



Climate Change Adaptation in Rural Areas of India – CCA RAI

The work related to climate-proofing focusing on Climate Change Adaptation (CCA) and mainstreaming it in development planning and government schemes, has been realised under the Indo-German development project Climate Change Adaptation in Rural Areas of India (CCA RAI) which is jointly implemented by the Ministry of Environment, Forests and Climate Change (MoEF & CC), Government of India and Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ). CCA RAI is financed by the German Federal Ministry for Economic Cooperation and Development. As part of climate-proofing, National Bank for Agriculture and Rural Development's (NABARD) watershed development Programme and the Forest Department's Joint Forest Management (JFM) Programme have been assessed with respect to long term climate impacts for more efficient and climate-resilient Programmes.

Climate Proofing of Public Schemes in India: Selected cases of Watershed Development Programmes and Joint Forest Management Programme.

Context/Background

The Government of India has recognised climate change as a potential threat that can undermine developmental work. Climate change in India is now being addressed and debated at various policy levels and efforts are made to mainstream climate change adaptation into development planning. There are existing rural development programme in India which contribute to building adaptive capacities of the rural poor. Many of these programme will face challenges due to climate change. Developmental plans hence need to be screened for climate risk and should be made resilient to the climatic uncertainties. Consequently, the project has based climate proofing work on the following adaptation hypothesis:

The main objective of Climate Change Adaptation in Rural Areas of India (CCA RAI) project is:

To enhance the adaptive capacities of vulnerable rural communities in rural India so that they are better equipped to cope up with climate variability and change.

Adaptation Hypothesis

Climate Proofing of Indian Public schemes safeguards achieving their objectives under changing climate conditions. It identifies co-benefits and opportunities to increase resilience at local level.

India's **National Water Policy, 2012** has a component on climate change adaptation strategy particularly focusing on increasing water storage through revival of traditional water harvesting structures and water bodies and efficient use of water. The **National Mission for Green India (GoI, 2010)** aims to build up strategies which focus on ecosystem resilience and strengthen ecosystem services. Adopting an approach of Community-based Natural Resource Management (CBNRM), the Government of India has tried to implement this strategy by developing guidelines for jointly managing forests with the communities in the form of Joint Forest Management (JFM) during the last two decades. However, in the light of recent challenges like climate change, the guidelines may need to be looked at through a climate lens to ensure their effectiveness.



Keeping all these concerns in perspective CCA RAI introduced climate proofing and applied this tool in the two major schemes: The watershed development programmes of the National Bank for Agriculture and Rural Development and Joint Forest Management programme of Ministry of Environment, Forests and Climate Change, Government of India.

The major objectives of using climate proofing tools are:

- To ensure that objectives of development plans are not undermined by potential climatic change.
- To ensure that a developmental programme or scheme is not leading to maladaptation practises and is not exacerbating the effects of climate change.
- Helps to identify and enhance inherent adaptation value of a project.

Climate proofing for Development

GIZ's Climate Proofing for Development is a methodological tool aimed at incorporating concerns of climate change into development planning. It enables development measures to be analyzed with regard to the current and future challenges and opportunities presented by climate change. It also addresses options of co-benefits to make development more inclusive and sustainable. The tool can be applied at national, sectoral, local and project level, and makes development measures on these levels more efficient and resilient. Climate proofing helps identifying and prioritising adaptation options, which can then be applied in the planning phase or when revising plans.

The overall objective of climate proofing of the schemes is:

- To enhance the efficiency of the programmes so that the primary goal of climate resilient development is fulfilled.

CCA RAI project climate-proofed NABARD's Watershed Development Fund (WDF) and the Indo-German Watershed Development Programme (IGWDP) in Tamil Nadu and Rajasthan, respectively. The project also worked with climate proofing tool on the Joint forest Management (JFM) scheme at the local level in Tamil Nadu and Madhya Pradesh. These programmes are examples of Community-based Natural Resources Management (CBNRM) programmes in India. Climate proofing of these schemes involves sensitisation of the stakeholders involved in governance and management of the water resources and forests.



Key steps

The generic steps as outlined in GIZ's climate-proofing tool are illustrated in the diagram below:

