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Conservation Council SA

1200 Bridges Too Far

Off-farm water recovery spending in the Murray Darling Basin

Money originally allocated to ensure a healthy Murray-Darling Basin is now earmarked to be spent on seemingly unrelated infrastructure in New South Wales. Instead of recovering 450GL promised to the environment in downstream states, this money may now flow to a range of questionable projects, including upgrading 1200 bridges in irrigation districts.

Kate McBride

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Summary

The Water for the Environment Special Account (WESA) was established to fund efficiency and constraints measures to recover an additional 450GL under the Murray Darling Basin Plan (Basin Plan). Water recovery was to be achieved through both on-farm and off-farm efficiency measures. To date, just 2.1GL of the 450GL has been recovered while $68.1 million has been expended from the WESA.

An independent review of the WESA found that under no circumstances will the required 450GL be recovered by 2024 and concluded only 60GL could feasibly be recovered. Under this scenario, just 13% of the water will be returned to the environment by the deadline.

After Federal Water Minister, Keith Pitt announced the discontinuation of the on-farm efficiency program, off-farm efficiencies became the only remaining form of environmental water recovery available to meet this 450GL commitment. This program has been allocated $1.48 billion to recover water for the environment through off-farm projects.

After consideration by the Murray Darling Basin Plan ministerial council in November 2020, a stocktake list of off-farm proposals was released by The Department of Agriculture, Water and Environment (DAWE). The proposals include projects such as the upgrade of 1200 bridges to 'meet Gross Vehicle Mass (GVM) requirements', building fences around channels, reducing the infrastructure of an irrigation company and increasing irrigation channel flow capacity and surge reservoirs 'to minimise excess being released'.

Only 3 of the 34 proposals specify potential water savings. Many of the proposals highlight benefits to irrigators but fail to mention any benefits to the environment. The Australia Institute contacted DAWE for specifics on project costings, water savings and more detailed project plans but was denied further information.

Years of inaction on water recovery from Basin states and a Federal Government not willing to enforce action has resulted in a Basin Plan that is currently failing the environment. It now appears that money earmarked for the recovery of environmental water is at risk of flowing to a range of infrastructure projects with questionable or no prospect for genuine water recovery within NSW irrigation districts.

Introduction

A key debate in the management of the Murray Darling Basin is how to get more water into rivers, wetlands and other natural features. The most efficient way to achieve this is for governments to buy water licences back from willing sellers. Such buybacks are opposed by some parties due to the perception that they result in negative social and economic impacts on communities where water is purchased. Buybacks were capped in 2015 and more recently were ruled out by Water Minister Keith Pitt.[1]

Another method of water recovery has been for governments to pay for more efficient irrigation infrastructure on farms, with the rights to the water savings split between the farmer and the public environmental water holders. Such efficiency measures are also controversial as they are widely seen to not actually deliver the promised water savings and may actually have reduced river flows.[2] International experience has also indicated problems with on-farm efficiency spending. [3]

The Basin Plan included a requirement to return 2750GL of water to the environment with an additional 450GL acquired through on-farm and off-farm infrastructure upgrades. The guarantee that the 450GL would be returned to the system was critical for South Australia agreeing to the Basin Plan in 2012.[4] This water recovery was to be funded through the Water for the Environment Special Account (WESA). Citing its ineffectiveness, particularly in recent water recovery efforts, in March 2021 Minister Pitt discontinued the on-farm water efficiency program.[5]

As a result, the only remaining form of water recovery to meet the target of 450GL under the Basin Plan is off-farm water efficiency. The Federal Government has allocated $1.48 billion to recover water for the environment through off-farm projects. The Department of Agriculture, Water and Environment (DAWE) website reads;

[1] Sullivan (2020) *Minister rules out farmer water buybacks, creates new Murray-Darling Basin compliance office*, https://www.abc.net.au/news/2020-09-04/pitt-committs-no-more-buybacks-creates-new-water-compliance-body/12627758

[2] Williams and Grafton (2019) *Missing in action: possible effects of water recovery on stream and river flows in the Murray–Darling Basin, Australia*, https://www.tandfonline.com/doi/full/10.1080/13241583.2019.1579965

[3] Perry, C; Steduto, P; Karajeh, F. (2017). *Does Improved Irrigation Technology Save Water.* Cairo: Food and Agriculture Organisation of the United Nations.

