CONCEPT NOTE & PROGRAMME

Workshop on Earth Observation for Irrigation Mapping in Kenya (IrrEO Project)

RCMRD, Nairobi Kenya, 5–7 May 2026

Organized By

Regional Centre for Mapping of Resources for Development

RCMRD

The University of Manchester

1. Background

Agriculture remains a cornerstone of Kenya's economy, contributing significantly to employment, rural livelihoods, and national food security. However, the sector is highly vulnerable to climate variability, with increasing frequency of droughts and erratic rainfall patterns affecting productivity and resilience.

Recognizing this, the Government of Kenya has prioritized irrigation development as a key pathway toward achieving food security and economic transformation. This commitment is articulated in several national policy frameworks, including:

- Kenya Vision 2030, which identifies agriculture as a key driver of economic growth and emphasizes modernization and expansion of irrigation
- Agricultural Sector Transformation and Growth Strategy (ASTGS) 2019–2029, which prioritizes increasing agricultural productivity and promoting climate-smart agriculture through improved water management
- National Irrigation Policy, which provides a framework for sustainable irrigation development and management
- National Climate Change Action Plan (NCCAP), which highlights irrigation as a key adaptation strategy for climate resilience

In line with these frameworks, Kenya has made significant investments in irrigation infrastructure and expansion of irrigated agriculture. However, despite these efforts, **critical data gaps persist**, limiting the ability to effectively plan, monitor, and optimize irrigation investments. The current challenges include:

- Fragmented and inconsistent irrigation datasets across institutions
- Limited spatial and temporal coverage of existing data
- Weak integration of data into planning and decision-making processes
- Limited monitoring of irrigation performance and outcomes

Earth Observation (EO) technologies present a transformative opportunity to address these challenges by providing **timely, scalable, and cost-effective data** on irrigated areas, crop conditions, and water use dynamics. Globally, EO is increasingly being integrated into agricultural monitoring systems; however, in Kenya, **its operational uptake remains limited**. The Key barriers include:

- Limited technical capacity to process and interpret Earth Observation data
- Lack of user-centered design in EO tools
- Institutional and workflow integration challenges
- Data accessibility and interoperability issues
- Concerns around data reliability and trust

In addition, the increasing use of EO technologies raises important **ethical and governance considerations**, including:

- Data privacy and ownership
- Equity and inclusion, particularly for smallholder farmers
- Risks of exclusion or unintended surveillance
- Need for transparent and accountable data use

The **IrrEO Project**, led by the University of Manchester is supported by the Gates Foundation, will develop national-scale irrigation mapping data and capacity in three countries – Kenya, Ethiopia, and Nigeria – between September 2025 and August 2029. Specifically, the project seeks to address these challenges by developing **user-oriented EO-based tools for irrigation mapping**. In Kenya, the University of Manchester is partnership with the Regional Centre for Mapping of Resources for Development (RCMRD),

A core principle of the project is **co-development with stakeholders**, ensuring that solutions are:

- Demand-driven
- Policy-relevant
- Technically feasible
- Socially inclusive and ethically sound

This workshop is therefore designed as a **multi-stakeholder platform** to align Earth Observation innovations with Kenya's policy priorities and practical irrigation needs.

2. Objectives

To inform the co-design of Earth Observation-based irrigation mapping tools through inclusive stakeholder engagement aligned with national policy priorities.

Goals:

- Identify data needs to support irrigation investments, policy, and planning
- Assess barriers limiting the adoption and uptake of Earth Observation technologies
- Examine privacy, equity, and justice implications of Earth Observation-based irrigation monitoring
- Strengthen collaboration among stakeholders supporting implementation of national agricultural and irrigation policies

3. Expected Outputs

The workshop is expected to deliver:

- A validated framework of irrigation-related data needs aligned with national priorities
- A diagnostic assessment of barriers to Earth Observation adoption in Kenya
- Recommendations on data governance, ethics, and responsible Earth Observation use
- Stakeholder inputs to guide the design of IrrEO tools
- A comprehensive workshop report to support policy and implementation processes

