Disaster and Development Centre

Disaster Management and Sustainable Development Centre

BRAC University

B.P. Koirala Institute of Health Sceiences

Bangladesh – Nepal – UK Seminar On Disaster Risk Reduction Studies in Higher Education: Linking Communities for Livelihood Security

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

Proceedings

Funded by

DelPHE
DEVELOPMENT PARTNERSHIPS IN HIGHER EDUCATION

British Council

Contents

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[3] emphasised 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[4] 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.

[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

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

Lack of Maintenance → Absentee Ownership → Poverty → Livelihood Insecurity

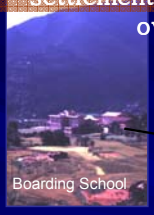
Risks from aggressive tourism and development

'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 resou



Boarding School

Future Residential Areas

Local Ownership

Land traditionally owned by outsiders

Bungamati

Guthi

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

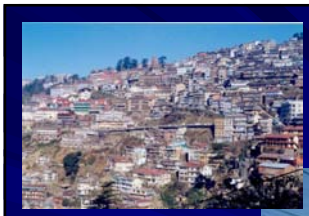
Impact of Changing Habitation Pattern

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



-Poor maintenance
- Misperceptions
- Subdivision

Transformation Processes in Urban Areas

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

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.

Risks during Post Disaster Recovery

Northern Kashmir Earthquake 2005

Mis-perceptions!

Natural or Cultural Disaster ?

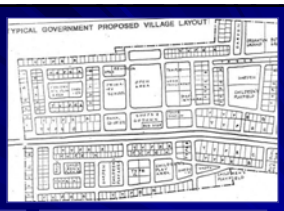
Local Craftsmen – Where are they?

The Survivors !

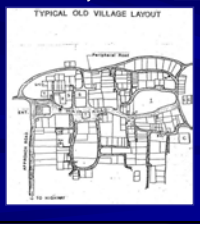
Post Earthquake Reconstruction

Imported Technology as Rigid Design Packages – How Sustainable?

New Layout



Traditional layout



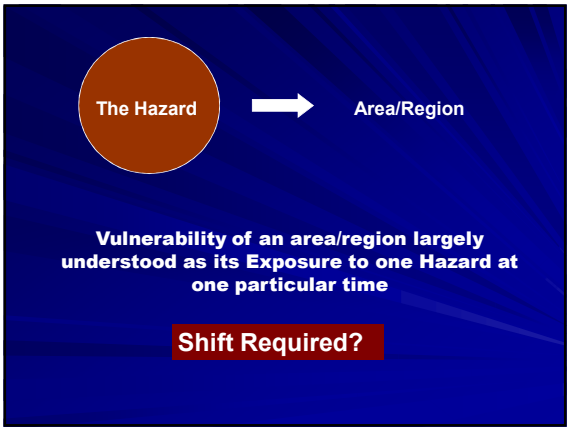
Culturally Compatible?

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

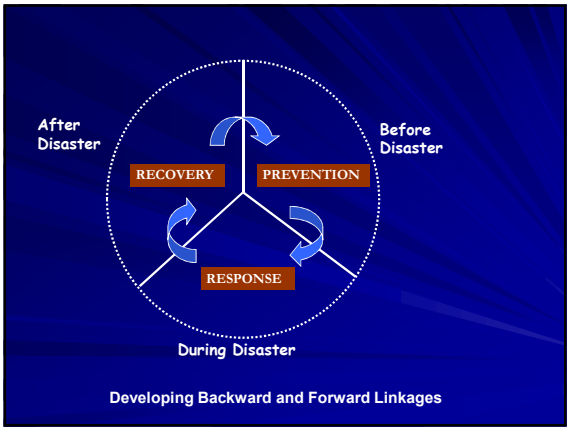
Disaster Risk Reduction Studies in South Asia

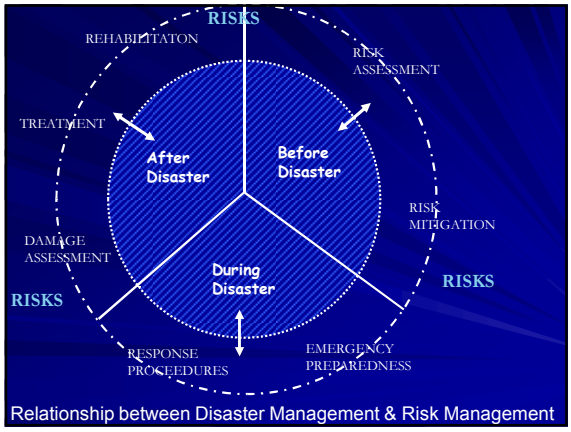
Thrust Areas



Vulnerability 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.





Multiple factors affect each other for increasing disaster vulnerability

- Disaster Risks are result of complex phenomena, linked not only to the catastrophic events like earthquakes but also to the slow and progressive events/factors that increase vulnerability to disasters
- Momentary events like earthquakes or floods just serve as the catalysts.

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 ….

Linking Research to 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

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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)

- 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.

(ADRC'2006)

(Digital Globe, 2004)

Top 10

Natural disasters by number of deaths - 2005

Earthquake, October	Pakistan	73 338
Hurricane Stan, October	Guatemala	1 513
Hurricane Katrina, August	United States	1 322
Earthquake, October	India	1 309
Flood, July	India	1 200
Earthquake, March	Indonesia	915
Flood, June	China, P Rep	771
Earthquake, February	Iran, Islam Rep	612
Measles Epidemic	Nigeria	561
Flood, February	Pakistan	520

Countries most hit by natural disasters - 2005

China P Rep	31
India	30
United States	16
Afghanistan	13
Bangladesh	12
Pakistan	11
Vietnam, Indonesia, Romania	10
Iran (Islam Rep), Russia	9
Haiti	8
Mexico, Turkey	7

Victims (killed and affected) of natural disasters per 100,000 inhabitants - 2005

Comoros	42 512
Malawi	37 376
Guyana	35 909
Niger	30 863
Cuba	22 914
Albania	11 240
Zambia	10 666
Djibouti	9 859
Kenya	7 497
Mozambique	7 461

