

# A Regional Preconference on Extreme Weather, Disasters, and Indigenous Practices in South Asia



AIBS Preconference | October 16, 2014

Madison Concourse Hotel, Madison, Wisconsin

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*AIBS Preconference, October 16, 2014*

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# AIBS Preconference

Thursday, October 16, 2014

**Madison Ballroom**  
**Madison Concourse Hotel**  
**1 West Dayton Street**  
**Madison, WI 53703**

## Hosted by:

American Institute of Bangladesh Studies  
(AIBS)  
B488 Medical Sciences Center  
1300 University Avenue  
Madison, WI 53706-1532

## Conference Leader and Organizer:

Dr. Golam M. Mathbor, Professor of Social  
Work, Monmouth University  
President, American Institute of Bangladesh  
Studies (AIBS)

## Co-Organizers:

Dr. Philip Lutgendorf, Professor of Hindi and  
Modern Indian Studies, University of Iowa  
President, American Institute of Indian  
Studies (AIBS)

Dr. Kamran Ali, Associate Professor of  
Anthropology, University of Texas at Austin  
President, American Institute of Pakistan  
Studies (AIPS)

Dr. Charles Hallisey, Senior Lecturer on  
Buddhist Literatures, Harvard Divinity School  
President, American Institute of Sri Lankan  
Studies (AISLS)

Dr. Mary Cameron, Professor, Anthropology,  
Florida Atlantic University  
President, Association for Nepal and  
Himalayan Studies (ANHS)

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## Overview

In the study of extreme weather and disasters, there is a common thread that sews together the patchwork of South Asia. South Asia is composed of the following eight countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. One fourth of the world population lives in this region. This sub-continent is situated between The Himalayas on the North and the Arabian Sea and the Bay of Bengal on the South. Due to the topography of the area, South Asia faces frequent natural disasters. The 2007 monsoon floods in India, Nepal and Bangladesh, the 2005 earthquake and 2010 floods in Pakistan, and the Tsunami of 2004 are examples of recent major disasters that have seriously impacted lives and livelihoods of people in the region. Due to the fact that many of the islands are just a few feet above the sea level, the residents of the Maldives are greatly concerned with

extreme weather. Higher sea levels can flood or even absorb some of the South Asian countries if continuous deforestation and subsequent washing away of sediments from the upstream countries to the seas are not halted. A major disaster can push people deeper into poverty and can severely deplete the financial resources of a country. In addition, long term psychological effects must be taken into account following disasters. Disasters are very often seen in isolation, and governments are reactive rather than proactive. Although the countries vary in their responses to mitigating the consequences of disasters as a result of extreme weather, similarities can be found dealing with the aftermath of disasters. One major commonality found is the human response to facing the same issues in disaster relief and management.

This one day regional symposium is a follow up event to the Council of American Overseas Research Centers (CAORC) sponsored first regional conference, "Water, Waves, and Weather: The Future of South Asia" that was held in Dhaka, Bangladesh in July of 2011. This conference set the tone for further investigations and lessons learned by the countries of South Asia. It was an excellent topic for an interdisciplinary conference co-sponsored by the relevant American Overseas Research Centers, with support from CAORC and the Department of State. Liberal Arts education has a strong emphasis on the utilization of human and social capital in addressing people's needs and identifying credible solutions both locally and globally. Similarly, social science education provides applied learning through a community organization approach. The sub themes of this preconference include:

- Extreme weather and disasters
- Impacts of extreme weather patterns and its effects on life and livelihoods
- Indigenous practices (coping strategies surviving resultant disasters)
- Community based disaster mitigation

- Institutional practices (nation-state, NGOs, and civil society)
- Shared expertise and innovation regionally
- Partnership to advance knowledge in long-term disaster recovery and reconstruction
- Media and coverage of disasters (traditional media, documentaries, online media etc.)

## Aims and Objectives

This 2014 regional symposium will bring together scientists, planners, and scholars of social science and humanities to examine the best available projections highlighting the impact of extreme weather and the various responses to it. Through the synergies created, we hope to spark greater research interest in this very serious subject, as well as assemble data that may be useful to policy makers and responders. This interdisciplinary conference will provoke critical engagement with the multiple meanings of extreme weather for its various constituencies – liberal arts and social sciences educators, policy makers, research scientists, and agency officials mitigating the consequences of disasters as a result of extreme weather.





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## **Continental Breakfast**

8:00 a.m.–9:30 a.m.

Madison Foyer, Madison Concourse Hotel

## **Opening Ceremony**

9:30 a.m.–9:45 a.m.

Madison Ballroom, Madison Concourse Hotel

**Welcome by** Dr. Golam M. Mathbor, AIBS President

**Welcome Remarks by** Dr. Jeanne Marecek, Chair of the Board, CAORC

**Opening Remarks by** Conference Leader: Dr. Golam Mathbor, Monmouth University

## **Vulnerability and Capacity Building**

9:45 a.m. - 11:00 a.m.

