Newsletter Issue I: Vulnerability and Risk Assessment *October 2011*

Dear Reader,

Welcome to the first issue of **CCA RAI NEWS**, the newsletter of the project Climate Change Adaptation in Rural areas of India (**CCA RAI)**. Each issue will focus on a specific topic around climate change adaptation in India. In this issue, we focus on vulnerability and risk assessments and the different articles included here give an insight into its approaches and applicability for Indian states. The section ***Project News*** highlights most important activities from our project.

This Indo-German development cooperation project **Climate Change Adaptation in Rural Areas of India (CCA RAI)** aims to enhance the capacities of vulnerable rural communities in India to live with climate variability and change. The Ministry of Environment and Forests **(MoEF),** Government of India, four of India's federal states **Rajasthan**, **Madhya Pradesh, Tamil Nadu** and **West Bengal** and **GIZ** are using a multi-level approach involving several different components to work towards this goal, guided by India's National Action Plan on Climate Change (NAPCC). The main fields of work under the project are:

- Supporting state-level action plans on climate change
- Conducting vulnerability and risk assessments
- Developing and testing adaptation measures
- Climate proofing of public investments and rural development programmes
- Development of financial instruments for adaptation
- Information and knowledge management
- Capacity development

The CCA RAI team would like to thank all the authors who have contributed articles for this issue and hopes that you will find the articles informative and interesting.

We would highly appreciate your feedback on the newsletter. Kindly write to us at cca.rai@giz.de with your views or for more information.

Project News

Workshop on Science-based Policy Options for Climate Change Adaptation in Rajasthan in February 2011

A two-day workshop on "Science-based policy options for climate change adaptation in Rajasthan" was organised by GIZ India and Rajasthan State Pollution Control Board on 24th-25th February, 2011 in Jaipur.

The workshop was successful in achieving its objectives. As the most important outcome of the workshop, two pilot projects i.e. sand dune stabilisation and agro-forestry were identified to be implemented under the CCA RAI project in Rajasthan.

Developing and testing technical adaptation measures

A documentation of ongoing projects and various institutions engaged for climate change adaptation in India and the four partner states was undertaken by a study commissioned to Winrock International India.

Two workshops for identifying technical adaptation interventions for West Bengal and Madhya Pradesh were held in **April 2011**. They were organised by the Department of Environment Government of West Bengal and The Environment Planning & Coordination Organisation (EPCO) Bhopal in Madhya Pradesh. Concept notes were developed by the participants according to pre-defined criteria for possible adaptation measures to be tested in Madhya Pradesh and West Bengal. The workshops helped in bringing together expertise from various institutes and organisations for developing some of the concrete pilot interventions. Two demonstration projects have started in this regard; one for food and livelihood security in flood plain region of West Bengal and the other for sequential restoration of sand dunes in Rajasthan.

Training of Trainers: Integrating Climate Change Adaptation into Development Planning, New Delhi July 2011

A Training of Trainers (ToT) on "Integrating Climate Change Adaptation into Development Planning" took place from 26.07.11 – 04.08.11 in New-Delhi, India. The highly motivated group consisted of experienced trainers and adaptation practitioners from Nepal, India, the Philippines and Germany.

All the freshly nominated trainers are now looking forward to soon give customised climate change adaptation trainings. There are already further trainings planned in India, e.g. in the North-Eastern region and also quite a few in the Philippines. For further information on climate change adaptation trainings in India please get in touch with Ms. Anna Kalisch at anna.kalisch@giz.de.

Climate proofing of public investments and rural development programmes

As a first step towards this approach an initial study to assess the potential of Joint Forest Management (JFM) as one of the government schemes for generating adaptive capacities was commissioned from Winrock International, India.

Seminar on Financial Instruments for Climate Change Adaptation May 2011

Seminar on "Financial Instruments for Climate Change Adaptation" was held on May 16, 2011 in New Delhi. Various consultancy firms, voluntary organisations, research centres, management institutes, and insurance companies working in this field shared their experiences of working conditions at the grass root level with poor communities.

State Action Plans on Climate Change

Under the CCA RAI project GIZ is currently supporting 14 states and two union territories in preparation of their state level action plans on climate change. GIZ on behalf of MoEF played the role to network with the state governments to ensure that the process is steered at the highest level. Out of the sixteen states 11 states have already submitted their state action plans to Ministry of Environment and Forests.

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Climate Change Adaptation in North Eastern Region of India (CCA NER)

Under the Adaptation portfolio of GIZ there is another technical cooperation project Climate Change Adaptaton in North Eastern Region of India (CCA NER) which has recently been initiated in July 2011 with the partner states as Sikkim, Meghalaya and Nagaland.

