



INDIA – TAMIL NADU



BACKGROUND

Rice cultivation is essential to the economy and food security of the southern Indian state of Tamil Nadu. Around 40% of the population relies on agriculture as a primary source of income. Furthermore, Tamil Nadu is one of the leading rice-producing states in the country. In 2016, rice production in Tamil Nadu stood at 7.98 million tonnes, with a total rice cultivation area of about 2.04 million hectares. The rice-growing regions in Tamil Nadu range from fully irrigated to completely rain-fed. This puts the state in a precarious situation that is exacerbated by increasing intensity and frequency of extreme weather events. For instance, in 2015 the state experienced major flooding while, in the following year it was severely hit by a drought. Moreover, Tamil Nadu is prone to cyclones, which often lead to additional agricultural losses.

Farmers suffering losses caused by extreme weather and climate change often receive compensation through a crop insurance and disaster relief scheme. The Prime Minister's Crop Insurance Scheme (Pradhan Mantri Fasal Bima Yojana or PMFBY) is a flagship programme of the government to address such losses. However, effective and efficient implementation of the programme requires real-time crop information that is accurate, consistent and transparent. RIICE India has answered that call by supporting farmers and other stakeholders such as the state's Department of Agriculture and insurance companies in accessing such information.

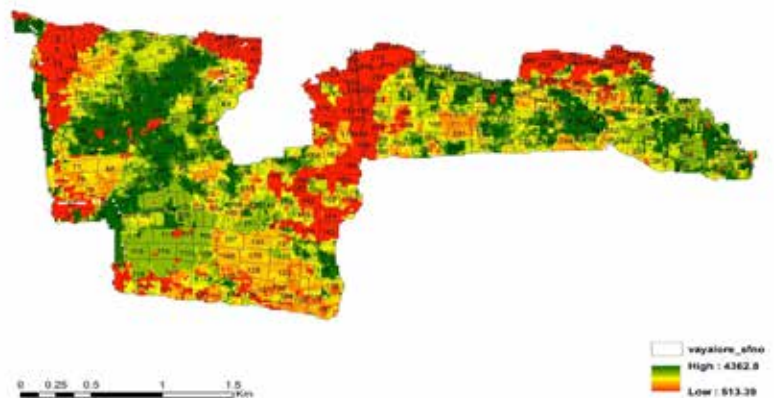
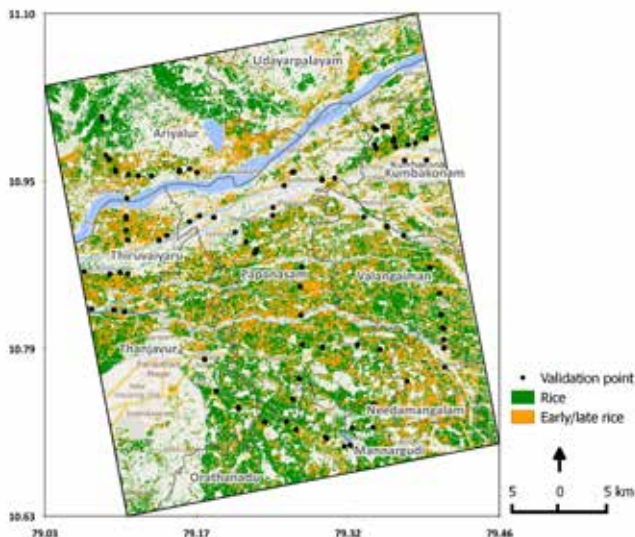
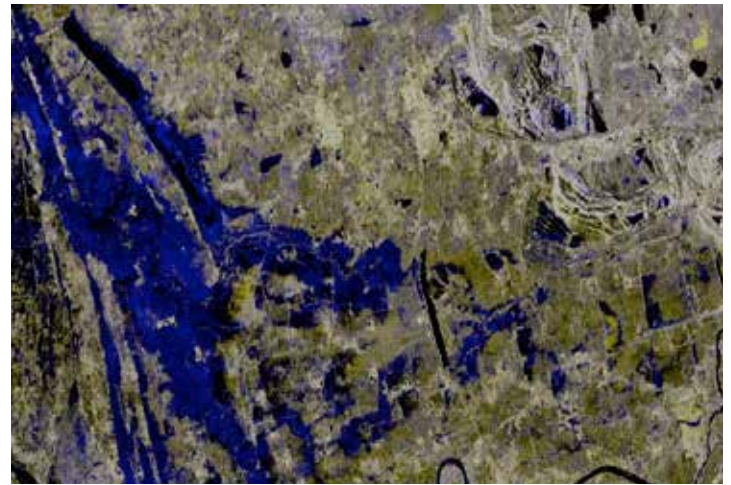
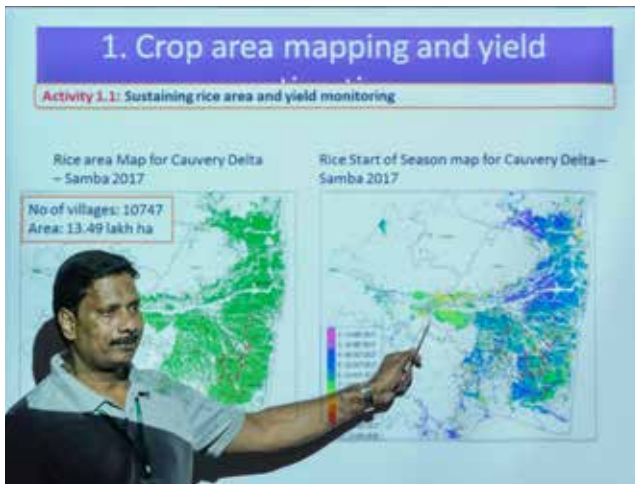


