

Background

Southern Riverina Irrigators (SRI) is a peak irrigation advocacy group representing five landholder associations in the Southern Riverina of NSW. SRI irrigators access water through Murray Irrigation Limited (MIL), which has a footprint of 748,000 hectares across 1200 hardworking farming families. Since the building of Hume Dam in the 1930's and the consequent arrival and massive growth in irrigation from renewed confidence and reliability from this top of the system access to water, our region has grown to produce many of the nation's staple foods including rice, wheat, corn, dairy, barley, canola, oats, peas, beans, beef, lamb and various horticultural enterprises and we are a significant contributor to the only manufacturing industry we have left in Australia, agriculture.

SRI irrigators must operate their business with the confidence that the various overarching governments have put adequate protections in place to ensure our primary producers are able to fill gaps in their program via the water market. The development of the water market to date has been questionable, with local governments approving various green field sites, state governments managing the river system and delivering ever increasing, time sensitive deliveries, with the federal government having enabled the water market to grow exponentially in the first place, via the separating of land and water titles – none of these governments communicate effectively on what capacity the system has and the third party implications on the triple bottom line if growth continues unchecked, which it has to date, despite the constant highlighting of the severe risks this poses. Priority has been given to the delivery of water downstream of the natural constraints of the system at the expense and reliability of permanent water entitlement holders, as per the Murray-Darling Basin Agreement, enduring since 1915 and its insertion into the Water Act 2007, state that NSW and VIC irrigators must pay for the conveyance of the system, i.e. the run of the river cost in gigalitres per year.

Confidence in basin governments and implementation of water policy is paramount if we are to have a sustainable, productive, and economically strong future not only for irrigators but given that agriculture is the 4th largest industry in Australia, with irrigation a significant weighting in this, for the country, especially in a post COVID-19 Australia, where we must drive the economy from a primary base.

SRI Submission: ACCC's Murray–Darling Basin Water markets inquiry Interim report

30 June 2020

Opening Statement

Southern Riverina Irrigators welcome the chance to provide stakeholder insight into the ACCC's Murray-Darling Basin water markets inquiry

Some preliminary findings highlighted by the ACCC were very encouraging, SRI has been arguing the below points using data and evidence for years which zero change in direction.

“there is a disconnect between the rules of the trading system and the physical characteristics of the river system. For example, on-river delivery capacity scarcity, conveyance losses and adverse environmental impacts are not considered in the processing of trades that change the location of water use, except through some blunt and imprecise rules, such as limits on inter-valley trade/transfers”

“there are scant rules to guard against the emergence of conduct aimed at manipulating market prices, and no particular body to monitor the trading activities of market participants

“there are information failures which limit the openness of markets and favour better-resourced and professional traders who can take advantage of opportunities such as inter-valley trade/transfer openings”

“water market intermediaries such as brokers and water-exchange platforms operate in a mostly unregulated environment, allowing conflicts of interest to arise, and opportunities for transactions to be reported improperly”

“Important information, such as allocation policies and river operations policy, which can significantly impact water pricing, are inadequately communicated to the irrigators and traders who rely on these to make business decisions”

“Exploration of potential market architecture reform including accountancy of conveyance losses and transmission loss applied to trades and delivery of water, along with investigation into the under-developed state of trading rules for unregulated systems in northern New South Wales including floodplain-harvesting”

“As trade volumes have increased and locations of trade have changed, problems with the current arrangements have begun to emerge.”

Pre-empting the separation of land and water titles in 2007 and on the back of increased intervalley and interstate water trading, the NWI initially set out a series of guidelines agreed to by irrigation communities and state and federal governments across the basin.

