



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



Climate-smart agro-advisory services for major food crops in South and Southeast Asia

Duration: January 2015 - December 2018

Focus areas: Vietnam, Khulna in Bangladesh, and Bihar and Odisha in India

The Climate-Smart Agriculture Advisory Service (CSAAS) seeks to harness the power of information and communications technology (ICT) for the outscaling of climate-smart agriculture (CSA) technologies and climate-informed advisory services for rice, maize, and wheat in South and Southeast Asia. ICT plays an increasingly important role in disseminating agricultural advisory services to farmers with timely and farm-specific information to improve their crop management decisions.

CSAAS aims at expanding the capabilities of the Rice Crop Manager (RCM), a web-based application available on smartphones developed by the International Rice Research Institute (IRRI), currently upscaled in the Philippines. The RCM enables agricultural extension staff to ensure sustainable productivity gains for poor rice farmers, through cost-effective crop management. Historical climate data, planting dates and weather forecasts, obtained through partnerships with other projects, such as the Cereal Systems Initiative of South Asia (CSISA) and the

meteorological services of the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES), are combined with location-specific crop management recommendations derived from current practices. The data received provide feedback to scientists for the conduct of additional research. The developed cloud-based, mobile phone app increases farmers' adaptive capacity to climate change by enabling them to adjust crop management, cropping systems, and postharvest operations for increased income and food security.



(PHOTO BY P. FICARELLI, IRRI)

Expected outcomes

By 2016, about 50,000 rice farmers receive farm and field-specific advice through the mediation of extension staff and mobile phones on optimal use of inputs and climate smart technologies (i.e., alternate wetting and drying, stress-tolerant seed varieties, etc.), weather forecasts, and related agromet advisory in selected pilot areas in each country.

By 2017, CSAAS is endorsed by the national agriculture research and extension system (NARES) of the different countries. Partnerships are established with mobile phone-based communication networks to use CSAAS in deploying farming advice to reach 200,000 farmers.

By the end of the project in 2018, 800,000 recommendations are delivered by different public and private partnerships constellations based on CSAAS. NARES update content and services to evolve CSAAS based on projects of stakeholders and farmers demands.

Expected outputs

- Results of action research and surveys in pilot locations to identify and evaluate climate-informed decision-making and management practices that can benefit male and female farmers exposed to uncertain and changing weather. ICT tools and collected information will be used to appropriately modify the agro-advisory service to facilitate targeted use by gender.
- Initial versions of a climate-informed rice agro-advisory service for the Mekong Delta and north of Vietnam and in Bangladesh.
- Initial version of a climate-informed maize agro-advisory service for the Mekong Delta and Red River Delta of Vietnam.
- Reports, discussion papers, and peer-reviewed journal articles on new climate information and analysis that enhances the capacity of data providers (e.g., regional and national meteorological institutions) to meet the demands of climate service beneficiaries.

- Report on mechanisms for effective partnerships in the development, dissemination, and use of the agro-advisory service.
- 'Tool construction kit' for advisory services.

Project team

Lead Organization: International Rice Research Institute

Partners:

- International Maize and Wheat Improvement Center
- Vietnam: Ministry of Agriculture and Rural Development, Cuu Long Delta Rice Research Institute, and Soils and Fertilizers Research Institute
- India: Bihar Agriculture University, Orissa University of Agriculture and Technology, and Bangladesh Rice Research Institute
- Bangladesh: Bangladesh Agricultural Research Institute

Project leader

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International Rice Research Institute (IRRI)

The International Rice Research Institute (IRRI) is the world's premier research organization dedicated to reducing poverty and hunger through rice science; improving the health and welfare of rice farmers and consumers; and protecting the rice-growing environment for future generations. IRRI is an independent, nonprofit research and educational institute founded in 1960 by the Ford and Rockefeller foundations, with support from the Philippine government. The institute, headquartered in Los Baños, Philippines, has offices in 15 rice-growing countries in Asia and Africa, and about 1,000 staff members.

Working with in-country partners, IRRI develops advanced rice varieties that yield more grain and better withstand pests and disease as well as flooding, drought, and other destructive effects of climate change. More than half of the rice area in Asia is planted to IRRI-bred varieties or their progenies. The institute develops new and improved methods and technologies that enable farmers to manage their farms profitably and sustainably, and recommends rice varieties and agricultural practices suitable to particular farm conditions as well as consumer preferences. IRRI assists national agricultural research and extension systems in formulating and implementing country rice sector strategies.

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