Impacts of climate change on peoples’ biodiversity management for food and nutrition security: The role of biocultural assessments

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Sowing Diversity = Harvesting Security (SD=HS)

• Strengthen farmers’ seed systems (rights & technical) for food and nutrition security for climate change adaptations,
• 5 countries: Vietnam, Laos, Myanmar, Peru, Zimbabwe, 150,000 HH, 50% women
• Low land paddy fields, high mountain altitude, semi-arid region, high and low potential areas
• 50 Partners and allies: CSOs, IPSHF, governments, universities, national and international research institutions, private sector
• Donors: Sida, IFAD, Netherlands Post Code Lottery, Dutch government
SCALE-UP PATHWAYS

**Mainstream:**
- Vertical
- Horizontal
- Temporal
- Scaling down

**Scaling up:**
- Gender sensitive concepts and tools
- Adaptation strategies
- Increased access to germplasms

**Impact:**
IPSHF Rights and Technical Capacities to influence local to global policies and institutions on the sustainable use of PGRFA under climate change

- **Gender Inclusion**
- **Policy Influencing**
- **Climate Change Response**
- **Farmer Field School**
- **PGRFA Access**
- **PGRFA Participatory Toolkit**
- **Innovation**
PGRFA Participatory Toolkit

- Participatory diagnostic & planning, accountability tools
- Baseline & end line surveys: PRA, questionnaires, secondary data, FFS curriculum, biocultural assessments
- Analyzing crop diversity, seed security, climate change perceptions, farmers’ access and diversity management. Climate change adaptation, diet diversity
- Disaggregated for women’s needs and roles
- SD=HS over 4200 HH

Credit: Shepherd Tozvireva/Oxfam Novib
| Local Assessments |

Currently there are nine IPCC local assessments under implementation in a variety of biocultural systems worldwide. Local partners are facilitating assessments of climatic conditions and trends within local biocultural systems and their impacts on livelihoods and well-being, and are systematically documenting the role of indigenous knowledge and practices for building evidence-based community adaptation plans.

**Kuna Yala, Panama**

In Kuna Yala, sea level rise is threatening the food sovereignty, health and survival of the Kuna People.

**‘Skeit Sami Nation’ Lapland, Finland**

Providing adaptation and survival mechanisms for the Sami community who is endangered by melting permafrost and documenting alternative traditions, reindeer herding solutions and innovative solar methods.

**‘Huay Mana’, Thailand**

In Huay Mana, Thailand, a warmer climate, decreased rainfall and reduced water levels (due to government policies) have resulted in a need to develop indigenous adaptation strategies.

**Zapara Territory’ Amazonia, Ecuador**

Aims to evaluate environmental impacts of climate change on indigenous subsistence, especially on agroecosystems and hunting and gathering systems, as well as the impact of oil extraction activities and its contribution to local and global climate.

**‘Parque de In Pata’, Cusco, Peru**

In the Potato Park, climate change is affecting biodiversity, especially native potato races and wild varietals, and thus food sovereignty. Therefore, the climate change with the Pacha Mama (Mother Earth) and ‘E/ion Viwi’ is endangered.

**Manasa, Kenya**

Longer cold seasons, frequent droughts and the loss of indigenous knowledge has meant a need to create coping mechanisms among the pastoralist Masai people in Kenya.

**‘Adivas’ Andhra Pradesh, India**

In Andhra Pradesh, India, Adivasi communities aim to assess the impact of climate change and strengthen resilience by securing rights to natural resources.

**‘Higa’ Cordillera, Philippines**

Collecting traditional climate change adaptation mechanisms and identifying the observed Climate Changes and the impact in recent years on community ecosystems, livelihoods and culture.
Phases developed in Toolkit:
1. Developing a Base Line
2. Evaluating Conditions and Trends
3. Engaging in Visioning and Scenarios
4. Developing Life Plans - Adaptation Plans
5. Implementing Responses
6. Evaluating with an End line

Source: ANDES
Farmer Field Schools pathway

- School without walls, self-spreading (ToT), autonomous farmers’ organization for sustainability & outreach,
- Farmers determine learning objectives for problem solving, joint experiments
- Ensure women’s participation
- Individual and collective empowerment
- Collaboration with public sector
- Design climate adaptations

Credit: ANDES
PGRFA Access Pathway

- Additional PGRFA, formal and informal, access is a constant demand
- *In-situ* & *ex-situ* collections, segregating, stable, near stable lines for multiple land use
- Matching & selection of preferred traits by women
- Traditional & scientific knowledge for selection, breeding, regeneration, multiplication
- Independent seed banks, at districts & households
- Barter markets and local markets

*Credt*: Shepherd Tozvireva/Oxfam Novib
Commercialisation lead to genetic erosion?

High potential area: S. Vietnam:

• 18,900 farmers trained in FFS
• Released 328 farmer varieties +2 certified varieties, 1 million ha
• Seed Clubs (2014): 30% of Mekong Delta seed requirements, about 70 rice varieties (certified and uncertified)
• % Farmers’ seeds bigger than the private sector
Climate Change Response

- Farmers perceived climate change on impacts to their farms
- Meteorological data & farmers’ observation/knowledge for agricultural planning
- Selection of stress tolerant crops & varieties
- Combination of late & early maturing varieties
- Disaster response in FFS

Credit: Shepherd Tozvireva/Oxfam Novib
Gender & Social Inclusion pathway

- Guided by a gender empowerment rationale, discrimination by gender, class & ethnicity
- Mainstream in all pathways, as most tools are gender blind
- Women’s agency on seeds management: access and benefit

Credit: Gigi Manicad
Policy Influencing pathway

• Most of national seed policies & laws do not recognize & support farmers’ seed systems

• SD=HS engages local to global policy influencing based on evidences that are grounded & validated by indigenous & farming communities

• Provides models multi-stakeholder engagement
Lessons Learnt: Importance of biocultural approaches to climate assessments

• Links global models to local models and data
• Deploy local/indigenous and scientific knowledge for increased precision and enables adaptive management
• Horizontal collaboration between decision-makers and stakeholders
• Focuses on making decisions and solving problems
• Multiple evidence base ensures TK-Science and local-global collaboration
• Communications based on cultural specificities
Lessons Learnt: Importance of biocultural approaches to climate assessments

• Local scenario development facilitate local communities to identify effective adaptation practices

• Multiple evidence base approach allows the incorporation of long-term predictive models within the immediate adaption plan.

• Combines indigenous peoples and local communities experiences and indigenous knowledge with model-based information to develop appropriate adaptation plans and actions

• Provides a framework for linking socioecological systems with the biophysical processes of climate-induced changes.
Recommendations

• Provide support for local biocultural assessments and links to scale up pathways

• A Technical Expert Meeting on Biocultural Local Assessments and Traditional Knowledge could be conducted in collaboration with the Ad-hoc Working Group on Article 8(j) and the Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP).

• The Office for Traditional Knowledge of the CBD could collaborate with the UNFCCC Adaptation Committee may consider establishing a workstream encompassing:
  • Improved use of data, information and knowledge on vulnerability, impacts and adaptation by communities related to agriculture and food security
  • Supporting knowledge exchanges amongst communities for sharing and validation of knowledge and experiences to increase the resilience of agricultural systems to long-term climate change.
  • Periodic reviews of local climate change impact and vulnerability assessments on food systems, including food security and nutrition
  • Developing a guide on how to design and conduct local assessments of agriculture, fisheries or forest systems to climate change, which could further support implementation of the Aichi targets
“Crops are not just expression of genes but are also the expression of spirits”

(FFS Lares 2015)