[4] Cullen (2012) *Gillard announces Murray Darling plan changes* https://www.abc.net.au/news/2012-10-26/gillard-announces-murray-darling-plan-changes/4334670

[5] Sullivan and Long (2021) *Murray Darling Basin Plan's on-farm Water Efficiency Program axed by government*, https://www.abc.net.au/news/2021-03-03/murray-darling-basin-on-farm-water-program-canned/13210554

> Projects funded under the program will improve the efficiency of off-farm irrigation infrastructure **and increase the volume of water available for irrigators**. They will also help us to reach our river health targets **of returning 450 GL by June 2024.**[6]

Leaving aside whether it is feasibly possible to simultaneously increase water for consumptive use and for the environment, an initial "stocktake list" of projects has been released by DAWE that includes project proposals.[7] Minster Pitt announced in March that 10 projects were ready for commencement within three to 12 months.[8] This report assesses the projects described on the stocktake list.

[6] DAWE (2021) *Off-farm Efficiency Program*, https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program

[7] Department of Agriculture, Water and Environment. (2021). *Off-farm Efficiency Program*. https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program

[8] Keith Pitt (2021) *Joint media release; Putting communities at the heart of the Basin Plan https://minister.awe.gov.au/pitt/media-release/off-farm-projects-recover-environmental-water*

Stocktake List

The stocktake list includes 34 individual proposals from 11 proponents. The list was considered by the Murray Darling Basin Ministerial Council in November 2020 and subsequently published by DAWE[9]. All of the proposed projects are located in NSW[10], however DAWE has said that projects in Victoria and South Australia are also being considered.

Only three proposals on the list specify the amount of potential water savings, with expected recovery to be between 7.4-9.2GL. A further proposal intends to pilot a desalination project that, if successful, could add "consumptive water into the system, estimated at 10GL annually". The remaining 31 projects provide no information about their potential to return water to the environment.

COLEAMBALLY IRRIGATION CO-OPERATIVE LTD

A proposal from Coleambally Irrigation Co-operative intends to capture flood water and divert it to local aquifers to "store water into the future".[11] If approved, this project would result in WESA money being spent to return less environmental water to the river system, not more. Other proposals focus on delivering water to irrigators by mitigating supply issues. Another proposal involves upgrading an undisclosed number of bridges under the pretence that "bridges were constructed to the bridge load ratings applicable in 1944 and this significantly constrains agricultural and regional transport productivity".[12]

GUNBAR WATER PRIVATE IRRIGATION DISTRICT

Two proposals from Gunbar Water Private Irrigation District aim to extend existing pipelines to deliver stock and domestic water to an additional 100 customers as well as the township of Booligal.[13] Far from returning water to the environment, such projects would take more from an already overallocated river system. To be clear, securing water supply for townships is important, but it should not be done using funds from the WESA which must be used to return water to the environment.

[9] Ibid.

[10] Department of Agriculture, Water and the Environment (2021) *Off-farm efficiency program* https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program

[11] Ibid.

[12] Ibid.

[13] Ibid.

MURRAY IRRIGATION LTD

With a total of seven proposals in the stocktake, Murray Irrigation have the most projects under consideration. Two proposals intend to upgrade the Gross Vehicle Mass (GVM) of 416 public bridges and 787 access bridges and culverts respectively. The justification provided is that upgrading these bridges will "improve farm efficiencies and productivity through significantly improved access to meet requirements of modern-day machinery and transport".[14] The proposals include details that the bridges are a financial risk to local councils. Another proposal aims to reduce the "infrastructure liability base that Murray Irrigation is required to look after".[15] How these upgrades will improve farm efficiencies and whether any water is expected to be returned to the environmental as a result is not made clear in the proposal.

MURRUMBIDGEE IRRIGATION LTD

Murrumbidgee Irrigation have a total of six proposals that include a pump station and pipeline from Lake Wyangan to "turn over water in the lake [to] improve water quality and provide irrigation capabilities for adjacent farmers".[16] Another proposal involves construction of surge reservoirs to "minimise excess [water] being released from the storages and not utilised". The proposal states that each year 70GL of releases are not extracted from the offtake.[17] Essentially this funding would ensure irrigators take every drop they're entitled to. Irrigators are, of course, entitled to receive their full allocation of water, but money intended to return water to the environment should not be used to achieve this aim.

