



# Climate-Smart Villages: A community approach to sustainable agricultural development



Phot credit: CCAFS South Asia

Climate-smart agriculture strives to sustainably increase productivity and incomes, build resilience and adaptive capacity, and where possible reduce/remove greenhouse gas emissions. It works to enhance achievement of national food security and development goals.

Climate-Smart Villages are sites where researchers, farmers' cooperatives, government officials and private sector partners come together to identify the most appropriate climate-smart interventions in agriculture based on its agro-ecological, climate risk profile and socio-economic conditions. These interventions include water smart practices (rainwater harvesting, laser levelling), weather smart activities (ICT-based agromet services, index-based insurance), nitrogen and carbon smart practices (precision fertilizers, catch-cropping), energy smart (zero tillage, residue management) and knowledge smart activities (farmer-farmer learning, seed banks and cooperatives). These interventions work together increase an agriculture community's resilience to climatic stresses.

## Objective

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- To encourage the adoption of climate-smart agricultural practices and technologies and develop climate resilient agricultural system linking existing government's local development schemes and investments.

## Locations

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Bihar, Haryana, Maharashtra and Punjab (India), Rupandehi, Morang and Sunsari (Nepal), and Khulna (Bangladesh)

## Partners

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National Agriculture Research and Extension Systems, State and Local Governments, Non-Governmental Organizations (NGOs), Agriculture Insurance Company of India, Private Sector Partners, Farmers Organizations, and CGIAR Centres – International Maize and Wheat Improvement Center (CIMMYT); International Food Policy Research Institute (IFPRI); International Water Management Institute (IWMI), Bioversity International, International Rice Research Institute (IRRI), and WorldFish.

## Approach

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- **Selecting the site:** The location of the Climate-Smart Village is selected based on its climate risk profile, alternate land use options, and on the willingness of farmers and local government to participate in the project.
- **Working with communities:** Community involvement is integral to the success of Climate-Smart Villages. CCAFS works with existing community groups of farmers, researchers, rural agro-advisory service providers and village officials.
- **Conducting the baseline survey:** Researchers conduct a baseline survey to capture the current socioeconomic situation, resource availability, average production and income and risk management approaches of village households. This enables an assessment of the impact of the interventions after a certain period of time.

- **Prioritizing interventions:** Stakeholders convene to prioritize and test which climate smart technologies and approaches are best suited to their local conditions. Focus group discussions involve farmers in a choice experiment using dummy money to indicate which actions they would most willingly carry out.
- **Building capacity:** Regular training exercises are organised for farmers on good agriculture practices. At some sites, a small farm is used for demonstration on the complete portfolio of interventions.
- **Monitoring and evaluating and progress:** A site coordinator provides technical inputs and liaises with CCAFS resource persons. Participating farmers document their activities and work with the coordinator to evaluate progress.

## Initial Results

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- A successful collaboration among the researchers, local partners, farmers' organizations, private sector and policy makers established to select and implement the locally appropriate climate-smart interventions in various crops and cropping systems;
- Climate-smart package of practices/technologies for cereal-based cropping system and coastal agriculture developed based on participatory evaluation of climate-smart interventions and farmers' prioritization of CSA practices and technology;
- Investments from state government (Maharashtra in India) and IFC-World Bank (Nepal) for scaling out climate-smart village model;
- Scaling out of climate smart villages: 28 CSVs in Haryana, 11 CSVs in Punjab, 26 CSVs in Bihar, 12 CSVs in Nepal and 4 CSVs in Bangladesh; and
- Baseline GHG emissions in climate-smart villages estimated. Mitigation potential of various climate-smart interventions in cereal-based cropping system analysed.

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## 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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