(ISDR 2006) 3

Summarized Table of Natural Disasters in NEPAL from 1934 to 2006

Source: "EM-DAT: The OFDA/CRED International Disaster Database

	Events	Killed	Injured	Homeless	Affected	Total Affected	DamageUS ('000's)
Drought	4	0	0	0	4,400,000	4,400,000	0
ave. per event		0	0	0	1,100,000	1,100,000	0
Earthquake	5	9,929	6,771	35,000	520,230	562,001	306,000
ave. per event		1,986	1,354	7,000	104,046	112,400	61,200
Epidemic	17	4,181	0	0	110,551	110,551	0
ave. per event		246	0	0	6,503	6,503	0
Extreme Temperature	3	108	210	0	0	210	0
ave. per event		36	70	0	0	70	0
Flood	27	5,478	1,024	81,925	2,326,045	2,408,994	990,613
ave. per event		203	38	3,034	86,150	89,222	36,689
Slides	16	1,728	124	80,200	362,294	442,618	0
ave. per event		108	8	5,013	22,643	27,664	0
Wild Fires	2	88	0	54,000	0	54,000	6,200
ave. per event		44	0	27,000	0	27,000	3,100
Wind Storm	6	97	19	0	165	184	3,600
ave. per event		16	3	0	28	31	600

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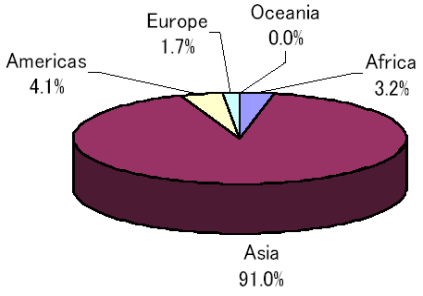
Number of Killed (World/Regions) 2005



(ADRC'2006)

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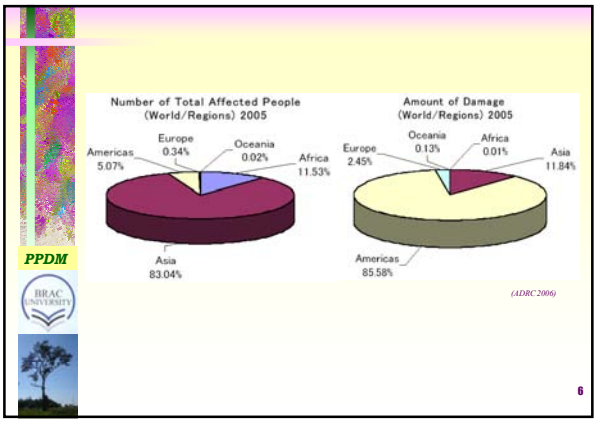

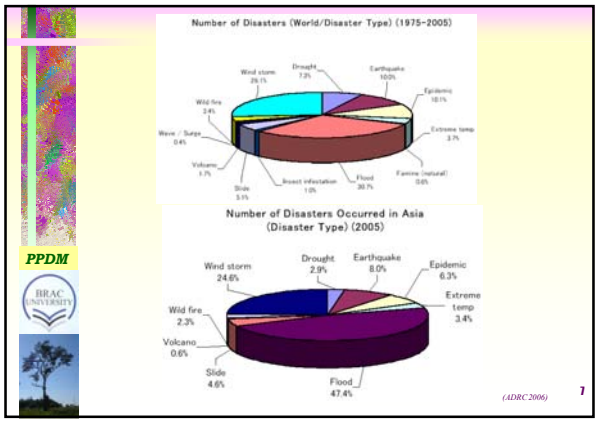

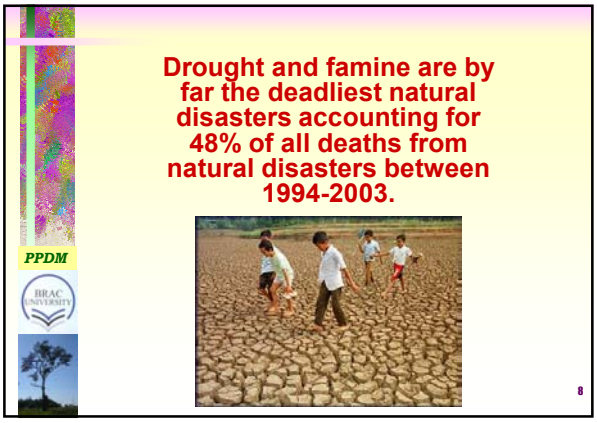

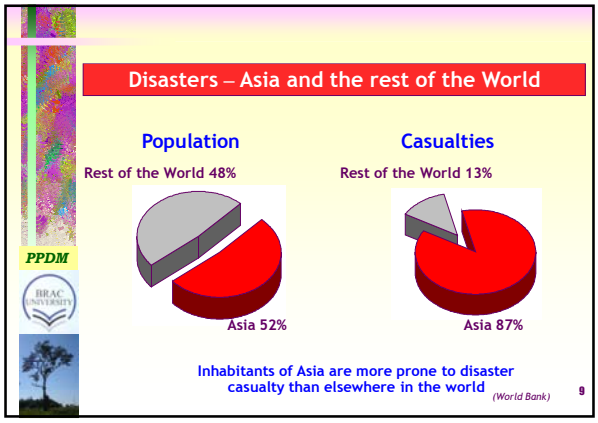

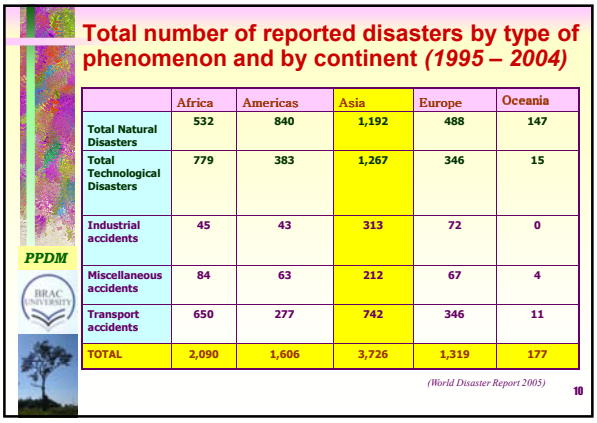

	Africa	Americas	Asia	Europe	Oceania
Total Natural Disasters	532	840	1,192	488	147
Total Technological Disasters	779	383	1,267	346	15
Industrial accidents	45	43	313	72	0
Miscellaneous accidents	84	63	212	67	4
Transport accidents	650	277	742	346	11
TOTAL	2,090	1,606	3,726	1,319	177

(World Disaster Report 2005)

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**

(Population Reference Bureau)

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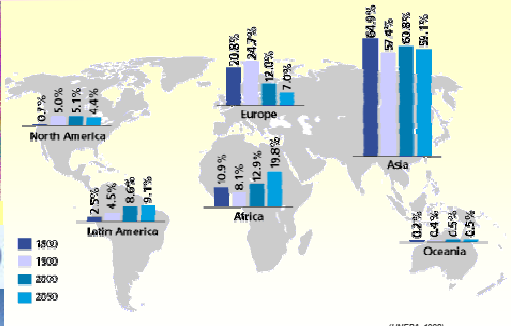

(UNFPA, 1998)

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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.

