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SUBMISSION

Regional Water Strategies

[redacted]

Contents

NSW Irrigators' Council

The NSW Irrigators' Council (NSWIC) is the peak body representing irrigation farmers and the irrigation farming industry in NSW. Our members include valley water user associations, food and fibre groups, irrigation corporations and commodity groups from the rice, cotton and horticultural industries.

Through our members, NSWIC represents over 12,000 water access licence holders in NSW who access regulated, unregulated and groundwater systems. NSWIC engages in advocacy and policy development on behalf of the irrigation farming sector. As an apolitical entity, the Council provides advice to all stakeholders and decision makers.

Irrigation farmers are stewards of tremendous local, operational and practical knowledge in water management. With more than 12,000 irrigation farmers in NSW, a wealth of knowledge is available. Participatory decision making and extensive consultation ensure this knowledge can be incorporated into best-practice, evidence-based policy.

NSWIC and our members are a valuable way for Governments and agencies to access this knowledge. NSWIC offers the expertise from our network of irrigation farmers and organisations to ensure water management is practical, community-minded, sustainable and follows participatory process.

NSWIC welcomes this opportunity to provide a submission on Regional Water Strategies (RWS).

NSWIC sees this as a valuable opportunity to provide expertise from our membership to inform the Inquiry. 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 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.

Introduction

NSWIC welcomes the development of Regional Water Strategies (RWS) to provide a long-term, strategic, and evidenced-based approach to water security in NSW.

This submission provides key important principles for developing options from the perspective of the NSW irrigation sector, whose long-term viability and sustainability is underpinned by water security. NSWIC refers to our Members in the relevant valleys on the more specific components of each respective RWS.

NSWIC is of the position that RWS should be about greater security for the whole resource, not about any one water user group in isolation. Whilst recent extreme drought conditions have brought town and environmental water security issues to the forefront, the RWS focus must remain on water security for all – including farmers.

NSWIC is of the view that the long list of options across the draft RWS do not fully align with the objective of enabling economic prosperity. NSWIC would like to see further work on developing more options, in collaboration with water users, that enhance water security for irrigated agriculture and ensure triple bottom line objectives can be met. NSWIC is of the position that more collaborative engagement with stakeholders is required.

NSWIC is of the position that RWS should be focusing not *only* on the extreme years, but for every year, which includes more 'standard' years. Focusing too heavily on the 'worst case scenario' creates fear and angst in the community, which drives a highly cautious and fearful public response. Whilst the extreme scenario is of course relevant and should be included, this must be presented within the broader context that extremes are by definition rare even with climate change.

NSWIC would like to see a stronger focus on conversations about risk – including appetite for risk, risk management strategies, as well as costs and benefits of various levels of risk appetite. As a principle, NSWIC is of the position that agile and active management should be prioritised to intervene as extreme events (such as worst on record) approach.

This avoids the significant opportunity costs of adopting a highly risk-averse approach every single year in case a worst-on-record event developed in the near future. With modern climate science and technology available, there is no reason why these dynamic and agile approaches should not be pursued as best-practice water management.

Overview

This submission outlines key principles under each of the RWS objectives, specifically:

1. Deliver and manage water for local communities – improve water security, water quality and flood management for regional towns and communities.
2. Enable economic prosperity – improve water access reliability for regional industries.
3. Recognise and protect Aboriginal water rights, interests and access to water – including Aboriginal heritage sites.
4. Protect and enhance the environment – improve the health and integrity of environmental systems and assets, including by improving water quality.
5. Affordability – least cost policy and infrastructure options.

Submission

1) Water for local communities

1A) Support securing town water supplies

NSWIC strongly supports the enhancement of town water security. Town water supplies represent a generally small proportion of the total water resource but require an extremely high level of reliability. Government must identify options that enhance town water security without having major impacts on other entitlement holders. Options may include: a diversity of water sources to enhance resilience and manage risks (e.g. groundwater and river water); engineering options (such as pipelines to reduce transmission losses); and, water recycling (such as storm water capture and reuse). These options must be developed based on local circumstances, informed and supported by local Councils.

