

What we aim to achieve

By the end of the project, the KERA AWD initiative will deliver:

- **Evidence-based Planning:** LCAS integrated into government and university workflows for data-driven decisions.
- **Lower Emissions:** Reduced GHG emission (methane) through large-scale adoption of AWD and LEPs.
- **Improved Water Productivity:** Higher or equivalent yields with less water, increasing resilience to water scarcity.
- **Farmer Incentives:** New income streams from PES schemes and voluntary carbon credits.
- **Research Leadership:** State-of-the-art GHG labs at KAU and a globally connected network of researchers and PhD students.
- **Policy Alignment:** A roadmap for Kerala to lead India in climate-smart rice systems.



Together, these outcomes will position Kerala as a pioneer in sustainable, low-emission agriculture, creating benefits that extend from farm families to the planet.



Our Partners

The project is driven by strong collaboration:

Government of Kerala - KERA Mission



Kerala Agricultural University (KAU)



International Rice Research Institute (IRRI)



Center for Water Resources Development and Management (CWRDM)



Department of Irrigation, Government of Kerala



Department of Agriculture, Government of Kerala



Contact Us

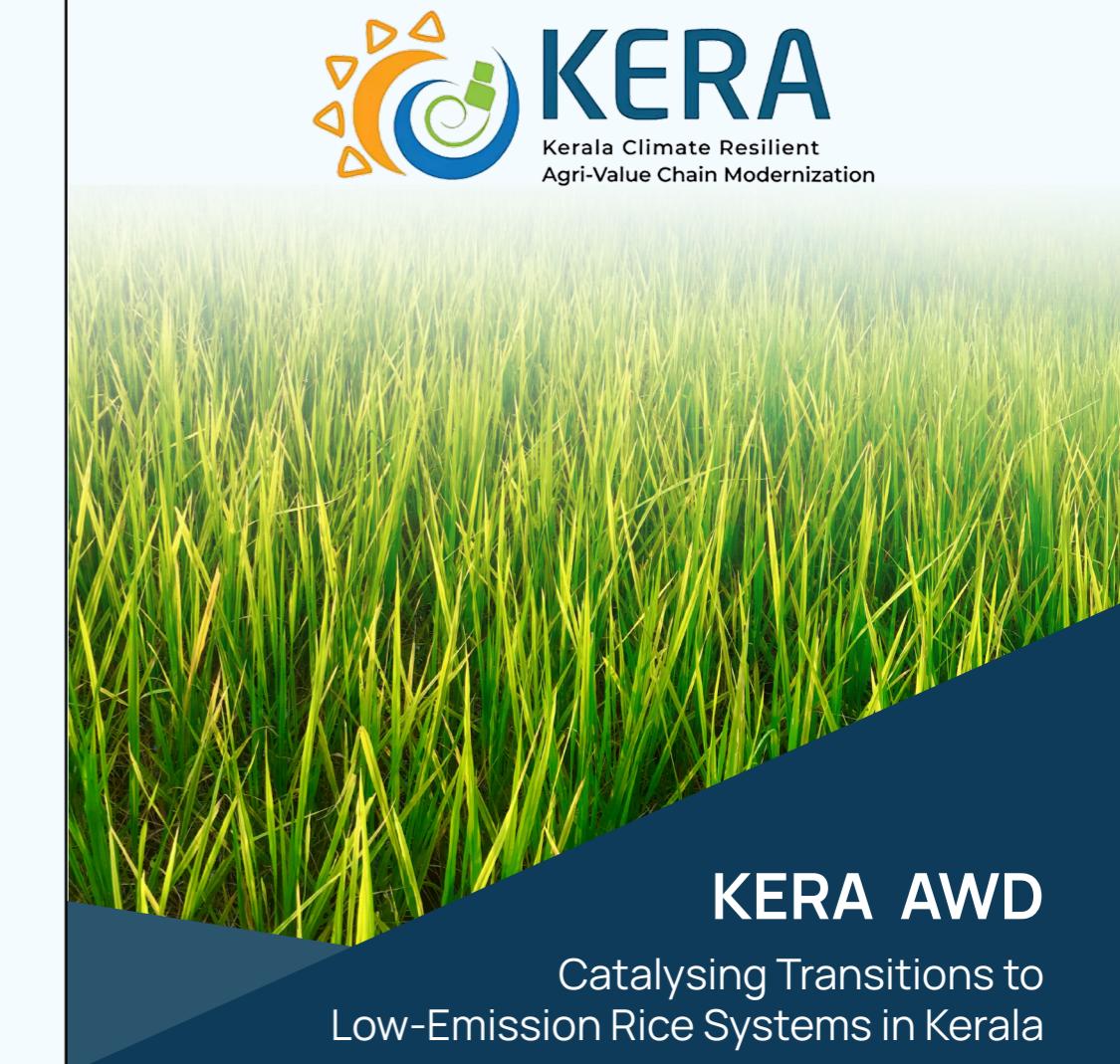
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KERA AWD

