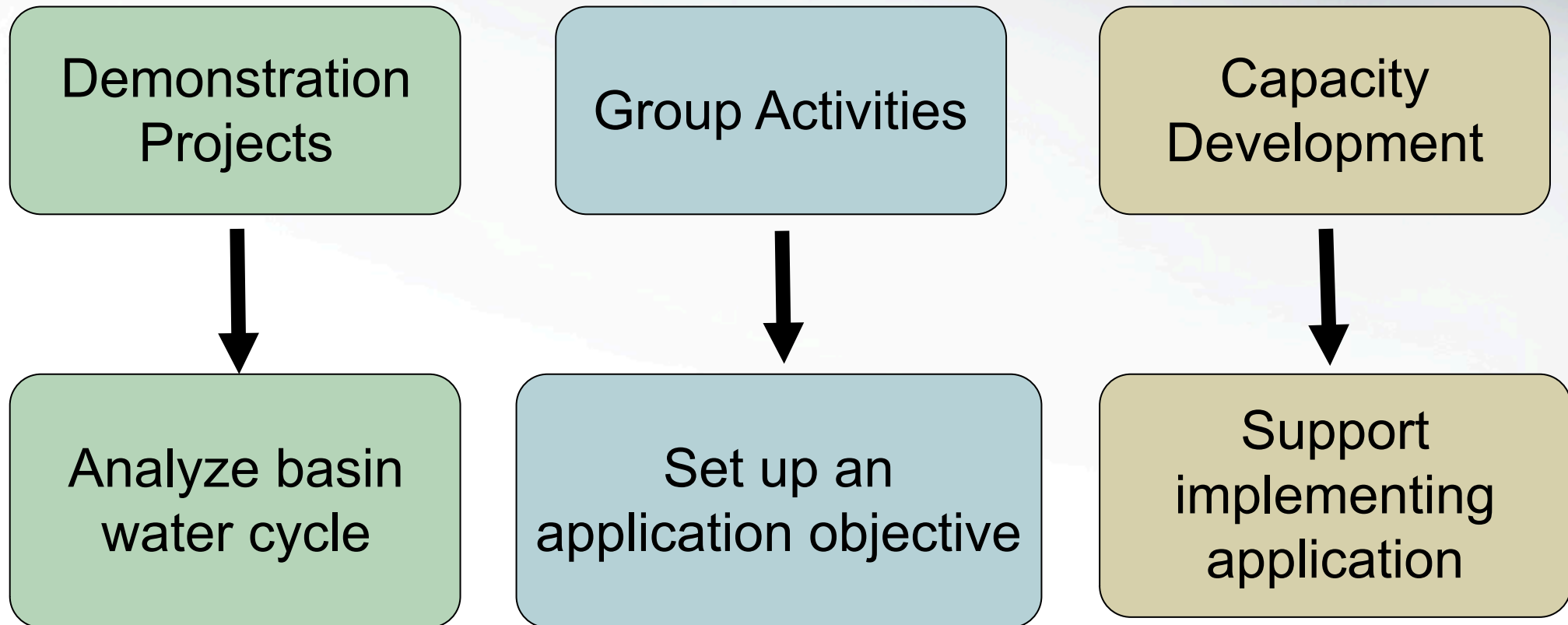
3 April, 2012



# Outline

- Brief overview
- Currently available training / modules
- New training modes and modules
- Collaborative activity for capacity building

# Capacity Development, Demonstration projects and Group activities



# Need to integrate Research, Capacity Development and Applications



- Higher Education Research
- Capacity development programs for training a large number of competent persons.