It is a guiding principle of NSWIC that irrigation farmers respect the prioritisation of water, as outlined in the *Water Management Act 2000* (*60 – Rules of Distribution applicable to making of available water determinations*), even though this places irrigated agriculture at the very bottom of the queue. Under this hierarchy, the highest priority is water for town and domestic services, secondly the environment, thirdly livestock, and finally irrigation water. Being the last to be allocated water, and the first to have the tap switched off when dry, irrigators already have much at stake if water security is not appropriately addressed.

Given irrigated agriculture is last in line for water, and the sector is effectively 'turned off' during dry periods, NSWIC frankly does not see any plausible opportunity to source water for higher priority users in critical periods from irrigated agriculture. Not only would options of this kind have serious negative ramifications for farmers and farming communities, but it would likely be unsuccessful in securing any additional water for other users at these times of critical water insecurity.

Recommendation:
Seek to identify options that enhance town water security without having major impacts on other entitlement holders, such as ensuring a diversity of water sources to enhance resilience, and reducing transmission losses (e.g. through pipelines).

1B) Drought of Record

NSWIC is aware that following the Parliamentary Inquiry into the 'Drought of Record' Bill, the Government is seeking to address the concerns raised in the RWS. NSWIC is not opposed to using the most up-to-date climate science (in fact, we support this as a guiding principle), however, the way that data informs management approaches must be the subject of further detailed investigation through this RWS process.

A question for Government is whether it is necessary to manage for the worst-ever drought *every year*, and bear the costs of that every year, or whether it is possible to develop a system of active and agile management that facilitates intervention *if* such an event develops?

It is the position of NSWIC that water management must be responsive, not defensive. The opportunity cost of locking away large volumes of water every year, just in case a low-probability extreme worst-on-record event occurs, is significant, unjustified and unnecessary if appropriate risk-management and response mechanisms are in place.

Ultimately, with today's climate science and forecasting abilities, water managers do know far enough in advance when an extreme dry period is approaching, for the necessary interventions to be triggered, and response mechanisms put in place so we can be prepared. If a situation does develop, water managers have sufficient notice as:

a) The resource assessment is done each month, so trends emerge well in advance if inflows are lower than budgeted.
b) Because the water management planning is for a two-year period looking forward, a shortfall doesn't impact availability immediately.
c) If inflows remain below the one in 100 year inflows for a prolonged period, it becomes clear there's a looming problem and there is time to put in place measures to ensure supply for high priority needs.

With this ability, a highly risk-averse approach every year is unnecessary, given the opportunity costs in agricultural production, jobs and regional economic activity.

Thus, NSWIC recommends that Government should adopt an appropriate and responsive risk management strategy that factors in the appropriate data, and adopts trigger points and processes for adaptive and agile decision-making. Central to this process, NSWIC recommends a review of the management of the last drought, particularly the design and delivery of the Incident Response Guide and Extreme Events Policy, to determine learnings and implement recommendations.

To inform decision-making on this matter, NSWIC also recommends that DPIE investigate what updating the drought of record would look like in practice, such as what outcomes would be automatically triggered, and what impacts on entitlement reliability would consequently result, for each valley.

This analysis should also assess the costs and benefits of various levels of risk-appetite and strategies, such as determining the costs of locking away large reserves every year in case a worst-on-record extreme year occurs. Further, this investigation should include thorough consideration of alternative options available to water managers that would allow intervention and adaptive management if an extreme event equivalent to a drought of record occurred (such as through the Extreme Events Policy and Incident Response Guides), without carrying significant opportunity cost every single year.

