



INTERNATIONAL TRAINING PROGRAMME

Development of Sustainability Indicators Using Sensor Fusion and Analytics for Agriculture

SMART AGRICULTURE • PRECISION FARMING • SUSTAINABILITY ASSESSMENT
CLIMATE-SMART AGRICULTURE • SENSOR FUSION • AGRICULTURAL DATA ANALYTICS



7-16
OCTOBER 2026



INDIAN INSTITUTE OF
TECHNOLOGY KANPUR,
INDIA



SMART DATA.
SUSTAINABLE AGRICULTURE.
BETTER FUTURE.



JOINTLY ORGANIZED BY
AFRICAN ASIAN RURAL DEVELOPMENT ORGNAIZATION (AARDO)

AND

INDIAN INSTITUTE OF TECHNOLOGY KANPUR (IIT KANPUR)

INTRODUCTION

- Theme of the programme** - **Development of Sustainability Indicators Using Sensor Fusion and Analytics for Agriculture**
- Sponsoring Organisation** - **African Asian Rural Development Organization (AARDO)**
www.aardo.org
- Training Institute (Host)** - **Indian Institute of Technology Kanpur (IIT Kanpur)**
www.iitk.ac.in
- Duration** - **7-16 October, 2026**

BACKGROUND

Agriculture is increasingly challenged by climate change, resource degradation, water scarcity, and the growing demand for food production. Ensuring sustainable agricultural development requires effective monitoring of soil, water, crops, and environmental conditions through reliable and measurable indicators.

Recent advancements in sensing technologies, Internet of Things (IoT), remote sensing, Geographic Information Systems (GIS), and data analytics have enabled the collection of large volumes of agricultural data. When integrated through sensor fusion techniques, these data provide valuable insights for assessing resource-use efficiency, crop performance, environmental impacts, and overall agricultural sustainability.

Recognizing the growing need for data-driven decision-making in agriculture, the **Indian Institute of Technology Kanpur (IIT Kanpur)**, in collaboration with the **Asian-African Rural and Agricultural Development Organization (AARDO)**, is organizing a ten-day international training programme on “**Development of Sustainability Indicators Using Sensor Fusion and Analytics for Agriculture.**”

The programme aims to provide participants with practical knowledge of agricultural monitoring systems, sensor technologies, sustainability assessment frameworks, and analytical tools for developing meaningful sustainability indicators. Through lectures, laboratory sessions, case studies, field exposure, and hands-on exercises, participants will gain an understanding of how integrated data can support sustainable and climate-resilient agricultural practices.

The programme is expected to benefit professionals, researchers, extension personnel, and policymakers working in agriculture, environmental management, water resources, and rural development by strengthening their capacity to evaluate and improve agricultural sustainability using modern digital technologies.



ABOUT THE COURSE

OBJECTIVES OF THE PROGRAMME

- To introduce participants to the concepts and principles of sustainable agriculture and sustainability assessment.
- To familiarize participants with sensor technologies for monitoring soil, water, weather, and crop conditions.
- To develop understanding of sensor fusion, remote sensing, and data analytics for agricultural applications.
- To enable participants to design and develop sustainability indicators for agricultural systems.
- To enhance participants' capacity to support data-driven decision-making for sustainable and climate-resilient agriculture.

LIST OF TOPICS TO BE COVERED

Day	Topic
Day 1	Introduction to Sustainable Agriculture and Sustainability Indicators
Day 2	Sensors for Agricultural Monitoring
Day 3	Data Collection Systems and Smart Farming Technologies
Day 4	Remote Sensing and GIS for Agriculture
Day 5	Sensor Fusion Techniques for Agricultural Applications
Day 6	Data Analytics for Sustainable Agriculture
Day 7	Development of Agricultural Sustainability Indicators
Day 8	Climate-Smart Agriculture and Decision Support Systems
Day 9	Field Visit and Practical Demonstrations
Day 10	Mini Project, Indicator Development, and Future Trends in Smart Agriculture



DETAILS OF THE COURSE

ESSENTIAL QUALIFICATIONS

- A bachelor's degree and a minimum of five years of relevant field experience are required.
- Proficiency in spoken and written English is mandatory, as the medium of instruction is exclusively in English, and translation services into other languages are not provided.
- Applicants should have good physical and mental health to complete the training course successfully.
- Ideally, applicants should be below **50** years of age.

MEDIUM OF COMMUNICATION

The medium of communication is primarily English. Participants are encouraged to have a proficient working knowledge of English to facilitate effective communication and engagement.

CERTIFICATE

Upon successful completion of the training program, participants will receive a certificate bearing the signatures of both AARDO and IIT Kanpur, providing authentication.

