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NSWIC
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SUBMISSION

National Water Reform

Productivity Commission Issues Paper

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Introduction to NSWIC

The NSW Irrigators' Council (NSWIC) is the peak body representing irrigation farmers and the irrigation farming industry in NSW. Through our 22 member organisations, we represent over 12,000 water access licence holders in NSW who access regulated, unregulated and groundwater systems. Our member organisations include valley water user associations, food and fibre groups, irrigation corporations and commodity groups.

NSWIC policy is centred on creating a **sustainable** and **productive** irrigation industry in NSW, with **secure** water access. Our sector is committed to being world-leaders in water-efficient, ethical and sustainable food and fibre production, whilst supporting healthy river environments.

Irrigation farmers are stewards of tremendous local, operational and practical knowledge in water management. NSWIC is a valuable way for Governments and agencies to access this knowledge. NSWIC offers our collective expertise to ensure water management is secure, sustainable and productive. As an apolitical entity, NSWIC provide advice to all stakeholders and decision makers.

NSWIC welcomes this opportunity to provide a submission to the Productivity Commission on National Water Reform. Each member reserves the right to independent policy on issues that directly relate to their areas of operation, expertise or any other issues that they deem relevant.

NSW Irrigation Farming

Irrigation farmers in NSW produce the food and fibre we all enjoy – from fruits, vegetables, dairy, nuts, meat, cotton, grains and wine – whilst being an important contributor to our regional and national economy.

Irrigation farmers in Australia are recognised as world leaders in water efficiency. For example, according to the Australian Government Department of Agriculture, Water and the Environment:

> *"Australian cotton growers are now recognised as the most water-use efficient in the world and three times more efficient than the global average"*[1]

> *"The Australian rice industry leads the world in water use efficiency. From paddock to plate, Australian grown rice uses 50% less water than the global average."*[2]

Our water management legislation prioritises all other users before agriculture (critical human needs, stock and domestic, and the environment), meaning our industry only has water access when all other needs are satisfied. Our industry supports and respects this order of prioritisation. Many common crops we produce are annual/seasonal crops that can be grown in wet years, and not grown in dry periods, in tune with Australia's variable climate.

Irrigation farming in Australia is also subject to strict regulations to ensure sustainable and responsible water use. This includes all extractions being capped at a sustainable level, a hierarchy of water access priorities, and strict measurement requirements.

[1] https://www.agriculture.gov.au/ag-farm-food/crops/cotton
[2] https://www.agriculture.gov.au/ag-farm-food/crops/rice

NSW Irrigators' Council's Guiding Principles

Integrity	Leadership	Evidence	Collaboration
Environmental health and sustainable resource access is integral to a successful irrigation industry.	Irrigation farmers in NSW and Australia are world leaders in water-efficient production with high ethical and environmental standards.	Evidence-based policy is essential. Research must be on-going, and include review mechanisms, to ensure the best-available data can inform best-practice policy through adaptive processes.	Irrigation farmers are stewards of tremendous knowledge in water management, and extensive consultation is needed to utilise this knowledge.
Water property rights (including accessibility, reliability and their fundamental characteristics) must be protected regardless of ownership.	Developing leadership will strengthen the sector and ensure competitiveness globally.	Innovation is fostered through research and development.	Government and industry must work together to ensure communication is informative, timely, and accessible.
Certainty and stability is fundamental for all water users.	Industry has zero tolerance for water theft.	Decision-making must ensure no negative unmitigated third-party impacts, including understanding cumulative and socio-economic impacts.	Irrigation farmers respect the prioritisation of water in the allocation framework.
All water (agricultural, environmental, cultural and industrial) must be measured, and used efficiently and effectively.			Collaboration with indigenous nations improves water management.

Acknowledgement of Country

NSWIC acknowledge the Traditional Custodians of the lands and waters across NSW, and pay respect to Elders past, present and emerging. NSWIC recognises and supports the traditional and cultural uses of water by Aboriginal people.

Contents

Background

The National Water Initiative (NWI) continues to be the blueprint for water reform in Australia. It was a bold and ambitious agreement by the Council of Australian Governments (COAG) in 2004, in which:

"The objective of the Parties in implementing this Agreement is to provide greater certainty for investment and the environment, and underpin the capacity of Australia's water management regimes to deal with change responsively and fairly."

More specifically, the objectives [23] set out that:

> *Full implementation of this Agreement will result in a nationally-compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes by achieving the following:*
>
> *i) clear and nationally-compatible characteristics for secure water access entitlements;*
>
> *ii) transparent, statutory-based water planning;*
>
> *iii) statutory provision for environmental and other public benefit outcomes, and improved environmental management practices;*
>
> *iv) complete the return of all currently overallocated or overused systems to environmentally-sustainable levels of extraction;*
>
> *v) progressive removal of barriers to trade in water and meeting other requirements to facilitate the broadening and deepening of the water market, with an open trading market to be in place;*
>
> *vi) clarity around the assignment of risk arising from future changes in the availability of water for the consumptive pool;*
>
> *vii) water accounting which is able to meet the information needs of different water systems in respect to planning, monitoring, trading, environmental management and on-farm management;*
>
> *viii) policy settings which facilitate water use efficiency and innovation in urban and rural areas;*
>
> *ix) addressing future adjustment issues that may impact on water users and communities; and*
>
> *x) recognition of the connectivity between surface and groundwater resources and connected systems managed as a single resource.*

As outlined in the *Independent Assessment of Social and Economic Conditions in the Basin*:

"NWI reforms have fundamentally altered the operating environment of water users in the Basin and across Australia."[3]

The NWI has undoubtedly delivered many positive improvements to water management in Australia, and these should be applauded. In the Commission's 2017 Inquiry, it was found that most jurisdictions had made good progress towards achieving the NWI objectives, and that

[3] https://www.basin-socio-economic.com.au/47038/widgets/250651/documents/147509

the reforms had significantly improved the way water resources are managed. However, as is inevitable with any bold reform of such scale, there have been significant adverse impacts. These adverse impacts were in some ways unintended and unforeseen, but in others, a direct consequence from reforms. There also remain outstanding aspects from the initial agreement, which have either not been fully implemented, or not implemented as intended.

Since 2004, significant changes have occurred to water management in Australia, but also more broadly in Australia and around the world. This shifts the context for water management, and fundamentally, the baseline on which future water planning is founded. As one example, since the NWI, Australia has endured two of the most severe droughts in living memory (Millennium Drought and the current drought starting in 2017). There have also been sweeping changes through waves of reforms, including the Murray-Darling Basin Plan, and more specifically in NSW a new world-leading standard of metering and the establishment of a dedicated water compliance agency (Natural Resources Access Regulator).

