First Biennial Review of the National Water Initiative

Australian Academy of Technology Sciences and Engineering

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National Water Initiative
KEY POINTS

The key points contained in the submission by the Academy of Technological Sciences and Engineering are:

- **The NWI reforms lies in the hands of the states and territories. Consideration should be given to strengthening some aspects of the NWI and the scrutiny provided by the NWC, and to developing more incentives and sanctions to ensure the NWI is implemented in ways that secure sustainable outcomes across the nation.**
- **There is a need to strengthen those requirements in the National Water Initiative (NWI) which favour integrated catchment planning and management.**
- **The NWI documentation should be recast to emphasise the deterministic role of catchments and to deal sufficiently with their idiosyncrasies in securing sustainable decisions on water allocation and use. That may well lead to a strengthening of the review process undertaken by the NWC.**
- **There is the need for the NWI and NWC to call for and, where necessary, demand a systems approach to planning and managing water catchments.**
- **It is desirable to strengthen the NWI to encourage more strategic water planning, including Clause 90 of the NWI, thereby encouraging state and territory governments to implement strategies to drive integrated water, sewage and energy planning and to give greater focus and priority to rural reform.**
- **The NWI could require state and territory governments to give special focus to coastal river systems and to exercise care in using inland experience to guide coastal planning and management in water resource management, water allocation and trading.**
- **The NWI should provide for state and territorial reviews of institutional blockages to water management reforms, leading as necessary to recommendations that can be explicitly followed up by the NWC.**
- **There would be considerable benefit in clarifying and recognising the various roles of stakeholders in a revised NWI, thereby reducing the risk that NWI initiatives will be compromised or fail to meet expectations during implementation.**

Introduction
The Academy of Technological Sciences and Engineering (ATSE) is pleased to provide a submission to the first biennial assessment of the National Water Initiative (NWI).

The Academy was established in 1975 with the mission to promote the application of scientific and engineering knowledge to the future benefit of Australia. The Academy is one of the four learned national Academies, which have complementary roles and work together both nationally and internationally. The Academy has about 750 elected Fellows comprising the leadership of applied science and engineering across the country. The Academy is comprised of experts in water use, management and planning. Thus, the broad scope of the activities of Fellows provides a sound basis for the Academy to comment on the national needs of water

management. The Academy's submission is based on the considered views of a number of Fellows with expertise in water management.

Scope

In reviewing progress of intergovernmental agreements, it is important to consider whether they represent constraints or limits on the achievement of nationally desired outcomes. Rather than respond in detail to the many issues identified in the NWI Agreement, the Academy will articulate some of the major challenges and strive to articulate sound strategic responses that are required to achieve significant water reform in Australia.

General

The Academy strongly supports the NWI as a major blueprint for national water reform. Given that the NWI agreement has been signed by the Australian Government and state and territory governments, it represents a shared commitment to water reform. The Academy strongly supports the overall objective of the NWI, namely to achieve a nationally compatible system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes.

While the NWI provides for various issues of water reform to be recognised and addressed, vigour and mode of implementation lies in the hands of the states and territories. As levels of commitment vary between states and territories, consideration should be given to strengthening some aspects of the NWI and the scrutiny provided by the NWC, and to developing more incentives and sanctions to ensure the NWI is implemented in ways that secure sustainable outcomes across the nation.

Specific Comments

1 Catchment Planning and Management

It is critical to recognise the problem of water management and planning as one critical element in catchment planning and management. Failure to do so will continue to lead to many initiatives being only partially successful or focusing on the wrong priorities. There is an extensive world literature on this subject. Australia is late in committing adequate resources and priority to catchment or river basin management and planning.

Our national history is one of many state and a few Commonwealth water initiatives, many of which have tried to deal with water as if it were a discrete element of a catchment or the environment. This has led to failed initiatives, poor planning and management of catchments and their resources, very substantial public costs and extensive community and primary industry confusion and cynicism.

Accordingly, there is a need to strengthen those requirements in the NWI which favour integrated catchment planning and management.

2 Catchment Systems

Each catchment, with its surface water, run-off, overland flows, rivers, groundwater and man-made interception and abstraction developments, is idiosyncratic and different in the part water plays in its main economic, social and ecological systems and in the ways each has been modified. The impacts of allocation and use therefore differ considerably from one catchment to

another. The responses to major problems and to the setting of priorities must, as a consequence, also differ based on analysis of each system.

Thus, for example, while there may be some common boundary conditions for water markets and water trading, if the long-term results of trading are to be sustainable, some conditions need to be set solely in the light of individual catchment needs. Generic approaches based on simplified views of water systems are potentially problematic, in the absence of good underpinning, confirmatory science and effective feedback loops.

The NWI documentation should be recast to emphasise the deterministic role of catchments and to deal sufficiently with their idiosyncrasies in securing sustainable decisions on water allocation and use. That may well lead to a strengthening of the review process undertaken by the NWC.

3 A Systems Approach to Planning and Management

Governments and their agencies traditionally subdivide major systems such as catchments and their water systems into 'manageable units' – water, environment, forestry, soil conservation, resources and their management, markets, trading and pricing and so on. The consequence is that when ministers and officials meet to tackle the water problems of the nation they are collectively and severally not oriented towards thinking and acting systemically.

Yet, the recent Commonwealth initiative in the Murray-Darling system could be argued to demonstrate that the breadth of the vision and the scale and boldness of the response must be commensurate with the scale and complexity of the problem if desired outcomes are to be secured. What has been the social, environmental and economic cost of the failure to recognise the need to manage and plan for this system in an integrated way over the past three decades?

