

**AUSTRALIAN WATER ASSOCIATION****Submission To The****House Of Representatives Standing Committee On Agriculture, Fisheries And Forestry  
Inquiry Into Rural Water Resources**

Secretary: *A/Dee*  
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 AGRICULTURE, FISHERIES  
 AND FORESTRY

**A) INTRODUCTION**

The Australian Water Association welcomes this opportunity to present a submission to the Committee regarding its Inquiry Into Rural Water Resources. This submission contains four sections:

- A) Introduction – This section, which includes background on the Association;
- B) Executive Summary – Summarizing key messages and recommended actions;
- C) Terms of Reference – Comprised of five subsections, each addressing one of the Inquiry's terms of reference; and
- D) Resources – Documents and other sources of information relevant to the Inquiry.

**About the Australian Water Association**

The Australian Water Association (**AWA**) is a national multidisciplinary association of individuals and organisations. The Association, founded in 1962, is focused on promoting the sustainable management of water.

AWA represents over 500 corporate members, including water utilities, government agencies with an interest in water, consulting practices, laboratories, suppliers and contractors to the water industry, as well as more than 3,000 Managers, Engineers, Chemists, Biologists, Health Professionals, Researchers, Students and other individuals. The Association has branches in all States/Territories; supported by a national office based in Sydney.

AWA uses a number of mechanisms to communicate to its members and non-member stakeholders. Our peer-reviewed journal, *Water*, is sent to all members 8 times a year. The *Australian Water Directory*, a "yellow pages" for the water industry, is widely distributed each year and accessible on our website as an interactive database. Our weekly email News is sent to ~4,300 individuals each week, including ~1,100 non-member subscribers (this is a free service). AWA also conducts a major conference and trade show each year, which is done in conjunction with 3 other associations in even-numbered years ("Enviro") and includes air, waste and business of the environment streams in addition to our water conference.

National Special Interest Groups (NSIGs) within the Association provide a mechanism to provide members with the opportunity to communicate and exchange information and data on specialist topics and are the source for a number of focused events run throughout the year. The AWA Water Management Law and Policy NSIG was specifically consulted regarding this Inquiry, in addition to a general invitation to the AWA membership and non-member contacts. The AWA Technical Director, Brian McRae, prepared this submission.

## **B) EXECUTIVE SUMMARY**

### **B.1) Previous Inquiries and Submissions**

This Inquiry must consider previous inquiries, particularly the Federal Catchment Management and Urban Water inquiries and, where appropriate, either support or otherwise comment on recommendations in the reports from those inquiries. [C.1.3]

### **B.2) Commonwealth vs State/Territory Government Roles**

AWA supports Australia's existing model of national guidelines / state regulations. Programs such as the COAG Reforms provide an opportunity to bring about desired reforms across jurisdictions without resorting to "heavy-handed" approaches. The Commonwealth has a valid role as a partner providing resources and facilitating coordination amongst the jurisdictions. [C.1.7, C.1.11]

### **B.3) The Price and Value of Water**

The current price of water, even in the urban context and particularly in the rural bulk water context, does not reflect a highly valued commodity. The appropriate price, which will promote sustainable management, is uncertain, however, it is most definitely higher than it is now. The value of water is difficult to determine; however, we should be actively trying to improve our ability to measure value. We should give greater consideration to the opportunity costs associated with allocation and policy decisions. [C.1.13, C.4.1, C.5.3]

### **B.4) NHT Funding**

Natural Heritage Trust funding has contributed in a number of ways, however, funding decisions are potentially subject to political considerations at the expense of realising the best overall outcomes. The situation is complex and there are no simple solutions. In the pursuit of sustainability, a primary goal of NHT funding should be to firmly establish ownership and governance at a catchment level, supported by knowledge development and management at state/territory and Federal government levels. [C.1.10, C.3.1]

### **B.5) Salinity**

Salinity is a very serious issue. Adequate water supplies will do little good if the land is unsuitable for farming or stock. The condition of the catchment also affects the quality of the water supply. While quantity of supply is important, quality cannot be ignored. Both symptoms and the root cause – land management – must be managed. The Inquiry must be mindful of the National Action Plan for Salinity and Water Quality. [C.2.2]

