



AARDO-MARDI

International Workshop on



AGRICULTURE TECHNOLOGIES:

Tools for Climate Change Mitigation



27 SEPTEMBER –
03 OCTOBER 2026



SUSTAINABLE
AGRICULTURE



CLIMATE
ACTION



INNOVATION
FOR IMPACT



BETTER FUTURE
TOGETHER

AFRICAN ASIAN RURAL DEVELOPMENT ORGANIZATION (AARDO)

Background of the Programme

Climate change is increasingly altering agroecosystems and undermining the sustainability of global agricultural production. Rising atmospheric temperatures, changing precipitation regimes, increased frequency and intensity of extreme weather events, elevated greenhouse gas concentrations, and the accelerated degradation of soil, water, and biodiversity resources are adversely affecting crop productivity, livestock systems, and overall agricultural resilience. These impacts are further compounded by emerging pest and disease dynamics, declining water-use efficiency, salinity intrusion, and the loss of ecosystem services, posing significant risks to food security, nutritional security, and rural livelihoods. Addressing such challenges requires a fundamental transformation of agricultural systems through the adoption of climate-smart agriculture, precision farming, digital technologies, resource-use efficiency, conservation agriculture, resilient crop varieties, integrated soil and water management, and other innovative adaptation and mitigation approaches. Strengthening institutional capacities, promoting technology transfer and enhancing knowledge sharing are, therefore, essential to accelerating the adoption of climate-resilient agricultural practices, particularly in developing countries across Africa and Asia that remain highly vulnerable to climate-induced risks.

Recognizing the importance of strengthening capacities to address these emerging challenges, the African-Asian Rural Development Organization (AARDO) and the Malaysian Agricultural Research and Development Institute (MARDI) having a long-standing and productive partnership remain dedicated to promoting sustainable agricultural development through knowledge sharing and technology transfer. Building upon the successful organization of eight joint online training programmes and other collaborative initiatives, AARDO and MARDI are jointly organizing this in-person International Workshop to provide policymakers, researchers, extension professionals, and technical experts from AARDO Member Countries with practical exposure to climate-smart agriculture, digital farming, precision agriculture, sustainable resource management, and other innovative agricultural technologies. Through expert lectures, interactive discussions, laboratory demonstrations, and field visits, the workshop will enhance participants' technical knowledge and practical skills, enabling them to adopt and replicate climate-resilient agricultural practices that contribute to improved productivity, food security, environmental sustainability, and resilient rural livelihoods across Africa and Asia.

Programme Duration:
27 September – 03 October
2026

Deadline to Apply:
28 August 2026

Organizing Institute:
Malaysian Agricultural
Research and Development
Institute (MARDI)

Sponsoring Organization:
African Asian Rural
Development Organization
(AARDO)

Objectives of Programme

The core objective of this international workshop is to facilitate high-quality knowledge sharing, capacity building, and collaborative research across AARDO member countries. Specifically, the programme aims at:

- Equipping participants with first-hand experience regarding Malaysia's successful agricultural models and technology-driven solutions;
- Demonstrating practical applications of climate-smart agricultural technologies, including greenhouse gas (GHG) collection, precision farming, and digital tools;
- Examining innovative waste management models that transform agricultural residues into wealth, driving circular economies and rural prosperity; and
- Fostering South-South cooperation by creating a collaborative forum for officials and scientists from Africa and Asia to exchange case studies and farmer-centric innovation models.

Approaches & Coverage of Programme

To maximize knowledge retention and practical understanding, the workshop shifts away from purely theoretical instruction to an interactive, multi-modal physical learning framework over a 7-day duration. The methodology encompasses:

- Thematic Technical Sessions: Interactive presentations led by specialized research scientists followed by structured Q&A segments.
- Laboratory and Field Demonstrations: Real-time showcases of frontier tools, such as Gas Chromatography (GC) for greenhouse gas emissions, agricultural drone and modular plant factories.
- Interactive Group Work and Breakout Activities: Brainstorming sessions designed to capture farmer-level innovation and structure localized technology adoption strategies.
- Experiential Field Visits: Immersive site visits to institutional research hubs, support facilities, and large-scale agricultural management landscapes.

