Towards an Integrated Approach of Disaster and Environment Management

A Case Study of Central Viet Nam

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Outline

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Introduction

- Environment and disasters are interlinked – poor environmental management increases the risks of disasters, and disaster events have negative impacts on the environment.
- A critical point to consider is that environmental concerns are not incorporated in disaster management practices.
- In most cases, decisions and actions on environment and disasters are taken separately.
- Roles and responsibilities are distributed among different and separate institutions.
Disaster - Environment: Context of Vietnam

- Natural conditions
  - Geographical location, topography, climate and hydrology encompass many factors and preconditions for disaster to occur

- Socio-economic conditions
  - Population growth and rapid urbanization
  - Pressure of economic growth
  - Inappropriate infrastructure development
Objectives and scope of the study

- To study disaster-environment linkages at local context
- To examine the gap between disaster and environment management
- To promote an integrated approach of disaster and environment management
- Study was carried out in Thua Thien Hue, Central Viet Nam
Research framework

Environmental risk or Disaster Event

Human Vulnerability
- Resistance
  - Livelihood
  - Health
- Exposure
  - Location relative to hazard
  - Environmental Surroundings
- Resilience
  - Adjustments
  - Preparation

Natural Hazard
- Severity
- Frequency

Global social, economic and political pressure

Human induced global environmental change
Disaster patterns change

- Frequency and severity are increasing
- Disasters last longer and unpredictable, e.g. flood 1999
- The flood/storm season comes earlier than before
- Local climate has been affected by global climate change (1996, 1997)
- Climate change may have contributed to a rise in intensity and frequency of adverse metrological phenomena
Disaster patterns change (cont.)

Flood frequency and intensity

- Increasing: 65%
- Decreasing: 22%
- Same: 12%
- Don't know: 1%

Temperature

- Increasing: 83%
- Decreasing: 2%
- Same: 12%
- Don't know: 3%
Close correlation between environment degradation, human vulnerability, and intensity of disaster impacts
Impacts of environment degradation

♦ Deforestation
  – Change rainfall patterns that lead to drought, flood, flash flood, siltation, etc.
  – Affect the croplands in the lowland areas that make the farmers more vulnerable

♦ Waste
  – Block the water flow, silt the reservoir and increase flood
  – Intensify the disaster risks due to industrial waste, emission, mineral exploitation, and pesticide

♦ Destruction of mangroves
  – Make the coastal zone more vulnerable to floods/typhoons
  – Reduce the fauna-flora diversity
Deforestation

Annual flood
Sand/grave exploitation
Slash and burn cultivation
Erosive cultivation practices
Erosion caused by 1999 flood
Annual flood
Waste dumping
Impacts of natural disasters

♦ Disasters exacerbate natural resources and human vulnerability
  – Disasters cause serious pollutions to the living environment and limited water resources
  – Disasters intensify the poverty gap in the population and rapidly increase the poverty rate
  – Disasters also cause a lot of unfavorable impacts on the vulnerable groups, such as the old, children, and women.

♦ Disasters take away many achievements of the national socio-economic development process
  – Disasters convert the fund for development to the emergency and response activities
Impacts on economy

♦ 25-30% of surveyed households claimed that their livelihoods are affected by flood every year

Average loss per household caused by disasters
Impacts on environment

- Significant impacts of flood on environment
  - 53% of households used unsafe drinking water
  - 58% of households were heavily affected by solid waste
  - 43% of households suffered from dead animals

Frequency of environmental impacts due to flood

- Always: 42%
- Sometime: 42%
- No: 16%
Impacts on society
Root causes

- Population
- Globalization
- Urbanization
- Economic growth pressure

Dynamic pressures

- Slash/burn agriculture
- Sand/grave exploitation
- Overexploitation of natural resources
- Improper relocation programs, urban-rural planning
- Poverty
- Inappropriate protection measures
- Environmental degradation
- Migration
- Low level of education

Unsafe conditions

Physical environment

- Insecure houses
- People live on boat
- House in lowland, riverbank

Public actions and Institutions

- Mainly focus on relieve and emergency response
- Inadequate warning
- Traditional coping...

Fragile economy

- Main livelihood based on agriculture and aquaculture
- Limited wage work in rural areas

Health

- Waste during the flood season
- Unhygienic condition

Hazards

- Flood
- Storm
- Drought
- Flash flood
- Landslides
- Coastal erosion
- Inundation
- Climate change
Disaster Environment Management

- At commune level, DM plan only focuses on emergency situation for floods and storms.
- At district and provincial level, detailed plan is prepared only for high-risk areas.
- Disaster-development linkages have been mentioned, but no concrete intervention.
- Development program, such as relocation failed to integrate disaster aspects.
The Gap...

- Little attention paid to the linkages (CECI, IFRC, CRS, etc.)
- Some project recognized the effect of environmental degradation on disaster risks, but take actions in different angles (DWF, SRC,...)
- Recently the CACC, and EHSEDM projects addressed the linkages, but...
- Lack of disaster consideration in environment programs
- Some initiatives try to incorporate multiple sectors such as ICZM, IMOLA
- PAM programs on reforestation
Conclusion

♦ Disaster impact is not a local or single problem
♦ Traditional practices on environment, disaster are under pressure
♦ There is a big gap in disaster and environment management policies, programs
♦ Weak connection between local and higher level in the process of formulating disaster management plan.
Towards an integrated approach

♦ Natural disasters should be recognized as an integral component of development and environment
  – DM not just a matter of emergency aid and humanitarian assistance
  – DM not just building and infrastructure design and land use planning

♦ Disaster management should also be integrated into:
  – Development programs, such as poverty alleviation, reforestation, etc.
  – Education programs, such as introducing DM into school curriculum etc.
  – Socialization programs, such as using local knowledge and concerns, allocation of public and private functions and responsibilities in DM
THANK YOU