### **B.6) Sustainability and "Adequate"**

Sustainability is a difficult concept, but a worthy objective. Intrinsic to the concept is the definition of what is adequate. It is not acceptable to simply assume that the status quo is appropriate. Australia has made considerable moves away from protectionism and towards free trade. To what extent are we obligated to perpetuate rural activities that may be unsustainable? [C.1.1]

### **B.7) Commonwealth Governance of Water**

The Federal Government structure does not provide a single focal point for water. If water management is a high level Federal priority, serious consideration should be given to centralising responsibility under a single minister. The recommendations from the Catchment Management Inquiry provide one pathway to moving towards consolidated Federal water management. [C.1.2]

### **B.8) An Holistic Approach**

There have been two recent Federal water inquiries. We are now embarking on a third, despite the fact that we have not yet acted on previous inquiries. AWA's submission to the Urban Water Inquiry stressed the need to consider water management in a holistic context – separate consideration of urban and rural uses of water compromises the potential to consider the fundamental issue of sustainable management. [C.1.3]

### **B.9) Management, Not Supply**

The options for increasing supply are limited by a number of constraints, with economic considerations likely to be more significant than technological barriers. Much of what we must do will relate to improving the way we manage what we have. The Commonwealth can and should assist in promoting water use efficiency. [C.1.4]

### **B.10) Data Centralisation**

The National Land and Water Audit represents a significant step forward, however, it falls short of the model presented by the US Geological Service. The potential benefits of such a model should be considered. What is the current cost of data that is collected, but under-utilised because it is not widely acceptable or standardized? [C.1.5, C.2.5]

### **B.11) COAG Reforms**

There is a lack of information at the national level regarding the extent to which some of the COAG principles have been met. Until we have a better handle on national water use, progress cannot be evaluated effectively. The relationship of rural suppliers to their customers may need to change to realise the desired outcomes. [C.2.1]

### **B.12) Water Trading**

Water trading is not a panacea. It holds promise as a tool, but its effectiveness is limited to how well the tool is fashioned, how it is wielded and how fit it is in each circumstance (outcome) to which it is applied. There is a critical lack of focus on evaluating and improving the effectiveness of this tool. [C.2.3]

### **B.13) Conjunctive Use**

Current regulation of surface waters and groundwater contains gaps. Groundwater is a minor part of overall use, but a significant source in some areas. Legal rights associated with groundwater differ from surface water, presenting potential impediments. Conjunctive use needs to be incorporated into water use regulation. [C.2.6, C.2.9]

### **B.14) Domestic Consumption (Rural)**

Domestic rural water supplies can incorporate an ethic of responsibility not necessarily present in an urban context. Intervention can have dis-benefits if not approached cautiously. Small rural communities do present some potentially significant challenges, but we should be careful about applying assumptions from urban contexts. [C.2.8]

## **C) TERMS OF REFERENCE**

### ***C.1) The role of the Commonwealth in ensuring adequate and sustainable supply of water in rural and regional Australia;***

#### **C.1.1) Sustainability as an Objective & “Adequate” as a Measure**

Sustainability is a difficult concept to nail down, but is an objective that must be pursued. This includes improving our ability to integrate environmental considerations and other externalities into economic frameworks to align market outcomes with policy objectives.

What is the true value of rural communities? Is it appropriate to provide national funding at levels that exceed this value or are otherwise disproportionate, effectively amounting to a subsidy? These questions go to the core of the terms “adequate” and “sustainable”. It is not acceptable to simply assume that the status quo is appropriate.

If a particular crop can be imported at a lower cost than it can be grown, should we subsidise its production? Is there an inherent value to national self-sufficiency that justifies subsidisation? Australia has made considerable moves away from protectionism and towards free trade. These considerations are relevant to what constitutes adequate and sustainable. Water is intrinsically tied to most human activity, at some level or another, however, it is rarely a significant factor in decision-making.