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- As for Japan, its share of world GDP will decrease from 14% in 2000 to 7% in 2030.
- England and France will disappear from the table of the five foremost world powers.
- India will be first among the next 10 powers, overtaking England and France.

(Free World Academy)

(www.silicon.com)

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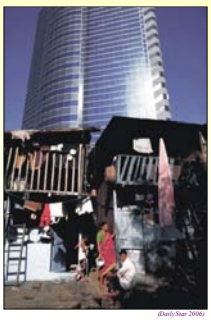
Economic Disparity

- 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.

(UNESCAP 2005)



(Daily Star 2006)

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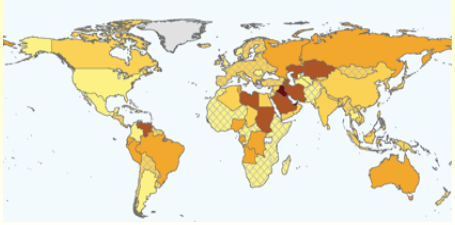
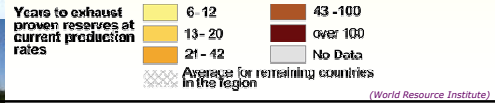
ENERGY - OIL

Global Oil Reserves-to-Production Ratios, 2004





(World Resource Institute)

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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

(http://tools.coralreef.org)

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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

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Impact of Deforestation

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

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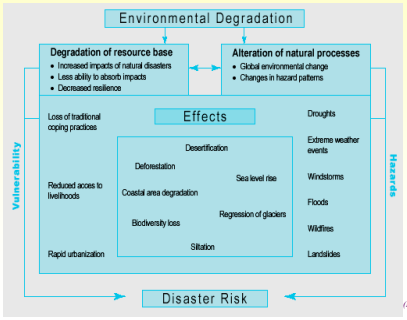
Link between Environmental Degradation, Natural Hazards and Vulnerability



(ISDR 2004)

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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.

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(www.concierge.com)

15 largest cities in the world in 2000 and forecasts for 2010 (population in millions)

2000		2010	
26.4	Tokyo	26.4	Tokyo
18.1	Mexico City	23.6	Bombay
18.1	Bombay	20.2	Lagos
17.8	Sao Paulo	19.7	Sao Paulo
16.6	New York	18.7	Mexico City
13.4	Lagos	18.4	Dhaka
13.1	Los Angeles	17.2	New York
12.9	Calcutta	16.6	Karachi
12.9	Shanghai	15.6	Calcutta
12.6	Buenos Aires	15.3	Jakarta
12.3	Dhaka	15.1	Delhi
11.8	Karachi	13.9	Los Angeles
11.7	Delhi	13.79	Metro Manila
11.0	Jakarta	13.7	Buenos Aires
11.0	Osaka	13.7	Shanghai

Extract from *The State of the World's Cities*, UN-HABITAT, 2001.

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.

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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

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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

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Disaster risk management on a regional level

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POLICY

LEGAL ARRANGEMENTS

INSTITUTIONAL FRAMEWORK

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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.
- District level multi-hazard disaster management planning initiated since 1995 and has picked up momentum post-tsunami 2004.

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RECENT DEVELOPMENTS IN S. ASIA:
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) Partner-ship development, (c) Expanding Mitigation, Preparedness and Response across a broader range of hazards, and (d) Strengthening emergency response systems.

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RECENT DEVELOPMENTS IN S. ASIA:
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.

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- 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.

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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.

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- 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.

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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.

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Thank You

Disaster Risk Reduction in Nepalese Higher Education Curriculum
- A case study from Kathmandu University -

BY

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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

Establishment & Programs

- **Higher Education Link** was established between **Kathmandu University** and **North Umbria 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

Major activities accomplished under this link include:

Establishment of

- **Disaster Management and Sustainable Development Center (DMSDC)**

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 workshop/ 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 – **Geo-hazard and Environmental Geology**
    - **Course** – B. Sc. – **Earth Hazard** (optional)

Other Higher Education initiatives in Nepal in Disaster Risk management

- **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…

- To take part in disaster management in the surroundings

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 practioner
- 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

northumbria UNIVERSITY
Disaster and Development Centre

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

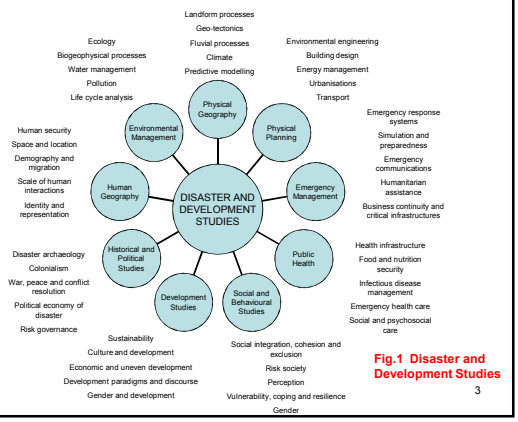


Fig.1 Disaster and Development Studies

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

Disaster Management and Sustainable Development

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

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

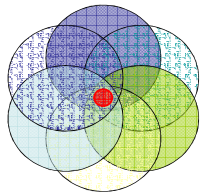
- PgC/PgD/MSc Disaster Management and Sustainable Development
- Disaster Resilience and Sustainable Livelihoods
- Social Care in Disaster and Development (SCDD)
- Trauma Risk Reduction (TRRP)
- Infectious Disease Risk Management (IDRM)
- Integrated Emergency Management and Security
- Migration and Displacement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

Learning with Partners

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

Structure and Function

Intersecting Programmes

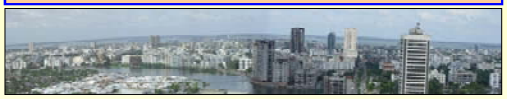


1. Support to Practitioners

2. Research, Teaching and Learning

3. Methodological and Policy Development

Disaster Risk Reduction in Bangladesh Higher Education



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Bangladesh – Nepal – UK Seminar on

Disaster Risk Reduction Studies in Higher Education: Linking Communities for Livelihood Security

Kathmandu University, Dhulikhel, Nepal

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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.

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- 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.

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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 undergrad and master's level at the department of Urban & Regional Planning.*
  - *Also research and publications at the Department of Civil Engineering, ITN, etc.*

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- **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 FULLFLEGED HIGHER EDUCATION PROGRAM GRANTING A MASTER'S DEGREE IN DISASTER MANAGEMENT

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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.

