BASIN PLAN SENATE INQUIRY – QUESTIONS ON NOTICE

Responses from the Department of Agriculture and Water Resources
February 2016

Question 1
Restoring the environmental health of the Coorong is one of the key drivers of water recovery. As mentioned in answer to questions from the September hearing, the department does not know how much fresh water has been diverted from the Coorong directly to the sea annually by the South East Drainage Scheme. This scheme is managed by one of the Basin partners, the S.A. government. The committee has received submissions suggesting that thousands of gigalitres of fresh water are diverted annually away from the Coorong to the sea. The South East Drainage Restoration Project currently in progress is expected to return less than 50 gigalitres of fresh water to the Coorong annually. The Coorong is a Ramsar listed wetland. (a) Does the department have any interest or oversight in the management of such a wetland? (b) If so, can the department advise what management plans are in place to improve the environmental health of the Coorong?

Answer:

(a) Yes. The Coorong is part of the Lower Lakes, Coorong and Murray Mouth Icon Site which is a target site for environmental monitoring under The Living Murray Program (TLM). The Commonwealth funding contribution to The Living Murray Program is made by the Department.

The MDBA advises that, in 2014-15, 122 GL of TLM water was provided to the Lower Lakes, the Coorong and Murray Mouth, including return flows and South Australian allocation.

(b) National Parks South Australia manages the Coorong National Park consistent with *the Coorong National Park Management Plan* (as amended in 1995). In addition the South Australian Government, working with a community reference group, has developed the following specific management plans for the Coorong, and Lakes Alexandrina and Albert Ramsar site:

- The Coorong, and Lakes Alexandrina and Albert Ramsar Management Plan (2000). A revision of this plan will be undertaken over the next year as a management action under the Coorong Lower Lakes Murray Mouth (CLLMM) Recovery Project.
- The 2010 Securing the Future: a long-term plan for the Coorong, Lower Lakes and Murray Mouth (Long-Term Plan). The Long-Term Plan is a 20-year road map for the future of the site. The CLLMM Recovery Project covers many of the management actions included in the Long-Term Plan.

Also, the *Lower Lakes, Coorong and Murray Mouth Icon Site Environmental Water Management Plan* (2014) defines the environmental water needs for the site.

Question 2
Have there been any negotiations with the S.A government to return water from the SE Drainage Restoration Project to the Coorong. If so, what was the outcome? If no, why not?

Answer:

Yes. The Department assumes this question refers to the South East Flows Restoration (SEFR) project, and not the Upper South East Drainage Program that was completed by South Australia in 2011.

The Australian Government has committed $160.3 million to assist the South Australian Government in implementing the Long-Term Plan that addresses the problems facing the Coorong Lower Lakes Murray Mouth (CLLMM). The CLLMM Recovery Project includes the South East Flows Restoration (SEFR) project.

The SEFR project will use a combination of newly constructed drains and widened existing drains within the Upper South East drainage system to divert additional water that currently flows to the sea from the Blackford Drain in the Upper South East into the Coorong South Lagoon. The diverted water will provide significant environmental outcomes for *en route* wetlands of the Upper South East through the provision of additional water of suitable quality, as well as salinity improvements in the Coorong South Lagoon.

The project has not yet commenced.

Question 3
Senator Madigan asked at the September hearing "does this scheme [the SE Restoration Project] have a material effect on the health of the Coorong?" The written answer provided did not answer this part of the question. Could you provide an answer to the question?

Answer:

Yes, the SEFR project should have a material effect on the health of the Coorong. As discussed above, the project will divert additional water that currently flows to the sea into the Coorong South Lagoon. Diverting this water into the Coorong South Lagoon will assist in better management of salinity levels in the Coorong and improve conditions for native aquatic plants and animal species.

The SEFR project has also been nominated by South Australia for consideration as a supply measure under the Sustainable Diversion Limit (SDL) Adjustment Mechanism.

Question 4
Has the department, or any government agency, undertaken an economic analysis of the cost of forgone agricultural production from the total volume of water used to maintain the water level in the Lower Lakes at 0.75m AHD?

Answer:

The MDBA advises that 0.75m AHD is the nominal design level of the structure. While no specific study has been undertaken, it should be noted that the barrages have enabled irrigation to increase across the Basin from a few thousand to over 10,000GL/year without any material negative impact on the communities and industries in and around the Lower Lakes.