#### **C.1.2) Reconsider Commonwealth Governance Model**

Water management within Australia focuses most of the power at the state government level. The Federal Government has played a significant role, notably through the COAG Water Reforms and the Murray Darling Basin Commission. However, the Federal Government structure does not provide a single focal point for water.

At a minimum, AFFA, Environment Australia and the NHMRC have significant roles. This division of responsibilities, between multiple departments and ministers, arguably exacerbates the relatively weak Federal role provided by the constitutional structure. The formation of the NRMCC, consolidating the water-related functions of ARMCANZ and ANZECC, was a positive move in this respect.

If water management is a high level Federal priority, serious consideration should be given to centralising responsibility under a single minister. The recommendations from the Catchment Management Inquiry provide one pathway to moving towards consolidated Federal water management.

#### **C.1.3) Consider Previous Inquiries**

There have been at least three recent relevant inquiries that should be considered in the context of this Inquiry and any associated report.

The Commonwealth Inquiry Into Catchment Management has produced a report that is currently with Government. AWA considers the Catchment Management Inquiry and the associated report to be highly relevant to the Rural Water Resources inquiry. Catchment Management is integral to both water supply and water quality.

The Commonwealth Inquiry into Urban Water recently concluded and Government was scheduled to receive a report by the end of August of this year. AWA’s submission to that Inquiry stressed the need to consider water management in a holistic context – separate

consideration of urban and rural uses of water compromises the potential to consider the fundamental issue of sustainable management.

The NSW Parliament is currently conducting an inquiry into Urban Water Infrastructure. A number of the issues raised in AWA's submission to the NSW Inquiry are relevant to the Rural Water Inquiry.

AWA prepared submission for all three of the above inquiries and has provided testimony for the first two (hearings have not yet commenced for the NSW Inquiry). Copies of AWA's submissions to these Inquiries are incorporated by reference and will be gladly provided upon request or may be accessed at: [www.awa.asn.au/news&info/submissions/](http://www.awa.asn.au/news&info/submissions/).

#### **C.1.4) Management, Not Supply**

The options for increasing supply are limited by a number of constraints, with economic considerations likely to be more significant than technological barriers. Therefore, much of what we must do will relate to improving the way we manage what we have. The Commonwealth can assist through initiatives such as the COAG Reforms, the National Land and Water Audit and the Murray Darling Basin Commission. Water use efficiency makes sense and should perhaps be used as a trigger, for example as a condition of obtaining /retaining a water allocation. Alternatively, taxes or tax incentives could be used as a mechanism to promote efficiency. This is a complex issue, involving a market component. Results will be influenced by the price of water supplies. However, when the formula is right, outcomes can be accomplished effectively and efficiently.

#### **C.1.5) Research Role**

There are a number of issues that require a coordinated research approach. Funding is a serious limitation in this regard. A number of the Cooperative Research Centres have made very positive contributions, as has Land and Water Australia and CSIRO. Due to the lack of a single Commonwealth focal point for water management, these initiatives may not be optimally coordinated. Research is a valid role for the Commonwealth as economic efficiency can result from pursuing a national research agenda. Existing efforts should be reviewed to identify opportunities to ensure adequate funding and optimal coordination.

One simple starting point would be frequent, consistent statistics on national water use by specific industries, including breakdowns by major crop types. There should be an increased focus on the value added by water use. Simply raising the level of awareness holds the potential to effect positive change.

Numerous state and local agencies are currently responsible for data acquisition, potentially providing efficiency in some respects (locally relevant), but also defeating the critical mass required for larger, more expensive projects that would prove useful to the water industry as a whole. No single agency has sufficient resources to properly fund large projects with the potential to benefit many groups. Coalitions of agencies and research groups can be unwieldy to manage largely due to the politics associated with them and none of the individual members has sufficient resources to carry out the work on their own, usually because their are legitimate competing demands for funding within their own organisation.

The uncertainty associated with applied research is a big hurdle to jump when it comes to trying to drum up funding. When funding is available, agency practices can be counter to efficient outcomes. One AWA member reported a proposal that would have required costs and efforts to be spread across multiple storage locations, due to agency policies, despite

the fact that 1 study covering 5 sites would have been half the cost of conducting studies at all 5 sites.

