Australian Government
Australian Centre for International Agricultural Research

Water

A traffic light soil water sensor for resource poor farmers: proof of concept

Key details

Location
Mozambique

Duration
Start Apr 2013 **End** Mar 2014

Budget AUD 163,766

Commissioned organisation
CSIRO

Partners
CSIRO Land and Water, Australia;
Measurement Engineering Australia Pty Ltd;
University of Eduardo Mondlane

Project Leader
Dr Richard Stirzaker

Program Soil and Land Management
Water

Project code FSC/2013/002

Overview

This project's main objectives were to assess the sensor's accuracy, develop a robust handheld interface, and develop mobile phone apps to collect and display the sensor's data.

In Africa, irrigation is largely under-developed and innovations are needed to help small-scale farmers manage their irrigation water. This study was the first step to delivering technology to such farmers by road testing a prototype sensor that measures soil moisture and gives an output resembling a traffic light: green (meaning plenty of water), orange (transition state), or red (running out of water).

Project outcomes

- Selected the combination of electrode arrangement and porous media to give step changes in resistance when moving from Green to Orange and Orange to Red.
- Developed robust, inexpensive interface for recording the step change in resistance and display it as 3 lights.
- Tested the usefulness and acceptability of the sensor to African smallholder farmers.
- Developed phone apps to make data collection and display as simple and as meaningful as possible.

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