
01 – 02 July 2007
Venue: Kathmandu University, Dfulikhel, Nepal

Proceedings

Funded by British Council
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Seminar Summary

The Disaster and Development Centre, Northumbria University together with Kathmandu University organised a seminar on Disaster Risk Reduction Studies in Higher Education: Linking Communities for Livelihood Security. This was held in Dhulikhel, Kavre, Nepal. The event was organised as a part of the programme on ‘People Centred Hazard and Vulnerability Mitigation in Disaster Risk Management’. As a DelPHE sponsored seminar, it brought together DelPHE partners, together with other disasters studies interest groups. It constituted an exchange experience and views on key challenges facing the implementation of disaster risk reduction studies in south Asia, especially in Bangladesh, Nepal and the UK. Plans for future working together were also drafted.

The seminar was enriched by participants from multiple disciplines, from Bangladesh, India, Japan, Nepal and the United Kingdom but it’s focus was more on Bangladesh and Nepal.

The seminar exchanged the teaching and research practices for higher education in Bangladesh, Nepal and the United Kingdom in advancing disaster risk reduction education. It was focused on evidence based research; research lead teaching, disaster risk knowledge transfer for higher education teaching, and the challenge of linking community to higher education studies in disaster risk management. The participants of the seminar examined how education, including higher education can play an important role in helping to create disaster resilience communities in south Asia. However, sustainable disaster risk
reduction education could only be implemented by linking evidence based local practices. This seminar focused on exploring ideas on disaster risk reduction studies with the main goals and objectives to:

1. Explore disaster risk reduction curriculum in higher education from Bangladeshi, Nepalese and the UK perspectives.
2. Learn more about how to help each other (inter university) make informed disaster risk reduction decisions.
3. Prepare university research centres to participate and integrate in regional, national and local risk reduction.

It is hoped that this seminar encouraged involvement of disaster risk reduction professionals in risk reduction education efforts and related research in Bangladesh, Nepal and the UK.

In an opening session Mr. Pratap Kumar Pathak\(^1\), outlined the importance of the seminar as part of his chief guest speech. Mr. Pathak shared his experiences on the drafted National Disaster Risk Management Strategies (NDRMS) based on Nepalese commitments at the World Conference on Disaster Reduction (WCDR, 2005). Dr. Andrew Collins\(^2\), framed the seminar with his key note address emphasising the need for evidence based research lead teaching in disaster risk

\(^1\) Joint secretary and head of Disaster Management Department at Ministry of Home Affairs Nepal  
\(^2\) Director, Disaster and Development Centre, Northumbria University
reduction studies. Mr. John Fry emphasized the role to be played by higher education institutions in making aware marginalised and vulnerable communities to reduce the impact of disasters in Nepal and Bangladesh. Mr. Fry expressed his pleasure with all participants of the seminar by presenting a DelPHE Emergency Kit Box to Pachkhal Valley Risk and Resilience Committee.

This report presents the most of the accompanying presentations and key issues, ideas and challenges raised in the seminar.

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3 Country Director, British Council, Nepal

4 DelPHE Emergency Kits Box, designed by Komal Raj Aryal, Research Associate and Manager of the Nepal – Bangladesh DelPHE project at Disaster and Development Centre Northumbria University. The box is named as Jeeban Rachak Bakas (life saving box) in Nepalese language.
Importance of Disaster Risk Reduction Studies in South Asia

Rohit Jigyasu
Conservation Architect & Risk Management Consultant, India

Increasing Vulnerability to natural disasters in South Asia.

An estimated one fifth of the vulnerable poor in South Asia become victims of natural disasters each year.

Mumbai Floods, India 2005---and at the moment !!!!!

Floods in Surat, Gujarat August 2006

Northern Kashmir Earthquake 2005
Indian Ocean Tsunami, 2005

Disasters – linkages across boundaries
- Drought in 2000 affected India, Pakistan and Afghanistan simultaneously.
- October-November 2000 monsoon flooding and subsequent soil erosion in North-East India, Nepal and Bhutan triggered severe floods in Bangladesh.
- December 2004 Tsunami affected eastern coast of Sri Lanka and South India.
- October 2005 Kashmir Earthquake affected India and Pakistan.

Underlying Reasons for Increasing Disaster Vulnerability in South Asia

Vulnerability of Rural Housing
- Degeneration of Traditional Skills
- Lack of Maintenance
- Incompatible Changes
- Poor Workmanship
- Absentee Ownership
- Poverty
- Livelihood Insecurity
Risks from aggressive tourism and development

'Modern' Images as benchmarks for development

Risks to Indigenous Water Systems due to unplanned development and loss of traditional knowledge

Impact of Changes in Management Systems for Agricultural Land

Forced Transition around rural settlements resulting in loss of control over local resources

Risks from Floods & Soil Erosion – Cultural Landscape of Majuli, Assam, India

Majuli Cultural Landscape

Risks from Ill-conceived Development and Tourism
Need for comprehensive protection measures (not piecemeal)  
Link with people’s livelihoods

Impact of Changing Habitation Pattern

Transformation Processes  
Increasing Earthquake Vulnerability

Fighting or Living with Risks?  
Shifting Char areas traditionally used as the inter-phase between the hinterland and the mainland across the river. However, Flood Mitigation Measures such as Embankments block the natural braided river characteristics of water network system which are interconnected but comes more alive during flood season. Moreover sudden rapid changes due to permanent habitation and cultivation is increasing the number of Chars, causing risks of flooding and soil erosion.

Risks to Delicate Ecological Relationships

Transformation Processes in Urban Areas

- Poor maintenance
- Misperceptions
- Subdivision
Common Factors for Increasing Disaster Vulnerability

- Poverty resulting in lack of maintenance, poor quality of constructions.
- Loss of Traditional Knowledge and inadequate understanding of 'Modern' Knowledge
- Acute Urbanization Pressures.
- Unsustainable Development
- Risks to Delicate Ecological Relationships

Risks during Emergency Response

Destruction more by demolition than by Earthquake during Emergency response

Risks during Post Disaster Recovery

Northern Kashmir Earthquake 2005

Other issues during emergency response

- Lack of coordination between multiple agencies – international, public, non governmental
- Lack of procedures for rescue and relief. Absence of adequate engagement of local community members.
- Absence of adequate procedures for damage assessment.

Mis-perceptions!

Natural or Cultural Disaster?

Local Craftsmen – Where are they?
Main Issues during post-disaster rehabilitation phase

- Reconstruction through compensation takes precedence over long-term sustainable recovery and improved resilience, thereby increasing dependencies.
- Importing unsuitable and unsustainable disaster resistant technology as designed packages for duplication.
- Lack of utilization of local knowledge and capacity: Community Participation — rhetoric or reality?
- Lack of understanding of local social and economic dynamics: Ill-conceived policies may lead to social polarization and break up of community structure.
- Challenges in bridging communities, NGOs and the local Government.

Disaster Risk Reduction Studies in South Asia

Thrust Areas
Vulnerability of an area/region largely understood as its Exposure to one Hazard at one particular time

**Vulnerability to be seen as `products` and `processes`**
- As `product` of social, cultural and economic transformation processes within communities.
- As `product` of normal (under) development process.
- As `product` of immediate and long-term disaster response.

**Relationship between Disaster Management & Risk Management**

Multiple factors affect each other for increasing disaster vulnerability

**Integrated and Dynamic Approach towards Vulnerability Reduction Required for Sustainable Disaster Reduction in South Asia**
Disaster Risk Management Goals cannot merely be looked in isolation as specialized policies and programmes...

Rather these need to be integrated into:
- Development Policies & Programs
- Urban and Rural Planning
- Housing
- Transport and Infrastructure Planning
- Environmental Planning & Management

But the big challenge is ... Policy and Action?

Disaster Risk Reduction Studies in South Asia – For Whom?

Different Types of Educational Initiatives for Different Target Groups:
- Professionals like Engineers, Architects etc.
- Administrators / Public Agencies
- Formal School Education at primary and secondary
- Informal / Vocational Education
- Various local community groups e.g. masons, women, youth

Facilitate Interaction / Cooperation among Various Target Groups

Role of Local Knowledge and Capacity

- Need to recover ‘scientific’ aspects of traditional knowledge and ‘traditional’ aspects of ‘scientific knowledge’
- Facilitating evolution of traditional knowledge to adapt it to the contemporary context / present needs and realities

Need for Multi-disciplinary, Participatory and Applied Research

Calling for Recognition of Local Knowledge and Capacity

......State-level disaster preparedness and mitigation measures are heavily tilted towards structural aspects and undermine nonstructural elements such as social and economic aspects of risk and vulnerability, knowledge and capacities of local people on coping and risk management.....

South Asian Regional Policy Dialogue on Disaster Risk Reduction and Management, August 2006

Integrated Disaster Risk Management necessary for linking present, past and future
Importance of Disaster Risk Reduction in Asia

K. Iftekhar Ahmed, PhD
Postgraduate Programs in Disaster Management (PPDM)
BRAC University
Dhaka, Bangladesh
www.bracuniversity.ac.bd

2004 was particularly disastrous for Asia due to Indian Ocean Tsunami. Also earthquakes, storms and floods.

2005 was also disastrous due to South Asian Earthquake—almost 91% of global disaster-related human losses.

In Asia (2005) >83% of total affected people and 91% of human losses. But only 11.8% of economic damage.

