

Submission re National Water Initiative Productivity Commission

Thank you for the opportunity to provide a submission on National Water Reform. Soils for Life (SFL) is a small not-for-profit NGO promoting leading regenerative landscape management practices on agricultural enterprises. This submission is directed towards improvements in environmental management of water throughout the nation. The issues of water trading and pricing as they impact irrigators throughout the Murray Darling Basin are of no direct concern to Soils for Life (SFL).

However, as a result of the nationwide nature of the SFL Case Studies, the interaction of State and Federal laws relating to the regulation of and compliance with relevant legislation is of concern. In particular, the complex approval process that landholders must undertake to bring about improved vegetation, soil and water conditions (“regulatory overburden”) have been highlighted by farmers at every gathering attended or convened by SFL.

Hence:

- 1) What have been the key benefits of water sector reform to date?

The recognition of the connection between surface and groundwater is a step forward as is the understanding of “over allocations”.

- 2) *Data and information sources that might be useful for assessing progress;*

BOM provides rainfall and river information. However, it might be useful for landholders to provide more data on their usage changes as a result of climate change, viz later plantings and earlier harvesting owing to lengthened and drier growing seasons. This is particularly valid for the cool weather winery regions where new grape varieties less susceptible to sunburn are being trialled.

- 3) *Areas where NWI reforms are stalled or delayed and consequences of that (for example, have there been costs incurred due to these delays?)*

The much-vaunted “one stop shop” approval process embodied in the amended EPBC Act has had no benefit to landholders seeking to improve the environmental condition of their land. There is a minefield of Federal, State and Local Government laws and regulations that must be addressed together with the costly commissioning of surveys, reports and plans to explain the proposal and its outcomes. In NSW, a farmer may need to obtain approvals under some or all of the following legislation:

- a) *Local Land Services Act (NSW) 2013*
- b) *Biodiversity Conservation Bill (NSW) 2016 (to replace the Native Vegetation Act)*
- c) *Water Management Act (NSW) 2000 as amended*

- d) *Water Act NSW (1912)*
- e) *Natural Resources Commission Act (NSW) 2003*
- f) *Fisheries Management Act (NSW) 1994*
- g) *Threatened Species Conservation Act NSW 1995 [31 May 2002] (also to be replaced by the Biodiversity Act when promulgated)*
- h) *Biosecurity Act (NSW) 2015*
- i) *Contaminated Land Management Act 1997*
- j) *National Environment Protection Council (New South Wales) Act 1995*
- k) *Protection of the Environment Operations Act 1997*
- l) *Federal Environment Protection and Biodiversity Conservation Act 1999*
- m) *Water Act (C'wealth) 2007,*
- n) *Water Amendment Act 2008 and associated Water Regulations*
- o) *National Water Commission Act 2004 (Cth)*
- p) *Water Market Rules 2009 (Cth)*

It is small wonder therefore that the latest State of the Environment Report (2016) had this to say:

“The outlook for the National Water Initiative, as Australia’s national blueprint for water reform, is variable During the past 5 years, impetus for the reform process has decreased, and progress has slowed in areas such as development of comprehensive water plans, improvements in sustainable water use, standardisation and nationalisation of water markets, and broader adoption of water accounting..... as large-scale land clearing or changes to land cover, have left a legacy of changes in quality and flow regimes, such as changes in biota and sediment, and nutrient concentrations in streams. “

4) *other unfinished business of the NWI.*

In 2014 it was suggested that the Productivity Commission should investigate the role of the NWI *“in improving outcomes, in particular:*

- *the interaction of water policy with other policy areas such as energy, agriculture, planning, urban supply*
- *whole-of-cycle water management*
- *provision to regional, rural and remote communities, and*
- *the economically efficient provision of water infrastructure.*
- *greater specificity around the ecological objectives and outcomes of water reform, underpinned by an appropriate monitoring effort “*

Insufficient effort has been placed upon the holistic role of water policy on agricultural practices and the recycling of urban sewage to benefit agricultural soils. To isolate agriculture from the environment is meaningless as is the artificial

separation of urban and rural water. All sectors are consumers and this is why whole of cycle water management is essential for climate control and productivity.