NSWIC is concerned that by focusing on simply updating the drought of record, the RWS would not consider all the policy levers available to Government, and would likely lead to sub-optimal outcomes. NSWIC did not support the 'Drought of Record' Bill earlier this year because the ramifications were insufficiently analysed; there was only a limited understanding on how best to incorporate this new data; and, these investigations should be conducted through the RWS development process to determine the way forward. The full NSWIC submission is available upon request.

Recommendation:
Careful consideration is required of how new climate data is incorporated into water management. NSWIC is of the strong position that water management must be agile and active to be able to respond if extreme events develop (such as through Incident Response Guides), which is preferential to a static approach of holding

significant reserves every year just in case, with high opportunity cost for agricultural production, jobs and regional economic activity..

Conduct a review of water management preceding and during the most recent drought to identify learnings, including the design and delivery of the Incident Response Guide and Extreme Events Policy.

Conduct analysis to inform decision-making on drought of record, including:

- The consequences of updating the drought of record in practice for each valley (e.g. what outcomes would be automatically triggered, what impacts would there be on entitlement reliability, etc).
- Assessment of the costs and benefits of various levels of risk-appetite and strategies (e.g. determining the costs, particularly opportunity costs, of locking away large reserves every year in case a worst-on-record extreme year emerges).
- Consideration of what alternative options are available to water managers that would allow intervention and adaptive management if the circumstances developed (e.g. Incident Response Guides), without carrying significant opportunity cost every single year.

1C) Integrity of entitlements

Any options must seek to maintain the integrity of entitlements. For example, if pipelines for inter-regional connectivity are pursued, this cannot involve the creation of any new licences, rather, existing licences must be purchased, in order to maintain integrity of existing entitlements.

1D) River operations savings

River systems must be managed most efficiently to minimise operational losses and maintain reliability and accessibility to all water users, whilst respecting the physical capacity and needs of the river system.

NSWIC sees river operational savings and reduced transmission losses as one of the most significant opportunities to save water, whilst also increasing water security (in terms of accessibility) to users (e.g. where a smaller conveyance factor is required to ensure the delivery). As an example, in the Lachlan, it requires 180,000GLs a year to run the river alone, whilst high priority needs comparatively only require 53,000GLs.

Reduced transmission losses benefit all water users by maximizing the total available resource. River operators must minimise operational losses, such as, for example, delivering productive water within the river channel to avoid the high transmission losses involved in overbank flows.

NSWIC recommends the RWS process explore further opportunities for operational savings. For example, in the context of delivering to high-reliability water users (e.g. towns, Stock & Domestic, and high-security entitlements), pipelines to reduce transmission losses should be investigated. Options that seek to improve bulk water delivery should also be explored for those systems.

Recommendation:

The development of RWS should focus on securing efficient delivery of water as a priority.

1E) Supply and demand equilibrium

NSWIC would like to see the RWS include population statistics, including forecast population growth/decline trajectories, to assist in water planning.

An informed understanding is required of the population that regional town water infrastructure and water services can support securely. Town planners must consider population capacity in order to (1) forecast when new infrastructure or upgrades are required to maintain water security in line with population trends, (2) to understand the community vulnerability or resilience to water insecurity, and (3) to determine the towns at highest risk in droughts.

Recent objectives to grow regional towns (i.e. decentralization and regionalisation) have not, until very recently, been matched with efforts to enhance the water security to meet that growing demand. Similarly, other towns are experiencing population decline, which is also important to factor into water planning efforts. At the very minimum, water infrastructure development must keep pace with population growth.

Recommendation:
Include population statistics and forecast trajectories into the RWS, to inform future water planning.

Town and regional planning efforts must consider the level of demand that could be securely supplied with existing infrastructure.

At the very minimum, water infrastructure development must keep pace with population growth.

1F) Innovative options

NSWIC strongly welcomes the investigation of innovative options to enhance water security and sees potential for NSW to be a world leader in water capture, storage and conservation technologies. NSWIC understands that Managed Aquifer Recharge (MAR) may have potential, however, further investigation is required. The principles underlying MAR of capturing water when it is abundant (i.e. in flood) and storing it with minimal losses to be used when it is dry (i.e. in drought) is strongly supported.

