

TeDrr

Transdisciplinary Education for Disaster Risk Reduction

Srikantha Herath

Institute for the Advanced Study of Sustainability
United Nations University

January 15, 2015

DRR Status

- Are we making progress in Disaster Risk Reduction?

DRR Status

- Are we making progress in Disaster Risk Reduction?
 - Yes; Compared to 1990's at the beginning of IDNDR, from reactive to mainstreaming risk assessment: many organisations dedicated to address DRR.

DRR Status

- Are we making progress in Disaster Risk Reduction?
 - Yes; Compared to 1990's at the beginning of IDNDR, from reactive to mainstreaming risk assessment: many organisations dedicated to address DRR.
- Are we happy with the progress?

DRR Status

- Are we making progress in Disaster Risk Reduction?
 - Yes; Compared to 1990's at the beginning of IDNDR, from reactive to mainstreaming risk assessment: many organisations dedicated to address DRR.
- Are we happy with the progress?
 - Probably not. The IDNDR was proposed by Frank Press to make technologies available to all to reduce the risks. Not in par with ICT advancements.

DRR Status

- Are we making progress in Disaster Risk Reduction?
 - Yes; Compared to 1990's at the beginning of IDNDR, from reactive to mainstreaming risk assessment: many organisations dedicated to address DRR.
- Are we happy with the progress?
 - Probably not. The IDNDR was proposed by Frank Press to make technologies available to all to reduce the risks. Not in par with ICT advancements.
- What are we doing wrong, and how should we improve?

DRR Status

- Are we making progress in Disaster Risk Reduction?
 - Yes; Compared to 1990's at the beginning of IDNDR, from reactive to mainstreaming risk assessment: many organisations dedicated to address DRR.
- Are we happy with the progress?
 - Probably not. The IDNDR was proposed by Frank Press to make technologies available to all to reduce the risks. Not in par with ICT advancements.
- What are we doing wrong, and how should we improve?
 - Our main challenge is implementing knowledge. We study the problems and understand the mechanisms. Then we come with risk reduction technologies and methodologies . However we do not study enough about implementing these solutions. Are they integrated with the other needs of the target communities. Are they sustainable?

DRR Challenges

- **Complex inter-connected problems**

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

DRR Challenges

- **Complex inter-connected problems**

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

- **Efficiently implement programs/projects**

Involve all stakeholders (→ transdisciplinary)

DRR Challenges

- **Complex inter-connected problems**

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

- **Efficiently implement programs/projects**

Involve all stakeholders (→ transdisciplinary)

- **Customising global knowledge**

Disaster impacts are primarily local. Depends on local
bio-physical and social characteristics → Solutions must evolve
locally incorporating traditional knowledge.

DRR Challenges

■ Complex inter-connected problems

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

■ Efficiently implement programs/projects

Involve all stakeholders (→ transdisciplinary)

■ Customising global knowledge

Disaster impacts are primarily local. Depends on local
bio-physical and social characteristics → Solutions must evolve
locally incorporating traditional knowledge.

■ Uncertainty in evolving risks

Need to define long term goals → Sustainability as the long
term objective

DRR Challenges

■ Complex inter-connected problems

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

■ Efficiently implement programs/projects

Involve all stakeholders (→ transdisciplinary)

■ Customising global knowledge

Disaster impacts are primarily local. Depends on local
bio-physical and social characteristics → Solutions must evolve
locally incorporating traditional knowledge.

■ Uncertainty in evolving risks

Need to define long term goals → Sustainability as the long
term objective

DRR Challenges

■ Complex inter-connected problems

Bring together a wide range of expertise (→ multi-disciplinary)
to solve problems together (→ inter-disciplinary)

■ Efficiently implement programs/projects

Involve all stakeholders (→ transdisciplinary)

■ Customising global knowledge

Disaster impacts are primarily local. Depends on local
bio-physical and social characteristics → Solutions must evolve
locally incorporating traditional knowledge.

