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Executive Summary

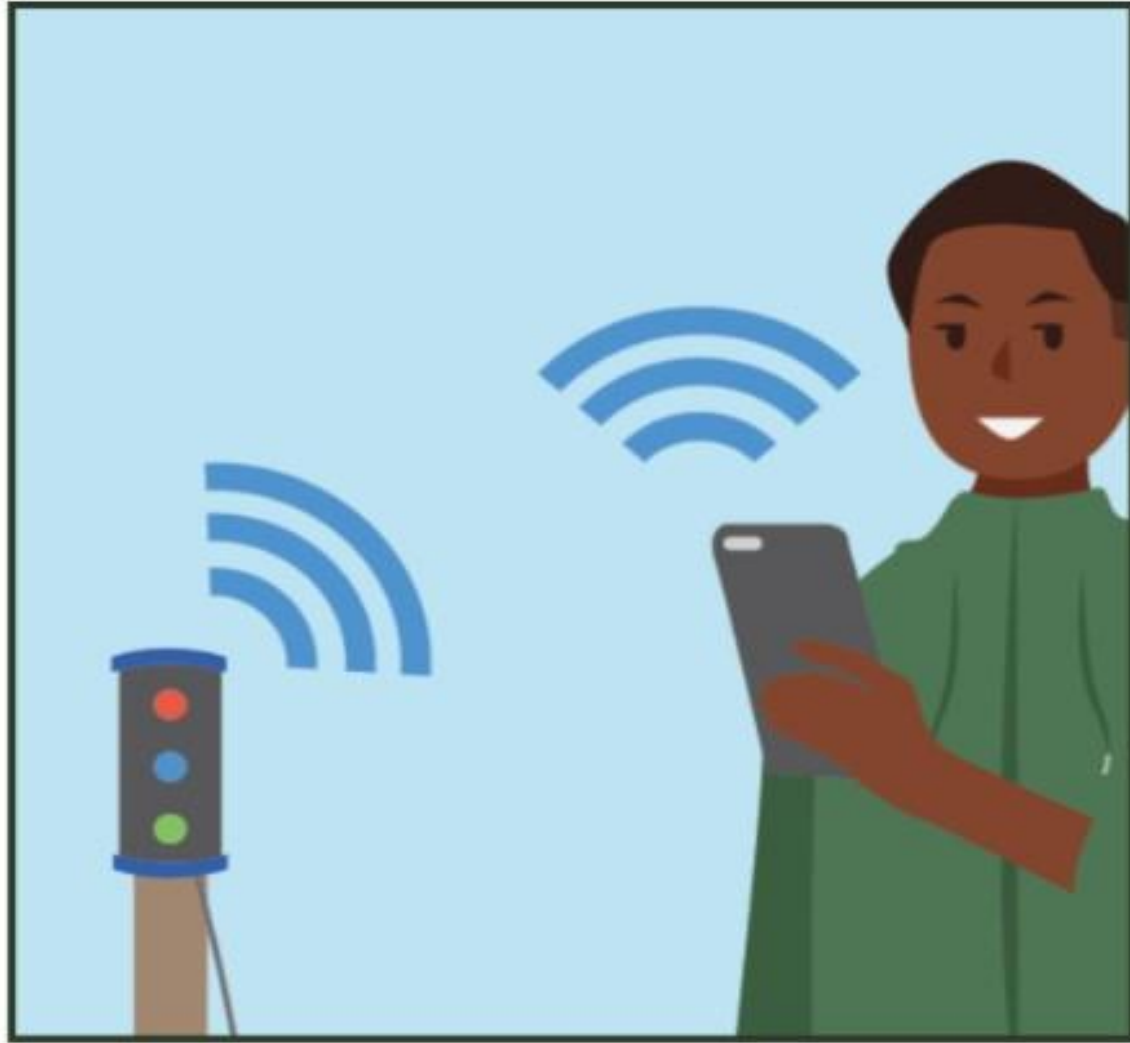
This study explores the pivotal role of Geographic Information Systems (GIS) in promoting gender inclusion and equity in smart irrigation technologies. By integrating GIS with IoT-enabled soil moisture devices, this study identifies opportunities to foster women's empowerment and equality in agricultural practices. The aim is to leverage spatial data and gender-responsive approaches to address the challenges faced by women farmers in irrigation demand management. Our goal was also to showcase the effective and sustainable use of this technology at the farm level. Key objectives include raising farmer awareness about irrigation tools and aims to demonstrate how these tools can strengthen efficiency, and water productivity in agricultural.