Madison Ballroom, Madison Concourse Hotel

**Chair:** Dr. Rebecca Manring, Indiana University

Topic 1: *Coping with Risk: Responses amongst Fishing Households*

**Dr. Roderick Stirrat**, Associate Professor, Department of Anthropology, University of Sussex

Sea capture fisheries are intrinsically risky. Risks include the unpredictability of fishing stocks, fluctuations in market conditions affecting the price of both inputs and outputs, the ever-changing nature of political relations affecting fishing rights and, of course, weather. Over recent years, according to Sri Lankan fishermen, weather conditions are increasingly variable. But rather than see them as a separate type of risk qualitatively different from - say - economic fluctuations, households tend to view all risks within the same frame and take actions to both limit and benefit from these fluctuations.

Many households adopt what might be called a risk adverse strategy, limiting the degree to which resources are put at risk. So for instance, maintaining a simple but cheap technology allows households to maintain a relatively low-income level whilst putting what resource they have into non-fishing resources. Traditionally these have taken the form of houses and jewelry, both of which can be used as security when productive capital needs to be replaced. Here perhaps the classic cases are found amongst those fishing groups most exposed to cyclones in the Bay of Bengal where even housing is minimal and almost all a household's capital is kept in the form of moveable assets especially gold.

At the other end of the spectrum are households which see fluctuations in the fisheries, in weather conditions and in the market as a potential source of income. So deep sea fishermen in Sri Lanka engage in (relatively) highly capitalized forms of fishing where the risks of total loss of equipment (and lives) are very high but the profits, which can potentially be gained, are equally high.

In between are households which tend to hedge their bets and adopt strategies which attempt to protect their productive resources whilst also allowing them to engage in activities which are both risky and potentially remunerative. Such strategies tend to be unstable, because they neither generate the spectacular (but occasional) incomes of high risk fishing nor the long term security which lower risk activities generate.

From a policy point of view, approaches to risk-management and mitigation, including

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ways of managing extreme weather conditions, which fail to acknowledge the very different strategies of different fishing households will have only a limited effect. Furthermore, attempts to increase interest amongst high risk fishermen in 'safety at sea' often ignore the degree to which risk is accepted as an inevitable correlate of the most lucrative forms of fishing.

*Topic 2: Local Capacity Building as an Intervention Strategy to Address the Natural Disaster: A Bangladesh Perspective*

**Shirin Sultana**, M.S.S.W, Doctoral Student, School of Social Work, Howard University, Washington

Bangladesh has a long history of natural disaster. Between 1980 to 2008, the country experienced 219 natural disasters including cyclones, floods and tornados, causing over US\$16 billion in total damage (UNDP, 2009). The natural disasters have also impacted a majority of Bangladeshis in their social and human life. The main causes behind these natural disasters are the high vulnerability of people (unaware), housing (dilapidated), location (coastal area), and infrastructure (lack of dam, embankment, and shelter house) (Shafiullah and Mathbor, n.d). Local capacity building intervention strategies as a part of disaster management can address the country's natural disaster given a comprehensive approach before, during and in the post disaster period comprising disaster preparedness, mitigation, response, and recovery (USAID, 2011). Capacity development involves broad participation by a wide spectrum of people at the community level in determining goals and taking civic action (Rothman et al., 2007). Disaster Management can be defined as "The body of policy and administrative decisions, and operational activities

which pertain to the various stages of disaster at all level" (USAID, 2011). Here, "Policy and administrative decisions, and operational activities" refer to the disaster cycles that include disaster mitigation, disaster preparedness, disaster response, and disaster recovery (USAID, 2011). Disaster mitigation is a set of programs which are taken to limit the adverse impact of hazards. It focuses on long-term measures for reducing or eliminating the risk. In the disaster preparedness phase, disaster managers develop plans of action for the time when disaster strikes. Disaster mitigation also refers to the effective readiness measures to expedite emergency action, rehabilitation and recovery. Disaster preparedness includes emergency warning, emergency shelter, emergency evacuation disaster plans, and maintenance of resources and training of personnel. The response phase includes the mobilization of the necessary emergency services and first responders in the affected area. Here, necessary emergency services include search and rescue, evacuation, demand analysis, resource analysis, emergency relief (food, water, sanitation, first aid, etc.) and logistic supply (tent). In addition, fire fighters, police, social workers, volunteers, Community Based Organizations (CBOs), and Non-Governmental Organizations (NGOs) act as first responders for natural disasters. The aim of disaster recovery is to restore the affected area to its previous state. It includes: a) rehabilitation (cleaning up the debris, rebuilding destroyed houses and property, re-employment, etc.) and b) reconstruction (rebuilding or repairing the essential infrastructure e.g., roads, hospital, schools, etc.).

Therefore, the paper aims to identify key causes of natural disaster and how the disaster management strategies with an

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emphasis on capacity building process can address natural disasters in Bangladesh. Finally, the paper will offer recommendations for effective disaster management in Bangladesh.