OTHER PROJECTS

A considerable number of projects involve rebuilding, lining or desilting existing channel systems. Open channels are an in-efficient, outdated form of water infrastructure that result in considerable losses from seepage and evaporation[18]. Off-farm efficiency programs should focus on decommissioning open channels and encourage the transition towards pipelines.

Other projects propose building fences around channels, reducing the infrastructure liability base that councils are required to maintain and increasing flow capacity of irrigation

[14] Ibid.

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Moghazi, H., Ismail, ES. (1997). *A study of losses from field channels under arid region conditions.* Irrigation Science.

channels.[19] None of these projects describe how they save water or how much will be returned to the environment.

REQUESTS FOR FURTHER INFORMATION

The Australia Institute contacted DAWE requesting further information on the projects, specifically around costings and estimated water recovery for these efficiency projects. A record of those questions and the information provided can be found in the Appendix.

DAWE responded via email explaining "The Stocktake list shared on our website represents a list of potential concept proposals that may address water losses, promote regional economic stimulus and agricultural productivity, and enhance environmental flows".

The email continued; "These proposals were provided in confidence as project concepts only. As such, costings and water recovery amounts cannot be shared at this stage".

When asked for further information on the 10 projects Minister Pitt announced were ready for commencement in the next three to 12 months DAWE replied "Some of the projects in the stocktake appear nearly ready to commence and we will be able to provide further information on these as the process unfolds".

When asked whether this list was exhaustive, DAWE replied that these were the proposals for which they had "received permission from proponents to publish" and that the proposals "require further development- including stakeholder engagement and preparation of detailed costings before any funding decisions are made".

When asked for details on the capacity for the listed projects to return water, DAWE acknowledged that "Some of the projects in the stocktake, such as those raising bridges, are not offering to return water to meet Basin Plan targets and will be ineligible for funding for water recovery under the Water for the Environment Special Account".

Nowhere in the publicly available information relating to the stocktake list is the concept of 'raising bridges' mentioned, so it is unclear to which projects this statement refers. Similarly, it is unclear which projects Minister Pitt was referring to in March 2021, when he said that there are "about 50" projects being considered and that some were ready for commencement in as little as three months.[20]

[19] Department of Agriculture, Water and the Environment (2021) *Off-farm efficiency program* https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program

[20] Keith Pitt (2021) *Joint media release; Putting communities at the heart of the Basin Plan https://minister.awe.gov.au/pitt/media-release/off-farm-projects-recover-environmental-water*

There is a distinct lack of clarity around the proposed projects, including those that are apparently on the verge of commencement, and little publicly available information around the stocktake list that has been considered by the Murray Darling Basin Ministerial Council.

Constraints

The WESA was established in the Water Act 2007 to enhance environmental outcomes by:

> Increasing the volume of Murray Darling Basin water resources available for environmental use by 450GL, and
>
> Easing or removing constraints on delivering environmental water to the environmental assets of the basin.[21]

A constraint is a rule or structure that affects the deliverability of water. It includes physical structures such as low-lying bridges, river channel capacity and third-party inundation which includes impacts to agricultural production and infrastructure damage/access. River operators avoid inundating private property to avoid becoming liable for damages.

Management practices that regulate flows to the point where water only remains in the river channel has led to a substantial decline in the Basin's floodplain ecosystems. Areas that would traditionally receive semi-regular flood inundation now go many years without a drink. Crucial environmental flows recovered under the Basin Plan cannot be delivered without constraints being relaxed or removed.

Constraint relaxation is key to delivering the Murray Darling Basin Plan, however current WESA proposals that were considered by the Murray-Darling Basin Ministerial Council appear to go well beyond the bounds of legitimate constraints management.