Total number of reported disasters (1995-2004)

- During 2000 -2004 (5 years) 55 % increase
- From 1995 -1999 Low Human Development (LHD) countries 100 % increase
- Medium Human Development (MHD) countries 57 % increase
- High Human Development (HHD) 20 % increase

2004 and 2005 were the worst years of the decade for countries of Medium Human Development (MHD)

Top 10

<table>
<thead>
<tr>
<th>Natural disaster by number of deaths</th>
<th>2005</th>
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<tbody>
<tr>
<td>Tsunami, Indonesia</td>
<td>71,000</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>1,156</td>
</tr>
<tr>
<td>Earthquake, Iran</td>
<td>516</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>511</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>311</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>97</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>97</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>51</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>11</td>
</tr>
<tr>
<td>Earthquake, India</td>
<td>7</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries involved in natural disasters, 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
</tr>
<tr>
<td>Japan</td>
</tr>
<tr>
<td>Indonesia</td>
</tr>
<tr>
<td>Philippines</td>
</tr>
<tr>
<td>Vietnam</td>
</tr>
<tr>
<td>Russia</td>
</tr>
<tr>
<td>Iran</td>
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<tr>
<td>Uzbekistan</td>
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<tr>
<td>Tajikistan</td>
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<tr>
<td>Kyrgyzstan</td>
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<tr>
<td>Kazakhstan</td>
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<tr>
<td>Mongolia</td>
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<tr>
<td>Nepal</td>
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<tr>
<td>India</td>
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<tr>
<td>Bangladesh</td>
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<tr>
<td>Pakistan</td>
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<td>Sri Lanka</td>
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<tr>
<td>Afghanistan</td>
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<tr>
<td>Iran</td>
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<td>Pakistan</td>
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<td>Nepal</td>
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<tr>
<td>Bangladesh</td>
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<tr>
<td>Pakistan</td>
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<tr>
<td>Nepal</td>
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</tbody>
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Summarized Table of Natural Disasters in NEPAL

<table>
<thead>
<tr>
<th>Event</th>
<th>Total</th>
<th>Affected</th>
<th>Affected Damage US (000's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>4</td>
<td>0</td>
<td>4,400,000</td>
</tr>
<tr>
<td>Earthquake</td>
<td>5</td>
<td>9,929</td>
<td>6,771</td>
</tr>
<tr>
<td>Epidemic</td>
<td>17</td>
<td>2,018</td>
<td>1,354</td>
</tr>
<tr>
<td>Extreme Temp</td>
<td>3</td>
<td>108</td>
<td>27,000</td>
</tr>
<tr>
<td>Flood</td>
<td>27</td>
<td>5,578</td>
<td>1,024</td>
</tr>
<tr>
<td>Landslides</td>
<td>16</td>
<td>1,728</td>
<td>124</td>
</tr>
<tr>
<td>Wild Fires</td>
<td>2</td>
<td>88</td>
<td>54,000</td>
</tr>
<tr>
<td>Wind Storm</td>
<td>6</td>
<td>97</td>
<td>19</td>
</tr>
</tbody>
</table>
Drought and famine are by far the deadliest natural disasters accounting for 48% of all deaths from natural disasters between 1994-2003.

Inhabitants of Asia are more prone to disaster casualty than elsewhere in the world.

Total number of reported disasters by type of phenomenon and by continent (1995 – 2004)

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Africa</th>
<th>Americas</th>
<th>Asia</th>
<th>Europe</th>
<th>Oceania</th>
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<td>Total Natural Disasters</td>
<td>532</td>
<td>840</td>
<td>1,122</td>
<td>488</td>
<td>147</td>
</tr>
<tr>
<td>Total Technological Disasters</td>
<td>779</td>
<td>383</td>
<td>1,167</td>
<td>346</td>
<td>15</td>
</tr>
<tr>
<td>Industrial accidents</td>
<td>46</td>
<td>46</td>
<td>269</td>
<td>72</td>
<td>0</td>
</tr>
<tr>
<td>Miscellaneous accidents</td>
<td>64</td>
<td>68</td>
<td>252</td>
<td>87</td>
<td>4</td>
</tr>
<tr>
<td>Transport accidents</td>
<td>699</td>
<td>277</td>
<td>742</td>
<td>346</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,098</td>
<td>1,646</td>
<td>3,736</td>
<td>1,639</td>
<td>637</td>
</tr>
</tbody>
</table>

Some Factors Influencing Disaster Trends
Population Growth

Agencies that try to predict future population seem to be moving closer to a consensus that:

- The world population will continue to grow until after the middle of this century (after 2050)
- Reaching a peak of some 9 billion (up from today’s 6.4 billion) and then …
- Perhaps declining in the waning years of this century

(Economic Growth)

- In 2030, the USA will still remain the greatest power, but its share in world GDP will drop from 28.5 to 25%.
- China will become the second power with 22% of world GDP.
- The European Union (25 countries), is expected to include 7 additional countries (Turkey, Bulgaria, Romania, Croatia, Serbia, Bosnia, Macedonia). It will represent 18% of world GDP compared to 28% in 2000.

(Economic Disparity)

- By 2015, more than 500 million Indians will live in dire poverty, despite rapid economic growth in their country.
- Since 1990 some 270m people in Asia-Pacific came out of poverty. … But still some 670m people living on less than $1 per day.

(ENERGY-OIL)

- Global Oil Reserves-to-Production Ratios, 2004

(World Resource Institute)
Impacts of Climate Change / Global Warming

- The loss of coral reefs and marine lives as oceans become warmer habitat for marine animals
- Increase in frequency and severity of hydro-meteorological disasters causing catastrophic damages to lives and livelihood options.
- Increase in the potential transmission of vector-borne infectious diseases

Deforestation

- Increasing levels of wood and paper consumption, primarily in industrialized countries, is one of the primary factors driving global deforestation.
- According to a study in 1981 (FAO/UNEP), tropical forests are disappearing at the rate of 7.3 million hectares (18 million acres) per year:
  - 4.2 million hectares (10.4 million acres) a year in Latin America
  - 1.8 million hectares (4.4 million acres) a year in Asia
  - 1.3 million hectares (3.2 million acres) a year in Africa

The rapid rate of deforestation in the tropics is a key driving force in the yearly increase of flood disasters.

Impact of Deforestation

- Increase in run-off
- Soil erosion
- Sedimentation in river
- Increase in landslides and flash floods

Link between Environmental Degradation, Natural Hazards and Vulnerability

Urbanization

- World population will increase from 6.1 Billion in 2000 to 7.2 Billion in 2015
- Almost ALL of the additional population will reside in cities.
- By 2015 more than half of the world’s population will reside in cities, and 8 of the world’s 15 megacities will be in Asia.
The Impacts of Urbanization

- Greater unplanned settlement: squatter settlements.
- More densely populated communities.
- More people living on marginal lands.
- More people and property at risk to floods, earthquakes, etc.
- More infrastructure and hence more damage in disasters.

Disaster Risk Management – What and Who?

Disaster risk management includes administrative decisions and operational activities that involve:
- Prevention
- Mitigation
- Preparedness
- Response
- Recovery and Rehabilitation

- Disaster risk management involves all levels of government – decision makers and local government
- Non-governmental and community-based organizations play a vital role in the process
- Communities themselves are first responders

DRM refers to a range of

- Policies
- Legislative mandates
- Professional practices
- Social, structural and non-structural adjustments
- Risk transfer mechanisms to prevent, reduce or minimise the effects of hazards on a community

Disaster risk management on a regional level

The initiating mechanism for policy formulation and development of DM systems is triggered by actual disaster events; usually not a proactive process of reducing the risks of disasters occurring.
RECENT DEVELOPMENTS IN S. ASIA:

INDIA

• National Disaster Management Act, 2005.
• National Disaster Management Authority, 2005.
• Govt. & UNDP – Disaster Risk Management Program covering 17 states and 169 districts.
• State level Disaster Management Authority in 13 states, especially Gujarat (2001), Orissa (1999) and Tamil Nadu (Disaster Management Department). Picked up momentum post-tsunami 2004.

BANGLADESH

• Comprehensive Disaster Management Programme (CDMP), 2003: Strategic institutional and programming approach designed to (a) Optimize the reduction of long-term risk and (b) To strengthen operational capacities for responding to emergencies and disaster situations including actions to improve recovery.
• “To achieve a paradigm shift in disaster management from conventional response and relief to a more comprehensive risk reduction culture.”
• Strategic focus: (a) Professionalizing the DM system, (b) Partnership development, (c) Expanding Mitigation, Preparedness and Response across a broader range of hazards, and (d) Strengthening emergency response systems.

SRI LANKA

• Post-tsunami 2004, significant steps have been taken towards putting in place a disaster risk management framework.
• Enactment of Sri Lanka Disaster Management (DM) Act, 2005.
• Establishment of the National Council for Disaster Management (NCDM) chaired by H.E. the President.
• Creation of the Disaster Management Centre as per the DM Act.
• Creation of the Ministry of Disaster Management & Human Rights.

Most recently the formulation and launch of the Road Map for Disaster Risk Management in Sri Lanka is a big step forward.
• This Road Map is a 10-year framework to be addressed in a systematic and prioritized manner with the involvement of all relevant stakeholders.
• These priorities for action are consistent with the Sri Lanka Disaster Management Act No. 13 of 2005, and also in line with the Hyogo Framework for Action 2005-2015.

Future Challenges

• Increasing urbanization - by 2010, 50% of world population will live in cities.
• More rural population migrating into urban areas seeking economic opportunities.
• Growth of human settlements expanding into hazard-prone areas.
• Global impacts such as climate change and sea level rise for island/coastal countries.

• ENSO impact and increase in Hydro-meteorological events.
• Potential earthquake impact in large cities (Teheran, Kathmandu, Dhaka, etc).
• Biological disasters (HIV-AIDS).
• Pandemic and epidemic threats (Avian flu, SARS).
• New weapons of mass destruction (biological weapons, "dirty" bombs).
• Environmental degradation - air pollution, depletion of sources of water.
Future Needs

- Scientific approach for risk reduction.
- Need to learn from the past and application of lessons for future.
- Change in policy environment in most countries.
- New approaches (loss estimation and recovery planning after disaster events for building better, safer and fast).
- Mainstream risk management into sectors and all development interventions.
- Transfer of responsibility from national to local.
- Involvement of private sector.

