



Project Brief - December, 2015

# Climate Change, Uncertainty and Transformation

About the project : **Climate Change, Uncertainty and Transformation**

NMBU : <http://bit.ly/1Qk35X5>

<https://www.ids.ac.uk/project/climate-change-uncertainty-and-tranformation>

<http://steps-centre.org/project/uncertainty/>

## Project summary

Climate change is considered to be one of the defining development challenges in the 21<sup>st</sup> century. Its impacts are set to be unprecedented and will lead to profound changes in the ways societies interact and function. Despite growing consensus regarding the multiple problems related to climate change, there exist a lot of uncertainties regarding how to anticipate and predict changes to the climate and environmental systems around the global, their local level impacts and how to respond to them. This is particularly true for poor and marginalised citizens of the world who depend on natural resources for their daily survival. Uncertainties in this context play a critical role in understanding and formulating responses. Dominant scientific and policy narratives tend to be limited in their understanding of uncertainty, basing their knowledge and policy prescriptions overwhelmingly on top down, expert knowledge and 'abstract' quantitative models. Our aim in this project is to draw on the experience and knowledge of local people living with everyday uncertainties and their ways of dealing with extreme climatic events. In doing so, we seek to complement existing 'mainstream' discourses of uncertainty with alternative knowledge regimes in order to make climate science more relevant to local people. This should hopefully help decision makers to draw on a wider range of options to address climate change issues. In addition, our research aims to foster wider transformative societal change by unmasking the barriers that uncertainty poses in bringing about more sustainable, equitable and just societies.

## Research partners

The project '*Climate Change, Uncertainty and Transformation*' is funded by the Norwegian Research Council (NFR) and involves a number of premier institutes around the world. It builds on earlier work on the topic undertaken by the ESRC funded STEPS Centre at the University of Sussex. The research group is led by the Department of International Environment and Development Studies (Noragric) based at the Norwegian University of Life Sciences (NMBU). The study partners are Institute of

### Focus

Interdisciplinary approach of looking at climate change uncertainties

Foster an understanding of uncertainty that is more inclusive and equitable

Identify barriers and interactions with transformation

Study differential experiences of uncertainty through the lens of gender, history, culture and socio-political context

### Key areas :

Water, Health, Livelihoods, Shelter, Policy and Practice

Development Studies (IDS), University of Sussex, STEPS Centre, Brighton; Norwegian Institute for Water Research (NIVA), Oslo; Indian Institute of Health Management Research University (IIHMR);



Mumbai Floods  
Photo Courtesy -  
[www.foelore.org](http://www.foelore.org)

Indian Institute of Technology Bombay (IITB), Mumbai; All India Disaster Mitigation Institute (AIDMI), Ahmedabad; Centre for the Study of Developing Societies Sarai (CSDS), New Delhi and Gujarat Institute of Desert Ecology (GUIDE), Bhuj, India.

Our research interests and foci span a number of disciplines from the social and natural sciences but largely located within the interdisciplinary fields of Development Studies and Science Technology Studies. As part of this research outlook, we look at distinct ecological settings and urban/peri-urban areas across three research sites in India - Kutch (drylands), Sundarbans (wetlands) and Mumbai (urban/peri-urban).

### Research focus

Uncertainties in climate change projections tend to vary widely and their integration in decision-making is highly debated and disputed by scientists and policy makers alike. Despite disagreements, quantitative assessments (usually based on probabilities and ecological risk assessment) continue to remain at the core of the scientific method. Policies that are informed and born out of this theorizing by experts, natural scientists and policymakers are limited to the

extent that they do not include valuable perceptions and everyday understandings in negotiating, living or coping with uncertainty. This approach of the 'above' is likely to bypass the interests of poorer and marginalized people, particularly in the global South. Thus our research will explore how bridges can be built between these varying perceptions and what should be done in order to support transformative development pathways that are more just, inclusive, equitable and acknowledge a variety of world views and knowledge systems.

