National Irrigators' Council

healthy rivers; healthy communities; food and fibre for Australia and the world

Submission to Productivity Commission Draft Report on National Water Reform

March 2021

National Irrigators' Council

The National Irrigators' Council (NIC) is the national peak body representing irrigators in Australia. The Council supports thirty-two (32) member organisations covering the Murray Darling Basin states, irrigation regions and the major agricultural commodity groups. Council members collectively hold approximately 5,500,000 mega litres of water entitlements.

The Council represents the voice of those involved in irrigated agriculture who produce food and fibre for Australia and significant export income. The total gross value of irrigated agricultural production (GVIAP) in 2017-18 increased to $17.7 billion (up 14%) {Australian Bureau of Statistics}

The sector produces essential food such as milk, fruit, vegetables, rice, grains, sugar, nuts, meat and other commodities such as cotton and wine.

The Council aims to develop projects and policies to ensure the efficiency, viability and sustainability of Australian irrigated agriculture and the security and reliability of water entitlements. The NIC advocates to governments, statutory authorities and other relevant organisations for their adoption.

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Overall comments

The irrigated agriculture sector is a vital industry, providing the food and fibre enjoyed by Australians and makes a critical contribution to our nation's current and future export income. Australia's irrigators are among the most efficient in the world, with efficiency driven by industry innovation and investment assisted in part by government programs.

The 2004 National Water Initiative (NWI) set the foundation for national water reform and provided the governance for water resource management in Australia. The NWI has enabled comprehensive improvement in water management throughout the Murray Darling Basin and Australia more broadly. Importantly, the NWI provides a system that was designed to manage Australia's water resources against the backdrop of climate challenges and continues to do so.

Over the seventeen-year period of the NWI, there have been major achievements. The Productivity Commission found in the 2017 inquiry on national water reform that: *overall, most jurisdictions had made good progress in meeting the objectives and outcomes of the NWI and that the reforms had significantly improved the way water resources are managed and water services delivered, resulting in significant benefits for the community.*

As a result of the Commission's 2017 inquiry, the Australian Government agreed in May 2019 to renew the NWI and has now commenced the process of policy renewal in partnership with state and territory governments. The Commission's 2021 draft report tells us that most jurisdictions have largely achieved their 2004 NWI commitments, while *all except Western Australia and the Northern Territory have enacted legislation to create secure, NWI-consistent water access entitlements for consumptive uses.*

Many NWI key principles have been established, enabling water planning arrangements for all areas of intensive water use, and environmental sustainability has been supported by formal provisions of water for the environment. Water markets have been created, allowing water to be traded to higher-value uses. And while most states and territories are still in the process of implementing non-urban metering policies, water accounting is broadly providing reliable and credible information.

During this time, the irrigated agriculture sector has continued to produce food and fibre while driving water efficiencies with a continued commitment to healthy river systems and a healthy environment.

Water entitlements have become valuable assets and water trading and markets have created a valuable business management tool for the irrigated agriculture sector, providing greater certainty and flexibility for businesses in changing market conditions and during periods of drought. And benefits are emerging from water provision for the environment focused on improved native vegetation and wetland conditions, supporting and protecting rare and threatened biodiversity, supporting the migration and breeding of native fish, waterbirds and frogs.

While these changes have been significant, it was not possible to foresee all the likely consequences of this major reform, nor understand how the context of water availability and management would change.

At the same time of this review of National Water Reform by the Commission, the ACCC has conducted an inquiry into the operation of water markets in the Murray Darling Basin and we currently await that final report. The ACCC noted in the interim report (drawing upon analysis of water market data from 2012 onwards) that the many benefits derived from water trading, including maximising the economic performance of irrigated agriculture, rely on fair and efficient water markets, underpinned by an environmentally healthy river system.

A number of factors come into play which make it timely for this review of the NWI and its effectiveness, to enable it to be sufficiently adaptive, and to examine how it might be modernised and refreshed to provide the right foundation for the future. Importantly, the review provides an opportunity for the broader community to provide their views regarding their experience of the NWI.

We note the Commission will also examine the interaction of water policy with other policy areas such as climate, energy, agriculture, forestry, land use planning and urban development.

NIC seeks to highlight the issues which warrant further discussion. Detail is provided here under the heading Water Planning and Entitlements, and relate to the current provisions of the NWI at paragraph 48, which states:

Water access entitlement holders are to bear the risks of any reduction or less reliable water allocation, under their water access entitlements, arising from reductions to the consumptive pool as a result of:
(i) seasonal or long-term changes in climate; and
(ii) periodic natural events such as bushfires and drought.

NWI Paragraph 49 goes on to say: *The risks of any reduction or less reliable water allocation under a water access entitlement, arising as a result of bona fide improvements in the knowledge of water systems' capacity to sustain particular extraction levels are to be borne by users up to 2014. Risks arising under comprehensive water plans commencing or renewed after 2014 are to be shared over each ten-year period in the following way:*
i) water access entitlement holders to bear the first 3% reduction in water allocation under a water access entitlement;
ii) State/Territory governments and the Commonwealth Government to share one-third and two-thirds respectively reductions in water allocation under water access entitlements of between 3% and 6%; and
iii) State/Territory and Commonwealth governments to equally share reductions in water allocation under water access entitlements greater than 6%.

Most would agree that climate issues were not attracting the same level of attention and scrutiny in 2004 as they are now seventeen years later. With current knowledge, underpinned by science, and the fact that it is broadly accepted that all industries have a role in addressing climate change, **then it should follow that there is equitable distribution of the burden in response to climate change, and any sector that is bearing more than its fair share must be compensated.**

NIC's strong view is that within a renewed NWI against the backdrop of future water decline, there must be equitable distribution of the burden. It is expected that all water users will play a role in delivering efficiencies across the entire system. This will include environmental water (planned and held), river operations, urban water/towns, stock and domestic, irrigation water and extractive industries.

With increased pressures as a result of climate change expected over a 15-20 year outlook, then it would be expected that greater knowledge and further developed technologies will also play a role.

Recommendations and key issues

NIC would like to see the following key points and recommendations made in earlier submissions and reiterated in this submission, and include:

- The impacts of water reform have not been distributed fairly and equitably to date where the productive sector has been called upon to 'do more with less'.
- It will not be an acceptable outcome where entitlement holders are required to solely bear the risk of climate change (as part of the objective to 'rebalance')
- There must be equitable distribution of the burden in response to climate change, with other water users being subject to the same standards of efficiency as the productive sector.
- Recognise that irrigated agriculture producers bear significant risk as part of their business planning in their respective industries, including accounting for present and future risks, whether industry related, trade market impacts and seasonal and climate related factors.
- Restate and embed a genuine triple bottom line outcome as part of water reform.
- Reiterate the Commission's 2017 recommendations regarding recognition that a river environment is more than just flow.
- Recommit to, and embed, complementary, non-flow, measures to improve river systems.
- Ensure water property rights are not diminished by planning processes and that the allocation of risk is appropriately spread.
- Avoid duplication in planning processes and reduce red tape in reporting and monitoring.
- Ensure pricing policies do not result in irrigators paying for broad community benefits including for benefits delivered by irrigation infrastructure which provide for community amenity, recreation and environment.
- Recommit to adaptive management, reinforcing its value and importance, and that it be pursued and firmly embedded in a renewed NWI.
- Embed the commitment to the objective of avoiding third party impacts from water reform.
- Reiterate the recommendations from the 2017 report around management of environmental water including more ground up engagement and to better, more consistent models for whole of catchment management.
- Recognise that allocation decisions are made based on available water, thus they self-adjust to climate variability.
- Support consideration of, and continued research into, impacts of climate change with a view to determining possible actions to equitably ameliorate impacts.
- Reiterate the importance of consultation with industry in implementation of recommendations.
- Recognise that markets have provided an efficient mechanism to rebalance water shares between the consumptive pool and the environment.
- Given the level of concern regarding the practicality of the Australian Standard, recommend:
    - a review of the performance of that standard in terms of its practicality and value.
    - genuine consultation with stakeholders that could assist in identifying alternative arrangements for robust metering.
    - recognise the multiplier effect and benefit from irrigated agriculture in regional development and the economic health of country communities.
- Oppose water buyback (beyond willing sellers) and the need to ensure that any analysis of "least cost" includes full assessment of community impact and benefit rather than simple dollar cost. *(ACCC sub)*
- Reaffirm the commitment to water market information with improved transparency, consistency and timeliness *(ACCC submission)*.
- Restate the justification for government owned Irrigation Infrastructure Operators (IIOs) being more strictly regulated than member owned operators. *(ACCC submission)*
- The need for less regulation in the charging rules applied to IIOs. *(ACCC submission)*

Background

The Commission discusses in the draft report the case for reform, highlighting Australia's experience of droughts in recent years and the impacts for rural and regional communities, towns and cities.

