



## HANDS-ON FIELD DEMONSTRATIONS ENHANCE ADOPTION OF METHANE-REDUCTION TECHNOLOGIES IN PADDY CULTIVATION

**TNAU-IFPRI Research Team**

*Centre for Agricultural and Rural Development Studies (CARDS),*

*Tamil Nadu Agricultural University, Coimbatore.*

The Centre for Agricultural and Rural Development Studies (CARDS), TNAU, Coimbatore, in collaboration with the International Food Policy Research Institute (IFPRI), Washington, USA, organized a Farm Field School (FFS) on "Methane Reduction in Rice Farming Systems in Tamil Nadu" on 8<sup>th</sup> October 2025 at T. Andipatti Village, Vadipatti Block, Madurai District.

The programme aimed to create awareness among farmers about climate-smart agricultural practices, demonstrate field-based methane mitigation techniques, and promote sustainable rice cultivation methods. A total of 25 farmers, along with TNAU-IFPRI Research team and agricultural extension officers, actively participated in the event.

The programme commenced with an inaugural address by Dr. A. Surendran (Research Associate), who emphasized the environmental consequences of methane emissions from continuously flooded paddy fields. He explained how improved agronomic methods can help reduce methane gas emissions while maintaining crop productivity and soil health.

Following this, Dr. K. Boomiraj (Associate Professor), delivered an insightful presentation on various methane-reducing technologies suited for paddy ecosystems.

He discussed the advantages of Direct Seeded Rice (DSR) and Soil Test Crop Response (STCR)-based fertilizer management, emphasizing their potential to improve input efficiency while lowering greenhouse gas emissions. Dr. R. Ranjith (Senior Research Fellow), explained the benefits of foliar application of Pink-Pigmented Facultative Methylotrophs (PPFM), a promising microbial approach that supports plant growth and reduces methane formation in flooded soils. Mr. V. Balamurugan (Senior Research Fellow), elaborated on the Alternate Wetting and Drying (AWD) method, highlighting how periodic drying of rice fields can significantly cut methane emissions without compromising yield.

The experts provided a comprehensive overview of climate-smart paddy cultivation strategies, combining water-saving practices, balanced nutrient management and microbial interventions. The sessions emphasized that adopting such integrated approaches could help farmers achieve sustainable productivity, resource efficiency and environmental protection.

The technical sessions successfully bridged the gap between research findings and on-farm application, reinforcing the role of scientific innovation in achieving low-methane, climate-resilient rice farming systems across Tamil Nadu.



The highlight of the programme was the hands-on field demonstration held at the farmer's field of Mr. Venkadasamy, T. Andipatti Village (Latitude: 10.0577° N, Longitude: 77.9895° E), covering an area of one acre. Farmers examined side-by-side five different treatments, T<sub>0</sub>-Farmers Existing Practice, T<sub>1</sub>- Transplanted+AWD, T<sub>3</sub>-DSR+AWD and T<sub>4</sub>-DSR+AWD+STCR+PPFM.

Participants observed visible differences in crop establishment, tiller formation, water use efficiency and methane emission reduction across the treatments. The interactive field session allowed farmers to compare results, ask questions and share their practical experiences with scientists and fellow farmers. During the interaction, several farmers including Mrs. R. Seetha and Mr. R. Rajendran appreciated the tangible improvements observed in the demonstration plots. They highlighted how these innovative practices not only reduce water usage and methane emissions but also save input costs and enhance overall farm profitability.

Many participants expressed their interest in adopting the techniques in their fields during the next cropping season. The Research team also provided guidance on integrating these practices into local farming systems and encouraged farmers to collaborate in community-based methane reduction efforts. The FFS concluded with discussions on scaling up the demonstrated technologies through farmer-to-farmer learning and extension activities.

Overall, the Farm Field School proved to be an effective platform for bridging scientific research and on-field application. The practical demonstrations, combined with farmer participation, significantly improved awareness and confidence in adopting climate-smart technologies. Through such initiatives, TNAU and IFPRI continue to promote sustainable, low-emission rice cultivation systems that contribute to climate resilience and environmental protection across Tamil Nadu.

