

Joanne Chong
Commissioner - National Water Reform 2024
Productivity Commission
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14 February 2024

Dear Commissioner Chong

Re: National Water Reform 2024 Call for submissions

Water Research Australia (WaterRA) welcomes the opportunity to contribute to this review of progress and future directions for national water reform in Australia, and to demonstrate our strong support for involvement of First Nations communities in water management.

WaterRA is a surplus-for-purpose member-funded organisation that for nearly 30 years (in its current and former iterations), has been delivering collaborative research and capability building that addresses the needs of the water sector. As such we are uniquely placed to reflect on progress to date and suggest future directions for aspects of Australia's water reform journey based on the outcomes of our research and other activities.

In the attached table we have identified specific aspects of the review where we consider we can contribute most - the issues we perceive and suggestions for change.

At a high-level much of our advice relates to the need for a greater focus on water quality/acceptability and not just quantity, as without both, water security is unattainable. Furthermore, without such a dual focus, opportunities may be missed for developing more effective and future-fit water governance e.g. by embracing a One Health approach within which human, animal and environmental health considerations arising from stressors such as climate change and anti-microbial resistance can be managed in an integrated way.

With this greater focus on water quality/acceptability and health, comes a need for new/expanded capacity and capability across decision-makers and contributing stakeholders, and additional sources/types of evidence to underpin decision making. Sustaining and augmenting the research and innovation ecosystem that provides these vital elements will be essential.

WaterRA's Leadership team would welcome the opportunity to either brief the Commission on any of the matters raised in this submission, or to appear before the Inquiry. For further information please contact us directly.

Yours sincerely,

Karen Rouse
Chief Executive Officer
Water Research Australia

Attachment: WaterRA Detailed comments and proposals

Aspect	Comments	Proposed Actions
<p>A framework for water resources management – embedding the concept of fit-for-purpose water resource management</p>	<p>Embedding the concept of ‘fit-for-purpose’ into frameworks for water resource management is supported, particularly as this requires comprehensively embracing water quality as an arbiter of water security.</p> <p>If this change is <u>not</u> adopted, there is risk that water may be available but unfit or unacceptable for the intended use; or conversely, water may be treated to a standard well beyond the need of the end use which results in over design of treatment and inefficient use of this precious resource.</p> <p>For example, our research has shown that climate change is causing greater variability in the operating levels of many reservoirs used for drinking water supply. At levels lower than previously accessed, water quality can be outside the current operating parameters for the associated treatment plants leading to costly upgrades and/or increased operating costs.</p>	<ul style="list-style-type: none"> • Develop nationally consistent metrics and a framework for assessing water security that incorporates water quality and its suitability and acceptability for intended use.
	<p>To be ‘fit-for-purpose’ water not only needs to meet designated water quality criteria but must also be ‘acceptable’ to customers. The concept of Water Insecurity and community driven tools to measure it, such as the Household Water InSecurity Experiences (HWISE) Scale can be a useful way to achieve an integrated assessment of water availability, accessibility and ‘acceptability’ for a community.</p> <p>Ref: Young SL, Boateng GO, Jamaluddine Z, Miller JD, et al. (2019). The Household Water InSecurity Experiences (HWISE) Scale: development and validation of a household water insecurity measure for low-income and middle-income countries. <i>BMJ Global Health</i>. doi: 10.1136/bmjgh-2019-001750.</p>	<ul style="list-style-type: none"> • Explore the use of Water Insecurity measures as a means to reflect community perspectives in water resources management especially for small regional and isolated communities

Attachment: Submission by Water Research Australia to the PC review of the NWI 2024

	<p>Regulation of whether a drinking water source is technically ‘Fit-for-purpose’ relies heavily on the Australian Drinking Water Guidelines (ADWG). As a minimum these Guidelines currently require updating, expansion to better cover stormwater as a potential source, and consolidation so that they can be more easily and consistently applied by industry and regulators.</p> <p>Linked to the above comments regarding ‘acceptability’ of water, is the need to also revisit ‘aesthetic’ criteria included in the ADWG and how they are applied given their strong link to ‘acceptability’ of water and indirect health impacts e.g. if ‘safe’ drinking water is shunned in favour of unhealthy soft drinks.</p>	<ul style="list-style-type: none"> • Update and consolidate the Australian Drinking Water Guidelines so that they provide a single guidance on producing drinking water from all sources (including desalination and purified recycled water whether generated from stormwater or wastewater). • Incorporate concept of ‘acceptability’ in definition of ‘fit-for-purpose’ and explore how aesthetic criteria in the ADWG can better support ‘acceptability’.
	<p>An essential component of enabling all water supply options to be on the table is regulator confidence that safe water can be produced by the proposed treatment processes – this relies heavily on Validation, especially where a technology is new or innovative.</p> <p>The Commonwealth government and water sector previously invested significantly in the former Australian Water Recycling Centre of Excellence which developed a framework and protocols for validation of water treatment processes to demonstrate that contaminants such as pathogens have been removed from source water to a level protective of human health. Since 2017, WaterRA has been the custodian of these outputs – now known as WaterVal, and has been working collaboratively with the water industry, academia and state-based regulators to expand the range of processes for which validation protocols are available, and has built support for national adoption of the WaterVal framework.</p>	<ul style="list-style-type: none"> • Provide clear and nationally consistent regulatory pathways that apply to drinking water production from all sources and new and existing technologies, supported by the WaterVal framework and protocols. • Include and resource the WaterVal framework as an essential component of the regulatory regime adopted to enable all water supply options to be on the table’. (This represents a prudent and efficient course of action due to the leveraging of significant previous government and industry cash and in-kind investment; and the existing high level of support from state-based health and environmental regulators.)