Catalysing Transitions to
Low-Emission Rice Systems in Kerala

Kerala's rice landscapes face mounting challenges – water scarcity, high cultivation costs, labour challenges, declining yields and the burden of greenhouse gas emissions. The KERA AWD Project, under the Kerala Climate Resilient Agri-Value Chain Modernization (KERA) Project, brings together the World Bank, the Government of Kerala, Kerala Agricultural University (KAU), the International Rice Research Institute (IRRI), Centre for Water Resources Development and Management (CWRDM) and global partners to transform rice cultivation.

Through Alternate Wetting and Drying (AWD) and other Low Emission Practices (LEPs), the project aims to conserve water, reduce methane emissions, and unlock new income opportunities for farmers – paving the way for a sustainable and climate-resilient rice future for Kerala.

Why this project?

Kerala's rice fields are unique but fragile. Traditional flooded paddy consumes enormous quantities of water and emits large amounts of methane, a potent greenhouse gas. At the same time, farmers face rising input costs, declining yields, water scarcity, and climate-related uncertainties.

The Government of Kerala, through its Kerala Climate Resilient Agri-Value Chain Modernization (KERA) Project, has prioritized a transition towards sustainable, climate-smart rice farming.

The KERA-AWD Project, supported by the International Rice Research Institute (IRRI), Kerala Agricultural University (KAU), Centre for Water Resources Development and Management (CWRDM) and global collaborators, focuses on Alternate Wetting and Drying (AWD) and other Low Emission Practices (LEPs) that balance productivity, resource use, and environmental sustainability, and facilitate the sustainable transition.

Project at a Glance

- **Coverage:** 2 districts: Palakkad and Thrissur
- **Lead Institutions:** IRRI & KAU
- **Collaborators:** Centre for Water Resources Development and Management (CWRDM, Kerala), Department of Agriculture, Department of Irrigation, Extension networks, Carbon developers
- **National research partners:** Indian Institute of Science and Education Research (IISER, Bhopal).
- **Global research partners:** Cornell University (USA), Wageningen University (Netherlands), University of Gothenburg (Sweden), Anglia Ruskin University (UK)
- **Stakeholders:** Farmers/Padasekharams, water user associations, policymakers, extension agents, research networks, carbon industry
- **Overall Goal:** To catalyse a large-scale shift to water-smart and low-emission rice-based systems in Kerala.



Strategic Objectives

- Identify, target and co-develop low-emission agronomy and water management options for low-carbon rice production
- Scale these GHG mitigation practices across Kerala
- Connect the farmers to credible payment for ecosystem services (PES) like carbon offset markets as a role model for integrative and scalable evidence-led mitigation programming



How we work: The KERA-AWD Approach

The project integrates science, practice, and policy through six interconnected Areas of Work:

- **Landscape Assessment (LCAS+):** Digitizing crop areas, management practices, soils, water systems, and hydrology to build Kerala's most detailed rice landscape database.
- **On-Station and On-Farm Experiments:** Testing AWD and other LEPs in controlled and real farm conditions to generate solid evidence.
- **GHG Modeling:** Identifying emission hotspots, developing predictive models, and validating results across regions.
- **Irrigation Systems:** Gathering canal discharge data and designing new irrigation schedules through farmer participation.
- **Carbon Finance:** Designing PES mechanisms, exploring voluntary carbon markets, and linking farmers to green finance.
- **Capacity Development:** Training PhD students, KAU faculty, extension workers, and farmers to ensure lasting impact.

This end-to-end approach ensures that innovations do not remain in laboratories, but reach the fields, policies, and financial systems that matter most.