NSWIC notes that the CSIRO has recently published an article on this potential. Further investigations are required, including to assess the suitability of each aquifer; potential environmental impacts and opportunities; potential impacts on surface water availability and entitlement reliability; feasibility; and, a quantification of costs and benefits. NSWIC recently undertook a study tour and saw effective examples of MAR in practice in California, which provided water security and environmental benefits. NSWIC endorses further investigation of the suitability of MAR in NSW.

1G) Critical Water Advisory Panels

NSWIC is of the position that the capacity for local input into decision-making, and the communication of decisions can be improved.

NSWIC requests that Critical Water Advisory Panels include water users to provide local input to inform the management of critical water shortages. This would allow practical advice to be provided from the perspective of those who will be most heavily affected, and improve the communication of decisions within local communities.

Recommendation:
Water users must be included on Critical Water Advisory Panels, to provide local input and practical advice.

2) Economic Prosperity

2A) Water is central to regional economies

NSWIC strongly supports the continued growth and prosperity of regional communities, and their supporting industries. Industries, such as irrigated agriculture, are critical to broader socio-economic outcomes and well-being in regional communities.

NSWIC is pleased to see economic prosperity included as a RWS objective, but some RWS proposed options do not align with this objective. NSWIC encourages development of additional options to serve this objective, in collaboration with water users.

NSWIC is of the position that greater infrastructure (e.g. extra storage capacity) is required to maintain industry alongside communities.

2B) Linking RWS to Planning Framework

NSWIC would like to see RWS integrated with relevant regional and economic development strategies and planning frameworks. This integration, whilst not only providing coordination and streamlining, would also open up discussion to non-water related options to support regional communities economically during droughts. This would have greater value than looking at water in isolation. For example, greater investment in secondary industries and local processing/value-adding would create a broader and more resilient economic base for primary industries.

Recommendation:
RWS should be integrated with relevant regional and economic development strategies.

2C) Water entitlement reliability

Irrigation farmers feel cautious about many proposed options because of their likely impacts on entitlement reliability, which could have detrimental effects on the prosperity of irrigated agriculture. NSWIC recommends, as part of further investigating options, that *Reliability Impact Assessments* are conducted to determine the extent of impacts on entitlement holders, and to communicate this transparently. This should be done as part of any business case or cost-benefit analysis.

As a case study, one primary concern for entitlement reliability is whether the RWS are intended to factor-in the paleoclimatic 'worst inflow sequence' in the context of allocation policy. A highly risk-averse approach – to manage every year in case 'worst

on record' inflows emerge the next year – would have significant opportunity cost with water sitting in reserves that could otherwise be used, with significant impacts on entitlement reliability. Please see 1B for further information.

Recommendation:
A Reliability Impact Assessment should be undertaken on all relevant options to assess the effects on entitlement reliability (whether positive or negative), and made available for further consultation.

2D) Underusage

Underusage – where water users cannot or are not using up to the Sustainable Diversion Limit (SDL) – remains a significant problem in many valleys. Ensuring water users can, and do, use up to the SDL is important in meeting the economic prosperity objective.

NSWIC seeks that DPIE develop feasible options to address underusage through the RWS process. NSWIC sees addressing underusage as a Government responsibility, with inaction carrying a high opportunity cost. Water users are left confused regarding what options are feasible to increase usage to allowable limits, without breaching the Basin Plan requirements for no net reduction of the protection of Planned Environmental Water (PEW).

Thus, NSWIC requests that DPIE-Water work with water users to develop a list of feasible permitted options to respond to underusage for the short, medium and long-terms in each valley. Immediate options should also be developed for the interim, whilst longer term options are developed.

Recommendation:
NSWIC seeks progress on addressing underusage. DPIE-Water should work with water users to develop feasible permitted options for each valley.