- 5) *the preliminary framework (table 1) – see above*
- 6) *priority areas for water reform – Legislative Overburden – see above*
- 7) *key contemporary and future drivers of water reform.*

The current government policy to revisit dam construction (and associated piping) for agricultural usage and urban expansion is at odds with flood mitigation theory. Reservoirs are highly evaporative and are required to be kept at maximum capacity to provide for droughts and increasing population needs. Flood mitigation dams should be maintained at very low levels of storage to buffer extreme rain events such as recently experienced with Cyclone Debbie.

Given this conflict in desired outcomes, the concept of “in ground” storage via aquifer recharge and water storage in alluvial floodplains (as “grass covered dams) would be preferable. Work undertaken at Mulloon Creek Natural Farms and along the Widden Brook using Natural Sequence Farming methods has demonstrated long term maintenance of base flows in Mulloon Creek and amelioration of peak flows during extreme rain events. The “chain of ponds” (or pool/riffle) morphology once widespread throughout this continent, is an efficient water storage system providing clean, filtered water to farmers and townships. Water de-energising via the “stepped” fall also lowers flood peaks and rehydrates the surrounding land.

- 8) *What further actions are needed to achieve clear and secure property rights? Nil.*
- 9) *What steps have been taken — or should be taken — to:*
 - a) *unbundle entitlements in unregulated surface water and groundwater systems? Nil*
 - b) *incorporate all water uses (for example, the mining industry) within the one planning framework?*

The “Water Trigger” is supposed to manage the mining industry. However, it has not addressed the concerns of farmers who continue to believe that their water entitlements will be adversely affected, particularly by “unconventional extraction of fossil fuels” as to both quantity and quality.

- 10) *What new water sources should be brought into a water entitlement process and why?*

As mentioned briefly above, the use of treated sewage as a water resource should be made available to farmers. The current practice of allowing stormwater, agricultural runoff and sewage overflows to drain to the sea is both polluting and a waste of a valuable resource. The SOE 2016 states that:

“Australia is the world’s second driest continent, after Antarctica, with a long-term

average rainfall of 430 millimetres (mm) and variations ranging across Australia from below 100 mm to above 3000 mm per year. Most of this is lost through evapotranspiration (loss of water from Earth through evaporation and transpiration from plants), and the annual average run-off coefficient (a measure comparing the amount of run-off with the amount of precipitation) is about 12 per cent. Thus, on average, some 383,000 gigalitres (GL) remain after evapotranspiration to enter Australian water environments, of which around 70,000–95,000 GL is used each year to meet Australia’s consumptive water needs.”

It goes on to say:

“Water management planning and plan implementation, including under the reforms of the National Water Initiative, have continued across Australia in recent years, with varying effectiveness because of the complexity of planning processes and competing priorities.

In New South Wales, 2012 planning controls for riparian land have been found to be not predicated on scientific evidence, and to be likely to compromise the environmental health of rivers and riparian systems (Ives et al. 2013). Water management issues have, however, been included in the management strategies of other sectors, such as the horticultural sector (Horticulture Australia 2006).

At a state and territory level, a 2014 audit of the effectiveness of catchment management authorities in Victoria found that ‘the existing approaches to catchment management in Victoria are inadequate. In particular, the statewide approach is fragmented and short term in focus, while catchment condition and changes over time are poorly understood’ (Victorian Auditor-General 2014).

The Great Barrier Reef 2013–14 report card reported mostly poor to very poor progress towards 2018 catchment targets for factors directly affecting catchment run-off, including low uptake of best management practices by sugar cane growers (e.g. nutrient management at 13 per cent of growing area) and graziers (e.g. pasture management at 28 per cent; 22 per cent in the Fitzroy Basin). Losses of wetlands and forest were reported as continuing, and the overall condition of the inshore marine receiving environment remained poor in 2013–14.”

The issues raised confirm that run-off, stormwater management and sedimentation remain major concerns. Failure to view stormwater and sewage as a resource and to minimise evaporation would appear to be a profligate waste and environmentally damaging.

11) *Are current approaches to water rights compliance and enforcement fit-for-purpose?*

NSW compliance and enforcement is heavy handed and threatening, particularly in respect of “controlled activities” and water diversion.

