Australian National University

2 February 2024
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Commissioner Joanne Chong & Assistant Commissioner Professor Anne Poelina
Productivity Commission
4 National Circuit
Barton ACT 2600, Australia

Submission to National Water Reform 2024 Inquiry

Dear Commissioners Chong and Poelina,

Thank you for the opportunity to provide a submission to the Productivity Commission (PC) inquiry into National Water Reform 2024. This inquiry and the PC's 2021 inquiry will provide important guidance to all Australian governments as they develop a new intergovernmental agreement that builds on the 2004 National Water Initiative.

The new agreement will provide a basis for all governments to be held accountable for water management actions and outcomes through coming decades. I welcome the priority placed on the interests and values of Aboriginal and Torres Strait Islander Peoples in the PC's 2024 inquiry scope and the Australian Government's consultations on new national water reform objectives.

This submission focuses on the PC's 2021 NWI renewal advice, findings and recommendations regarding urban water services in regional and remote communities (12.3, 12.4, 12.6). Attached to this submission is a peer-reviewed journal article that used publicly available data to assess the populations and locations across Australia without access to alternative definitions of a basic level of service in terms of water quality. This study identified major gaps in monitoring and reporting which highlight the need for a national drinking water quality database and consistent standards for performance reporting against the Australian Drinking Water Guidelines.

Please note that this submission reflects consultation with the federal Department of Climate Change, Energy, Environment and Water on draft objectives for the new agreement. Please contact me for further information regarding this submission.

Sincerely,

Dr Paul Wyrwoll

"Commit to ensuring affordable access to a basic level of water services for all Australians. At a minimum, these would include safe and reliable drinking water. Where subsidies are needed, they should be provided as transparent community service obligation payments. (12.4)"

Government commitments to ensure basic or minimum levels of service would provide customers, providers, agencies, and regulators with benchmarks for collaborative decision-making to improve water services (see Hall et al. 2022 and Jackson et al. 2019 for reviews of broader enabling conditions). The need is greatest in regional and remote Australia where poor drinking water access is a major barrier to improved health, well-being, and socio-economic outcomes (Hall et al. 2020, Moggridge et al. 2022). The national benefits of achieving 'water for all" in Australia have been estimated to vastly exceed the costs (Manero et al. 2024).

There are other important components of water access beyond the three mentioned in the PC's advice ("affordability", "safety" and "reliability"). For water quality, a minimum level of service should also include the "acceptability" of drinking water. Acceptability relates to both direct human consumption (e.g. taste, smell, odour) and indirect impacts on household welfare, such as water with high mineral content damaging fixtures and fittings.

Although supplied water may be considered safe from microbial or chemical contamination, that does not mean it is acceptable for drinking, washing, and other household water uses. The costs of unacceptable drinking water include the financial burden of averting behaviour (e.g. bottled water purchases), mental health impacts (e.g. concern about safety of children's' bathing water), and switching to potentially unsafe hydration sources (e.g. poorly maintained rainwater tanks, sugary drinks) among others documented in community-led research (e.g. Tonkin et al. 2023), government research (e.g. Jaravani et al. 2016), academic research (Hartwig et al. 2021), citizens' inquiries (Maloney et al. 2019), and regular media reporting from across regional Australia (e.g. Pillarisetty 2023, Cole 2023, Fitzgerald 2023).

Given the above household costs, including "acceptability" in minimum levels of service provides a stronger basis for governments to invest in water service improvements, and broader water management actions, that would generate health, well-being, and socio-economic benefits across regional and remote Australia. It would also ensure that the new national agreement is consistent with the Australian Drinking Water Guidelines (ADWG) (NHMRC 2022), which states that an overarching objective for water quality is to provide "good quality water – that is, water that is aesthetically pleasing and safe, and that can be used without detriment to fixtures and fittings". In relation to acceptability, the ADWG defines guideline values for so-called "aesthetic" characteristics of drinking water. These aesthetic guideline values, and equivalent values for health-based characteristics, provide an important basis for short- and long-term monitoring and reporting of drinking water quality outcomes across the Australian water industry. Consistent with the PC's 2021 NWI Renewable Advice 12.4 regarding "reliability", the definition of acceptability could be varied according to local circumstances and customer expectations for service improvements.

Wyrwoll et al. (2022a) reviewed public reporting by 177 utilities to quantitatively estimate the populations and locations across Australia in 2018-19 where reported drinking water quality did not meet basic levels of service defined in relation to the ADWG. The journal article is attached to this submission. Key results include:

- At least 25,245 people across 99 locations with populations <1000 reportedly accessed water services that did not meet health-based guideline values.
- Including larger towns and water systems, the estimated service gap rises to at least 194,572 people across more than 115 locations.
- Considering health parameters and the ADWG definition of 'good' aesthetic characteristics, the reported service gap rises further to at least 627,736 people across 408 locations.

- Forty percent of all locations with recorded health exceedances were remote Aboriginal or Torres Strait Islander communities.