The draft report acknowledges that jurisdictions have made good progress against the reform agenda with most achieving their commitments. With seventeen years of water reform implementation, the Commission discusses the opportunities for improved stewardship of Australia's water resources, based on the following:

- Severe droughts
- Climate change
- Projected population growth and increased demand for water
- Changing community expectations regarding the management of water, including support for greater recognition of the interests of Aboriginal and Torres Strait Islander people and the importance of water for cultural purposes for individuals and communities, and opportunities presented for economic participation.

There are significant pressures placed on the agriculture sector and communities as a result of drought conditions. The prospect of a hotter and drier climate and resultant impacts on the agriculture sector, combined with projected population growth, present significant challenges and risks to the security of Australia's water resources.

Forecasts relating to environmental impacts due to lower than average rainfall into river systems, as well as pressures on towns and cities are well understood. In recent droughts some communities have faced having to transport water into towns.

Australia has always had major climate variability (the most variable in the world) and continues to adapt to these challenges. Extensive water storage capability and irrigation systems have been built to manage this variability and to act as mitigation measures over periods of multi-year droughts. Importantly, this has also underpinned the capacity of irrigating farmers continue to grow food and fibre during those periods for use in our domestic markets and for export. This has also helped manage delivery of water to our towns for consumption and water to the environment.

Planning for extreme events is challenging but NIC views that existing core principles around priority issues, must remain. In the Murray Darling Basin there is a clear hierarchy of priorities with human needs at the top and a series of steps in plans to deal with increasingly severe drought.

NIC's climate change policy recognises the challenges for Australia's productive irrigated agriculture sector posed by climate factors. Farmers have long been at the forefront of leading adaptation and response to drought and climate issues. Australia is able to grow food and fibre in a dry and variable climate because it has built water storage and irrigation infrastructure. Such infrastructure will continue to play a vital role in underpinning food and fibre production as well as ameliorating some impacts of climate change, including through partnerships which deliver water for the environment.

As part of the broader Australian community, the sector is willing to bear its fair share in response to climate change while also responding to the growing global demand for food and fibre. The sector expects to be supported by policies which enable it to play its part in the response to climate change without the risk of perverse outcomes for the sector.

We emphasise NIC's Position Statement which goes on to say (in part):

- *Irrigation is fundamental to sustaining food and fibre production, Australia's farmers continue to be at the forefront of leading adaptation and response to drought and climate change.*
- *NIC recognises the impact of climate change and acknowledges the need for Australia to meet its obligations on carbon emissions reduction.*
- *NIC supports policies which address climate change without putting an unfair burden on agriculture by imposing unreasonable and unsustainable costs or regulatory restrictions.*
- *Adaptation is already occurring across the irrigated agriculture sector through:*
    - *the implementation of more water efficient irrigation systems, resulting in increases in water efficiency and productivity across many industries over the last decade.*
    - *A change in crop types with a shift to more drought tolerant or water efficient varieties and a spatial shift in where crops are grown.*
    - *industry sectors investing in changes in crop management practices and taking up opportunities offered by climate R&D, identifying suitable crop varieties and water use efficiency measures, supporting innovation and resilience in the agriculture sector while maintaining viable industries and much needed regional employment.*
    - *the use of solar powered pumps for crop irrigation.*
    - *reafforestation as carbon sinks which also support ecosystems.*
- *NIC supports amelioration projects, including capital works, to retain more water in storage and to more efficiently deliver water to key environmental assets.*
- *NIC expects equitable distribution of the burden in response to climate change, any sector which is bearing more than its fair share must be compensated.*

Continued research into impacts of climate change on our river systems, supported by technology and scientific evidence in modelling is critical. We do not view that there should be a fundamental change to the NWI to achieve this. If any change is considered it must encompass the principles outlined above – and critically, that burden must be equitably shared.

This view is in recognition that irrigation infrastructure, and potentially new infrastructure, may be able to play a part in planning for changing rainfall patterns and facilitating amelioration of climate change impacts. Policy in this area must acknowledge that there will be negative impacts on the environment from climate change; it will be possible to ameliorate some impacts, but it will not be possible to prevent all impacts on current climate projections.

Irrigators have seen 1 in every 5 litres of previously available irrigation water (1 in 3 in some areas), move from agriculture to the environment. It is a testament to the skill of the irrigated agriculture sector and their commitment to efficiency and productivity that they (assisted by government programs) have increased the value of production.

The ACCC noted in their interim report in the inquiry into water markets in the Murray Darling Basin [1] that: *overall growth in GVIAP has occurred in the context of a significant reduction in the consumptive pool, as recovery of water for the environment has removed up to 30 per cent of the total volume of entitlement on issue in some catchments.*

Irrigated agricultural production is a long-term sustainable job generator for rural communities, generating more direct on farm and off-farm jobs than dry land agriculture and continues to

[1] *ACCC Interim report inquiry into water markets in the Murray Darling Basin, 2020: p 116.*

provide employment in many communities. Water markets enable better productivity and drive efficiency, and fundamentally they are the mechanism which has allowed Government to return water to the environment.

The Bureau of Meteorology estimated which the total volume of water abstractions across Australia during 2018–19 was estimated as 15 100 GL, ten per cent lower than the figure reported for 2017–18. Water abstracted for agricultural use (10 500 GL) accounted for 70 per cent of the total, followed by water abstractions for urban use (3050 GL) at 20 per cent. Water abstractions for both agricultural and urban use declined in comparison to the previous year. Water abstracted for other industrial purposes (1550 GL) accounts for ten per cent of the total water use. [2]

We note expenditure on rural distribution services was over $719 million in 2018-19 where these services contributed to irrigated agriculture production worth $16.4 billion in 2018-19 [3] comprising 27 per cent of total agricultural production.

In 2018-19, the value of entitlements on issue in the southern Murray-Darling Basin was at least $26 billion.[4] In the Murray-Darling Basin, the total volume of held environmental water entitlements in 2018-19 was 4635GL, or 23 per cent of all entitlements on issue [5].

[2] *Bureau of Meteorology, Water in Australia 2018-19*
[3] *Australian Bureau of Statistics*
[4] *Aither, 2020*
[5] *Bureau of Meteorology, 2020: Murray Darling Basin Authority, 2020*

National Water Initiative (NWI) renewal: a refreshed intent

The proposed elements of a renewed agreement are outlined in the draft report as follows:

(a) significantly enhanced elements, and

(b) a new element.

Water resource management

1. Water access entitlement and planning frameworks
2. Water trading and markets
3. Environmental management (a)
4. Aboriginal and Torres Strait Islander people's interests in water (b)
5. System integrity (a)

Water services provision

6. Pricing and institutional arrangements
7. Urban water services
8. New infrastructure development (b)

Supporting arrangements

9. Community engagement, and adjustment
10. Knowledge, capacity and capability building

As noted, the Commission suggests the overarching goal of the NWI remains sound but should be modernised to ensure adaptation to droughts, climate change, projected population growth and increased demand for water, and recognition of the interests of Aboriginal and Torres Strait Islander people and the importance of water for cultural purposes for individuals and communities, and opportunities presented for economic participation.