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ROLE OF BRAC UNIVERSITY & BRAC

- BU is within BRAC's nationally important organizational framework. Right place to run program in this nationally significant field.
- Linkage to BRAC with its extensive infrastructure and experience is an advantage for BRAC University.
- Because course is targeted largely for NGOs, relevant within BRAC.
- Allows forming an important bridge between education and practice and dissemination of research findings to the practical field via BRAC programs.
- Useful for other departments: architecture, business administration, economics and soc

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- **Elective course on disaster risk management to be offered in the Masters of Development Studies (MDS) program, creating possibility for obtaining specialization in disaster management within development studies.**

DEV 617 Disaster Risk Management

This course provides a broad and detailed understanding of disasters – their threats, consequences and organizational management mechanisms, with emphasis on their relationship to the wider context of development. The objective is to enable disaster management practitioners, or those who might be involved in future disaster management practice, research or education, to build or enhance their capacity for working in this field. The course is multi-disciplinary and draws upon a wide range of case studies, research findings and experiences of local governments, civil society and NGOs, both from Bangladesh and elsewhere in the developing world. Contents: Organizational and policy context of disaster management, Assessment of risk and vulnerability, Risk communication, training and public education, Preparedness and vulnerability reduction, Response and recovery strategies, Rehabilitation and long-term development, Community-based approaches, Planning, implementation and management of interventions. 3 credits.

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TARGET

- Bangladeshi organizations a source of students and also partners. Also govt departments - DMB, health, environment, fire service, armed forces, etc.
- International and national NGOs.
- Over the long term, the course is expected to attract students from other countries, particularly in the South Asian region.
- Multi-disciplinary course to produce graduates who can work in disaster risk reduction field in wide-ranging capacities and roles.
- Practice-oriented course, in lieu of academic qualifications, professional/practical experience is also considered.
- Wide 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.

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FACULTY

- 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 from different disciplines teach.

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CONTACTS

- 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), Swinbourne University (Australia) - are also sources of exchange and partnership.

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PROGRAM STRUCTURE

- **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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PROGRAM STRUCTURE

Level	Duration	No. of courses	Credit
Certificate	1 semester	6	15
Diploma	2 semesters	12	30
Master's	3-4 semesters	2	6
		Dissertation	9
		TOTAL	45

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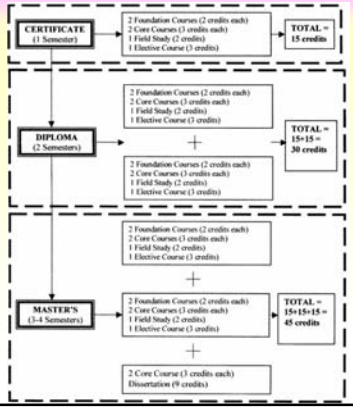

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SCHEDULE

- 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.

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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%).

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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.

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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).

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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)

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▪ *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)

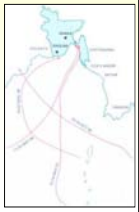
1. Disaster Preparedness and Vulnerability Reduction
2. Independent Study in Disaster Management II

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*)



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■ *Master's Program*

A) Core Courses (3 credits each)

1. Assessment of Risk, Vulnerability and Capacity
2. Dissertation Seminars

B) Dissertation (9 credits)

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CHALLENGES AND OPPORTUNITIES OF TEACHING DRR IN HIGHER EDUCATION

Dilruba Haider
BRAC University
Dhaka, Bangladesh
2 February 2007

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

Challenges cont...

- 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

STUDENTS

- 1st batch had 16 students, while the 2nd batch 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 six
- Each batch had one student from academic sector

Strength of teaching DRR in Bangladesh:

- 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)

Strength of teaching DRR in Bangladesh cont.....

- BRAC programme tries to reflect that very learning into the carriculum
- 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 carriculum)

Thank you

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

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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.

Compression

- Subjects' estimates showed less dispersion than did the statistical estimates.

Availability Bias

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

Miscalibration of confidence judgment

- 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.

Contd.

- 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.*

2. Respond Mode problems

- 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

3. Defining risk

- 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

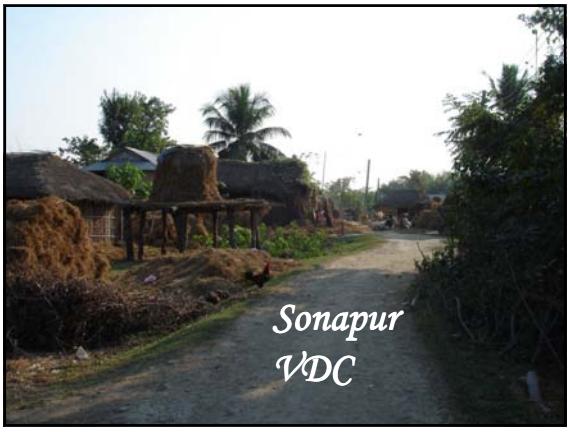
- As knowledge accumulates about people's intuitive theories of risk, it will become easier to predict which details know and ignore, as well as which omissions they will notice and rectify.

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.


Sonapur
VDC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SONAPUR V.D.C


INSTITUTE OF HEALTH SCIENCES
TATA

Will I have a "future" ???

Issues and Challenges of Disaster Risk Reduction Teaching in Higher Education.

Kumud R. Kafle, Sanjay N. Khanal, Rana B. 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

Issues and Challenges of Disaster Risk Reduction Teaching in higher education.

- Conceptions
- Students' Interests
- Research facilities and funding
- Course structures
- Roles of parents
- Linkages /coordination to governmental and nongovernmental organizations
- Joint research
- Reliability data
- Capacity buildings
- Availability of hardware and software
- Faculty members

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/INGOs (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 60-70 (Environment Science and Engineering) in Undergraduate program**
- **Computer availability is 16 numbers only.**
- **Data availability**
- **Space availability**

Available Hardware

- **Computers P4 16 Nos.**
- **GPS (Garmin 60) 3 Nos**
- **GPS (Trimble) 1 No.**

Available Software

- **ArcView 3.2a**
- **ArcView 3.2**
- **ArcGIS 9 (desktop)**
- **ILWIS 3.0 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

RESEARCH ON DISASTERS
AT
BRAC UNIVERSITY

Postgraduate Programs in Disaster Management (PPDM), BRAC University Dhaka, Bangladesh

Md. Humayun Kabir, *Coordinator*
Md. Hafizul Hasan, *Lecturer*

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

CERTIFICATE	2 Foundation Courses (2 credits each) 2 Core Courses (3 credits each) 1 Elective Course (3 credits) 1 Field Study (2 credits) 15 CREDITS	TOTAL 15 CREDITS
+		
DIPLOMA	2 Foundation Courses (2 credits each) 2 Core Courses (3 credits each) 1 Elective Course (3 credits) 1 Field Study (2 credits) 15 CREDITS	TOTAL 30 CREDITS
+		
MASTERS	2 Core Courses (3 credits each) Dissertation (9 credits) 15 CREDITS	TOTAL 45 CREDITS

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

- Reverence 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

- Flood in Baridhara: Causes and Management Approaches
- Damage Assessment of High Schools/*Madrasas* inside Dhaka-Narayanganj-Demra (DND) Embankment Project- A Case of Fatullah *Thana*
- Case Study on Adaptations of the Sphere Standards in Flood Relief 2004
- Assessment of Flood Impact on Education in 2004- A Case Study of Hariharpara High School, Fatullah, Narayanganj
- Learning to Reach Relief and Rehabilitation to Flood Affected People: Relief Operation Experience of BRAC in 2004 in Dhaka
- Reducing Flood Vulnerabilities through family level preparedness: A Case of Rowmari *Upazila* in Kurigram District
- Impact of Flood Disaster on Domestic Animals and Pets: A Case Study of Mohangonj *Upazila*, Netrokona

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 Damming on Coastal Geomorphology: A Case Study on Feni River Dam, Bangladesh
- Causes and Effects of Water Logging in Dhaka City

List of the Students' Independent Studies contd.