The intergovernmental agreement detailed water market development within the basin and essentially went by the guiding principles below, which formed the basis of key objectives within the Federal Water Act 2007 and Murray-Darling Basin Plan 2012, including optimisation of the triple bottom line, clearly identified in the Preamble of the NWI 2004 in points 2 and 5; “In Australia, water is vested in governments that allow other parties to access and use water for a variety of purposes – whether irrigation, industrial use, mining, servicing rural and urban communities, or for amenity values. Decisions about water management involve balancing sets of economic, environmental, and other interests. The framework within which water is allocated attaches both rights and responsibilities to water users – a right to a share of the water made available for extraction at any particular time, and a responsibility to use this water in accordance with usage conditions set by government. Likewise, governments have a responsibility to ensure that water is allocated and used to achieve socially and economically beneficial outcomes in a manner that is environmentally sustainable.

The Parties agree to implement this National Water Initiative (NWI) in recognition of the continuing national imperative to increase the productivity and efficiency of Australia’s water use, the need to service rural and urban communities, and to ensure the health of river and groundwater systems by establishing clear pathways to return all systems to environmentally sustainable levels of extraction. The objective of the Parties in implementing this Agreement is to provide greater certainty for investment and the environment, and underpin the capacity of Australia’s water management regimes to deal with change responsively and fairly”

Engagement at local, state, and federal level has been poor and extremely unsatisfactory, ignoring the decades of knowledge and experience garnered by irrigators surrounding water management.

Considering drivers of reform, SRI will focus on various aspects of the NWI 2004 that have come through to the Water Act 2007 and Murray-Darling Basin Plan particularly in relation to water markets. The reason many of these protective frameworks were tabled and adopted in the formulation of the NWI 2004, without the groundswell of community scrutiny present today, is because there was extensive and genuine community consultation with the intention to inform change. Objectives from the NWI 2004 that now reside in the Water Act 2007 remain unimplemented, even though they have endured through 25 renditions of the Water Act 2007, to the latest version in January 2020.

Basin water policy is influenced by the Murray-Darling Basin Agreement, internal state water management decisions, the Water Act 2007 and the MDBP - all with the underlying objective to balance social, economic and environmental factors for water management in the national interest of Australia. While the objectives of various pieces of legislation acknowledge these values, the body of the acts and implementation of policy, does not. Implementation of the Murray Darling Basin Plan (MDBP) and the consequent 110 plus reviews to date, indicate monumental failings as evidenced by continued calls to can the plan, host a royal commission into the MDBP and the Murray-Darling Basin Authority (MDBA).

As an ‘independent’ authority - documented decisions would indicate MDBA decisions have never been truly independent, nor consistent with a ‘whole of basin’ approach, as per the objectives of the Water Act 2007. Instead the Water Act 2007 and Basin Plan has ensured 74.56 per cent of water

recovered for the environment has occurred in the southern basin, primarily in the Murray system (NSW/Vic), the Goulburn River (Vic) and the Lower Darling, where the majority of temporary trades now also occur, despite the Southern Basin never breaching the 93/94 cap that kick started buybacks in the first place. Social and economic impacts are not just confined to a reduction in irrigation entitlements, impacts extend to third party influences including industry, community, the environment, pricing and supply of water markets, stranded assets and concern around future operation and viability of Murray River system. The Murray-Darling Basin Agreement and the Murray Darling Basin Plan have led to major inequities in Southern Basin water management. NSW Murray Valley General Security (GS) has incurred increased negative impacts because of basin agreement requirements to South Australia and changes to inflows from the Northern Basin.

When governments pushed for the water market to develop, deliberately leaving out various protective parameters discussed throughout this paper, that were in line with the national interest, they envisaged a totally free market that would satisfy 1 mandatory objective of the MDBP was mandated to be developed upon, subsequently sacrificing every other objective at a state and federal level – **“20 Purpose of Basin Plan The purpose of the Basin Plan is to provide for the integrated management of the Basin water resources in a way that promotes the objects of this Act, in particular by providing for: (e) water to reach its most productive use through the development of an efficient water trading regime across the Murray-Darling Basin”**

What is the governments definition of “most productive use”? Do they mean volumetrically, dollar figure, environmentally, or? As of today, vulnerable rural communities consisting of families running small businesses and agriculturally focussed regions are underpinning two things, both impacting their reliability of their license and in turn their viability.