The draft report sets out under Modernised Objectives **Part A**, a series of Draft Renewal Advice (DRA). NIC seeks to provide comment on the range of objectives described, as follows:

> DRA 3.3: (2)(b) Modernised Objectives: *Includes all sources of water, recognises connectivity between surface and groundwater, and takes into account water quality.*

This is an area where there has been a knowledge gap around the connectivity between groundwater and surface water systems, largely based on the lack of a consistent definition of connectivity. These issues are in development and relate to issues such as the nature of the interaction between the surface water and groundwater resources for the developed state of the resource; the rate at which the interaction is occurring; the timeframe over which the interaction occurs and be quantifiable.[6]

> DRA 3.3 (3): *Suggests statutory water provisions for the environment which are integrated with complementary natural resource management to achieve agreed environmental outcomes.*

NIC strongly agrees here and has long advocated a genuine focus on complementary measures or non-flow measures. The Commission's Five Yearly review of the Basin Plan endorsed the importance of complementary natural resource planning and management frameworks, and NIC continues to emphasise the importance of integration and management

[6] *Murray Darling Basin Authority; Evaluation of the connectivity between surface water and groundwater in the Murray Darling Basin, 2006*

of environmental water and waterways. Further discussion is provided under**: Environmental Management.**

> DRA 3.3: (4) *processes to enable Aboriginal and Torres Strait Islander people to have ongoing influence in water planning and natural resource management that affect Country and access to water consistent with the 2020 National Agreement on Closing the Gap.*

NIC supports the legitimate aspiration of First Nations people in water issues, for cultural, social and economic purposes, and provides further comment under**: Securing Aboriginal and Torres Strait Islander people's interest in water.**

> DRA 3.3: (5) *the capacity to trade water to promote its highest value use within the physical, ecological and social constraints of water systems in an open, transparent water market with a level of regulation that is proportional to the maturity of market development.*

NIC supports this objective and provides further detail under**: Water trading and markets.**

> DRA 3.3: (6) *a system of water metering, measurement and accounting, coupled with effective compliance, that promotes water user and community confidence in the integrity of water management and water markets.*

NIC supports this objective and provides further detail under**: Ensuring the integrity of water resource management.**

> DRA 3.3: (7) *clarity on the assignment of risk arising from future change in the available of water for the consumptive pool and how future adjustments should be managed.*

NIC suggests further interrogation is required on this matter and provides comment under **Water Entitlements and planning**.

Building in Good Governance for a Renewed NWI

The draft report suggests governance arrangements established for the NWI, have been significantly eroded over the years, noting a need for a strengthened governance architecture to ensure confidence in the reform effort.

Draft recommendation 4.1 suggests: *Water ministers should come together periodically to oversee development of a renewed NWI, and to receive, consider and act upon advice that comes out of any periodic review of the agreement* with the National Water Reform providing ongoing collective oversight of the agreement, which would include policy advice and guidance.

NIC would support the role of the National Water Reform Committee to support this objective. However, the National Water Reform Committee must be visible to stakeholders and must include a mechanism, or set of arrangements, to facilitate genuine stakeholder/community engagement. There must be clear roles and responsibilities embedded within a new governance architecture to support the work of a renewed National Water Reform Committee.

Currently, there is no insight into the role and the activity of the National Water Reform Committee. In fact, NIC only became aware of the existence of the National Water Reform Committee (state and federal government agencies) during stakeholder consultation as part of this review.

It is a concern that this Committee appears to operate with no external visibility and little interaction with stakeholders (as with the Basin Officials Committee), making it very difficult for industry and the community to understand any progress on issues and what might be under consideration - if anything.

In addition to the role of Water Ministers coming together periodically to oversee the development of a renewed NWI along with work of the National Water Reform Committee, NIC would like to see strong interaction between the Reform Committee and other water entities. These might include Basin Water Ministers, Basin Officials Committee, ACCC, Bureau of Meteorology, ABARES and Australian Bureau of Statistics.

With the recently established entities like the National Water Grid Authority and the Northern Australia Development Fund, these bodies should also be engaged as a general principle more broadly along with state and local governments.

Water Entitlements and Planning

A key element of this chapter of the draft report focuses on decisions being made to determine if, when and how the balance between environmental and consumptive uses should be reviewed and new objectives set. This is during periods of significant reductions in all water allocated either to consumptive users or the environment. The report suggests which in highly developed systems, a solution might be to identify triggers that indicate the need to rebalance environmental and consumptive uses and reset the objectives from time to time.

This chapter notes: *Reforms to water access entitlements and planning should be maintained and enhanced. Key areas that warrant further attention in a renewed NWI include:*

- *establishing contemporary water plan processes that account for climate change. This should include provisions in water plans to deal with water scarcity arising from drought, including priorities for water sharing and actions relating to meeting critical human and environmental needs. In relatively undeveloped and developing areas, there is an opportunity to set consumptive and environmental shares in ways that manage the risk of future resource reductions. And, in highly developed systems, triggers could be identified that indicate the need to rebalance environmental and consumptive uses and reset the objectives from time to time.*

The draft report goes on to suggest that any rebalancing due to climate change should occur only when there is sufficient evidence to support the change — that is, the benefits of rebalancing are expected to outweigh the costs. The Commission suggests that the need for change could be indicated by either a hydrological or ecological trigger as follows:

- *a hydrological trigger would require independent expert review and assessment of hydrological conditions (streamflows and groundwater levels) on a regular basis, to identify when predefined triggers for reconsidering the balance have been reached. Victoria has a process of this type through 15 year long-term water resource assessments. However, this approach may not reflect the actual ecological outcomes emerging as water availability changes.*
- *an ecological trigger would require ongoing monitoring of long-term environmental outcomes with regular public reporting. Where agreed long-term ecological outcomes are clearly not being achieved, a review would be triggered to identify why. If the investigation indicated that the outcomes observed were a direct result of insufficient water, the water planning process would need to reconsider the balance between environmental and consumptive uses. One key benefit of this approach is that it considers outcomes directly.*

The report suggests that when the 'trigger' is reached, this would set in train a process that includes:

- *reviewing the plan's objectives and outcomes and reaching agreement to either retain or change them based on community engagement and a clear cost-benefit analysis*
- *identifying alternative hydrological options that meet the new objectives and agreed outcomes, and selecting the option that achieves this most cost-effectively*
- *agreeing a mechanism to transition to the new balance.*

The suggested triggers rely on hydrological and ecological triggers and do not account for the needs of the productive sector, equally impacted by climate change. There must be balance in considering the importance of the productive sector to regional communities, and the flow on benefit of food and fibre production. In recognition of the impacts on the sector as a result of water reform, any mechanism recommended for dealing with climate change should not unfairly direct further burden of reduced inflows onto consumptive water users.

NIC is concerned that a system based on identifying triggers, may have the **effect of undermining the principle of a property right – a key foundation of the existing NWI**. As the Commission suggests, in its final report it will be critical careful consideration is given to how this issue is to be addressed.
The Commission rightly observes there needs to be clarity about who bears the risks of any future declines in water availability for consumptive use due to revisions to the balance set in water plans.

We look for the Commission to deliver a strong recommendation providing for **equitable distribution of the burden in response to climate change and that any sector bearing more than its fair share must be compensated.**

Similarly, we expect the Commission to also provide a **strong recommendation around clarifying that interaction between 'rebalancing' and 'triggers' and how the risk provisions would interact with an adopted rebalancing approach.** Clarification and additional guidance is needed on the reference to transitioning to the new balance when rebalancing is required.