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/problem
- Global Warming: Causes and Consequences

List of the Students' Independent Studies contd.

On Environmental Pollution/problem
- Air Pollution in Dhaka City: Causes and Health Effects
- Fulbari 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 Decreerchar Union under Faridpur District
- Rapid River Erosion of the Padma at Hashail Banari Union under Munshiganj District
- Case of a Person Affected by Riverbank Erosion

List of the Students' Independent Studies contd.

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

On Disaster Management
- Effectiveness of Gono Unnayan Prochesta's Contingency Plan during Emergency Response 2004
- A Study on the Dialectics of Expectations of Disaster Management Committees and People at Risk: A Case Study of Two Unions in Kazipur *Upazila* of Sirajganj District
- Children Participation: An Opportunity to Increase the Efficiency of the Disaster Management Activities
- An Exploratory Study on Tools Used in Participatory Vulnerability and Capacity Assessment (PVCA)
- Hyogo Framework and Corporate Plan of Bangladesh Government: Commitment and Reality

List of the Students' Independent Studies contd.

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 Livelihoods Issues in Disaster Risk Reduction Activities

On Disables
- 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

List of the Students' Independent Studies contd.

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 in Greater Rangpur: 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.

The students' research cover major studies of DM

- Impact/Damage Assessment
- Disaster Preparedness
- Emergency Response
- Flood Relief
- Assessment of Health Effects Unemployment Problems due to Disasters
- Participatory Vulnerability and Capacity Assessment
- Disaster Risk Management
- Children's Participation in Disaster Management
- Challenges for the Physically Challenged People Population Displacement
- Collapse Rescue
- Food Insecurity
- Solid Waste Management
- Disaster Management

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.

Dissertations of PPDM

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

Unplanned Urbanization of Dhaka City: Increase of Rainfall Induced Flood Vulnerability- *by Mirza Abdul Ali*

This research applied remote sensing and GIS techniques to detect the low land status in different time period and the trend of unplanned urbanization that 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 operation of urban drainage system. The study has been conducted based on remote Sensing and GIS software used in order to assess the unplanned urbanization on rainfall induced flood vulnerability.

A Study on Coastal Water Pollution of Bangladesh in the Bay of Bengal -*by Md. Mizanur Rahman*

About three thousand ships including oil-tankers come to our ports every year. There are several thousand mechanized trawlers and boats that spill oil in the coastal water of the country. But our port authority has no laboratory to measure the extent of pollution. The foreign ships taking advantages of poor law against oil spill in the coastal water just flee very quickly after dumping wastes in the sea. Along with it, a number of industries namely fertilizers, cement, pulp and paper, food processing, pharmaceuticals, metal, textile, chemical, petroleum and lubricant plants etc. discharge heavy metals into the coastal water. The shrimp industries of the coastal area generate 15 tons of waste daily which is received by the sea. The study is done based both on primary and secondary data.

Coping Mechanism at Char Communities with Reference to the Persons with Disabilities: Case Study of Sirajganj District -*by Omar Farook*

The study aims at getting primary information of coping mechanism of char population especially in flood disaster. Moreover, the study focused on how persons with disabilities cope during floods. Results from the survey show that two study areas are of significantly different in terms of availability of services. Besides, two areas are having different indigenous knowledge, sheltering, and coping mechanisms.

Capacity Building for Flood Preparedness: Comparison between the Initiatives of the Government and Leading NGOs -by Ratish Chandra Roy

Bangladesh has already experienced devastated floods in the recent past in terms of duration and damage. The study has made a critical exploration on capacity building for flood preparedness. The government of the country has a flood forecasting system. But people being very poor are incapable of getting benefit out of that system. The awareness raising programs of NGOs, collaboration projects of GOB and NGOs also created scope and opportunity.

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

The study aims at overseeing the impact of household food security in the Flood proofing project areas. There are several food security indicators to measure household food security. Results from the study show that food security was achieved by more than 87 percent of the flood proofing project areas. The food security situation was observed more or less stable in the program areas. The effect on food security depends on how consumption of different food items was affected.

Investigation into the Replication Issues of Break-Wall for Flash Flood Mitigation *-by Ahmed Shahnewaj Choudhury*

Based on the combination of primary and secondary methods, this study examines the various social, economic and environmental aspects of constructing and maintaining the brick-wall as a mitigation measure for flash floods in Bangladesh. Results from the field survey show that collection of money and loss of lands as the main problems in the replication issues of brick-wall for flood mitigation in the haor region. In some areas, the lands of the villagers were forcefully acquired for the construction of brick-wall. Due to the conflict of interest among the various stakeholders affected by the brick-walls, different social and economic difficulties arose in the study area.

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, no holistic 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 a 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.

Students (on a field trip)


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

Post Graduate Programs in Disaster Management
BRAC UNIVERSITY, Dhaka

Research Methods in Disaster Risk Reduction Study

Sabita A. Khanal, Kumud R. Kafle, Surendra Jose, Sanjay K. Nepal

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 Security"
July 1-2, 2008
Kathmandu University, Dhulikhel, 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**

Disaster Research Studies done at KU

Level	Topic	Methods
B. Sc	Landslide Hazard Mapping using GIS and Remote Sensing for Watershed Management Planning of Lele Drainage basin, 2000	Data collection Characterization Analysis
B. Sc	Study on Earthquake Preparedness in Banepa Municipality, 2002	Application of GIS Questionnaire survey Data Analysis
B. Sc	Disaster Management: An Overview of the Programmes their Efficacy and Adequacy in the Context of Nepal , 2003	Data Collection Questionnaire survey Analysis

Disaster Research Studies at KU Contd……

Level	Topic	Methods
B. Sc	Earthquake Vulnerability of Central Dhulikhel Municipality, 2004	Digital Mapping GIS Tool RADIUS use Questionnaire Survey Data Analysis
M. Sc.	Disaster Risk Management Capabilities of the Health Sector in Kathmandu Valley and the Priority needs for further Improvement, 2006	Data Collection Personal Interview Hospital Capacity survey Application of GIS