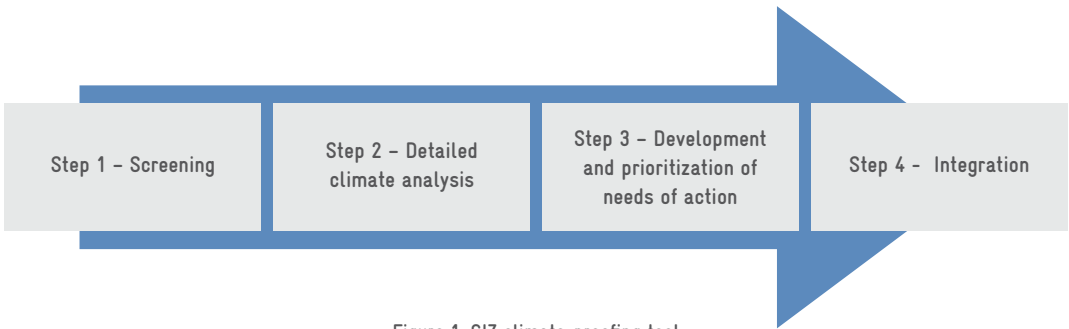


Figure 1: GIZ climate-proofing tool

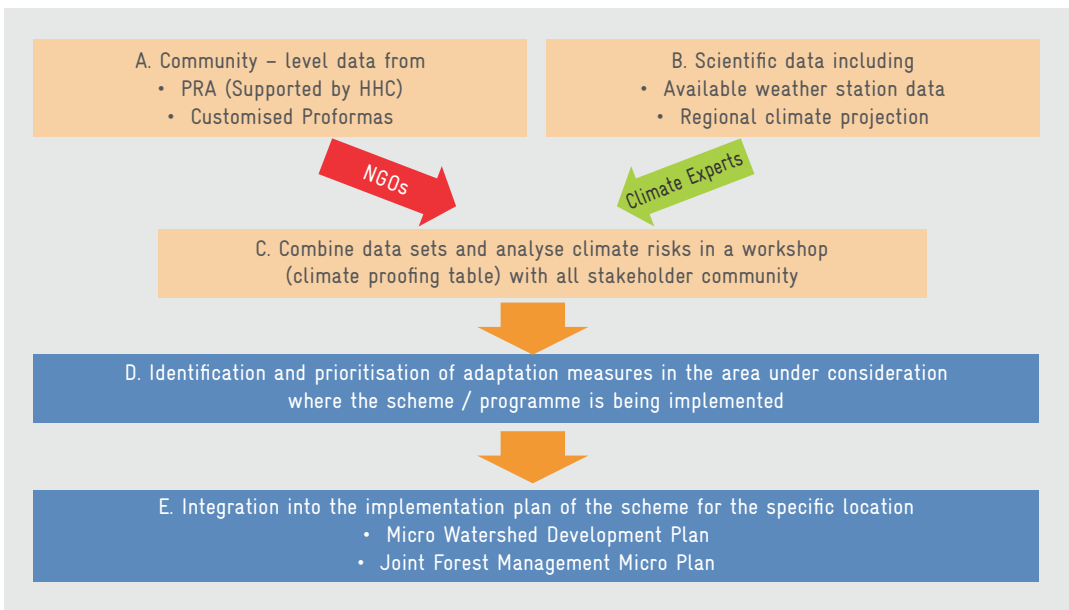


Figure 2: Diagrammatic representation of climate-proofing public schemes



Climate proofing tool is participatory in nature and involves a combination of top-down and bottom-up approaches. Based on an analysis of the current and projected climatic trends in the region, probable biophysical and socio-economic impacts of climate change on the exposure unit, existing adaptive capacities of the communities and gaps have been identified to integrate adaptation options. These options are recommended by experts, prioritised through a stakeholder consultation and are then incorporated in the plan.

Objectives of climate proofing watershed development programme and learnings

Key objectives of climate proofing watersheds are:

- To analyse biophysical and socio-economic impacts & risks of climatic variations on goals of watershed development programmes in India.
- To assess the sensitivity and vulnerability of the watersheds in India based on the projected climate scenarios.
- To study existing maladaptation practices in the watersheds which have the potential to exacerbate the effects of climate change.
- To address risks and opportunities arising due to climatic variations
- To address options of co-benefits and convergence of watershed development with other ongoing programmes in India.
- To build and strengthen climate change adaptive capacities of communities within a watershed, without foregoing development for the poor.

Climate proofing watershed was piloted in two watersheds under the Watershed Development Fund (WDF) of NABARD in Dindigul district of Tamil Nadu and in Udaipur district of Rajasthan under the Indo German Watershed Development Programme (IGWDP) of NABARD.

Climate proofing watersheds assessed the impacts of climate change on various exposure units such as soil, agriculture, water, forests, pastureland, livestock and livelihood of communities within the two watersheds and identified treatment measures for implementation which would reduce the vulnerability of the watershed and build adaptive capacities of the communities. This helped to assess not only the probable risks to the watersheds due to climate change but also helped in evaluating the objectives of the ongoing watershed development programmes in India in light of these climatic changes. These



assessments strengthened the need to follow a risk based approach to adaptation and mainstreaming adaptation into development. The objectives of climate proofing watershed are in line with the overall objectives of the NAPCC specifically on the National Water Mission. It also addressed some of the issues highlighted in the National Water Policy, 2012, and other similar government initiatives to reduce India's vulnerability to climate change.

The output of this exercise is in the form of climate proofed WDF and IGWDP guidelines and a chain of impacts of climate change based on climate and socio-economic data, fed into the 'climate proofing table'.

