

Low cost water salinity sensor for smallholder irrigators in developing countries



Key details

Location

Malawi, Mozambique, Tanzania

Duration

Start Jun 2015

End Sep 2016

Budget

AUD 140,000

Commissioned organisation

CSIRO

Partners

CSIRO Agriculture Flagship; Measurement Engineering Australia Pty Ltd

Project Leader

Richard Stirzaker - CSIRO Agriculture Flagship

Program

Water

Project code

LWR/2015/035

Project outcomes

Three low cost salinity measurement alternatives were evaluated:

1. The SaltLight electrical conductivity (EC) meter developed to proof of concept stage by Measurement Engineering Australia (MEA).
2. Commercially available, low cost EC wands in common use by the hydroponics industry.
3. Commercially available open-source EC modules, compatible with the 'Arduino' microprocessor platform that can be the foundation of a low cost custom meter.



Overview

Depletion of surface and groundwater resources has resulted in farmers using irrigation water with unsuitable salinity levels. Farmers only know if water is too saline after it has impacted their crop. There is a need for a simple, low cost sensor that small scale farmers can intuitively use to decide whether or not water is suitable for irrigation or whether leaching is required. The purpose of this Small Research and Development Activity is to develop technologies for smallholder irrigators that will help them manage water on their farms.