



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



Genetic adaptation to climatic risks: crowdsourcing farmers' preferences for crop varieties



Photo credit: Biodiversity International

Farmers are often not able to quickly access and adopt new crop varieties that are developed and tested by scientists. Biodiversity International, supported by CCAFS, is working with farmers to evaluate crop varieties as part of the 'Seeds for Needs' project.

This project aims to expose local farmers to diverse crop varieties and increase their knowledge and familiarity about different traits and options. This participatory approach allows farmers to grow a range of crop varieties on their fields and rank them according to performance.

The project also aims to crowdsource farmers' knowledge and preferences and integrate this into crop management programs. In CCAFS' Climate-Smart Villages in Vaishali (Bihar, India) and Rupandehi (Nepal), farmers and researchers are testing various wheat varieties through this innovative crowdsourcing approach to crop selection.

Objectives

- To implement a participatory crop variety selection approach for climate risk management at the local level.
- To involve farmers in crowdsourcing crop improvement by identifying different crop varieties and traits best suited to their local conditions.

Locations

Vaishali district (Bihar, India) and Rupandehi district (Nepal)

Partners

Indian Agricultural Research Institute, Nepal Agriculture Research Council (NARC), Biodiversity International

Approach

- A team of scientists select crop varieties suitable to a particular location through geospatial analysis.
- Farmers are encouraged to grow a few pre-selected seed varieties on their own farms to test and evaluate their performance.
- Farmers observe and rank the performance of the varieties in terms of yield, disease and pest resistance, nutrient requirement and grain quality. Scientists facilitate farmers in monitoring and evaluating the crop varieties.

- The information is shared with researchers and seed producers through village agents or by phone.
- This knowledge is used by researchers and seed producers in crop improvement programs and for technology targeting and seed multiplication.

Initial Results

- In Bihar (India), 800 farmers are now testing wheat varieties as 'citizen scientists'.
- In Rupandehi (Nepal), more than 15 wheat varieties are being tested on farmers' fields with the participation of NARC scientists.
- Farmers and researchers have ranked the varieties based on various characteristics, such as early vigour, yield, and grain quality, and share the results with other farmers in the village.
- From this participatory approach to testing and evaluation, farmers are now more aware of the best wheat varieties for their local conditions.
- Video testimonials from the project have been shared widely with other farmers.
- The project has built strong collaborations among CGIAR centres, national agriculture research institutes, and NGOs working on climate risk management in agriculture.

ABOUT CCAFS

The CGIAR Research programme on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT).

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**Climate Change, Agriculture and Food Security (CCAFS),
South Asia**

International Water Management Institute (IWMI)
New Delhi Office; NASC Complex; CG Block
Dev Prakash Shastri Marg, Pusa; New Delhi-110012, India

www.ccaafs.cgiar.org/regions/south-asia