Introduction

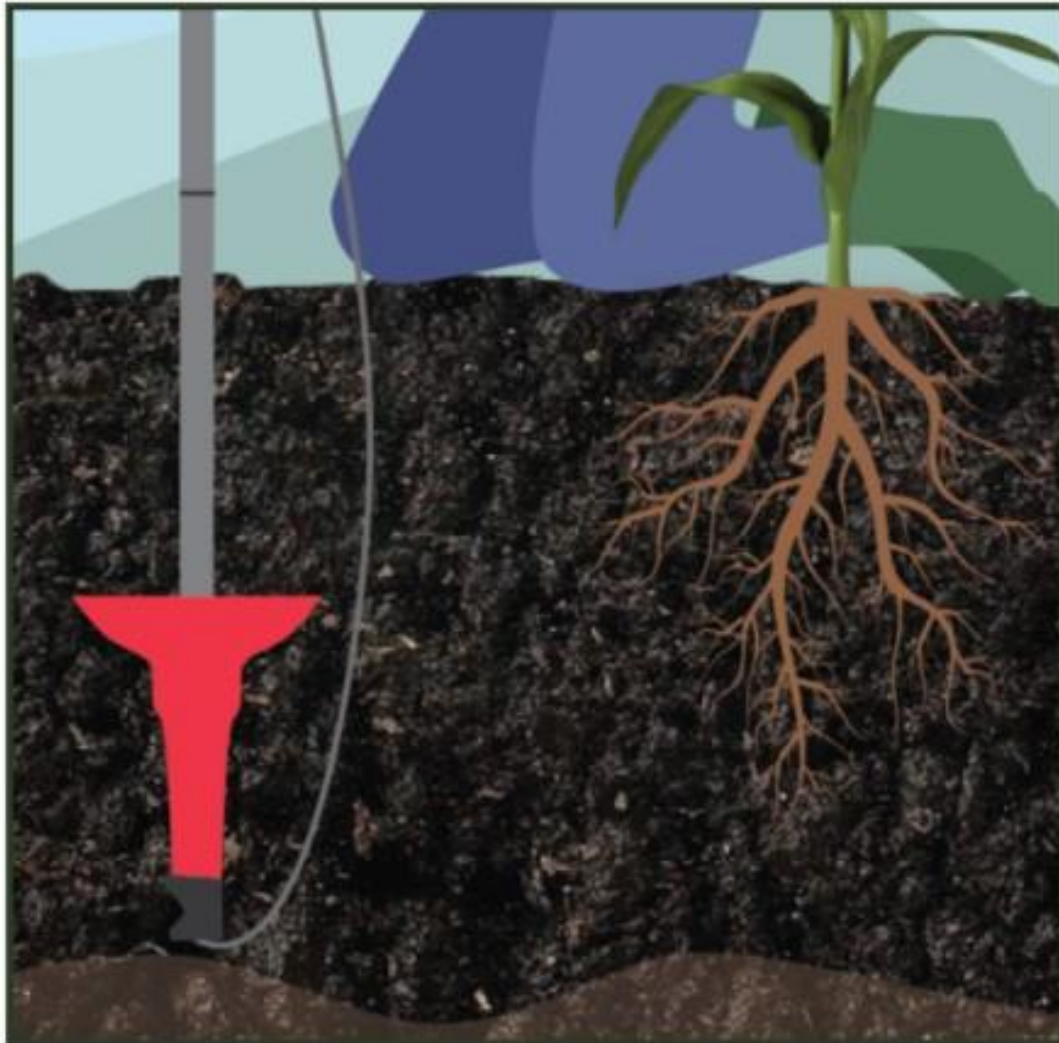
IWMI Pakistan conducted various capacity building initiatives in Okara District to enhance water productivity through irrigation demand management for women farmers and youth. Participants were informed about instrument usage to improve agricultural practices.



Chameleon Card



Wi-Fi Soil Moisture Sensor



Wi-Fi-Detector

Materials and Methods

During the training, farmers were provided with a detailed explanation of the instruments, and practical demonstrations of using the EC meter were conducted. In irrigation demand management, soil moisture sensors and EC meters play a crucial role. The use of soil moisture sensors allows farmers to easily determine when their crops require water and when they do not.