There must be clear provisions for assigning risks, with water access entitlement holders continuing to bear the risks to the consumptive pool arising from climate change and periodic natural events [7]. NIC continues to have concerns in this regard and suggests these issues must be clarified. In terms of balance, there is a need to articulate the benefits of water from the consumptive pool directed towards food and fibre production, and the multiplier effects for local communities, regions and nationally.

In this context, we point to the evidence from reviews over recent years around the impacts of loss of water from communities. At the time of the review of the Northern Basin in 2016[8], we noted that the loss of between 25-30 per cent of water had had varying impacts across the Northern Basin, but as the MDBA's own analysis reflected, up to 35 per cent of agricultural jobs had already been lost in some communities. We noted at that time which the estimate was conservative.

Given the overwhelming evidence of socio-economic impact, we advocated that no further water acquisition should occur across the Northern Basin. We noted communities should not be expected to bear further economic and social damage as a consequence of the flawed 'just add water' approach when the recovery of 278GL at that time had cost the Northern Basin $139 million annually in lost farm-gate production. And based on a conservative 3:1 multiplier effect, we estimated this accounted for over $400 million lost to communities in the Northern Basin annually. As we know, the outcome of the review resulted in a 70GL reduction in the water to be taken out of the Northern Basin.

Of concern is the suggestion triggers be identified for periodically rebalancing environmental and consumptive (water) uses, and notes: *a nationally consistent planning, market and regulatory based system of managing surface and groundwater resources for rural, urban and remote use that: includes clear triggers and processes for reviewing the balance between water for the environment and consumptive use, such as in response to the effects of climate change.*

[7] *Intergovernmental Agreement on A National Water Initiative, 2004: paragraph 48*
[8] *Murray Darling Basin Authority, Technical Overview of the Social and Economic Analysis, December 2016*

Information request 6.1: *The Commission seeks feedback on suitable triggers for rebalancing environmental and consumptive share in the context of climate change. What are the advantages and disadvantages of the different approaches?*

The question around so called 'suitable triggers for rebalancing environmental and consumptive share' requires careful consideration and clear accountability frameworks are necessary to guide decisions.

The Commission's suggested adoption of 'triggers' raises significant uncertainty. It is not clear whether potential triggers might be in reference to an ongoing drought event, or whether this is climate related episodic event/s, in other words, during times of extreme dry or extreme wet periods.

NIC is not at all attracted to the idea of 'rebalancing' applying 'triggers'. If this had the effect, for example, of government/s intervening to review priorities in particular climate related events, then questions must be raised regarding impacts on property rights.

In the context of examining 'rebalancing' approaches, then why not consider a 'rebalance' in a situation where agricultural production was below benchmarks due to lack of water resources, resulting in a risk to national food security. A 'rebalance' might similarly be examined during an extended wet period which delivers excessively large amounts of water into systems.

Of concern is the Commission suggesting *'A number of enhancements to the NWI would enable entitlement holders and the environment to better contend with drought within the term of a water plan, and, over the longer term, support adaptation of a water plan to a changing climate*. The report goes on to note three key additions to existing water plan processes to deal with climate change:

- clear and robust provisions to contend with drought
- setting consumptive shares in relatively undeveloped and developing areas
- water plan reviews and changing the balance between consumptive use and environmental use in response to climate change in highly developed systems.

There is a rising trend for total demand for resource, with an increasing reliance on permanent water availability. A more holistic government planning and regulation approach is needed to ensure that changes in demand and use patterns across the Basin are complementary to the Basin's water availability characteristics, and that there is an appropriate balance between annual and permanent plantings.

NIC recommends using existing mechanisms to allocate water rather than redistribution of entitlements themselves.

The productive sector is already bound by water sharing plans which are designed to enable adjustment, providing transparency in the way the plans are designed. And while recognising that each state has a different system of allocations, the existing allocation system is structured in such a way that it is able to respond through times of drought when there is water shortage.

To date, the impacts of water reform have not been distributed fairly and equitably. The productive sector has been called upon to 'do more with less' and it is fair to suggest that other water users have not been subject to the same standards of efficiency.

As part of the Commission's suggested 'rebalancing' approach in the context of forecasts of reduced water availability, and with the objective of achieving fairness, NIC's view is that the whole system must be comprehensively examined to find opportunities for water efficiencies. This will require innovative thinking and may also necessitate the current regulatory framework being adapted to accommodate such new approaches.

The system must be managed in a more holistic way; that is, managing water across the whole system to meet all system needs and demands, not as separate parcels of water.

All water users must play a role in delivering efficiencies across the entire system. This will include environmental water (planned and held), river operations, urban water/town water, stock and domestic, irrigation water and extractive industries. All parts of the system must share the burden of climate change and the resultant pressures on the system.

There may be a case to examine the issue of underuse in the system to understand whether this element of reform is now fit for purpose. Reforms are enabling water to (rightly) be put aside, for farmers to manage risks in the system. Over time this can result in a lack of supply in the system and there may be a better, and more efficient, way to ensure that there is plentiful supply in the system.

During periods of high rainfall and where irrigation businesses have a wet year allocations policy, there may be opportunity for consumptive users to extract more water in valleys that have historic underuse. This could be applied as long as it did not compromise other entitlement holders.

Carryover is an important part of enabling better planning for farm operations, however, there are concerns that enable investors to purchase allocation and carryover water, and whether or not that is being sold to a producer or utilised for crop production in a timely manner. Whether for instance, carryover is held to increase its value and show an annual capital increase for a fund manager when perhaps it should have been made available for consumption.

In our submission to the ACCC, we acknowledged these concerns. Restrictions on ownership would cause negative impacts for irrigating businesses including those relying on allocations, unintended consequences and potentially costly compensation. We suggested there was a need to identify whether there was any anti-competitive behaviour or evidence of market manipulation.

While carryover is valued by most irrigators, there may be a case to examine its increasing use and unintended consequences on overall supply.

A well-balanced system must have the capacity to avoid shocks during periods of prolonged drought. The federal Government's Water for Fodder program in 2019 produced 40 gigalitres of water from the Adelaide Desalination Plant to supply farmers in the southern connected Murray Darling Basin to grow fodder and pasture to keep stock alive during drought. This was not palatable to all users, though it assisted fodder growers at a critical time. If a system is well-balanced system, these situations should be avoided.

As discussed in this submission under Urban Water, it is important that urban supply is examined to identify opportunities to achieve multiple benefits. This will involve local government playing

a substantial role in identifying opportunities for recycling, harnessing waste- water and storm water, and in some cases, desalination.

It will not be an acceptable outcome that entitlement holders are required to bear the risk of climate change. As noted in earlier submissions, there must be a process to ensure that water property rights are not diminished by planning processes and that the allocation of risk is appropriately and proportionately spread.

Irrigated agriculture producers acknowledge the challenges around the prospect of a drier climate with lower inflows in the future. This includes challenges for many agriculture and processing industries with the usual flow on impacts on the broader agriculture sector and communities.

However, agriculture industries already bear significant risk as part of their usual business planning in their respective farming operations and industries. This includes accounting for present and future risks, whether industry related, trade market impacts and seasonal and climate related factors.

As highlighted in earlier submissions, the sector expects to be supported by policies to enable it to play its part in the response to climate change without the risk of perverse outcomes for the sector.

NIC has frequently pointed to the fact that the success of agricultural businesses depends on the capacity of the sector to continue to innovate and adapt, using best practice to manage climatic risks and securing investment for the future. This includes the uptake of opportunities presented for the sector's participation in carbon markets to contribute to Australia's emissions reduction goals and investing in new technologies.

Water trading and markets

NIC provided a full submission to the ACCC inquiry into water markets in the Murray Darling Basin, emphasising our strong support for the water market overall, for the benefits it has brought in increasing the value of agricultural production in the Murray Darling Basin, in creating a secure property right and in achieving the overall goal of allowing water to go to the highest value use.