In developing the Basin Plan, the environmental watering needs of 122 sites across the whole Basin were assessed. These sites are located from the top of the river system to the bottom. The assessment showed that if the watering needs at those 122 sites were met, then there would be sufficient water reaching the end of the system to meet the environmental watering needs of the Lower Lakes.

There have been a number of socio-economic studies undertaken to understand the costs and benefits of the Basin Plan by a range of organisations, researchers and consultants. These are publicly available on the MDBA website. For example, the Australian Bureau of Agricultural and Resource Economics (ABARE) undertook modelling of the potential impacts of water recovery under the Basin Plan in 2010, including possible changes in the gross value of irrigated agriculture (http://www.mdba.gov.au/kid/kid-view.php?key=p79SmV3q9PQjM*L2aQqW8Gi6NSscuIO59AXb9R9v7*A).

The Australian Government's approach to water recovery has been to prioritise investment in productivity-enhancing water infrastructure and to cap surface water purchases at 1,500 gigalitres, as legislated in the *Water Amendment Act 2015*. A total of almost $13 billion is being invested in the Basin out to 2024, with most funding dedicated towards minimising socio-economic impacts and assisting irrigators and irrigation communities to make more efficient use of the Basin's water resources.

Also of relevance is the fact that the Australian Government's investment in water efficiency programmes has made it possible to access significant volumes of water that would otherwise have been lost through seepage and evaporation. These water savings are then shared between the environment and farmers in ways that allow water to be recovered for the environment without lowering the productive capacity of participating farmers and irrigation districts.

Question 5
Was the $300 million of Commonwealth funding of the S.A. desalination subject to S.A. minimising its extraction of water from the Murray River?

Answer:

The Commonwealth's contribution is subject to South Australia reducing its reliance on the River Murray as detailed in the *Implementation Plan for Augmentation of the Adelaide Desalination Plant*. This includes:

- 6 gigalitres of high reliability water entitlement to be held and managed by the South Australian government exclusively for environmental purposes in the River Murray. As at 30 June 2015, South Australia reported Held Environmental Water Licence 213146 had an entitlement volume of 6.015 gigalitres which equates to a long-term volume of 5.414 gigalitres in long-term average annual yield.

- In addition to the above high reliability water entitlement, in eligible years (i.e. after 1,600GL are made available for South Australia) the next 12 gigalitres will be allocated to the Environmental Provision for the River Murray's environmental watering needs. Once the 12 gigalitres have been provided, 5 per cent of all subsequent inflows up to 1850 gigalitres will be allocated to the Environmental Provision (i.e. a maximum of 24 gigalitres will be provided in any one eligible year). A maximum of 120 gigalitres is to be provided to the Environmental Provision over any 10 year rolling period of eligible years under this arrangement.

Question 6
How often is the desalination plant operating and allowing a reduction in water extraction from the Murray River by S.A.?

Answer:

The Department does not hold information on this matter. This question should be directed to the South Australian government for a response. However, South Australia has provided annual reports on Environmental Water Allocations, use and outcomes in line with the requirements in Schedule 1 of the Implementation Plan.

Question 7
Is the S.A. government competing with SA irrigators in the water market?

Answer:

This question should be directed to the South Australian government for a response.

Questions 8 & 9
Has the department considered reforms in the water trading market, such as allowing brokers to only charge commissions to buyers or sellers on each transaction? If so, what is the status of consideration of reform? Has the department assessed the benefits to irrigators of only allowing licensed persons to be water brokers?

Answer:

Yes. In 2013, a draft COAG Regulatory Impact Statement (RIS) on regulation of water market intermediaries was published (available on the Department of the Environment website at https://www.environment.gov.au/water/australian-government-water-leadership/coag/consultation-ris-2013).

The purpose of the draft RIS was to seek comments from stakeholders on options for the potential regulation of intermediaries and to gather information to inform the final RIS. The draft RIS assessed four options from 'status quo' to 'full regulation' and concluded that Option 4 (establishment and maintenance of a licensing scheme) would have the highest cost. Industry and government responses to the draft RIS showed there was little consensus to indicate a preferred approach. The RIS process has not progressed any further.

As part of the 2014 independent review of the *Water Act 2007*, the expert Panel recommended that industry develop, in consultation with the Australian Government, an industry-led scheme of regulation for water market intermediaries. The scheme could include voluntary accreditation, a code of conduct and a defalcation fund.

