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Commonwealth Environmental Water Holder Framework for Investing in Environmental Activities

Submission
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Introduction

The National Irrigators' Council (NIC) welcomes the opportunity to respond to the Commonwealth Environmental Water Holder's (CEWH) Investment Framework following recent changes to Section 106 (3) – (6) of the Water Act 2007.

NIC has consistently argued the case for a balance between social, environmental and economic outcomes to ensure the Basin Plan is fair and workable.

This relates directly to the confidence that irrigators and irrigation dependent communities have in the Murray Darling Basin Plan. For more than a decade, the irrigated agriculture sector has actively participated in the development and implementation of the Basin Plan. The Plan seeks to achieve the essential balance between environmental outcomes and the social and economic health of Basin communities. Our commitment remains to a healthy environment and to a viable, productive irrigated agriculture sector in Australia.

NIC has long supported increased flexibility in relation to the proceeds of sale of environmental water, including the carryover of water allocations. We made the case in our submission to the 2014 review of the Water Act 2007, suggesting that the CEWH be enabled to trade water for environmental reasons and use the derived funds for environmental purposes within the Murray Darling Basin.

We have argued for a shift from flow targets and volume, to a greater focus on outcomes. NIC strongly argues that flow targets are not an adequate measure of the health of a river and that the success of the CEWH's work needs to be measured in environmental outcomes. To do this, the river environment needs to be healthy and NIC has advocated that a range of complementary or non-flow measures to achieve this.

This submission details a series of non-flow measures, which include improving the river as habitat for native fish species, restoring fish passage, eradicating feral species, and other measures.

Our strong contention is that funding some of these measures via water trading is fundamental to achieving the CEWH's objectives.

Over recent months, NIC's position advocating complementary measures has received some strong endorsement. The Northern Basin Review made welcome recommendations about the need to implement complementary or non-flow measures. It also clearly demonstrated that the acquisition of more water for the environment delivers a questionable level of environmental benefit while resulting in higher levels of social and economic pain.

Recently, the Productivity Commission as part of the review of National Water Reform, endorsed the need for an outcomes focus, and included a series of strong draft recommendations about environmental water management and complementary measures.

In determining a water trading policy, there must be recognition of the CEWH's strong position in the water market. The Commonwealth is by far the biggest owner of Murray Darling Basin water, with a potential significant position in the market. The CEWH's trading guidelines should include consideration of whether or not it will consider impact on the market in any trading activity.

In responding to the questions posed in the development of the Framework for Investing in Environmental Activities, NIC is guided by a series of principles, agreed by our Members, and which highlight the commitment of irrigators to a triple bottom-line outcome from the Basin Plan.

NIC Guiding Principles

The objective of the National Irrigators' Council is to protect or enhance water as a property right and to champion a vibrant sustainable irrigation industry.

- A healthy environment is paramount
 - Sustainable communities and industries depend on it
- Protect or enhance water property rights
 - Characteristics of water entitlements should not be altered by ownership
- No negative third-party impacts on reliability or availability
 - Potential negative impacts must be compensated or mitigated through negotiation with affected parties
- Irrigators must be fully and effectively engaged in the development of relevant policy
- Irrigators expect an efficient, open, fair and transparent water market
- Irrigators require a consistent national approach to water management subject to relevant geographical and hydrological characteristics
- Irrigators expect Government policy to deliver triple bottom line outcomes
- Regulatory and cost burdens of reform be minimised and apportioned equitably.

Feedback on Questions

1. What sort of environmental activities, that complement current or future Commonwealth water delivery, could be a focus for investment by the CEWH?

NIC has argued for the focus of the Basin Plan to shift towards achieving better ecological outcomes through a range of non-flow measures. NIC notes that all Basin Water Ministers have reaffirmed their support for complementary environmental projects in the Basin and will consider further advice at future Water Ministers meetings, on how best to embed complementary measures in the implementation of the Basin Plan.

Measures improving riverine and riparian outcomes have been routinely delivered through successive federal government programs such as Caring for our Country and the National Landcare Program. Any investment approach should involve a range of measures which will support the Basin Plan's environmental objectives over the short, medium and long-term to ensure native species have the greatest opportunity to thrive.