Australia does not have an agency equivalent to the US Geological Service, which is responsible for collecting and vetting, nation-wide, the basic hydrographic data needed to plan and manage freshwater resources. The potential benefits of such a model should be considered. What is the current cost of data that is collected, but under-utilised because it is not widely acceptable or standardized?

#### **C.1.6) IWRM as an Objective**

Internationally, Integrated Water Resource Management (IWRM) is the process that encompasses approaches to ensure sustainable management of water supplies and water-related resources. This should be a central tenet of Commonwealth activity and a central focus of Australia's overall natural resource management.

#### **C.1.7) Commonwealth as an "Information Hub"**

While COAG reforms have progressed more slowly in the rural sector than the urban sector (the initial timetable allowed for this), it should be acknowledged that Australia's progress towards IWRM on a global scale is significant. AWA recently hosted the Executive Secretary of the Global Water Partnership and he commended us for our progress with respect to IWRM. An example of activity in this regard is the specific river basin plans being prepared in a number of the states that address issues of allocation<sup>1</sup>.

The Commonwealth should look to facilitate these state initiatives and promote a sharing of information so that we can continue to progress and continually lift the standard. There is of course a need to ensure that rural communities and other local stakeholders are not disenfranchised.

#### **C.1.8) Coordinating Investment**

Commonwealth funding has been effective in leveraging state matching funds. The newly formed Natural Resources Management Ministerial Council should be used as a vehicle to ensure effective coordinated investment.

#### **C.1.9) Regulatory Harmonisation**

Disparities in legislation and regulation amongst the jurisdictions can be problematic. The Commonwealth should work to harmonise the states approaches. Both water and commerce operate beyond the boundaries of state jurisdiction.

#### **C.1.10) NHT Funding**

Natural Heritage Trust funding has contributed in a number of ways, particularly with respect to catchment/land management activities. However, funding decisions are potentially subject to political considerations at the expense of realising the best overall outcomes. The situation is complex and there are no simple solutions. This funding leverage should be applied in a manner that promotes local management of catchments. This is not an easy goal, but the most effective way to ensure that water resources are managed sustainably is to firmly establish ownership and governance at a catchment level. This outcome should be a primary goal of NHT funding.

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<sup>1</sup> Including: Water Allocation Management Plans (WAMPs) in QLD (see DNRE), Water Management Plans (WMPs) in TAS (TAS DPIWE) and Water Sharing Plans (WSPs) in NSW (NSW DLWC).

AWA notes that the National Action Plan for Salinity and Water Quality has goals for clearer targets and closer governance along the lines suggested above.

#### **C.1.11) Commonwealth as a Partner**

AWA suggests that the appropriate role, overall, for the Commonwealth is as a partner, working "hand-in-hand" with the states/territories to ensure Australia's water resources are managed sustainably.

Australia's constitutional framework relegates water management and regulation to the state and territory governments. The Commonwealth Government plays a significant role, through a variety of programs and in particular through the National Water Quality Management Strategies (NWQMS). The Guidelines approach of the NWQMS was the subject of some criticism in a recent report by the Productivity Commission (specifically, the Australian Drinking Water Guidelines). In general, AWA supports the national guidelines / state regulations model. Programs such as the COAG Reforms provide an opportunity to bring about desired reforms across jurisdictions without resorting to "heavy-handed" approaches (exhibited by Federal water regulation in the United States).

The Commonwealth has a valid role, as a partner providing resources and facilitating coordination amongst the jurisdictions. This partnership approach could be strengthened further and there are opportunities to consider consolidation at the Commonwealth level. The Catchment Management Inquiry makes a number of suggestions regarding increased focus on water at the Federal level and those recommendations should be given due consideration.

#### **C.1.12) "Integrated Catchment Management"**

On a global scale, Australia had made significant progress advancing the implementation of catchment management. However, there is much to learn and very little certainty about the "right" way to do this. The *integrated* part is particularly difficult – requiring the coordination of different tiers of government, industry and individuals.