National training programs  
for researchers and  
practitioners

Supporting Post  
graduate  
Research

Demonstration Project

Training of trainers

Dissemination of results to policy makers

# Activity Summary



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

# Institutions: Resource organizations

## Metadata Information

Institutions Training Modules Subjects Add Search Login

### UNU-ISP

*Submitted by admin on Fri, 2011-06-17 16:13*

Institution

United Nations University Institute for Sustainability and Peace  
5-53-70 Jingumae, Shibuya-ku, Tokyo 150-8925 Japan  
Tel: +81-(0)3-5467-1212 | Fax: +81-(0)3-3499-2828  
<http://isp.unu.edu>

#### Available Training Modules:

[Rainfall downscaling](#)

[Flood inundation modeling](#)

[Postgraduate Courses on Building Resilience to Climate Change](#)

[Disaster Management and Humanitarian Affairs \(DMHA\)](#)

[Climate Energy and Food Security \(CEFS\)](#)

# Training Modules from one Institution

## Metadata Information

[Institutions](#) [Training Modules](#) [Subjects](#) [Add](#) [Search](#) [Login](#)

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# Training Modules: Resources on topics...

## Metadata Information

[Institutions](#) [Training Modules](#) [Subjects](#) [Add](#) [Search](#) [Logir](#)

## Training Module

Title	Institute Name	Subjects
<a href="#">Climate Energy and Food Security (CEFS)</a>	<a href="#">UNU-ISP</a>	<a href="#">Food Security</a> , <a href="#">Climatic change</a> , <a href="#">Energy</a>
<a href="#">Disaster Management and Humanitarian Affairs (DMHA)</a>	<a href="#">UNU-ISP</a>	<a href="#">Disaster Management</a> , <a href="#">Humanatarian Affairs</a>
<a href="#">Flood forecasting using DHM</a>	<a href="#">The University of Tokyo</a>	<a href="#">Flood</a>
<a href="#">Flood inundation modeling</a>	<a href="#">UNU-ISP</a>	<a href="#">Flood</a>
<a href="#">Hydrologic modeling and flood runoff analysis &amp; forecasting with IFAS (Integrated Flood Analysis System)</a>	<a href="#">ICHARM</a>	<a href="#">Flood forecasting</a>



# List of Training Module Subjects

## Metadata Information

Institutions

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- Climatic change (3)
- Disaster Management (2)
- Downscaling (1)
- Energy (1)
- Flood (5)
- Flood forecasting (2)
- Food Security (1)
- Humanatarian Affairs (1)
- Landslide (1)
- Meta data (1)

# Example of input

## Training Programme on Climate Change Downscaling Approaches and Applications

Institute Name:

X UNU-ISP [nid:10]



Enter the name of the institution where this course or training will be provided

Title: \*

X Training Programme on Climate Change Downscaling Approaches and Applications

Subjects: \*

X Downscaling, Climatic change

Select the subjects (tags) that relate and describes this content. Enter a comma sep

Description:

The program is developed with the contributions from NCAR (University of Nebraska Research Institute of Japan, the University of Tokyo, Japan, Indian Institute of Technology, Philippines, Philippines, Nippon Koei Co. Ltd., Japan, Asian Institute of Technology of Hydrology and Meteorology, Viet Nam, and Institute for Social and Environmental USA. The Ministry of Environment of Japan - IGES partnership facilitated the program contribution to Asia Pacific Adaptation Network (APAN).

## Training Programme on Climate Change Downscaling Approaches and Applications

UNU-ISP

Downscaling, Climatic change

The program is developed with the contributions from NCAR (University of Nebraska), USA, Meteorological Research Institute of Japan, the University of Tokyo, Japan, Indian Institute of Technology, Dandi and Kharagpur, University of Philippines, Philippines, Nippon Koei Co. Ltd., Japan, Asian Institute of Technology, Thailand, Institute of Hydrology and Meteorology, Viet Nam, and Institute for Social and Environmental Transition (ISET), USA. The Ministry of Environment of Japan - IGES partnership facilitated the programme development as a contribution to Asia Pacific