On Going Disaster Research Studies at KU

Level	Topic	Methods
B. Sc	Earthquake Vulnerability Analysis of Mid Part of ward No 10 Kathmandu Municipality , 2007	Data Collection Characterization Analysis with GIS
B. Sc	Earthquake Vulnerability Analysis of Northern Part of ward No 10, Kathmandu Municipality, 2007	Data Collection Characterization Analysis with GIS
B. Sc	Earthquake Vulnerability Analysis of southern Part of ward No 10 Kathmandu Municipality, 2007	Data Collection Characterization Analysis with GIS

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

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

Topic	Methods
Resource Allocation and Habitation Planning for Disaster Risk Reduction in Pachkhal Valley	PRA GIS Application
Community Based Hazards and Vulnerability Reduction for Sustainable Livelihood: a Case Study of *Jugedharo* Women Goat Rearing Group.	PRA Action research

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

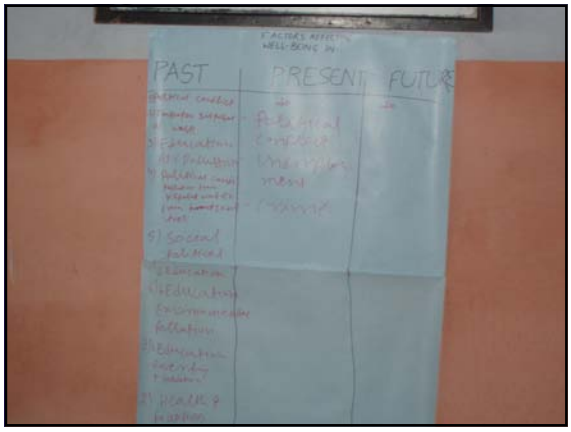
- After selecting appropriate information, it must be presented in a comprehensive way.
- The *terms* that recipients use for understanding individual concepts and the *mental models* that they use for integrating those concepts should be taken into account.

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.


PAST
PRESENT
FUTURE


Thank You

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 In fracture :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 Himanchal Pradesh
- Photo grapes with 3 column news

Facts

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

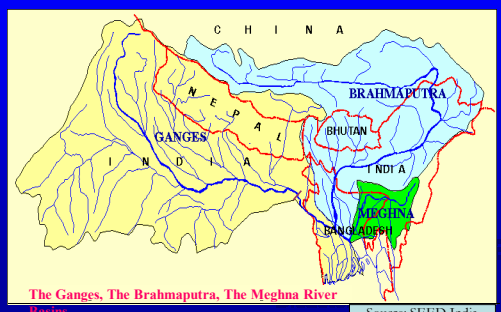
Komal Raj Aryal
Research Associate
Disaster and Development Centre
Northumbria University, UK

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 ?

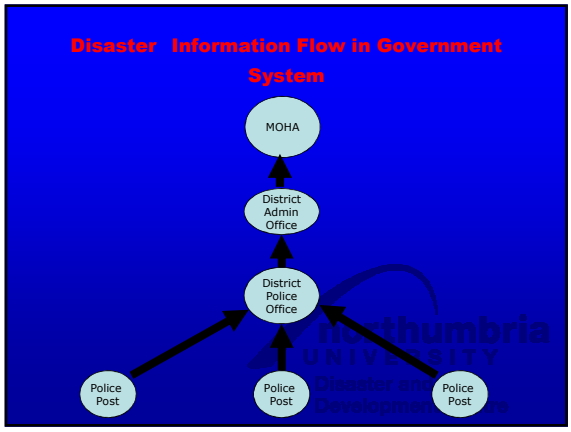
CATCHMENT AREA

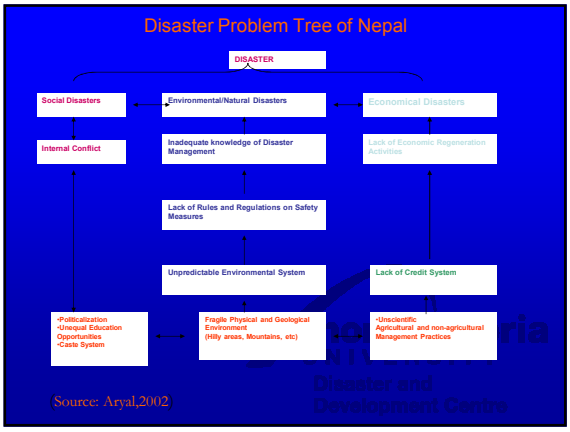


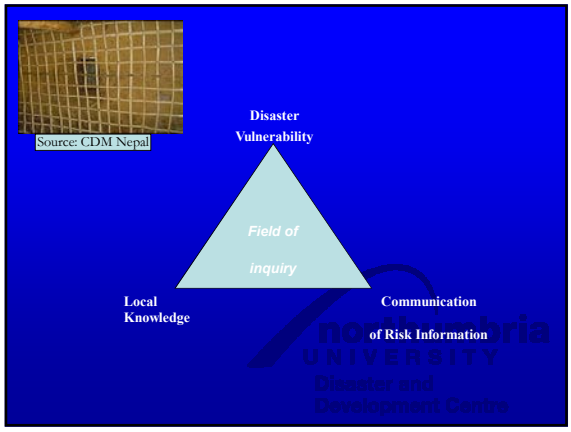
The Ganges, The Brahmaputra, The Meghna River Basins

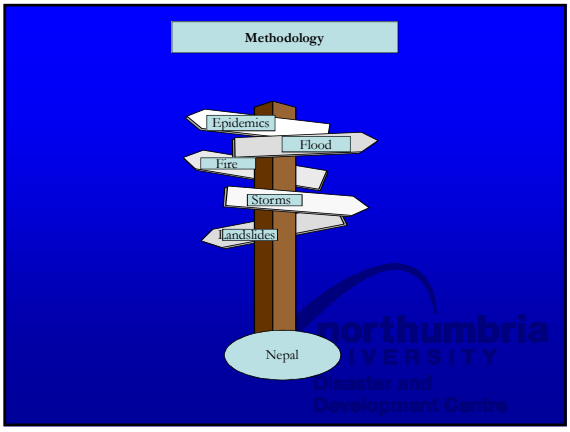
Source: SEED India

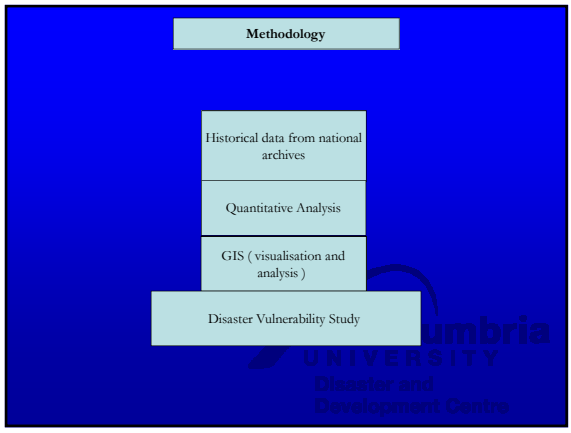

June,2004
June,2007


Disaster Information Flow in Government System
MOHA
District Admin Office
District Police Office
Police Post
Police Post
Police Post