1. Overbank transfers and breaches of choke trade rules by consecutive governments.
2. Underwriting insatiable downstream demand via deliveries down the system that do not fit within bank either.

This highlights that the markets functionality cannot be looked at in isolation of all the other objectives that governs its development and direction into the future.

SRI expects an answer, devoid of all politics, as to why all solutions at the conclusion of this paper cannot be implemented effectively and immediately as they are in line with the national interest of Australia and satisfy all objectives of the Water Act and Murray-Darling Basin Plan.

Interim Inspector-General Mick Keelty

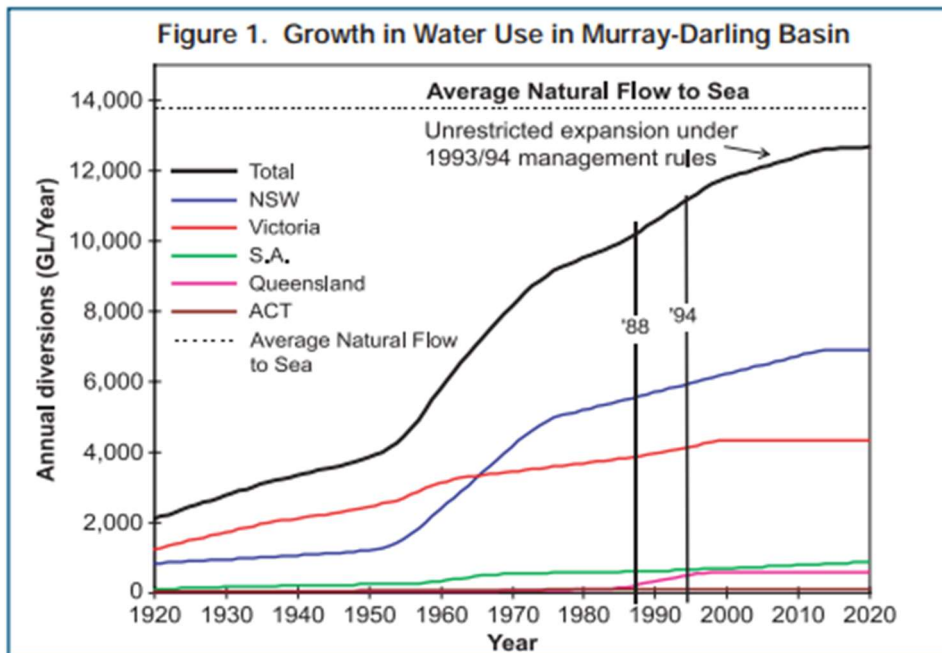
- 1. As cited in a recent report from the Interim Inspector-General of Murray–Darling Basin Water Resources, Mick Keelty AO, median inflows from the tributaries of New South Wales over the past 20 years are almost two-thirds lower than those experienced during the previous century (see figure 2 below). The report stated that irrigation expanded rapidly in a relatively wet period during the 1990s, and that many water users’ memories of water availability may have been formed during this period, which had less frequent dry years than the period since. The report also found that dry periods in different parts of the Darling and the Murray are increasingly occurring at the same time.**

Quoting the recent report from the Interim Inspector-General (IIG) of Murray-Darling Basin Water Resources, Mick Keelty AO, is ill advised. The notion that irrigators work off of memory to highlight the fact that due to the developments upstream, downstream and policy influence that we having our reliability impacted from what it would and should be had the above not occurred, is a blatant, unfounded insult to the industries that provide staple foods to this country, in line with the national interest. Southern NSW began development 120 years before the IIG’s claims of the 90’s. Main centres in the area; Barham, Deniliquin, Moulamein, Finley, Berrigan, Barooga settled from 1830 in the earliest instances to 1878 in the latest.