## Training Modules

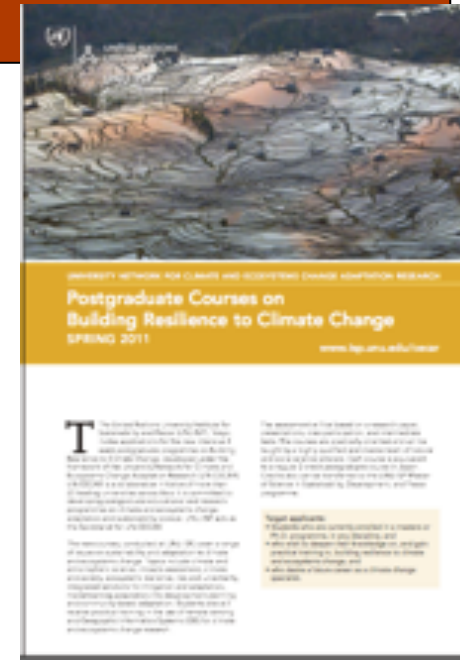
Title	Institute Name	Subjects
<u>Training Programme on Climate Change Downscaling Approaches and Applications</u>	<u>UNU-ISP</u>	<u>Downscaling, Climatic change</u>
<u>Web-based In-situ Data Loading, Quality Control, Meta data Registration</u>	<u>The University of Tokyo</u>	<u>Meta data</u>

# For more information

- Visit:
  - <http://cecar.unu.edu/metadb/>
- Use the online form to add information on a new Training Modules.
- Login to review and edit submitted content
  - For AWCI the user name is awci
  - awci2012

# Actions

- Joint actions by UN-CECAR
  - Curriculum Development
    - Three Themes (18 curriculum- modular):
      - Science of Climate and Ecosystems Change
      - Adaptation and Mitigation
      - Impacts and Vulnerabilities
    - **BUILDING RESILIENCE TO CLIMATE CHANGE**
  - Joint Research Project Development (2 themes)
    - Rapid Onset Changes; **Floods, Cyclones**
    - Slow Onset Changes; **Land degradation, Bio-diversity loss**
  - Needs Assessment (4 countries)
  - Training Programs :  
**Downscaling: Approaches and Applications**







UNIVERSITY NETWORK FOR CLIMATE AND ECOSYSTEMS CHANGE ADAPTATION RESEARCH

# Postgraduate Courses on Building Resilience to Climate Change

SPRING 2012    February 20 - March 23

# Building Resilience to Climate Change 1

## Science, impacts and vulnerability

- Taught by partner university faculty and international experts.

Extremes and Impacts on Agriculture, Eco Systems, Water

Climate and Earth System; Climate Change Evidence and Implications

Scenarios, Uncertainty, Downscaling

Complex Systems, Integrated Assessment





# Building Resilience to Climate Change 2

## Approaches to adaptation

- Students nominated by member uni, credits are transferred. Open to all



Urban and Rural  
Adaptation  
Strategies



National Target  
Programme,  
Adaptation  
Framework

Community  
based  
Development  
and Response



Sectoral  
Strategies  
Energy and  
Water



Economic Assessment  
Cost benefit  
Adaptation Cost



# Combined with Applied Training



- Combined with hands on training with Remote Sensing (JAXA) GIS (AIT, Nippon Koei Co. and ESRI) applications for climate change analysis: Water and Food production.
- Special emphasis on Community Based Adaptation Planning and Implementation methods (Gadjah Mada University, Indonesia)



# Future

- Preparing materials for teachers
- Workshop for teachers
- Conducting courses at different locations in 2013
- New courses
  - Low carbon society
    - Renewable Energy (CECAR Conference in May, 2012)
    - Multi-scale Environmental Governance
- AWCI members in the mailing list (from Dr. Petra)