■ Uncertainty in evolving risks

Need to define long term goals → Sustainability as the long
term objective

**ALL OF THE ABOVE NEED NEW RESEARCH AND
EDUCATION APPROACHES**

Multi, Inter and Transdisciplinary Approaches

From Annemarie Groot et al, WUR Wageningen KB1 Congress, 2009



Multi-disciplinary:
Experts from different disciplines work side-by-side on elements of the same problem.

Education ▶ Education

Multi, Inter and Transdisciplinary Approaches

From Annemarie Groot et al, WUR Wageningen KB1 Congress, 2009



Multi-disciplinary:
Experts from different disciplines work side-by-side on elements of the same problem.

Education

▶ Education

Inter-disciplinary:

Collaboration between experts from different disciplines, with interaction ranging from exchange to integration.



Training

Multi, Inter and Transdisciplinary Approaches

From Annemarie Groot et al, WUR Wageningen KB1 Congress, 2009



Multi-disciplinary:
Experts from different disciplines work side-by-side on elements of the same problem.



Trans-disciplinary:
Collaboration among experts from different disciplines and non-experts. Integration of needs, practical experience, and expert knowledge.

Education

▶ Education

Inter-disciplinary:

Collaboration between experts from different disciplines, with interaction ranging from exchange to integration.



Training

▶ Training

Applied Field Projects

UNU-IAS

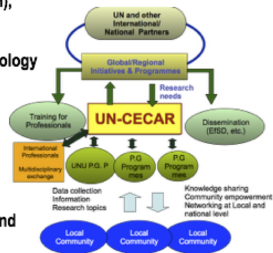


University Network for Climate and Ecosystems Adaptation Research: UN-CECAR

Established in 2009 to develop local capacities through Interdisciplinary approaches. The group jointly develop educational and research programmes.



- Australian National University
- Bangladesh University of Engineering and Technology
- Tsinghua University, China
- Chinese Academy of Forestry
- Indian Institute of Technology Delhi
- Indian Institute of Technology Kharagpur
- Gadjah Mada University (UGM), Indonesia
- Kyoto University, Japan
- The University of Tokyo, Japan
- Ibaraki University, Japan
- Ritsumeikan Asia Pacific University, Japan
- National University of Malaysia (UKM), Malaysia
- Tribhuvan University, Nepal
- University of Engineering and Technology Lahore (UET), Pakistan
- University of the Philippines,
- Yeungnam University, Korea
- Seoul National University, Korea
- Nanyang Technological University, Singapore
- University of Peradeniya, Sri Lanka
- Asian Institute of Technology, Thailand
- Chulalongkorn University, Thailand
- Viet Nam National University, Viet Nam

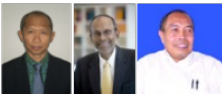


UN-CECAR Postgraduate Courses:



Building Resilience to Climate Change (1 & II)

- Science, Impacts and Vulnerability - I (nat. science)
- Approaches to adaptation - II (social science)



- Taught by partner university faculty and international experts.
- Students nominated by member uni, credits can be transferred (17 uni.)
- Open to all, no tuition fee for member inst. often local support provided

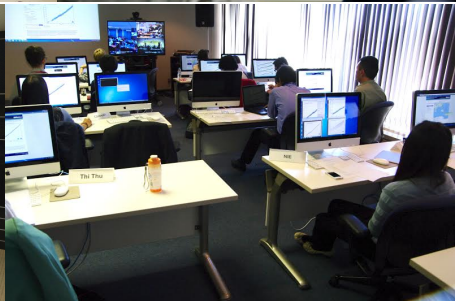


UNIVERSITY NETWORK FOR CLIMATE AND ECOSYSTEMS CHANGE ADAPTATION RESEARCH
 Postgraduate Courses on
**Building Resilience to
 Climate Change**



UNIVERSITY NETWORK FOR CLIMATE AND ECOSYSTEMS CHANGE ADAPTATION RESEARCH
 POSTGRADUATE COURSES ON
RENEWABLE ENERGY
 SPRING 2014

**Blended Model
 from 2014:**
 Transcribed lecture
 videos studied
 before classes:
**Video conference
 links universities**