In its response to the Water Act review (http://www.environment.gov.au/water/publications/water-act-review-govt-response), the Government noted that industry-led self-regulation of water market intermediaries directed at protecting the integrity of the water markets has merit and that it will encourage water market industry representative bodies to establish such arrangements.
This approach recognises that there have been very few reported cases of misconduct by water market intermediaries and no evidence of overall adverse effects on the market requiring Commonwealth intervention.

Question 10
Has the department assessed the benefits from implementing a national water trading platform comparable to the ASX?

Answer:

No. The Department did undertake a National Water Markets System project from 2009 to 2014 but this was not comparable to the ASX. This is an emerging area of market development with a few private water trading platforms already established, primarily in the southern Basin.

Question 11
What guidelines or strategy did the Commonwealth employ to ensure that implementation of the Plan or Commonwealth activities did not unduly adversely affect important entities like GMW, Murray Irrigation or similar, or similarly affect particular townships or communities?

Answer:

The Commonwealth has made funding available to private irrigation infrastructure operators and irrigators through its various infrastructure programs such as the Sustainable Rural Water Use and Infrastructure Program (SRWUIP). It is a business decision for the entity to participate in these programs in accordance with the program guidelines and assessment processes.

Through the Irrigation Modernisation Planning Assistance program and the Hotspots program, the Commonwealth made funding available to irrigation infrastructure operators to develop a modernisation plan for its business based on clearly identified water savings opportunities. The scope of the plan encompassed consideration of the future strategy for the irrigation water provider and the irrigation district in the short and long term (to 2030) including the outcomes of stakeholder consultation with irrigators and the wider community. The Guidelines for the Private Irrigation Infrastructure Operators Program (PIIOP) in NSW for instance, had a mandatory requirement for applications to have completed a Modernisation Plan and a Hotspots Assessment or equivalent. The Guidelines for PIIOP also require projects to contribute to a long-term sustainable future for irrigation communities in the context of reduced water availability as part of its economic and social criteria.

In the case of SRWUIP, all State Priority Projects are subject to Commonwealth due diligence criteria. The Commonwealth Government Due Diligence Criteria for Basin State Priority Projects (Schedule E to the Agreement on Murray-Darling Basin Reform 3 July 2008) requires projects to consider social, economic, environmental, financial and technical aspects of the project. In terms of the economic and social criteria, project proposals need to demonstrate that the project secures a long-term sustainable future for irrigation communities, in the context of climate change and reduced water availability into the future. Specifically outlined in the Due Diligence criteria is the requirement that:

- Projects must contribute towards regional investment and development, secure regional economies and support the local community; and
- Projects must demonstrate a long-term economic and environmental benefit that can be sustained over a 20 year horizon, preferably supported by an irrigation modernisation plan consistent with the Commonwealth's guidelines for irrigation modernisation planning assistance.

In the case of the GMW Connections project, a business case for an irrigation modernisation project was prepared by the state of Victoria and submitted to the Commonwealth for a due diligence assessment based on the above criteria. Following the mid-term review of the Connections Project Victoria is leading the development of a project delivery plan for a revised project including extensive stakeholder consultation. This plan is due to be submitted to the Commonwealth for assessment by the end of March 2016.

The Department continues to evaluate the effect of its water recovery programmes, including the impact on irrigation providers. Evaluations undertaken to date for Tenandra and Trangie indicate a range of benefits including maintaining production at pre-project levels and a reduction in farm debt. Indeed, the long term viability of the Tenandra Scheme was under question prior to the modernisation works.

The MDBA has primary responsibility for the broader assessment of the impacts of the Basin Plan, including on townships and communities. The MDBA is using a range of information sources to determine what is changing in Basin communities and why. This includes data on irrigated agriculture production, water use, patterns of water trading, measures of productivity, new developments and investment, demographic shifts (such as changes in the population, age profiles and migration into or out of rural communities), employment, estimates of social and economic conditions and community wellbeing. The MDBA is required to report on the social and economic effects of the Basin Plan every five years, and the first report is due in 2017.

Question 12
What is the primary cause of turbidity in rivers in the Basin Plan and what is being done about it?

Answer:

Turbidity is a measure of the light-scattering properties of water (that is, the clarity or cloudiness of water) due to the amount of suspended particles. Australia has naturally turbid waters because of its deeply weathered soils rich in clay-sized particles. These particles are readily transported to streams during storms where they can remain suspended in the water column for long periods.

