

# WESTERN GOVERNORS ASSOCIATION

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## WATER RESOURCE MANAGEMENT AND CLIMATE CHANGE CHALLENGES

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While the impacts and influences of climate change are being debated, researched, challenged and responded to, much of the world has, over the past decade, witnessed or directly experienced profound drought, natural disasters, temperature extremes and water shortages that are both real in their impact and, perhaps, a precursor to our future under most climate change scenarios.

I will reference my experiences in Australia's agricultural sector where prolonged drought of record, record low levels in water storages, declining water run-off, past allocation decisions and urban growth have each contributed to a modern day catastrophe that is challenging the very fabric of communities, industries and iconic environmental features. Climate change influences are also seen as a contributing factor in the scope and prolonged impact of these events. Closer to home, many similar challenges are being confronted across states represented by the Western Governors Association.

It is little comfort that water shortages and climate change are global issues. Like politics, most water resource management solutions will be local, many will be contentious, tough choices will be required, investment will be significant, there will be few easy options. As Australia's Murray-Darling Basin experiences over the past decade have revealed, impacts deliver crippling blows to communities, individuals and industries. The cost is reflected with social, economic and environmental consequences, in many instances with both long-term and irreversible consequences.

Our planning and decision making processes will need to be focused on long-term outcomes, with many pressing short-term priorities. Most investments will be in long-life assets. Many will be expensive, priorities will need to be established, choices made, past practices reviewed.

While today's events may have crept up on us because we missed the early warning signs, sound well structured long-term planning, supported by real-time data will move us beyond knee-jerked, contentious and sometimes radical responses that create management, social and fiscal problems when our options are most limited.

Sustainability of the resource base is paramount. Management principles apply equally to the agricultural sector, urban residential and the wider industry base.

There is, however, much good news to report. The responses we have witnessed to recent events, clearly outline not only the path that governments, industries, corporations, communities and individuals will be required to follow, but also the willingness of people to engage the process at all levels. Innovation is evident in many of the solutions that have been put into practice in recent years.

A range of conservation and efficiency practices have been successfully adopted across sectors. Initiatives in power generation, residential and industry water conservation activities, reuse and recycling initiatives, desalination, aquifer storage and recovery (ASR) and by industrial users have each contributed to dramatic reductions in water use, enhanced water supplies and water supply security.

Leaders have emerged to drive the process, innovation has spurred changes to practices and priorities, the knowledge base of our water resources is greater now than every before, albeit moving from a very low and disparate base.

Complacency is one of the biggest threats to long-term change, as are perverse outcomes from policy settings, as we have in the financial impact on many water utilities as consumers respond to mandatory water use reduction targets.

Those who haven't regularly been confronted by water shortages quickly agitate for a return to the status quo at the first sign of moisture. Even in the most depressing of climate change scenarios it is realistic to expect that there will be prolonged periods of excessive rainfall events that will lead to calls for a relaxation of supply constraints, or a return to profligate practices of times past. We have short memories, leadership and education will be critical to maintain commitment and focus on the longer term goals and objectives.

In moving from one regime to another, equity is crucial. Agricultural water use accounts for approximately 70 percent of available freshwater resources, yet, in the eyes of many this is viewed as: agriculture wastes 70-80 percent of water and is ,therefore, responsible for my suffering.

Urban water requirements in many instances appear to have greater priority than those for regional areas. Population shifts, industry and employment growth, poor management of existing infrastructure places immediate pressure on the re-allocation of water from rural regions to satisfy rising urban demand.

Ownership of infrastructure and pricing of water are contentious issues, the nexus between energy and water is not well understood, but is real. We must now equitably factor in our policy and program response to climate change in a way that integrates these responses across water, energy, transportation and other policy and planning priorities. In addition, it is not just water quantity that we must focus on, but also water quality issues need to be understood and addressed.

One experience to reflect upon is the propensity to defer investment in critical infrastructure in past years, which has resulted in an almost insurmountable mountain of urgent projects that need to be funded to meet immediate water management challenges, in both urban and rural regions. One need only look at the project lists for fresh water, sewerage and stormwater in the recent federal stimulus package to gain some idea of the outstanding investment that is required to meet today's investment demand. This dilemma is not unique to the United States, it is global, across both developed and developing economies.

It is by reference to this scope of issues that we must respond to and address our contemporary challenges.

It is important though to recognize that the past decade has revealed the depth of talent, ingenuity and commitment of individuals, enterprises and institutions who have collectively responded to water resource management challenges as they have emerged. We must provide greater incentive for and recognition of these efforts to focus the endeavors of the brightest and best on the management challenges that lie before us.

There is now a greater awareness of major issues such as:

- ♦ the fragility of the water resource base in many regions;
- ♦ the critical need to invest in data, capture, analysis and dissemination;
- ♦ the impacts of our use and reuse of existing resources;
- ♦ the need for and benefit of planning at both catchment and individual levels;
- ♦ the fact that integrated, whole-of-community responses will deliver the most optimal outcomes;
- ♦ the environment is a key component in the management equation;
- ♦ a one-size fits all approach is not the most appropriate response;
- ♦ much of the technology base common to other sectors can play an immediate role in the delivery of effective and efficient management options;
- ♦ governments alone cannot resolve the multitude of issues;
- ♦ the need for greater commitment to research and development and, where possible, a faster pace of application of R&D outcomes;
- ♦ the need for leadership across the community to put in place long-term solutions; and
- ♦ the cost of environmental remediation and upgrade to or replacement of existing infrastructure is such that significant levels of funds will be required for many years.

We still have a need to provide greater clarity to issues such as:

- ♦ the regional impact of climate change scenarios and how they will impact water resource management and future investment and management requirements and who will bear the burden of these costs and change;
- ♦ food security;
- ♦ the energy/water nexus;
- ♦ resource pricing and ownership; and
- ♦ environmental factors.

Around these introductory comments, the theme that I will progress in my remarks will encompass:

1. Availability of Data to:
  - ♦ support policy and program development;
  - ♦ promote investment and inform management decisions;
  - ♦ inform scientific studies;
  - ♦ review actions and future planning;
  - ♦ stimulate research and development; and
  - ♦ educate and communicate.
2. Partnerships
  - ♦ not enough time to proceed without learning from other regions dilemmas, responses and policy and program outcomes.
3. Certainty
  - ♦ will stimulate confidence, investment and changes to management practices.
4. Education and communication.
  - ♦ community and industry programs are crucial to extend knowledge and understanding of the options, opportunities and outcomes.