Why would South Australia, New South Wales and Victoria enter a tristate agreement called the Murray-Darling Basin Agreement, to detail water sharing between the states following Federation in 1915 if irrigation only started developing and ramping up in the 1990’s? The Torrumbarry Weir was completed in 1924 to increase efficiency to bolster irrigation usage in Southern NSW, Why would SA, NSW and VIC build Lake Victoria in 1928 to carry 680GL, holding water in reserve to supply the obligations made in 1915? Why would they build Hume in 1936 carrying 3,005,156 ML, if industries did not develop to utilise and pay for this until 1990? Why would the NSW government build the Yarrawonga Weir in 1939, if not to hold excess water in wet times for irrigation? Why would the NSW government pass legislation to convert Menindee to conserve water for downstream as part of the 1915 agreement in 1945 and complete works in 1960, if it weren’t to hold newly excess water in NSW for use in the Riverina, to better utilise water coming down from the Darling? Or a further 3,856,232ML completed with Dartmouth in 1979 to underpin the industries that had developed over the past 43years since building Hume if the use only increased in the 1990’s.

The last substantial water capturing or increase in infrastructure for water use was Dartmouth dam, in 1979. Industries in NSW and VIC developed and increased long before the 1990’s.

The below graph, with the blue line, clearly indicates that the expansion in NSW exploded in the 60’s, 70’s and 80’s. Not the 90’s. Further to this, most of the increase in development happened, shown in blue and pink below, in the Northern Basin, not the Southern Basin.



(MDBC n.d.)

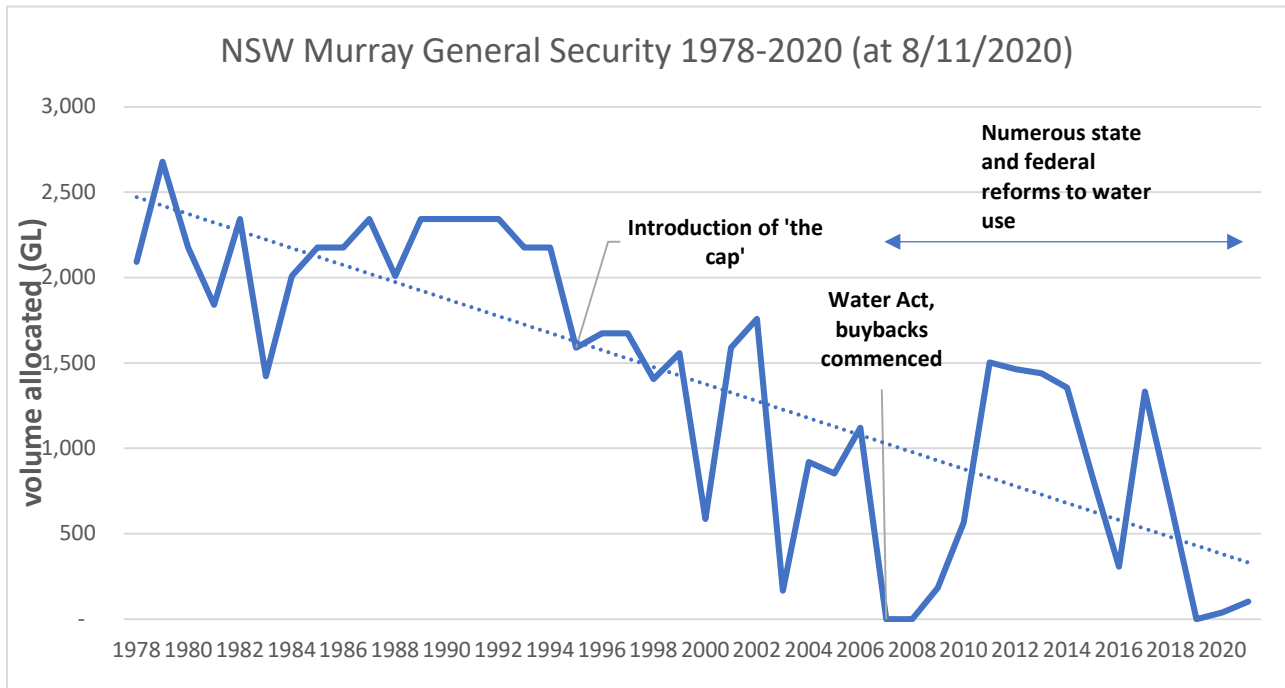
In fact, using the NSW Murray as an example, the decades as per water use for the region are as follows 70's>60's>80's>90's>2010's>2000's. This has absolutely nothing to do with the memory of farmers and everything to do with poor policy.