Demonstration of Soil Moisture and EC Meter and Mapping

Installation of Instruments



Installation of Soil Moisture



Taking Card Readings



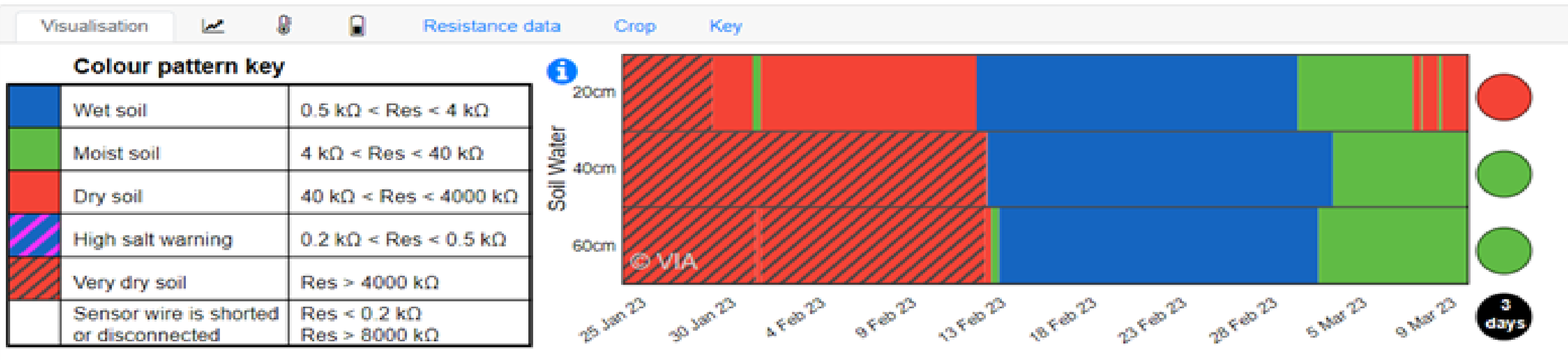
Working Soil Moisture Sensor



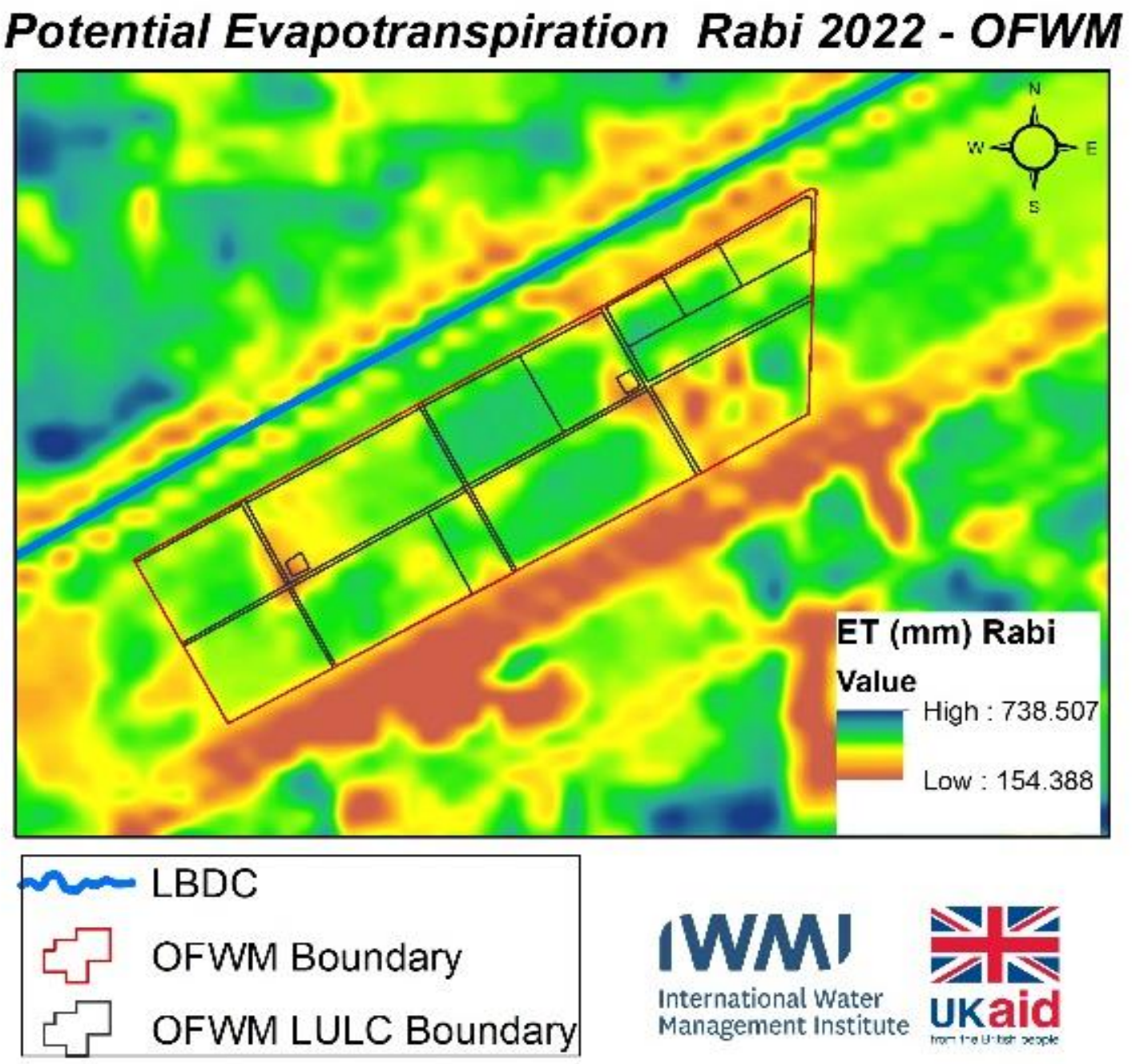
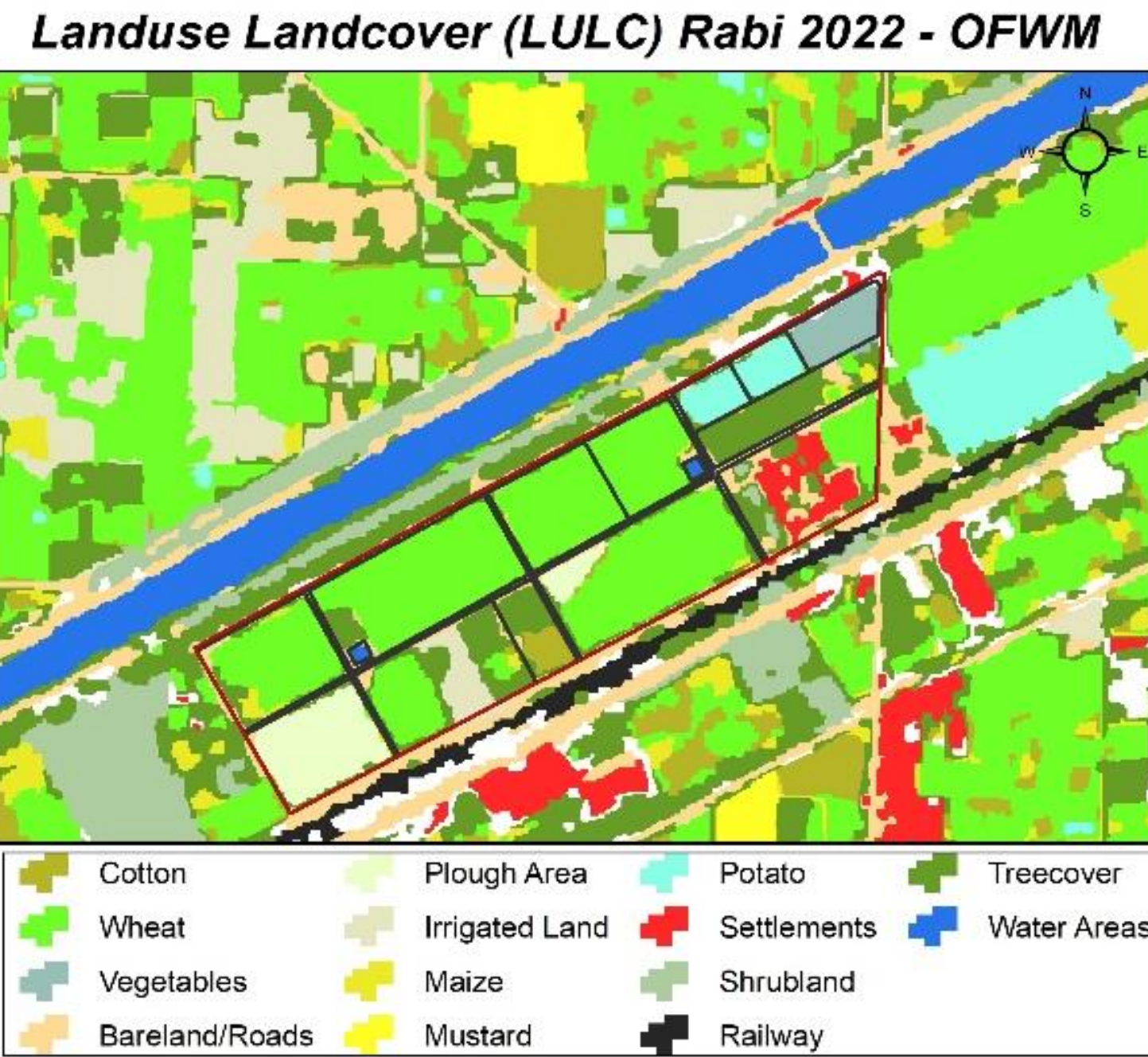
Attached Chameleon Card