4. Target Participants

The workshop will bring together approximately **80 participants**, including:

- National and county government agencies (agriculture, irrigation, water, planning)
- Development partners and financing institutions
- Research and academic institutions
- Private sector actors (Agri-tech and geospatial service providers)
- Farmer organizations and irrigation scheme representatives
- Civil society organizations, including gender and inclusion advocates

5. Methodology and Approach

The workshop will adopt a **participatory and co-design approach**, combining:

- Technical presentations
- Facilitated discussions
- Thematic working group sessions
- Field-based visit
- Plenary synthesis

6. Expected Impact

The workshop will contribute to:

- Improved evidence-based irrigation planning and investment aligned with national strategies
- Increased uptake of EO technologies in agricultural decision-making
- Strengthened data governance and ethical practices
- Enhanced multi-stakeholder collaboration supporting Kenya's development agenda

Programme

Day One - 5 May 2026 – Tuesday, Opening & Irrigation Context in Kenya

Time	Session	Facilitator
08:00 – 09:30	Arrival & Registration	RCMRD
09:30 – 09:40	Introduction of Participants	RCMRD
09:40 – 09:50	Workshop Overview	Objectives, structure, expected outputs (RCMRD)
09:50 – 10:00	Welcome Address	Director General, RCMRD
10:00 – 10:15	Project Vision (Global Perspective)	University of Manchester
10:15 – 10:25	Remarks by Key Stakeholders - Gates Foundation - British Embassy	RCMRD
10:25 – 10:55	Official Opening - Government of Kenya	RCMRD
10:55 – 11:00	Group Photo	RCMRD
11:00 – 11:30	Tea Break	RCMRD
11:30 – 12:00	Irrigation Mapping in Kenya (Status, challenges, opportunities)	State Department of Irrigation
12:00 – 12:15	Q&A Session	RCMRD
12:15 – 12:45	IrrEO Project Overview, Tools, objectives and Kenya's role	University of Manchester
12:45 – 13:00	Q&A Session	RCMRD
13:00 – 14:00	Lunch Break	RCMRD
14:00 – 15:00	Interactive Stakeholder Session - Share experiences and perspectives on irrigation status/limitations/key examples	University of Manchester
15:00 – 16:00	Working Groups Session - Sector-based grouping	RCMRD
16:00 – 16:15	Group Report backs	University of Manchester
16:15 – 16:45	Tea Break	RCMRD

Day Two – Wednesday, 6 May 2026 - Data Needs, EO Applications & System Design

Time	Session	Facilitator
09:00 – 09:10	Recap of Day 1 - Summary of key takeaways	RCMRD
09:10 – 09:30	Session 1: Data Needs (Decision-making needs, current data use, gaps)	University of Manchester
09:30 – 10:30	Working Group Session 1 (sector groups) - *Baseline data use, needs, and gaps*	University of Manchester
10:30 – 11:00	Tea Break	RCMRD
11:00 – 13:00	Working Group Session 2 (mixed groups) - *Addressing data needs & the role of Earth Observation*	University of Manchester
13:00 – 14:00	Lunch Break	RCMRD
14:00 – 14:30	Interactive Stakeholder Session	University of Manchester
14:30 – 15:30	Working Group Session 3 (mixed groups) - *Platform design and sustainability*	University of Manchester
15:30 – 16:30	Presentations from all Working Groups	RCMRD
16:30 – 16:45	Closing Ceremony	RCMRD
16:45 – 17:15	Tea Break	RCMRD

Day Three – Thursday, 7 May 2026 - Field Visit & Practical Learning

Time	Session	Facilitator
08:00 – 08:30	Picking up packed breakfast and boarding the bus	RCMRD
08:30 – 11:00	Travel to the Community Irrigation Scheme	Field Visit - RCMRD
11:00 – 13:00	Field Visit (Observe irrigation systems and farmer engagement)	Community Irrigation Scheme Point of Contact
13:00 – 14:30	Lunch Break	RCMRD
14:30 – 17:00	Travel Back to RCMRD	RCMRD

Note: Participants are requested to wear outdoor comfortable clothes and shoes for the field visit