

**Submission
No 65**

INQUIRY INTO WATER AUGMENTATION

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To:
The Hon. Robert Brown MLC,
Chair, General Purpose Standing Committee No.5
NSW Legislative Council
Parliament House, Macquarie St
Sydney NSW 2000

Dear Sir,

Thank you for the opportunity to comment on the inquiry into the Augmentation of Water Supply for Rural and Regional New South Wales. By way of background, I have been involved in agricultural research for over twenty years, have witnessed flood and drought events in both coastal and inland parts of NSW, and currently reside in the Riverina where the river system is subject to regulated flow. Please find below comments relating to the various terms of reference of this inquiry.

a) investigate the requirement for a water equation (demand and supply out to the middle of this century) for rural and regional New South Wales

While residential water use accounts for less than 5% of all consumption, increased population will also increase demand for agricultural production and therefore demand for agricultural water supply. The state population is projected to grow by approximately 50% by the middle of the century, which will lead to an increase in demand for water by the middle of the century. Any future planning discussions need to be based on facts and the best available projections of domestic, agricultural, industrial and environmental water requirements, which would make a water equation critical for forward planning.

b) examine the suitability of existing New South Wales water storages and any future schemes for augmentation of water supply for New South Wales, including the potential for aquifer recharge

An audit of existing infrastructure would be fundamental of any planning. The capacity and longevity of existing water supply infrastructure needs to be assessed to determine volume of additional water augmentation required to meet projected demand, as well as identifying the best combination of refurbishments and placement of new water augmentation facilities.

Reliance on underground aquifers for water supply carries with it the implied guarantee of security of water supply from that source, from both a quantity and quality perspective. Anecdotal evidence suggests Coal Seam Gas (CSG) extraction methods such as fracking could significantly affect the long term capacity to extract good quality water from aquifers. Unless the negative impacts of CSG extraction can be adequately demonstrated to be reversible, expansion of CSG operations should be halted, particularly if there is intent to rely upon underground aquifers for future potable water supplies.

c) review the NSW Government's response to the recommendations of the June 2013 report by the Standing Committee on State Development on the adequacy of water storages in New South Wales

Progress toward achieving positive outcomes on the 19 recommendations contained in the June 2013 report by the *Standing Committee on State Development* on the adequacy of water storages in New South Wales needs to be reviewed and reported. Of particular note would be progress towards Recommendation 15 regarding the feasibility of establishing en-route storage facilities to maximise opportunities for water use and re-use along the river, as well as Recommendation 19 seeking commitment to research into water efficiency.

d) examine the 50 year flood history in New South Wales, particularly in northern coastal New South Wales, including the financial and human cost

Floods are part of the natural variation and compilation of an exhaustive database of past flood events would be a useful starting point for determining flood mitigation works, including flood water diversion. Climate change could result in a tendency toward more extreme events, which could lead to larger than average floods, higher peak flows and consequently increase the potential impact on life and infrastructure. These potential changes need to be reflected in any projections of future flood events.

As well as flood heights, it would be useful to examine flow rates as well. Effectiveness of diversion systems for flood mitigation will be dependent on the system being able to effectively and efficiently harvest flood waters at peak flow rates.

e) examine technologies available to mitigate flood damage, including diversion systems, and the scope of infrastructure needed to support water augmentation, by diversion, for rural and regional New South Wales

Diversion of coastal water flows into inland waterways is a concept that has been around for some time. The potential environmental impacts within a donor river valley resulting from diversion of typical water flows need to be weighed against the benefits potentially derived in the recipient areas. Capturing runoff from episodic events that would normally lead to flooding would require strategically placed storage facilities with carefully planned trigger levels so that typical water flows down the length of the river are not adversely affected.

Diversion of stored water in an efficient and cost effective manner to inland regions may then be problematic. The success of such a venture, and return on the capital outlay on infrastructure, would depend on the storage facilities being able to hold sufficient quantities to provide end users of the stored water with some certainty of regular annual supply from that source without need to harvest water outside of mitigation of flood events.

f) examine social, economic and environmental aspects of water management practices in New South Wales and international jurisdictions, including the following case studies:

i. Broken Hill town water supply/Menindee Lakes system

ii. South Western NSW water management practices

iii. North Western NSW water management practices

Other submissions have already covered issues relating to these case studies in good detail. In particular, it has been noted by others that the trigger points for the Menindee Lakes system needs revision to make residential water supply in Broken Hill and surrounds more sustainable.

g) the efficiency and sustainability of environmental water being managed by different State and Federal Government departments and agencies

The release of environmental flows is problematic. Cold water released from the bottom of a storage facility can have a detrimental impact on the flora and invertebrate fauna downstream of the release point. Prior to the construction of water regulation facilities (dams, weirs etc), inland rivers and surrounding environments went through a natural cycle of drought and flood. This natural cycle needs to be reflected in the managed system. However, reliance of South Australian residents on the Murray Darling system for supply of residential water currently needs to be considered in flow management. To allow river flows to be managed in a more natural manner, consideration needs to be given to using pipelines to deliver a secure and continuous water supply to points at the lower end of the system.

The involvement of multiple stakeholders with competing interests will make it difficult to arrive at a water plan that satisfies everyone. Management by too many government agencies reduces the transparency and efficiency

of the process. Reducing the management to a single entity such as the MDBA would appear to be a step in the right direction, however there needs to be continuous self-assessment so that when deficiencies are identified, such as the Menindee Lakes trigger point, action can be taken in a timely manner.

The Government needs to commit to providing adequate staff and resources to oversee and coordinate any infrastructure and water management policy. The manner in which some State government departments have been gutted, eg, NSW DPI, raises concerns whether the government has the necessary expertise and capacity to manage rural and regional water supplies, let alone undertake any augmentation programs.

h) the management, appropriateness, efficiency and reporting of:

i. inter-valley transfers

ii. conveyance and loss water

iii. carryover

iv. the management and reporting of the water market

Leakage from current delivery systems appears to be in the order of 15-20%. Addressing these losses would provide a tangible and measurable outcome. Enclosing open supply channels, preferably using Australian-made pipes derived from recycled plastic, would address these issues as well as help create jobs in the recycling industry, reduce landfill and provide environmental benefits.

Water licences should be tied to property, as loss of water rights can effectively render some country unproductive or at least reduce profitability of any farming exercise to the point where it may not be economically viable to continue. This would have a negative impact on the land price should land be sold without any attached water licence.

As a minimum, transfer of water licences between valleys should not be allowed. Total licence allocations should be compared to system output capacity to ensure each system is not over-allocated. Any sleeper licences or those that have not been actively used for some period of time when water was available should be bought back.

Yours Sincerely,

Rex Stanton