

Can Short Term Climate Forecasting Improve Irrigation Efficiency?

The IAA's Perspective



Introduction

- Tony Horton
- IAA National Board Member
- IAA = Irrigation Association of Australia
- NR&M is member of IAA
- NR&M staff are members of IAA
- Manager, Water Use and NR&M's representative in IAA



Presentation

- IAA Structure
- IAA Mission, Vision and Values
- IAA Goals
- Australian Water Industry Forum
- IAA Environmental Policy
- IAA's Approach to Improving Water Use Efficiency
- Role of Science
- Short Term Climate Forecasting
- Reduced Demand for New Dams?
- Impact of WAMPs



IAA Structure

- Regions 
- National Board of 12
- Secretariat Peter Garrad
- www.irrigation.org.au
- 750 members – individuals, businesses and corporations
- 1700 – 2000 with business and corporate nominees
- Represents all sectors of the irrigation industry 



IAA Structure - **Regions**

- Melbourne
- Murray-Riverina
- South Australia
- Western Australia
- (Sydney)
- NW NSW
- NSW North Coast
- Darling Downs
- SE Qld



IAA Structure - **Representation**

- Irrigators and Irrigation Managers
- Amenity Irrigators and Managers
- Contractors and Installers
- Consultants
- Equipment Manufacturers
- Equipment Distributors and Retailers
- State and Local Government Agencies and Employees
- Water Service Providers and Employees
- Educational Institutions – staff and students



IAA Mission, Vision and Values

- Mission – *Growing a viable, efficient and sustainable Australian irrigation industry*
- Vision – *To be the leading national association representing the irrigation industry in Australia*
- Values
 - ◆ Professional
 - ◆ Inclusive of the views and interests of members
 - ◆ Environmentally responsible
 - ◆ Apolitical
 - ◆ Proactive
 - ◆ Accountable
 - ◆ Ethical
 - ◆ Focus on members



IAA Goals

- To increase membership
- To promote the value of the irrigation industry
- To develop, promote and contribute to industry **policy**
- To establish strategic **relationships** that help fulfil the Association's goals
- To encourage industry **best practice**
- To ensure the irrigation industry has the necessary **skills** base, including access to irrigation skills development and **training**
- To facilitate the availability of and access to industry **information**
- To influence, coordinate and contribute to the direction and prioritisation of industry **research**
- To manage the Association's internal communication and operating procedures to ensure effectiveness
- To ensure the Association is effectively and efficiently administered and that all statutory requirements are met
- To raise the profile of the Association



Australian Water Industry Forum

- IAA, AWA, ANCID
- To input to national irrigation and water resource strategic issues
- Reactive and Proactive
- Long term strategic issue to be addressed = **Climate Change** and its impact on water availability and the irrigation industry







IAA Environmental Policy

- 2 Editions (Oct 1997 and Apr 2000)
- Collection of key policies and strategies
 - ◆ Improve water use efficiency
 - ◆ Develop standards and codes of practice
 - ◆ Increase profitability of irrigated agriculture
 - ◆ Education
 - ◆ Better planning of new regional irrigation developments
 - ◆ Improved water allocation and water pricing arrangements
- All lead to improved water use efficiency



IAA's Approach to Improving Water Use Efficiency

- Adoption of a national and uniform definition of “irrigation efficiency”
- World's best practice and benchmarking
- Participation in national programs 
- Benchmarking based on uniform definition and measurement of efficiency and productivity
- Environmental and water management auditing
- Financial concessions
- Technical Solutions 
- Standards and Codes of Practice 
- Education 



IAA's Approach to Improving Water Use Efficiency

Participation in National Programs

- Irrigation auditing
- Waterwise
- National Benchmarking Program
- Dissemination of generated information
- Irrigation Conference and Exposition
 - ◆ National (Sydney in 2002)
 - ◆ Regional (Toowoomba 11-12 July 2001)



IAA's Approach to Improving Water Use Efficiency

Technical Solutions

- Efficient irrigation distribution systems
- Efficient irrigation emission devices
- Soil moisture and plant water use sensing systems
- Automatic control systems and computerised management systems
- Laser controlled land grading systems
- Computer aided design systems
- Flow meters



IAA's Approach to Improving Water Use Efficiency

Standards and Codes of Practice

- Irrigation for Profit - 1990
- Whole Farm Planning for Irrigation – Design Guidelines - 1991
- Guidelines for Ring Tank Storages
- Australian Code of Practice on On-Farm Irrigation - 2001
 - ◆ General Edition
 - ◆ Service Provider Edition
- Border Check Irrigation Design Guidelines
- Standard Contract
- Journal “Irrigation Australia”



IAA's Approach to Improving Water Use Efficiency **Education**

- Certification of Irrigation Designers
- Certification of Landscape Irrigation Auditors
- Certification of Irrigation Installers
- Urban Irrigation Installers course and licensing
- Accreditation of Contracting Businesses
- Irrigation Fundamentals course
- Future Certification of Irrigation Managers
- 13 Learning Guides in Irrigation at sub-trade level – available in September
- Seminars, field days



Role of Science

- Research, development and information transfer important to irrigation industry and improved water use efficiency
- Policy and Technical Working Group of National Board
- Partner in establishment of National Irrigation Science Network



Short Term Climate Forecasting

- Climate change seen as important strategic issue
- SOI improves estimation of probability of wet or dry seasons
- Yet to see widespread use of information in irrigation management
- IAA supports the development of improved **practical** decision support systems



Reduced Demand for New Dams?

- Depends on storage-depth characteristics of existing dams
- 20% improvement in efficiency leads to 20% reduction in water demand on dam
- Increase in reliability of storage << 20%
- New urban supply dams will be delayed until demand increases by 20%
- Rural WUE will lead to greater productivity, not reduced water use



WUE to Reduce Impact of WRPs?

- WRP = Water Resource Plan
 - ◆ WRP with tradeability = WAMP
 - ◆ WRP without tradeability = WMP
- Government view v Irrigator view
- “reality” v ‘perception’
- WRPs lead to
 - ◆ increased certainty
 - ◆ ‘known’ reliability
 - ◆ no future erosion of entitlement
 - ◆ increase in value of entitlement
 - ◆ limits on take – limits to water harvesting
- WUE will enable irrigators to maximise the benefits of their entitlements and to better cope with limit on take