Thank You
**Disaster Risk Reduction in Nepalese Higher Education Curriculum**

- A case study from Kathmandu University -

By

Sanjay N. Khanal, Rana B. Chhetri, Kumud R. Kafle, Sabita A. Khanna

Disaster Management and Sustainable Development Center (DMSDC)
Department of Environmental Science and Engineering (DESE)
Kathmandu University (KU)

Establishment of Programs

- Higher Education Link was established between Kathmandu University and Northumbria University in 2003 under the support and management of DFID and British Council

- Department of Environmental Science and Engineering (DESE) KU offers:
  - undergraduate courses on: Environmental Science & Environmental Engineering and
  - graduate and post graduate programs in Environmental Science

**DESE has following Centers, Laboratories & facilities for research and teaching purpose**

- Aquatic Ecology Center
- Disaster Management and Sustainable Development Center (DMSDC)
- Instrumentation Lab
- Environmental Lab
- Environmental Engineering Lab (under construction)
- Waste Water Treatment system
- Lysimeter for Leachate study
- Environmental Monitoring stations
- Experimental Field Plots

**Objectives of DMSDC**

- To offer academic courses on disaster and related fields
- To provide trainings to different strata of the people on different aspects of disaster management
- To carry out researches on specific and pertinent issues
- To raise public awareness about local hazards and vulnerabilities, mitigation measures and run preparedness programs

**Objectives of DMSDC (Contd.)**

- To establish a data base and sharing of information with concerned institutions
- To enhance the capacity of faculty members
- To establish collaborative linkages with concerned national and international organizations
- To offer a Masters program on Disaster Management and Sustainable Development
Some highlights of DMSDC

- A Computer laboratory for GIS, RS and ESM has been established in the center
- Established Collaboration with NSET, CASITA and other concerned organizations
- Organization of talks/lectures, workshops
- Exchange visits
- Presentations and publications
- Student researches

Some highlights of DMSDC (Contd.)

- People Centered Hazard and Vulnerability Mitigation in Disaster Risk Management – October 2006
  - Research on Disaster risk reduction: livelihood sustainability of communities - Panchkhal
  - Capacity building
  - Exchange visits
  - Organization of workshops/ seminars
  - Publications

Strengthening of the DMSDC:

- Capacity building - human resources, facilities
- Enhancement of links and collaboration
- Institutional as well as student research

DESE introduced Disaster Risk Management course in its graduate program and Environmental Hazard and Disaster management course in its undergraduate program since 2004.

The graduate course has following basic coverage:

- Natural Hazards scenario of Nepal
- Disaster Risk Management in Nepal
- Vulnerability
- Risk, risk reduction, addressing remaining risk
- Disaster, Risk study methods

(NSET has been supporting for the offering of this course since the beginning)

The undergraduate course coverage is as follows:

- Natural hazards, general principles of mitigation, hazard zoning, prediction, control, avoidance
- Identification, evaluation and mitigation of various kinds of hazards – tectonic, volcanic, gravitational, fluvial, ocean and lake, glacier and snow, ground water and permafrost, precipitation, wind, biosphere and cosmogenic
- State of natural disaster risks and preparations in Nepal.

Teaching learning process included – lectures, assignments, field studies, presentations etc.
Other Higher Education initiatives in Nepal in Disaster Risk management

- Tribhuvan University
  - Institute of Engineering
    - Center for Disaster studies
      - Course – M. Sc. in structural Engineering – Seismic resistant design of structure
  - Institute of Science and technology
    - Course – M. Sc. in Geology – Geohazard and Environmental Geology
    - Course – B. Sc. – Earth Hazard (optional)

- Pokhara University
  - Nepal Engineering College
    - Center for Disaster Studies
      - Proposed Master of Science program in Disaster Risk Management
  - SCHEMS
    - Course – B. Sc. Environmental Management – Disaster and risk assessment techniques

Thank you
Disaster Risk Reduction Education in Nepalese School Curriculum

Haribol Khanal  
Executive Director,  
Curriculum Development Centre, Ministry of Education,  
Nepal Government

School level curricular provisions on Disaster management

Addressed by:
• The objectives (Primary to secondary)  
• The contents basically (science, social studies, Environment, Geography, population and environment)

Objective of curricular provisions

• To provide general cognitive knowledge  
• To develop positive attitudes towards disaster management  
• To develop skills on various issues of disasters enabling students to initiate preventive and safety measures

Curricular coverage

At primary level:
• Identification of the types of natural disasters  
• to describe the affects of natural disasters  
• To describe the preventive ways of disasters  
• To adopt the preventive ways in everyday lives

Curricular coverage cont...

At lower secondary level
• To see the relations of development and environment problems  
• To describe and take part in protecting natural resources including disasters

Curricular coverage cont..

At the secondary level
• To analyze and describe the causes, effects and preventive ways  
• To take part in natural resource, and disaster management at the surroundings  
• To understand the importance of caring for the earth, explain the human impact on it, identify the measures of caring and take part in caring activities
Curricular contents

• The following curricular contents have been included into the school level curricula in various subject areas in terms of knowledge, attitudes and skills development
  – Landslides, flood, storm, aglagi, soil erosion,
  – Earthquake, its impact / effects, causes and consequences
  – Natural resources: concepts, types, and conservation

Curricular contents cont...

• Caring for earth: concepts, relations of man and earth, need for caring, effects of human acts on caring capacity of the earth, ways of caring the earth
• Hazards: types (natural and human created), reasons, impact of hazards and their management

Problems in terms of disaster management

• Specific focus on various types of natural disasters and their critical analysis skills yet to be discussed heavily
• Need more curricular weightage which is quite difficult
• Pedagogical adaptation on disaster management is yet to be made which play significant roles in imparting technical skills on students, teachers and even parents.

Curricular possibilities

• Analysis of the existing school level curricula and identify the plugging point for curricular integration
• Emerging trend, tools and techniques on managing disasters can be integrated and or promoted through curricula by initiating necessary efforts in revision process
• Establishing Network in designing, developing curricula and curricular materials

Curricular possibilities cont...

• Develop a resource manual, advocacy manual, practical handbooks on disaster management for educationists, curriculum experts, teachers, others and disseminate them to the practitioner
• Initiation of orientation, awareness and empowerment activities at the national to grassroots level

On behalf of CDC

• We thank to the organizer for providing opportunity for sharing the curricular provisions, problems, and future possibilities on this global concern to save both the earth, human beings and the future generations

Thank you
Disaster Risk Reduction in UK Higher Education

Dr Andrew Collins
Disaster and Development Centre (DDC)

Where it came from

• Multiple disciplines - academic development and demand for a different paradigm (long term)
• Change in perception about effectiveness and cost effectiveness of disaster prevention - political
• Civil Contingencies Act (2004) - UK government concern about ‘security’
• Millennium Development Goals (1995, 2002) - international concern about sustainable development
• Process leading to Hyogo Framework (2004) - International acceptance of disaster reduction strategy

Key cross-disciplinary ideas in DRR

• Natural Hazards
• Human vulnerability
• Environmental sustainability
• Sustainable livelihoods
• Prediction and early warning
• Risk management
• Human resilience
• Human security

Where has it lead?

• A stimulating and successful academic development, theoretically and methodologically
• Policy informed by theory that is in part developed from observation of practice
• Improved human capacity to recognise a disaster reduction approach and where possible enter employment that contributes to this agenda
• Some evidence of influence on the political will to engage with DRR

What it has not done yet

• Enter the wider education curriculum
• Fully reconcile different academic traditions
• Gain sufficient attention of emergency responders
• Learn from the disparate and multicultural interpretations of disaster risk reduction
• Attract sufficient financial investment
• More directly support community development of disaster risk reduction, rather than just sign up to that as the right idea.
What more might be done – more immediately

- More and better research
- Increased acceptance of cross-disciplinarity and patience with the challenge of an integrated approach
- Humility, to be able to think again
- Support learning in disaster risk reduction across a broader range of academic levels
- Rethink the meaning of community participation in the learning process of the ‘expert’.
- Further investment in one of the most key issues of our times.

What more might be done – more idealised view of ‘new’ Disaster Reduction Education

- Lead by ongoing real or perceived threats
- Practitioner oriented with perpetual interpretation and review
- Proactive engagement to facilitate disaster reduction i.e. resilience in practice through participation
- Lessons learnt through evaluation before, during and after disasters
- Build on localised knowledge through ‘grounded’ research and risk communication in the community
- People centred assessment of disaster risk
- Empathy with the subject matter to motivate
- Change behaviour

What’s happening at Northumbria? (a start)

- Dedicated postgraduate programme on link between disaster management and sustainable development
- Parts of undergraduate modules for courses in environmental management and geography
- Disaster and Development Centre (DDC) to consolidate research led teaching approach through project approach
- Use of theoretical and practitioner research approaches for policy and practice

Teaching and Learning Modules (postgraduate)

- Sustainable Development
- Disaster Risk Reduction
- Approaches and Methods to Project Planning
- Physical and Mental Health in Disaster and Development
- Subject Exploration (flexible topic specialisation)
- UK Emergency Planning
- Research Methods
- Work Placement
- Dissertation

Disaster Management and Sustainable Development

DDC Vision as an Applied Research Development

Facilitating disaster risk reduction and sustainable development for human security and resilience
DDC People
- Academic Staff Engagement
- Research Associates
- Project Field Staff
- PhD Registrations
- Visiting Scholars
- MSc Students
- Volunteers
- Affiliates

Origins of Disasters?
A Knowledge Acquisition Challenge
Assess Origins, Manage Risks:
- Hard Science
- Soft Science
- Non-Science
- Art - Faith – Culture
- Politics

Methods
- Teaching and Learning
- Applied Research
- Capacity Building
- Community Development
- Policy Advice
- Technical Support
- Cross-cultural Exchange

DDC Current Themes - Programmes
- PgC/PgD/MSc Disaster Management and Sustainable Development
- Disaster Resilience and Sustainable Livelihoods
- Social Care in Disaster and Development (SCDD)
- Trauma Risk Reduction (TRRP)
- Infectious Disease Risk Management (IDRM)
- Integrated Emergency Management and Security
- Migration and Displacement
- Gender and Disaster

Learning with Partners
- DDC engagements in more than 20 countries
- 25 Partnerships and collaborations established

Structure and Function
1. Support to Practitioners
2. Research, Teaching and Learning
3. Methodological and Policy Development

Intersecting Programmes
Disaster Risk Reduction in Bangladesh Higher Education

K. Iftekhar Ahmed, PhD
Postgraduate Programs in Disaster Management (PPDM)
BRAC University
Dhaka, Bangladesh
www.bracuniversity.ac.bd

Bangladesh – Nepal – UK Seminar on Disaster Risk Reduction Studies in Higher Education: Linking Communities for Livelihood Security
Kathmandu University, Dhulikhel, Nepal

Introduction

- Bangladesh is highly disaster-prone; context of poverty, disasters assume great proportions; risk and vulnerability to various disasters is extensive.
- Some disasters are annual and cause regular national loss. Others are waiting in the offing - not hard to imagine destruction by earthquake in dense urban areas.
- There is an important need for higher education programs that contribute to disaster risk reduction.

