Conserving traditional seeds through Community seed banks – A Tool to Address Climate Change in farming regions of India

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About Sustainet

A cooperation project to combat world hunger through sustainable agriculture

- Three out of four poor in developing countries are rural
- 2.1 billion individuals in rural areas live below a $2-a-day poverty line
- Most depend directly or indirectly on agriculture for their livelihoods
- Therefore agriculture plays a key role in poverty reduction.
- There are numerous examples of locally successful projects in sustainable agriculture, but they do not spread on a large scale
Sustainet’s intervention in addressing the issue -

- Formation of alliance of German GOs and NGOs working in development cooperation sector
- Formation of 3 networks comprising 36 regional NGOs in the Pilot regions of India, Latin America and Africa
- Documentation and analysis of “good agricultural practices” for sustainable land use
- Systematic analysis of factors relevant to dissemination/ scaling-up and to cope with climate change

Area of case study
Examples from India

- Recently heavy floods were experienced in the arid zones of Thar desert (50 villages affected).
- Cherrapunji, a high rainfall area has received half of its total rainfall in 2006.

INDIA AND AGRICULTURE

- **Population**: 1 billion +
- **GDP from Agriculture**: 34 \% (1994), 42 \% (1980)
- **Area under Agriculture**: 50 \% (160 mha)
- **Population dependent on agriculture**: 65\%
- **Average farm size**: 1 to 5 ha

Most of India’s poorest people live in rural areas, fully dependent on natural resources for agriculture. The impacts of climate change would result in increases in their miseries.
Why do we need to worry, because:

- Farmers are increasingly using chemical fertilizers and pesticides
- Farmers are using hybrid seed varieties and adopting monocrop
- Focus is on cash crop and water intensive crops
- Farmers are losing their traditional knowledge of conserving seeds as seeds are easily available in the market
- STILL POLICY MAKERS AND SCIENTIST DO NOT HAVE A SOLUTION TO REVERSE THE PROCESS
Project Activities undertaken by Navdanya to develop adaptation strategies

- Monitoring and impact of flood and drought due to climate change
- Impact of climate change vis-à-vis carbon stock, sequestration, organic carbon dynamics and moisture regimes under organic versus chemical farming in different agro-ecosystems
- Programme on traditional seed saving, seed collection and seed exchange on sites prone to climate change
- Creation of seed banks for conservation drought, flood and saline resistant for distribution in disaster areas

Climate Change adaptation through Biodiversity based Organic Farming

- Rejuvenation of agrobiodiversity can be an important strategy to adapt to adverse climate change impact
- Biodiversity based production systems encourages organic farming and therefore reduce dependence on agrochemicals (fossil fuel based) thus reducing green house emissions
- Agrobiodiversity provides resilience to the ecosystem against impact of climate change
Devising Strategies

Community Seed Banks

Building insurance to address climate change issues through community seed banks:

- Establishment of three community seed banks in
  - Rajasthan for conserving drought resistant varieties
  - Orissa to conserving saline resistant varieties and
  - Bihar/Bengal for flood resistant varieties.
Need to conserve seeds because:

- Decline of usage of indigenous and traditional varieties after Green Revolution. Commercialization of agriculture further eroded this practice.
- Study mentions more than 10,000 varieties of paddy in India. A study records 3000 varieties of wheat were cultivated in Garhwal region of Uttarakhand before the Green Revolution which has now dwindled down to 320.
- In India, 80% of seed supply is usually met by farmers themselves.
- A majority of the farmers are using high-yielding varieties, how does one ensure propagation of traditional diverse seeds?

What is Community Seed Bank

Community seed bank is a concept wherein the farmer being the custodian of the agrarian society.

The community seed bank is run by the farmers with traditional knowledge of conserving seeds.
Some of the Flood and Salt Tolerant Rice indigenous varieties of Orissa

- Kalambank: Yield 10 q/ha (Flood and saline resistant)
- Kartick patini: Yield 10 q/ha (Flood and saline resistant)
- Dhaata Patini: Yield 13 q/ha (Saline resistant)
- Luna: patini: Yield 10 q/ha (In high saline conditions)
- Sola: Yield 10 q./ha (Saline resistant)

Drought Resistant Rice Varieties of Uttaranchal
Native seeds embody indigenous knowledge. A farmer who uses native seeds uses his traditional knowledge, skills and wisdom to grow them. He does not depend on an “expert”. It therefore promotes self-reliance.

Native seeds are hardy, as they have, over the years, developed resistance to the pests and disease-causing organisms in the system in their locale.

Traditional seeds have high levels of tolerance to condition of stress and are adapted to local agroclimatic conditions.

Native seeds are central to a subsistence economy as farmer grows food for his sustenance; markets only ‘surplus’.

Importance of Traditional seed varieties

A women farmer from arid zone of Rajasthan with traditional seed storage system
Community Seed bank in Deshma Village, Rajasthan

Traditional Seed storage system in Bihar and Bundelkhand
Strengthening Community Seed Supply Through Community seed banks
Survey for the identification of seeds

Survey conducted to collect the information on the availability of traditional seeds

Awareness meetings with the farmers on climate change and community seed banks
Selection of seeds

Seed selection is done by keeping the following in mind:

- Yield potential
- Qualities like colour, palatability, texture and flavour etc.
- Adaptations to climatic oscillations
- Pest and disease resistance
- Fodder value

Multiplication of seeds in the farmer’s field
Project impacts

- At the completion of the project the result will be interpreted for:
  - Identifying areas prone to climate change
  - Extent of conservation, multiplication and distribution of seeds in disaster prone regions
  - Effectiveness of seed bank
  - Documentation of performance of seeds conserved
  - Dissemination of information of the seeds to the communities that are under the risk of adversities of climate change

Seeds for Life: Save to secure our future
For more details................

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THE WORDING OF A SIGN ERECTED BY SCIENTISTS NEAR THEIR NORTH POLE CAMP IN 2003 HAD TO BE CHANGED BECAUSE THE ICE WAS DRIFTING 400 YARDS AN HOUR. (CREDIT: ANDREW C. REVKIN THE NEW YORK TIMES)