Articles

Methodological framework for climate change vulnerability assessment in India

The Energy and Resources Institute (TERI), Stockholm Environment Institute (SEI), European Climate Forum (ECF)

Many definitions and frameworks have been used to understand vulnerability of a system to climate change and this has lead to the development of diverse methodologies for assessing vulnerability. Vulnerability assessment can be a complex task requiring many steps along with collection of large quantities of information. Understanding that a multitude of interpretations of vulnerability exist, this study sought to develop a methodological framework for assessing vulnerability for purposes of adaptation planning. In cognisance of the challenges that vulnerability assessments currently face, this framework does not rely on one generic method but guides the development of a customised approach by selecting various methods and tools and then combining them into a methodology that is context-specific. This framework is represented under three nodes viz. knowledge about the vulnerable entity; key questions that capture and build on existing knowledge and the methods that are applied to increase the knowledge about the vulnerable entity that is being considered.

Climate Change Vulnerability Profiles for North East India

NH. Ravindranath, Centre for Sustainable Technologies, Indian Institute of Science

The study was initiated to assess the impacts and vulnerability of North East states of India to current climate variability and projected climate change. It developed an index based approach of vulnerability assessment for the key sectors agriculture, water and forest at the district level. Representative indicators for these fields of natural resources were determined with the help of the statistical technique Principal Component Analysis (PCA). Determined indicators were temporal and local variability of rainfall, groundwater availability, population density, and fragmentation and biodiversity of forests among others. The objective was to assist in (i) identifying and prioritising the most vulnerable sectors and districts to assist planners, decision makers and development funding agencies to identify the most vulnerable regions for adaptation interventions, (ii) identifying adaptation interventions and (iii) mainstreaming adaptation into development programs. Results indicate the majority of the districts in North East India are subject to climate induced vulnerability currently and in the near-term future. The vulnerability shows diverging spatial patterns for the different sectors. The northern districts of North East India are more vulnerable to climate change in the agricultural sector, western and central parts mainly in the water sector, and eastern districts in forest sector. The study demonstrated the application of an index based approach for identifying the most vulnerable sectors and regions and to identify and prioritise adaptation interventions.

Stakeholder engagement in climate change vulnerability assessments and associated challenges: A case study in the Ganges Basin in India

Suruchi Bhadwal [a], Ashok Mishra [b], Arabinda Mishra [a], Sreeja Nair [a], Sneha Balakrishnan [a], Sambita Ghosh [a], G. J. Lingaraj [a], Annemarie Groot [c], Christian Siderius [c], Catharien Terwisscha van Scheltinga [c], Eddy Moors [c] and Tanya Singh [c]

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This ongoing study seeks to assess the impact of Himalayan glaciers retreat and possible changes in the Indian summer monsoon on the spatial and temporal distribution of water resources in Northern India. The study will integrate outputs from climate and hydrological modelling with socio-economic projections for the Ganges basin. Stakeholder perspectives from the case study sites will be integrated with the results of modelling assessments in order to assist in the formulation of adaptation strategies that are locally suited. Stakeholder perceptions are gauged through a series of surveys conducted at the state, district and community level across the Ganges basin. These surveys cover issues related to climatic hazards, past and current coping strategies and their effectiveness, identification of vulnerable groups, regions and sectors, and changes in their vulnerability patterns. One of the key challenges faced on ground is with respect to the communication of scientific information in a manner best understood by stakeholders and integrating results of scientific assessments with stakeholder perspectives.

Communities Perceptions on vulnerability to climate change, coping mechanism and adaptive capacities in Sikkim

Nima Tashi Bhuti and Kinzong S. Bhutia

The communities in Sikkim, a state situated in the north eastern Himalayan region of India, have been living closely with nature over centuries and have always depended upon agriculture, animal husbandry, and forestry for their livelihood. The agriculture in Sikkim has undergone a major transformation from food grains production to cash crops like large cardamom, ginger and orange. These communities are particularly vulnerable to climate change as a result of their high dependence on various ecosystem services and natural resources.

In the last years, the climate has shown considerable changes with less winter frost and snowfall, more cases of drought, increase of rainfall intensity and untimely hail storms while rainfall months have decreased. Various measures of adaptation have been undertaken to sustain their livelihoods over the time. The welfare programmes of government like the public distribution system and the Mahatma Gandhi National Rural Employment Guarantee (MGNREGA) schemes provide the basic income to sustain the livelihoods of communities. People have also diversified their livelihood options from just agriculture and livestock to non-farm activities like tourism, horticulture, medicinal plant cultivation, orchards and daily wages employment in various developmental activities. Additionally, the market chain has improved by direct marketing and export of their products.

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