Most practitioners are either trained abroad or learn from painstaking work experience.

BRAC University runs the only specialized higher educational program in Bangladesh, offering certificate, diploma and master’s level qualifications in disaster management.

Educational program targeted for active professionals allows contributing to this nationally significant field, the reason for developing this course.

STATE OF DRR EDUCATION

- Disaster Research, Training and Management Center (DRTMC), Dhaka University:
  - Mainly research and short training courses.
  - Library resources and publications.
  - Modules on disasters taught at the Department of Geography.

- Jahangir Nagar University:
  - Modules on disasters taught at the Departments of Geography and Planning.
  - Research and publications.

- BUET:
  - "Natural Hazards & Disaster Management" course at undergraduate and master’s level at the department of Urban & Regional Planning.
  - Also research and publications at the Department of Civil Engineering, ITN, etc.

- Chittagong University:
  - Some modules and research at the Department of Geography.

- Some govt. agencies: BPATC, DMB, BMD, SPARRSO, etc.
  - Conduct short-training courses.

- Some Private Universities eg. IUBAT, AIUB:
  - Modules or related courses (eg. Floodplain Management)

EXCEPT FOR BRAC UNIVERSITY, IN BANGLADESH THERE IS NO FULLFLEDGED HIGHER EDUCATION PROGRAM GRANTING A MASTER’S DEGREE IN DISASTER MANAGEMENT.

PPDM HIGHLIGHTS

- Entry into 1-semester postgraduate certificate course on Disaster Management.
- Expansion into 2-semester postgraduate diploma program, with option of master's degree in additional 1-2 semesters.
- Semi-autonomous program within BRAC University (BU); links with Architecture and Social Sciences.
- Long-term objective to develop disaster risk reduction institute within BU.
- Targeted primarily for staff of various organizations to supplement profession-based learning.
- Practice-oriented course to advance post-professional qualifications and for career development.
Maximum 20 students. Given national relevance and interest, and International and national NGOs.

Because course is targeted largely for NGOs, relevant within BRAC.

Also professional/practical experience is also considered. Access to wide-ranging candidates, recruiting has forces, etc.

Govt. departments (DMB, health, environment, fire service, etc.)

Feasibility. Disaster risk reduction field in wide-ranging capacities a contribution.

Target group important contributing factor towards course feasibility.

Maximum 20 students. Given national relevance and interest, and accessibility to wide-ranging candidates, recruiting has not been difficult. 2nd batch running.

Adequate expertise in Bangladesh within the disaster field (BPDC, CARE, CDMP, UNDP, etc.) - the main source of teaching staff.

Administered by a faculty group from BU and support staff from BRAC and BU.

Specialist faculty from other universities, organizations and other countries.

In line with student composition and course contents, teaching staff gathered from a range of disciplines.

In courses with explicit multi-disciplinary contents, a team of tutors gathered from different disciplines teach.

Regional contacts - ADPC (Thailand), AIDMI (India), NSET (Nepal) - for visiting faculty, educational links, exchange programs, collaborative projects and events.

International contacts - WSSI (USA), Cranfield University (UK), CENDEP (UK), ITC (Netherlands), Swinburne University (Australia) - are also sources of exchange and partnership.

At certificate level, field-oriented and applied aspects are emphasized. At diploma level, more theoretical than certificate level.

For students assessed at the certificate level to require them, non-credit preparatory courses are provided at the diploma level.

Stage 1: 1-semester postgraduate certificate program of 15 credits: 2 foundation courses (4 credits), 2 core courses (6 credits), 1 elective course (3 credits) and 1 field study (2 credits).

Stage 2: Extended as diploma program, another semester of additional 15 credits: 2 foundation courses (4 credits), 2 core course (6 credits) and 1 elective course (3 credits) and 1 field study (2 credits).

Stage 3: Extended to a master’s degree, another 1-2 semesters of additional 15 credits: 2 core courses (6 credits) and dissertation (9 credits).

At certificate level, field-oriented and applied aspects are emphasized. At diploma level, more theoretical than certificate level.

For students assessed at the certificate level to require them, non-credit preparatory courses are provided at the diploma level.

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For students assessed at the certificate level to require them, non-credit preparatory courses are provided at the diploma level.
**PROGRAM STRUCTURE**

<table>
<thead>
<tr>
<th>Level</th>
<th>Duration</th>
<th>No. of courses</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>1 semester</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Diploma</td>
<td>2 semesters</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>Master’s</td>
<td>3-4 semesters</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Dissertation</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>45</td>
<td></td>
</tr>
</tbody>
</table>

**SCHEDULE**

- 13 contact hours per week @ 3 hours per day for 3 days a week and 4 hours on another day. Evening classes. Part-time enrollment available for diploma program.
- Courses for audit and credit available to other departments at BU and other universities.
- For field study, contact hours based on field visits.
- For dissertation at master’s level, the schedule consists of personal tutorials with supervisor(s), attending core courses and working outside class.

**ADMISSIONS CRITERIA**

- Minimum 3-year bachelor degree. Candidates with a bachelor degree of lesser duration accepted if completed a relevant diploma or certificate course. This criterion also relaxed for candidates with at least 5 years of relevant professional experience upon passing an assessment test.
- Minimum 2nd division in SSC, HSC and minimum 2nd class or at least 2.00 CGPA in bachelor degree. Alternatively, O-level in five subjects and A-level in two subjects with a GPA of at least 2.0, according to BRAC University scale: A=5, B=4, C=3, D=2 and E=1; only one E is acceptable.
- Qualifying in a 100-mark admission test consisting of written test (80%) and interview (20%).

**COURSE LOAD**

- Register at certificate level for 15 credits and complete course in one semester.
- If initially enrolling for a diploma or master’s degree, then register for minimum 6 credits and maximum 15 credits per semester.
- Other than certificate level, full-time students have to register for at least 12 credits per semester.
- The diploma has to be completed within 3 years and the master’s degree has to be completed within 5 years after the original date of admission.

**COURSE CONTENTS**

- 3 main components: lectures/seminars, field visits and study projects. Foundation, core, elective courses, field studies and dissertation.
- Independent study projects, (more complex at diploma stage), under relevant guidance, presented as terminal assignments.
- Field visits to disaster-prone areas and disaster management projects as part of field studies.
- 3 main aspects: Pre-disaster preparedness and risk reduction; Post-disaster response, relief and rehabilitation; Disaster mitigation and long-term development (Pre-disaster + Post-disaster).
**COURSE COMPOSITION**

**Certificate Program**

A) Foundation Courses (2 credits each)
1. Introduction to Hazards and Disasters
2. Fundamentals of Disaster Management

B) Core Courses (3 credits each)
1. Disaster Response and Recovery Strategies
2. Independent Study in Disaster Management I

C) Elective Courses (3 credits) (any one)
1. Riverine Disaster Management
2. Cyclone and Tornado Preparedness and Rehabilitation
3. Earthquake Vulnerability Reduction

D) Field Study I (2 credits)

**Certificate Program**

A) Foundation Courses (2 credits each)
1. Organizational and Policy Context of Disaster Management
2. Research and Analytical Methods

B) Core Courses (3 credits each)
1. Disaster Preparedness and Vulnerability Reduction
2. Independent Study in Disaster Management II

C) Elective Courses (3 credits) (any one)
1. Riverine Disaster Management
2. Cyclone and Tornado Preparedness and Rehabilitation
3. Earthquake Vulnerability Reduction

D) Field Study II (2 credits)

**Master's Program**

A) Core Courses (3 credits each)
1. Assessment of Risk, Vulnerability and Capacity
2. Dissertation Seminars

B) Dissertation (9 credits)

**Diploma Program**

A) Foundation Courses (2 credits each)
1. Organizational and Policy Context of Disaster Management
2. Research and Analytical Methods

B) Core Courses (3 credits each)
1. Disaster Preparedness and Vulnerability Reduction
2. Independent Study in Disaster Management II

C) Elective Courses (3 credits) (any one)
1. Community Based Approaches to Disaster Management
2. GIS Applications in Disaster Management
3. Building Design and Construction in Disaster-Prone Areas
4. Urbanization and Disasters
5. Risk Communication, Training and Public Awareness

D) Field Study II (2 credits)

E) Preparatory Course (if required)
Challenges

We did not have many academically qualified people to teach the programme; but have the maximum number of people with long and hands on experience in this field.

So the programme started off with the practitioners: disaster managers at UN level, national and international NGOs, grass root NGOs.

Cautiously steered clear from the traditional concepts / traditional way of teaching.

Very strong focus on disaster risk reduction.

Very few women involved in disaster management field, and therefore, difficult to get female faculty.

Very little or no gender disaggregated data available in country.

1st batch had 16 students, while the 2nd batch had 15 students.

1st batch had three women students, 2nd batch, none.

1st batch had one student from defense while in 2nd batch three.

1st batch had two fresh graduates.

Twelve of the students in the 1st batch were already in DM while in 2nd batch seven.

In the 1st batch five were from GOB while in 2nd batch six.

Each batch had one student from academic sector.

Need to get away from Command and control theory of disaster management teaching/ training.

Paradigm shift: to risk reduction.