We welcomed the conclusion in the ACCC interim report, acknowledging the benefit the market has produced as well as some of the deficiencies caused by complexity and lack of transparency. As we await the final report of the ACCC, we suggest however, that while there are areas which need improvement, any flaws that might be identified, should not outweigh the benefits of having water markets and the capacity to transfer allocation and entitlement to its highest value use.

We also highlighted in our ACCC submission that separating land and water and creating markets had a direct benefit to the irrigated agriculture sector; it made water entitlements a property right which gave a level of security to irrigators that was not previously available.

The protection and enhancement of the property right attached to water is a key principle. Changes in crops grown are driven by the return producers receive at the farm gate. Commodity prices, market access and input costs impact these decisions. Water markets facilitate change by allowing water to be moved (within physical constraints) to its highest value use.

However, the ideal should be to maintain a rich diversity of commodities in production across regions with a mix of annual and permanent crops. This also fits with Australia's aspiration to be part of the global demand for food and fibre when the world population is forecast to exceed 9 billion by 2050. It is also important that any perverse outcomes are avoided that might cause a substantial investment shift from communities.

Water markets have enabled inflow of capital and have enhanced the value of irrigated agriculture. This has had positive impacts overall but negative impacts in some regional areas, mostly reflecting the economic returns for water use (as measured at the farm gate). **Markets have provided an efficient mechanism to rebalance water shares between consumptive pool and the environmen**t.

The Commission's draft report notes the possible uses of revenue from environmental water trading. One of those is described as: *works and measures that enable best use of environmental water or extend environmental water outcomes.* We suggest this should link with our recommendation and points made on the issue of complementary, or non-flow, measures under **Environmental Management** in this submission.

Overall, NIC's view is that the water market is probably doing exactly the job it was intended to do. We support the goals around harmonisation of water registers, the aim to have ease of transaction for participants in the water market and greater transparency.

There is a principle embedded around 'third party' impacts. It is hard to see many areas of water reform where third party impacts have been extensively considered or ameliorated.

Despite the very positive elements of the market (outlined in more detail in the ACCC submission), it is undeniable that there have been third party impacts. It is reasonable to

suggest governments are not responsible for people or businesses which lose money due to decisions they have made regarding participation in a market. However, there is a broader question about impacts on communities and regions when there are large transfers of entitlement or allocation from areas where they used to be used for production to growth areas.

The highest profile example of this is the movement of water from dairy to nuts. The water entitlement and allocation which has moved to areas like Mildura has grown jobs and economic activity in that area. That community is an undoubted winner from the water market, though it would be reasonable to say that some, predominantly dairy communities up-river, have not fared as well. And although individual water owners have made decisions which might have benefited them, there has been third party impact on the community.

Similarly, changes to demand driven by growth in some crops do impact price and that has an impact on the viability of other producers.

How the principles of the NWI intergovernmental agreement could practically reflect this third-party impact is debateable. The point here is that if the agreement is to talk about avoiding third party impacts, it must prompt greater consideration by government about how to actually do that in a way which reflects the fact that impacts are broader than were perhaps originally envisaged in 2004.

Environmental Management

The Commission's draft renewal advice 8.2 Integrated Management is encouraging. This suggests that the management of environmental water should be integrated with complementary waterway management at the local level by ensuring that consistent management objectives govern both the use of environmental water and complementary waterway management activities.

The 2017 review made some well-considered and positive recommendations around management of environmental water, the need for ground up input and institutional arrangements. Section 5.3 of that report included some detail around this, building on the comment that *"in the Commission's view, the problem is that the legislative, institutional and policy frameworks in most states and territories do not facilitate the integrated management of environmental water and waterways"* [9].

That report made recommendations which NIC strongly supported. These included recommendations 5.2 to 5.5 on environmental water planning and management. Those recommendations emphasised the need for planning to be devolved as far as possible to a ground up model. They reflected the need for better management models, putting forward Victorian CMAs as a positive example, and the need to plan as far as possible for environmental water to have broader benefit.

This and other reviews have made recommendations about improving the effectiveness of the use of environmental water and better demonstrating the benefits to build community support.

It is reasonable to acknowledge that we are seeing a gradual improvement in the effectiveness of use of environmental water to deliver environmental benefits. This is coming from managers gaining greater experience about interaction with other factors, better knowledge on timing etc.

A discussion is necessary about what actual real outcomes are sought and achievable in the use of environmental water, and the results of that watering, as opposed to a simple giga litre volume amount.

Disappointingly, the recommendations made in the Commission's 2017 Five-year review of the Basin Plan (most of which were strongly supported) have seen little or no obvious action.

Similarly, section 5.5 in the report dealing with improving monitoring, evaluation, reporting and adaptive management [10] leading to recommendation 5.6. This section deals extensively with a point NIC has made repeatedly in many submissions to almost every review – and again in this one – and that is, the need to focus on environmental outcomes not just flow measurement.

There is little visibility to date that these recommendations and actions are in development and/or under implementation. NIC has raised these issues over many years with key water and environment agencies as well as directly with federal Government Water, Agriculture and Environment Ministers.

We acknowledge and appreciate that in the 2017 Basin Plan Five-year review, the Commission endorsed the importance of complementary natural resource planning and management

[9] *Productivity Commission, 2017, page 151*
[10] *Productivity Commission, 2017, p 168*

frameworks, and NIC continues to emphasise the importance of integration and management of environmental water and waterways.

The Commission is aware of NIC's advocacy over many years for a genuine focus on the development of complementary, or non-flow, measures to deliver the best environmental outcomes. The Commission itself has recognised that **providing water in itself is not necessarily enough to secure environmental outcomes.** Environmental water provisions can help achieve flow regimes and extraction rates which better reflect ecological need.

The reference to a 'flow' must be seen as an input and not an outcome, where **'flow targets' cannot be described as delivering environmental outcomes.** Achieving these outcomes should not be simply a matter of ticking off flow targets. We have argued that greater innovation and imagination is needed in the effort to support river systems and to deliver environmental benefits more broadly.

In the context of the Basin Plan implementation, and as part of the response to the Northern Basin Review, there is under consideration by the Australian Government, a suite of Toolkit measures put forward by the NSW and Queensland Governments. Some of these measures include environmental works and measures to promote fish movement and habitat including fish way construction and cold water pollution.

There has been a significant lead time on getting these measures underway but NIC would hope that in time they might provide an example of the on-the-ground impact of such measures.

Pleasingly, many review recommendations in recent years are reflecting this direction, including the Commission itself through a number of reviews, including the Five-year review of the Murray Darling Basin Plan in 2019 and the Sefton review examining the social and economic conditions in the Basin.

Complementary measures might include projects designed to improve the river environment by enhancing conditions for native fish, improving riparian zones and tackling weeds and feral animals.

NIC's submissions over many years recommend a suite of complementary measures focused on:

- Projects to improve fish migration which might involve small local projects including removal of obsolete infrastructure; installation of fish ways and improvements to weirs;
- Appropriate management of cold water pollution (larger scale capital works projects)
- Restoration of native fish habitat with river improvements (including things like re-snagging) and enhancement and development of native fish hatcheries;
- Feral animal control in wetlands along the system including Narran Lakes, Gwydir Wetlands and Macquarie Marshes (with feral pigs a high priority);
- Riparian land management, and
- Weed eradication; projects which might involve local community – eg through Landcare groups.

Complementary, or non-flow, measures would be designed to support the best environmental outcomes. The Commission has previously recognised that providing water *in itself is not necessarily enough to secure environmental outcomes. Environmental water provisions can help achieve flow regimes and extraction rates that better reflect ecological need.*

NIC strongly supports the Commission's draft renewal advice 8.12 **committing to adaptive management.** The advice suggested that in planned environmental water systems, state and territory governments should:

- establish mechanisms to ensure that adaptive management is implemented consistently and explicitly in practice, and
- ensure that adequate monitoring, evaluation and reporting efforts on agreed environmental outcomes, and report openly about instances where these outcomes are not achieved.