It is not a simple as identifying the best model – whether local and regional catchment management groups are likely to solve catchment wide problems (over allocation, salinity, eutrophication and sedimentation, etc.) or whether these need to be approached by state or national bodies. Success depends on a number of factors, such as adequate funding and there are problems and advantages to any model. There are examples of successes and failures relying on similar models.

An improved understanding of what works, and more importantly, why it works, is needed. The Commonwealth has the potential to facilitate the collection, analysis and dissemination of what has been done. This is a vital to improving our future initiatives.

#### **C.1.13) The Price and Value of Water**

The current price of water, even in the urban context and particularly in the rural bulk water context, does not reflect a highly valued commodity. The appropriate price, which will promote sustainable management, is uncertain, however, it is most definitely higher than it is now. The value of water is difficult to determine; however, we should be actively trying to improve our ability to measure value. In general, it is possible to generate far greater GNP through using water for industrialization than it is for agricultural use, particularly for high water / low cash value crops. There are of course other considerations -- this is not a suggestion that we should not have irrigated agriculture. However, we should give greater consideration to the opportunity costs associated with allocation and policy decisions.

***C.2) Commonwealth policies and programs, in rural and regional Australia that could underpin stability of storage and supply of water for domestic consumption and other purposes;***

**C.2.1) COAG Reforms**

The COAG Water Reforms have had positive effects, particularly in the urban water industry. Reforms suggested for the rural water sector have progressed more slowly. They should be pursued as a first course of action and reviewed and revised as necessary to realise the established objectives. While the reforms are focused on competitive efficiency, the outcomes of those reforms have the potential to positively influence security of supply, a central focus of this inquiry.

There is a lack of information at the national level regarding the extent to which some of the COAG principles have been met. Principle 5 for example outlines that water should be used to maximise its contribution to national income and welfare, within the social, physical and ecological constraints of catchments. There is a large gulf between this principle and empirical evaluation of how our actions measure up against it. Until we have a better handle on national water use, this cannot be evaluated effectively.

Rural water providers do not necessarily know who their customers are, or what they are going to do with the water delivered to the customers gates. There is a degree of uncertainty and variability with respect to rural water use that is not paralleled in the urban sector. Does this relationship have to change in order to monitor the impact of the COAG reforms? More controversially, are more proactive rural water authorities – employing “carrots” and/or “sticks” – required to realise the objectives of the COAG Reforms?

**C.2.2) Salinity**

Salinity is potentially a very serious issue. Adequate water supplies will do little good if the land is unsuitable for farming or stock. The condition of the catchment also affects the quality of the water supply. While quantity of supply is important, quality cannot be ignored. Some of the salinisation that has already occurred or will occur can be mitigated by technological fixes. However, this approach is largely about managing the symptoms. This will be necessary, but the causes must also be addressed for any satisfactory long-term result.

The National Action Plan for Salinity and Water Quality (NAP) is a significant program with respect to the issues raised above and any recommendations resulting from this Inquiry should be fully cognizant of the NAP and seek to reinforce, strengthen and/or modify the NAP to avoid confusion.

**C.2.3) Water Trading**

Water trading has progressed, although activity has been largely limited to the Victoria/South Australia area of the Murray Darling system. The experiment appears to have produced some benefits, but there are outstanding vexing issues, particularly with respect to the severance of land and water rights. It remains uncertain whether trading is a solution to fully/over allocated water resources or will skew water ownership into monopoly areas, potentially leaving future community supply needs out of economic reach.

Water trading would seem to have a logical and necessary place in our overall water management platform. However, it needs to be realised that it is only a part of an overall system and that simply allowing trading does not guarantee outcomes – government influence is needed to ensure that non-market considerations, such as environmental



goods, are adequately represented in market outcomes. We cannot live on wine alone, and market forces alone can not address the social, physical and ecological constraints that are integrated with rural water use. Government intervention is appropriate and necessary to ensure these non-market needs are realised. The Commonwealth should work with the states to promote an effective water trading system.