The NSW Government and MDBA regularly use a 113 year inflow history derived using a correlation coefficient from rainfall, that if average inflows were to occur, as they did from 1891-2004, that the NSW Murray General Security would yield 84% on average.

This has a range of factors that informed it aside from rainfall factors, chiefly including:

- 39% of annual contributions to the 1915 MDB Agreement South Australian obligation of 1850GL being supplied by the Darling as per Thoms et al paper and various MDBA papers plus their live and historical river data
- Accurate metering, licensing and cap compliance occurring in the Northern Basin
- In bank delivery of water to permanent and temporary water demands in the Southern Connected System
- All water users and license categories being subject to the same operating rules
- Policy adherence that dictates users must not be impacted by government intervention in water use and frameworks

The below graph, when combined with buybacks, highlights that the NSW Murray General Security now utilises, on average, 634 productive GL from 2000-2020 compared to 1925GL in the 1980-2000 period from 1674GL of entitlements. The 1925GL was what this region was built upon. SRI is unsure how many GL would need to be on average utilised within the region for it to maintain its viability, however it is our position that it is unreasonable for government to expect a 2/3 reduction in productive capacity to be manageable for our communities going forward and shows a clear lack of insight to bolster this region to provide for population explosions domestically and abroad into 2050, when the NSW population is predicted to increase by 67% from today.



(NSW DPI, 2020)

Policy Failure and outright contravention

Why does the government continue to observe half delivered policy? If this policy were education, health or transport it would be overhauled in a heartbeat and potentially a Royal Commission, however as the voting base impacted by this reform, directly, are the minority, the government is able to ignore calls that it is an absolute disaster and is failing to deliver upon the vast majority of its objectives, at great detriment to Australians rural and urban.

Mentioned at the conclusion of the Opening Statement as a result of governments wrongly prioritising **(e) water to reach its most productive use through the development of an efficient water trading regime across the Murray-Darling Basin** aspect of water markets the other objectives are left shattered, these include:

- (a) giving effect to relevant international agreements (to the extent to which those agreements are relevant to the use and management of the Basin water resources)**
- (b) the establishment and enforcement of environmentally sustainable limits on the quantities of surface water and ground water that may be taken from the Basin water resources (including by interception activities)**
- (c) Basin wide environmental objectives for water dependent ecosystems of the Murray Darling Basin and water quality and salinity objectives**
- (d) the use and management of the Basin water resources in a way that optimises economic, social and environmental outcomes; and**
- (e) as above**
- (f) requirements that a water resource plan for a water resource plan area must meet if it is to be accredited or adopted under Division 2; and**
- (g) improved water security for all uses of Basin water resources.**

RAMSAR being a relevant international agreement, of which the Murray River Channel and Barmah & Millewa Chokes are listed, yet they continue to deposit increased rates of sediment into the river as a result of perpetually increase demand via the environment and productive sector - far exceeding the rivers ecologically sustainable limits, whilst incurring Third Party impacts such as decreasing water quality and decreased reliability, contravening the MDBP 2012's Part 2, 9.02, Types of water quality degradation and their key causes, (b) elevated levels of suspended matter, which the MDBP states is caused by the way the river is being ran currently, why is this relevant? This is the direct result of downstream demand exceeding channel capacity and should not be ignored by the ACCC –

“Schedule 10—Key causes of water quality degradation

Elevated levels of suspended matter

(iv) practices that over the long-term cause decline of stream morphology, leading to near stream processes of gully erosion, side wall cut and head migration”