Topic 3: *Not food but debt: Drought vulnerability in Sri Lanka's dry zone*

**Dr. Joshua Theodore Bazuin**, Vanderbilt University, Vanderbilt Institute for Energy and Environment

Various climate scenarios for Sri Lanka suggest that the country will experience higher levels of water stress in the future. The effects of such stress will be particularly felt by farmers in Sri Lanka's dry zone, where rice paddy cultivation is in part dependent on water transported by canal over long distances from the central highlands. Many of the predictions about the human impacts of climate change suggest that food shortages, diseases, and resource conflicts will be major challenges in the future. In our study of climate change, agriculture, vulnerability, and adaptation, we find that debt and not food security is a locus of vulnerability to climate change among rice farmers in Sri Lanka. The government has had a robust safety net to ensure food security, and almost all farmers are careful to keep at least one year's worth of rice for their family's subsistence needs. However, the economics of rice production in Sri Lanka are challenging. In the best of times, labor shortages, heavy reliance on expensive agricultural inputs, and a recent surplus of rice in the country mean that it is difficult to grow paddy at a profit. Many farmers go into debt to finance the purchase of seeds, agrochemicals, and labor for the growing season. Others have considerable long-term debt for machinery and household uses. Water shortage-induced crop

failures and subsequent inability to service debt can cause considerable hardships for farming households, including forced migration, loss of farmland, and mental distress. The possibility of drought-induced farm debt problems is exacerbated by moves by the government to move away from buffering risk for individual Sri Lankans.

Topic 4: *Climate Adaptation through Disaster-Resilient Housing Practice: Exploring the Realities in Hazard-Prone Rural Bangladesh*

**Shakil Bin Kashem**, PhD Candidate, Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign  
**Suman Kumar Mitra**, Assistant Professor, Department of Urban and Regional Planning, Bangladesh University of Engineering and Technology (BUET), Dhaka  
**Mohammad Aminur Rahman**, Assistant Professor, Department of Architecture, BRAC University, Dhaka

Improving present housing stock by introducing disaster-resilient housing practice in hazard-prone areas has been proposed in different extreme weather adaptation literature. But, what are the present housing practices, and how the prevailing dynamics of social vulnerability may adopt or interact with the improved housing practices are yet to be studied widely. This study explored these questions through case studies in two hazard-prone rural areas of Bangladesh: *Nalerchar*, located in cyclone hazard prone area of *Noakhali* District and *Ujanchar*, located in flood hazard prone area of *Rajbari* District. The authors considered disaster-resilient housing within the broader domain of social vulnerability and questioned the status quo behind present housing practice. The authors found that a significant number of people of these areas are already aware about different



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safe housing techniques, but very few of them apply those techniques for house construction. Lack of financial capability and unavailability of construction materials were found to be two of the explicit constraints, but the underlying drivers also need recognition for any adaptation measure through housing improvement. Problems with land tenure were found to be one of the most significant constraints. Most of the people living in these areas have immigrated within last 10-12 years after losing their belongings to natural hazards in other places. Now, they are again living in hazard prone areas being unable to find any safer place. Insecure land tenure discourages them to make any significant investment for home improvement. We also found that despite thousands of people living in both of the study areas there is no formal or informal provision for schooling of the children. Illiteracy, struggle to obtain property rights, and inaccessibility to the market are making them more vulnerable over time. It reinforces the widely accepted idea that adaptation should not be viewed as an estranged component from the overall development process. To consider disaster-resilient housing practice as a mechanism for extreme weather adaptation, we should recognize the socio-economic drivers that created prevailing practices at the first place.

#### Topic 5: *Extreme Weather in the Western Himalayas: Effects on Biodiversity*

**Trevor Price**, Professor, Department of Ecology and Evolution, University of Chicago

While a global average of 2°C is considered the threshold beyond which the planet must not warm, the western Himalayas have warmed by almost that much in the last 25 years. The author described results from the

only long-term study on animal populations in the western Himalayas, in Kashmir and Himachal Pradesh, which show that some bird species are breeding by up to two weeks earlier than they were in the 1980s. Ongoing investigations are studying the effects of extreme weather on reproductive success. In particular, we are examining the effects of isolated major storms, extensive fog, and interactions with predators and food supply. We are also comparing the western and eastern Himalayas in India. It is striking how few monitoring efforts are currently being undertaken, and this includes the very sparse distribution of climate stations. Biodiversity conservation is critical to the long-term health of the region. We emphasize that it is not climate change alone but interactions with both the (over) harvesting of wild animals for food and loss of natural lands habitat that are creating the serious threats to nature. Unlike extreme weather, which can be reversed with concerted efforts to sequester carbon, biodiversity loss is irreversible.

#### **Indigenous Knowledge**

11:00 a.m. - 12:15 p.m.