An AWA member who is investigating whether rural water markets, as currently structured, are meeting environmental objectives has identified a number of apparent shortcomings, including:

- Water trading has increased the overall use of water due to the activation of sleeper and dozer licences. Most water being traded is water that was not being used in the first place. This is counter to the expectation that water markets would decrease consumption.
- Water markets were meant to facilitate structural adjustment - enabling inefficient users to exit the industry permanently. Yet, most water trades are temporary. There are many deeply embedded social and cultural reasons why people will not sell out permanently.
- In line with efficiency expectations, water may be moving to higher value users but the overall impact of this move may be increased risks of salinity.

Markets are simply a tool. Outcomes will depend on the specific nature of the tool (big hammer, little hammer), where the tool is used and how it is used. The problems are complex and solutions will necessarily involve a degree of complexity. We cannot rely on markets alone, nor can we assume that economic efficiency and environmental effectiveness are the same. These objectives are different and potentially conflicting.

Progress towards meaningful solutions will require state involvement and support from the rural sector and the community. Financial commitments to accomplish desired outcomes may be significantly more than anticipated. Market mechanisms may assist/serve in this process but it must be remembered that they are on a tool.

It should also be noted that urban and rural demands can overlap. Urban supplies are generally accorded a higher degree of security – ensuring their allowance is met before agricultural needs are satisfied. However, to the extent that urban authorities have to enter the market for supplies, there is the potential for conflict. Assuming the demand is simultaneous, the urban supplier will generally be able to pay more. However, at least one utility reports encountering situation where water from the market was required, but unavailable – agricultural demands had cornered the supplies.

Uncertainty regarding water rights is particularly problematic. From a purely scientific perspective, the concept of sleeper and dozer licenses and is untenable. The issue of water rights raises political and economic issues – a mix that is not necessarily conducive to socially optimal outcomes. This is a fundamental issue, which goes to the core of whatever we try to do to manage resources and extends back in common law to before the occupation of Australia. There are serious considerations of whether this inherited framework is compatible with our current goal of sustainability and the extent to which constricts that evolved in the relatively wet European climate are applicable in Australia. To what extent do these inherited conventions constrain our ability to progress?

#### **C.2.4) Governance vs Infrastructure**

Australia has at least 433 "large" dams; opportunities for additional storage infrastructure are limited, as the best locations have been used and due to other emerging social and environmental considerations. Governance is as or more important than infrastructure and should be a major focus of Commonwealth activities.

#### **C.2.5) Hydrologic Monitoring**

Hydrologic monitoring could use additional support at the Commonwealth level. Changes in water agencies have compromised monitoring of streamflow data. Adequate information is vital to optimal resource management. The National Land and Water Resources Audit has been a valuable catalyst, but the information needs outstrip what has been produced. Problems in these regards extend down to the lack of adequate training for field hydrographers. One AWA member commented on the lack of adequate field equipment during their honours thesis work and the tremendous potential assistance additional funding could provide. Streamflow data is vital to understanding the impact of farm dams and other diversions.

#### **C.2.6) Conjunctive Use**

There is often a gap in regulations between the regulation of surface waters and the use of groundwater. Restrictions in one area can lead to usage in another, often unsustainably. Groundwater extractions in riparian areas can affect streamflow, essentially circumventing any restrictions. Conjunctive use needs to be incorporated into water use regulation.

#### **C.2.7) Imports and Exports**

Imported farm products can be viewed as having an "equivalent water value". Thus, an option for addressing supply shortages is to import products that produce water savings. The same is true of exports -- they represent an export of water (not just the water content of the product, but the water required to produce it).

It would be possible to use market mechanisms to create incentives or disincentives to the import and export of "water". This requires a very detailed level of understanding of where water is going and the economic value of its use. The Australian Bureau of Statistics has done some work in this area, but more is needed. AWA does not necessarily advocate a wholesale implementation of aggressive market regulation, however, further examination of water from this standpoint is enthusiastically supported.

