Submission No 129

INQUIRY INTO RATIONALE FOR, AND IMPACTS OF, NEW DAMS AND OTHER WATER INFRASTRUCTURE IN NSW

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SUBMISSION ON MACQUARIE RIVER RE-REGULATING STORAGE PROJECT

TO THE NEW SOUTH WALES PARLIAMENTARY INQUIRY INTO THE RATIONALE FOR, AND IMPACTS OF, NEW DAMS AND OTHER WATER INFRASTRUCTURE IN NEW SOUTH WALES

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I have been involved in research on environmental issues for a number of years. During that time I have participated as a panel member in several national and international Inquiries including, most recently, a Citizen's Inquiry into the conditions of the rivers, people and communities (human and non-human) of the Darling River Basin. We interviewed more than 100 local people who volunteered to share their experience of life along the rivers.

Our report is soon to be published. In it we make clear the degraded state of the rivers generally, and the consequent negative impact on the people and communities in the Basin. It appears the major causes of the crisis in the Basin, along with climate change, have been the over extraction of water for irrigation and mismanagement in the governance of the river's' ecosystems.

Dams have played a significant role in the degradation of the Darling River Basin ecosystems. We believe there should be a moratorium on dam building and an independent, thorough public inquiry into the case for any future dams.

Introduction

The World Commission on Dams (WCD) established the most comprehensive guidelines for dam building. Their final report describes an innovative framework for planning water and energy projects that is intended to protect dam-affected people and the environment, and ensure that the benefits from dams are more equitably distributed.

The WCD framework covers key areas for improved planning of dams, including **the need to fully assess all available options for meeting water and energy needs; addressing outstanding social issues from existing dams before building new ones, gaining public acceptance for key decisions, and the importance of protecting healthy rivers.**

The WCD recommendations form the basis for many decision-making processes for dams around the world and constitute international soft law. They are also

being adapted to national contexts in various public dialogue processes around the world.

The Commission was a global multi-stakeholder body initiated in 1997 by the World Bank and the World Conservation Union (IUCN) in response to growing opposition to large dam projects. The Commission had a mandate to review the development effectiveness of large dams and to develop internationally acceptable guidelines for the planning, construction and operation of dams.

The WCD found that while "dams have made an important and significant contribution to human development, and benefits derived from them have been considerable... **in too many cases an unacceptable and often unnecessary price has been paid to secure those benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment.**"

In the case of the present project, the case for the dam project has not been assessed properly. I strongly believe that whatever claimed, and widely disputed, potential benefits might follow its completion, this is one of the instances where the price to be paid in social and environmental terms is many times over any alleged benefit.

My submission deals first with the major dam project known as the Macquarie River Re-regulating Storage. Following that I will make brief comments on other projects mentioned in the Inquiry's Terms of Reference

Response to the Terms of Reference

a) The need for the projects, including the historical allocation of water and consideration of other options for ensuring water security in inland regions.

The case for the **need** to construct the new dams envisaged by the government and proposed by WaterNSW has not been made. There may be a political case for constructing these dams, but there is no evidence put forward by the proposer to justify the certain detrimental impact on the communities, human and non-human, and the regional ecosystem. The scientific case against the new dams has been clearly and comprehensively made by Professor Kingsford and numerous others.

The **need** is to oppose the dams proposed as they will further degrade the river and the Macquarie Marshes and the Ramsar listed wetlands that are already in a degraded condition.

Another **need** is to change the methods of historical water management to ensure that what should be environmental flow by law, is not used for irrigation. The Scoping Report (p. 16 of the proposal) indicates that flows from tributaries into the Macquarie River will be captured by the major dam proposed and used to fill orders, presumably from irrigators. Damning the river so that the natural water flow from unregulated tributaries, such as Talbragar, Bell and the Little Bell, is captured and available for irrigation is more than just a question of **quantity** diverted from the river's downstream ecosystems. The science makes clear that water from the weir pool lacks the **quality** of natural flow water, so that even if released downstream and not used for irrigation, the now regulated water does not adequately provide the nutrients for a healthy river.

Alternatives to the dams have not been considered adequately, if at all. Despite the statement that in considering how to better regulate flows in the Macquarie River system to ensure better water security and usage, especially for irrigators, the proposers identified " a number of feasible options", it is clear that no such number was pursued. The proposers mention only one, that of reconstructing the Gin Gin Weir.

In fact, they clearly did NOT consider it a feasible alternative: "This would require the continuation of operational inefficiencies currently experienced, and not realizing increased security of water supply, full potential of agricultural operations or achieving the long-term water security strategic objectives in the Macquarie River catchment." Nevertheless, reconstructing that weir, and putting in a fish passage is part of the alternative "package" that should be considered.