However, Governments responsible for implementing the previous report have failed to engage and/or even inform industry on many of the outcomes. For example, the existence of a "National Water Reform Committee" (made up of state and federal government agencies) only came to light when mentioned in a Stakeholder meeting for this review.

This committee, like the Basin Officials Committee, seems to operate with no external visibility making it very difficult for industry and the community to know what – if anything – is being pursued in this space. Similarly, the April 2020 report by the Interim Inspector General for the Murray-Darling Basin[4] revealed that the MDBA, CEWH and Department of Agriculture, Water and Environment:

> '… have recently committed to a four-year Water and Environment Research Program due to start in July 2020. The program will invest in research on changes in climate, hydrology, and social, economic, cultural and environmental outcomes, with the objective of strengthening scientific knowledge of the Basin to help inform water and environment management decisions.'

Stakeholders on the frontline of water reform impacts have been excluded from any role in setting the direction, methodology and priorities of this program, except presumably as passive participants in the research.

For this reason, we welcome the opportunity to work with the Productivity Commission to develop a contemporised NWI, designed to: acknowledge how far Australian water management has come, to address the adverse impacts of previous reforms, that delivers greater transparency on internal Government deliberations, and that is fit for contemporary water challenges.

Scope of Inquiry

The Inquiry seeks to assess progress towards achieving NWI objectives and whether reforms are achieving the intended outcomes. Specifically:[5]

In undertaking the Inquiry, the Commission should assess:

- *progress in jurisdictional adoption of NWI principles, objectives and key outcomes, and where these have not been adopted, the impacts and opportunity costs of not doing so*
- *the outcomes to date of the NWI and related water reform efforts, taking account of other drivers of reform*

[4] 'The impact of lower inflows on state shares under the Murray-Darling Basin Agreement'. Report by the Interim Inspector General for the Murray Darling Basin. April 2020.

[5] Productivity Commission (2020) National Water Reform – Issues Paper. https://www.pc.gov.au/inquiries/current/water-reform-2020/issues/water-2020-issues.pdf [iv].

- *the extent to which the NWI reforms are adequate to support government responses to emerging or changing water management challenges such as climate change, and*
- *provide any further practical advice on addressing the joint governments' priorities for implementation of a renewed NWI, and*
- *provide specific practical advice on ways in which the NWI could be improved to support better social, economic and environmental outcomes.*

The Commission should also consider:

- *the interaction of water policy with other policy areas such as climate, energy, agriculture, forestry, land use planning and urban development*
- *the policy ramifications of emerging climate change impacts on water resources*
- *the provision of reliable water services to regional, rural and remote communities*
- *the principles to be satisfied for any government investment in major water infrastructure projects*
- *issues identified in the Commission's 2017 Report, and*
- *international experiences and examples.*

Overview

Summary of key findings:

- The NWI has delivered many improvements to water management in Australia, and these should be applauded. There is scope for the NWI to be contemporised, to meet new and emerging challenges, and to address the adverse impacts of past reforms.

- NWI objectives of 'addressing overallocated systems' in the Murray-Darling Basin can be considered achieved with Sustainable Diversion Limits now in place, through significant water recovery. This has, of course, had significant social and economic ramifications, particularly for communities dependent on irrigated agriculture.

- The previous water reform era focused on shifting the balance of water between users – e.g. between environmental and productive buckets of water. Now that this balance has been struck, future water planning must shift the conversation beyond simply moving water between types of users (i.e. between buckets), but to how water can be optimally utilised by each water user (i.e. within buckets).

- The Risk Assignment Framework is poorly applied in practice, and lacks the supporting architecture to be effective. The absence of an agreed metric and method to measure reliability, absence of reporting, and minimal baseline data, are leading causes to poor implementation.

- Third-party impacts are too narrowly defined, and not captured by performance indicators.

- In NSW, water pricing for rural bulk water does not meet the NWI objectives of following a 'user pays' principle; rather, NSW pricing is based on an 'impactor pays' principle. This has water users paying for public interest items such as water quality monitoring, environmental management, flood mitigation and compliance.

- Underusage is a significant problem, which is poorly understood, poorly accounted, and lacks policy mechanisms to facilitate improvements.

- Metering and measuring in NSW have significantly improved in recent times, with ongoing reforms. Consistency with other jurisdictions is required. NSW's new metering standards are recognised as world-leading.

- NWI outcomes for community partnership and adjustment have been particularly poorly implemented, and triple-bottom line provisions need to be strengthened.

- 'Adaptive management' is fundamentally important to water management, but water managers have failed to apply this principle in practice. Instead, water management suffers from a stiffness/rigidity of policy, even when it comes to implementing formal inquiry recommendations.

Summary of key recommendations:

- A stakeholder reference group be established to reform the NWI, with broad consultation on provisions to better meet emerging challenges and address the unintended, perverse and unforeseen outcomes from water reform to date.

- The National Water Reform Committee made up of state and federal government agencies be required to release the agenda, minutes and all other documents considered at its meetings, to enable public scrutiny of its deliberations and decisions with a direct impact on all water users. Membership should also be disclosed.

- A renewed NWI should contribute to a better understanding of 'reliability', including providing measurement options/approaches, and requirements for reporting; communication/data availability; and, impact assessments. A renewed NWI should also improve the supporting architecture to deliver the principles of the risk assignment framework.

    - Governments should commit to assessing the cumulative impacts of water reforms on the reliability and security of water entitlements.

- Broaden the definition of third-party impacts, as well as performance indicators for water trading, to include socio-economic impacts and impacts on water entitlement reliability. Require the trading framework and rules to limit effects on third parties.

- Productivity Commission to lead the development of a framework for setting prices for rural bulk water that accounts for and facilitates cost recovery for public interest/benefit items. This framework is to be included in a renewed NWI.

- Direct investment to complementary and non-flow measures with potential to achieve important ecological outcomes while minimising adverse socio-economic outcomes.

- Governments should develop (1) underusage triggers points (based on overusage trigger points for non-compliance) and (2) stimulus policy mechanisms which come into play when trigger points are reached.

- Improved metering and measurements in other jurisdictions to ensure consistently high standards nationally.

- A renewed NWI should facilitate Governments developing new and improved socio-economic objectives and performance indicators, through robust MER programs, to improve understanding of socio-economic impacts of water reforms.

- Recommit to historic commitments for adaptive management. Explore opportunities to improve accountability for adaptive management in practice, such as by establishing a board with responsibility for ensuring adaptive management occurs, including auditing, monitoring and driving forward action on the implementation of the recommendations from reviews/inquiries/assessments.