NIC notes that the recent draft report from the Productivity Commission on water reform, included strong conclusions and draft recommendations relating to the need for environmental water planning to be include more than just flow rates. That report strongly endorsed the need for planning to incorporate broader objectives in addition to the flow objectives and complementary measures.

Investment by the CEWH in environmental works will help deliver the Basin Plan's environmental objectives without additional financial, nor non-financial, cost to regional communities. NIC supports a new Investment Framework that focusses on several key areas:

- Environmental remediation on public or private land with demonstrable environmental improvements;
- Activities that support water savings and/or water quality in the Basin, including pest species management
- Investment in infrastructure that will improve the river environment;
- Improvement to equipment, technology and methods that will directly benefit the administration of environmental water in the Basin.

With respect to **environmental remediation**, examples could include:

a) Carp control through the release of the Carp Herpes virus

Carp make up around 80% of the fish biomass in the Murray Darling Basin, and this level of presence costs the nation up to \$500 million in lost opportunity annually. There is empirical evidence that shows Carp impact on water quality, plankton levels, the frequency and duration of algal bloom, native fish, macrophytes and water birds¹ - sadly, much of this impact is wrongly attributed to productive water-users.

Research has shown that a carp specific virus known as Cyprinid herpesvirus 3 is highly effective on the carp species present in Australia. International case studies indicate the virus will kill 70-100% of carp in a native population within a very short time. The virus has also been shown to only affect Common carp and Koi carp (same species) and to not impact adversely on other fish species, birds, reptiles, amphibians, mammals or crustacea.

While the types of environmental flows built into the Basin Plan might deliver some benefits to some valuable components of the ecosystem, they are also known to increase carp breeding if delivered onto floodplain habitats during warmer months.

NIC welcomes the Australian Government's announcement of a \$15 million investment in 2016 to undertake the necessary work with a plan to release a carp-specific herpes virus into waterways. This work continues and includes extensive public consultation along with research and planning.

To ensure that carp numbers do not rebuild after release, it will be necessary to employ additional measures to suppress carp and promote recovery of native fish communities (with the latter being estimated at 10% of pre-existing condition). NIC notes that 30-40% of the freshwater fish species in the Murray-Darling are now listed as threatened, or are conservation dependent, without appropriate measures in place to recover stocks.

While carp is the biggest threat to the health of aquatic ecosystems across the Basin, other factors are contributing to the decline of native species, including:

- degradation of habitat and water quality;
- overfishing;
- thermal pollution; and,
- barriers to fish migration.

Significant social and economic benefit, derived from improved inland fish resources, is likely to occur as a result of the eradication of carp and the rectification of the above matters.

NIC recommends that the any carp biocontrol program and improvements to environmental flow delivery, must be accompanied by parallel efforts to:

- re-establish populations of locally extinct native fish species through re-stocking following carp removal
- mitigation cold water pollution at four priority dams
- restore native fish habitat along river reaches within priority river valleys through the Murray-Darling Basin

b) Appropriate management of cold water pollution

The importance of water temperature for breeding, feeding, growth and larval survival in native fish species has been well understood for over a decade, as is the impact of cold water pollution on aquatic organisms and river health in the Murray-Darling Basin. A recent study noted that mortality levels in Murray cod eggs can reach 100% at 13 degrees Celsius, and that low water temperatures can dramatically reduce growth rates in species including Freshwater catfish and Murray cod, and can

cause up to 30% mortality in Silver perchⁱⁱ. All these species are 'listed' under either national or state environmental legislation and over 2500km of riverine environment is now understood to be affected by thermal pollution in the Murray-Darling Basin.

There are cost effective engineering solutions to cold water pollution and it is appropriate that these measures might be funded or assisted by the proceeds of trading of environmental water. They should be a core component of planning for the environmental health of rivers and are therefore an appropriate way to invest proceeds of trading.

c) Improvement of fish migration through fishways

Many native fish species are now known to migrate during various stages of their life and barriers to migration are now listed as a key threatening process in state and Commonwealth threatened species legislation.