Natural turbidity is increased by sediment entering rivers after land clearing, particularly the removal of riparian vegetation. Flow regulation and water abstraction can also increase turbidity by contributing to riverbank erosion. Turbidity can also be influenced by a host of other natural and management-related causes (including invasive species, such as carp).

State governments have primary responsibility for land management responses to water quality problems. These management responses can include revegetation, fencing riparian zones, on-farm management practices and changes to flow management (including providing increased flow variability with environmental water).

Question 13
The report, *Economic Impact Assessment of the Murray Darling Basin Plan on Wakool Shire 2014* outlines devastating consequences for the shire and its residents from the implementation of the Basin Plan. Do you accept the report's findings?

Answer:

The Department considers the report, *Economic Impact Assessment of the Murray Darling Basin Plan on Wakool Shire 2014*, provides useful information on the water use, agricultural production, industry structure and demographic characteristics of the Wakool Shire. In particular, the report identifies long-term patterns, such as declines in population and falls in local jobs, which have been evident since 2001 and pre-date the Basin Plan. As such, the report highlights the causal role of the drought in these long-term changes.

The Department considers the assumptions underpinning the modelling undertaken in section 6 of the report do not reflect the current arrangements under the Basin Plan and do not take into account the Australian Government investment in water infrastructure efficiency projects. While the modelling assumes that water recovery equates to production loss, the Australian Government's approach to water recovery has been to prioritise investment in productivity-enhancing water infrastructure. Investment in water efficiency programmes has made it possible to access significant volumes of water that would otherwise have been lost through seepage and evaporation, and have improved production outcomes.

Additionally, the water recovery targets upon which the report were based will be subject to change as a result of the operation of the SDL Adjustment Mechanism.

Question 14
It is possible that agricultural output in particular areas may fall, due to water recovery, to such an extent that it could lead to the economic collapse and social dysfunction of some areas, such as Wakool Shire. What plans does the department have to address this issue?

Answer:

The Department has prioritised investment in productivity-enhancing water infrastructure. Increasing the efficiency of water use through upgraded infrastructure allows production levels to be maintained or increased with the use of less water. The Gross Value of Irrigated Agricultural Production (GVIAP) has shown a marked improvement in recent years following the Millennium drought. Despite water entitlements being transferred from irrigators to the Commonwealth, Gross Value of Irrigated Agricultural Production for the Basin rose by 64% in nominal terms in the five years between the decade low in 2008-09 and 2013-14 (Australian Bureau of Statistics data 2008-09 to 2013-14).

The Australian Government has also invested in projects which help to strengthen Basin communities through a broader range of initiatives, such as the 'Murray-Darling Basin Regional Economic Diversification Programme' (MDBREDP) administered by the Department of Infrastructure and Regional Development.

Question 15
Has the department advised the minister that the current wording of the Water Act 2007, as it relates to the supposed equal priorities of environment, social and economic considerations is ambiguous and should be amended?

Answer:

In 2014, as required under Section 253 of the Water Act, a review was carried out by an independent Panel of experts - Mr Eamonn Moran PSM QC (chair), Mr Peter Anderson, Dr Steve Morton, and Mr Gavin McMahon. The Panel found that the Act's framework does provide for the achievement of economic, social and environmental outcomes. However, the Panel also emphasised the continuing challenge of balancing these outcomes in implementing the Basin Plan and made 23 recommendations on how the operation of the Act could be improved.

On 3 December 2015, the Australian Government tabled its response to the review and introduced the *Water Amendment (Review Implementation and Other Measures) Bill 2015*. Further information on the Government's response can be found at: http://www.environment.gov.au/water/publications/water-act-review-govt-response.

Question 16
Given the enormous disruption to Basin communities from the implementation of the Plan, has the department reassessed the objectives and priorities of the Snowy Hydro scheme? If not, why not?

Answer:

No. The water objectives and priorities for the Snowy Scheme are established under the 2002 Snowy Water Inquiry Outcomes Implementation Deed (the Deed). The Deed is an instrument signed by the Australian, New South Wales and Victorian Governments as the joint shareholders in Snowy Hydro Ltd.

The water objectives and priorities set under the Deed are expressed as obligations placed on Snowy Hydro Ltd under the Snowy Water Licence (Snowy Licence) held between Snowy Hydro Ltd and the NSW Government. The Snowy Licence is subject to a statutory review in 2017 and every 10 years thereafter.

Question 17
Assuming that a key priority of the Snowy Hydro scheme is to maximise generation of electricity at high prices regardless of irrigation needs, has a cost benefit analysis been undertaken of the scheme that considers social and economic considerations?