Objectives of Climate-proofing Joint Forest Management programme and learnings

The outputs of this exercise are two independent studies with respect to the selected JFM Committees (JFMCs) in Madhya Pradesh (MP) and Tamil Nadu (TN). Local grid level climate data (temperature and rainfall) of past three decades were used to analyse the climate pattern and project short term and long term climate scenarios in both the regions. Analysis of the planning documents of these committees and climate impacts on forests and livelihoods were carried out.

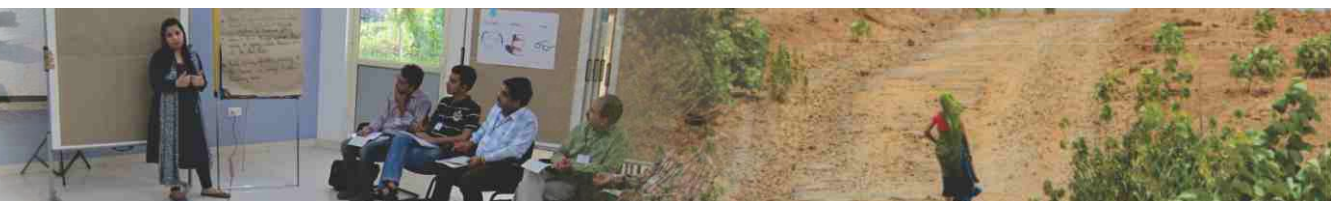
The final outcomes of this exercise have been captured in a generic set of learnings for JFM in India and their continued and increased relevance in the context of anticipated climate change. These are:

The key objectives of climate proofing the Joint Forest Management scheme are:

- Reviewing the Joint Forest Management guidelines in the CCA-RAI partner states (Madhya Pradesh, Rajasthan, Tamil Nadu and West Bengal) to assess their adaptation potential in forestry sector
- To assess the micro plans of the Joint Forest Management Committee in the vulnerable districts selected in the states.
- To assess the biophysical and socio-economic impact of current and future climate projections on the selected forest areas managed by JFMCs.
- To carry on scientific and community assessment and suggest adaptation options which helps in restoring the ecosystem services and securing the NRM dependent livelihood base of the community.
- To prioritize the suggested adaptation options during a stakeholder consultation and present the recommendations to Ministry of Environment and forest.



- Direct human pressure on forests is considerably high, even without taking into account the expected negative impacts of a changing climate
- Climate-induced tipping points will put forests and people depending on them at great risk
- Valuation of environmental services provided by forests to non-forest sectors and internalization in the mainstream economy is part of the solution
- Governance matters! Improvement in governance mechanisms will go a long way in managing the forest resources: only joint effort by Forest department and community participation can achieve this
- Multi - sector coordination is the key to success
- Better-equipped forest service (in terms of infrastructure, equipment and personnel) can make the difference
- Integrated Knowledge management, proper coordination in the forest sector, social vulnerability assessment and research focused on the long term form the foundation for designing and implementing interventions for climate change adaptation
- Timely access to adequate information is critical to build in resilience of the forestry sector to climate change
- Protecting and diversifying livelihoods are the best way for managing climate change related risks
- JFM Micro-plans can go a long way in supporting climate change adaptation of people and forests alike



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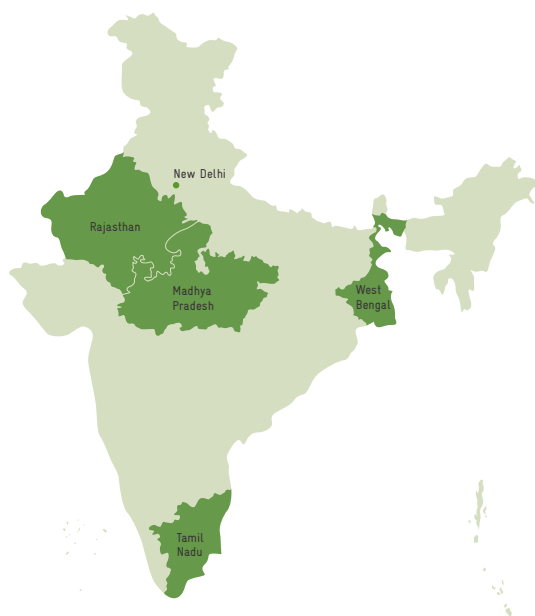
Peter Saile

Edited and compiled by :

Indraneel Ghosh
Kaushik Raj Hazarika
Peter Saile

Website :

www.ccarai.org



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PROJECT PARTNERS

Government of India

Ministry of Environment, Forests and
Climate Change (MoEF & CC)
| <http://www.envfor.nic.in/>

German Development Cooperation

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
| <http://www.giz.de>

Government of Madhya Pradesh

Environmental Planning and Coordination Organization
(EPCO)
| <http://www.epco.in/>

Government of Rajasthan

Pollution Control Board
| <http://rpcb.nic.in/>

Government of Tamil Nadu

Department of Environment
| <http://www.environment.tn.nic.in/>

Government of West Bengal

Department of Environment
| <http://www.enviswb.gov.in/>