2E) Irrigated Agriculture Vision

NSWIC encourages DPIE-Water to work with the irrigation sector and communities to develop a vision for the irrigated agriculture sector for the next 30 years. This vision would be critical to the strategic planning of both water management and regional development. This vision is aligned with the findings and recommendations of the recent report by the *Independent Assessment into Social and Economic Conditions in the Basin*[3].

Recommendation:
Develop a strategic vision for the irrigation sector in NSW.

2F) On-farm water savings

NSWIC encourages DPIE to examine options for on-farm water saving initiatives. The objective of these projects would be to maximise the volume of food and fibre that can be produced from agriculture's share of available water. Note: this option is explicitly not referring to the creation of any water entitlements from the savings (or reduced water to the farmer by any means), but rather, allowing farmers to improve

[3] https://basin-socio-economic.com.au/

productivity from the same volume of water. Options may include technology to reduce evaporation from storages, lining irrigation channels to prevent seepage, and soil moisture probing technology.

Recommendation:
The RWS should seek to identify water efficiency options that maximize agricultural water productivity, without reducing agriculture's share of water.

2G) Research & Development

Water is the most limiting factor for agriculture in Australia, yet there is no dedicated research body to improve agricultural water productivity, efficiency and management. This must be addressed. Government investment in an Agricultural Water Security Research Centre would assist in developing the latest in science and technology to make Australia more resilient to drought.

2H) Adjusting to increased water scarcity

An outcome of the RWS should be maintaining, and where possible enhancing, irrigated agricultural production (and hence maintaining or enhancing entitlement reliability).

The long-term climate change projections, and subsequent reduced reliability of entitlements outlined in the RWS, is deeply concerning. If this worst-case scenario becomes the 'norm' with existing measures remaining constant, it is likely that some irrigated farm businesses would struggle to remain viable. Options should be developed that seek to maintain or enhance water security for irrigation farmers to avoid that scenario.

3) Aboriginal Water Rights and Interests

3A) Cultural water use

NSWIC recognises and supports the traditional and cultural uses of water by Aboriginal people.

In terms of developing water entitlement arrangements, it is important to distinguish between cultural uses and economic purposes. Particularly where water is required for economic purposes, existing licences should be purchased, and the integrity of those licences (e.g. characteristics) maintained.

NSWIC has been developing a Cultural Billabong Restoration project with our First-Nations Advisor. NSWIC encourages Government to investigate options of this kind, that are linked to broader social and economic development, by providing culturally appropriate employment that delivers cultural and environmental outcomes. Further information on this project is available upon request.

In summary, the project objective is "*to improve Indigenous water management by holistically self-empowering ecosystems and communities through billabong restoration, recognising cultural water values and interests, and allowing the cultural creativity of custodians to manage local environments through Community Development Programs*".

4) Protect and enhance the environment

4A) Dynamic Equilibrium

All water users alike – irrigators, towns and the environment – need to factor in greater climate variability and adjust to changes in climate. Undoubtedly, the environment is changing. More expansive environmental monitoring is required to improve understanding of environmental dynamism and natural variability. There is a need to manage for the environment of tomorrow - a changing climate means it may not be feasible to maintain today's environmental conditions into the future.

4B) Work already underway

NSWIC encourages DPIE-Water to identify and outline the many measures and programs already underway to protect and enhance the environment. Whilst most of these have been developed through processes outside of the RWS, they should be clearly articulated and understood through the process, as they form part of the broader framework and context for water management.

4C) Concerns of buybacks

NSWIC notes that further buybacks remain a real possibility under the Basin Plan following its 2024 reconciliation. NSWIC is strongly opposed to buybacks, given the impacts on the agricultural water share and broader social and economic ramifications. Additionally, the long-term value of buybacks as an environmental measure must also be called into question under climate change scenarios.