Part of that package would be a clampdown on illegal taking of water which occurs in a number of different ways, including floodplain harvesting and overextraction by license holders.

Another possibility is water buy back from license holders who may wish to do so.

Further, education campaigns regarding, and implementation of, water-recycling by all concerned, and the supply of water tanks to communities are two programs that should be undertaken as a matter of urgency by the state government.

b) The economic rationale and business case of each of the projects, including funding, projected revenue, and the allocation and pricing of water from the projects

The proposers have been playing their cards close to the chest as far as these matters are concerned. The information given has been skimpy and not entirely certain. Thus even the answer to the basic question-how much water will be in the roughly 30 kilometre weir pool-is not entirely clear. While the proposal suggests it will be 6000 megalitres (ML) which is the "preferred option", the scoping report (p9) where it was signalled that the capacity might be as high as 9500 ML.

As far as allocation goes, they claim that the environmental flow will not be decreased. That is simply not a credible statement given the primacy given to supplying irrigators and the fact that the vital nutrition rich tributary water will be caught by the dm.

On the other matters, WaterNSW-not known for keeping to its obligations and undertakings- promises a business case will be made out later, at some point in the process of gaining approval. It is passing strange that the desire for dam building seems to have blinded the proposers to the question of the economics. of building dams.

c) The environmental, cultural, social and economic impacts of the projects, including their impact on any national or state water agreements, or international environmental obligations

The project will have numerous significant **downstream** negative effects. Throughout their proposal WaterNSW makes claims that there are either no negative effects or that those that will inevitably occur are not significant, or if significant not at a level that cannot be ameliorated. I will not go further than to say that these claims are misleading.

Macquarie Marshes and Ramsar listed wetlands

The project will decrease the amount of Planned Environmental Water (NSW *Water Management Act 2000*) in the Macquarie River thereby reducing the amount of water for the Macquarie Marshes and its Ramsar listed sites. These are in poor condition and have been declining for a decade at least (Australian Government letter of 2010 to the Ramsar Secretariat).

The proposers admit that there will be negative impacts on matters of **National and International Significance**, in particular the Macquarie Marshes but try to dismiss this on the specious ground that because of the distance to the Marshes, 150 km, the impact will be indirect, therefore insignificant.

Australia has an obligation under the *Water Act 2007(Cth)* and the *Ramsar Convention* to protect the Macquarie Marshes. The loss of flows to them is an issue that must be assessed as a controlled action. The increased capture of water resulting from this proposal will cause less water to reach the Marshes (and less of the vital natural flows) with resultant negative effects on their ecological stability. It will also increase the destructive impact from future drought conditions superheated by climate change.

Species or threatened ecological communities

Here again the proposers accept that there will be negative impacts. In this case, on a number of threatened Ecological communities and flora as well as Fauna (birds, mammals, reptiles and fish), 28 altogether. And WaterNSW even accept that the impact will be significant.

Yet they remain confident that "mitigation measures" will solve the problem. and they are content to allow further assessment to indicate of what those measures will consist. This is unconvincing, particularly considering their poor environmental record, to which we will refer below.

Migratory species or their habitat

Here once again the proposers indicate that there will be potential direct negative impacts on migratory species, 9 in number listed under the EPBC Act. Yet they suggest that the impact will not be significant.

This time their avoidance strategy is "That there are extensive areas of likely more important habitat for migratory species in the region. As such, the proposed action is unlikely to result in substantial modification of important habitat or seriously disrupt the lifecycle of migratory species."

So the calculation is clear: **business interests are balanced quantitatively against ecological interest, not qualitatively.** Such a strategy means that little by little the environment can be sliced up and disregarded. The measurement of significance by a subjective calculation of size or dimensions is unacceptable.

The proposers are asking that the mitigation that they admit will be required will be carried out later. But their record of fulfilling all undertakings is less than convincing.

Conditions for Fish

The Macquarie River has already been listed by the NSW Environmental Protection Agency as having fish conditions that are "Extremely Poor". The project will certainly not enhance those conditions. In fact, there will be a deterioration of water quality and the loss of habitat riffle zones.

There are 5 categories of freshwater fish protected under the NSW *Fisheries Management Act 1994*, as listed:

Eel Tailed Catfish (Endangered, Endangered Population; Olive Perchlet (Endangered, Endangered Population); Southern Purple Spotted Gudgeon (Endangered); Silver Perch (Vulnerable); Trout Cod (Endangered).

