Submission to the Inquiry into the Emergency Water (Murray-Darling Basin Rescue) Bill 2008

by the

Senate Standing Committee on Rural and Regional Affairs and Transport,
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from

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A. QUICK FIXES DON'T WORK

The Emergency water (Murray-Darling Basin Rescue) Bill 2008 aims to set up another authority over the Murray-Darling Basin (MDB)

- The authority is likely to be unconstitutional.

- The Bill aims at quick fix solutions, calling for a hastily put together Basin plan within 30 days of the new authority being established, including allowing for a realignment of the inter-state allocations of water, when this issues are so complex, it took 15 years after federation to negotiate the inter-state water sharing agreement. Other recent quick fix solutions have been shown to fail.

- Varying the water sharing agreement and interim allocations will mean farmers have no way in which to forward plan for their farming programs as they will have no certainty over supply of water for their farms.

- The Bill aims at environmental outcomes that are undefined, because the science of the MDB is yet to be done.

1. This Bill is likely to be unconstitutional as water issues are under state jurisdiction, unless by mutual consent with the Federal government. Attempting to have Federal law set up an overarching authority with greatly enhanced powers in the hands of the Federal Water Minister, is likely to prove unconstitutional.

2. The Bill proposes only another quick fix solution.

The first quick fix solutions was The Living Murray proposal. It was shown to be fatally flawed. The interim report of the 2004 House of Representatives Standing Committee on Agriculture Fishing and Forestry has been the only review of the science behind the Living Murray process, upon which all subsequent policy has been based.

The Committee members were so shocked by the lack of science about the state of this desert river system and by the lack of any justifications for buying water for environmental flows, that its interim report urgently called on the Federal government to act on just two recommendations:

Recommendation 1

In light of the Committee's severe reservations about the science, the Committee recommends that the Australian Government urge the Murray–Darling Basin Ministerial Council to postpone plans to commit an additional 500 gigalitres in increased river flows to the River Murray until:

- a comprehensive program of data collection and monitoring by independent scientists is completed;
- non-flow alternatives for environmental management are considered and reported upon more thoroughly; and
- a full and comprehensive audit focused specifically on the Murray–Darling Basin's water resources, including all new data, is conducted.

Recommendation 2

The Committee recommends that the Australian Government ask the Murray–Darling Basin Ministerial Council to allocate sufficient funds out of the $500 million allocated to the River Murray by COAG to the abovementioned tasks, prior to proceeding with the proposal to obtain increased river flows.

This committee's interim report must be the starting point for constructing a plan for the MBD.

The second quick fix solution was the 2006 Melbourne Cup day announcement by the then Prime Minister and Premiers that open trade in farmers permanent water entitlements was going to solve the Basin's problems. Governments could buy water for environmental flows. This plan proved to be no solution, because as farmers across the Basin pointed out immediately, the MDB was in the middle of a major drought and there was little water available to trade.

The third quick fix was the $10 bn outlay by then Prime Minister John Howard. It contained no overall plan for the MDB, but allocated more money to continue the process begun by the fatally flawed Living Murray plan.

Further, by trying to put a plan in place in 30 days (sect 7 (3)) and be approved in another 30 days (sect 8 (1)) the Bill fails to account for the enormously complex legal, economic, social, environmental, agricultural, industrial a urban issues involved across a region the size of the MDB. The original inter-state water sharing agreement took 15 years to negotiate!

3. Giving the Minister the power to vary the inter-state water sharing agreement and interim allocations (sect 9 (1) (a) – (b)) will mean farmers will be unable to reliably plan for their farming programs investments as they will have no certainty over supply of water for their farms. This will particularly impact farmers with permanent plantings -- like grape vines and fruit trees. Unless they receive a set volume of water, their plantings will not give a crop; and unless they receive a minimum amount of water, their plantings will die, taking 7 years plus before their re-plantings grow and produce a commercial crop.

Giving the Minister this power, before a major long-term plan for the Basin is put in place, is like giving the Minister the power to vary the availability of electricity or fertilizer to farmers.

4. The Bill wants environmental targets, targets which have not been defined:

- 9 (1) (f) – wants water allocated for environmental purposes;
- 10 (c); 18 (1) (b) -- grants the environment an inalienable entitlement to water allocations;
- 12 (C) – allocating flows according to environmental needs;
- 18 (1) (b) -- allows the Minister to buy water for returning water use to sustainable limits.

What are sustainable limits? Against what benchmark is environmental health of the rivers in the MDB to be defined? As the Interim Report of the Standing Committee on Agriculture has point out, there has been no comprehensive, scientific study of the Basin's environmental health. Much of the supposed science has been no more than opinion. And without an audit of the available water and water entitlements, how can sustainable limits be defined.

