



Appendix N

Recapitulation and Commentary

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RECAPITULATION and COMMENTARIES

Silliman University Group
Dumaguete City, Philippines

Realizing Challenges, Exploring Opportunities

**Proceedings of the International Conference-Workshop on Biodiversity
and Climate Change in Southeast Asia: Adaptation and Mitigation**

19-20 February 2008 • Sofitel Philippine Plaza Hotel • CCP Complex, Pasay City, Philippines



Introduction

- **10 paper presentations: 1 keynote, 1 pre-conference paper, 2 thematic papers, 6 country papers**
- **In addition:
Dr. Arsenio Balicasan and H.E. The Netherlands Ambassador Robert Brinks stressed the need for awareness of climate change impacts on biodiversity, the people, the economy.
They also discussed the BRP on Mt. Malindang as example of an integrated ecosystem approach.**



Meanwhile, Dr. Rodel Lasco presented the unequivocal evidence for climate change as caused by the release of large amounts of greenhouse gases especially CO₂.



- **The Keynote Speech delivered by Dr. Delfin Ganapin, Jr. was a comprehensive review of the actual and potential impacts of climatic change on biodiversity and the environment.**
- **The three keywords of this review were biodiversity loss, climatic change and extinction.**
- **The speech urged the crafting of an operational strategy and action programs at local and regional levels to alleviate poverty and achieve the millennium goals.**



Pre-Conference Paper

Wilfredo H. Uy

Coastal biodiversity: Implications of the BRP research on impact, vulnerability and adaptation to climate change

Showed the approaches used by the Biodiversity Research Programme:

- **Location-derived and development-oriented**
- **Multi-stakeholder participation**
- **Systems-oriented and interdisciplinary**
- **Landscape approach**

Revealed the threatened biodiversity from the mountain to the sea that demonstrated the interconnectivity of different ecosystems.



- Demonstrated that mitigations to climate change on coastal biodiversity should achieve short- and long-term results through a combination of social and physical mechanisms.
- Described other social infrastructures to be developed to sustain the mitigations to climate change after BRP.
- **(Animal extinctions at Mt. Malindang from late 1950s to 2000s? Compare with SW Negros and SE Asia [20-30%] in 50-60 yr; Env. Conserv. 2004)**
- **(Low fish biomasses in Bohol Sea---not due to CC)**



Thematic Paper 1

Pak Sum Low

Biodiversity: Impacts, vulnerability, and adaptation to climate change

- Illustrated the value of biodiversity and ecosystem services to human well-being
- Demonstrated how climate-induced changes and events have caused profound impacts both on humans and the ecosystem (e.g. phenology)
- But biodiversity is more vulnerable to climate change because of other human-induced activities
- (CC to impact oceanographic processes e.g. upwellings, mixed layer, fish behavior, with dire consequences to fishery production)



- **People that are most dependent on biodiversity are those most vulnerable to climate change and its impacts**
- **Asked the question to what or whom climate change is dangerous? To human being, biodiversity or both?**

Requires multi-dimensional threshold in measuring impacts of climate change

Risk has to be measured by factoring in hazard (climate change) and vulnerability (both biodiversity and human factors)



Country Paper 1 (Singapore)

Chou Loke Ming

Anticipated impacts of climate change on marine biodiversity based on field situations simulating climate change scenarios in Singapore

Demonstrated the following:

- climate change impacts are varied;
- need to improve resilience of ecosystems to provide insurance against impacts of climate change;
- **(His case study implies coral resilience, needed to determine vulnerability)**
- need to look into innovative techniques and approaches;



- **be proactive rather than reactive in dealing with the problem;**
- **develop more effective management of natural habitats;**
- **responses have to cover the range of species and habitats**



Country Paper 2 (Cambodia)

Vathana Sann

Indigenous animal genetic resource conservation and its impact on climate

**Showed how livestock production could influence
climatic change phenomenon through methane
emission**

Highlighted the following:

- **Low quality feed leads to the production of GHG (CO₂ and CH₄)**
- **High fiber diet produces more methane in contrast to high grain diet**



- **In Cambodia, domestic livestock produced 48% GHG, as opposed to rice production**
- **There is a move to change the feeding regimen for livestock in Cambodia towards better feed types (mixed)**
- **Wild ruminants (local species) and other herbivores are more efficient than imported cattle which produce more CH₄**



Country Paper 3 (Philippines)

Florencia B. Pulhin

***Climate change and biodiversity in the Philippines:
Potential impacts and adaptation strategies"***

Showed the causes of biodiversity loss:

- **Overpopulation:**
poor people are forced to migrate to forest areas to eke out a living,
expansion for settlements and infrastructure
- **Forestry policies that allowed:**
conversion of (forest) lands for landless, timber license agreements, pasture lease agreements



- **Further threats to biodiversity:**
 - climate change**
 - pressure on forest resources of the vulnerable sectors to the impacts of climate change**
- **Adaptation strategies to be undertaken:**
 - assessment of risk and vulnerability**
 - enhance biodiversity management to reduce risk and vulnerability**
 - mainstream climate change to biodiversity management**
 - sustainable financing mechanism**



Thematic Paper 2

Meine van Noordwijk

The role of biodiversity in mitigating climate change

- Showed the sequence in the loss of agro-biodiversity: initial use, degradation, rehabilitation, critical loss of ecological functions
- Introduced the concept of *sustainagility* along with sustainability: What's the difference?
- *Sustainagility* is the ability of the system to stay; to adapt to climate change



- **Defined functional diversity: How diverse is an ecosystem to be considered good?**
- **(Diversity and productivity: MacArthur; Pauly et al. [Fishing down the food webs results in top carnivore loss])**
- **Argued that generic agro-biodiversity as part of climate change adaptation is still conceptual rather than empirically supported**
- **Resolved the issue about planned diversity and the need to prepare for diversity of plans (don't trust your leader)**



Country Paper 4 (Malaysia)

Alona Linatoc

Malaysia's current policy and research initiatives toward climate change: Impacts to biodiversity

Shown the following:

- Malaysia is committed in protecting its biodiversity through its policies and programs.
- Federal and state governments adapt policies and regulations that maintain the harmony between environmental sustainability and economic development.
- Consultations with the state government and state-relevant institutions to avoid conflicts and contradictions in the implementation of environmental and adaptation strategies.



Observed the following:

- **clean development mechanism (CDM): comprised of energy-based projects**
- **criteria: support sustainable policies, involve participation of sectors**
- **avoid deforestation initiatives in Sabah: designation of conservation areas and carbon sequestration programmes**
- **rehabilitation of degraded forest through enrichment planting, reduced impact logging , working on logged-over areas, incorporated biodiversity issues**



Argued that forest destruction will mean great loss of carbon sinks; additional carbon dioxide release will exacerbate global warming and climate change

Suggested more studies on the following:

- **Plants' physiological responses to the changing environment**
- **Impacts of climate change on biodiversity and how biodiversity can impact climate change**
- **Notion that plants are contributing to climate change (volatile organic compounds)**



Country Paper 5 (Vietnam)

Nguyen Huu Ninh

The role of biodiversity in climate mitigation in Vietnam: Red River estuary-Balat case study

Showed climate projections:

temperature rise

sea-level rise

**increase in the strength, duration and frequency
of El Niño and La Niña events**

IOD (Indian Ocean Dipole)

increased intensity of tropical cyclones

**increased storm surges, precipitation and
flooding**

increased risk of drought

increased heat waves



**Illustrated the impacts of climate change on:
livelihoods, national development and economy,
agriculture, water supply, health conditions**

**Projected what policy for natural resources
management can do: policy intervention to
increase resilience, poverty reduction, creation of
local employment, denial of benefits to locals due
to loss of common property resources**

**Recommended provision of legal framework,
change in perception about climate change at
every level**



Country Paper 6 (Thailand)

Amnat Chidthaisong

Research initiatives in Thailand on climate change: Impacts and adaptations

Showed various experiences in climatic change:

**increase in temperature and precipitation,
droughts, tropical storms, sea level rise**

Impacts:

**forest species composition change, flooding
increase, shoreline change, seawater intrusions,
coastal erosion, mangrove quality**



Looking to the Future

“At the end of the day, in a more democratic world, it will be the ethics and desires of the **people**, not their leaders, who give **power** to government and the NGOs or take it away. They will decide if there are to be more or fewer **reserves**, and choose whether particular species will live or die.”

- E.O. Wilson (2002)

WINNER OF THE BP NATURAL WORLD BOOK PRIZE 2002

EDWARD O. WILSON THE FUTURE OF LIFE



'THE WORLD'S GREATEST LIVING WRITER ON SCIENCE'
The Times

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**Used regional climate model in research:
physical assessment, ecosystem impact, socio-
economic**

**Showed that forest can oxidize methane
concentration compared to non-forest areas**

**Future activities: assess impacts by ecosystems,
socioeconomic assessment, vulnerability,
adaptation**

**Concluded that data available on physical climate
change are:**

- 1. consistent with global trends**
- 2. show high vulnerability of various ecosystems
to climate change/variability**