



Resolution of Trans-boundary Water Conflicts

ICID Webinar

**Hon Karlene Maywald
Chair ICEWaRM**

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An Australian Government Initiative



Roles and Responsibilities

Australian Constitution

“The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.”

Which is a noble objective.....

Outcome for the Murray Darling Basin and other catchments

- States responsibility to manage water
- No national strategic approach
- Local interests superseded National interest
- Local industry/individuals expectation of “rights” to access water
- No consideration of downstream impacts
- Inconsistent policies and laws to manage water
- Development at the expense of the environment (particularly downstream)



- **Over-allocation of water beyond system capacity:**
 - Stressed and threatened production capacity
 - Investment uncertainty
 - Threat to reliable water supply and quality
- **Stressed/endangered environment:**
 - Fish deaths
 - Riverine forest deaths
 - Floodplain degradation
 - River mouth closure
- **Pollution impacting on the ability to supply fit for purpose water:**
 - Salinity
 - Blue green algae
 - Acid sulphate soils
- **Conflict between:**
 - State Government's and inconsistent policies and planning
 - Upstream and downstream users both within states and between states
 - Irrigators and industry
 - Urbans needs and other needs



How do you build capacity and resilience to meet these types of challenges?

Technically?

Politically?

Murray-Darling Basin

- 1 million km²
- 20% of mainland Australia
- 2 major river systems
 - Murray River 2,530 km
 - Darling River 2,740 km
- 4 States and 1 Territory
- Supports 3 million people
- 75% of Australia's irrigation
- \$15Aus Billion in Agricultural production