Entitlement reliability is forecast to reduce, which will affect both farmers and environmental water holders alike (given Held Environmental Water entitlements are former irrigation entitlements and thus have the same characteristics). This suggests that buybacks will have diminishing value as an environmental measure into the future, bringing into question the long-term viability of that mechanism.

NSWIC encourages DPIE-Water to investigate the value of buybacks given climate change. If a significant diminishing value from reduced reliability is identified, this should inform the NSW Government's approach at 2024, to pursue other options with a greater demonstrable long-term environmental outcome – and without damaging communities and agricultural production – such as complementary measures.

NSWIC strongly supports complementary measures – such as habitat restoration, pollution management, fish passage, feral and invasive species control – that are outcome-focused and can bring real attainable environmental benefits. NSWIC recommends that the RWS identify a package of complementary measures for each valley, developed in consultation with local water users and communities.

Recommendation:
RWS to include a package of complementary measures for each valley, developed in consultation with local water users and communities.

4D) Understanding the existing framework

NSWIC is of the position that the existing water management framework (i.e. allocation policy) is already suitably designed to respond to changing climatic conditions. Whilst NSWIC believes allocation announcements should be more timely, predictable and transparent (so all water users can understand the formula used to determine allocations), we consider any fundamental changes very high-risk and not a priority at this time. If changes do occur, there must be the utmost caution to not erode entitlement reliability or utility.

The general public does need an enhanced understanding of how allocations work, to provide confidence of the link between water availability and water use by irrigators. During dry periods, pressure on both government water management and the irrigation sector grows, and improved water literacy in the general public will be increasingly important to manage tensions and foster confidence.

Recommendation:
The existing water management framework is designed to automatically adjust shares based on changes in water availability and is thus considered well-suited.

Greater communication in mainstream media is necessary to improve water literacy among the general public and foster confidence in water allocation frameworks.

4E) Connectivity

NSWIC notes that many of the RWS have options seeking to enhance connectivity of systems. NSWIC recognises the importance of connectivity and notes the importance of coming to a shared understanding of connectivity (definition, mechanisms to operationalise, and measures of success). There are, however, some necessary considerations in developing options with this objective:

1) Significant work has been undertaken in recent times to develop connectivity rules and requirements. Current rules and mechanisms for managing connectivity must be fully understood in the first instance.

2) Mechanisms to manage for connectivity must be pragmatic, and will necessarily need to consider the physical limitations of systems, including:
   - The ephemeral and event-based nature of some systems;
   - Channel capacity constraints to deliver water between systems, including choke points;
   - Hydrology to understand the movement of water across and between valleys, including into/out of river systems and across floodplains;
   - Rainfall patterns, particularly in areas with highly variable rainfall, and the dependency of inflows on rainfall;
   - Changing climatic patterns with more extreme and prolonged dry periods.

   The extent and nature of connectivity will necessarily be subject to these physical and hydrological limitations, and therefore expectations need to be managed.

   Whilst NSWIC appreciates the importance of connectivity when circumstances allow, it is important in a nation with such a variable climate that a simplistic

understanding of connectivity does not become the threshold or performance indicator for water management. We therefore encourage DPIE to take account of the natural limitations to consistent connectivity. This is important to alleviate any unrealistic expectations that all rivers must always flow.

3) Connectivity is a subjective term with a broad scope of interpretation and understandings. Further work is required amongst all stakeholders to come to a shared understanding of what connectivity means and looks like in-practice, and how this can be operationalised. The questions that need to be asked, include:
   • What is the purpose of connectivity?
   • How do we achieve connectivity?
   • When can we achieve connectivity?
   • Where can connectivity be achieved?
   • What does success look like in managing for connectivity?

4) The *Independent Panel Assessment of the Management of the 2020 Northern Basin First Flush Event* provided detailed recommendations on improving connectivity. NSWIC encourages DPIE-Water to consider and adopt these recommendations in the development of RWS options.