Future-focussed investment from the MDBA in the Sea to Hume program has seen fish passage restored over 2225 km of riverine habitat by installation of fishways at 15 barriers in the southern MDB. Reinstatement of fish passage at 13 barriers in the main stem of the Darling, Barwon, Paroo and Warrego Rivers would reinstate continuous access 5180 km. This outcome would exceed the Sea to Hume program, which is currently, and rightfully, lauded as one of the largest ecological rehabilitation projects undertaken in Australia. Tributary fishways also open up significant kilometres of passage and improve environmental outcomes associated with instream site specific indicator sites.

d) Restoration of native fish habitat

A healthy habitat is vital to the condition of native fish communities. Numerous studies throughout Australia have demonstrated the value of restoring fish habitat for native fish communities. In the Condamine River, habitat improvement along the Dewfish Demonstration Reach resulted in significant increases in Golden perch (5 x increase), Murray cod (from absent to captured every survey), Spangled perch, Bony bream (11 x increase), Carp gudgeon (1200 x increase), and Murray-Darling Rainbowfish (60 x increase).

Re-snagging in the lower Murray resulted in a threefold increase in Murray cod, and was estimated to significantly increase overall population sizeⁱⁱⁱ It would also result in lower flow thresholds being required if re-snagging occurred at lower heights to provide adequate habitat that is submerged for periods long enough to be of benefit.

e) Feral animal control in wetlands, particularly the Narran Lakes, Gwydir Wetlands and Macquarie Marshes

Feral pigs are one of Australia's most successful and widespread invasive species. Their success is largely due to their omnivorous diet, comprising mostly green grasses and herbs. They also eat a variety of native vertebrate species including reptiles, amphibians, birds and mammals.

Feral pigs have been present in the Macquarie Marshes since 1896 and they threaten important native wildlife species in the marshes such as the snipe, storks and ibis.

Studies undertaken on the stomach content of feral pigs in the Macquarie Marshes have revealed grasses, roots, ferns, fruits, crops, frogs, lizards, snakes, turtles, birds, mammals, invertebrates and carrion. Five different vertebrate species were found, including eastern bearded dragon, barking mash frog, green tree frog, spotted marsh frog and De Vis banded snake.

In recent years, pig populations in a number of catchments, including the Gwydir and Lachlan, have exploded. This is partly due to the delivery of environmental water to wetland areas during dry-sequences as this is assisting the pigs to survive during drought.

f) Riparian land management

The health of our waterways is inextricably linked to the surrounding land and land use. Grazing management adjacent to water ways is essential to maintain stream bank stability and limit erosion, sedimentation and poor water quality.

Riparian buffers should continue to be encouraged in high risk and vulnerable locations as should programs to encourage improved grazing and cropping strategies upstream, to limit poor quality runoff. It is critical that measures be implemented to mitigate the significant damage occurring due to livestock and feral animals on icon sites such as Gwydir Wetlands, Macquarie Marshes and Narran Lakes, beneficiaries of government water.

g) Weed eradication

Weeds are a significant threat to Australia's natural environment. They displace native species, contribute significantly to land degradation, and reduce farm productivity. Aquatic weeds continue to spread through flooding, moving the plants to other waterways. Many aquatic weeds have been introduced into, or have colonised, new waterways.

Invasive species, including weeds, animal pests and diseases, represent the biggest threat to biodiversity after habitat loss. Weed invasions change the natural diversity and balance of ecological communities, threatening the survival of many plants and animals as the weeds compete with native plants for space, nutrients and sunlight.

It is estimated that nationally, the impact of invasive plants continues to increase with exotic species accounting for about 15% of all flora. This figure is increasing yearly by about ten new species per year.

In terms of investment in improvements to **equipment, technology and methods** that will directly benefit the administration of environmental water in the Basin, initiatives could include:

h) Adoption of improved technology and equipment

Investment under this category would need to demonstrate direct benefits to the natural environment in the Basin, delivering more water effectively to identified environmental sites and/or have a positive impact for water retention in the system.

i) Data

Increasingly, the adoption of sophisticated data analysis is leading to greater farm efficiencies, including in the irrigated agricultural sector. Such efficiencies have a direct benefit to water efficiency as well as to farm efficiency. NIC believes investment in similar data and systems could allow environmental water managers to reap similar benefits.