- 12) *What are the key areas of water planning where further progress is required to achieve the objectives and outcomes of the NWI?*

Perhaps a new class of licence might be investigated, i.e. a private landholder's right to manage water for the benefit of his land's (and other landholders within a catchment) environmental requirements. Hence, re-hydration of a floodplain for both agricultural and ecological purposes might be considered appropriate grounds for the issuing of an "environmental water" licence. It may be possible to have restrictions placed on such an entitlement, viz only to divert water by means of gravity (no pumps) so that environmental impoundments could only be filled at times of high stream flow or run-off. This licence would be in addition to the "harvestable right" applicable to a landholding and the impoundment or pondage would be regarded as "ephemeral". Such a concept would better connect the environmental benefits of regulated water and "private water", i.e. that which falls on a landholder's property or flows through his land.

- 13) *Is there scope to streamline water planning processes to reduce unnecessary costs on planners and participants?*

The process of gaining approval for the installation of erosion-control measures in streams or gullies is currently beyond the capacity and resources of individuals to conduct. A simplified, single application without the need for multiple expert reports should be developed so that landholders are not required to meet high costs nor employ external contractors. Landscape repair should be something that farmers can do and maintain without intrusive government oversight. At present, the costs and investment in time is too much for farmers and they therefore allow problems with their land to increase unabated.

- 14) *Are processes for reviewing water plans sufficiently robust, transparent, open, and timely?*

This submission process and the background material available online is excellent.

- 15) *Is there scope to improve how water plans deal with long-term shifts in climate affecting resource availability? Are there recent examples of leading practice?*

International studies¹ emphasise the linkage between actively growing vegetation, water availability, soil carbon content, and climate moderation. The role of plants in both the short and long water cycles is well-documented, but plants require moisture within the root zone to achieve maximum photosynthesis.

Floodplain rehydration is essential for the mitigation of climate change, wildfire prevention, agricultural productivity and ecological function. Deeply incised streams and rivers are incapable of overbank spills in all but catastrophic floods, meaning that they are almost always draining water away rather than replenishing surficial supply.

1

http://www.waterparadigm.org/download/Water_for_the_Recovery_of_the_Climate_A_New_Water_Paradigm.pdf

To keep our landscapes cool in summer and warmer in winter (climate change results in greater numbers of severe frost days per annum²) water must be returned to our soils and vegetation via the chain of ponds systems mentioned above. Reinstatement of this pre-human geomorphology is a vital factor in addressing climate change and providing the urban public with an adequate supply of clean, potable water.

- 16) *Are current water entitlement and planning frameworks conducive to investor confidence, facilitating investment in major new infrastructure (such as in northern Australia), while managing risks to the supply security of existing water users?*

Major agricultural companies are managing with less water and, at times, no entitlements whatsoever. The trend to dryland grazing is now growing in the south of the country, but this may not be environmentally sustainable in the long term. There should be a balance between fodder growth for livestock (under some irrigation) and the return of water to the environment. In times of drought, those properties that have sold their water entitlements cannot afford to buy into the market and must transport fodder over large distances to maintain even their breeding stock. This adds to the greenhouse gas emissions from agriculture.

- 17) *What steps have been taken — or should be taken — to integrate water quality objectives into water planning arrangements.*

The response to this has been covered by reference to the Great Barrier Reef and other sedimentation problems referred to above. However, the “blackwater” events referred to in SOE 2016, the continuing salinization of watercourses and intermittent groundwater contamination episodes are all of concern.

- 18) *What are the guiding principles for ‘best practice’ management of environmental water? Are the institutional and governance arrangements for held environmental water working well?*

Environmental flows have been defined as “the means for integrated management of river flows to meet the needs of people, agriculture, industry, energy and ecosystems within the limits of available supply and under a changing climate.”³

It is not simply a matter of pleasing as many people as possible by keeping the rivers at a “base flow” level. The idea is to maintain river health and to allow connected wetlands to function properly. Research shows that every wetland is different. Naturally, some wetlands are always wet, some are mostly wet with some dry phases, and some are mostly dry with wet phases. The frequency, extent and duration of the wet or dry phases varies from wetland to wetland, depending on where they are on the floodplain.