This reflects the Commission's earlier review and recommendations. As NIC has frequently noted, a desire for 'adaptive management' is expressed throughout water reform documentation, including the NWI and the Basin Plan. Unfortunately, the reality is that processes seem to be restrictively bound by targets either set in legislation or resulting from a complete lack of trust.

To date there has been a lack of visibility and/or reference around the principle of 'adaptive management'. This covers a range of issues around the provisions of third-party impacts and the need for 'mutual agreement' for changes which impact access (and therefore reliability) and the need to consider broader socio-economic impacts to either avoid impacts or address 'adjustment' issues.

NIC is extremely frustrated with the failure to implement sensible recommendations from previous inquiries around environmental water and catchment management; measurement and monitoring of outcomes, adaptive management and the very slow progress on acknowledging that complementary measures are critical for the health of the river system.

We would like to see the Commission make a strong recommendation around the principle of 'adaptive management', reinforcing its importance and value, and embedded and implemented as part of genuine water reform.

We see this most clearly in the ability to consider environmental outcomes - rather than simply flow targets - and in the Basin Plan with the lack of flexibility around the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) projects and methods of achieving 'Schedule 5' environmental outcomes.

As systems and partnerships mature and evolve, and as water managers gain greater experience and knowledge about interaction with other factors, there is opportunity to use the whole water system in a more imaginative way with greater cooperation between Commonwealth Environmental Water and industry. We are seeing a gradual improvement in the effectiveness of the use of environmental water to achieve positive outcomes.

There are valuable examples of the benefit of partnerships between Commonwealth and state water owners with industry, demonstrating very practical approaches when industry and the environment come together.

The agreement between Renmark Irrigation Trust and the Commonwealth Environmental Water Holder (CEWH) initiated in 2016 is an example of mutually beneficial arrangements which may become more common across the Murray Darling Basin. Under the agreement, water is typically delivered to the environment during the irrigation off-season, helping to maintain irrigation infrastructure, flush pipes and reduce water delivery costs for irrigators.

The partnership enables the delivery of environmental water through private infrastructure in an efficient manner, to places it may not otherwise be able to access, while irrigators receive income through water delivery charges for the use of their infrastructure. Areas which benefit from the partnership delivering environmental water help to boost the health of floodplains, support native vegetation such as river red gum and black box trees which provide habitat for native fauna and threatened species.

There are similar arrangements in place with private irrigator groups across the southern Murray Darling Basin where environmental water is delivered under a mutually agreed schedule, typically during the irrigation off-season.

It is important that environmental assets are protected and supported. NIC supports amelioration projects, including capital works, to retain more water in storage and to more efficiently deliver water to key environmental assets.

Securing Aboriginal and Torres Strait Islander people's interest in water

NIC has long supported the legitimate aspiration of First Nations people in water issues and how they might seek to manage water for cultural, social and economic purposes. Economic purposes might be participation in productive agriculture and other industries, underpinned by skills and training to provide jobs in communities.

It is important that Aboriginal and Torres Strait Islander communities are able to articulate their aspirations so that opportunities might be identified for collaborative partnerships with broader systems users, including urban water and environmental water.

The NWI recognises the cultural water needs of Aboriginal and Torres Strait Islander Australians as a key feature. The NWI has not specifically addressed the provision of water for economic development, though since the final report of the Commission in 2018, this has been a greater focus. However, like all productive water users, the NWI enables Aboriginal and Torres Strait Islander Australians to engage in the water market to buy trade water rights.

We also note the Commission's 2018 finding that where state and territory governments provide access to water for Indigenous economic development, they source water within existing water entitlement frameworks, such as by purchasing water on the market or as part of transparent processes for releasing unallocated water. NIC noted the allocation of funding by the Federal Government for the acquisition of water in the Murray Darling Basin. It would be a perverse outcome if Government funding had an effect on the market by increasing demand and price for all users.

The Commission's Finding 9.1 in the draft report suggests there is more to do to include Traditional Owners' interests in water in jurisdictional planning and the management of water, acknowledging the slow progress against commitments made in the 2004 National Water Initiative, and against the current context of the National Agreement on Closing the Gap and wide support for action.

Draft Renewal Advice 9.1 focusing on a new co-design element suggests – *a renewed NWI should include both an objective and new element dedicated to Aboriginal and Torres Strait Islander people's access to water and the involvement and participation of Aboriginal and Torres Strait Islander people in water management. The Commission supports the establishment of the Committee on Aboriginal Water Interests to develop the new NWI element, to:*

- *Ensure alignment between commitments under the National Agreement on Closing the Gap and new NWI content*
- *Have a terms of reference that allows for an advisory role to the Coalition of Peaks*
- *Report directly to water ministers.*

NIC's earlier submission did not seek to provide advice on the most appropriate structure or mechanism to progress these aspirations, however we note the draft report suggests a Committee on Aboriginal Water Interests be established, with the Commission suggesting (9.3) that the *Committee on Aboriginal Water Interests could consider content that ensures that, where state and territory Governments have decided that providing access to water is an effective way to support the economic development of Aboriginal and Torres Strait Islander communities, access is provided by:*

- *Sourcing water within existing water entitlement frameworks, such as by purchasing water on the market or as part of transparent processes for assigning unallocated water.*

- *Ensuring adequate supporting arrangements (such as training and business development) are in place to enable Aboriginal and Torres Strait Islander communities to maximise the value of the resource for their needs and uses.*
- *Actively involving Aboriginal and Torres Strait Islander communities in program design.*

NIC recognises Aboriginal and Torres Strait Islander communities must have a role in determining the most appropriate structure to facilitate the aspiration to own and manage water for the benefit of their communities. Whatever the body or structure, it will important that it is designed to interact with key agencies such as the National Water Reform Committee, the MDBA, the Bureau of Meteorology, and state and federal Water Ministers.

In supporting this approach, NIC highlights that existing property rights should be maintained. NIC supports the approach to use existing frameworks, that cultural objectives are explicitly identified and provided for in water plans, and that First Nations' monitoring and reporting obligations mirror those of other entitlement holders.

NIC supports natural resource managers incorporating cultural objectives into river and wetland plans, as far as possible, and this to be done in conjunction with Traditional Owners on the ground, community by community and region by region.

Ensuring the integrity of water resource management

The draft report notes the aim to have: *A system of water metering, measurement and accounting, coupled with effective compliance, that promotes water user and community confidence in the integrity of water management and water markets.*

NIC highlighted in our submission to the ACCC that compliance is a key factor in maintaining market confidence as well as in building community trust around water users. NIC has provided strong commentary over several years where there has been major progress in better resourcing of compliance activity, metering policies and in moving NSW floodplain harvesting from a property right to a fully measured volumetric entitlement consistent with the broader system.

We welcome this progress and support continuing implementation. NIC recommended that the final ACCC report should make it clear that strong progress has been made and that full implementation of the various state and national metering arrangements should be allowed to continue to conclusion, following which it might then be appropriate to review and assess outcomes.

The NWI agreement deals with compliance and monitoring in sections 87 to 89 [11]. The principles are clear but are in reasonably general terms, and given the very different systems across Australia, this remains appropriate.

It is recognised that the standard for compliance, metering and monitoring is higher in a system like the Murray Darling Basin than it would be in some smaller irrigation areas, such as some coastal rivers, where the irrigation take is generally supplementary and relatively small scale. The fact that non-Murray Darling Basin jurisdictions are at various stages in metering implementation has been raised by other stakeholders regarding lack of compliance with national metering standards.