Recommendation: *Implementation of complementary, or non-flow measures, aligning with the increased flexibility for the CEWH to sell water allocations if the proceeds are used for environmental activities, such as:*

- a) Carp control through the release of the Carp Herpes virus*
- b) Appropriate management of cold water pollution*
- c) Improvement of fish migration through fishways*
- d) Restoration of native fish habitat*
- e) Feral animal control in wetlands*
- f) Riparian land management*
- g) Weed eradication*
- h) Adoption of improved technology and equipment*
- i) Data*

2. Are there any environmental activities that you think should not be eligible for investment by the CEWH?

NIC has no specific comment to make here beyond the fact that the intended purpose of any environmental activities should be evaluated in line with the broader objectives of the CEWH Investment Framework.

3. What criteria do you think should be used for assessing environmental activities?

NIC broadly agrees with the suggested criteria to assess potential environmental activities outlined in the discussion paper, including initially assessing activities as eligible for funding and evaluated against CEWH priorities. Anticipated benefits from the investment should also include improving the effectiveness of proposed Commonwealth environmental water use, assisting the CEWH's capacity to meet environmental objectives of the Basin wide annual environmental watering priorities and to also align with broader Government priorities.

Specific further criteria might include projects and initiatives that can demonstrate:

- Improved environmental benefits through the types of complementary measures described in our response to Question 1.
- Greater community benefit by supporting habitat and/or recovering threatened species and threatened ecological communities and critical ecosystems to improve ecological outcomes in partnership with a private landholder by using Commonwealth water in a productive system.
- Consideration of enhanced social, economic and cultural wellbeing to improve a community's capacity to attract industry, business and tourism opportunities, and by extension potentially grow a region's health, education and skills capabilities.
- Alignment with, and/or enhancement of, other federal government programs.
- That a project does not involve issues of competitive advantage in line with competitive neutrality principles.
- Project proponent's capacity to manage any risks associated with the project.

4. What types of activities would be most appropriate for joint funding arrangements?

Consideration of investment in projects with an Irrigation Infrastructure Operator (IIO) to support the targeted delivery of environmental water to sites. These should be developed in conjunction with the IIO and other relevant stakeholders. Activities might include assisting in the restoration of an area, for example, a floodplain for broader environmental and community benefit.

NIC also supports the CEWH working in collaboration with state and/or community organisations to provide additional leverage or benefit to investment opportunities that may deliver multiple objectives, for example wetland watering and pest and feral animal control. Funding could be used to allow for integrated project delivery.

5. What types of in-kind contributions could support environmental activities?

In-kind contributions could be by way of provision of machinery, labour, the use of services and facilities, the use of existing irrigation infrastructure, and professional advice and services. The Investment Framework issues paper notes that *'in-kind' contributions should be valued according to the accounting rules agreed by the CEWH and must also be incurred by the project proponent as part of the project*.

NIC would agree with an approach that evaluates in-kind contributions that is understood by all participants at the commencement of any process to submit project proposals.

6. Are there other 'delivery partners' that the CEWH could consider?

Other delivery partners should include farmers/private landholders, irrigation infrastructure operators, fishing and other sporting groups, local government, state governments, indigenous groups, local industry, community groups such as naturalist groups, CMAs, Local Land Services, Landcare groups.

7. Are there any other types of 'partnership' opportunities or investment approaches that could be considered by the CEWH?

A unique approach could include the use of Commonwealth water in a productive agricultural system, in a controlled and managed way for environmental benefit and to potentially extend to broader community benefits from greater management of ecological outcomes.

An example of this approach is the supply of environmental water to basin irrigation layouts (contour rice layouts) as practiced in the Central Valley of California. The Waterbird Habitat Enhancement Program (http://calrice.org/pdf/waterbirdhabitatbro_web.pdf) involves the investment of US\$10 million of federal Farm Bill funds to enhance habitat on 40,000 hectares of California rice fields. This program sees rice fields flood to a particular depth and duration to provide habitat for specific species. In addition, vegetation is managed within the fields to further match the habitat requirements for those species. Investment in modification and management of basin layouts would lead to cost effective habitat provision while seeing very high water use efficiency for environmental water delivered. There is also the opportunity to invest in the creation of habitat features within irrigation infrastructure. The construction of islands and mud flats within water storages and reuse system will see significantly improved habitat provision created from infrastructure that was primarily developed for productive purposes.

8. Are there practical ways that small groups or individuals could be supported to apply for funding?

There is opportunity for the Investment Framework to include a small grants program tailored to meet the needs of small groups or individuals, such as local community groups and farmers who seek to undertake environmental activities. This could be by way of one-off community grants or, one or two funding rounds over a three or four-year period. Grants could include the option of cash and/or in-kind funding contribution (further detail in response to Question 9).