² <http://www.abc.net.au/news/2015-08-21/qch-frost-field-trial/6715106>

³ International Union for Conservation of Nature,
http://cmsdata.iucn.org/downloads/water_briefing_eflows.pdf

The construction of dams, weirs, and channels has resulted in many wetlands either being disconnected from rivers or permanently connected to rivers or channels. This means that some wetlands do not get as much water as they used to, and others get too much. Where possible, environmental water managers mimic the wetting and drying phase.⁴

There is now a recognition of these factors, but allowing rivers and wetlands to dry is at odds with the needs of the other four participants in the picture – the townsfolk, the farmers, industry and energy generators.

It might be preferable for the governments to consider the establishment of “interim” storages near each rural centre to provide water during these intentional dry phases. They could be filled in times of high flows and allowed to empty when needed for urban or industrial supply. They would also enhance flood mitigation regimes.

- 19) *How can institutional arrangements be used to ensure agencies with natural resource management responsibilities (including environmental water managers) pursue least-cost approaches to achieving environmental and other public benefit objectives? AND Are the policies that affect the health of water systems sufficiently integrated?*

The current “user pays” regime appears to have had the desired result of making consumers (rural, urban and industrial) more “water wise”. Anyone dependent upon a rainwater tank(s) can give lessons on how to minimise unnecessary water use. The withdrawal of incentives for rainwater tanks and nil incentives for domestic grey water recycling, have been counter-productive. Such policies probably save the government money in the long term and are akin to domestic, off-grid energy generation

- 20) *Are there sufficient checks and balances to prevent unviable or unsustainable infrastructure projects from proceeding? If not, what are the areas needing improvement?*

The planning processes and compulsory public consultation means that no infrastructure proceeds without controversy and publicity. That said, the construction of the Wingecarribee to Goulburn water pipeline has proved to be a “white elephant” at considerable cost to the ratepayers of Goulburn. Council was warned that there were better and cheaper options available for water-starved, drought stricken Goulburn during the Millennium Drought. The “yuk factor” for tertiary-treated sewage proved insurmountable but intelligent use of the Mulwaree Ponds (flowing through the city untouched), urban stormwater and a pipeline from the Pejar Dam would all have been far cheaper, more efficient and potentially environmentally beneficial through the creation of filtering wetlands on flood-prone wasteland. This was simply a case of an engineering solution defeating an environmental one.

⁴ <http://www.vewh.vic.gov.au/environmental-water/environmental-benefits>, Victorian Environmental Water Holder

21) *Should further water reform be pursued through an improved NWI? AND How can policy impetus be best generated?*

No mention is made in the NWI Issues Paper of the potential benefits that might accrue from the implementation of an “ecosystem services” regime in this country. Payments made to farmers in the USA, Europe and the United Kingdom have been very successful in convincing them of the merits of land and water stewardship. Such payments are either provided from general tax revenue or are traded rather like the ETS with polluters funding the ecological benefits on behalf of the general public.

“a cost-effective means to improve environmental management and improve livelihoods by rewarding people for their efforts in providing ecosystem services, such as watershed protection, soil stabilization etc. PES was originally defined as a voluntary transaction for a well-defined ecological service, with at least one buyer (if only one, the government), at least one provider, and based on the condition that the buyer(s) only pay if the provider(s) continue to deliver the defined ecosystem service over time.”⁵

Water availability and quality is the most usual service provided, particularly by farmers. Every farmer has water falling on his/her land and every farmer can improve the condition of run-off water or stream water running through the property. Groundwater purity should also be a responsibility of landholders as bad practices can adversely influence the aquifers.

Great savings could be achieved in the environmental outcomes of the NWI if an ecosystem service payment were undertaken by the Federal Government to farmers in return for habitat protection, watershed rehabilitation, vegetation management, pollination services, erosion control etc.

Thank you for the opportunity to contribute to the public consultation.

Regards

Natalie Williams
Chief of Staff
Level 2
14-16 Brisbane Avenue
Barton ACT 2600

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⁵ <http://www.cifor.org/project-websites/payment-environmental-services/>