Conceptually, we are concerned with the discourses, practices and contradictions around uncertainty in three different realms and their interactions:

- *Uncertainty from above*: The 'official', accredited expertise from established scientific disciplines and professions that are linked to powerful agencies and actors. These include experts, modelers, planners and natural scientists.
- *Uncertainty from the middle*: Intermediaries that communicate and translate information and understandings of uncertainty between the 'above' and 'below', the facilitators between the scientific and experiential knowledge. Actors here include civil society organizations,



Continuous land erosion from last 40 years  
Photo Courtesy - IIHMR University



Depletion in the Asia's largest grassland area – Banni  
Photo Courtesy - GUIDE

academic institutions, media, and political stakeholders.

- *Uncertainty from below*: The framings of lay and local people in the global South which emanate from their direct, lived experiences. Their experiences, perceptions and knowledge may differ from or can complement existing scientific knowledge.

### Project approach and research sites

The project's research sites represent a selection of diverse socio-economic and ecological settings. They include a megacity (Mumbai), a dryland area (Kutch) and a wetland area (Sundarbans). Their contrasts and dynamics provide a rich pool of data that we study using an eclectic mix of research approaches and methods which include sociological, economic, ecological and historic components. Not limited to these sites, our exploration is embedded and locks in at various scales that include global, national and local discourses around climate change, uncertainty and transformation. Through this holistic approach, the project will contribute to a deeper understanding of these interrelated issues in India and beyond.

#### ***The Sundarbans***

The Sundarbans is a UNESCO World Heritage Site located in West Bengal (India) and Bangladesh. Besides being the largest mangrove delta in India with a dynamic and complex ecosystem, it is also one of the most visible victims of climate change. Cyclones, sea level rise and socio-economic challenges contribute to make it highly vulnerable. The research will explore how different people experience and respond to climate-related changes and the accompanying challenges in areas such as health, livelihoods and shelter.

#### ***Mumbai***

Mumbai is the largest urban agglomeration in India and faces specific concerns on account of its coastal location, topography and rapid urban development. The impact of sea level rise on coastal communities, disappearing mangrove forest cover, floods, temperature and precipitation changes, in conjunction with development pressures pose formidable challenges for present and future adaptation. The research is examining the relationships between different kinds of uncertainty, (e.g. floods and disasters), livelihoods and planning models.

### Kutch

Kutch is a dryland area in the Indian state of Gujarat with historically specific and embedded experience(s) of water scarcity and ecological uncertainty. In Kutch, the research focuses on understanding the links between climate change and livelihoods in two of the district's diverse ecological areas: agro-pastoral lands and the coastal area. Each of these areas experience various climate-related variability and vulnerabilities, including changes in rainfall and drought patterns. This research will look into scientific, social and political narratives of climate variability and how people cope with it against the backdrop of a rapidly changing political economy of this region.

### What we will do

Given the mounting challenges of climate change and the increasing urgency with which global actors seek to address it - as exemplified by the Paris Climate Agreement (2015) - our research can play an important role to help complement existing, dominant scientific regimes and add to discussions on alternative development pathways. In order for the projects findings to be of relevance and use here, we intend to disseminate them to a wider audience of academics, decision makers, development agencies, public at large and media through various channels:

- Site wise monographs and reports: These will provide a comprehensive picture of how uncertainty, climate change, and translation are perceived and understood in India.
- Learning and sharing platforms: Meetings with stakeholders will bring together 'representatives'



Demolished house due to coastal erosion and sea level rise  
Photo Courtesy : IIHMR University

of multiple knowledge frames. These include policy experts, civil society actors, scientists and implementing organisations at the sub-national, national and global level. We will engage in discussions with participants that revolve around informed and inclusive decision making related to uncertainty.

### Get involved

We strive to foster dialogue with academics, practitioners and the larger community to gain a better, more inclusive understanding of uncertainty and its co-relationship with just and equitable development outcomes. For this purpose, a series of workshops, in-depth interviews, group discussions, community level meetings and media linkages have been planned for which we welcome new participants. If you would like to get in touch with us, sign up for updates on our website, and to find out more please refer to the contact details provided below.



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