Small groups or individuals might seek to form partnerships with their key industry body for example, Landcare groups or CMAs and other interested groups. This activity would occur through consultation with delivery partners identifying local and regional needs, followed by advice to state agencies who would submit project proposals.

Local engagement officers located in regional centres across the Murray Darling Basin are well positioned to play a role in supporting and/or facilitating the development of project proposals. Engagement officers would provide useful input through their knowledge of local and regional environmental needs, as well as an understanding of the barriers to achieving good environmental outcomes through watering in a specific region.

The arrangements should be flexible to allow for establishing delivery partnerships that are locally relevant, that is, to allow for local delivery arrangements to be established and not bound by delivery through certain organisation types. The best delivery models will vary between regions.

9. By which methods (for example, one-off grants, procurement, and investment prospectus) do you think the CEWH should fund environmental activities?

NIC supports the range of methods for funding environmental activities noted in the issues paper (ie grants, procurement and investment prospectus) for the CEWH to fund environmental activities. For the purposes of progressing smaller activities with the participation of local groups and individuals, a tiered grants program could be established incorporating three tiers of funding, each with a cash and/or in-kind contribution. For example:

- Tier 1 grants: up to \$50,000
- Tier 2 grants: \$50,000 - \$100,000
- Tier 3 grants: \$100,000 - \$250,000

This would enable individuals such as farmers/private landholders and other entities like sporting clubs and potentially local industry groups to participate. Criteria for such a program could extend to a private landholder's capacity to use Commonwealth water in a productive system that was able to demonstrate support for habitat and recovery of threatened species and threatened ecological communities.

A procurement and investment prospectus approach would be an appropriate way forward for funding larger projects. A similar approach to the Australian Government's Threatened Species prospectus may be worth examination. The release of a prospectus provides a window to enable business, industry and the philanthropic sector to play a key role.

10. Are there other relevant considerations or do you have any other

With the Commonwealth holding the position as the biggest owner of Murray Darling Basin water, it is important that the CEWH has regard for the strong position he has in the water market. The CEWH must give due consideration to any involvement in the marketplace for annual allocations, and the effect this can have on prices given the sheer scale of CEWH entitlements. For example, in wetter years, when the CEWH is a seller, this has the potential to impact negatively on values, while in dry years, this will not have the opposite effect (other than a legacy effect from previously removing entitlements from the consumptive pool), and so could be seen as a negative impact overall. In other words, this forces prices lower in wet years but does not provide the offsetting effect in dry years.

NIC would expect the CEWH to have a policy which clearly states the consideration it gives to its potential to impact the market.

About the 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 across the Murray Darling Basin states, irrigation regions and the major agricultural commodity groups. Council members collectively hold approximately 5,000,000 mega litres of water entitlements.

The national body is the policy and political voice of those who use water for commercial agricultural purposes, producing food and fibre for local consumption as well as making a significant contribution to Australia's export income.

The national body is funded by irrigators, for the benefit of irrigated agriculture, which provides jobs in rural and regional communities. Members are not individual irrigators but members of their respective representative organisations. An irrigator is defined as *'a person or body with irrigation entitlement for commercial agricultural production'*.

Member organisations are located in irrigation regions across Australia within the Murray-Darling Basin and beyond. They represent a diversity of organisations from irrigation infrastructure operators, individual irrigators, processors through to agricultural commodity groups who produce and value add food and fibre for domestic consumption and significant export income.

The NIC advocates on behalf of irrigated agriculture and 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.

ⁱ Vilizzi, L., Tarkan, A.S. and Copp, G.H., 2015. Experimental evidence from causal criteria analysis for the effects of common carp *Cyprinus carpio* on freshwater ecosystems: a global perspective. *Reviews in Fisheries Science & Aquaculture*, 23(3), pp.253-290.

ⁱⁱ Lugg, A. and Copeland, C., 2014. Review of cold water pollution in the Murray–Darling Basin and the impacts on fish communities. *Ecological Management & Restoration*, 15(1), pp.71-79.

ⁱⁱⁱ http://www.depi.vic.gov.au/_data/assets/pdf_file/0013/282001/Murray-River-resnagging-fact-sheet-2014.pdf