This impacts Southern Basin Markets, because due to the unknown level of take in the Northern Basin via river, groundwater and FPH, there is an impact on the Darlings contribution to the SA border, this has compounding impacts; 1) the full SA annual entitlement must now come from the Southern Basin and the ever increasing temporary trade market must also solely be sourced from the Southern Basin, the result? A 21.4% reduction in the Barmah & Millewa Chokes capacities. Highlighted in the MDBA 2017 compliance review, only 29% of QLD take is compliant, whilst only 66% of NSW is compliant. Given the Southern Basins 98% compliance in their respective WRP areas, this NSW non-compliant take is all Northern NSW orientated. How can the government possibly enforce this environmentally sustainable limit on the quantities of water extracted in the north if said volumes taken are not even known within government departments, let alone publicly?

“3 Basin water market and trading objectives - The objectives of the water market and trading arrangements for the Murray-Darling Basin are:”

This schedule legislates a multitude of the principles found in the NWI 2004, cited 37 times in the water act for exchange rates and trading zones to be an integral part of water markets, as they would protect “third party interests”. These include the reliability of those wearing the conveyance of the river as per the Murray-Darling Basin Agreement, one such agreement that has not evolved to incorporate the level of downstream use seen today.

“(a) to facilitate the operation of efficient water markets and the opportunities for trading, within and between Basin States, where water resources are physically shared or hydrologic connections and water supply considerations will permit water trading”

Currently NSW has a paper-based system to transfer water downstream, whilst VIC has an electronic system, meaning transfers of the exact same nature in the exact same river will take days in NSW and seconds in VIC. VIC also uses SMS’s to disseminate market info whilst NSW has no such passive mechanism.

“(b) to minimise transaction cost on water trades, including through good information flows in the market and compatible entitlement, registry, regulatory and other arrangements across jurisdiction”

There is no such registry in any shape or form in any jurisdiction that facilitates this transfer of information, multinationals – Duxtons, government – CEWH and IIO’s - Murrumbidgee are benefiting from the opaque and scarce nature of this market, Murrumbidgee Irrigation made \$51m in temporary trading last water year, whilst the CEWH has been caught transferring water entitlements downstream during a period in which private license holders couldn’t use their water in the same way i.e. using return flows to move water downstream.

“Commonwealth Environmental Water Holder (CEWH) & Temporary water deliveries

Water Act 2007 - Part 6—Commonwealth Environmental Water Holder Division 1—Establishment and functions- 109 Operating rules (2) Operating rules that the Minister makes under subsection (1) must not: (a) impose obligations on any person other than the Commonwealth Environmental Water Holder”

“Clause 31 & action 59. Water access entitlements will...vii) be recorded in publicly-accessible reliable water registers that foster public confidence and state unambiguously who owns the entitlement, and the nature of any encumbrances on it”.

The water registries currently in place are grossly inadequate and do not come remotely close to satisfying the level of public knowledge of entitlement ownership mandated nor demanded publicly. Even though, also found in schedule 3 of the water act, is states “4 Basin water market and trading principles (3) All trades should be recorded on a water register. Registers will be compatible, publicly accessible and reliable, recording information on a whole of catchment basis, consistent with the National Water Initiative.”

“Clause 58 iv) recognise and protect the needs of the environment; and v) provide appropriate protection of third-party interests.” Channel capacity, as a result of the frequency and magnitude of downstream use, has reduced by 21.4% since 2008 (MDBC 2008), compared with December 2019 (MDBA 2019), this is contrary to a key component of assessing ecological impacts in the Basin Plan in “Schedule 10 – key causes of water quality degradation 2bii) elevated levels of suspended matter...the volume or manner of release of water, resulting in bank or bed erosion” (Basin Plan 2012)

“Clause 60 The States and Territories agree to establish by 2007 compatible institutional and regulatory arrangements that facilitate intra and interstate trade, and manage differences in entitlement reliability, supply losses, supply source constraints, trading between systems, and cap requirements, including & 60 ii) where appropriate, the use of water access entitlement exchange rates and/or water access entitlement tagging and a system of trading zones to simplify administration”

During an overbank transfer event the Commonwealth Environmental Water Holder pays 20 per cent losses on top of delivery, pre 2018 this was 30 per cent. The developing downstream productive sector (permanent plantings) has never paid an exchange rate on water. This severely disjointed approach by Local, State and Federal governments has reduced the reliability of general security entitlement holders and caused ecological damage, failing the NWI, Basin Plan and the Water Act.