Madison Ballroom, Concourse Hotel

**Chair:** Dr. Philip Lutgendorf, University of Iowa

#### Topic 1: *Indigenous Knowledge to Cope with Disasters in Gilgit-Baltistan, Pakistan.*

**Abida Ali**, Focus, Presented by **Nusrat Nasab**, Humanitarian Assistance Program (FOCUS)

This research paper documents indigenous knowledge and practices regarding natural disasters in Gilgit-Baltistan- the

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mountainous region of Pakistan. Due to harsh climatic conditions these communities are more vulnerable, however, these environmental challenges have enabled them to devise adaptive strategies, mitigation measures and coping capacities to respond to disasters. The wisdom of the past is on the verge of disappearing as it is part of the diminishing rich oral tradition. This knowledge has been transmitted orally by previous generations. There is a need to document, translate, and analyze the wise narratives of the elders in this mountainous region, which could be used in Disaster Risk Reduction (DRR).

This research has been the first attempt to collect and document indigenous knowledge in the region of Gilgit-Baltistan. This knowledge is focused on natural disaster management, including early warning signs of natural disasters, coping and adaptive measures to reduce such risks and its impact. The present study was based on a qualitative paradigm of research. The instruments and procedures included focus group discussions, semi-structured interviews and questionnaires. Informants were mostly elderly men and women above 50 years from the four linguistic communities living in different geographical areas; namely Hunza, Nagar, Gojal, Yasin and Ishkoman valleys in Gilgit-Baltistan. These are less privileged, far flung communities where this knowledge has been practiced to some extent. Information is gathered on the basis of their rich experiences and careful observations of the surroundings, including mountains, land, water, sky, plants and animals.

The most dominant and concerned hazards in the region include earthquakes, landslides, rock fall, debris flow, Glacier Lake Outburst Floods (GLOF) and flash and

riverine floods. This research brought forth various indigenous coping strategies against natural disasters. These include early warning systems, like human made signals, signals deduced from animals and state of change in the human body.

Through changing behavior and sounds of animals, birds and other living beings indigenous people understand minor to extreme changes in weather. This knowledge includes warning signals, which warn people to take precautionary measures and evacuate in a timely fashion. Architecture of the traditional houses was distinct and was built to adapt to the climate. In addition, these communities hold rich folklore about natural disasters. They had devised methods to stockpile herbal medicines in case of any emergency and injury respectively. Therefore, it is important to document this knowledge and see how it is practiced for the sustenance in extreme disaster management.

Topic 2: *Integrating Natural and Social Science to Inform Adaptation to Extreme Weather in Bangladesh and Sri Lanka*

**Dr. Jonathan Gilligan, Associate Professor,** Department of Earth and Environmental Sciences, Vanderbilt University

The impact of extreme weather events, both abrupt (such as tropical cyclones) and sustained (such as periods of severe drought), depends on the characteristics of affected communities. As Adam Smith noted, more than 200 years ago, catastrophe does not result from extreme weather alone, but depends on the social, political, and economic context. Similarly, extreme weather patterns interact with changing local environmental conditions and changing societies. This presentation will report on two projects that integrate social scientists, natural scientists,



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and engineers to study impacts, vulnerabilities, and adaptations to environmental stress in Bangladesh and Sri Lanka in order to better understand the characteristics of successful adaptation to environmental conditions.

In Bangladesh, the research focused on a community badly hurt by Cyclone Aila in 2009. The island community, with approximately 40,000 inhabitants, was flooded for 18 months and tens of thousands of residents were displaced from their homes and left with poor access to basic needs, such as safe drinking water and shelter. Even after embankments were repaired and the flood waters removed, the fertility of paddy fields was significantly reduced by salinity and sediments deposited by the flood. Both the physical environment and the communities are frequently misunderstood, which hinders adaptation projects.

In Sri Lanka, this study investigated farmers' responses to water scarcity in the dry zone, comparing villages with traditional locally-managed irrigation schemes to more newly settled villages with centrally-managed irrigation systems. Irrigation water shortages arise both from changing patterns of precipitation and drought and also from changing allocation of surface water and changing demand as the farming population of the dry zone increases and land tenure changes. There has been considerable concern by government and aid organizations over the reticence of farmers to adopt practices that make more efficient use of irrigation water, but despite this concern, the farmers' reasons for choosing crops and cultivation methods are poorly understood.

In both Sri Lanka and Bangladesh, it is observed that the human impact of extreme weather depends on social, economic, and political conditions of affected populations.

This paper reports examples of failed projects to reduce vulnerability and a smaller number of successful projects. It is also observed that local practices, such as land use can strongly modify the physical impacts of severe weather events. The presenters will report on their latest results and their working hypothesis that successful adaptation projects must begin by understanding the capabilities, needs, and desires of affected communities.