Since the publication of that paper, the ADWG have been updated to include guidance on managing health risks from microorganisms using health-based targets (HBTs) (see Chapter 5 of NHMRC 2022). HBTs have been used by the water industry in metropolitan areas for nearly 10 years (WSAA 2015), and are now being adopted by smaller local water utilities with support from state government agencies (see Huynh et al. 2023). The national definition of "safe" drinking water could incorporate statistics describing implementation of these risk assessments (i.e. as a process-based indicator for monitoring the safety of water services, see Charles et al. 2020 and Schiff 2019), assessment results, and/or subsequent risk mitigation actions.

A common set of definitions for houshold water access in the new agreement would support jurisdictions to realise and report progress on shared objectives and outcomes. A prominent framework at the global level is the Human Right to Water (HRW) as defined under General Comment No. 15 of the United Nations Committee on Economic, Social and Cultural Rights (UN CESCR 2003). The HRW provides the following definitions:

- *Availability*. The water supply for each person must be sufficient and continuous for personal and domestic uses. These uses ordinarily include drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene. The quantity of water available for each person should correspond to World Health Organization (WHO) guidelines. Some individuals and groups may also require additional water due to health, climate, and work conditions;
- *Quality*. The water required for each personal or domestic use must be safe, therefore free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health. Furthermore, water should be of an acceptable colour, odour and taste for each personal or domestic use;
- *Accessibility*. Water and water facilities and services have to be accessible to everyone without discrimination, within the jurisdiction of the State party. Accessibility has four overlapping dimensions:
    - (i) *Physical accessibility*: Water, and adequate water facilities and services, must be within safe physical reach for all sections of the population. Sufficient, safe and acceptable water must be accessible within, or in the immediate vicinity, of each household, educational institution and workplace. All water facilities and services must be of sufficient quality, culturally appropriate and sensitive to gender, life-cycle and privacy requirements. Physical security should not be threatened during access to water facilities and services;
    - (ii) *Economic accessibility*: Water, and water facilities and services, must be affordable for all. The direct and indirect costs and charges associated with securing water must be affordable, and must not compromise or threaten the realization of other Covenant rights;
    - (iii) *Non-discrimination*: Water and water facilities and services must be accessible to all, including the most vulnerable or marginalized sections of the population, in law and in fact, without discrimination on any of the prohibited grounds; and
    - (iv) *Information accessibility*: Accessibility includes the right to seek, receive and impart information concerning water issues.

“Monitor and report on water quality and service outcomes in remote Aboriginal and Torres Strait Islander communities. (12.6)”

“Subject all urban water service providers to performance monitoring and reporting (12.3)”

There are widespread and systemic gaps in Australia’s monitoring and reporting of water quality. In addition to a lack of monitoring in remote areas and small systems, there is also a significant incidence of monitoring without public reporting. Both types of gaps undermine the capacity of governments at all levels to prioritise investments and customers’ informed engagement and collaborative decision-making with services providers and government agencies.

Table 7 in Wyrwoll et al. (2022a) provides an overview by jurisdiction of monitoring and reporting gaps in 2018-19. It was estimated that at least 1.2 million customers of local water utilities in regional New South Wales did not have access to information on reporting against ADWG health-based and aesthetic characteristics. In this jurisdiction, there is no requirement for local water utilities to publicly report on water quality performance and the NSW Health administered database containing that information is not publicly accessible. Similarly, we found that government programs servicing Aboriginal communities in Western Australia and New South Wales lacked public reporting. Reporting standards vary greatly across jurisdictions and service provider size, from highly detailed reports with summary statistics and explanations of data (e.g. Power and Water Corporation in the Northern Territory) to short summaries of the number of exceedances for small number of drinking water characteristics (e.g. small Queensland local water utilities) and statements on websites that the Australian Drinking Water Guidelines are being met (e.g. some New South Wales local water utilities). The different reporting approaches can be viewed via the supplementary information to the study which includes links to data sources for all 177 utilities included in the review (see Wyrwoll et al. 2022b).

Australia lacks a comprehensive strategy for transparent water quality monitoring and reporting. The new national agreement is an opportunity to develop a National Drinking Water Quality Database to monitor progress on improving household water access and support other government programs, including commitments under Closing the Gap Priority Reform 4 regarding disaggregated data and information sharing. The development of this publicly available database would be enabled by the establishment of consistent standards for annual reporting of drinking water quality monitoring across all jurisdictions, e.g. a defined set of summary statistics to report by ADWG characteristics. Power and Water Corporation (2022) provides an Australia-wide benchmark for better practice in reporting of drinking water quality data. An important component of a national database would be education and information resources that support households and communities to interpret reporting and use the information to define their expectations for improvements.

Investments in new or improved monitoring programs would be supported by an Australia-wide audit of regional and remote water services, including funding for the development of community-led water safety plans. One of the key barriers to improved water quality monitoring and public reporting is the costs involved in laboratory testing, staffing and other costs borne by service providers. Major utilities have a larger revenue and customer base than smaller and remote service providers, and thereby have a greater capacity to absorb such costs. Hence, inclusion of “information accessibility” as a component of basic or minimum levels of service would support the sustainable provision of subsidies to ensure all service providers are monitoring and publicly reporting water quality outcomes. Government funding for community organisation-based water quality monitoring and education could reduce the costs of service provider reporting and empower customers to engage in shared decision-making.

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