Disaster Problem Tree of Nepal
DISASTER
Social Disasters
Environmental/Natural Disasters
Economical Disasters
Internal Conflict
Inadequate knowledge of Disaster Management
Lack of Economic Regeneration Activities
Lack of Rules and Regulations on Safety Measures
Unpredictable Environmental System
Lack of Credit System
•Politicalization
•Unequal Education Opportunities
•Caste System
Fragile Physical and Geological Environment (Hilly areas, Mountains, etc)
•Unscientific Agricultural and non-agricultural Management Practices
Source: Aryal,2002


Source: CDM Nepal
Disaster Vulnerability
Field of inquiry
Local Knowledge
Communication of Risk Information


Methodology
Epidemics
Flood
Fire
Storms
Landslides
Nepal

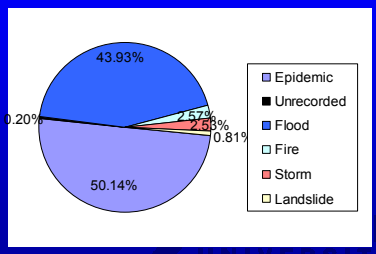

Methodology
Historical data from national archives
Quantitative Analysis
GIS (visualisation and analysis)
Disaster Vulnerability Study

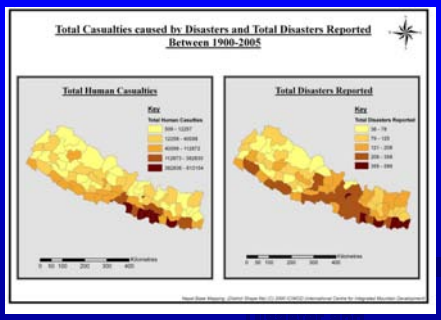
Epidemics: Cholera, dysentery, dengue fever, and Japanese encephalitis
Storms: Thunderstorm, hailstorms, snowstorms, and windstorms
Flood: Flood and heavy rain.
Landslides: Mudslides, debris flow, landslides, GLOF (glacier lake outburst floods);
avalanche
Fire: House fire, forest fire, and industrial fire.

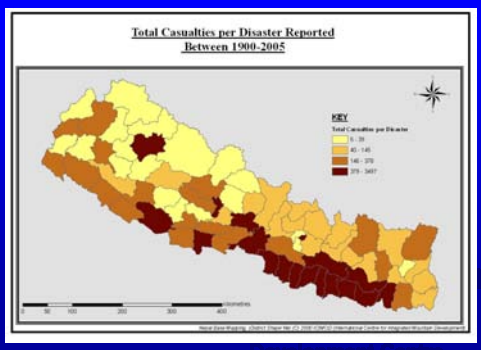
(1900-2005)

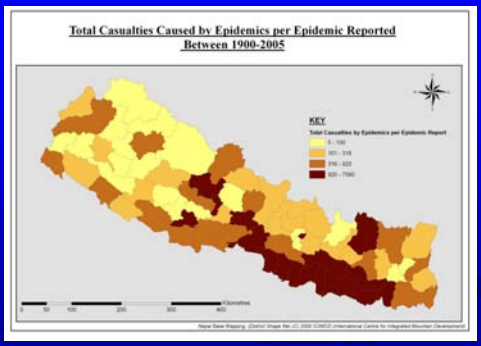
13,525 disaster events
7,406,764 human casualties

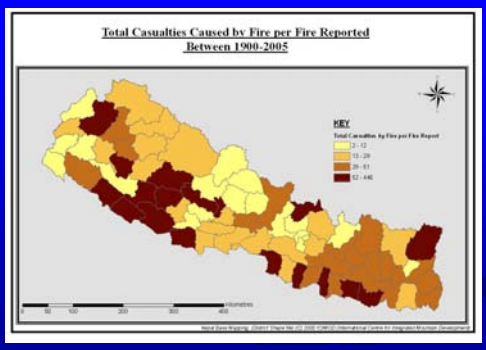
Depiction of Cause of Human Casualties by Disaster in Nepal (1900-2005)