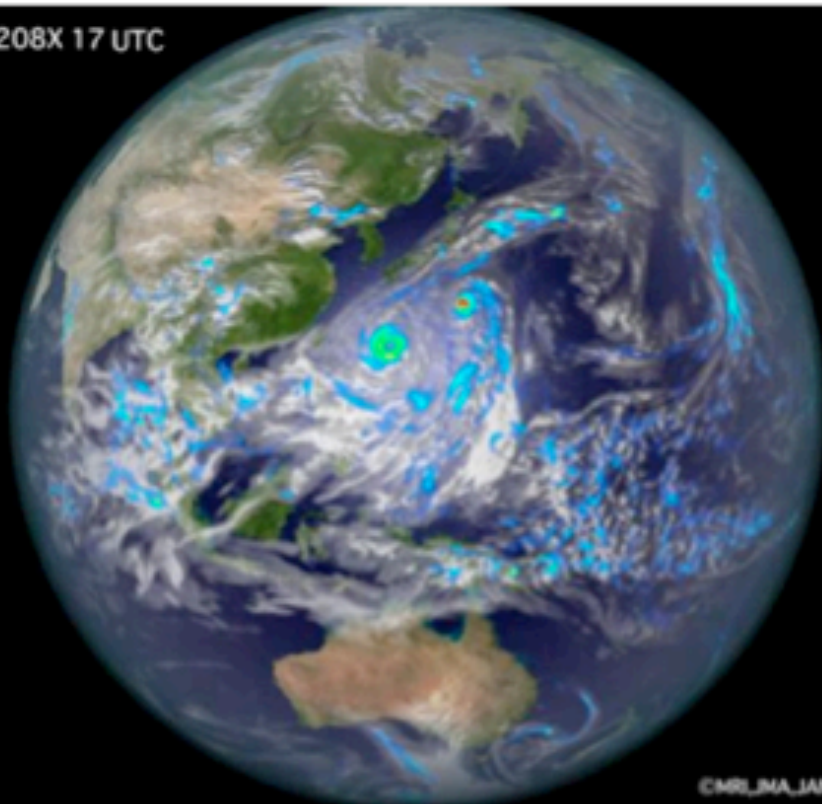
UNITED NATIONS  
UNIVERSITY

**UNU-ISP**

Institute for Sustainability and Peace



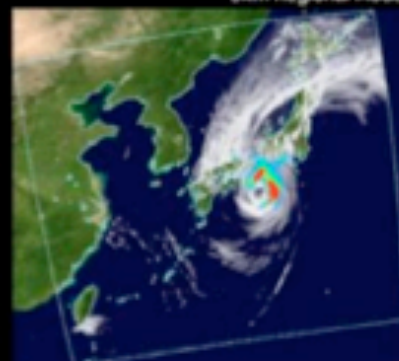
13 Sep 208X 17 UTC



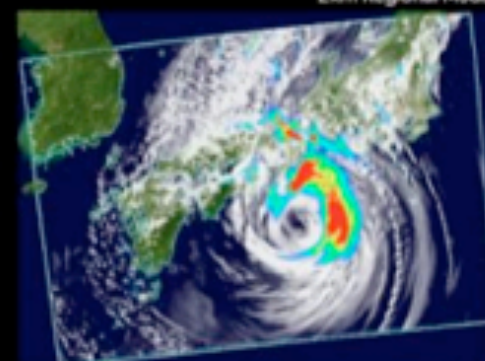
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5km Regional Model



