**Background**

The International Rice Research Institute (IRRI) and its partners developed site-specific nutrient management (SSNM) principles to identify the best nutrient management practices for specific rice fields. Consideration of the timing, quantities and types of fertilizers are some of the key components of these findings.

Following the SSNM principles, IRRI launched Rice Crop Manager (RCM) in 2013 in partnership with the Philippines Department of Agriculture (DA) and the Philippines Rice Research Institute (PhilRice) to provide personalized advice to farmers on crop and location-specific nutrient management. It is a web-based decision-support tool systematically enhanced for rice farming in the Philippines. RCM has expanded its capabilities to provide advisory services through complementary tools that are integrated into one web-based platform, the Rice Crop Manager Advisory Service.

RCM recommendations are provided to farmers through a one-page print-out and a short messaging service (SMS) to improve and guide crop management. It enables extension workers to use a computer or smart phone to provide farmers with crop management recommendations matching their field condition.

**The Challenge**

Rice fields in Asia are often small and have great variability in terms of fields and farmers. Fields vary in crop variety, yield level and fertility level. Farmers vary in their access to resources and technologies. Field-specific crop and nutrient recommendations are needed to optimize yields and profit tailored to fields and farmers.

**Results**

Since RCM was launched in 2013, farmers across the country have benefited from the recommendations provided for their specific fields.

- Over 2 million RCM recommendations have been generated across 16 rice-growing regions in the Philippines.
- Use of RCM recommendations provided an average yield increase of 0.4 tons (400 kg) per crop per hectare equivalent to about USD100/ha/cropping season added net benefit.
- Approximately 117,000 farmers and 189,000 fields were registered nationwide using the RCM Farmer and Field Registration app.
- Almost 84,000 fields (44% of registered fields) were measured using global positioning system (GPS) equivalent to 57,000 hectares.
- RCM has been included in the Philippines Rice Road Map, which sets the targets and strategies for achieving rice production to 6.0 tons/hectare by 2022.

(1 Results are generated from http://phapps.irri.org/ph/rasstat. All statistics are presented as of July 2019)
Lessons Learned and Recommendations

IRRI continues to gather lessons from field implementers and partner agencies:

• **Government partnership and ownership takes time.** Strong partnerships with and commitment from the Department of Agriculture and relevant agencies (local government units) are essential in the deployment and scale of ICT-based decision support tools, but these have required years of relationship building and collaborative engagement to ensure that all relevant stakeholders are involved.

• **Integrating ICT tools into the day-to-day activities of agriculture extension workers can be challenging.** Government agricultural extension workers have a multitude of responsibilities catering to the agriculture, aquatic and natural resources sectors. The dissemination mechanism for RCM Advisory Services relies on agricultural extension to deliver research information to farmers. The RCM team is working to better incorporate RCM as a seamless part of their duties by professionalizing extension services or transforming them to be “knowledge workers” to accelerate the impact of ICT tools for farmers’ productivity.

• **Continued research provides strong science-based, validated content.** While the core science behind RCM remains sound, continued validation and enhancement of the RCM capacity for more accurate recommendations is also important. IRRI works closely with the Philippine Rice Research Institute (PhilRice), a partnership that has helped to identify research gaps and develop actionable, easy-to-use farming advice.

• **Internet connectivity limits widespread scale.** As a web-based decision tool, the Philippines’ weak or limited internet connectivity remains one of the primary limitations to large-scale dissemination. Though offline versions of RCM Advisory Service apps are available, bringing farmers to a place with reliable internet connectivity to ensure timely delivery of recommendations continues to limit the program’s reach.

Next Steps

The next few years will be critical in the overall success, sustainability, scale and impact of RCM as IRRI transitions the program to the Department of Agriculture (DA) and considers how to use the lessons of RCM Philippines in other geographies across Africa, South Asia and Southeast Asia.

• **Transitioning RCM management, operations, research and dissemination to the Philippine Department of Agriculture.** By 2021, IRRI will completely transition the RCM platform to the DA, formally institutionalizing it within the day-to-day operations and budget as part of their vision for a “rice-secure Philippines”.

• **Expansion to other geographies.** RCM in the Philippines serves as a model of how science can be translated into results through access to evidence-based information using technology-supported platforms. The lessons and experiences in the Philippines from both research and dissemination can provide valuable insights on the most appropriate pathways for deployment of agricultural information through the ICTs.

Our Partners

For more information, visit [http://phapps.irri.org/ph/ras/](http://phapps.irri.org/ph/ras/)

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