- Governments should actively commit to programs designed to improve public confidence in water management, improve awareness of recent and ongoing reforms, and improve water literacy of the broader community.

Submission

(i) Water Access Entitlements & Planning Framework

Water Property Rights

NWI Components:
Clauses 25 to 34.

Excerpt:
Clause 25(i): *"enhance the security and commercial certainty of water access entitlements by clearly specifying the statutory nature of those entitlements".*[6]

The establishment of a clearly defined regime of water property rights to underpin water reform in Australia is a core tenet of the NWI, and even predates the 1994 COAG Water Directive Framework.

In the COAG Communique from the meeting of 25 February 1994, it states:

"the State government members of the Council, would implement comprehensive systems of water allocations or entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and, if appropriate, quality"[7]

Clearly specifying the statutory nature of entitlements is fundamentally important to the integrity of the water management framework. Additionally, establishing clearly defined water property rights is also a necessary prerequisite to effective water markets and trading.

However, in the context of NSW, State water legislation does not go as far as explicitly specifying the statutory nature of entitlements (e.g. specifying water entitlements as property), contrary to some other states, such as South Australia (*Water Resources Act 1997 (SA), s29(5)*) and Tasmania (*Water Management Act 1999 (Tas) s 60*). The South Australian Act, for example, states:

"A water licence is personal property and may pass to another in accordance with the provisions of this Act or, subject to this Act, in accordance with any other law for the passing of property."

NSW does not have such an equivalent. Although, importantly, whilst the lack of express provision under the NSW *Water Management Act 2000* (WMA) may initially suggest that NSW failed to implement this (central) component of the NWI, it cannot be simply deduced that this means water entitlements are not property, as it is established via other means, and the subject of an entire field of property law. Rather, what it does suggest, is that there is room for improvement in the NSW WMA to clarify the provisions committed to under the NWI. [8]

[6] NWI Clause 25 (i).
[7] Council of Australian Governments (COAG), Communique from the meeting of 25 February 1994, Hobart <http://www.environment.gov.au/system/files/resources/6caa5879-8ebc-46ab-8f97-4219b8ffdd98/files/policyframework.pdf>.
[8] Supplementary Information:
Gray and Lee raise some crucial points on this matter in an article titled *National Water Initiative styled water entitlements as property: Legal and practical perspectives,* including:

Findings:
State-based legislation has varying degrees of success in realising the NWI objective of specifying the statutory nature of entitlements. NSW is particularly weak on this component.

It must be noted that the proprietary nature of entitlements has been established through other forms, and thus this issue is more of clarity and consistency than legal effect.

Recommendation:
State-based legislation should be required to specify the statutory nature of entitlements, for clarity and the avoidance of doubt.

Addressing Overallocated Systems

NWI Components:
Clauses 41 to 45.

Excerpts:
Clause 41: *"...arrangements require that allocations to provide a better balance in water resource use (including appropriate allocations to the environment) for all river systems and groundwater resources which have been overallocated or are deemed to be stressed..."*

Clause 43: *"...any of those systems found to be overallocated and/or overused as defined in the water planning process will be adjusted to address the overallocation or overuse, and meet the environmental and other public benefit outcomes."*

Central to the NWI, is returning overallocated systems to *sustainable extractions levels* to *provide a better balance in water resource use*. In the Murray-Darling Basin, Sustainable Diversion Limits are now in effect, and all water take must comply with these limits. In many valleys, the level of water use is actually well below these limits (see below).

Through water recovery measures - primarily the Murray-Darling Basin Plan (Basin Plan) but including Water for Rivers and The Living Murray – more than 20% of the water once available for farming has now been recovered from productive water users and is now available for environmental purposes (28% in the southern Basin). This is a significant change in a relatively short period of time.

"Since the rollout of the National Water Initiative (NWI), examination of whether NWI styled water entitlements are property has been largely neglected."

"In some jurisdictions, the nature of NWI styled water access rights or entitlements still has not been legally clarified"

"Anecdotal evidence also suggests that in many farming and other communities it is likely that discussion about the legal nature of water entitlements has not been raised at all. Stakeholders and others have proceeded on the basis that old-style water licences have been converted into National Water Initiative (NWI) styled water entitlements."

"the failure to define clearly NWI styled water entitlements as property presents potential difficulties for the efficient functioning of water markets, and therefore for achievement of the NWI objectives relating to efficiency. Without certainty of the right, the incentives for efficient trade and investment may be substantially undermined."

Whether this is simply an omission from the WMA, or an intent of state-based planning, remains unknown. As McKenzie notes, there has:

"been pressure on States to create water rights that are actually something less than property rights even if they are rhetorically described as such"[8]

The Commonwealth Environmental Water Holder (CEWH) now has 2,875,939ML of registered entitlements, with a Long-Term Annual Average Yield (LTAAY) of 1,989,423ML[9]. This now makes the CEWH the largest water holder in almost all Murray-Darling Basin valleys. This is in addition to planned environmental water (or rules-based) committed under the State-based Water Sharing Plans.

The previous water reform era focused on shifting the balance of water between users – e.g. between environmental and productive buckets of water. Now that this balance has been struck, future water planning must shift the conversation beyond simply moving water between types of users (i.e. between buckets), but to how water can be optimally utilised by each water user (i.e. within buckets).

For productive water users, this involves assessing the regulatory settings to:

- Identify limitations and opportunities; ensuring water is allocated to enable use up to the Sustainable Diversion Limit or Cap respectively (as intended);
- Better understand the drivers of irrigator behaviour;
- Address the adverse third-party impacts from previous reforms;
- Improve water efficiency;
- Identify measures to manage the impacts of a changing climate and supply shortages; and,
- Maximise production from the share of water made available to agriculture.

The persistent public narrative around water use and management fails to recognise the significant reforms of the past decades, and fails to acknowledge what has changed. Those who fail to see beyond this expired narrative will likely continue to criticise the irrigated agriculture sector and governments alike, and call for further reductions in water access by farmers.

Ultimately and pragmatically, a contemporary looking glass reveals far greater opportunities for improvement in water management and improvements in policy settings for the productive and environmental pools of water alike. Unfortunately, obsession with continually shifting the balance of a system already designed to place irrigated agriculture as the lowest priority, will achieve nothing more than popularity. We need to step up the conversation around sustainability to be more informed, contemporised, and pragmatic about the current system.

Findings:

NWI objectives of 'addressing overallocated systems' can be considered achieved in the Murray-Darling Basin with Sustainable Diversion Limits now in place, through significant water recovery. This has, of course, had significant social and economic ramifications, particularly for communities dependent on irrigated agriculture.

Now a sustainable balance has been struck in the Murray-Darling Basin, focus must shift beyond simply moving water between types of users (i.e. between buckets), to how water can be optimally utilised by each water user (i.e. within buckets).

