

## **NATIONAL WORKSHOP TO INITIATE ESTABLISHMENT OF NATIONAL STANDARDS FOR IRRIGATED CROP WATER BALANCE AND ETC FIELD METHODOLOGIES**

# **Finding the common ground**

### **BACKGROUND**

No single methodology is used to calculate crop evapotranspiration (ETc) in Australia. This reduces confidence in the various estimates of crop water use, which are an important piece of base information that underpins much water policy.

The National Action Plan on Salinity relies on an accurate understanding of ground water recharge rates in both irrigated and dryland farming systems. Estimates of recharge rates are directly affected by estimates of crop water use as both are elements of paddock, farm and catchment scale water balances. A more rational comparison of different methods to reduce recharge rates would be possible if a common methodology was used to estimate crop water use.

The National Program for Sustainable Irrigation convened a one-day national workshop to investigate the current use of different methodologies to estimate crop water use and possibly to initiate establishment of national standards for methodologies to estimate irrigated crop water balance and crop evapotranspiration (ETc).

### **KEY FINDINGS**

The workshop agreed that there is a need to develop a common national approach to methodologies to estimate ETc and outlined a way for this to happen. The benefits of a common national approach were seen as:

- Outputs can be compared across farm/district/regions/catchments so that values have common meaning, particularly for irrigation scheduling and design of irrigation systems.
- Improved confidence in the estimated water use values of different crops. This information is critical for water allocation decisions.
- Greater ability to institute continuous improvement in a standardised manner as measurement technology and estimation procedures improve.
- The Bureau of Meteorology being better able to fulfil its role as a national service provider by providing client focussed information using a common methodology.

To enable a national approach to be taken the workshop proposed three actions:

1. Gain formal acceptance of the proposal by all relevant State and federal organisations.
  2. Test the applicability of using the international approach to estimating ETc as detailed in FAO56 and identify the status of technical information by detailing what is available, what quality it is and what data is missing.
  3. Implement a national research and development program to provide improved agromonic and climate data in future.
-

## RECOMMENDATIONS

The workshop recommended the preparation of two scoping papers to implement the findings of the workshop.

The first paper outlining a framework for a standardised approach will be submitted to the Natural Resource Management Council to ensure that State and Commonwealth agencies approve the framework and support its national implementation.

A second paper was recommended to outline the technical issues to be addressed to ensure the establishment of a nationally agreed common approach. The paper is to develop a “proof of concept” to test the applicability of the FAO56 guidelines including:

- Using current data to establish ETo (daily reference evapotranspiration) and Kc (crop coefficient) databases; containing both climate data and field measurements to estimate ETo and validate models.
- Producing an operational daily product for national coverage – Eto map and grid file.
- Documenting the methodology.
- Describing how to get national acceptance of the method.

## ABOUT THE WORKSHOP

### Aims and methodology

The aims of the workshop were to establish:

1. The need for national standards for irrigated crop water balance and crop evapotranspiration (Etc) field methodologies.
2. If there was an agreed need, to identify the steps to be taken to have all agencies agree on and promulgate these methodologies.
3. If there was difficulty in reaching agreement, to identify any additional research that needed to be undertaken to provide more information on the methodologies.

### Researchers

The workshop was convened by the National Program for Sustainable Irrigation and held in Melbourne in June 2002.

The workshop was attended by representatives from the Bureau of Rural Sciences, Bureau of Meteorology, NSW Department of Land and Water Conservation, Tasmanian Department of Primary Industry, Water and Energy, Queensland Natural Resources and Mines, NSW Agriculture, Primary Industry and Resources South Australia, Queensland Department of Primary Industry and the CRC for Catchment Hydrology.

Representatives from Agriculture WA and the WA Water and Rivers Commission were kept informed and invited to comment on the workshop report.

Resources are being sought to further the recommendations.

## MORE INFORMATION

To read the workshop report, go to Land & Water Australia’s website, <[www.lwa.gov.au](http://www.lwa.gov.au)> or obtain National Program for Sustainable Irrigation CD, *Irrigation Research 1993-2003* CD (item number EC030601), <[www.lwa.gov.au/catalogue](http://www.lwa.gov.au/catalogue)> or call 1800 776616 and quote the item number.

## NATIONAL PROGRAM FOR SUSTAINABLE IRRIGATION

For more information about the program contact coordinator

Murray Chapman, phone 03 5763 3214, email <[rplan@mcmedia.com.au](mailto:rplan@mcmedia.com.au)>