This simply serves to reinforce the need for the NWI and NWC to call for and, where necessary, ensure the implementation of a systems approach to planning and managing water catchments.

4 Towards More Strategic Water Planning

In the absence of integrated management of water, sewage and some aspects of energy services, many coastal towns draw unnecessarily large quantities of water from rivers in non-drought conditions, return too much poorly treated effluent at the wrong locations and incur high costs and consume excessive energy in the process. Yet the framework adopted for water plans, in order to make the process 'manageable', often historically precludes those involved in the production of water plans from confronting such issues and their impacts on the very water systems for which they are planning.

More generally, trade-offs across land, water and vegetative systems are usually precluded because of the very structure of the plans, whereas trade-offs across such regimes may provide excellent opportunities for more practical and less painful responses to problems from a total system perspective. In rural surrounds water plans often fail to confront the extent of change needed in farming, pastoral and primary industry, as well as rural residential practices, if major water goals are to be secured. Yet such assessments could contribute significantly to more sustainable farming and regional development.

It is desirable to strengthen the NWI to encourage more strategic water planning, including Clause 90 of the NWI, thereby encouraging state and territory governments to implement strategies to drive integrated water, sewage and energy planning and to give greater focus and priority to rural reform. It is too late to recognise such shortcomings and constraints years later

when allocations, markets and practices have become entrenched as a result of poor or narrowly-focused planning and further deterioration in catchment, river and water quality may have ensued.

5 Making the Right Trade Offs

Water planning and management is difficult. There are few if any significant 'win-win' situations left. Serious deterioration of rivers, significant over-allocation of available water, the legacy of past agricultural practices, poor town and regional planning all require detailed analysis followed by well-considered strategic and systemic responses. The costs and benefits need careful assessment. Hard as it may seem, there must be winners and losers in implementation of the chosen strategies with, where appropriate, recognition of the losers. Comforting rhetoric and palliatives cannot serve the national economic, social or environmental interest. Governments, severally and collectively, cannot provide structural adjustment funding in every deserving situation, but a careful analysis leading to a good understanding of the extent of necessary change and its implications in any given catchment can lead to more effective and more timely change, better stakeholder understanding and a fairer distribution of costs. Narrowly focused assessment, planning and management can lead to poor social and economic, as well as ecological, outcomes.

6 Coastal Catchments

It is obvious why much governmental and intergovernmental focus is on inland river systems. But the tendency to draw nation-wide conclusions about water planning, management, priorities and strategies from detailed analysis of major inland systems can lead to inappropriate priorities and ineffective strategies for coastal catchments. The primary reason is that coastal catchments meet multiple different needs and support a vast array of users, from primary to secondary industry, from old pastoral to new industries like aquaculture, from urban development to recreation and so on. The river systems are quite different ecologically from inland systems and meet very different economic and social needs. It follows that there are many stakeholders, including state agencies and authorities, councils, a variety of catchment, river, water, land and estuarine management committees, communities, land holders and water users.

In recognition of these differences, the NWI could require state and territory governments to give special focus to coastal river systems and to exercise care in using inland experience to guide coastal planning and management in water resource management, water allocation and trading.

7 Impediments to Major Reform

There are issues of institutional blockages to major reform. Throughout the nation there are hierarchies of town and regional planning, land, water, vegetation and estuarine management, as well as agency and local government arrangements to deal with a vista of water-related issues, many of which have been left in place over decades. While this problem is frequently acknowledged in planning reviews, it is little recognised in catchment and water reform, either at national or state levels. Nor is there much understanding that officers, community and industry representatives have effectively become custodians or defenders of these arrangements and that they will act to 'protect' them. Most of these arrangements will not and do not simply atrophy under the assault of major new reforms. This matter is of prime importance in securing successful outcomes from major national water initiatives.

The NWI should provide for state and territorial reviews of institutional arrangements that impact on water management reforms, whether such arrangements are suitable for ensuring the achievement of such reforms, and to make recommendations that can be implemented by

states/territories and be evaluated by the NWC in terms of the intergovernmental agreement.

8 Stakeholders

Successful catchment and water management requires a clear understanding by the various social partners of their respective roles. The NWI does not set out these roles clearly and, as a consequence, risks failing to gain appropriate inputs and sign-off at various stages in development of documentation and the promulgation of agreed strategies.

For example, world-wide, effective catchment management has come to recognise the central role of local communities and stakeholders in identifying problems, in setting priorities, discussing alternatives and signing off on major initiatives. Equally there is recognition of the need for political leadership in facing tough issues, in mediating the various interests, in ensuring equity in the distribution of costs and benefits, in ensuring that feedback occurs and is responded to, and in driving reform including institutional reform.

All stakeholders – governmental, water users and the community – rely heavily on the advice and analysis of experts in exploring system-wide problems, in analysing evidence and data and in laying out alternative scenarios and their implications. In this latter regard it is frequently difficult for lay people to see the need for system-wide responses to local problems or to bridge the many difficulties in interpreting available data, of variable quality and applicability. Those in government often fail to appreciate the same need as they strive to simplify, cut through and achieve a politically satisfactory outcome in a the allowed time frame. The fact that such expertise is in very short supply in academe, government and industry simply exacerbates this problem.

There would be considerable benefit in clarifying and recognising the various roles of the stakeholders in a revised NWI, thereby reducing the risk that NWI initiatives will be compromised or fail to meet expectations during implementation.