COMMUNICATION

WhatsApp communication will be established among the participants, the host institute, and AARDO to enhance communication speed and information sharing.

VISA & AIR TICKETS

AARDO will facilitate the visa application process through the Indian Missions in the participants' respective countries. Air tickets will be provided by AARDO once the visa is confirmed, allowing the candidate(s) to attend the program. Upon the nominee(s) confirmation, round-trip economy class air tickets will be arranged for their travel to Lucknow/New Delhi and back.

TO APPLY

Apply online through <https://aardo.org/aardot.php> **The scanned copy of the application (submitted online) duly recommended by the competent authority, to be kindly forwarded** to the AARDO Secretariat through email: iec@aardo.org latest by **31 July 2026**.



ABOUT THE PROGRAM



ABOUT THE HOST TRAINING INSTITUTE (IIT-Kanpur)

The Indian Institute of Technology (IIT) Kanpur, established in 1959, is one of India's premier institutions for higher education and research in engineering, science, and technology. Located in Kanpur, Uttar Pradesh, IIT Kanpur is renowned for its academic excellence, cutting-edge research, and innovation. The institute offers undergraduate, postgraduate, and doctoral programs across various disciplines, fostering an environment of intellectual rigor and interdisciplinary collaboration. Equipped with state-of-the-art facilities, IIT Kanpur emphasizes hands-on learning and practical application of knowledge. Its faculty includes leading experts and researchers committed to advancing knowledge and solving real-world problems. IIT Kanpur's contributions to technology, industry, and society have earned it a reputation as a leader in education and a catalyst for technological progress in India and beyond.



IMPORTANT NOTE

- Applications not accompanied by a recommendation from the participant's country's AARDO Nodal Ministry or Center of Excellence will not be considered.
- Completed applications must be submitted to the AARDO Secretariat on or before the closing date **31 July 2026**
- Due to limitations in the number of participants, only selected candidates will be notified through their Nodal Ministry and AARDO's Centers of Excellence.

Program Coordinators - IIT Kanpur

Prof. J. Ramkumar

(HAG), Dept. of ME & Design, FNAE, FETE, FIE(I), SC Agarwal Chair Professor, Coordinator for ImLab, MedTech Lab & RuTAG IIT Kanpur
Mobile : +91-512-259-2185
E-mail: jrkumar@iitk.ac.in
URL: home.iitk.ac.in/~jrkumar



Dr. Amandeep Singh

FIE(I), MIFFFF, IMISTE Institute Ambassador, IIC IIT Kanpur Coordinator for ImLab & RuTAG IIT Kanpur REO, MedTech Lab
Mobile : +91-512-259-2133
E-mail: adsingh@iitk.ac.in
URL: home.iitk.ac.in/~adsingh



ABOUT AARDO

The AFRICAN-ASIAN RURAL DEVELOPMENT ORGANIZATION is a rural centric inter-governmental autonomous organization located at 2, State Guest Houses Complex, Chanakyapuri, New Delhi 110 021, India .

African Asian Rural Development Organization is mandated to develop understanding among members for better appreciation of each other's problems and to collectively explore, opportunities for coordination of efforts for the welfare and eradication of thirst, hunger, illiteracy, disease and poverty amongst rural people in the African-Asian region. The Organization comprises thirty six (36) members, which include thirty one (32) countries namely, Burkina Faso, Egypt, Ethiopia, Eswatini, Gambia, Ghana, Kenya, Liberia, Libya, Malawi, Mauritius, Morocco, Namibia, Nigeria, Sierra Leone, Sudan, Tunisia and Zambia from Africa, and Bangladesh, R.O. China (Taiwan), India, Iraq, Jordan, R.O. Korea, Lebanon, Malaysia, Oman, Palestine, Pakistan, Sri Lanka, Syria and Yemen from Asia, as the full members, and Korea Rural Community Corporation (KRC), R.O. Korea, the Agricultural Bank of Sudan (ABS), Sudan, Ekiti Chamber of Commerce, Industry, Mines & Agriculture (EKICCIMA), Nigeria and Economic and Social Development Center (ESDC), Palestine as Associate Members.

AARDO is promoting South-South Triangular cooperation in the domain of agricultural and rural development. As such, AARDO is championing and advocating more science to rural societies for inclusive transformation of rural areas in Africa and Asia.

PROGRAMME COORDINATORS - AARDO

Dr. Sanjeeb K. Behera

Head , IEC Division

African Asian Rural Development
Organization (AARDO)
E-mail : sanjeebbhehera@aardo.org
Mobile : +919810664507

Mr. Kamal Dhameja

Head Administration and Senior Technical
Officer (STO), IEC Division

African Asian Rural Development
Organization (AARDO)
E-mail : kamaldhameja@aardo.org
Mobile : +918076448341