Data Collection

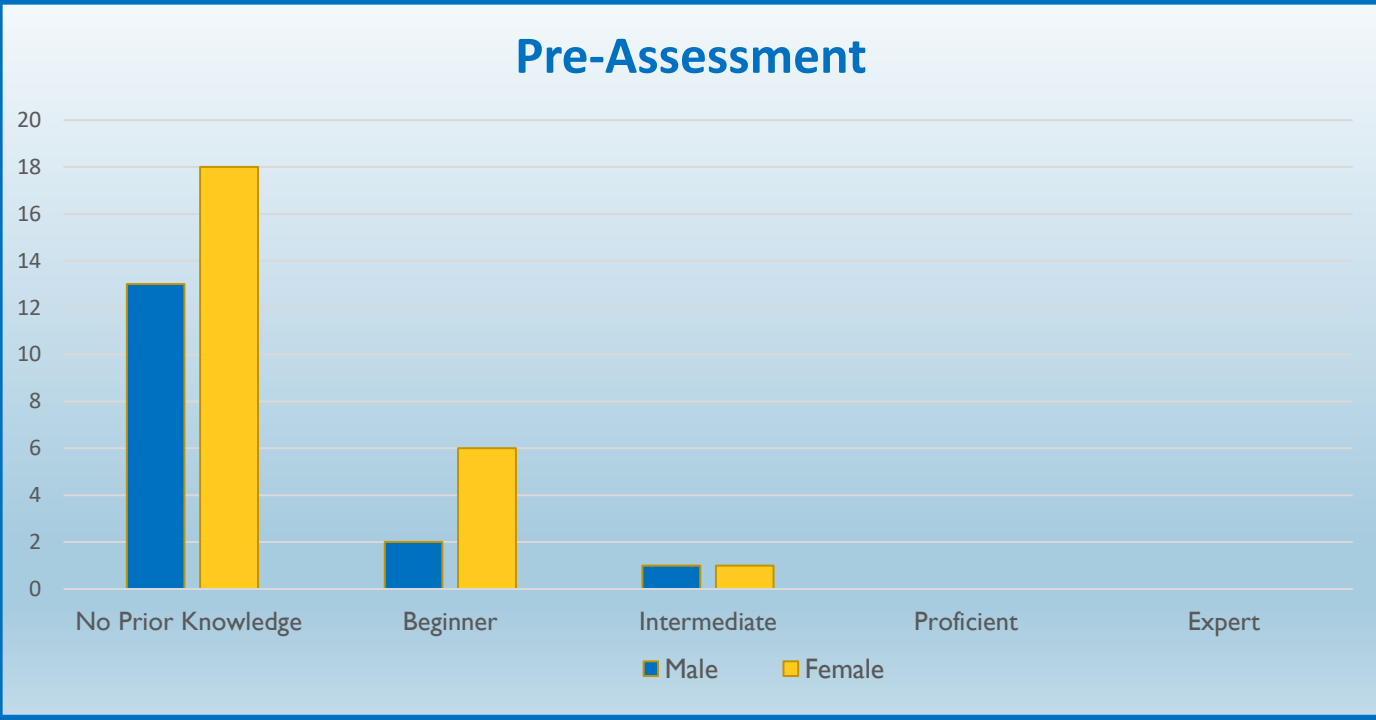
Irrigation Bay: OFWM Sprinkler Irrigation Field
Crop: **Wheat**, Install date: **25 Jan 23**, Sensor: **Chameleon 2**