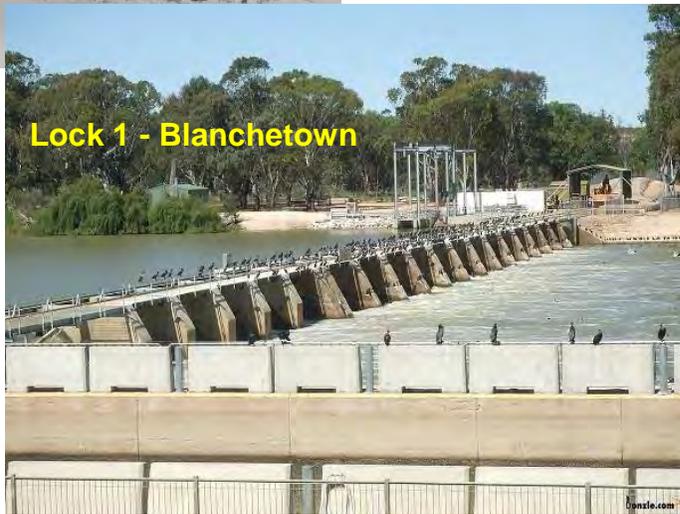
River Murray - Highly Regulated System



Prior to regulation



Dartmouth Dam – Photo Michael Bell



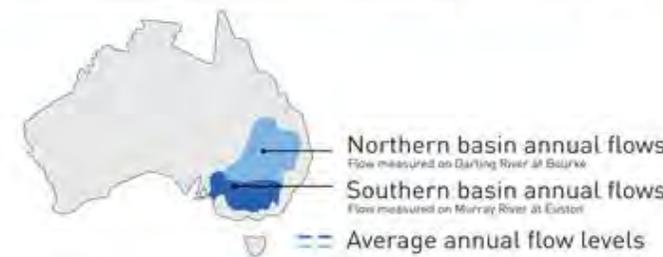
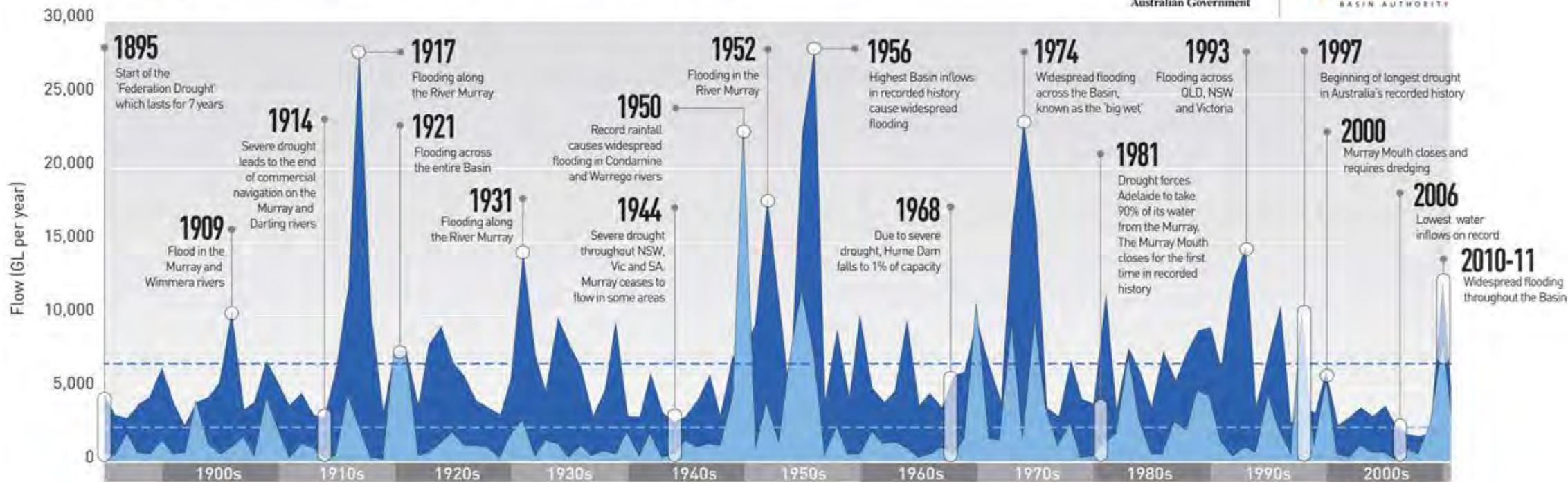
Lock 1 - Blanchetown



The Weather



HISTORICAL RIVER FLOWS WITHIN THE MURRAY-DARLING BASIN





Definitive Reform Instruments

1914-17 River Murray Agreement/River Murray Commission

Multijurisdictional agreed water sharing arrangements – Building of Dams locks and weirs - primarily for navigation and irrigation purposes

1981-82 Murray Darling Basin Agreement/MDB Commission

Expands the role of the Commission to include the Darling Rivers and water quality

1994 National Water Reform Agenda

Strategic reform framework aimed at achieving an economically viable and ecologically sustainable water industry

