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Session 2, Column 2 (Mitigation II)

Generating Evaluative Evidence for Climate Change Mitigation through Training Rural and Tribal Women in Central Indian Forests

Yogesh D. Jadhav
Chief Operating Officer
Barli Development Institute for Rural Women,
Indore, INDIA
www.barli.org  ydjadhav@gmail.com  0091-98275-57489
The problem!

So how do we get from where we are to where we want to be...?
A possible way forward/solution..

An ancient teaching....The essence of action..

- **Karmanye Vadhiyakaraste, Ma phaleshou kada chana,**
  **Ma Karma Phala Hetur Bhurmatey Sangostva Akarmani.**“

- (“You have only the right to do your duty, not to its fruits. Never consider yourself the cause of the results of your activities, and never be attached to not doing your duty.”)

The Bhagavat Gita (2. 47)
Coming to terms with: Global climate change

Let us admit that...
- Anthropogenic climate change has happened in past several decades and has not been a ‘days phenomenon’
- Hence mitigation/adaptation initiatives have to be given ample time so as to see the results of actions
- Results won’t happen overnight, but resolute and timely actions are needed
- Evaluations would have to wait 😊; i.e. until ample evidence has been generated
- And all these efforts need to be inclusive: starting from the ground up, and must include the grassroots communities
- Every action counts which may not be necessarily be evaluable right away!

‘A Journey of a thousand miles begins with a single step’
Background

• Central Indian forests are most vulnerable towards climate change
• Nearly 400 million tribal and rural people are dependent on forests for their livelihoods
• Forests are degrading due to exposure to multiple stressors in tribal areas: rapid land-use change due to intensive agriculture, unplanned urbanisation and other anthropogenic activities.
• Impacts: water resource scarcity, depleting biodiversity, and adverse impacts on local ecosystem services.
• Relevance: The human-environment systems of the tribal communities (including land-use and land-use change stressors) play a crucial role in rural and tribal areas of India
Sustainable forest management (SFM) - recognised as an important element of sustainable development - Rio, 1992.

Sustainable forestry practices have been quintessentially linked to climate change mitigation and adaptation activities worldwide (REDD+, LULUCF, FAO, UNFCCC, etc).

Many countries initiated processes for development of C & I for SFM.

Launch of the regional initiative for Sustainable management of dry zone forests (including India)
Policy framework for tribal people’s participation in climate change mitigation through forestry activities

**Policy framework**
- The Joint Forest Management resolution (JFM, 1990)
- Constitution and role of the JFM committees
  - FPC: Forest Protection Committee,
  - VFC: Village Forest Committee,
  - EDC: Eco-development Committee

**State-people synergies**
- Participatory roles of the state and the forest peoples’ institutions in sustainable forest management (SFM)
- Linkages of SFM and vulnerability monitoring with tribal peoples’ participation;

There is a need for monitoring these indicators of climate change at local/grassroots level
Madhya Pradesh is the second largest states in India, with a population of more than 60,385,118 people, but it is one of the most poorest states. The tribal people, which comprise of more than 12,233,000 people, (about 20%) are the poorest of the poor. And nearly half of this population are the tribal women and girls.
Tribal women are the key players in managing local forest resources. They are valuable repositories of local knowledge and can capture time line data on local changes in local climate. They are better informed about the spatial-temporal changes in forest sustainability in their tribal villages. Hence, tribal women can play a pivotal role in monitoring climate change mitigation.

The Barli Development Institute for Rural Women trains tribal women in conserving their forest ecosystems through mapping and evaluating the indicators of changing climate in their tribal areas (in addition to making them self-reliant through training in life-skills).