#### **C.2.8) Domestic Consumption (Rural)**

Domestic rural water supplies are often centred around the use of rainwater tanks, bores or other locally-managed supplies. In general, this promotes an awareness and an ethic of responsibility that is not necessarily present in an urban context. The need for intervention here is potentially limited. With respect to small rural communities (<1,000 people), there are some significant challenges. A recent workshop by the CRC for Water Quality and Treatment and the National Health and Medical Research Council sought to identify research priorities to address these communities (see AWA Water Journal, September 2002).

An AWA member studying efforts to improve domestic water quality in rural areas noted that the standard provision of piped supplies and/or local treatment works may provide both benefits and liabilities. Water supplies may be improved, but at the cost of a certain self-sufficiency, responsibility and sustainability afforded by local supplies such as rainwater tanks. This approach may also represent a decrease in environmental

sustainability. This illustrates the difficulty of seeking to remedy “obvious” deficiencies – holistic consideration is needed. How do we weight the various trade-offs?

**C.2.9) Groundwater Resources**

Groundwater-derived supplies are a minority of overall consumption, but a significant part of consumption in many parts of Australia. This source is particularly worrisome due to a number of innate characteristics – it cannot be seen, is imbued with scientific uncertainties and debate, and it crosses property boundaries in ways that are far less obvious than surface supplies. Legally, it is associated with different rights and precedents. There is a need for improved understanding of how its use may impact communities “downstream” and what rights should be possessed by other users.

**C.3) The effect of Commonwealth policies and programs on current and future water use in rural Australia;**

**C.3.1) Commonwealth Subsidies**

The Commonwealth's ability to influence water use is limited under current constitutional constraints. It must look for opportunities to influence outcomes, rather than acting directly to produce them. This includes proactive initiatives specifically targeted at water and non-water initiatives that nevertheless have an effect on water use. Irrigation accounts for 70% of overall water use in Australia. Programs such as crop subsidies can influence water use. Care should be taken to ensure that any federal initiatives related to farm produce do not result in undesirable outcomes regarding water management. Consideration should be given to establishing a mechanism that would ensure the appropriate level of consideration and scrutiny.

**C.3.2) Conservation / Channels vs Pipes**

In general, the cheapest "new" water is saved water. Australia has very high evapotranspiration rates. Irrigation water is often transported in open channels, potentially with significant evaporative losses.<sup>2</sup> The cost of converting channels to pipelines can be offset by the water saved (this is a case-by-case issue, with the outcomes of an economic assessment tied to the value of water).

Richard Pratt has suggested a massive initiative to pipe all open channels. The concept is bold and the reality is complex. However, the idea is worthy of further study and should be given serious consideration. It should be noted that there are potential environmental consequences of losing surface water systems when pipes replace open channels. This just goes to the issue of there being no "one-size fits all" solution.

**C.3.3) Irrigation of Pastures**

Irrigation of pastures is of very questionable economic value. This usage represents more than half of the total irrigation water usage. Mechanisms to shift activities away from pastures to more productive uses should be seriously considered. Mechanisms to ensure that pastures and other agricultural and horticultural uses compete on the same footing should be pursued.

**C.3.4) CSIRO UWP**

The CSIRO Urban Water Program provides a model of how we can look to improve our management of water resources. Rural water use should be subjected to a similar initiative, designed to identify specific tools, techniques and approaches that can be applied to improve the overall outcomes of water use.

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<sup>2</sup> For example, the ANCID benchmarking report shows that System Water Delivery Efficiency (portion of diverted water delivered to customers) is on average 92% for piped systems and 81% for open channels.

**C.4) Commonwealth policies and programs that could address and balance the competing demands on water resources;**

**C.4.1) Price of Water**

The price of water is known to influence demand in a manner that is generally efficient. Demand management has been extensively applied in the urban water sector as a means to address security of supply. While the application of demand management in the rural sector will necessarily be different, the basic principle is valid and should be pursued. The COAG Water Reforms recognise this paradigm.