2004 National Water Initiative

The collective agreement on the Principles of Water Management

2006-07 Millennium Drought



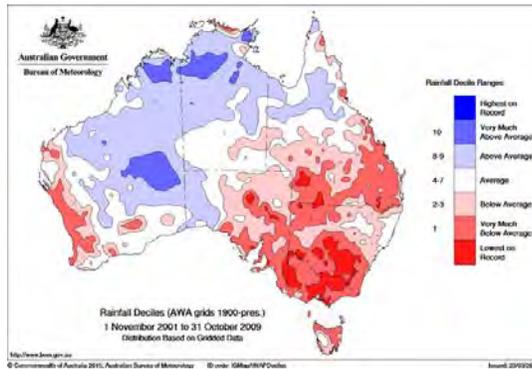
The Millennium Drought 2002-12

Unprecedented drought period

River Murray flows lowest in recorded history

Potable supply threatened / Agriculture decimated

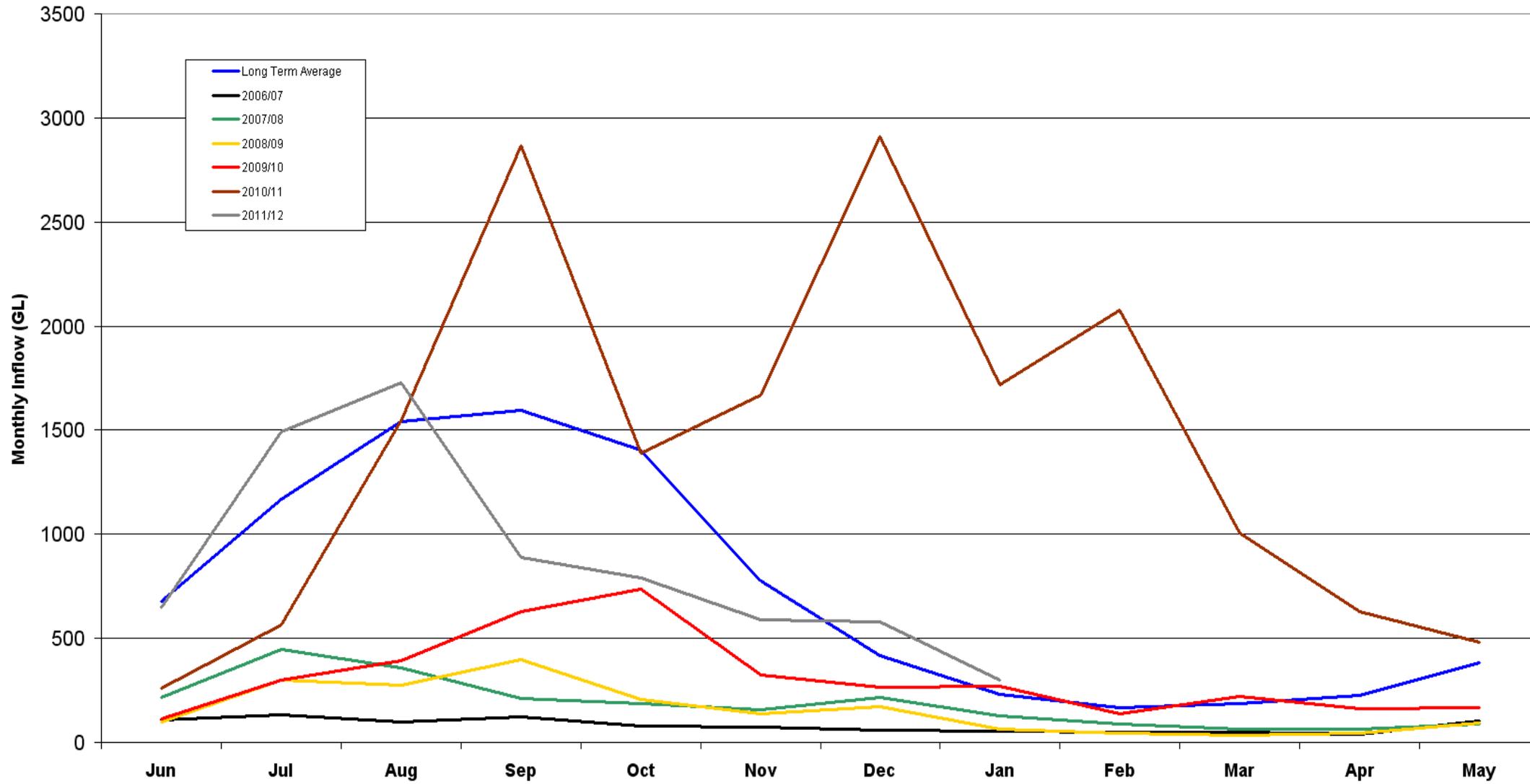
Challenged traditional approaches and basic assumptions of our water supplies



Crisis as a reform catalyst



River Murray System Inflow (Excl Menindee and Snowy)



The Millennium Drought – Impact on SA Irrigators



Year	Opening Allocation %	Final Allocation %
2003-04	65%	95%
2004-05	70%	95%
2005-06	70%	100%
2006-07	80%	60%
2007-08	4%	32%
2008-09	2%	18%
2009-10	2%	62%
2010-11	21%	67%
2011-12	100%	100%



Definitive Reform Instruments

2007 National Plan for Water Security

Federal Government Plan to transfer water management from States to Commonwealth Government
(\$13billion funding including significant investment in science and infrastructure)

2008 National Legislation – *Water Act 2007*

An Act to make provision for the management of the water resources of the Murray-Darling Basin, and to make provision for other matters of national interest in relation to water and water information

2012 -2019 The Basin Plan



The Murray-Darling Basin Plan

The Basin Plan sets:

- Overall environmental management objectives and outcomes
- Sustainable diversion limits (SDL) – sets how much surface water and groundwater can be taken from the Basin
- A sustainable diversion limit adjustment mechanism – allows SDLs to be adjusted under certain circumstances
- Constraints management strategy to address obstacles to delivering environmental water
- An environmental watering plan – to protect and restore the Basin's rivers and wetlands
- A water quality and salinity management plan that sets objectives and targets e.g. a minimum of 2 million tonnes of salt to be exported out of the Murray Mouth each year



The Murray-Darling Basin Plan

The Basin Plan sets:

- Requirements that state watering plans must comply with to be accredited under the Basin Plan by 2019
- A mechanism to manage critical human water needs – the minimum amount of potable water needed by communities who are dependent on the Basin's water resources
- The rules for water trading and better access to water market information
- The process for identifying the risks to continued water availability in the Basin, and strategies to manage them
- A monitoring and evaluation program, including an annual report on the effectiveness of the Basin Plan.



Science and Monitoring

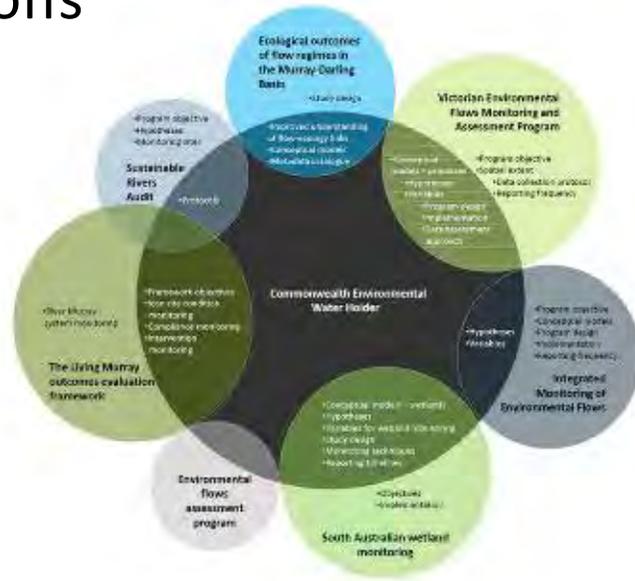
- Independent scientific assessments of sustainable extraction limits
- Use of science forums and multiple scientist engagement
- Good science assist with community discussion and engagement





Community Engagement and Assessment of Socio-economic Impacts

- Early and ongoing engagement critical to final policy design
- Workshops, communication, regular forums
- Assess economic impacts of various scenarios and engage with those effected on trade-offs



250 **BASIN PLAN IMPLEMENTATION MEETINGS**



13 MEETINGS WITH PEAK BODIES
NIC • NFF • ACF • NSWIC
NBAC • MLDRIN

113 **CONFERENCES AND EVENTS**
[inc. sponsorship of 17 conferences and programs]



4 PARLIAMENTARY SECRETARY TOURS across the Basin

COMMUNITY ENGAGEMENT 2014 2015

SEPTEMBER: PUBLIC CONSULTATION DRAFT ENVIRONMENTAL WATERING STRATEGY
OVER 300 **STAKEHOLDERS ATTENDED THE MEETINGS IN 9 TOWNS AROUND THE BASIN**

2 **NBAC MEETINGS IN 2015**

APRIL: NORTHERN BASIN COMMUNITY MEETINGS
NARRABRI • WARREN • GOONDIWINDI • DIRRANBANDI

“ Discussed our environmental science work & social and economic analysis ”