We note for example, Western Australia approved meters do not have to comply with Australian Standard 4747 and in Tasmania there is no reporting on metering, so it is unclear if metering standards are being enforced. [12]

The Commission's 2017 review noted significant progress on metering and compliance. Since that time there have been further significant reforms in compliance and metering standards, across the Murray Darling Basin states in particular.

Consistent with the position we have taken on a range of reviews, NIC would suggest that no further reform is needed until implementation of the current processes is completed.

Irrigators strongly support accurate metering and compliance regimes, and NIC is on the record as having zero tolerance for water theft. The industry has actively engaged with government in seeking practical standards for rollout of new metering standards.

Many of these points were dealt with in more detail in the Commission's Five-year Review of the Murray Darling Basin Plan. NIC's concerns raised previously around practicality of some of the standards and timetables, remain. In our submissions to the Commission's Five-year Review we raised concerns about the practicality of the Australian Standard and the fact that it simply could not be met in a range of situations.

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[11] *Intergovernmental Agreement on a National Water Initiative, 2004*
[12] *Irrigation Australia Ltd, submission p 3 p 7*

The Commission agreed with that view and included in the Five-year review, recommendation 12.2 which said: *Basin States should consider the role, costs and benefits of consistent metering policies including the role of metering standards. Basin Governments should work with Standards Australia to formally revise standards to ensure quality and cost effectiveness in water measurement. The new metering implementation plans being developed by Basin States should be supported by publicly available business cases.*[13]

NIC supported this recommendation and urged authorities to consult industry and manufacturers to ensure it was practical.

Irrigators' concerns remain, that in some jurisdictions, targets are not practical and that, even with all the best will in the world, some cannot be met. NIC members also have concerns about differences in criteria in different states (as noted) and the implications that has for practical issues like training sufficient accredited installers.

Irrigators support standards which require accurate meters with telemetric capability, however issues remain with irrigators being able to access meters for high volume uses that comply.

Given the level of concern regarding the practicality of the Australian Standard we recommend:

- **a review of the performance of that standard in terms of its practicality and value**
- **genuine consultation with stakeholders which could assist in identifying alternative arrangements for robust metering.**

NIC was advised (informally) that Government agencies had reviewed the Standard. We have not been aware of any public consultation nor have we seen anything to detail changes or even consultation with manufacturers. This 'in house' approach involving government agencies is completely unsatisfactory.

It would be reasonable for this review to:

- acknowledge the significant progress which is being made in metering and monitoring.
- acknowledge that the irrigation industry has demonstrated a strong commitment to accurate metering and support for compliance.
- reinforce the point made in the 2017 review that "arrangements are commensurate with the risks to the integrity of the water entitlements and planning frameworks they seek to address, and that they are subject to scrutiny through standard regulatory and economic review processes"[14]
- make a strong point that achieving the highest possible standards in metering requires genuine consultation and engagement with users and manufactures to ensure standards and targets are practical and effective.

[13] *Productivity Commission Report: Five Yearly Assessment, Murray Darling Basin Plan, 2018, p 312*
[14] *Productivity Commission, 2017, p 289*

Urban Water Services

NIC broadly supports the points made in draft renewal advice 11.1 – 11.8. These focus on updating and embedding National Water Urban Planning Principles in the NWI, subjecting all urban water service providers to monitoring and reporting, including principles for governance of regional and remote water services where local governments retain ownership of utilities and monitoring and reporting on water quality and service outcomes in remote Aboriginal and Torres Strait Islander communities.

Recommendation 13 of the Sefton report said: *The Australian, state and local governments should improve the water security of Basin towns and cities (including First Nations communities) by focusing on better supply and demand forecasting and planning; non-rainfall based supply options; a full assessment of costs, benefits, risks and uncertainties; and adequate provision of required water supply.*

As part of this effort, the Australian, state and local governments should work with town water suppliers to develop regional pilot programs for alternative urban supply sources, including indirect potable reuse.

As noted earlier, NIC would support opportunities for alternative urban supply sources with local government and industry playing a role. Examples might include (as suggested) harnessing waste-water and storm water and examining opportunities for desalination. This should occur in conjunction with local government leading the commitment to water restrictions inside and outside periods of drought, accompanied by investment in behavioural change to reduce urban water consumption.

We expect that the National Water Grid Authority would find opportunities to work strategically with regions where there are towns with at risk water supply, to support those towns to secure their requirements. This could be embedded as part of a region's broader planning objectives and in this context, local government must play a key role along with agriculture industries and local/regional business enterprise organisations.

Larger towns that are known to have secure water supply may be granted permission to sell water through a special purpose access licence. It is also important that local planning extends to stormwater being managed in such a way that keeps water in the landscape. This will contribute to urban amenity, create urban habitat, improve the health of rivers and wetlands, reduce localised flooding and/or provide alternative sources of water supply.

Water reform in rural Australia

Chapter 12 of the report discusses how a renewed National Water Initiative would address adjustment issues, and ...*guiding principles in a renewed NWI would clarify how governments can best respond to any significant adjustment pressures faced by rural communities as a result of reform-induced reductions in water availability.*

These should point first to the generally available measures that target the welfare and skills of individuals, and to regional development planning to leverage community-level capabilities and competitive advantages. These are usually the best responses to adjustment pressures. Where specific assistance is warranted, governments should support change by focusing any direct assistance on building adaptive capacity in affected communities and securing employment or business opportunities for the most vulnerable individuals.

NIC highlighted in our earlier submission areas of the original agreement which we felt were not addressed. Included here was the importance of avoiding broader socio-economic impacts (which might result in adjustment measures). This relates to examining and acknowledging the role of productive agriculture and the multiplier benefits. The focus should not be solely on the $ per mega litre value (from an economist's perspective) but rather a focus on securing overall value in communities.

We have previously noted that the record to date in addressing adjustment issues, via the Basin Plan experience, has been mixed and in cases where recovery has been primarily through buyback has been very poor.

The Sefton independent panel report in 2020 confirmed the very patchy and, as a result, often unsuccessful impact of structural adjustment programs in regional areas. This is not solely an issue about water reform, but rather more fundamentally an issue about the effectiveness and consistency of regional development programs.

The 2004 NWI agreement (rightly) appears to emphasise avoiding negative impacts as the first priority. *The Parties agree to address significant adjustment issues affecting water access entitlement holders and communities that may arise from reductions in water availability as a result of implementing the reforms proposed in this Agreement*.

This agreement is not going to solve the problems caused by regional development policies which fail to focus on developing the long term sustainable economic base of regions, although this is a vital issue. NIC would rather that a renewed NWI, and subsequent implementation, recognise more fully the multiplier benefits of irrigated agriculture for communities. There is a broader question about the effectiveness of adjustment and regional development programs.

Irrigated agriculture is generally more intensive than dry land agriculture; it produces more jobs on farm and greater flow on benefits off farm. This in no way denigrates the vital contribution of dry land agriculture in regional areas. However, a renewed NWI should recognise the greater benefit and multiplier effect from irrigated agriculture. This could be considered in the negative where water is removed from production - and in the positive in estimating flow on benefits to communities from expanded irrigation activity.

The Sefton panel noted: *Funding to support Basin regions and towns impacted by Basin water reforms must be used to build industries that provide long term jobs and income for communities. Regional development or adjustment programs must be community driven, long*

term and consistently supported over several terms of governments. The Panel also recognises that the economic development programs may have limited scope, especially in small towns. Some towns exist almost solely for irrigation and lack other competitive advantages to make them attractive.

Adjustment measures should rightly align with regional development planning and priorities, for example, building on existing industry as well as through community level capability, and identifying competitive advantage. There may be a case for specific industry support as in the past, underpinned by a cost benefit analysis. Any support must be able to demonstrate sustainable benefits.

In terms of providing grant program funding, it would be preferable to consider supporting industries by way of research, development and extension and platforms to support commodity market development and in doing so, leverage existing industry capability. In working through these issues, it will be critical to undertake comprehensive community consultation to fully understand economic drivers in a particular community and/or region.