Further, against what benchmarks are river health and sustainable limits to be measured? Even many policy makers mistakenly think of MDB rivers as being like European rivers, which are feed by regular rainfall and flow constantly. In stark contrast, the MDB rivers are desert rivers. In a drought they dry out with a widespread, massive loss of wildlife. Prior to human intervention, this **naturally** occurred on a far more regular basis than today. This regular feast and famine is what **naturally** occurs along the Murray Darling Basin rivers system.

Only thanks to human intervention, during the current drought the Murray River has been kept artificially full and flowing for several years longer than would have happened under natural conditions, i.e. before the huge Snowy Mountains Scheme and other dams locks and weirs were constructed across the system. The Federal Water Minister, Penny Wong, recently said that the system would have dried out several years ago but for the dams holding water for distribution in this one of Australia's regular extended drought periods.

The MDB rivers are not like the European river systems, which have high constant flows from regular reliable rainfall. Because the MDB rivers are desert rivers, they have large variations in annual flows. For example, where as the Rhine River in Switzerland has a maximum flow that is twice the minimum flow, the Murray River has a maximum flow 15.5 times its minimum flow and the Darling River 4,700 times its minimum flow.

Therefore, the question again has to be asked, against what environmental benchmark is the MDB rivers to be assess for environmental flow needs? Is it to be expected that they are to be of the quality of a European river system, or is the system to be assessed as a desert system with periodic droughts, drying up of rivers and huge loss of fauna and flora?

B. A FIVE STEP PLAN FOR THE BASIN

The failure to set any benchmarks for making water allocation decisions is highlighted by sect 12 of the Bill -- "Matters to which Minister must have regards when making a determination."

These 22 criteria form a list of many of the issues involved in making a decision on water allocations, but set no priorities and have no benchmarks. It is a random list of issues from which therefore only random decisions can to be made.

What follows sets out four necessary and long overdue steps needed to put a MDB plan in place. At various times since the National Water Initiative began in 1994, the first three of the following have been promised, but have not happened. They form the necessary research that has to be done before a plan can be put in place and for benchmarks to be set.

These steps take as their starting point the findings of the Interim Report of the 2004 House of Representatives Standing Committee on Agriculture Fishing and Forestry inquiry into the science -- or more accurately the lack of science -- behind the Living Murray proposals. The Committee's findings are outlined above. That Committee noted that when the Murray Darling Basin Commission capped water diversions from the river system in 1994-95, an opportunity was missed to put in place research programs to capture data on improvements in river health. A decade of valuable data to guide future management of the river was not collected. The work of collecting that data is must now begin.

The following steps are essential and urgently needed.

First, recently, the Prime Minister finally announced an audit of the basin's water, as part of his $13 billion allocation to the Basin. That audit needs to be comprehensive. It requires a full audit of the available surface and ground water, of the 24 different types of water entitlements across the MDB and of the expanding amount of virgin land being opened up for irrigation agriculture by managed investment schemes. It should examine the need for new dams, including new environmental reservoirs which are kept for supplying environmental flows down the system.

It should also examine the feasibility of water being tunnelled from the east coast to the MDB. For example, in 1981 the NSW Water Resources Commission produced a *Possibilities for Inland Diversions of NSW Coastal Steams,* which outlined possible dam sites on the NSW east coast, each capable of providing water by tunnel into the Murray Darling Basin system. Of these, the most favourable 5 high yielding dams producing 2,027,000 megalitres annually. This would add about 16 per cent more water to the Murray Darling Basin's average flow.

Second, there needs to be a comprehensive environmental study of the MDB. River health cannot be achieved unless it is first defined. There are 22 issues involved in river health. Improving the environmental health of the Basin's rivers requires a complex response, involving analysis of the costs and benefits of possible variations to current management practices relating to:

- instream habitat: the logs, water plants, water turbidity and temperature that affect river life;

- riparian zone health, relating to stream bank stability, land and vegetation adjoining the river like wet lands and billabongs, and flood effects on the regeneration of the flora and fauna;

- instream structures: the siting and management of locks, dams and weirs which affect river flow, irrigation use and riparian zone flooding;

- seasonality of flows: the natural regeneration cycle is in July-September (coinciding with the periodic, traditional snow melt leading to river flooding), whereas main flow timing is November-February when farmers irrigate;

- salinity management, catchment area by catchment area;

- control of pest species;
- losses of water in the distribution channels and impoundments;
- volume of water flows down the rivers in the Basin.

All river health issues must be systematically addressed, before considering environmental flow changes. Then, community agreed science must demonstrate a need to increase environmental flows. Should this be demonstrated, the Murray Darling Basin Ministerial Council and the new Murray Darling Basin Authority must work with Regional Rural Water Authorities and communities to invest in water saving measures, to increase irrigation water delivery efficiency across the system.