**C.4.2) Water Trading & Water Rights**

Market-based initiatives, such as water trading, are not perfect, but cannot be ignored. If we can manage to get the "right", they offer one of the most effective ways of ensuring efficient allocation of supplies against demands. The Commonwealth can play a significant role by ensuring that the strategies that do get pursued are evaluated and information on the outcomes of these initiatives and relevant international initiatives are shared in a manner that leads to continual improvement and refinement. The Commonwealth can also play a role by contributing to reasonable structural adjustments for land owners that feel they are owed compensation for the loss of what they considered to be tangible, durable water rights.

**C.4.3) Tragedy of the Commons**

The potential downside of market-based approaches is under-represented constituencies, such as the environment ("The Tragedy of the Commons"). An appropriate role for government is to ensure that subsidies or penalties are present to ensure that market outcomes reflect policy considerations such as environmental sustainability.

**C.4.4) Environmental Flows**

Water for the environment certainly represents one of the more difficult competing demands. Recent releases to the Snowy River represent an outstanding success. How do we move forward and ensure the appropriate environmental flows are allowed down other stressed river systems? Are market mechanisms – attributing the value of these flows in dollar terms – a satisfactory approach? Or, the best approach?

***C.5) The adequacy of scientific research on the approaches required for adaptation to climate variability and better weather prediction, including the reliability of forecasting systems and capacity to provide specialist forecasts.***

**C.5.1) Global Participation**

There is considerable uncertainty within the global scientific community regarding this issue. The Commonwealth should ensure that Australia is an active contributing participant in international activities to improve our understanding of these issues. The global hydrological cycle operates without respect to national boundaries.

**C.5.2) Symptoms and Cause**

Adaptation and prediction are necessary, but they are reactions to symptoms. As with salinity, due consideration must be given to remedying the causes, at least to the extent that they originate from human activity. The consensus of the International Panel on climate change is that sufficient evidence exists to know that things are changing. There is also a high certainty that human activity is contributing to this change (the devil is in the details). Australia's position on the Kyoto Protocol is difficult to defend. To the extent that we consider it to be flawed, we should be proactively pursuing alternatives to address the finding of the International Panel on climate change.

**C.5.3) The Cost of Water**

Water for irrigated agriculture, representing ~70% of total consumption, is priced very low. The true cost of this water is, particularly if environmental considerations are factored in, is higher than the price charged.

There is a legitimate need to maintain Australian competitiveness on a world market. However, in the face of drought and uncertainty regarding rainfall patterns and Greenhouse effects, what is the true cost of pursuing current export policies? Water needs to be priced as appropriate to ensure sustainable outcomes – this requires a better understanding of the full costs, not just the short terms costs to obvious stakeholders who have clear interests.

While we should participate in investigation regarding the cause and effect of potential changes, we should not ignore research into adaptation. Even if the former are worthy in the long-term, the latter may be essential in the short-term. Water use efficiency is a primary component of adaptation, as well as an underlying tenet of sustainability. Efficiency is irrevocably tied to pricing signals. The Commonwealth should facilitate research and dialogue regarding this issue.

**C.5.4) User Pays**

Due in large part to a dearth of scientific data, there is uncertainty regarding the component effects of communities on water bodies subject to usage pressures. How do we determine which group is responsible for which component of overall effects, particularly when these systems are dynamic and synergies are unavoidable? Should we pursue water resource management taxing/levies? If so, who should pay – the entire community or the water users in proportion to their draw?

## **D) RESOURCES**

The report on the Federal Catchment Management Inquiry  
<http://www.aph.gov.au/house/committee/envirom/reports.htm>

The Federal Urban Water Inquiry (report forthcoming)  
[http://www.aph.gov.au/senate/committee/ecita\\_ctte/](http://www.aph.gov.au/senate/committee/ecita_ctte/)

AWA's submissions to the above inquiries  
<http://www.awa.asn.au/news&info/submissions/>

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[aste@mail.enternet.com.au](mailto:aste@mail.enternet.com.au)

WSAA Facts, NMU Report and ANCID Report  
<http://www.awa.asn.au/NMU/index.asp> and [bookshop@awa.asn.au](mailto:bookshop@awa.asn.au)

The Water Account for Australia, 1993-94 to 1996-97 (ABS Cat. No. 4610)