Three fish species are protected under the EPBC Act: Murray Cod (Vulnerable); Silver Perch (Critically Endangered) Trout Cod (endangered).

The threats come from proposals such as that under consideration, as made clear by the proposers:

"Instream structures are also listed as the Key Threatening Process Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams. The degradation of native riparian Vegetation along NSW watercourses and the Removal pf Large woody debris for NSW Rivers and streams are also Key Threatening Processes that may apply to the project".

In the upstream weir pool of an estimated 30 km, aquatic habitat and recruitment areas will be lost due to inundation. Vulnerable Murray Cod will lose existing spawning sites.

Flora and fauna to be affected

The proposer's research reveals the serious dangers posed to the ecosystem of the Macquarie Valley.

There are "62 plant species listed as Threatened and 44 animal species listed as Threatened. In addition, there are 14 Threatened Ecological Communities (TECs)-11 endangered TECs and three Critically endangered. Of the 14 TECS listed under the NSW *Biodiversiy Act 2016*, seven have a listing under the EPBC Act. Nine migratory species of birds are also listed under the EPBC Act."

Indigenous Heritage sites

The upstream weir pool generated by the proposal will be at least 30km long. At the 20 km point there are registered Aboriginal Heritage sites. These will be

covered by water. The proposer's nonchalantly state "The nature of the recorded sites suggests that similar sites are likely to exist at other locations along the river and across the landscape."

Does that mean that one less existing site is counterbalanced by the possible existence of other sites?

Again, this **quantification methodology, disregarding the quality or subjective value of things to be preserved or destroyed**, reveals a disturbing attitude within WaterNSW. It does not augur well for future remedial or mitigatory measures should the proposal be accepted.

Finally, the reduction in water flow downstream will also decrease the amount of water available to maintain **groundwater levels**, and will threaten **inter connectivity** with the Barwon-Darling especially in dry years**.**

Upstream damage

For at least 30 kilometres upstream (assuming the storage pool is limited to the "preferred option" of 6000 ML and does not reach the 9500 considered in the Scoping Report) the water will cover and destroy vegetation and habitats. The entire ecosystem will be transformed. Aquatic habitat and recruitment areas will be lost due to inundation. Vulnerable Murray Cod will lose existing spawning sites.

Variations of water levels in the storage area will result in erosion and destabilisation of the river banks.The magnificent river Red Gums will be lost over time, and forever.

A popular public recreation area for "picnicking, boating, fishing and bushwalking with a sandy river beach" will be destroyed, contrary to what the proposers claim. Their response "the project is seeking to retain and enhance these features as far as practicable" is not convincing.

d) The impacts of climate change on inland waterways, including future projections, and the role of dams and other mass water storage projects in ensuring security of water supply for social, economic and environmental outcomes.

Climate change represents an existential threat to the security of water and the survival of the entire country should appropriate policies not be adopted. In order to achieve water security for the future, partisan politics regarding the rivers must be repudiated. They have bedevilled the communities in the Darling River Basin for years.

The proposal appears to be an example of partisan politics at work. The current Commonwealth and NSW governments wish to push through dams without proper assessment, nor transparency, nor adequate participatory consultation of all sections of civil society.

Future decisions on water must be based on 1) the vast amount of sound scientific evidence about water and its management that has been produced in this country, and others, and 2) the First Nations' traditional knowledge and experience gained through their custodianship of the rivers for thousands of years, and that of other riverine communities.

The proposal appears to be an example of the bureaucratic tendency of this government agency, WaterNSW, to ignore both the science and the people's knowledge and experience, both First Nations and the other riverine communities.

I have discussed above in a) alternatives to the dam project proposed, and these are some of the ways in which the impact of climate change may be ameliorated. But there needs to be a much greater transformation in our relationship to the rivers in this country if water security is to be achieved in the face of a drier continent.

"We all need to shift our values and ethics from our traditional exploitation and extraction mode, to one of care for and engagement with nature. as a species we must learn to care for the Biosphere that created us, the vey thing that supports our own life supporting systems. this is clearly where our collective futures lay." (Merritt, 2020)

First, a long term Economic Plan must be developed in order to lessen our usage and dependency on water from the rivers. We need to establish what new industries for the digital age can be developed in regional NSW; and what crops should be grown, with emphasis on dryland farming. Those that are so dependent on water that they necessitate over extraction of water, such as cotton, especially the mega operations, should be transitioned out. So also mining of fossil fuels which requires large quantities of water.