*Topic 3: Can a Vulnerable Education Sector Combat Extreme Weather Vulnerability? A Contextual Analysis of Coastal Charlands' Sustainable Adaptive Capacity in Bangladesh*

**Sudipta Roy**, Doctoral Student, School of Education, Indiana University, Bloomington

Bangladesh is often considered to be one of the most vulnerable countries to global climate variability. However, certain areas and communities in Bangladesh are more vulnerable than others. Coastal lands are arguably the most marginalized and risk-prone areas. Nevertheless, there is a global consensus that education can be used as an adaptive tool to build the capacity to cope among risk-prone populations. Although education is an important adaptive measure in the extreme weather struggle, we need to critically question how education sectors are actually ready and capable of acting as an adaptive tool, especially in the context of extreme physical-social vulnerability and marginalization in Bangladesh.

This paper draws on empirical findings from household interviews from four villages in two districts in Bangladesh called Satkhira and Bagerhat in order to answer some basic questions including how vulner-

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able coastal lands in Bangladesh are and why, how education has been seen as a tool for adaptation, and how the education sector itself is vulnerable to environmental change-related consequences. In so doing, this paper first describes different components of the vulnerability framework in the context of human-environment systems. Then this paper elaborates on the definition (formal schooling and local knowledge) and role of education both as a recipient of vulnerable situations and a buffer between disparities and hope reviewing available literature on the vulnerability and adaptation. In the second part of the paper, it views that both Satkhira and Bagerhat are vulnerable to environmental changes, especially, extreme weather. The impact of these changes is apparent on the access and quality of education in those two districts making the education sector also vulnerable to environmental change. The paper ends with a discussion that suggests that considering education as solely an adaptive capacity does not provide a fuller picture of how the education sector's exposure and sensitivity to vulnerability are interrelated. Moreover, the concept of education for sustainable development in those vulnerable areas in Bangladesh may be an overestimation of the real capacity of education sector.

*Topic 4: A Review of Traditional Knowledge Systems Based Indicators for Making Weather and Climate Related Ex-Ante Agricultural Decisions by Farmers*

**Dr. Upasna Sharma**, Assistant Professor, Department of Humanities and Social Sciences, Indian Institute of Technology Delhi, HauzKhas, New Delhi

Seasonal climate forecasts are potentially important for taking ex-ante decisions to manage climate risk in the agricultural sector. Many seasonal climate forecasts are

now available and are disseminated to the farmers in India and other developing countries. These seasonal forecasts are not received by the farmers in a vacuum of prior expectations of upcoming climate. Often farmers develop prior expectations about the likely weather and climate in the upcoming agricultural season based on traditional knowledge systems for predicting climate. This paper presents a review of the traditional knowledge based indicators used to predict climate for agricultural purposes in India and other countries. This is a part of a larger project studying the farmer's uptake of agromet advisories provided by the meteorological department in the presence of traditional knowledge based climate forecasts available to farmers as background information in the semi-arid regions of India. Three main kinds of indicators have been observed – one, hydro-meteorological indicators such as changes in wind direction, changes observed in the sky, water bodies, rainfall patterns; second, bio-physical indicators such as changes observed in the pattern and behavior of local flora and fauna; third, indicators based on almanacs and astrological predictions. A review of such knowledge systems is important to understand what weather and climate parameters these indicators are predicting vis-à-vis the science based forecasts?; what kind of decision rules do these indicators provide vis-à-vis the science based forecasts?; and how would they explain the uptake or otherwise of science based climate forecasts in regions where there is a prevalence of such traditional based indicators for making weather and climate related agricultural decisions? This paper provides answers to the first two questions through the review of literature on such systems in Indian and other parts of the world. The third question

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would be answered once the empirical field study is completed.

Topic 5: *Relevance of Traditional Ecological Knowledge in Prevention and Management of Droughts in India - A Historical Perspective*  
**Dr. Baisakhi Bandyopadhyay**, Research Associate & Principal Project Investigator, History of Science, Indian National Science Academy, India

Natural disasters like droughts have had severe impact in third world communities over many centuries. Drought is a common natural disaster in India; it is often related to the climate of India and cause massive losses of life and property. Indian agriculture is heavily dependent on the monsoon as a source of water. In some parts of India, the failure of the monsoons result in water shortages, resulting in below-average crop yields. Droughts have led to major famines, including the Bengal famine of 1770, the 1876–1877 famine, the 1899 famine and the Bengal famine of 1943. Rapid population growth and technology driven economic advances in India have increased fragmentation of holding and forced intensive but unsustainable land use pattern. Most of the tribal societies of drought prone areas do not manage droughts in isolation from their overall farming system and have evolved strategies and social arrangements that are in tune with the survival compulsions. Therefore, for any planning intervention and policy framework, a better grasp and understanding of people's perception, priorities, traditional knowledge, and their own coping strategies is undoubtedly vital. There is much scope in the country to document the indigenous wisdom of the tribal and to integrate it with the modern techniques for a better management of droughts in drought-prone areas.



Lunch Break  
TBA  
(all participants are invited)  
12:15 p.m. – 1:30 p.m.