Third, there has to be a **comprehensive socio-economic impact study** done of the Basin to examine the effects of liberalised permanent water trading, of the consequent loss of water out of irrigation regions and of the impact of opening large areas of virgin land for irrigation farming by managed investment schemes.

Policy makers need to understand that the random buying of only a relatively small percentage of water from an irrigation region can lead to the collapse of that region's agriculture and its economy. Trading of farmers permanent water allocations has brought serious disruption to irrigation communities. Therefore, there should be a moratorium on permanent water trading until stability is brought to the system. Temporary water trading should continue.

It should be remembered that this huge irrigation system, based on the massive Snowy Mountains Scheme, was designed to provide Australia with food security following the strategic challenges Australia faced in WWII. The taking of water for environmental flows not only defies logic until the basin audit and environmental studies have been completed, but it puts at risk Australia's food security.

Fourth, operations of the MDB are so complex – with its urban, agricultural and environmental water needs – that the new Murray Darling Basin Authority requires management people with expertise in river flows, catchment, land and environmental management, and irrigation management. It requires involvement by community nominated representatives, is needed to manage urban and agricultural environmental issues in the Basin.

Fifth, climate has always been variable in Australia. However, there is evidence that pollution has caused a reduction in rainfall over the Alpine regions of the Basin. This needs to be remedied by instigating major cloud seeing programs over the Alpine regions, utilising expertise in cloud seeding from the US, South Africa, Japan and Israel. (See Appendix A)

These five steps are fundamental to putting a logical, scientifically based plan into place for the proper management of the MDB.

APPENDIX A

Urgent need for comprehensive cloud seeding program in alpine regions of Murray Darling Basin

Only a comprehensive cloud seeding program can put more water in the alpine catchments of the Murray Darling Basin, given preliminary forecasts of another possible low rainfall winter-spring season.

The Federal government's $13 billion water plan cannot save water unless there is water in the system to save.

Cloud seeding is regularly done in several states of the USA, financed by the Federal and regional governments and the farming community. Cloud seeding in Nevada yields an extra 250,000 megalitres annually for a cost of $US10 per megalitre. Cloud seeding is also routinely done in Japan, South Africa, Mexico and Israel.

There have been a several cloud seeding experiments in Australia since the 1950s. The only two that showed promises for substantially increasing rainfall were in Tasmania and in the Snowy Mountains. For the latter, there is a narrow window of opportunity in the winter spring period, July to September. (See for example, documents from "Australian Cloud Seeding Research Symposium," Australian Bureau of Meteorology, Melbourne May 7-9, 2007).

Some estimates suggest that a comprehensive program of cloud seeding could add 1,500-2,500 gigalitres of water to the Murray Darling alpine catchments.

Given the $13 billion allocated to the Basin water plan and the extremely low current reserves, a relatively inexpensive, comprehensive cloud seeding program could prove a life saver to the lower Basin region.

Scientists use cloud seeding nuclei to initiate rain fall generation in clouds. These nuclei include: silver iodide particles; dry ice pellets; and hygroscopic seeding with micronised salt.

Currently, cloud seeding in the Snowy Mountains region has been restricted to small areas. It has been argued by some environmentalists that wider seeding would disrupt normal rain fall cycle.

Rather than disrupting the rainfall cycle, cloud seeding should be seen as restoring rainfall patterns.

Important work by Professor of Meteorology, Daniel Rosenfeld, at the Hebrew University in Jerusalem has shown that pollution from cities like Melbourne and from power stations like those in the La Trobe Valley, create pollution shadows where rain fall diminishes. Rosenfeld's studies in California and Israel show that rainfall in those pollution shadows diminish by 15-25% (e.g. see "Quantifying precipitation suppression due to air pollution," Amir Givati and Daniel Rosenfeld, *Journal of Applied Meteorology,* Vol 43, 2004).

Rosenfeld explains rain is created when water condenses on previously existing small dust particles or pollution particles, so that clouds are made up of many small droplets. These droplets collide and coalesce with each other, forming larger droplets until they are large enough to precipitate as rain.

However, if there are a lot of pollution particles, the same amount of water in a cloud will be distributed among more and more smaller droplets. These droplets will not coalesce as readily if they contain pollutants like sulphur dioxide, nitrous oxide and hydrocarbons. It takes longer for these smaller droplets to coalesce into raindrops, slowing the ability of clouds to rain.

The main reservoirs in the southern Basin region are down to very low capacity, and a significant proportion of stored water is “carry over” water from last season. This is water that farmers have already paid for but which they have held over from last season for the next season.

It is imperative that the MDBC urgently undertake a comprehensive cloud seeding program to stave off a major farming and environmental disaster in the Basin.