Second, we need to revise our understanding of how to manage the rivers. Merritt, a keen observer of the Darling-Barwon (Northern Basin) for more than a decade, had this to say as a way of "drought-toughening" the Basin:

"Instead of making big dams that ruin the country, why not totally regulate the entire length of the Barwon Darling with interconnecting weirs? these weirs

would not be the traditional “block weir”, they would need to be made with barrage style gates that could be lowered or movd aside when a rain or flood event was happening the closed systematically as flows reduce, causing a backing-up of waters that can e used to keep the entire system in good health. this is not a new idea; it was apparently part of a “plan” years ago but the “plan” got side-tracked or overlooked…

The placement of these weirs would not be made as they have been, according to where there is a town or homestead, but rather made according to where their placement would best create positive and maximum water conservation outcomes for the Barwon/Darling riverine system and all life along and in it.

If the volume or capacity of each weir were enough to create an emergency or environmental flow to the next weir downstream, the whole system would be self-supporting, allowing intr-weir flushing should bacterial infection affect any part of the system downstream.” (Acknowledgement: the plan mentioned was originally developed by long time Bourke Shire Councilman, Mr. Jack Bennett).

e) Any other related matter

Information Sources

Lack of reliability and uncertainties calls for more studies.

We are told that:

“Further studies and surveys will be undertaken to confirm the validity of the findings of those sources {refers to information used for the proposal-GB} as related to the proposed action”.

“Some of the reports used raise uncertainties about aspects of the Macquarie River environment. The proposed further studies and surveys should reduce those uncertainties as relate to the proposed action.”

In other words, the **proposal is built on questionable assumptions** to an extent the degree to which is unknown but that we are asked to accept.

We object to what appears to be a cavalier approach to making claims that are potentially unreliable and/or uncertain. At most, the proposers should be asked to do their homework and return with a proposal that is supported by the scientific and other relevant disciplinary knowledges available.

Consultation re alternatives

According to the proposes, “No consultation on the alternative has been conducted. WaterNSW has no current plans to undertake public consultation on

the project alternative (re-construct the existing weir to the original design height or maintain the existing weir with construction of a re-regulating storage)."

This "take- it- or- leave- it" attitude is inconsistent with the activity of entering substantive, meaningful, participatory consultation with the public.

Assessment of Alternatives

According to the proposers "No environmental assessments are proposed for the project alternative".

In our view this attitude of WaterNSW is unfortunate to say the least. The Macquarie River Valley ecosystem has been identified by the *NSW State Infrastructure 2018-2038 Report* as a valley wherein the irrigation industry has exceeded the natural capacity of the system. The valley is highly over-allocated as of now. Climate change is widely recognized as adding to the scarcity of water.

An alternative is desperately required. It needs to be developed with true, informed, public consultation. More water extraction from the river system will be a disaster for the Macquarie Valley ecosystem.

We support the rejection of the current proposal, with admonition to WaterNSW to engage in consultation of a proposed alternative project that will avert such a disaster.

We suggest that discussions should be undertaken on the reconstruction of the Gin Gin Weir to the original design height without construction of a re-regulating storage pool. Fish passage, recognised as important in the present proposal, and mandated 9 years ago, to again be a requirement of the new construction.

Environmental record of WaterNSW

In legalistic manner the proposer points to the fact that no legal proceedings have been taken against it. However, that does not mean that they have a "clean record".

The reality is that its record (including its predecessor agencies, combined in 2015) has been sullied, evincing a degree of intentional omissions in some respects and negligence in other respects. It does not inspire confidence in the proposer's ability to ensure satisfactory mitigation and remediation can be carried out should there be the likely negative impacts, of national and international significance, on the ecosystem of the Macquarie Valley.

We have mentioned above the 9 year absence of fishways mandated for the original Gin Gin Weir.

Other instances of which we are aware include:

The failure after 9 years to build two other fishways, legally required by the NSW Fisheries Act, at Gunningbar and Marebone in the Macquarie River system, necessitated by the impact of upgrades to Burrendong Dam.

The Augmentation and Safety Upgrade of the Chaffey Dam on the Peel River resulted in the extinction of the Booroolong Frog in 2019.

In the water year of 2019, the daily flow rate for environmental water releases was not complied with by WaterNSW during what is known as the "stable cod flow" when the Murray Cod were on the nest. This resulted in flow rises and falls that impacted negatively on the nesting fish.