Had a coordinator in the programme to ensure that risk reduction is adequately integrated into the programme.

Bottom up approach needed to promote change: communities most aware of historical risk scenarios, and closest to their own realities – strong NGO presence help reflect their perspectives at the national level (PRSP).

BRAC programme tries to reflect that very learning into the curriculum.

Have the show case of best practices in DRR in country for the students to get exposure to.
Opportunities

- More than 40,000 NGOs
- Whole country being disaster prone
- NGOs always getting into disaster management especially in disaster response almost every year; for one type or another disaster (flood / cyclone / tornado / drought / river erosion / monga / earthquake / fire / hail storm)
- Donors doing pre qualification of NGOs: UN, AusAid, DFID – looking for expert / trained staff members

Opportunities cont…..

- Risk reduction highlighted in WCDR;
- Strategic goals of the Hyogo declaration focused on risk reduction in development planning, institutional capacity and community capacity building, integrating risk reduction into emergency relief and recovery,
- Disaster Management Bureau, Directorate of Relief and Rehabilitation (all focusing on risk reduction)
- CDMP creating a good job market for DRR professionals (planning their

STUDENTS

- One student joined CARE
- One student joined CDMP as an expert
- One student has become the head of the disaster management team of OXFAM
- One student has joined the DM programme in BRAC as the lecturer
- The defense people who are often involved in disaster response are getting more and more interested in the course: many armed forces members are going on peace keeping mission (need to incorporate conflict resolution in the curriculum)

Thank you
Disaster risk & Public health
What to impart in public media and How much skills we need to manage as health professionals

Paras K Pokharel MD, MD. Additional Professor
School of Public Health & Community Medicine,
BP Koirala Institute of Health Sciences, Dharan, Nepal

Role of Risk Perception in Public Health
- **Risk Perception**: Systematically describing people's degree of understanding about health risk issues.
- **Risk communication Research**: Designing and evaluating messages for improving that understanding.

Risk Perceptions in Public Health
- People can be hurt by inaccuracies in risk perceptions.
- The price of misperceptions of risk perceptions may be exacted over the long run as well as in individual decisions.
- The outcomes of health risk decisions partly determine people's physical & financial resources, hence managing their own affairs and shaping their society.

Quantitative Assessment
- **1. Estimating the size of risks**: Lay people do not realize how small or large the risk is. By estimating the magnitude of risk, effective decisions can be taken.

Internal Consistency
- Estimates of relative frequency were quite consistent both within and across respond mode.

Anchoring Bias
- Direct estimates were influenced by the anchor that the investigators provided.
- Thus, people seem to have less a feel for absolute frequency, rendering them sensitive to the implicit cues in how questions were asked.
Subjects’ estimates showed less dispersion than did the statistical estimates.

At each level of statistical frequency, some causes of death (homicide, tornadoes, flood) consistently received higher estimates than others.

In a study subjects were asked how confident they were in their ability to choose the more frequent in a pair of causes of death. They tended to be overconfident.

One possible explanation of this overconfidence is that their personal experiences with risks create an illusion of understanding, leading them to feel inappropriately like experts.

A second is that the high risk teenagers have less ability to think critically about the bases of their beliefs or less willingness to do so. Effective decision making requires not just having knowledge, but also recognizing the limits to one’s understanding.

One recurrent obstacle to assessing or improving lay peoples estimates of risk is reliance on verbal quantifiers for both communicating and eliciting risk estimates.

Perceived lethality, perceived invulnerability, a log - linear respond mode

Probability of death
Expected loss of life expectancy
Expected probability of premature fatality
Total number of deaths or deaths per person exposed or per hour of exposure, or loss of ability to work
Unwitting use of different definitions can lead to controversy and confusion.
**Catastrophic Potential**

- The ability of an activity or a technology to cause large number of deaths in non-average years.

**Risk Comparisons**

- The multidimensional character of risk means that hazards that are similar in many ways may still evoke quite different responses.

**Qualitative Assessment**

1. **Event definitions**
   - Scientific estimates of the magnitude of a risk require detailed specification of the conditions under which it is to be observed.

2. **Supplying details**
   - Aside from their methodological importance, the details that the subjects infer can be substantially interesting.

3. **Cumulative risk-a case in point**
   - As knowledge accumulates about people’s intuitive theories of risk, it will become easier to predict which details know and ignore, as well as which omissions they will notice and rectify.

4. **Mental models of risk decisions**
   - Judging each element in a standard representation (models) of their decision making situation.
Conclusion

- Understanding risk perceptions is a complicated business.
- We have observed methodological issues appear deceptively simple but they are not.
Will I have a “future”???
Issues and Challenges of Disaster Risk Reduction Teaching in Higher Education.

Kumud R. Kafle, Sunjoy N. Khanal, Rana R. Chhetri, Sabita A. Khanna

Disaster Management and Sustainable Development Center (DMSDC) Department of Environmental Science and Engineering (DESE), Kathmandu University (KU)

Nepal - Bangladesh - UK Seminar on "Disaster Risk Reduction Studies in Higher Education: Linking Communities for Livelihood Sustainability July 1-2, 2007 Kathmandu University, Dhulikhel, Nepal

Conceptions
- People have perceive that god creates disaster
- Superstition and fatalistic nature of wrong perception
- Disaster Management is part of geology subject
  - Earthquake
  - Flood
  - GLOF
  - Volcano
  - Landslide
Concentration on natural hazard only not in preparedness and its pre-management

Discussion
- Focus on preparedness before the disaster occurrences
- Need of research on indigenous resilience techniques & existing local level committee and improve it by different technical methods e.g. communication networking system

Students’ Interests
- Most of the students interests are in Pollution and Wildlife and its conservations
- Only 4 Students has carried out disaster relevant research out of 222 undergraduate pass out
- Only 1 student has carried out disaster relevant research in graduate level
- Lack of knowledge on scope of disaster risk management

Discussion
- Explanation of its scopes
- Awards and other benefits for the research
- Classes on motivation and social responsibilities

Research facilities and funding
- Limited fund
- Most of the research grants are as per funding agencies’ need
- For research facilities, new updated software and appropriate faculty are not easily available
- Difficult to provide other physical facilities (logging, transportation and equipments)

Discussion
- Funding for research
- Funding for seminars and workshops
- Research publications
- Fund generation

Course structures
- Existing Generic course structures

Discussion
- Epidemics
- Road accidents (190 accidents in KTM, last month)
- Internal migration due Political disturbances
- Haphazard urbanization
- Communication networking
- Awareness trainings
Roles of parents
- Joint structure family
- Influence by relatives
- Influence by neighbors

Discussion
- Interaction program with teachers, students, parents, village officers, social organizations, community based organizations and the stakeholders
- Radio and TV program
- Awareness on responsibility and accountability in society

Linkages / coordination to governmental and nongovernmental organizations
- More than 33 Government/Semi-governmental Agencies (15 Nos.)
- Non-Governmental Organizations (5 Nos.)
- External Agencies/NGOs (9 Nos.)
- Academic Institutions (4 Nos.)
- Lots of redundancies and duplications in the works.
- Most of the works are carried out on a project basis with its own time and budgetary limitations.
- No system of peer review of the research/project reports.
- Coordination between academic Institutions and non academic Institutions

Discussion
- Linkage among all relevant organizations
- Data sharing
- Increased frequencies of seminars and workshops

Joint research
- Inadequate coordination
- Lack of research interests

Discussion
- enhancement of coordination
- sharing experiences
- interest

Reliability of data
- Misunderstanding
- Ethics on professions
- Belief to each other
- No databank system in area of disaster management
- The relevant organizations are working in their way and keep data in their own record system.

Discussion
- Understanding among the organizations
- Data sharing system
- Databank
- Data quality control system

Capacity buildings
- Few trainings on disaster management
- Sharing of knowledge among the teachers
- Exchange training/working program
- Lack of joint research program
- Lack of Motivation towards the disaster management

Discussion
- Exchanges program among the domestic and international institutions
- Training from experts
- Formal Academic Program

Availability of Hardware and Software
- Students in one Batch 40-45 (Environment Science and Engineering) in Undergraduate program
- Computer availability is 30 numbers only.
- Data availability
- Space availability
- Available Hardware
  - PCL 5
  - PCL 9
  - ILWIS 3.0 Academic
  - ERDAS Imagine (Demo Version)
- Software
  - Arc/View 3.2a
  - Arc/View 3.2
  - Arc/View 9 (trialing)
  - ILWIS 3 Academic
  - ERDAS Imagine (Demo Version)

Discussion
- Updated software
- Funding for new software/hardware /training, particularly in disaster management
Faculty members

- Inadequate specialists
- In our DESE has 12 faculty members

Discussion
- Teamwork among the teacher/experts

Thank You
Initiation of the PPDM in BRAC University

Objectives

In view of the vulnerability of the country to natural disasters and the need to build capacity in terms of trained manpower BRAC University initiated the development of a curriculum of studies in Disaster Management in 2003.

Intake of the Students

- Offered to students in Fall 2005

Programs offered

- Certificate - 1 semester
- Diploma - 2 semesters
- Masters – 3 semesters

Foundation Courses

- Introduction to Hazards and Disasters
- Fundamentals of Disaster Risk Management
- Organizational and Policy Context of Disaster Risk Management
- Research and Analytical Methods

Core Courses

- Disaster Response and Recovery Strategies
- Disaster Preparedness and Vulnerability Reduction
- Assessment of Risk, Vulnerability and Capacity
- Independent Study in Disaster Management I
- Independent Study in Disaster Management II
- Dissertation Seminars
Elective Courses

- Relevance of Disaster Risk Management
- Cyclone and Tornado Preparedness and Rehabilitation
- Earthquake Vulnerability Reduction
- Community Based Approaches to Disaster Management
- GIS and Remote Sensing Techniques in Disaster Management
- Building Design and Construction in Disaster-Prone Areas
- Urbanization and Disasters
- Risk Communication, Training and Public Awareness
- Gender Issues in Disaster Management
- Disaster Risk Reduction and Development Planning

Thesis/Dissertation

Students intending to do Master degrees are required to complete a dissertation (maximum 20,000 words, minimum 15,000 words) on a topic related to disaster management. The dissertation will have to be presented and defended at a committee composed of at least two faculty members and one external examiner.