<p>Water entitlements and planning</p>	<p>With increasing demands for water and periodic shortages, water-use efficiency gains will remain the most sustainable water source in many situations and hence should not be overlooked as an option.</p> <p>Australia’s aspirations for Green Hydrogen will increase water demand in many locations and systems. Examining the impacts of this water demand on existing users and identifying opportunities for benefits to the water industry and its customers through integrated planning on a national basis, use of recycled water, and generation of co-products of use to utilities, were drivers for WaterRA and its members to join the Scaling Green Hydrogen CRC bid. As the bid was unsuccessful, there remains a pressing need to identify future water-requirements (quality and quantity) for Green Hydrogen, and optimal locations that will yield additional circular economy opportunities and climate change mitigation.</p>	<ul style="list-style-type: none"> • Explore how a more circular and water efficient economy, could be better enabled by updated policy settings, and regulatory regimes including for integrated land-use and water planning. • Identify information and capability needs of decision-makers regarding water’s role in a circular economy and invest in resourcing this gap.
<p>Knowledge, capacity and capability building</p>	<p>The Productivity Commission’s <i>National Water Reform 2020</i> Inquiry Report identified the need for capacity and capability of decision-makers for making evidence-based decisions. An element of such ‘capacity’ is for the evidence to exist in the first place which in turn requires resourcing of the researchers and stakeholders who provide it.</p> <p>Investment in water research has been declining and erratic for many years despite water’s pivotal role in enabling healthy communities and creation of a sustainable economy resilient to climate change and other shocks. Much of today’s applied water research draws on foundational knowledge generated by previous CRCs and Centres of Excellence. Without renewal/maintenance of such collaborative research ventures and sustained funding, our ability to deliver timely and cost-effective applied research into the future will be severely curtailed.</p>	<p>Build on NWI measures to include the following:</p> <ul style="list-style-type: none"> • Support for enduring collaboration across industries and research institutions to ensure strong pipelines of new knowledge and water professionals (research and industry); • Reliable translation of research to innovation and impact by focusing on delivering value across the whole research lifecycle from idea to implementation

<p>Aboriginal and Torres Strait Islander people's interests in water</p>	<p>WaterRA strongly supports the prioritisation of involvement of First Nations communities in water management and is committed to reflecting First Nations perspectives in all of our research and capability building initiatives.</p> <p>We have listened and learned that such activities must be undertaken with participation of First Nations people ('nothing about us without us'), respect for cultural IP, and mindful of capacity and reciprocity. With these provisos, there is great potential to develop greater knowledge and understanding of how together we can manage water resources in a way that ensures healthy communities and a healthy environment especially in a changing climate.</p>	<ul style="list-style-type: none"> • Provide resources and enable (with capacity building where necessary) First Nations peoples to lead and contribute to water research and knowledge sharing with the goal of achieving optimal water management outcomes through 'braiding' of First Nations and Western scientific approaches and knowledge.
	<p>In 2022 the Walgett Aboriginal Medical Service and Dharriwaa Elders Group implemented HWISE (described above) to assist them to improve food and water security for their community. They found that 46% of the Walgett Aboriginal Community surveyed reported experiencing food insecurity and 91% said they were worried about water quality at some time in the last year. They concluded that the findings of the survey will help the community to better support community-led efforts to improve food and water security.</p> <p>There exists an opportunity to learn from the Walgett community experience, and empower other communities to use the HWISE tool. The results could provide insights on prevalence and severity of water insecurity within First Nations communities' across Australia (and enable comparisons to First Nations communities in other countries) that would then: guide policymaking (including resource allocation); allow measurement of the impact of new initiatives; and enable progress and accountability to be monitored by communities and governments.</p>	<ul style="list-style-type: none"> • Consult with Committee on Aboriginal Water Interests regarding use of the HWISE tool by communities to record their experiences of water insecurity and its impacts on broader community wellbeing; and how this changes over time.