*The site: Madhya Pradesh contd...*
TRIBAL AREAS FROM WHERE THE RURAL AND TRIBAL WOMEN COME FROM
Methodology for evolving Peoples’ Indicators (PI) for generating evaluative evidence at Barli Institute

- Guidelines adapted from base/generic set of indicators (from sources like: FAO, CIFOR, ITTO)
- Sensitisation of tribal women about the C&I system (based on the generic set of C&I)
- Evolution of people’s indicators through participatory processes like: participatory discussions, workshops, focused group discussions, knowledge sharing, demonstration plots
- Training the women in monitoring and evaluating these peoples’ indicators in their respective tribal/forest areas
Conceptual framework

Global Indicators & Criteria
(FAO, CIFOR, ITTO)
(A top down approach)
(Globally agreed and enforced)

Minimum acceptable set of Indicators and Criteria (I&C)

Peoples’ Indicators (bottom-up approach)
(Locally evolved and validated)
Generating evaluative evidence for climate change mitigation
Participatory workshop at Barli Institute

Participatory training workshop at Barli Institute (duration 10 hrs)

• Session 1: Introduction to climate change and sustainable forestry (2 hrs)
  – Sensitisation: sustainability principles (by use of Cooperative games, and documentary films)
  – Field demonstration of sustainability practices
  – Dividing the participants into groups

• Session 2: Brainstorming on climate change and its impacts on tribal areas (1 hr)

• Session 3: Workshop: Expression of forest situations and indicators through sketching and coloring (4 hrs)

• Session 4: Interactive presentations by groups (2 hrs)

• Session 5: Learning and sharing the results (1 hrs)
Introduction to climate change and sustainable forestry
Introduction to climate change and sustainable forestry
Brainstorming on climate change and its impacts on tribal people (1 hr)
Creative expression of forest situations and indicators through sketching and coloring (4 hrs)
Creative expression of forest situations and indicators through sketching and coloring (4 hrs)
Interactive presentations by groups
Learning and sharing the results
Outcomes

- Tribal women have their own indigenous ways of assessing the changes in climate and forest sustainability of their forests
- Tribal women are better informed about these changes as they are the primary users of forest resources (including: fuelwood, fodder, small timber, non-wood forest products, etc)
- Peoples’ Indicators for sustainable forest management can be used to generate evidence for climate change mitigation
- Due to the training interventions of Barli Institute, the tribal women are being empowered to monitor and evaluate climatic changes in the community forest areas of the trainee-women.
Benefits of using Peoples’ Indicators (PI)

- Spatio-temporal robustness and site-specificity of PI
- Ease of implementation
- User-friendliness
- Use of local knowledge
- Cost effectiveness
- Objective verifiability of PI
- Validity of collected information over-time
- Sense of ownership by women and their tribal communities
### Some examples of Peoples’ Indicators (PI) for climate change

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Indicators (Base set)</th>
<th>The corresponding ‘Peoples’ indicators’ expressed by the tribal women</th>
</tr>
</thead>
</table>
| **Criterion 1: Extent of forest and tree cover** | 1. Area and type of natural and man-made forests  
2. Forest area under fragile ecosystems  
3. Area of dense and degraded forests  
4. Area rich in NWFP species  
5. Forest area diverted to non-forestry use  
6. Community managed forest area | 1. Forest area and density  
2. Trees on bunds, wastelands etc.  
3. Forest area under community management |
| **Criterion 2: Ecosystem function and vitality** | 1. Status of natural regeneration  
2. State of natural succession  
3. Status of secondary forests  
4. Weeds pests, disease, grazing, fire etc.  
5. Maintenance of food chain | 1. Natural regeneration  
2. % of healthy trees  
3. Weeds, grazing, fire etc.  
4. Presence of cobwebs |
| **Criterion 3: Biodiversity conservation**      | 1. Area of protected and fragmented ecosystem  
2. No. of rare, endangered, threatened & endemic species including tiger population  
3. Level of species richness and density  
4. Canopy cover  
5. Medicinal, aromatic and other NWFP’s  
6. Level of non-destructive harvesting | 1. No. of birds and animals of different species  
2. No. of tree species  
3. Availability of NWFP’s, medicinal and aromatic plants |
| **Criterion 4: Soil and water conservation**     | 1. Soil moisture  
2. Soil compaction  
3. Status of soil erosion  
4. Run-off (Water yield)  
5. Soil pH  
6. Soil organic carbon  
7. Nutrient status of soil  
8. Soil flora, fauna & microbes  
9. Level of water table  
10. Sediment load | 1. Exposed gravel, pebbles on the forest floor  
2. Presence of gullies  
3. Siltation of tanks and reservoirs  
4. Duration of water in water bodies  
5. Presence of earthworms |
## Some examples of Peoples’ Indicators (PI) for climate change