#### **Governance and Partnerships**

1:30 p.m. - 2:45 p.m.

Madison Ballroom, Concourse Hotel

**Chair:** Dr. Charles Hallisey, Harvard University

Topic 1: *Governance Matters: Power, Development, and Extreme Weather in Coastal Bangladesh*

**Md. Ashiqur Rahman**, Ph.D. Candidate, School of Anthropology, University of Arizona

Adverse effects of extreme weather touch every sphere of lives both in the developed and developing countries. But people from the global south are more vulnerable than the global north, because of their scarce resources, socioeconomic, political, and weak governance systems. This study addresses whether unequal power relations, under the umbrella of governance, plays any role shaping peoples' livelihood resilience to the impact of extreme weather. Based on six months of intensive field work in the coastal Bangladesh, this study claims that uneven power relations enhance local peoples' resilience to the adverse effect of extreme weather



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for the short period of time in a micro level, but it decreases livelihood resilience to extreme weather in the long run. Moreover, development institutions do not deal with this uneven power issue in a way that helps local marginalized people to adapt to the environmental stressor.

Topic 2: *Coastal Urbanization and the Politics of Extreme Weather in South India*

**Mukul Kumar**, PhD Student, Department of City and Regional Planning, College of Environmental Design, UC Berkeley

This paper examines the relationship between coastal urbanization and extreme weather events in Tamil Nadu, India, with a focus on the Chennai metropolitan region. This paper argue that processes of urban transformation along the coast—particularly in the real estate and energy sectors—have made the region more vulnerable to a range of extreme weather risks. Drawing upon fieldwork in coastal fishing villages and informal settlements, this paper show how these urban and environmental processes reinforce forms of socio-economic and spatial inequality. This paper engages with debates in urban and political theory while also incorporating data from climate modelers in the earth sciences.

Topic 3: *Micro-Practices of Marginalization: Governance in Sri Lankan Tsunami Camps*

**Dr. Michele Ruth Gamburd**, Professor and Chair, Anthropology, Portland State University

In the immediate aftermath of the Indian Ocean tsunami in 2004, impromptu camps arose along Sri Lanka's southwest coast in temples, churches, and schools. By

promulgating rules over people and places, those who administered the crisis quickly established their authority. Using ethnographic data gathered in 2005 from camp residents and from religious leaders and government workers directly involved in camp management, this paper examines how camp administrators created power hierarchies and polarized identities as they formalized camp institutions. The author discusses three techniques through which camp administrators created governable subjects and spaces. The first was the proliferation of bureaucratic forms to collect personal information. The second technique was the creation of newly-rigidified camp boundaries that were guarded by military personnel, closed during nighttime hours, and accessible only to "aid-deserving" people or aid workers. The project of distributing relief materials equitably required considerable administrative coordination and effort. Using a third governance technique, camp administrators appropriated and withheld humanitarian goods. In most instances, aid was controlled exclusively by people who were not directly affected by the tsunami. Displaced people's resistance manifested as complaints. Fights over relief materials arose as the tsunami-affected grew increasingly marginalized from and distrustful of the administrators. Simultaneously, administrators grew to mistrust the camp residents, viewing the displaced as lawless, greedy, and lacking in self-control. Examination of governance strategies in short-term tsunami camps reveals the early growth of a top-down, paternalistic, potentially corrupt aid apparatus that marginalized tsunami-affected people and sacrificed their right to participate in their own rescue.

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Topic 4: *The Role of Government in Disaster Management: A Case Study of Recent Coastal Disasters in Sri Lanka and New Jersey, USA*  
**Pamela Ann Ferdinand**, MBA, Freelancer

Disaster management, both in Sri Lanka and the USA, has evolved to a system where government is the primary source of leadership in disaster planning and recovery. Past years have seen disaster management change from a process that started with managing destruction *after* a disaster to a system where planning and preparation along with recovery are now the entire process. The process used to be a system where officials waited for a disaster to happen before taking action. Now, preparations are made for a potential disaster and should one occur, procedures are put in place to take action for recovery.

The new system is not stagnant but fluid, allowing flexibility to make changes both during and after the disaster process. New ways of thinking are constantly emerging, because with every disaster there are lessons to be learned. The lessons from each disaster require changes to be implemented so that the process is ready for the next disaster. Mitigation is an important component of disaster management.

The term "disaster", as used here includes risks, incidents and impacts from extreme weather. Through interviews, questionnaires and observation of planning processes, this paper will examine the critical role that government plays in coastal disaster management both in Sri Lanka and New Jersey. Information will be compared of how governments develop partnerships with private businesses, non-governmental relief organizations and other necessary organizations to provide assistance to communities. Examples of

coastal disasters will be examined for good practices and lessons learned that may be used in the development and management of disaster assistance plans and procedures in any community.