Independent Research

- Till the spring semester 2007, around 50 independent studies have been conducted by the PPDM students.
- Along with these studies, 10 Dissertations have been completed by the PPDM graduates.

List of the Students’ Independent Studies

On Floods
- Major Floods and Impacts on Food Security: The Case of the 1998 Flood in Bangladesh
- Impacts of Floods on the Economic Condition of Agricultural Workers in Bangladesh: A Case Study of Brahmanbaria
- Impact of River Drainage on Coastal Geomorphology: A Case Study on Feni River Dam, Bangladesh
- Causes and Effects of Water Logging in Dhaka City

On Earthquake
- Post Disaster Preparedness: Earthquake in Dhaka City
- Implication of Density and Urban Forms in Earthquake Vulnerability

On Cyclone
- A Case Study of BRAC’s Involvement in the aftermath of 1991 Cyclone in Kutubdia
- Hurricane Katrina and Experience from Cyclone Preparedness Program of Bangladesh
- Profiles of Some Historic Cyclones in Bangladesh

On Tsunami
- Impact of Tsunami of 26 December 2004 and Bangladesh Perspectives
List of the Students' Independent Studies contd.

On Tsunami
- Tsunami 2004: Learning to be Prepared for Future
- Use of Tsunami Deposits Data to Improve Assessment of Tsunami Risk

On Arsenic Contamination
- Alternative Sources of Drinking Water for Arsenic Affected Areas in Bangladesh
- Groundwater Arsenic Contamination in Bangladesh: A Study of Cox’s Bazar District

On Environmental Pollution
- Global Warming: Causes and Consequences

On Drought
- Means of Ensuring Adequate Water Supply in Dhaka to Mitigate Hydrological Drought

On Health
- Air Pollution in Dhaka City: Causes and Health Effects
- Fullbari Coal Project: Environmental Impact Assessment
- Water in Camps of Displaced People: Supply, Assessment of Quality and Simple Treatment Method

On Riverbank Erosion
- Impact of River Bank Erosion on the Livelihood of the Affected Population: A Case Study at Deesreche Union under Faridpur District
- Rapid River Erosion of the Padma at Hashbani Banar Union under Munshiganj District
- Case of a Person Affected by Riverbank Erosion

On Food Insecurity
- USAID Food AID Program in Bangladesh (1999-2004): As a Means to Improve Disaster Risk Management and Reduce Food Insecurity in Bangladesh
- Assessing Food Security and Livelihood Issues in Disaster Risk Reduction Activities

On Disabilities
- Understanding the Family Level Disaster Plan and Community Response to Physically Challenged Persons
- Vulnerability Analysis of the Disabled People in the Cyclone

On Building Collapse
- Building Collapse Rescue in Dhaka City

On Unemployment
- Seasonal Unemployment in Greater Rangpur: A Study on Its Causes, Effects and Remedial Prospects

On Road Accident
- High Way Road Accident in Bangladesh: A Temporal Study of Savar Thana

On Waste Management
- Management of Domestic Wastes in Dhaka City
- Solid Waste Management and Environmental Degradation

On Unemployment
- Seasonal Unemployment: A Study on Its Causes, Effects and Remedial Prospects

Independent Research

Students' Independent studies include almost all aspects of Disasters:
- Floods
- Earthquake
- Groundwater Arsenic Contamination
- Tsunami Impacts
- Cyclone
- Riverbank Erosion
- Water Logging
- Drought
- Road Accident
- Environmental Pollution
- Global Warming
Independent Research contd.

Methodologies Applied in DM Research

- Most of the independent studies have been conducted based on the secondary information (published literature in the journals and books, newspaper reports, public documents, websites, Remote sensing data). Along with that, primary data (field investigation, key informant interview, individual interview) have also been used.

Independent Research contd.

Dissertations of PPDM

- 10 dissertations have been done
- Cover different aspects of DM (flood vulnerability assessment, disaster management activities)

Independent Research contd.

Unplanned Urbanization of Dhaka City: Increase of Rainfall Induced Flood Vulnerability(by Mirza Abul Ali)

This research applied remote sensing and GIS techniques to detect the low land status in different time period and also trend of unplanned urbanization. It is one of the major causes of water logging in Dhaka City. Management of drainage system of Dhaka City is presently a challenge for the urban authorities because of rapid growth of population and unplanned development activities. Therefore, a close coordination among urban authorities and agencies and collaboration between public and private sectors is needed for effective management and sustainable solution of urban drainage problems. The study is based on aerial photographs, high-resolution satellite images, and primary data collected from previous studies. The research encompasses the entire city of Dhaka and analysis has been performed using remote sensing data.

Independent Research contd.

Flood Proofing Project at Char and Haor: Impact on Household Food Security and Consumption(by Shahnaz A. Zakaria)

This study examines the impacts of flood proofing project on food security and consumption of vulnerable households in the Char and Haor areas of Bangladesh. The study is based on both primary and secondary data. The research includes interviews, focus group discussions, and household surveys to assess the effects of flood proofing projects on food security, income, and consumption patterns. The results indicate that flood proofing projects have had a significant positive impact on food security and consumption. The study also highlights the need for sustainable and inclusive development strategies that address the needs of vulnerable populations in vulnerable regions.
Role of Social Corporate Sector in the Earthquake Disasters: A Case Study of Dhaka City—by Mushfequa Ferdous

Dhaka is located in an earthquake prone area for its geological settings. The corporate sector is an integral part of the community and cannot remain isolated from disaster reduction initiatives. Results from the study show that various issues need to be integrated on corporate disaster preparedness and management to advocate materializing it as the corporate social responsibility.

Changes in Livelihood Pattern of Inhabitants in Waterlogged Areas in South-West Region in Bangladesh—by Kaiser Rejve

The southwestern part of the country is subject to different types of environmental problems. Results show that in the study area, an elicited attempt has been undertaken to ascertain the negative impacts of river siltation, water logging, salinity and other disasters. Interestingly, the local people have been trying to participate in the decision-making processes because they have the indigenous knowledge. But the foreigners dealing with the development projects are ignorant of the local environment.

Exploring the State of Disaster Management Activities in Dhaka City—by Md. Aminur Rahman

The present study explores the state of Disaster Management activities in Dhaka city based on mainly primary and secondary information. It is found that very few of the institutions have training modules and the universities have course or module on disaster management. Compared to the necessity, research, training, teaching and practical activities on disaster management in Dhaka city is really scanty.

Students’ Field Studies

Field Studies

Objectives

• In order to teach PPDM students practically beyond their classes, they are taken to disaster prone sites of Bangladesh.
• Students identify the potential hazard risks and assess the coping strategies of the local people.
• Students are required to produce an individual report on the field study.

Field Studies contd.

Till 2007, PPDM students visited three disaster prone area of the country covering the
-Central part and northeastern wetlands prone to flood hazard
-Coastal island- prone to cyclone and earthquake hazards
PPDM’s Future Directions

- Extend scope of PPDM beyond offering degree courses to a provider of short courses, training and workshops.
- Become a source of information on disasters: database etc.
- Work toward establishing itself as an ‘Institute of Disaster Management’

Thank You
Disaster Research Studies done at KU

<table>
<thead>
<tr>
<th>Level</th>
<th>Topic</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Sc</td>
<td>Study on Earthquake Preparedness in Banepa Municipality, 2002</td>
<td>Application of GIS Questionnaire survey Data Analysis</td>
</tr>
<tr>
<td>B. Sc</td>
<td>Disaster Management: An Overview of the Programmes their Efficacy and Adequacy in the Context of Nepal , 2003</td>
<td>Data Collection Questionnaire survey Analysis</td>
</tr>
</tbody>
</table>

Disaster Research Studies at KU

On Going Disaster Research Studies at KU

<table>
<thead>
<tr>
<th>Level</th>
<th>Topic</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Sc</td>
<td>Earthquake Vulnerability Analysis of Mid Part of ward No 10 Kathmandu Municipality , 2007</td>
<td>Data Collection Characterization Analysis with GIS</td>
</tr>
<tr>
<td>B. Sc</td>
<td>Earthquake Vulnerability Analysis of Northern Part of ward No 10, Kathmandu Municipality, 2007</td>
<td>Data Collection Characterization Analysis with GIS</td>
</tr>
<tr>
<td>B. Sc</td>
<td>Earthquake Vulnerability Analysis of southern Part of ward No 10 Kathmandu Municipality, 2007</td>
<td>Data Collection Characterization Analysis with GIS</td>
</tr>
</tbody>
</table>

On Going Disaster Research Studies at DMSDC

- People Centered Hazard and Vulnerability Mitigation in Disaster Risk Management DelPHE/DFID, UK.
  - DDC, NU, UK.
  - DMSDC, DESEE ,KU, Nepal
  - BRAC University, Bangladesh
  - BPKIMS Dharan , Nepal

Contents of the Presentation

- Disaster Research Studies at KU
  - Undergraduate Research
  - Graduate Research
  - Departmental Research
- On Going Disaster Research Studies at KU
  - Undergraduate Research
  - Graduate Research
  - Departmental Research
- Proposed Disaster Research Studies at KU
People Centered Hazard and Vulnerability Mitigation in Disaster Risk Management at DMSDC

- Methodology
  - Survey: individual questionnaire interview, FGD- PRA
  - Establishment of Risk and Resilience Committee (RRC)
  - Action Research

Interaction with Communities

Proposed Disaster Research studies at DESE/DMSDC

<table>
<thead>
<tr>
<th>Topic</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource Allocation and Habitation Planning for Disaster Risk Reduction in Pachkhal Valley</td>
<td>PRA GIS Application</td>
</tr>
<tr>
<td>Community Based Hazards and Vulnerability Reduction for sustainable livelihood: a Case Study of Jugedhoro Women Goat Rearing Group</td>
<td>PRA Action research</td>
</tr>
</tbody>
</table>
Research Methods in Risk Assessment

Dr. Anup Ghimire, M.D
Senior Resident
Department Of Community Medicine
B.P. Koirala Institute Of Health Sciences
Dharan, Nepal

Selecting Information

- The information in a communication should reflect a systematic theoretical perspective, capable of being applied objectively.