   One of these recommendations was: *"Develop first flush arrangements, in consultation with water users, Traditional Owners and communities, that clearly articulate how connectivity within and between water sources in the Northern Basin, and critical human and environmental water needs, will be provided for during first flush events. Connectivity must be a primary objective of first flush management in the Northern Basin if insufficient water is available to meet tributary and downstream critical water needs. However, the arrangements to meet downstream critical water needs, of necessity, also have to be reflective of and responsive to the ephemeral and intermittent flow nature of the rivers in the Northern Basin."*

Recommendation:
Options to promote connectivity are important, but necessarily must be subject to physical and hydrological limitations. A comprehensive understanding of existing measures is fundamental, as well as coming to a shared understanding of what 'connectivity' means. NSWIC encourages DPIE-Water to base the assessment of options around the recommendations of the First Flush Final Report.

5) Affordability

5a) Cost-sharing arrangements

NSWIC is of the position that the NSW cost-sharing framework needs to change, particularly in the context of delivering many of the proposed RWS options. Infrastructure investment, and water management more generally, is in the interests and benefits of the whole community. However, at present, the cost-sharing arrangements have the irrigation sector paying a disproportionate share of the costs, including funding many public interest items on behalf of the community (with a cost-share ratios of 80:20 for capital expenditure (80% by water users), and 100:0 for operational expenditure (with water users paying 100%)).

NSWIC rejects the 'impactor pays' principle, as inconsistent with contemporary water management principles, such as the National Water Initiative (NWI). This principle is based on an overly simplified counterfactual of predevelopment conditions, that would inevitably lead to assigning costs to water users. The reality is water management activities are necessarily required for human civilisation (with or without irrigation) – and particularly in our society, which values the sound management of water resources and the health of river systems.

If an 'impactor pays' principle continues, NSWIC believes climate change is now the largest 'impactor' on waterways, and many of the services and new infrastructure are a result of preparing towns and river systems to be resilient to a drying climate. The impacts of climate change on waterways is now clearly evident, experienced and thus broadly accepted. It would be almost impossible, however, to develop a funding model based around this 'impactor' (unless from general revenue), and thus a reconsideration of the impactor-pays principle is required.

NSWIC has concerns that current cost-sharing arrangements could restrict valuable and necessary projects being adequately funded, based on financial limitations of water users and their capacity/willingness to pay. This is exacerbated following periods of drought and limited water access which lead to financial hardship of water users. These dry periods are typically the periods when new announcements (and costs) are made, as there is typically greater political will to announce new measures.

NSWIC has concerns about the long-term sustainability of the impactor-pays model, given modelling predicts decreasing reliability of water entitlements and thus decreasing financial returns to water users at the same time as demands are increasing to manage for water scarcity particularly for town water supply. As one example, in the draft Lachlan Regional Water Strategy, it states "*general security users in the Lachlan could experience… a 60% decrease under long-term climate change projections*". This trend, of decreasing reliability/yields from decreased water supply, but growing demand for water management services and infrastructure to manage decreased water availability, is not compatible with the current cost-sharing ratio.

NSWIC recommends that a new cost-sharing framework is developed, based on the 'user pays' principle outlined in the National Water Initiative 'Best Practice Water Pricing and Institutional Arrangements' (Clause 64), to which NSW is a signatory. The NWI states: (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". A new framework must account for and facilitate cost recovery for public interest/benefit items, rather than leave this to customers to pay on their behalf.

Additionally, NSW recommends that each option in the RWS outlines the intended beneficiaries/users, and the costing arrangements.

Recommendation:
A new cost-sharing framework is required that accounts for and facilitates cost recovery for public interest/benefit items. This should include shifting from the highly contentious 'impactor pays' principle to a 'user pays' principle, consistent with the National Water Initiative.

Conclusion

NSWIC and our members are available at your convenience, if you have any questions or would like any further information.

Kind regards,

NSW Irrigators' Council.