APPROACHES

- ◆ During Phase I, in December 2012 – April 2015, RIICE's core objective was to establish the **technical proof of concept** and bring the RIICE technology to a scientifically rigorous and acceptable level. Demonstrating the capabilities of RIICE technology, the project gained the confidence of the key stakeholders i.e. insurance companies and the Department of Agriculture of Tamil Nadu state.
- ◆ **Capacity building** has been at the core of the RIICE project in Tamil Nadu. For example, the technical partner, the Tamil Nadu Agricultural University (TNAU), created its in-house capacity development programme. RIICE member institutions trained a team of scientists on how to use software, conduct on-the-ground verification and validate the results obtained.
- ◆ During RIICE Phase II, from May 2015 – October 2017, the Department of Agriculture and other stakeholders, convinced by the technology, decided to **pilot RIICE**. After the first pilot season,

RIICE was **scaled up to cover all of the major rice growing districts in Tamil Nadu**. Through a series of consultations with the insurance partner, the Agriculture Insurance Company of India (AICI) and other insurance companies, RIICE **project outputs were linked with the insurance requirements under PMFBY**, and the use case for RIICE technology in the scheme's claims assessment was developed.

- ◆ RIICE Phase III, September 2017 – June 2019, focused on the institutionalization of RIICE application and adoption in Tamil Nadu. RIICE technology was recognized in Tamil Nadu, but the need for continued efforts to make it commercially sustainable was becoming evident. Based on some demands by the state's Department of Agriculture and the insurance companies, a potential solution could be to expand the technology and insurance coverage to other crops in the future.



ACHIEVEMENTS

- ◆ RIICE in Tamil Nadu has covered **nearly 1 million hectares of rice-growing area**, including season monitoring, yield estimation and input to claims assessments.
- ◆ RIICE partner **TNAU is now capable of independently producing area and yield results**, including conducting the on-the-ground verification and validation. The area and yield results generated are of great relevance to the existing crop insurance programme in India as they provide loss-assessment information, which can be used for insurance pricing or in claims assessment, for example in case of prevented or failed sowing.
- ◆ The project supported the **disaster relief efforts from the state government during the 2015 floods** by providing timely flood loss assessment reports that identified the farmers who were worst hit. Based on this assessment, those farmers immediately received 50 tonnes of rapid germination rice seeds as relief material.
- ◆ The **insurance companies operating in this state are now well-versed in the modalities and benefits of RIICE technology**, thanks to the ongoing dialogues and other interactions.
- ◆ In the crop season in late 2016 - early 2017, the state suffered a once-in-a-century drought leading to heavy crop losses. **With the help of RIICE technology, 22,500 farmers insured by AICI received payouts for prevented/failed sowing based on the inputs provided by TNAU.** Prevented/failed sowing payouts can be triggered when farmers are either unable to sow or the sown crop fails to germinate due to adverse climatic conditions. This was the first direct application of remote-sensing satellite technology in crop insurance payouts in **Tamil Nadu, and one of the first in India.**



LESSONS LEARNED AND CHALLENGES

- ◆ Remote-sensing technology can be instrumental in monitoring and assessing natural disasters including floods and droughts so that timely relief can be provided to the affected farmers.
- ◆ By providing timely crop-loss information, remote-sensing and satellite technologies can play a major role in crop insurance.
- ◆ Capacity building and a viable commercial model are key to the sustainability of the project.
- ◆ Active collaboration from the government and industry stakeholders is essential to translate the use of technology into a meaningful positive impact on farmers' livelihoods and security.
- ◆ A viable commercial model for the use of technology is essential for the long-term success of the project beyond the donor-supported time frame. Jointly developing a business model and investing time in business planning and scenario analysis at an early stage help to identify points for alignment, which in turn contribute to the financial sustainability of the project.
- ◆ Achievements, experiences and learnings from India are valuable to other RIICE countries. In August 2018, a Cambodian government delegation visited India to learn from the success of RIICE in Tamil Nadu and develop a better understanding of crop insurance.

