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## Bernard Omodei

Measured Irrigation, Australia

### Measured Irrigation - Improving the water-efficiency of irrigation by changing the irrigation paradigm

The current paradigm for controlling the volume of water delivered to each plant is to control both the flow rate and the duration of the irrigation event. Measured irrigation is a radical departure from this paradigm and the implications for water-efficiency and energy-efficiency are significant. Measured irrigation is the implementation of two fundamental concepts: (i) Measured irrigation controls the application rate to each plant by controlling emitted volumes directly without the need to control the flow rate or the duration of the irrigation event. (ii) Variations in the application rate to each plant throughout the year are controlled by the prevailing weather conditions; the application rate is proportional to the nett evaporation rate (evaporation minus rainfall). Conventional irrigation systems use a timer or controller to control the opening and closing of solenoids in order to control the duration of the irrigation event and the frequency of irrigation. Measured irrigation uses an evaporator and level sensor to control the duration of the irrigation event and the frequency of irrigation. During the irrigation event water slowly drips into the evaporator from a control nozzle. Some applications of measured irrigation are discussed including the amount of water saved.

### Biography

Bernie Omodei completed his PhD in Numerical Analysis age 26 years from Australian National University and postdoctoral studies at University of Manchester and Flinders University of South Australia. After lecturing at University of Sydney for seven years, he was Mail Order Manager at Oxfam Australia for 10 years. Prior to embarking on a career as an inventor, he was Fundraising Manager at Trees For Life. As well as his publications in mathematics, he recently published a paper on measured irrigation in *Irrigation Science*. He attended the 2015 International Symposium and "Writeshop" on Rainwater Harvesting in Addis Ababa.

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