NIC maintains that NWI principles should be broader to recognise that regional development objectives are a very legitimate aim for government and that irrigation provides one of the few ways a project can be funded that produces ongoing economic activity and jobs.

NIC would like to see better embedded in NWI principles, greater recognition of the multiplier effect and benefit from irrigated agriculture in regional development and the economic health of country communities.

We note that Productivity Commission reports have questioned whether government investment has met NWI principles regarding investment in new projects.

There must be transparent cost benefit analysis prior to any government funding being committed, including where any infrastructure funded or financed by governments is viable and sustainable, to meet public expectation.

Irrigated Agriculture in Australia

Irrigated agriculture farmers in Australia, producing food and fibre, perform a vital role feeding and clothing Australians and the world, making a major contribution to the social and economic wellbeing of many rural communities and to the national economy.

Irrigators operate in all states of Australia producing a variety of fresh and bulk foods and other commodities. Major irrigated foods include fruit and vegetables, dairy products, nuts, rice, fruit juice, wine, sugar, cereal grains and sheep and beef cattle. Sustainable irrigation is the key that has made the Australian cotton industry, for example, a global leader and a highly sought after product.

In 2017-18, total Gross Value of Irrigated Agricultural Production (GVIAP) increased to $17.7 billion (up 14%).[15]

The four commodities with the highest GVIAP were:

- Fruit and nuts (excluding grapes) at $4.2 billion (up 20%)
- Vegetables at $3.4 billion (up 3%)
- Cotton at $2.3 billion (up 52%); and
- Dairy products at $2.2 billion (up 37%).

These four commodities in total accounted for 69 per cent of total GVIAP for the 2017-18 year.

The Murray Darling Basin is Australia's most important agricultural region, with irrigated agriculture a key component. The most recent ABS figures show that irrigators grew 36 per cent of the value of production in the Basin, worth more than $8.6 billion in 2017-18. As a wholesale value that number is likely to underestimate the full flow on impact in the communities of the Basin.

Agriculture uses around 70 per cent of the water consumed in Australia per annum and irrigation uses 90 per cent of that.

The increasing demand for irrigated agriculture and the challenge of declining water availability is driving increases in the efficiency of irrigated agriculture. Efficiency is improved through more water-efficient crop varieties, more precise application of water, technology enabling improved farm management practices, irrigation infrastructure and river management.

In terms of the agriculture sector more broadly, ABARES most recent quarterly report [16] notes the *gross value of agricultural production is forecast to reach a record $66 billion in 2020–21, boosted by Australia's second-biggest winter crop on record. Significantly larger harvests in every Australian state are forecast to result in a 59 per cent increase in the gross value of grains, oilseeds and pulses compared with the 2019–20 season. The gross value of livestock production is forecast to fall 8% due to falling slaughter, despite record high prices for cattle and sheep.*

With the global demand for food and fibre steadily increasing against the backdrop of a world population forecast to exceed 9 billion by 2050, Australia is well positioned to take up the opportunities presented and to be at the forefront of this global demand.

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[15] *Australian Bureau of Statistics: Gross Value of Irrigated Agricultural Production, 2017-18 financial year*
[16] *Department of Agriculture, Water and the Environment: Agricultural Overview: March 2021*

The future prospects for irrigated agriculture in Australia are strong. This is not without challenges for the sector as part of its responsibility in meeting the climate change task and meeting community expectation to reduce emissions, while participating in the broader effort to contribute to global action.

Climate variability is not new for farmers. The agriculture sector has over a long period worked with a variable climate, adapting to significantly reduced water during times of drought. For the irrigated agriculture sector in particular, irrigation storages and the trading platform have been built in Australia as a way to ensure capacity to produce food and fibre during prolonged dry conditions.

The ability to store water for use in dry times is the very essence of irrigation, serving as one of many drought mitigation measures and to also serve as a climate change mitigation measure. It also serves as an important strategy to help deliver environmental and community water.

Climate change and climate change policy impacts on irrigators in two key areas – water supply (including changes in run-off into catchments) and energy policy. While efforts to ameliorate climate change impacts on the environment are supported, it is not possible to avoid all negative impacts, and it would therefore not be reasonable to expect food and fibre producers and the communities to bear the whole.

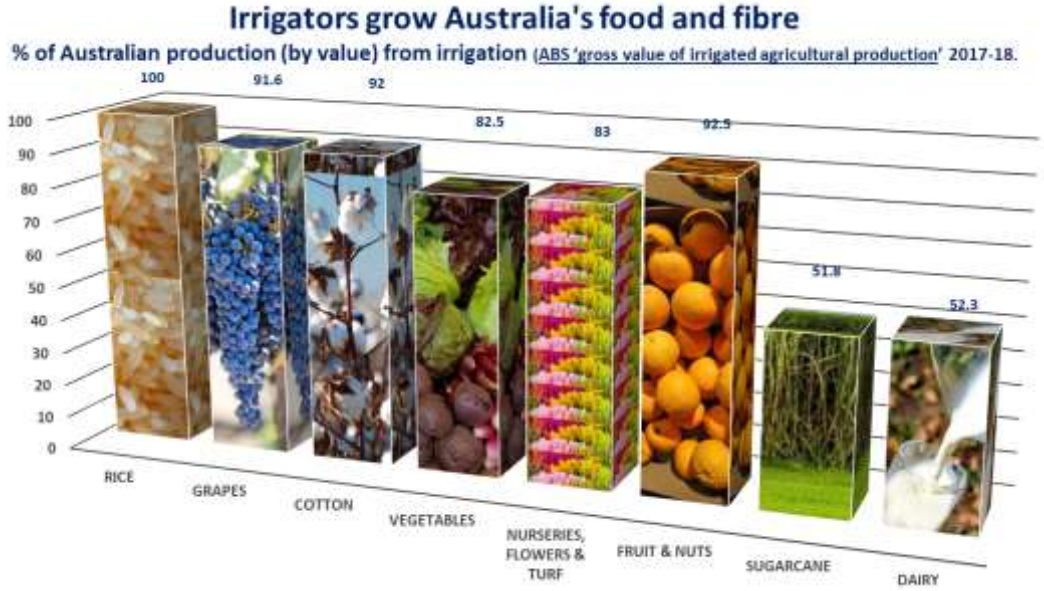
NIC recognises climate predictions pointing to less run-off overall and more variability with storm events and drought. This presents challenges for agriculture and the community and in the medium to longer term, it will mean long term averages change. It is important to recognise that trade may also be affected in the future as trade partners look to countries with strong climate policies to source goods.

The success of agricultural businesses depends on the capacity of the sector to continue to innovate and adapt, using best practice to manage climatic risks and securing investment for the future. This includes the uptake of opportunities provided for the sector's participation in carbon markets to contribute to Australia's emissions reduction goals.

Energy costs have presented a major barrier for Australian irrigated agriculture and impacted the competitiveness of many industries. Energy for pumping and pressurising irrigation water, heating and cooling used in some industries, is a significant part of the cost structure for food and fibre production.

The irrigated agriculture sector expects to play a part in moving to lower carbon emissions and meeting Australia's international obligations and community expectation. The evidence shows that agriculture has been an enthusiastic leader in the take up of renewable energy – where it is able to be shown to be cost effective for the farming business.

The irrigated sector will continue to participate on a fair and equal basis, as part of the broader effort to secure Australia's water resources into the future.


Irrigators grow Australia's food and fibre
% of Australian production (by value) from irrigation (ABS 'gross value of irrigated agricultural production' 2017-18.
100
91.6
92
82.5
83
92.5
51.8
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RICE
GRAPES
COTTON
VEGETABLES
NURSERIES, FLOWERS & TURF
FRUIT & NUTS
SUGARCANE
DAIRY