Topic 5: *The Political Economy of Natural Disasters: A Case Study of Atta Abad Natural Disaster*

**Saranjam Baig**, PhD Candidate, Claremont Graduate University, California and Assistant Professor, Karakoram International University Gilgit-Baltistan, Pakistan

Adopting an ex-post approach and taking the Atta Abad natural disaster as a case study, this article focuses on the natural disasters' ex-post impact on the macro-economy and societal conditions of the affected region. Along with the socio-economic costs, this research also outlines the repercussions of the politics of mismanagement in the aftermath of natural disasters. In the absence of appropriate policy measures by the governments to tackle the ex-post reverberations of natural disasters, this research examines how routine bureaucratic venality and laziness may disturb the social fabric and the identity of displaced people. Taking the Atta Abad natural disaster as a lesson-learned, this research further investigates the behavior of the people living in other disaster-prone areas in the same region.

The Atta Abad natural disaster was an outcome of a massive landslide that came down a steep mountain slope in Hunza, an isolated valley that borders with China in the extreme north of Pakistan. The landslide filled the narrow valley of the Hunza River, blocked the water and buried the strategically-important Karakorum Highway. The result was formation of a 14

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mile long lake that split the region into two making the Upper Hunza accessible from central Hunza and rest of Pakistan only via the lake by a temporary and unreliable boat service. After four years of this disaster, the status-quo remains, which has severe socio-economic consequences on the lives of the local people.

And because natural disasters occur in a political space, the level of government preparedness and response greatly determines the extent of suffering incurred by the affected population; this research will give an outline of the determinants of the political apathy towards this disaster by the provincial and federal governments. Policy suggestions and implications that may improve the future policymaking will be discussed.



#### ***Institutional Practices***

3:15p.m. - 4:30 p.m.

Madison Ballroom, Madison Concourse Hotel

**Chair:** Dr. Mary Cameron, Florida Atlantic University

Topic 1: *Extreme Weather, Communities' Responses and Institutional Practices in Heterogeneous South Asia: A Case from Everest Region, Nepal.*

**Dr. PasangYangjee Sherpa**, Pennsylvania State University; Nepal Academy of Science and Technology

**MedineePrajapati**, Nepal Academy of Science and Technology, Kathmandu, Nepal

**PrashidhaYonzon**, Resources Himalaya Foundation, Kathmandu, Nepal

In the summer of 2011, heavy rain flooding destroyed houses in the village of Ghat, Everest region, Nepal. The villagers gathered as soon as they could to save people buried under the debris and to salvage whatever was possible. A few hours later, army and police personnel along with politically active youths from distant villages came together to assist in the rescue and salvage. Religious rituals to please the village deities and to protect the village from future disaster followed. Prayer flags were hung high and incenses were burned and a sign requesting donations from passers-by stood in front of a once standing house.

What this incident showed was that, at the village level, natural disasters are inevitable, community members work together in the aftermath of disaster often setting their prior interests and agenda aside, and perform religious rituals to keep future disasters at bay.

Further exploration of this incident and examination at the community level, showed the increasing unpredictability of the occurrences of extreme weathers among locals, lack of scientific knowledge about the wider range of extreme events,



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lack of sufficient restoration resources, and lack of accessibility to restoration resources or the knowledge of their existence.

Taking Everest region as a case study, the authors found that there have been institutional activities and scientific researches working on extreme event related issues for almost a decade now. However, the aforementioned limitations concerning the lack of knowledge and resources continue to exist. Additionally, households that are most vulnerable, who would benefit most from such institutional activities and research were found to be excluded or included only as passive recipients of “awareness raising” programs.

Based on the preliminary findings of our collaborative problem-solving project that began in December of 2013, this paper argues that proper institutional practices involving community members as equal partners and not just as passive recipients of foreign programs have the potential to better the current system. This paper finds that while extreme events at the local level are perceived in different ways, the communities’ responses may be enhanced or limited depending on the availability and accessibility of knowledge and resources.

This presentation recognizes the presence of trans-disciplinary multiple stakeholders including residents and non-residents. Secondly, it argues that critical engagement with the multiple meanings and perceptions of extreme weather held by multiple stakeholders should be considered in addressing extreme weather and disasters in a heterogeneous region like South Asia.

Topic 2: *Institutional Response to Drought: The Experience of a Farmer Company and Its Community in Sri Lanka*

**Dr. Namika Raby**, Professor, Anthropology, California State University Long Beach

This paper will focus on the impact of the 2003-2004 droughts in Sri Lanka through the experience of a farming community and the role of a farmer company in managing its wet season, Maha rice cultivation. While the drought was national, Kurunegala district and the north western province was declared under severe drought conditions by the Government of Sri Lanka and the Food Agricultural Organization of the United Nations. During this period, the RidiBendi Ela major irrigation system managed by the Irrigation Management Division of the Irrigation Department, Ministry of Water Resources was the only similar entity able to cultivate more than two-thirds of the command area with a corresponding low water duty. The RidiBendi Ela Farmer Company, Nikeweratiya, Kurunegala was the entrepreneurial arm of the tripartite model for irrigation management transfer, envisaged at this time, the remaining components being the community based farmer organization, and the irrigation agency: The farmer company is legally constituted under the Companies Act and the farmer organization and its parent organization is formed under the Irrigation Ordinance and the Agrarian Development Act. The respective roles of these twin entities mobilizing its community at large who are also shareholders in a company managed by farmers, is examined from the following perspectives: managing the drought on farm and mitigating its impact on the community. Data is then contrasted with two other scenarios of

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drought management: in this irrigation system without the active participation of the farmer company; and a farmer organization response to drought in an irrigation system without the presence of a similar farmer company.