Answer:

Not to the Department's knowledge. However, irrespective of variations in electricity prices throughout the year, Snowy Hydro Ltd must release specified volumes of irrigation water into the River Murray.

The Snowy Water Licence held between NSW and Snowy Hydro Ltd determines the amount of irrigation water that Snowy Hydro Ltd must release into the River Murray catchment each year. Similar rules apply to the releases that must be made into the Murrumbidgee catchment.

These releases are called the Required Annual Releases. The rules are based on a nominal annual release volume of 1062 gigalitres into the Murray and 1026 gigalitres into the Murrumbidgee. The actual volume released will vary from year to year depending on climatic conditions and the volume of releases made in the previous year.

Further to the obligations on Snowy Hydro Ltd in the Snowy Water Licence to make the Required Annual Releases, the Murray-Darling Basin Agreement (Schedule 1 to the *Water Act 2007*) places obligations on NSW to ensure that River Murray Required Annual Release is made each year. In dry years the Required Annual Release from the Snowy Hydro-electric Scheme contributes up to 33 per cent of inflows to the River Murray.

Question 18
How much has been expended on the Native Fish Strategy and associated programs since 2003?

Answer:

The amount spent on the development and implementation of the Native Fish Strategy is set out in the table below.

	Project	**Expenditure $'000**	**Timeframe**
	Native Fish Strategy	29,400	2005-06 to 2013-14 (please note expenditure prior to 2008 are approximate only)
Associated programs	Improving fish passage at the River Murray Mouth Barrages	1,300	June 2014 to November 2015
	Sea to Hume fishways	51,000	2003-04 to 2013-14
	Edward River Offtake Fishway and Stevens Weir Regulator Fishway	6,300	2008-09 to 211-12
	Re-snagging between Hume Yarrawonga	4,300	2003-04 to 2007-08
	Pest fish and River Restoration	174	2014-15

Question 19
Is addressing cold water pollution a key feature of the strategy?

Answer:

Yes. Cold water pollution was a component of one of the key driving actions of the Native Fish Strategy. In addition, the Basin-wide environmental watering strategy (2014) highlighted the importance of addressing water quality issues such as cold water pollution to support fish outcomes in the Basin.

Question 20
What actions have been undertaken since 2003 to address cold water pollution?

Answer:

The Department is aware that:

- NSW Government adopted the Cold Water Pollution Strategy in 2004 which aimed to reduce the significant effect that dams have on the ecology of downstream rivers in NSW. Since then, NSW have assessed 3,000 dams and weirs and identified the high priority dams and weirs for reform, reviewed operating guidelines to minimise cold water pollution, considered structural modifications and established an interagency group to oversee the Cold Water Pollution Strategy.
- The NSW Cold Water Pollution Interagency Group published guidelines for managing cold water releases from high priority dams and an implementation report in 2011 and 2012.

- The first cold water curtain was installed in the Basin at Burrendong Dam during 2014 and was successfully trialled in 2015.

The CEWH also advises that it is supportive of action to address cold water pollution and continues to work with state governments and water authorities on collaborative measures which would further improve the environmental outcomes that can be achieved in the Basin's rivers. The main step the CEWH can take to manage cold water pollution is through the timing of a watering action. The risk of cold water pollution is much lower at cooler times of year (winter and early spring) when dam water temperatures are not stratified. Environmental watering typically targets this time of year (particularly in the southern Basin), to align with natural cues including those for native fish spawning. Other options include timing releases with downstream tributary flows, which will dilute the cold water, and releasing water at a rate and/or volume unlikely to cause a significant risk in receiving water temperatures.

Question 21
Is the department satisfied with MDBA progress on addressing the Native Fish Strategy to date? If not, what plans are in place to address any identified deficiencies?

Answer:

Yes. The Native Fish Strategy was a joint activity administered by the MDBA on behalf of the Basin governments. The MDBA implemented the strategy in line with the budget and activities agreed annually by the Murray-Darling Basin Ministerial Council as part of the Corporate Planning process. The key achievements of the strategy were to inform implementation of the Sea to Hume fishway program on the Murray River, to improve the status of native fish populations in the Basin, and to repair and protect key components of aquatic and riparian structural habitat that sustain native fish through establishing a number of demonstration reaches within the Basin. The strategy was discontinued by the MDBA when joint government funding for it closed in 2012.