A persistent public narrative of water management and irrigated agriculture fails to recognise the significant reforms of the past decades. Ultimately, this narrative jeopardises progress on future reforms, by instilling outdated priorities.

Recommendations:

Governments should commit to programs designed to:

- Improve public confidence in water management;

[9] https://www.environment.gov.au/water/cewo/about/water-holdings

- Improve awareness of recent and ongoing reforms; and,
- Improve water literacy of the broader community.

Risk Assignment

NWI Components:
Clauses 46 to 51.

The Risk Assignment Framework is critical to protecting the integrity of property rights of water entitlements. However, NSWIC is of the position that significant improvements are required for the risk assignment framework to be operationalised effectively in practice, as it is currently poorly implemented and lacks the supporting architecture to be effective.

NSWIC notes that the NWI specifies that this risk assignment is to apply to risks which "*are additional to those identified for the purpose of addressing known overallocation and/or overuse*" [46], and in the context that "*…a pathway for dealing with known overallocation and/or overuse has been agreed*" [47].

This premise must be emphasised as fundamentally important, as policy settings eroding reliability must not be a means of reducing water use. Whilst NSWIC is strongly opposed to any reduction in the productive share of water, if this is the intention of any Government, it should at least occur through the market rather than policy.

NSWIC is highly concerned that over time Governments have introduced policy changes with cumulative impacts on entitlement reliability – which have ultimately not been subject to this framework. At the crux of the problem, there continues to be no agreed metric or method for measuring reliability, and regular reporting does not occur. In the 2009 NWI Assessment Report, the performance indicator for the risk assignment framework was established as:

> *6.1 Application of risk management framework in jurisdictions and regular public reporting to aid risk management*

However, to our knowledge, NSW has not undertaken any reporting, and continues not to have established ways of measuring, monitoring and reporting on reliability changes. Consequently, owing to a lack of supporting architecture, water users are bearing all the risks of impacts on reliability (regardless of cause), contrary to the Risk Assignment Framework.

Water users are also highly concerned about the impacts of climate change and reduced inflows on entitlement reliability. Governments should work with water users to develop pathways forward that support water users in adapting to new climatic scenarios. Clarification is required for Clause 48, to recognise that reduced inflows due to climate change will automatically be incorporated into the management framework, as access is to a share of the available resource. Any additional reductions caused by government policy change in response to climate/drought remains subject to Clause 50.

Reliability

'Reliability' is defined under the NWI as *"the frequency with which water allocated under a water access entitlement is able to be supplied in full"*. There has been a long standing, and highly regarded, commitment to water users amid recent water reforms of "no impacts on yield or reliability" of water entitlements. However, there remains no agreed measure of reliability, nor are changes assessed, assigned against the Risk Assignment Framework, or reported.

To ensure reliability is (at least) maintained, a clear, transparent, and agreed-upon methodology or framework is required for how changes to reliability are measured and responded to. This is important, to:

- Determine the extent of any reduction in reliability to identify appropriate compensation, or to inform appropriate mitigation strategies, where a property right has been (or is expected to be) infringed upon.
- Ensure accountability of Government to their commitments.
- Provide the certainty of established metrics and processes, particularly to inform Water Sharing Plans, and to allow water users to have confidence.
- Facilitate objectivity in decision-making by providing the evidence base to understand the nature and extent of impacts resulting from a proposed policy change, as well as to better understand the winners and losers.
- Allow measures to reflect contemporary thinking and best practice.

The NWI definition of reliability does not capture the nuances of reliability changes, as it is only based on 'full' water allocations (not partial allocations less than 100%). Whilst there is currently no single established measure of reliability of water entitlements, certain measures have become a standard practice in some areas and are generally accepted:

- *Percentage of the time full entitlement is available:*
  - *Percentage of years the maximum AWD is achieved by a specific date in the water year. For example, the percentage of years that the cumulative AWD of 100 per cent (i.e. full entitlement) is achieved by January.*
- *Average Available Water:*
  - *This measure is the long-term average AW/AEW at a date in the water year.*
- *Average annual use:*
  - *The long-term average annual extractions divided by the sum of the issued shares.*[10]

Another measure is the estimated conversion factors on all entitlements provided by the States to inform the development of the Basin Plan and LTAAY of entitlements recovered for the environment. These conversion factors have since been refined using new knowledge and improved metrics for the States' Water Resources Plans submitted for MDBA accreditation.

Since these commonly accepted measures were developed, there has been significant changes to the nature and regulatory environment of productive water use. Areas and entitlement holders that typically experienced relatively high reliability have experienced a shift to lower reliability. Some areas that typically had under-utilisation of Water Access Licences (WALs) now have greater utilisation than historically. Severe droughts (such as the Millennium and current drought) have had substantial impacts on business operations and their decision-making. Fundamental policy changes have come into play. All these cumulative changes have driven changing water use patterns, leading also to changing agricultural patterns (e.g. movement to higher value crops). These changes call for a rethink of how we conceptualise and measure reliability.

NSWIC has written a Paper on *Key Considerations for Measuring Reliability of Water Entitlements*, which is available upon request. Key findings from this Paper include:

- It is important to have an established measure of reliability which can be applied across the state (at minimum), with the necessary levers to take account of varying circumstances between valleys. Measures need to be able to determine both the cause and the effect of impacts on reliability.
- A combination of measures ('multiple lines of evidence') would be ideal to measure reliability as it would be more comprehensive and give decision-makers a toolkit or suite of instruments to adopt.

[10] Ribbons, C., 2009, Water availability in New South Wales Murray-Darling Basin regulated rivers, NSW Department of Water and Energy, Sydney.

- Measures that take into consideration total water availability (across different licence types) are more representative.
- *Median effective available water* throughout the water year (e.g. quarterly) and across licence types is a more representative measure of reliability than current practices, and is NSW irrigation industry's preferred approach.

Findings:

The Risk Assignment Framework is poorly applied in practice, and lacks the supporting architecture to be effective.

The absence of an agreed metric and method to measure reliability, and lack of reporting and baseline data, are leading causes to poor implementation.

A reduction in the reliability of a water entitlement, is in effect, an erosion of a water property right, and undermines the integrity of the water management framework.

There is a widespread perception that the reliability of entitlements has reduced, without compensation.