40 **REQUESTS TO ENGAGE WITH INTERNATIONAL DELEGATES**

MAJOR STRATEGIC PARTNER OF THE 17TH





Monitoring and Evaluation

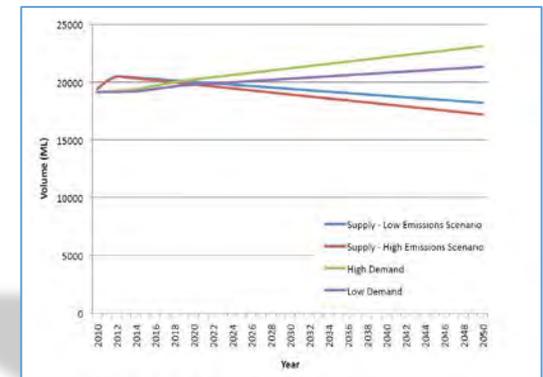
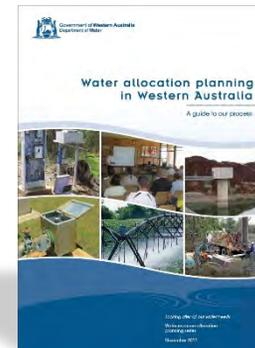
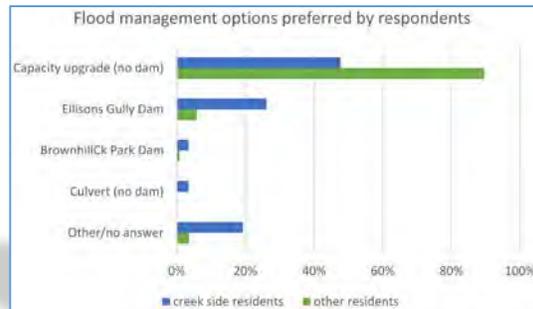
- Regular monitoring of progress and constraints
- Monitoring of implementation undertaken by independent parties
- Extensive consultation in evaluation
- Broad monitoring framework and regular data collection on a range of variables (flow, quality, ecological surveys, etc)





Complimentary Planning Initiatives

- Water allocation plans
- Water demand and supply plans
- Environmental watering plans
- Stormwater management plans
- Water quality improvement plans





Basin Planning underpins water reform and enables evidence based decision making...

Basin Planning paves the way for interjurisdictional dispute resolution

The Policy Tool that brings everything together

BASIN PLANNING – Managing the conflicts



Increasing demands:

- Irrigation – existing and aspiration for new of irrigation
- Urbanisation and population growth
- Industry growth
- Hydro
 - Big Dam proposals will change flow characteristics - ? 3rd party impacts
- Climate Change/Variability
- Inter -jurisdictional interests (International, national and interprovincial)
- Flood induced disaster
- Ground and Surface water– conjunctive management
- Water quality – needs to be fit for purpose

BASIN PLANNING – Conceptual Model Design



- Climate
- Rainfall/Snow/Ice
- Surface/groundwater
- Water quality
- River systems modelling
- Biophysical modelling
 - Ecosystems
- Socio-economic modelling
 - Potable water, sanitation and hygiene
 - Hydropower
 - Agriculture/ Irrigation /Fisheries
 - Ecosystem services
 - Social/Cultural benefits



Source: CSIRO

Finding the right sustainable solutions



Firstly.... It is NOT just an engineering problem !

It is just as much about changing human behaviour/culture as it is about technological solutions

Governments that couple policy reform with infrastructure investment deliver long term solutions i.e. Sustainability and Prosperity

Requires a multi-disciplinary approach – social and physical science

Politicians need good science to underpin decision making



Why the need for Science?

- Politicians must build acceptance for the need for change
- Communities need to understand the benefits of change as well as the risks of not changing
- Information based on evidence from good science provides a common language for discussions
- When Communities change behaviour concurrently with infrastructure investment, greater prosperity and long term sustainability prevail
- Science informs evidence based decision making

Basin Planning – Securing Infrastructure Investment



- Water Security is an economic enabler of prosperity
- Basin Planning underpins implementation of sustainable policy and when coupled with robust institutional arrangements will deliver water security
- Water security creates the certainty for long term investment for government, irrigators and other broader private sector (e.g. electricity).



Key Messages

- Transparency, good science and capacity development underpins the process for conflict resolution
- Expand thinking beyond conventional engineering solutions
- Seek knowledge and understanding beyond your field
- Be prepared to engage a multidisciplinary approach
- Know the bigger picture - seek to mitigate third party impacts and prevent unintended consequences that could arise from ill-informed decisions
- Engage with communities and seek to build not only infrastructure but the community capacity to sustain it
- Be ready to respond to crisis – the accelerator for change
- Understand that lasting reform takes time



Thank you