Topic 3: *Mid-Second Century C.E. Responses to Gujarat's Lake Sudarśana Disaster*  
**Marilyn Edwards Leese**, Freelancer

In the year 72 (c. 150 C.E.), Lake Sudarśana's flooded embankments crumbled, leaving a dry and barren valley in the vicinity of Girinagara, in the Kāṭhiāwād region of Gujarat. According to his rock-cut inscription, the Mahākṣatrapa Rudradāman received different responses as to how to deal with the disaster. Local inhabitants urged restoration of the artificial lake which Chandragupta and Aśoka Maurya originally sponsored. Rudradāman's ministers, presumably residing far away in the Śaka's capital of Ujjain in Madhya Pradesh, counseled against refurbishment. Thirdly, a Parthian, apparently well-versed in hydraulic engineering, seems to have championed building a dam of a new design. This paper addresses influences which potentially informed each response as well as Rudradāman's eventual decision. In this regard, the paper takes into account various sources: Girnar's Aśokan edicts, South Asian law codes, Parthian hydraulic techniques, and finally, written and architectural records of the South Asian, Parthian and Roman worlds in the second century C.E.

Topic 4: *Institutional Practices (Nation-State, NGOs, and Civil Society)*  
**Hina Lotia**, LEAD Pakistan: Leadership for Environment and Development

Pakistan is ranked as the 12<sup>th</sup> most disaster hit country according to the Global Climate Risk Index, in time period 1993 to 2012. In 2010 due to the massive floods, Pakistan topped the list, while in 2011 it ranked third in the world. Pakistan is prone to a number of disasters and climatic extreme events such as floods, droughts and earthquakes. The situation has worsened due to the global trend of extreme weather and in future will be a nontraditional security threat to the country. In Pakistan, the mean temperatures are rising, glaciers are melting and precipitation patterns are becoming erratic and unpredictable. While extreme weather is a global phenomenon, Pakistan with its low resilience capacity has become one of the most vulnerable countries. Historically our approach to address climate extreme events has been reactionary. The recent disasters in Pakistan exposed our inadequate preparedness and also ability to respond post-crisis. Keeping in mind our high vulnerability, our approach needs to change from a fire fighting mode to a focus on building long-term resilience. The key step in this direction is to build strong institutions and better coordination amongst various actors (bringing different expertise forward) – nation/state, civil society (CSOs) and academics.

Institutions play a fundamental role in a country's ability to plan and respond to disasters. In the developing world, we increasingly find non-state institutions like NGOs and CSOs playing a vital function as instruments of informal public policy making. NGOs/CSOs are brewing to the policy front by undertaking initiatives related to advocacy, awareness, public policy engagement and policy research. Furthermore, non-state institutions are also active in on-ground activities – evidenced by

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the 2010 major flood relief work carried out by NGOs and CSOs. Also, academic institutions are doing credible research, which can be useful for evidence-based policy making.

In Pakistan, both state and non-state institutions (CSOs and Academia) are playing a role in managing disaster risk. However there is space for better coordination between the two. In Pakistan, state institutions both at the federal and provincial level, have a mandate to effectively respond and provide relief in the event of a disaster. Though service provision gaps in certain areas overlaps with others. However as a result of weak capacity and knowledge-base, their work is predominately ad hoc. In this weak state institutional structure – NGOs and civil society organizations play a vital role in disaster risk reduction. However we are yet to define and map the roles of these institutions and discern what possibility of synergies and collaboration exists.

With this in mind, LEAD Pakistan proposes to arrange an expert panel on mapping the current practices of state and non-state institutions in Pakistan related to extreme climatic events and disasters. The panel will include representatives from both state and non-state disaster response institutions in Pakistan. In this mapping exercise the panel discussants will:

1. Identify gaps or overlaps in institutional practices and service delivery
2. Define or suggest the role each type (state and non-state) of institutions can effectively and efficiently play
3. Identify and recommend possible synergies and possibilities of collaboration
4. How can non-state institutions (NGOs, civil society organizations and academia) play a role in influencing better and evidence-based policy making

#### Closing Session (4:30 p.m.– 5:00 p.m.)

AIBS Reception and Social Hour  
Conference Room V  
(all participants are invited)  
5:30 p.m. – 6:30 p.m.

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