Recommendations:

A. A renewed NWI should contribute to a better understanding of 'reliability', including providing measurement options/approaches, reporting and communication requirements, and impact assessment requirements. A renewed NWI should also contribute to improving the supporting architecture for delivering on the principles of the risk assignment framework. This may include:
    a. An independent agency/adjudicator to manage reliability data, including holding responsibility for identifying causes of changes to reliability, in order to guide application of the risk assignment framework.
    b. Establishment of a *Reliability Index* (e.g. modelled off the ASX) as a dashboard to communicate reliability data. This would provide good information to the community, and would also assist in developing an evidence base to support the need for or against policy changes, particularly where there is a trend in adverse impacts.
    c. Requirements for any proposed water policy change to be accompanied by a *Reliability Impact Assessment*, to make the exact impacts explicit to water users during consultation, and to describe how those impacts are intended to be mitigated/compensated, and also to ensure Government understand their liabilities.
    d. Requirements that each Water Sharing Plan must specify, or at least include in supporting documents, the metrics which are relevant to that WSP to determine the baseline for reliability and assess any policy changes which may impact on yield or reliability. This should be linked to the MER, and include short and long term metrics to assess across the key dates (Plan Limit, BDL and current conditions).

B. Governments should commit to assessing the cumulative impacts of water reforms on the reliability and security of water property rights.

Managing Extreme Events

NWI Components:

The 2017 NWI guidelines note that water plans should include clear rules or processes to describe how extreme situations will be managed.

NSWIC is of the position that the NWI guidelines for water plans include clear rules or processes to describe how extreme situations are managed, and require further development

in NSW. This is expected to progress following the recommendations of the *Independent Assessment into the Management of the First Flush Event Draft Report,* which we hope the NSW Government will adopt.

NSWIC has continued to advocate that the application of S324s requires a clear and transparent framework to codify requirements, particularly around determining 'public interest'. Such a framework would need to balance effectively managing extreme events, with protecting the integrity of the water management framework and water property rights.

As the Issues Paper rightly outlines:

"Suspending water plans is only appropriate in the most extreme circumstances because it creates large disruptions and uncertainty for water users and generally impacts significantly on the environment."

However, to date, this approach (S324 of the NSW WMA) remains the primary mechanism in NSW for managing events of this kind, as occurred in the First Flush event in early 2020. As the subsequent *Independent Assessment into the Management of the First Flush Event Draft Report* found:

"The WM Act in and of itself does not provide the complete framework for section 324 orders to be applied and lifted dynamically, as is required to manage first flush events."

"Given the level of mistrust in water management in NSW, the continued use of section 324 temporary water restriction orders outside of a clear, publicly consulted framework (to manage first flushes) and the absence of information on the outcomes are likely to consistently lead to accusations of favouritism and incompetence. As an alternative to the use of section 324 restriction orders in times of severe droughts, which are expected to increase in frequency and severity with a drying climate, water users and the community have expressed strong support for including details about first flush management arrangements in the WM Act and water sharing plans."

The recommendations from this Draft Report therefore included:

"Embed the management of first flush events in the regulatory and policy framework for managing drought."

Perhaps the greatest area for improvement for managing extreme events is actually the management arrangements for coming *out* of these events. As the Draft Report states:

"…it's worth noting that, in the vast majority of cases, section 324 orders are used to cope with the decreasing availability of water, not the increasing availability of water. Even in the Extreme Events Policy and incident response guides, section 324 orders are referred to as a tool to manage water sources as they go into drought, rather than as they come out of drought."

NSWIC has provided detailed commentary and recommendations in submissions to the *Independent Assessment into the Management of the First Flush Event,* and we refer the Commission to these submissions for further specific information.[11]

Importantly, extreme events measures must strictly only be applied in extreme circumstances, such as extreme drought, that cannot otherwise be managed through usual water sharing arrangements. Clearly defining this is critical to ensure management is targeted to specific needs of systems emerging from the most extreme depths of drought, and also, to preserve the integrity of normal water sharing arrangements in dealing with all other scenarios.

[11] NSWIC (2020) Submissions Webpage https://www.nswic.org.au/submissions-2020/

It should be noted that a number of mechanisms are in Water Sharing Plans to provide for connectivity and extreme events, but these were not adhered to in managing the First Flush Event of early 2020.

Finding)
The NWI guidelines for water plans to include clear rules or processes to describe how extreme situations are managed, requires further development in NSW. Progress is being made towards addressing this through the *Independent Assessment into the Management of the First Flush Event*.

One of the largest areas for further improvements in extreme events management is in the management of first flush events amidst/following extreme drought, and the need for transparent and predictable mechanisms within the regulatory framework itself to reduce the reliance on S324s.

Detailed recommendations are included in the NSWIC submissions on the First Flush Event 2020.[12]

Climate Change

NSWIC notes that the Commission is welcoming information on recent developments in how jurisdictions are considering climate change in water allocation frameworks. In summary:

- The water management framework automatically takes climate change into consideration, given allocations are a share of the available resource. Simply, if inflows/supply decreases, allocations will automatically decrease.
- The NSW WMA has a legislated order of priorities/hierarchy of water access, which means critical human and environmental needs must be met before any water is made available to productive uses.
- NSW is in the process of developing Regional Water Strategies, which will analyse 10,000 years of paleoclimatic data to plan and manage the water needs in each NSW region over the next 20 years.

(ii) Water Markets & Trading

NWI Components:
Clauses 58 – 63.

Excerpts

Outcomes:
58. The States and Territories agree that their water market and trading arrangements will:
i) facilitate the operation of efficient water markets and the opportunities for trading, within and between States and Territories, where water systems are physically shared or hydrologic connections and water supply considerations will permit water trading;
ii) minimise transaction costs on water trades, including through good information flows in the market and compatible entitlement, registry, regulatory and other arrangements across jurisdictions;
iii) enable the appropriate mix of water products to develop based on access entitlements which can be traded either in whole or in part, and either temporarily or permanently, or through lease arrangements or other trading options that may evolve over time;
iv) recognise and protect the needs of the environment; and
v) provide appropriate protection of third-party interests.

[12] NSWIC (2020) Submissions Webpage https://www.nswic.org.au/submissions-2020/

Actions (summarised):

- *compatible, publicly-accessible and reliable water registers of all water access entitlements and trades (both permanent and temporary) on a whole of basin or catchment basis;*
- *compatible institutional and regulatory arrangements that facilitate intra and interstate trade, and manage differences in entitlement reliability, supply losses, supply source constraints, trading between systems, and cap requirements;*
- Studies into *effective market and regulatory mechanisms for sharing delivery capacity and extraction rates among water users… to implement efficient ways to manage changes in water usage patterns, channel capacity constraints and water quality issues;* and the *feasibility of establishing market mechanisms such as tradeable salinity and pollution credits…*
- *reduce barriers to trade in the Southern Murray-Darling Basin by taking the necessary legislative and other actions to permit open trade and ensure competitive neutrality.*

As noted in the Issues Paper, the ACCC is inquiring into Murray-Darling Basin water markets. NSWIC supports the Productivity Commission drawing from the findings and recommendations of the ACCC, given this is a thorough and comprehensive recent review. NSWIC will be providing a detailed submission to the ACCC Draft Report, and we refer the Commission to that upcoming submission for more detailed analysis.[13]

Protecting third-parties

While Clause 58 (v) addresses protecting third-parties, and this is further detailed in Schedule F (3); the NWI only narrowly defines third-parties as holders of entitlements. Subsequently, within the Water Act 2007 and Murray-Darling Basin Plan 2012 which both adopt the NWI objective of protecting third-parties, there is also no more nuanced understanding of third-parties provided.