Candidates for such a perspective

1. Mental model analysis
2. Calibration analysis
3. Value-of-information analysis

Mental Model Analysis

Communications should be made to convey a comprehensive picture of the process creating and controlling a risk.

Advantages of mental model analysis

- It allows the emergence of lay beliefs that never would have occurred to an expert.

Contd......

- It reduces the chances of omitting critical concepts, by disciplining the experts to define their universe of expertise in terms of the influence diagrams.
- It reduces the clutter created by peripheral information that is routinely included in messages, without much to its role.

Contd......

- It increases the chances of revealing the terms in which laypeople express their beliefs.
Calibration Analysis

- Communication should attempt to give recipients the appropriate degree of confidence in their beliefs.
- They would focus on cases where people confidently hold incorrect beliefs that could lead to inappropriate actions or lack of confidence in correct beliefs needed to act on them.

Value -of -information analysis

- Value-of-information analysis is the general term for techniques determining the sensitivity of decisions to different information.
- Communication should be attempted to provide the pieces of information having the largest possible impact on pending decisions.

Formatting Information

- After selecting appropriate information, it must be presented in a comprehensive way.
- The terms that recipients use for understanding individual concepts and the mental models that they use for integrating those concepts should be taken into account.

Evaluating Communications

- Effective risk communication can help people to reduce their health risks that they take.
- Misdirected communications can prompt wrong decisions by omitting key information or failing to contradict misconceptions.

Conclusion

Quantitative or qualitative both research methods need an anthropological background and in depth understanding of culture, religion and financial background to perceive and assess the Risk Resilience, so extra attempt is needed in our education & communication to reach in grass root level for proper evaluation.
Challenge in Risk Communication
Kiran Pokhrel
2nd July 2007

Development of Nepali Media
Before 1990
• Gorkhapatra
• Rising Nepal
• Radio Nepal
• Nepal Television
• Mission paper

After 1990
• Daily- 1 Dozen
• TV-6
• Radio-147
• Magazine-
• On line-
• Weekly Paper

Media Coverage
2000 onwards
• Increase in coverage
• Increase in In-depth reporting
• Analysis of problems
• Priority of the media houses- Beat Reporting
• Increased knowledge of Media Persons

Case study
2005 to 2006(Kantipur Daily)
Number of Reporting: 88
National : 28
International : 60

Covered Issues
• Flood : 15
• Land Slide : 8
• Hailstorm : 3
• Fire : 2
Common Issues Coverage

- Agriculture and Food Security: x
- Health and Nutrition: x
- Education: x
- Housing, Physical Planning and Infracture: x
- Livelihood: x
- Drinking Water and Sanitation: x
- Cooperation: x
- Rescue and Relief: x
- Governance: x

Trend

- Only Event Reporting
- No opinion/Depth Research Article

Case

Nepal (Humla)
- 2005 July 3: 6 people killed and 5 disappeared
- News reported after 4 days
- Single Column

India (Simla)
- Flood of Himachal Pradesh
- Photo grapes with 3 column news

Facts

- Average Killed by Flood: 350
- Average People by Disaster: 1200
- Annual Average Loss: 5 hundred m.

What Could Be Done

- More Sensation
- Established Issues of Development
- Dissemination of Research
- To increase sensitivity to a broad range of disaster issues at the personal, interpersonal and organizational levels;

contd.

- To develop an understanding of basic concepts for improving skills to analyze issues, roles, relationships and situations from a Disaster perspective
- Participation with Media
THANK YOU
Doing Postgraduate Research in Disaster Risk and Resilience from Nepalese Prospective

Komal Raj Aryal
Research Associate
Disaster and Development Centre
Northumbria University, UK

Content
• Introduction
• Problem Statement
• Areas of study
• Methodology
• Results
• Disaster Scenarios in Nepal (geographical distribution of hazards)
• Challenges

Why disaster risk reduction study is important in Nepal?

CATCHMENT AREA

The Ganges, The Brahmaputra, The Meghna River

Source: SEED India

Environmental disaster risk in Nepal:

March 2006
March 2007

April 2004
April 2007

May 2006
June 2007
Epidemics: Cholera, dengue fever, and Japanese encephalitis
Storms: Thunderstorms, hailstorms, snowstorms, and windstorms
Flood: Flood and heavy rain
Landslides: Mudslides, debris flow, landslides, GLOF
Avalanches
Fire: House fire, forest fire, and industrial fire.
(1900-2005)
13,825 disaster events
7,006,764 human casualties

Depiction of Cause of Human Casualties by Disaster in Nepal (1900-2005)
Time to act now with evidence-based scenarios!

Thank you!
Methods for Risk and Resilience Research in Nepal

Dr Samantha Jones, Northumbria University

Delphe Seminar, July 2007

Presentation Aims

• Brief introduction to first Delphe research project
• Application of various research methods in this research
• Discussion (time permitting) of areas for future research
• Application of research methods in HE teaching

Research is one of the component aims of the Delphe project

Successful academic research may include:

– Valuable insights from field work
– Rigorous empirical data collection
– Contribution to theoretical debate
– Topical/ original/ novel

• Too early to evaluate the success of RRC
• One research project has begun:

Broad hypothesis

– Committees with a higher capacity to implement risk reduction activities (e.g. through strong socio-political networks/ organisational skills) may less well represent the needs of the most vulnerable

Action Research

• This is an action research project as researchers are actively involved in transforming the situation in which they research -
• with the intention of improving the lives of the participants and beyond (redress power/ create change/ influence policy/ empower and build capacity/ problem solve) PROCESS: establishing 3 RRCs

Considerations: process shapes the outcome of research

Participatory Appraisal

As part of the establishment of the RRCs, PA workshops were held on the premise that:

– PA often generates data quickly, good for initial, exploratory research
– Diagrammatic and graphical tools may help participants feel at ease and engage more easily with the subject
– The philosophy is congruent with our own: experts as facilitators, learning from local knowledge, reveals local priorities
– Can be empowering especially if oriented to problem solving
Participatory Appraisal

Process - Initial workshops included: matrix ranking, spider diagrams, hazard mapping; vulnerability assessment; institutional importance

Considerations: Does not generally meet the standards for publishable social science research; limited applicability

Qualitative Methods

• Aim to be adopted in this research to: better capture diversity (e.g gender, wealth)
• Understand context
• Explore people’s experiences, feelings, meanings attributed to the world, ‘rich/thick’, detailed, nuanced, complex

Qualitative Methods

Process: recording meetings to expose feelings, who speaks, listens; interview with committee members

Considerations: Time consuming (e.g. translating and transcribing); prolonged engagement may be needed to enhance trust, openness and reliability

Quantitative Methods

• Also questionnaire survey in wider community to create a representative sample (transect sample)
• Using a combination of closed and open ended questions to generate categorical and ordinal data to enable statistical analysis

This research project: 200 people interviewed at each site – risk priorities and perceptions

The data (hopefully) will not only enable the research question to be addressed, but also be useful to the RRCs, policymakers as it examines:
– What are people’s priorities for risk reduction
– What factors affect their vulnerability and wellbeing
– Where are the hazards
– At what level risks might be best managed
– What actions are already being taken to reduce risk
– What ‘resources’ might be most useful for strengthening resilience

Ideas for future research

• May be other outputs from data generated
• Evaluative/reflective paper – key role for Sabita and Anup
• What other avenues could be explored as part of this link?
  – Scope for co-authored papers, across disciplines/countries and
  – Combining experience in publishing in international peer reviewed academic journals with good field understanding
DM research methods in HE

For example:
Teach research methods and set research questions/ projects for students.
Students can design research project e.g.
- Compare levels of disaster preparedness between two communities
- Are risks gendered?
- Evaluate the effectiveness of a DRR project
Appendix 1: Programme

Day 01 / 1st July 2007

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Registration</td>
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<tr>
<td>09:30 – 12:00</td>
<td>Opening Session</td>
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<tr>
<td>09:30 – 09:35</td>
<td>Welcome Address: Dr. S.N. Khanal, DMSDC, KU</td>
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<tr>
<td>09:35 – 09:45</td>
<td>Chief Guest: Mr. Pratap Kumar Pathak, Joint Secretary, Ministry of Home Affairs Nepal</td>
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<tr>
<td>09:45 – 09:55</td>
<td>Special Guest Address: Mr. John Fry, Director, British Council</td>
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<tr>
<td>09:55 – 10:05</td>
<td>Inauguration by lightening and Inaugural address: Prof. B.M. Tuladhar Register, KU</td>
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<tr>
<td>10:05 – 10:20</td>
<td>Key Note Address: Dr. Andrew Collins, Director, Disaster and Development Centre, Northumbria University</td>
</tr>
<tr>
<td>10:20 – 10:30</td>
<td>Appreciation to Pachkhal Valley Risk and Resilience Committee by Mr. John Fry (Community Emergency Kits Handover)</td>
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<tr>
<td>10:30 – 10:40</td>
<td>Vote of Thanks Prof. S.N. Rimal Dean, School of Science</td>
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<tr>
<td>10:40 – 11:00</td>
<td>Tea Break</td>
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<tr>
<td>11:00 – 12:50</td>
<td>Session 1: Overview and Outline</td>
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<td></td>
<td>Chair: Mr. Somlal Subedi, Joint Secretary, Ministry of Local Development Nepal</td>
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<tr>
<td>11:00 – 11:20</td>
<td>Importance of Disaster Risk Reduction Studies in South Asia: Dr. Rohit Jigyasu, Visiting Faculty, Research Centre for DMUCH, Ritusmeikan University, Kyoto, Japan</td>
</tr>
<tr>
<td>11:20 – 11:40</td>
<td>Disaster Risk Reduction in Bangladesh Higher Education Curriculum: Dr. Iftekhar Ahmed (BRAC)</td>
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<tr>
<td>11:40 – 12:00</td>
<td>Disaster Risk Reduction in Nepalese Higher Education Curriculum: A Case Study from Kathmandu University: Dr. S. N. Khanal</td>
</tr>
<tr>
<td>12:00 – 12:20</td>
<td>Disaster Risk Reduction Education in Nepalese School Curriculum: Mr. Haribol Khanal, Director General, Curriculum Development Centre, Ministry of Education, Nepal Government</td>
</tr>
<tr>
<td>12:20 – 12:40</td>
<td>Disaster Risk Reduction in British Higher Education Curriculum: A Case Study from Northumbria University: Dr. Andrew Collins and Dr. Sam Jones (DDC, NU)</td>
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<tr>
<td>12:40 – 13:00</td>
<td>Questions and Answers</td>
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<tr>
<td>13:00 – 14:15</td>
<td>Lunch</td>
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</tbody>
</table>
14:15 – 16:30 Session 2: Challenges of DRR Teaching in Higher Education
   Chair: Professor S. Nagesh, Head, Department of Community Medicine, BPKIHS/ Lady Harding Medical College, Government of India
14:15 – 14:35 Mr. Md. Hafizul Hasan, BRAC University
14:35 – 14:55 Dr. Paras K. Pokharel, BPKIHS
14:55 – 15:15 Mr. Kumud Kafle, Disaster and Sustainable Development Centre, KU
15:15 – 16:15 Discussion
16:15 Adjourn
18:00 Reception Dinner
Day 02 / 2\textsuperscript{nd} July 2007