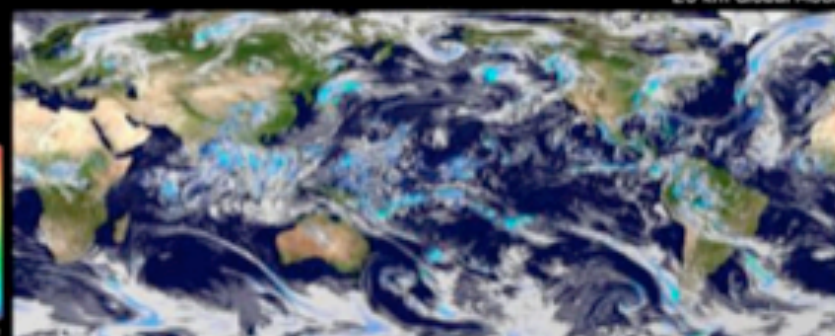
2km Regional Model



17 Sep  
208X  
21 UTC



20 km Global Model



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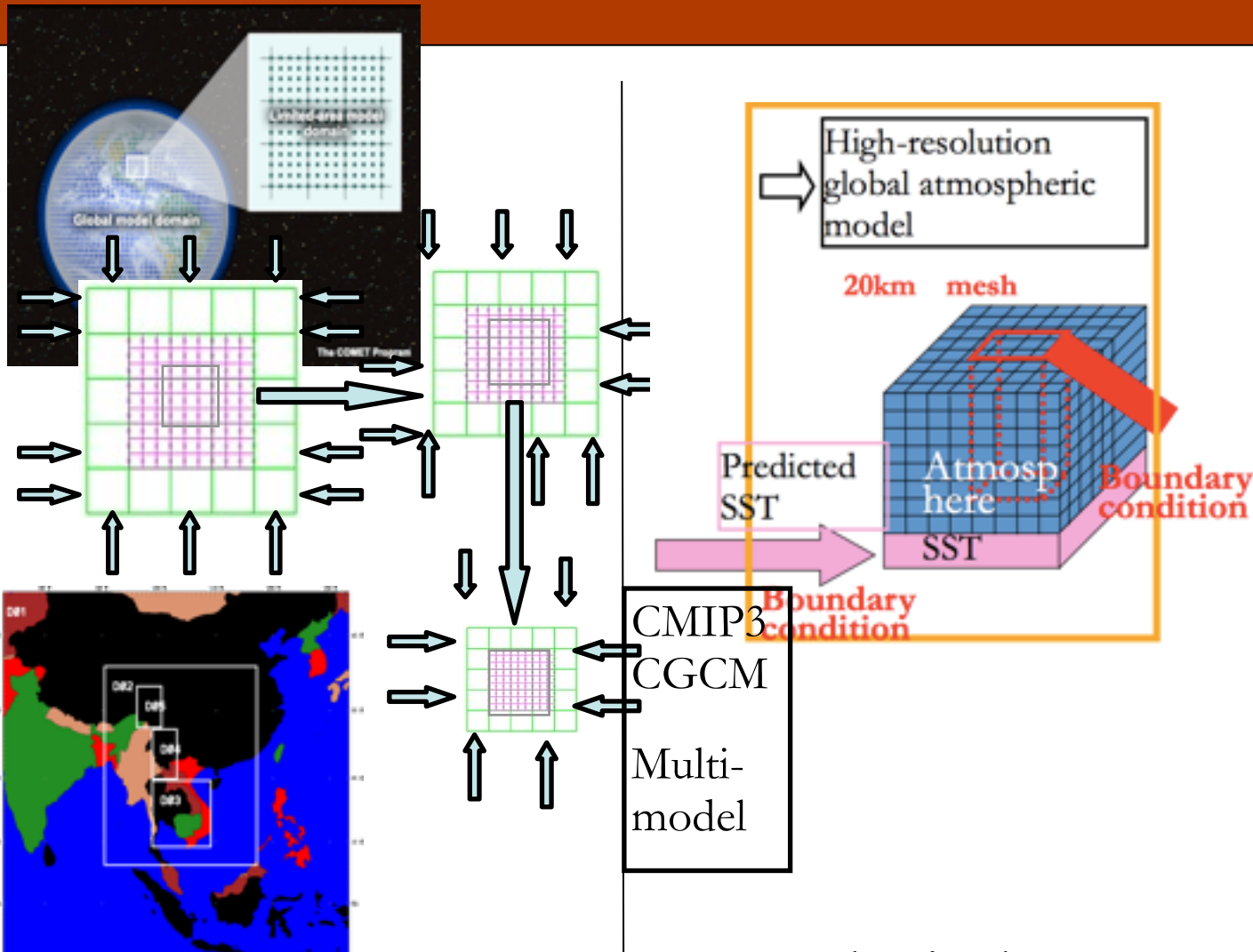
University Network for Climate and Ecosystems Change Adaptation Research