Third-parties extend beyond entitlement holders to the broader social and economic impacts arising from market operations. This includes the changing trends of water use brought on by market dynamics, and the impacts this has on communities, industries/sectors, businesses, and jobs. This also extends to the uneven impacts between geographic regions, as well as various irrigated agriculture sectors/commodities.

In 2009, the National Water Commission set out NWI trade performance indicators:[14]

> 5.1: % (by volume and number) of entitlements/allocations traded permanently, temporarily or leased.
>
> 5.2: Water trade approval times, including removal of barriers to trade.
>
> 5.3 Number and proportion of applications rejected by state and territory approval authorities.
>
> 5.4: Cost of doing a trade of a water entitlement, including permanent and temporary trade

In summary, the performance indicators for market effectiveness are based on the extent of trading, and the movement of water to the highest value use. Whilst these indicators may have a place within a broader framework, there is a need for contemporised performance indicators. These should include the ability of the market to: support a productive and vibrant irrigated agriculture sector and the dependent regional economies/communities; foster confidence of

[13] NSWIC (2020) Submissions Webpage https://www.nswic.org.au/submissions-2020/
[14] 'Australian water reform 2009. Second biennial assessment of progress in implementation of the National Water Initiative'. National Water Commission.

businesses and individuals in its effective operation; facilitate efficiency of water use; and respect channel capacity constraints and natural system limitations for healthy river environments.

Finding)
Third-party impacts are too narrowly defined, and not captured by performance indicators.

Recommendations:
Require the framework and rules governing trading to limit effects on third parties.

Broaden the definition of third-party impacts to include, for example, socio-economic impacts (non-entitlement holders), and the integrity of water access entitlements.

Broaden the water trading performance indicators, to include broader socio-economic indicators (e.g. jobs in agriculture and related industries), regional development, water user satisfaction, etc.

Registers

NSWIC notes that simplified public access to water availability and trade information is sought in general by water market participants. NSWIC has called for the development of a public water trade register at a valley or zone level, that could provide timely information on temporary and permanent trade.

At present in NSW, there is the NSW Water Register (administered by WaterNSW). *"The NSW Water Register provides public access to information about water licences, approvals, water trading, water dealings, environmental water and other matters related to water entitlements in NSW'.*[15] This is then complemented by the Water Access Licence Register, which provides more detailed information about every water access licence in NSW – such as the share component, extraction component, water source, conditions, and current ownership details. NSWIC is of the position that between these two registers, the National Water Initiative requirements are largely satisfied.

Where these Registers fall short of meeting NWI commitments is in regards to "compatible systems for registering water access entitlements", given Basin States have different types of entitlements and terminology. NSWIC would also raise concerns over time lags of information being made available on these registers.

NSW water registers have been subject to significant recent public debate, including two Bills and a Parliamentary Inquiry. The debate focused on allowing registers to be searched by an individual's name or their business name. NSWIC does not support making personal information available/searchable by expanding current registers or developing new registers), as that information is sensitive, private, and confidential. It would expose vulnerable members of our irrigation community (e.g. small farms, or elderly demographics), who hold a large proportion of entitlements in NSW. The concern is this would lead to vexatious behaviours directed at private individuals and or exploitation of individual circumstances by market participants. This is because it would allow a direct path for interested buyers to contact those with holdings, potentially by-passing formal requirements, proper processes and protections.

[15] https://waterregister.waternsw.com.au/water-register-frame

(iii) Best Practice Water Pricing

NWI Components:
Clauses 64 to 77.

Under the NWI 'Best Practice Water Pricing and Institutional Arrangements' (Clause 64) one of the outcomes is (iv):

"give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management"

In NSW, the Independent Pricing and Regulatory Tribunal (IPART) has instead adopted an 'impactor-pays' principle for rural bulk water pricing, under which water users (i.e. irrigation farmers) are the impactors. The cost-share ratio is 80:20 for Capital Expenditure (with water users paying 80%), and 100:0 for Operational Expenditure (with water users paying 100%). This ultimately has water users bearing the costs for public interest items, such as water quality monitoring, environmental management, flood mitigation and dams that serve multiple purposes including urban needs.

This principle is based on an overly simplified counterfactual of pre-development conditions, that would inevitably lead to assigning costs to water users. The reality is water management activities are necessarily required for human civilisation – and particularly in our society that values the health of river systems and has significant interest in their proper management.

In NSW, a 22% increase in WAMC charges is being proposed to pay for improvements to water management, including the establishment of the Natural Resources Access Regulator (NRAR) to conduct water compliance. Many of these improvements were specifically designed to improve public confidence in water management, and/or were services long paid for by water users but poorly delivered by Government. NSWIC is of the position that the Government should pay for compliance, not water users, and water users should also not be made to pay for previous poor performance of Government agencies.

Findings:
In NSW, water pricing for rural bulk water does not meet the NWI objectives of following a 'user pays' principle, rather an 'impactor pays' principle.

In NSW, water users pay for public interest/benefit water management items and services. This includes water quality monitoring, environmental management, flood mitigation and compliance.

There is a strong perception amongst water users that the cost-share ratio (80:20 CapEx and 100:0 OpEx) is unfair, unjustified and highly inappropriate.

Recommendation:
Productivity Commission to lead the development of a framework for setting prices for rural bulk water that accounts for and facilitates cost recovery for public interest/benefit items.

Productivity Commission to recommend that NSW reviews the cost-share ratio, and impactor-pays principle, with a view to better apportion costs for public interest items in future pricing determinations for rural bulk water.

(iv) Integrated Management of Water for Environmental and Other Public Benefit Outcomes

NWI Components:
Clauses 78 to 79.

NSWIC is concerned that recent environmental management has focused simply on volumes of water, rather than actual ecological outcomes. This is highly concerning. Not only does this approach pose the greatest risk to social and economic outcomes, but it also risks genuinely achieving the desired environmental improvements.