The Federal Government's funding commitments were detailed in the *Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin.*[22] With only $200 million allocated to constraints, the ability of this program to upgrade 1200 bridges is brought into question. Furthermore, the first review of the WESA found that the account's allocation of $200 million is sufficient to cover expenditure on constraints.[23]

The Australia Institute contacted DAWE regarding the upgrade of 1200 bridges and how these projects relate to the removal of constraints. DAWE responded "The constraints

[21] Australian Government (2020) *First Review of the Water for the Environment Special Account, p.1* https://www.agriculture.gov.au/sites/default/files/documents/first-review-water-for-the-environment-special-account.pdf

[22] Council of Australian Governments (2019*) Intergovernmental Agreement on Implementing Water Reform in the Murray Darling Basin, p.4.* https://www.coag.gov.au/sites/default/files/agreements/iga-on-implementing-water-reform-mbd-9-august-2019.pdf

[23] Australian Government (2020) *First Review of the Water for the Environment Special Account, p.1* https://www.agriculture.gov.au/sites/default/files/documents/first-review-water-for-the-environment-special-account.pdf

projects are separate projects to those in the stocktake" meaning none of the $200 million allocated to constraints from the WESA is expected to fund these project proposals.

Water for the Environment Special Account Review

As previously mentioned, the recovery of 450GL of environmental water is funded through the WESA. In March 2020 the first review of the WESA was released. The independent panel concluded that neither the 450GL nor the constraints measures will be delivered by the 2024 deadline.[24] Analysis commissioned by the panel found that up to 60GL could feasibly be recovered.[25]

A projection of 60GL recovery by 2024 means, under this scenario, just 13% of the water will be returned to the environment by the deadline. Years of inaction and political games between states has resulted in a Basin Plan that is well and truly behind schedule.

[24] Australian Government (2020) *First Review of the Water for the Environment Special Account, p.2* https://www.agriculture.gov.au/sites/default/files/documents/first-review-water-for-the-environment-special-account.pdf

[25] Ibid.

Conclusion

While delivering some important environmental flows, the Murray Darling Basin Plan has been undermined by the misuse of public funds and too often it has been the environment that has lost out as a result.

To succeed in its objective to return water to the environment, the Basin Plan must have an environment-first approach. However, some projects listed under the off farm efficiency program, which is required to return 450GL of water to the environment, bring into question whether the environment is even a consideration.

The guarantee that the efficiency program would recover 450GL was essential to South Australia agreeing to the Basin Plan. Now it appears this program will fall well short of its goal and that money intended to deliver water downstream, critical for keeping the Murray Darling Basin healthy and Murray Mouth open, is at risk of being redirected to building bridges and increasing storage capacity upstream.

River systems die from the bottom up and it is the lower Murray that will suffer the most from any shortfall or delay in reaching the 450GL target.

Money from the Water for the Environment Special Account should only be spent on projects that deliver clear benefit to the health of the Murray Darling River system and increase the flow of environmental water. The Murray-Darling Basin Ministerial Council should reaffirm their commitment to this fact.

RECOMMENDATIONS

Recommendation 1- The Department of Agriculture, Water and the Environment release detailed plans, costings and estimated water recovery volumes prior to the commencement of any off-farm efficiency projects funded through the Water for the Environment Special Account.

Recommendation 2- The Murray-Darling Basin Ministerial Council commit to buying back water entitlements through open tenders from willing sellers to cover any shortfall in the 450GL of water recovery required by June 2024.

Recommendation 3- The Murray-Darling Basin Ministerial Council commission an independent audit of the Water Efficiency Program process that led to $68.1 million being spent to recover just 2.1GL of water.

Recommendation 4- The South Australian Government refuse to support any expenditure from the Water for the Environment Special Account on off farm efficiency projects until

detailed plans for those projects have been released, including credible water recovery volumes.

Appendix

Between 25th and 31st March 2021 the Australia Institute sought additional information relating to the off-farm efficiency program and the stocktake list. What follows is a summary of information requested and received through that correspondence.

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25.3.2021 - Australia Institute: I'm emailing in regard to the off-farm infrastructure projects, more specifically the project proposals available in the stocktake list (https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program). I'm interested in obtaining some additional information regarding the proposals, specifically the costings and estimated water recovery for each of the projects.