# Training Programme on Climate Change Downscaling Approaches and Applications

9-14 November 2011

<http://cecar.unu.edu>

# Downscaling Approaches



## Statistical Downscaling

$$y = f(x)$$

Relation between large scale predictors from global models and small scale parameters (predictands)

Prof. Toshio Koike,  
University of Tokyo

Weather Research and Forecasting (WRF) Model of NCAR, USA

Meteorological Research Institute (MRI), JAPAN

# Training module details

- 4 days common --> 5 days
  - Climatology: IIT, Delhi
  - **Dynamic Downscaling with WRF**, Dynamic Downscaling (WRF) by NCAR, implementation by University of Nebraska, USA
  - 20km Global model forecasts by MRI, Japan
  - Statistical downscaling by University of Tokyo
  - Risk Assessment and GIS (UNU, AIT, Nippon Koei)
- 2 day programmes (3) --> 5 days
  - Climate Extended, IDF and Extremes (UNU , UP, IHP)
  - Impact on rice production (UNU, IIT, **TH, SL** )
  - Flood Impacts (UNU, NK, TU, **SL**)
  - Communicating Results (ISET)



Proceedings of International workshops for  
Developing a Training Programme on  
**CLIMATE CHANGE  
PROJECTIONS  
DOWNSCALING:  
APPROACHES  
AND  
APPLICATIONS**

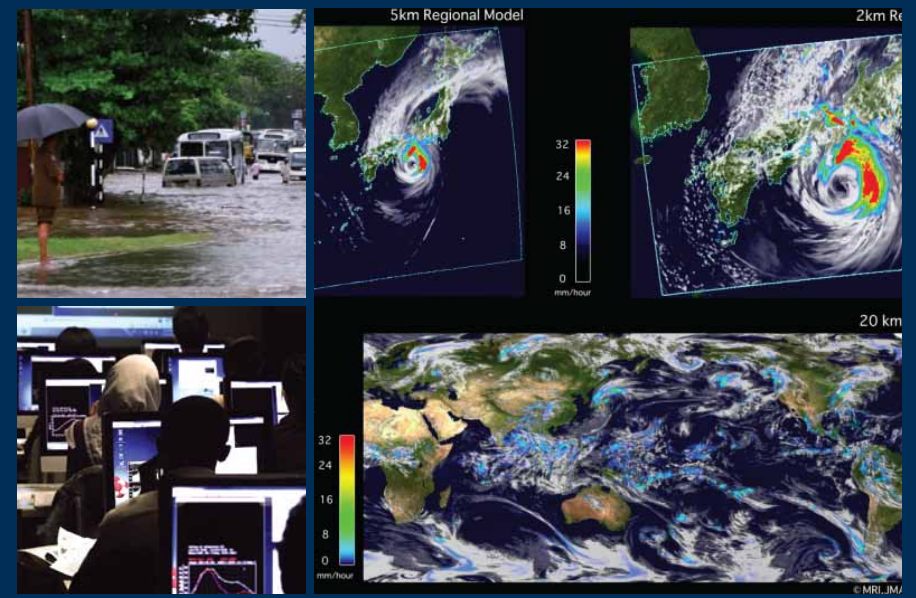


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# DOWNSCALING

Handbook and Proceedings of First Training on  
**CLIMATE CHANGE PROJECTIONS DOWNSCALING:  
APPROACHES AND APPLICATIONS**



©MRI, JMA



# 2012-2013

- The next downscaling workshop will be held in Thailand, 2012 November. (Requested by participants in AWCI meeting in South Korea in 2011)
- Two separate sections
  - Climate Projections
  - Applications
- 4 km - 12 km control runs and future projections (only for Sri Lanka) are now completed

# Collaboration in Capacity Development

- Update Meta-data information
- Make use of available training programs
- Web Tutorial initiative
  - JAXA web tutorials
  - IFI initiative (UNESCO, UNU and ICHARM): tutorials

Thank You.