The irrigation industry has long advocated for complementary or non-flow measures to improve the health of river systems. Such measures include: habitat restoration, feral and invasive species management, carp control, cold water pollution management, improvements to fish passage, and native species breeding programs. Programs such as these have received far less attention than required, given the current volumetric focus.

Now that SDLs are in place, and the CEWH has significant volumes of water to improve environmental health, the focus must shift to maximising environmental outcomes using this water.

Findings:
Focus on volumetric outcomes alone has overtaken the much-needed focus of achieving genuine environmental outcomes.

Recommendations:
Investments in complementary and non-flow measures have the potential to achieve important ecological outcomes, with the lowest detriment to social and economic outcomes. These measures should be further investigated and implemented.

(v) Water Resource Accounting

NWI Components:
Clauses 80 to 89.

Underusage

Through the MDBA Transitional Take Reports, a significant accumulation of Cap Credits is evident, and concerns have been raised whether such credits will continue under formal SDL accounting. Ultimately, this underused productive water causes significant concerns for water users as this is lost opportunity for production. Frustrated water users also question whether water users have been short-changed.

The MDBA is currently assessing the 'Trends in use relative to the SDL in the Southern Basin'. From our participation in stakeholder forums, we understand a trend has been identified of underuse relative to the Transitional Diversion Limit (TDL) of 375GL/year across the Murrumbidgee, NSW & Vic Murray, and Goulburn SDL resource units.

The causes of underusage remain poorly understood – however, water users dispute claims that it is simply a result of irrigator behaviour. Irrigator behaviour is driven by a number of factors, most significantly, the rules and policies determining how they can operate.

Given that a trend of underuse has been identified, NSWIC and other stakeholders have called on Government to undertake work on policy responses to stimulate water usage up to the SDL

in areas where underusage has been identified as a persistent problem. Water users have called for a trigger point to be developed at which point 'stimulus' measures would apply, to provide the certainty to water users that the issue will be addressed. The proposed trigger point for underusage has been advocated for as the same as the over-usage non-compliance threshold.

Water users are also concerned that modelling improvements are locking away underused water. There is a delicate balance between updates to incorporate the best available information, and facilitating certainty. Given the premise of the Basin Plan is water recovery to meet the SDLs, it is vitally important that what occurred before and after the model updates is clear (and documented), as this has material impacts on allowed levels of use. This is necessary to ensure confidence and transparency, but also to ensure material impacts are not inadvertently resulting.

Furthermore, the complexity of water resource accounting and modelling – often referred to as the 'black box' - also adds to concerns around transparency. Whilst this complexity is of course necessary to some extent, communication to simplify the processes would be useful.

Water users consider underusage to be an urgent priority issue given this is lost opportunity for production at a time of extreme water shortages. The approach by governments has largely been complacency, and commitments only to monitor issues into the future. This does not reflect the urgency and concerns of water users.

Findings:
Water resource accounting lacks transparency, which is heightened by the complexity of systems/processes.

Underusage is a significant problem, which is presently poorly understood, poorly accounted, and lacks policy mechanism to facilitate improvements.

Recommendations:
Governments should develop (1) underusage triggers points (based on overusage trigger points for non-compliance) and (2) stimulus policy mechanisms which come into place when trigger points are reached.

Metering & Measuring

It is the position of NSWIC that all water must be metered. Put simply - if it can't be measured, it can't be managed.

In NSW metering and measuring has changed significantly in recent times, brought on in the new *NSW Non-Urban Metering Framework*[16]. These changes will result in an incredibly high standard of metering, which will be not only the highest in Australia, but the highest in the world. Manufacturers around the world had not yet developed products that met such specifications – clear evidence that this is a world-leading reform.

Through the NSW Healthy Floodplains Project, floodplain harvesting take will also be subject to strict metering requirements, as outlined in the Floodplain Harvesting Measurement Policy[17]. NSW will be the first state in Australia to require metering for floodplain harvesting, and this has been welcomed by industry across the State.

Further areas of improvement would include improving consistency between jurisdictions. This was highlighted in the 2017 Commission of Inquiry:

[16] https://www.industry.nsw.gov.au/water/metering/overview-of-the-non-urban-water-metering-framework
[17] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0005/317093/floodplain-harvesting-measurement-policy.pdf

"However, the assessment of progress against the NWI (and related documents) has highlighted areas for improvement specifically relating to implementation of national frameworks for non-urban water metering, and compliance and enforcement systems for water resource management."

This was again recently highlighted by the ACCC in the Draft Report into Murray Darling Basin Water Markets:

"Without adequate and consistent metering across the Basin, it is not possible to maintain an effective compliance and enforcement regime"

Metering is critically important to the irrigation industry, as high metering standards are needed to rebuild social licence, trust and confidence by the general public. Particularly in multi-jurisdictional river basins, consistency between states is essential to facilitate cooperation, ensure equity that the same standards apply, and to prevent confusion or misunderstandings. All state jurisdictions should follow the lead of NSW, and improve their metering standards with consistency to align with the NWI intentions.

Findings:
Metering and measuring in NSW has improved significantly in recent times, with ongoing reforms. These new metering standards are recognised as world-leading.

Recommendations:
Improvements to metering and measurements in other jurisdictions are required to have consistently high standards for metering and measurement nationally.

(vi) Urban Water Reform

NWI Components:
Clauses 90 to 92.

NSWIC acknowledges the importance of urban water reform, but will focus on the rural water reform components of this inquiry.

(vii) Community Partnerships and Adjustment

NWI Components:
Clauses 93 to 97.

NSWIC is of the firm position that this component of the NWI has been undeniably poor in implementation, to the extent that it has not been realised.

Water users persistently report feeling left out of decision-making. Consultation occurs too late in the policy development process, at which point decisions have already been made, and consultation is thus tokenistic. Stakeholders feel that consultation is not genuine, as there is often an absence of appetite for changes arising from the consultation, and that the information presented is 'for information only'.

Water users have reported that agency staff are often reluctant to engage with them, which has created a non-constructive culture of fear and defensiveness in agency engagement approaches. This reluctance has notably been heightened since the Four Corners episode 'Pumped'. In the 'Matthews Inquiry' which followed, it was noted in the Final Report that:

"The department's unfortunate experience of the Four Corners program should not be allowed to drive a passive 'listening' agenda only."[18]

"The exclusive and somewhat private consultation forum for selected irrigator interests presented in the Four Corners program may not have been appropriate, but that is no reason for the department to be hesitant about close consultation with irrigator groups in the future. Indeed, the department has a special obligation to understand the views of irrigators, and irrigators have a right to be heard."[19]

The departure from any significant genuine forms of community partnerships and engagement, is likely the leading contributing factor to the loss of confidence and trust by stakeholders in decision-making.