Thematics/Focus Areas

The technical curriculum is systematically structured into key thematic pillars:

Pillar I: Climate-Smart Agricultural Technologies & Ecosystem Management

Focuses on adaptation and mitigation techniques tailored for highly vulnerable environments like rice agro-ecosystems and tropical peatlands. Key sub-topics include the development of climate-resilient

crop varieties, intermittent irrigation (AWD), biochar application for soil carbon sequestration, and evaluating carbon market potentials.

Pillar II: Innovative Agricultural Waste Management & Circular Economy

Explores the transformation of agricultural and livestock biomass into high-value assets. This includes national R&D initiatives for livestock enteric emission reduction, carbon footprint assessments of vegetable farming systems (e.g., MyGAP-certified models), advanced rice straw mechanization, and processing biochar for environmental engineering.

Pillar III: Digital & Precision Agriculture

Addresses the integration of Fourth Industrial Revolution (4IR) tools in farming. Topics cover IoT-based water management for grain and staple crops, smart irrigation, early warning forecasting systems for integrated pest management (IPM), automated plant factories, and controlled-environment greenhouses for high-value fruit production.

Expected Outcomes

Upon conclusion of the workshop, participants are expected to:

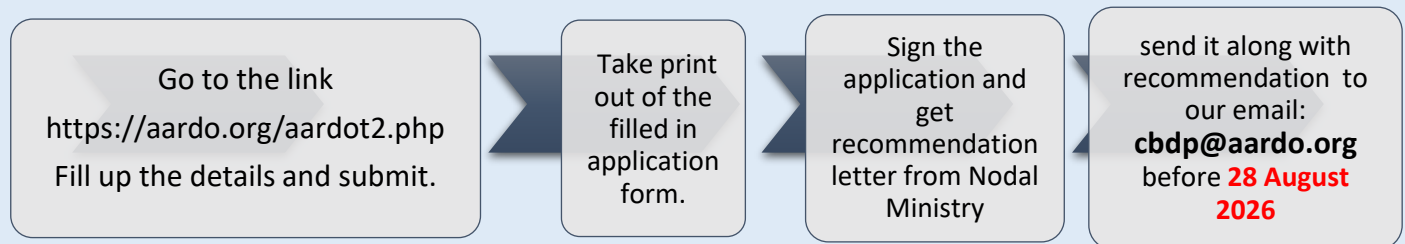
- Enumerate technology requirements in their economies and identify transferable Agri-Technologies.
- Formulate institutional action plans to introduce or adapt climate-smart technologies within their domestic agricultural portfolios.
- Deploy advanced techniques for measuring greenhouse gas emissions and conducting carbon footprint assessments in their home countries.
- Establish an enduring professional network across African and Asian borders to collaboratively address shared climate vulnerabilities in farming.

About the Institution

The Malaysian Agricultural Research and Development Institute (MARDI) is Malaysia's premier national research institution dedicated to advancing the country's food, agriculture, and agro-based industries through science, innovation, and technology. Established under the MARDI Act 1969 and operational since 1971, MARDI conducts multidisciplinary research covering crops (excluding rubber, oil palm, and cocoa), livestock, food processing, and integrated farming systems. In addition to research and development, the Institute plays a pivotal role in technology commercialization, knowledge dissemination, laboratory and consultancy services, capacity building, and extension support for farmers and agribusinesses. Guided by its vision of becoming the preferred provider of

innovative technologies for a sustainable and competitive agricultural industry, MARDI continues to promote modern, efficient, and climate-resilient agricultural practices while fostering national and international collaboration to strengthen food security and sustainable rural development.

Application Process:



Who can Apply / Requirements

- Minimum a Bachelor's degree in **Agriculture or Allied subjects**, with considerable working experience in planning and executing the programmes related to subject of the programme.
- Must be subject specialist and related to the subject of the programme.
- Proficiency in spoken and written English language, as the medium of conducting the programme is English only, and translation facilities into any other language would not be available.
- Must be in good health to undergo the programme.
- Candidate must be nominated by the Nodal Ministry of AARDO, the recommendation/nomination letter must be shared along with the application.

Programme Coordination

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