09:30 – 11:30 Session 3: Research Methods in Disaster Risk Reduction Study

Chair: Dr. Iftekhar Ahmed, BRAC University
09:30 – 09:50 BRAC
09:50 – 10:10 Kathmandu University: Mrs. Sabita Khanna
10:10 – 10:30 Dr. Anup Ghimire, Senior Researcher, Community Medicine and Tropical Disease, BPKIHS
10:30 – 10:50 Challenges in Researching Disaster Risk Reduction for Risk Communication in Nepal: Kiran Pokharel, Senior Radio Journalist
10:50 – 11:05 Tea Break

Chair: Dr. S.N. Khanal, DMSDC, KU
11:05 – 11:25 Doing Postgraduate Research in Disaster Risk and Resilience from Nepalese Prospectives: Komal Raj Aryal, DDC, Northumbria University
11:25 – 11:55 Dr. Sam Jones, DDC, Northumbria University
11:55 – 12:25 Discussion
12:25 – 13:30 Lunch
13:30 – 16:00 Session 4: Participatory Curriculum Development Exercise (A Model Curriculum for Disaster Risk Reduction in Higher Education) in 3 groups.
13:30 – 13:40 Orientation and Outline of the Activities: Dr. Andrew Collins
13:40 – 15:10 Group Work for Model DRR Curriculum
15:10 – 15:20 Group 1 Presentation
15:20 – 15:30 Group 2 Presentation
15:30 – 15:40 Group 3 Presentation
15:40 – 16:00 Discussions
16:00 – 16:10 Closing Remarks: Dr. Andrew Collins, Director of DDC, Northumbria University
17:00 Departure to Kathmandu
18:30 Dinner at Kathmandu
## Appendix 2: Name List

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Suresh Raj Sharma</td>
<td>KU</td>
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<tr>
<td>Prof. Bhadra Man Tuladhar</td>
<td>KU</td>
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<tr>
<td>Mr. Mukund Prasad Upadyaya</td>
<td>KU</td>
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<tr>
<td>Sharad C. Bhandari</td>
<td>RSS</td>
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<td>Bijaya Raj Ghimire</td>
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<td>Bidur K.C.</td>
<td>TU</td>
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<td>Mr. John Fry</td>
<td>BC</td>
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<tr>
<td>Dr. Andrew Collins</td>
<td>DDC,NU</td>
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<tr>
<td>Dr. Samantha Jones</td>
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<td>Hideyuki Shiroshta</td>
<td>DDC,NU</td>
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<td>Komal Raj Aryal</td>
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<td>Dr. Iftekhar Ahmed</td>
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<td>Md. Hafizul Hasan</td>
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<td>Md. Humayun Kabir</td>
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<td>Ms. Dilruba Haider</td>
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<td>Dr. Anup Ghimire</td>
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<td>Dr. Paras K. Pokharel</td>
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<tr>
<td>Ms. Priaya Pokharel</td>
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<tr>
<td>Dr. S.N.Khanal</td>
<td>DMSDC,KU</td>
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<tr>
<td>Mr. Kumud Raj Kafle</td>
<td>DMSDC,KU</td>
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<tr>
<td>Ms. Sabita Khanna</td>
<td>DMSDC,KU</td>
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<td>Dr. Bipin Pathak</td>
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<td>Dr. R.B. Kayastha</td>
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<td>Dr. Sagar Raj Sharma</td>
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<td>Dr. Rana B. Chsetri</td>
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<td>Ms. Salu Adhikari</td>
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<td>Mr. Paul White</td>
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<td>Mr. Suresh Bhattarai</td>
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<tr>
<td>Name</td>
<td>Institution</td>
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<tr>
<td>Dr. J.B. Chauhan</td>
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<td>Dr. P.C. Adhikari</td>
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<td>Dr. Vishnu Dangol</td>
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<td>Ram Prasad Regmi</td>
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<td>Kiran Pokharel</td>
<td>Radio</td>
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<tr>
<td>Mr. Hitoshi Kato</td>
<td>DWIDP</td>
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<tr>
<td>Mr. Mahendra Kumar Khamyahang</td>
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<tr>
<td>Mr. Tanka Adhikari</td>
<td>PVRRC</td>
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<tr>
<td>Ms. Phanindra Adhikary</td>
<td>IRD NEPAL</td>
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<tr>
<td>Mr. Sujit Ale</td>
<td>KantipurFM</td>
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<td>Ahmad Kamruzzaman</td>
<td>KU</td>
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<td>Romesh Tuladhar</td>
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<td>Bhagubali Timilsina</td>
<td>NepalISP</td>
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<td>Renuka Bhandari</td>
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<tr>
<td>Jhala Kumari Dulal</td>
<td>RRC</td>
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<tr>
<td>Gyänendra Chaudhary</td>
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<tr>
<td>Dr-Rujan B. Kayastra</td>
<td>KU</td>
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<td>Sujan Maratha</td>
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KU: Kathmandu University
NNS: National News Service
GoN: Government of Nepal
TU: Tribhuvan University
BC: British Council
DDC, NU: Disaster and Development Centre, Northumbria University
BRAC: BRAC University
Rits: Ritsumeikan University
BPKIHS: B.P. Koirala Institute of Health Sciences
DMSDC, KU: Disaster Management and Sustainable Development Centre, Kathmandu University
UMN: United Mission to Nepal
JICA: Japan International Cooperation Agency
DWIDP: Department of Water Induced Disaster Prevention
DMRRC: Dhankuta Municipality Risk and Resilience Committee
PVRRC: Pachkhal Valley Risk and Resilience Committee
IRD NEPAL: International Relief and Development
KUSMS: School of Medical Sciences, Kathmandu University
BVDC: Baluwa Village Development Committee
Appendix3: Suggested Development of Collaboration

Further collaborative activities for programmes at KU, BRACU, BP/Koirala and Northumbria to focus energies around common interests

- Should be consistent with DELPHE component of development.
- Joint research papers (eg. Cross-cultural, comparative themes).
- SWOT analysis as pre-condition to further developments.
- Linkages between Health Sciences and other disciplines (eg. Environment) within KU, between all universities, and within countries. Wider departmental involvements.
- Staff exchange (eg. 1 semester certificate course at BRAC) – capacity building.
- Community-to-community exchanges.
- Joint conference in 2008.
- Additional research proposals.
- Brief description (one paragraph each) describing research interests of individuals
- SAARC regional university – BU & KU could host the Disaster Studies programme.
- BRAC could help KU in capacity building and assisting in curriculum development for (say) postgraduate courses. KU/Northumbria can help BRAC test RRC concept within BRAC community development setup.
- Extension of RRC concept in Bangladesh.
- Exchange for capacity building and marketing, recruitment, scholarships, etc.
- Creating a bridge in public health in disasters between BRAC, BP, DDC and KU.
- Faculty visits between all institutions – work towards teaching for at least a semester, not just visits.
- Research on media communication and disaster communication – common themes inter-country (Bangladesh - Nepal)
Joint research between universities incorporating NGO sector
Short term courses attached to the (exchange visits as) joint programmes for practitioners as means to reduce costs of exchanges and other developments.
Sharing good practice based on workshops and community involvements.
Comparative research between countries/places on key topics such as floods and landslides
Four Universities to form larger pool of ‘experts’ that may be available for consultancy through joint expertise.
PhD research

Suggested actions to incorporate disaster reduction experience beyond universities of mutual benefit to universities, policy makers and communities beyond the university

Incorporation of traditional knowledge would be a different activity in the various countries/locations. Needs a guide on the process of acquiring local/indigenous knowledge.
Student internships with NGOs as a way of university being in close contact with the community
Open a web site for Delphe project owned by the group. Information resource.
NGOs and CBOs as an avenue of information between university and community
Feedback to communities, policy makers and practitioners.
Training for the media for accurate reporting of risks, and to feed back awareness to communities.
Needs analysis workshops for people beyond the university.
Bring NGO, practitioner or other people to contribute to modules – guest speakers
Communities as case studies that can be also used by students for action research activities
- Manual as a compendium of Local Knowledge that academics and communities contribute to.
- Delphe project newsletter.
- Facilitate NGO research needs
- Feed research results back to the community
- Encourage students to present at seminars and conferences (particularly those of international organisations)
Appendix 4: Photos

Day 01 / 1st July 2007