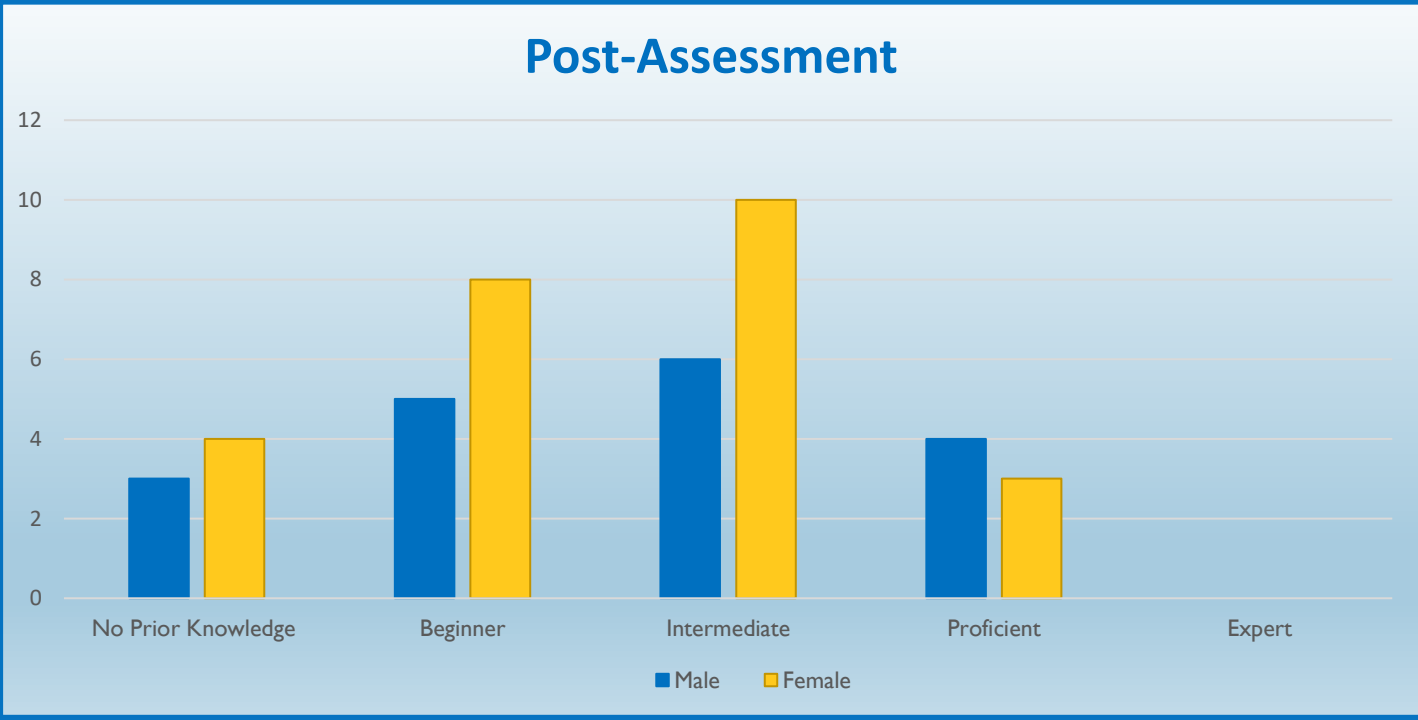
How Soil Moisture Sensors Works?



Landcover and Irrigation Demand Mapping



Pre-Assessment Chart



Post-Assessment Chart

Findings and Implications

During our assessment of the training, a significant increase in farmers' knowledge was observed, and they expressed great satisfaction with the opportunity to leverage new technology. Approximately 80% improvement in their knowledge was noted, with a higher frequency among female farmers. The farmers enthusiastically conveyed their intention to fully utilize modern technology and expressed gratitude for the practical exposure they received during the training.