Whilst the NWI requires Governments and agencies to "engage water users and other stakeholders" and "open and timely consultation with stakeholders", this is not detailed or defined. The performance indicators should include the satisfaction of stakeholders that they were appropriately involved in the process, and the actual degree of change to address stakeholder concerns resulting from consultation.

Clause 97, relating to addressing adjustment issues for entitlement holders and communities, has also not been implemented, or been highly limited at best. The experience of water users and communities through the Basin Plan, for example, has been very poor. The *Independent Assessment of Social and Economic Conditions in the Basin* Draft Report sheds light on this, including:

"In previously vibrant communities, volatility, rapid change, and uncertainty are resulting in sharp falls in investment and a loss of confidence. These outcomes have contributed to widespread farm exits, social dislocation, vulnerable supply chains, small town decline, and downstream processors and employers contemplating their future in the Basin."

"The Panel's view is that fundamental reforms with broad national benefits could be at risk if community support for water reforms falls further from where we are now."[20]

Given the reform agenda of the past decade has been driven by water recovery for the environment, there is a firm view that environmental objectives have taken precedence over the social and economic objectives. Whilst environmental objectives are of course fundamentally important, social and economic objectives cannot be left out. NSWIC calls for a recommitment by Governments to genuinely achieving triple bottom line objectives, including specific measures to boost social and economic outcomes.

In NSW, Water Sharing Plans have inadequate social and economic objectives, strategies and performance indicators, and these concerns have been raised by stakeholders through recent public consultation.[21] Concerns were also raised that there is no baseline against which the socio-economic objectives, strategies and performance indicators are assessed. The Monitoring, Evaluation and Reporting (MER) plan submitted to the MDBA covered only environmental monitoring, evaluation and reporting. The NSW DPIE has recognised that *"further work could be done on Part 2, in particular on the economic, social and cultural objectives and performance indicators"*[22] and has committed to a review over the next 12-18 months, with the subsequent development of a new more comprehensive MER. Whilst it is

[18] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0019/131905/Matthews-final-report-NSW-water-management-and-compliance.pdf [P 16].
[19] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0019/131905/Matthews-final-report-NSW-water-management-and-compliance.pdf [P 17].
[20] file:///C:/Users/Policy/Downloads/Panel_Draft_Report_-_Independent_assessment_of_social_and_economic_conditions_in_the_Basin%20(1).pdf [P ix].
[21] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0006/313269/wsp-wrp-community-consultation-what-we-heard.pdf
[22] https://www.industry.nsw.gov.au/__data/assets/pdf_file/0006/313269/wsp-wrp-community-consultation-what-we-heard.pdf [P 6].

pleasing to see these recent commitments to improving socio-economic objectives/indicators, this work is very late in the reform process, and to date remains uncomplete. Additional Commonwealth resources to develop these measures at a national level, and incorporate them into national plans, would be beneficial.

A further issue, particularly relating to the implementation of the Basin Plan, is that timeframes have been unrealistic and not allowed time for communities to adjust to change. Many issues have raised this issue, and recommended flexibility in timeframes to alleviate the hard hits from reforms. However, the Basin Plan timeframes are hard-wired and legislated, with little political appetite to amend the Plan to introduce timeframe flexibility, even though it has been shown to be necessary for socio-economic and environmental outcomes to be properly met.

Findings:
NWI outcomes for community partnership and adjustment have been particularly poorly implemented.

Poor community engagement and stakeholders feeling removed from decision making is a leading contributor to the mistrust and loss of confidence by stakeholders in water management.

Recommendations:
Strengthen the NWI's triple bottom line provisions.

Governments commit to developing new and improved socio-economic objectives and performance indicators, through robust MER programs, to improve understanding of socio-economic impacts of water reforms.

Adopt the recommendations from the Independent Assessment of Social and Economic Conditions in the Basin, particularly regarding finding better wats to effectively engage and empower communities.

In regards to the Basin Plan, amend the Plan to enable flexibility in timeframes (as previously recommended by the Productivity Commission).

(viii) Knowledge and Capacity Building

NWI Components:
Clauses 98 to 101.

Whilst knowledge and capacity building programs are in place, the outcomes are poorly incorporated into policy. Despite water policy being based on the principle of "adaptive management", there is a rigidity and stiffness to policy in being responsive to new knowledge and information, or flexibility during implementation.

NSWIC is highly disappointed by the lack of responsiveness to the more than 45 inquiries and reviews into water management in the Murray Darling Basin since 2012, which have largely provided informed and sensible recommendations for improvements. In particular, the Productivity Commission's last 5-year review of the Basin Plan provided comprehensive and constructive recommendations which were embraced by industry as a roadmap forward to improvements, but the Basin States and the Commonwealth are slow to take them up.

NSWIC firmly supports adaptive management, and recommends that the Commission reinforces its importance through a finding or recommendation to recommit to this principle and improve the way in which it is applied.

Findings:

'Adaptive management' is fundamentally important to water management, but jurisdictions have failed to apply the principle in practice, with a stiffness/rigidity of policy, even when it comes to implementing formal inquiry recommendations. The slow and underwhelming progress by Governments on implementing the constructive recommendations from the Productivity Commission's Five Yearly Assessment of the Basin Plan is an example.

Recommendations:

The Commission to include as a finding and/or recommendation to recommit to commitments for adaptive management.

The Commission to explore opportunities to improve accountability for adaptive management in practice, such as by establishing a board with responsibility for ensuring adaptive management occurs, including auditing, monitoring and driving forward action on the implementation of the recommendations from reviews/inquiries/assessments. This could occur within the Office of the Inspector-General for the Murray Darling Basin.

Conclusion

The NWI has facilitated significant improvements to water management in Australia. This submission has outlined key areas in which:

- The NWI has not been fully implemented, or not implemented as intended; and
- The NWI requires contemporising to continue to have enduring relevance to future water management in Australia.

Overall, jurisdictions have come a long way in implementing the NWI objectives, notably with further work required in some components, as outlined in this submission.

Whilst the NWI remains the blueprint for water reform in Australia, the context for water management has evolved significant since its development, which creates both opportunity and need for a revised contemporary NWI to suit new and emerging water challenges.

The original NWI will remain of fundamental importance to water management in Australia, but it requires reform and renewal to remain relevant and pertinent, and to provide guidance for the adaptive management of Australia's water resources into the future.

Recommendations:
A stakeholder reference group be established to reform the NWI, with broad consultation on provisions to better meet emerging challenges and address the unintended, perverse and unforeseen outcomes from water reform to date.

NSWIC thank the Commission for the opportunity to provide this submission, and is available to provide further information as required.

Kind regards,

NSW Irrigators' Council.