### Criterion 5: Forest resource productivity
<table>
<thead>
<tr>
<th>1. Growing stock of wood</th>
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<tbody>
<tr>
<td>2. Natural regeneration status</td>
</tr>
<tr>
<td>3. Increment of wood and NWFP’s</td>
</tr>
<tr>
<td>4. Level of material and technical input</td>
</tr>
<tr>
<td>5. Extent of protection measures</td>
</tr>
<tr>
<td>6. Area of afforestation and plantations</td>
</tr>
<tr>
<td>7. Level of intangible benefits</td>
</tr>
</tbody>
</table>

1. Availability of small timber, woodfuel, NWFP’s
2. Availability of medicinal plants, flowers and fruits
3. Leaf litter

### Criterion 6: Forest resource utilisation
<table>
<thead>
<tr>
<th>1. Aggregate and per capita wood and non-wood consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Import and export of wood and NWF products</td>
</tr>
<tr>
<td>3. Recorded and unrecorded removal of wood and NWF products</td>
</tr>
<tr>
<td>4. Direct employment in forestry sector</td>
</tr>
<tr>
<td>5. Contribution of forests to total income</td>
</tr>
</tbody>
</table>

1. Per household consumption of woodfuel and NWFP’s
2. Per household utilisation of timber
3. Dependence of people on forests
4. Employment from forests - Direct and Indirect

### Criterion 7: Social, cultural and spiritual needs
<table>
<thead>
<tr>
<th>1. Well being in terms of livelihood, recreation, cultural and aesthetic needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Degree of economic, social, gender and participatory equity</td>
</tr>
<tr>
<td>3. Conflict management mechanism</td>
</tr>
<tr>
<td>4. Traditional (Indigenous) knowledge application</td>
</tr>
</tbody>
</table>

1. Trade of fuelwood, timber
2. Increase in total income
3. Trees of religious values
4. Use of traditional knowledge

### Criterion 8: Policy, legal and institutional framework
<table>
<thead>
<tr>
<th>1. Existing policy and legal framework</th>
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<tr>
<td>2. Extent of community, NGO and private sector participation</td>
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<tr>
<td>3. Investment in research and development</td>
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<tr>
<td>4. Human resource capacity building efforts</td>
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<tr>
<td>5. Status of forest resource accounting</td>
</tr>
<tr>
<td>6. Status of monitoring and evaluation mechanism</td>
</tr>
<tr>
<td>7. Status of information dissemination and utilisation</td>
</tr>
</tbody>
</table>

1. Level of participation
2. Conflict resolution mechanism
3. Capacity building measures
4. Mechanism for handling forest offences
5. Efforts to reduce pressure on forests
The way ahead

- Refinement of indicators and their aggregation with the national level generic set of criteria and indicators
- Generate database of PI generated at grassroots for their up-scaling
- Seek donor funding for setting up of more pilot sites in other states of the country for facilitating gender-inclusive initiatives for monitoring and evaluating climate change at grassroots
- Initiate scaling-up of the successes and approaches, extrapolating the methodologies to a variety of landscapes and eco-regions
- Conduct further research on gender-inclusive strategies in climate change evaluation and monitoring systems (CCEMS) in the field and corroborate the observations using laboratory techniques
Learnings

- The study provides a pragmatic solution with demonstrable results wherein tribal women are using their **traditional knowledge in** monitoring and evaluation of environmental changes (incl. climate, forests, biodiversity)
- The study also establishes that the women can become **major drivers** for effecting sustainable development ‘**on-the-ground**’. It accentuates that - without women’s participation, any developmental intervention is bound to have a limited success
- It highlights the crucial aspect of **including gender perspectives** in the climate change evaluation scenario (especially in the natural resource-based methodologies in developing countries)
- It reinforces the importance of including women’s empowerment and training in national developmental agenda and accentuates the need for scaling-up these grassroots initiatives to higher/regional levels
Thank you !