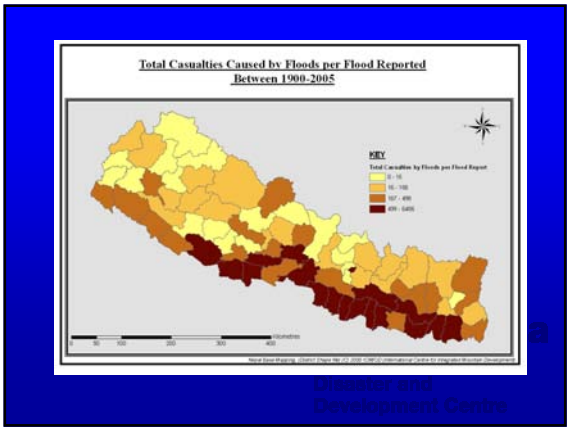


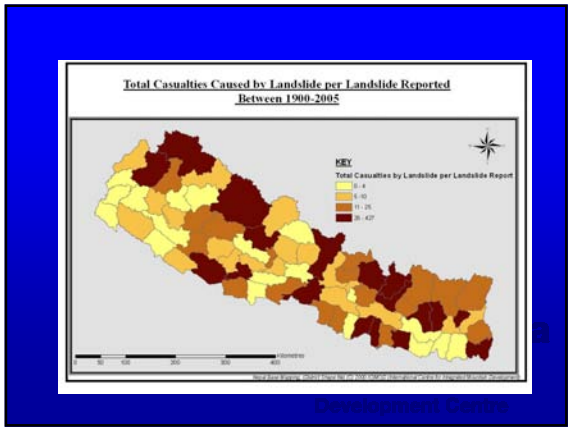


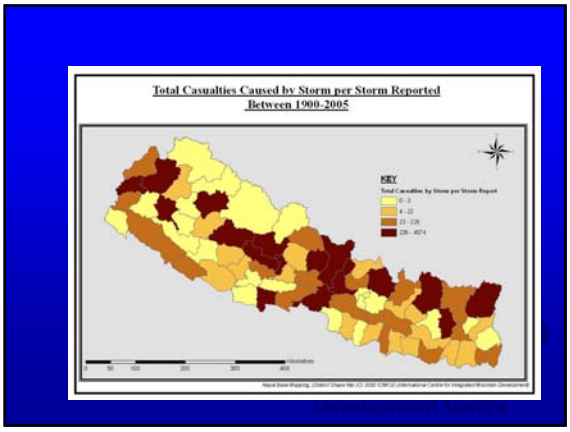


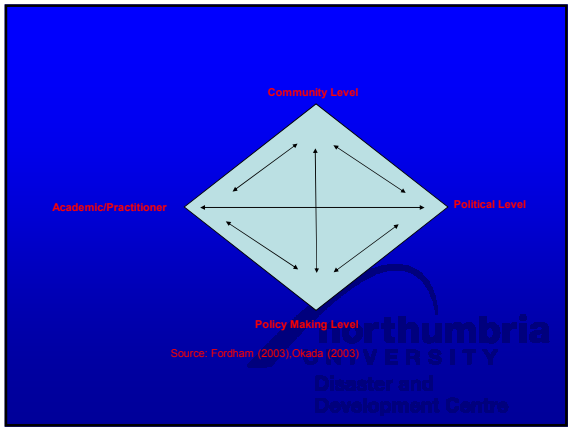












Time to act now with evidence based scenarios!

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

Appendix1: Programme

Day 01 / 1st July 2007

09:00 – 09:30	**Registration**
09:30 – 12:00	**Opening Session**
09:30 – 09:35	Welcome Address: Dr. S.N.Khanal, DMSDC, KU
09:35 – 09:45	Chief Guest : Mr. Pratap Kumar Pathak, Joint Secretary, Ministry of Home Affairs Nepal
09:45 – 09:55	Special Guest Address: Mr. John Fry, Director, British Council
09:55 – 10:05	Inauguration by lightening and Inaugural address : Prof. B.M. Tuladhar Register, KU
10:05 – 10:20	Key Note Address: Dr. Andrew Collins, Director, Disaster and Development Centre, Northumbria University
10:20 – 10:30	Appreciation to Pachkhal Valley Risk and Resilience Committee by Mr. John Fry (Community Emergency Kits Handover)
10:30 – 10:40	Vote of Thanks Prof. S.N.Rimal Dean, School of Science
10:40 – 11:00	**Tea Break**
11:00 – 12:50	**Session 1: Overview and Outline**
Chair:	**Mr. Somlal Subedi, Joint Secretary, Ministry of Local Development Nepal**
11:00 – 11:20	Importance of Disaster Risk Reduction Studies in South Asia: Dr. Rohit Jigyasu, Visiting Faculty, Research Centre for DMUCH, Ritusmeikan University, Kyoto, Japan
11:20 – 11:40	Disaster Risk Reduction in Bangladesh Higher Education Curriculum: Dr. Iftekhar Ahmed (BRAC)
11:40 – 12:00	Disaster Risk Reduction in Nepalese Higher Education Curriculum: A Case Study from Kathmandu University: Dr. S. N. Khanal
12:00 – 12:20	Disaster Risk Reduction Education in Nepalese School Curriculum: Mr. Haribol Khanal, Director General, Curriculum Development Centre, Ministry of Education, Nepal Government
12:20 – 12:40	Disaster Risk Reduction in British Higher Education Curriculum: A Case Study from Northumbria University: Dr. Andrew Collins and Dr. Sam Jones (DDC, NU)
12:40 – 13:00	Questions and Answers
13:00 – 14:15	**Lunch**

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 / 2nd 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**

Appendix2: Name List

Name	Organization
Prof. Suresh Raj Sharma	KU
Prof. Bhadra Man Tuladhar	KU
Mr. Mukund Prasad Upadyaya	KU
Sharad C. Bhandari	RSS
Bijaya Raj Ghimire	GoN
Bidur K.C.	TU
Mr. John Fry	BC
Dr. Andrew Collins	DDC,NU
Dr. Samantha Jones	DDC,NU
Hideyuki Shiroshita	DDC,NU
Komal Raj Aryal	DDC,NU
Dr. Iftekhar Ahmed	BRAC
Md. Hafizul Hasan	BRAC
Md. Humayun Kabir	BRAC
Ms. Dilruba Haider	BRAC
Dr. Rohit Jigyasu	Rits
Mr. Pratap Kumar Pathak	GoN
Mr. Somlal Subedi	GoN
Mr. Haribol Khanal	GoN
Prof. S.Nagesh	BPKIHS
Dr. Anup Ghimire	BPKIHS
Dr. Paras K. Pokharel	BPKIHS
Ms. Priaya Pokharel	BPKIHS
Dr. S.N.Khanal	DMSDC,KU
Mr. Kumud Raj Kafle	DMSDC,KU
Ms. Sabita Khanna	DMSDC,KU
Dr. Bipin Pathak	KU
Dr. R.B. Kaystha	DMSDC,KU
Dr. Sagar Raj Sharma	KU
Dr. Rana. B. Chsetri	KU
Ms. Salu Adhikari	KU
Mr. Paul White	UNM
Mr. Suresh Bhattarai	UNM

Dr. J.B. Chauhan	KU
Dr. P.C. Adhikari	
Dr. Vishnu Dangol	
Ram Prasad Regmi	
Kiran Pokharel	Radio
Mr. Hitoshi Kato	DWIDP
Mr. Mahendra Kumar Khamyahang	GoN/DMRRC
Mr. Tanka Adhikari	PVRRC
Mr. Shuva Adhikari	PVRRC
Ms. Phanindra Adhikary	IRD NEPAL
Mr. Sujit Ale	KantipurFM
Ahmad Kamruzzaman	KU
Romesh Tuladhar	DWIDP
Bhagubali Timilsina	NepalSP
Renuka Bhandari	KU
Jhala Kumari Dulal	RRC
Gyanendra Chaudhary	KU
Dr-Rujan B. Kayastra	KU
Silu Brochhibhoya	KU
Rina Kurmachya	KU
Saru Taujle	KU
Vijay Khadgi	ICIMOD
Bharat K. Shresthe	KU
Tirrhar Adhikan	KU
Bhogendra Lomichhane	TU
Dilip Khawas	TU
Dr. N.P. Sinha	KUSMS
Smiriti Gurung	KUSMS
Dr. Sagar R. Shaliya	KUSMS
John Dickinson	KUSMS
Khagendra Achorya	KU
Maina Dunuwar	BVDC
Dr. Biraj Karmacharya	KUSMS
Roshan B. Bhandari	TU
Sujan Maratha	KUSMS

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)

Appendix4: Photos

Day 01 / 1st July 2007

Day 02 / 2nd July 2007