Project Sustainable Urban Water Management

GC Driver Climate Change, Urbanization

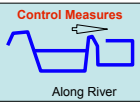
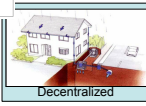
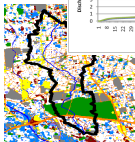
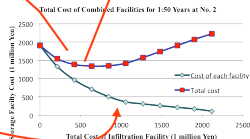
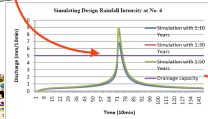
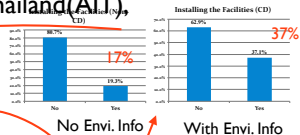
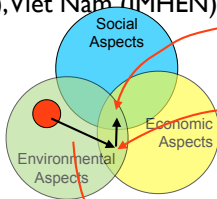
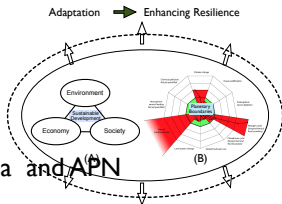
Theme water too little, water too much

Funding Ministry of Science and Technology, China and APN

Partners Japan (Local Gov, University, NGO),
China(Tsinghua), Viet Nam (IMHEN), Thailand(AIT),

Synopsis

Climate change and urbanization has similar effects on urban water cycle. Urban water management through a combination of centralized and decentralized (onsite) with a focus on preserving local water cycle can lead to sustainable solutions

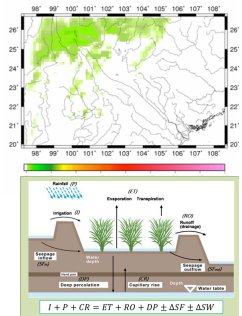


Project
GC Driver
Theme
Funding
Partners

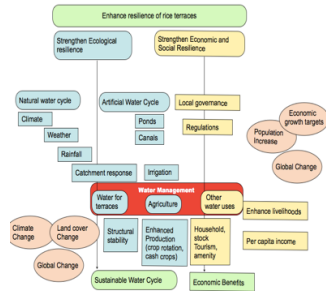
Rice Terrace Sustainability
Climate Change
Food, water too little, water too much
APN
Yunan Normal University, University of Philippines, Tsinghua University, Dept. forestry, NGO Sitmo

Synopsis

Developing ecosystems based strategies for enhancing resilience of Rice Terrace Farming



Activities



TeDrr Workshop Outcomes



United Nations University, 5F Elizabeth Rose Hall
Friday, 31st October 2014
 09:30 - 16:30

Agreed that TeDrr should be implemented as project-based pilot research programmes addressing a local complex problems that require the participation of relevant stakeholders.

Issues: how the project leadership and accountability is implemented, the rewards and motivation, consensus building and conflict resolution all need guide lines for successful implementation of transdisciplinary projects.

Concluding Remarks

- Post graduate sector can be the engine for customising useful global knowledge; especially to bring in sustainability considerations.

Concluding Remarks

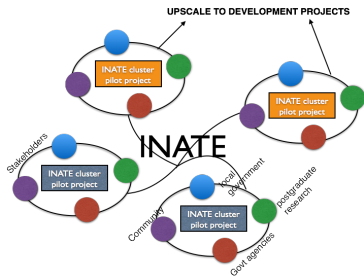
- Post graduate sector can be the engine for customising useful global knowledge; especially to bring in sustainability considerations.
- A trans-disciplinary approach to education based on field projects would help efficiently integrate research, education and training for disaster reduction measures that are sustainable.

Concluding Remarks

- Post graduate sector can be the engine for customising useful global knowledge; especially to bring in sustainability considerations.
- A trans-disciplinary approach to education based on field projects would help efficiently integrate research, education and training for disaster reduction measures that are sustainable.

Concluding Remarks

- Post graduate sector can be the engine for customising useful global knowledge; especially to bring in sustainability considerations.
- A trans-disciplinary approach to education based on field projects would help efficiently integrate research, education and training for disaster reduction measures that are sustainable.



International **N**etwork for **A**dvancing **T**ransdisciplinary **E**ducation [**INATE**] is proposed to develop and implement pilot demonstration research project clusters across Asia that can be upscaled to Transdisciplinary projects addressing DRR and Sustainability.

Thank You!