References

Asmal, Kadar (2001) "Introduction: World Commisison on Dams Report, *Dams and Development" American University International Law Review* 16 (6) 1411-1433

Bosshard, Peter (2010) " The Dam Industry, the World Commission on Dams and the HSAF Process" *Water Alternatives* 3(2) 58-70

Kingsford, Richard (2020) Submission on EPBC Act Referral 2020/8652; WaterNSW Macquarie River re-regulating Storage

Maloney, Michelle et al (2020) Report of the Citizen's Inquiry into the Darling River Basin (forthcoming)

Merritt, Mark (2020) A Weir System for the Rivers and the Ecosystem (email to the author, 17 July)

Merritt, Mark (2020) Submission to the Independent Assessment Panel: Social and Economic Conditions Impacting the Murray Darling River Basin

Schulz, Christopher and Adams, Bill (2019) Debating Dams: The World Commission on Dams Twenty years On https://www.advancedsciencenews.com/debating-dams-the-world-commission-on-dams-twenty-years-on

World Commission on Dams (2005)

OTHER PROPOSED DAM PROJECTS

Darling River Western Weirs Projects:

Wilcannia Weir

This is a promising project. For once there has been considerable consultation with the local community and the response has been positive. The new weir has been sought for many years. Discussions have largely focused on the location which will be downstream of Wilcannia as opposed to the old weir which was located above the town. There seem to be no environmental drawbacks of any significance related to this construction.

The citizen's Inquiry view is that this was a project that should be exempted from any moratorium on dam building.

Bates, Angela (2018) "Wilcannia to get a new weir on struggling Darling River after three decades of lobbying" https://www.abc.net.au/news/2018-11-13/wilcannia-to-get-new-weir-after-decades-of-lobbying/10493024

Other aspects of the Western Weirs Project

It appears that WaterNSW is developing a Strategic Business Case and is intending to deliver "Construction of a new integrated system of gated weirs to replace current fixed weirs along the river allowing WaterNSW to more effectively manage flow along the whole system' (the Darling Barwon from Mungindi to Wentworth-GB).

They state that "There are 29 weirs along the Barwon-Darling River and the adjoining tributaries. WaterNSW owns a number of weirs in the system, however ownership of the others is unclear.

The current infrastructure is also known to have a number of deficiencies from poor condition of weirs, no system level functionality, flow regulation limitations, town water supply and security concerns and unclear responsibility of structures.

WaterNSW is investigating a holistic approach to the management of weirs in the far west….benefits of taking a holistic approach to improving the management of the Barwon Darling systems by assessing the feasibility of modifying and changing the operation of river infrastructure to support remote community water supplies and provide related socio-economic, environmental and other benefits".

It seems that for this project WaterNSW has envisaged doing the right thing by the river and the river communities.

https://www.waternsw.com.au/projects/new-dams-for-nsw/western-weirs-program#:~:text=The%20Western%20Weirs%20Program%20covers,River%20and%20the%20adjoining%20tributaries.

Mole River Dam Proposal

I object to this proposal.

The 60 metre rock wall will capture 100 GL (billion litres) and will inundate over 800 ha of farmland and bushland.

It is not a critical necessity that it be built, therefore it should not be rushed through to completion under the NSW *Water Supply(Critical Needs) Act* 2019 without proper scrutiny and environmental impact assessment.

I believe there is doubt that the project is financially viable.

The capture of that amount of water will further degrade the river downstream, threatening biodiversity. Upstream, there will be loss of productive farmland and Aboriginal heritage sites.

It appears there has been no effective consultation with local communities.

It seems likely that the main beneficiaries will be irrigators but the negative impact will be on the health of the ecosystem.

Wyangala Dam Wall Proposal

The proposal is to raise the Dam wall by 10 metres. that will mean a further 650 GL will be captured from the Lachlan River. Almost 2000 ha of land will be inundated upstream.

I object to this proposal similar grounds grounds as listed above re the Mole River Dam proposal.

Further grounds for opposition relate to the nine wetlands that will receive reduced vital natural flows. (These are listed under the Directory of Important Wetlands in Australia) Three of these are listed amongst the 18 Key Environmental assets in the Murray Darling Basin for fulfilling the Basin Plan targets.

Dungowan Dam Proposal

The proposal is to enlarge the dam, taking an additional 10 GL from the Peel River and inundating 207 ha of land.

I object to this project on a number of grounds.

Lack of adequate consultation.

Inundation upstream will cover Aboriginal heritage site of importance while ruining bushland, plants and animals therein.

Downstream the lessened flows will impact negatively on the Namoi river and threaten loss of connectivity with the Barwon-darling in dry periods.

Uncertainty about the ownership of the dam and therefore the management of the water supply (Tamworth Regional Council or WaterNSW}.

Loss of additional natural flows will impact the health of the Peel River and therefore threaten the endangered fish species, platypus and turtles.

As with the other dam projects no consideration has been given to alternatives to this dam project.

It is not a critical need and should be the subject of a public inquiry as with the two other projects above.