



Farmers' Field Day, Bihar, March 2014



# **SEEDS FOR NEEDS - INDIA**

Broadening the genetic base of crops to empower farmers for climate change adaptation through crowdsourcing

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How can agricultural biodiversity help minimize the risks associated with climate change?

#### **THE APPROACH:**

- 1. Expose farmers to more crops and their varieties and increase their first-hand knowledge about different traits and options available
- 2. Strengthen their seed systems and seed-saving capacity so that they always have access to planting material that fits their changing needs.

#### **ESTABLISHMENT OF FARMER-BASED EXPERIMENTAL NETWORK**

**OUTCOMES** 

• Farmers' network

**Production** 

established and growing -

**Improvement Programme** 

• Farmers are willing to take

up programme on Seed

Farmers willing to set up

**Community Seed Banks** 

→ Ultimately lead to a Citizen

local seed system -

Science Approach

**Crowdsourcing Crop** 

#### **UPSCALING ON-FARM ACTIVITIES**

**Can Crowd-Sourced Crop Improvement Programme Reduce the Vulnerability of Local Seed Systems to Climate Change?** 



Farmers evaluating varieties



Bioversity team visiting sites in Bihar



Women farmers with crowdsourcing packets



Crowdsourcing packets

varieties which they evaluated in their own farm

**OBSERVATIONS** 

Farmers provided with different

- Most of these varieties performed better than varieties which were previously cultivated
- Farmers are willing to grow selected varieties for further testing for large scale cultivation
- Farmers have better understanding on use of diversity for climate risk adaptation - willing to grow more varieties

RESULTS

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- Farmers' network expanded from 30 to 15,000 farmers over 3 years
- Yields obtained from trials comparatively higher than the existing averages
- Farmers' awareness of need for diverse good quality seeds increased
- Groups of farmers have initiated the process of seed multiplication and setting up community seed banks





Crowdsourcing sites have increased from 7 to 24 districts and now cover the 4 states of Bihar, Uttar Pradesh, Madhya Pradesh and Chhattisgarh.

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## **INNOVATIVE TECHNOLOGIES TO CAPTURE CLIMATE PATTERNS AND TRENDS FOR CLIMATE CHANGE ADAPTATION**

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RESEARCH PROGRAM ON **Climate Change**, **Agriculture and CCAFS Food Security** 

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- Micro-weather recording devices iButtons installed across all crowdsourcing trial sites
- Records temperature and humidity at any given time interval
- iButtons are mounted on specially designed stands made of PVC pipes
- Data is downloaded from the iButtons onto portable recorders from the fields

## **FUTURE PLANS**

- Farmers have already become 'citizen crop scientists' providing feedback on their preference ranking data
- Project aims to upscale the farmers' network to 30,000 farmers in the next 2 years
- Also aims to generate an ICT-based system to improve farmers' decision-making process for seeds and meteorological information
- In process of developing technologies (with partners) for
  - Bespoke Apps for mobile phone
  - Application Programme Interface (APIs) and online databases
  - Interactive voice response (IVR) system
- Environmental sensors (e.g., iButtons, or Wimotosensors) 4.



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