30.3.2021 - DAWE: The Stocktake list shared on our website represents a list of potential concept proposals that may address water losses, promote regional economic stimulus and agricultural productivity, and enhance environmental flows. This report was requested by Darling Basin Ministerial Council in mid-2020. Any decision to invest in these proposals will need to ensure that they can help protect basin communities against emerging pressures and future challenges, such as a water constrained future, changing crops and industry, more diverse water availability and changing water demand patterns. The department is working with Basin states and key stakeholders to continue to develop these concept proposals further. Any proposals that are of interest will need to be provided as formal applications under the Off-farm Efficiency Program as announced on 3 March by Minister Pitt. These proposals were provided in confidence as project concepts only. As such, costings and water recovery amounts cannot be shared at this stage.

31.3.2021 - Australia Institute: I'm enquiring specifically regarding the proposals in the stocktake that include the upgrade of over 1200 bridges. I understand the need to remove constraints however the proposals appear to be more concerned with the GVM of bridges than removing the constraint. I'm wondering if there was any further information on this. I note that the Minister Pitt has said that at least 10 projects will be ready to go within the next year. Is any further information available on the projects that are nearing commencement?

31.3.2021 - DAWE: the stocktake list on our website contains potential concept proposals only at this point and the department is working with the Basin states and key stakeholders to develop these concept proposals further. The proposals provided in the stocktake list are high-level and may change in their proposed project activities and will need to meet the relevant program criteria to proceed. Some of the projects in the stocktake appear nearly ready to commence and we will be able to provide further information on these as the process unfolds. Some of the projects in the stocktake, such as those raising bridges, are not offering to return water to meet Basin Plan targets and will be ineligible for funding for water recovery under the Water for the Environment Special Account. The constraints projects are separate projects to those in the stocktake.

We will provide further information on the Off-farm Water Efficiency program as it becomes available, please refer to our website https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program.

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DAWE replied to further questions from the Australia Institute on 10th May 2021. Those questions and the responses are listed below.

- How much money within the Special Account has been spent to date?
    - *As at 31 March 2021, a total of $68.1 million has been expended from the Water for the Environment Special Account (WESA) to support Efficiency Measures and Constraints Measures.*

- How many gigalitres of water has been recovered so far? I can see from reports that 1.9GL was recovered through the COFFIE program. Pitt also announced earlier this year that the WEP had recovered.2GL of water since 2019. Is the total recovered to date 2.1GL? Is that 2.1GL the entirety of water currently recovered in order to achieve the 450GL of water required?
    - *The COFFIE Program has recovered 1.9GL of water from 66 small projects and funded from the WESA.*
    - *The Water Efficiency Program (WEP) has recovered 17.3 megalitres (to June 2020).*

    - *Although the program is closed, applications made before 3 March are still being processed. If progressed, these projects will also contribute to the target.*
    - *The Minister's announcement on 3 March 2021 referred to a total of 0.2GL of water recovery from the WEP.*

- I've also come across the On-farm Irrigation Efficiency Program, I've just wondering if this has anything to do with the Special Account or the 450GL of water? Just looking for clarification that this is a different program to the WEP. Link- https://www.agriculture.gov.au/water/mdb/programs/basin-wide/ofiep
    - *The On-farm Irrigation Efficiency Program (OFIEP) was funded by the Sustainable Rural Water Use Infrastructure Program (SRWUIP). SRWUIP is a national program investing in rural water use, management and efficiency, including improved water knowledge and market reform, and water purchase for the environment*
      https://www.agriculture.gov.au/water/mdb/programs/basin-wide/srwuip

- I've been looking into the off-farm projects included in the stocktake of projects and I'm just wondering if this is an exhaustive list? It appears that these projects are all from NSW so wondering if there are any other projects on the table for consideration. Link- https://www.agriculture.gov.au/water/mdb/programs/basin-wide/off-farm-efficiency-program
    - *The list of projects included in the stocktake published on the department's website includes high-level concept proposals the department received permission from proponents to publish.*
    - *Victoria and South Australia state-led projects are also being considered.*
    - *The concept proposals received as part of the stocktake require further development- including stakeholder engagement and preparation of detailed costings before any funding decisions are made.*

- In previous years have there been any off-farm efficiency projects or has this program only been initiated this year?
    - *Off farm projects have been funded under previous Commonwealth programs. For example: Goulburn Murray Water Connections project Stage 2 and the Private Irrigation Infrastructure Operators Program in New South Wales. See:* https://www.agriculture.gov.au/water/mdb/programs/basin-wide/srwuip