Deliverability

The Murray River is approximately 2500 km from its headwaters in the Upper Murray to its outlet in the Southern Ocean.

- At Albury, the stream gradient of the Murray is 125mm/1km(5inches/km) down to Wentworth, which is a mere 33 metres above sea level.
- The Murray at the confluence with the Goulburn is still 1992 kms from the Murray mouth and a mere 124.9 metres above sea level.
- Natural physical constraints and geography mean river systems have exceptionally low amounts of fall along their courses.
- The Murray, Edward/Wakool system and Murrumbidgee Rivers have significant bends and water travel time is accentuated because of significant natural river bends in the rivers.
- Mildura is 878 kms from the Murray mouth but only 34.5 metres above sea level.
- The last 100km to the Murray mouth in SA falls at 12mm/km (half an inch/km).
- Transfers of water to South Australia incur major transmission/conveyance losses.

Flows to South Australia from the Murray River are affected by natural river system capacities and constraints including natural riverbanks, natural restrictions (e.g. chokes), inflows from Northern Basin, inflows from Victorian and NSW tributaries.

The MDBA define system constraints as structural constraints; physical barriers either natural or built; or non-structural constraints: operational rules either chosen by operators or formalised by agreements or legislation

Exceeding system constraints is recognised for increasing flooding risk and adverse environmental impacts such as bank slumping. It also creates agricultural pollution runoff and hypoxic blackwater events in warmer seasonal conditions.

Victorian Government: Fact Sheet Water supply and Demand; An assessment of water availability and horticulture water demand in the southern Murray-Darling Basin (2019)- Report summary:

- Horticultural demand is concentrated in the Lower Murray Region and physical system constraints limit the availability of water that can be traded or delivered to the region.
- Estimates for current horticultural water demand (i.e. from tree plantings like grapes, fruit and nuts including almonds) is 1,230 GL per year and will grow to 1,400 GL once all current plantings reach full maturity. (55% higher than recent estimates by the Australian Bureau of Statistics):
- If horticulture manages to meet this demand by purchasing water on the market, there would be little water left to supply other irrigated industries and there could be increased water market prices. During periods of extreme dry water availability horticultural water will demand all the surface water allocated for productive use in that particular year.

Recommendations

There are various options available through policy reform or infrastructure solutions to government that are not being implemented because of political palatability.

SRI believe the recommendations below will correct current failures and fit in line with managing this precious resource with a true national interest:

1. Quarantine remaining funds left under the \$13.2billion Murray Darling Basin Plan, principally the 450GL for WESA and the 605GL SDL suite of 36 projects, on the basis the 450GL has prohibitively high socioeconomic costs while the 605 SDLs whilst a measure to reduce buybacks will actually further impact reliability.
2. Maximise net economic returns to the Australian community from existing Basin water resources, without increasing use and impacting other valley or water license holders.
3. Quarantine funds until a Federal Royal Commission has been delivered on the Murray-Darling Basin Plan and Murray-Darling Basin Authority with terms of reference to be decided by community stakeholders involved in irrigation.
4. Investigate why the MDBA will not permit changes to the Basin Plan when evidence is compelling to do so.
5. Investigate the basis buybacks were justified upon, 75 per cent of all MDB buybacks have occurred in the Southern Basin while collectively these valleys have never breached sustainable caps from 93/94 through to 2007 - the premise of the federal water reform
6. Establish a scientific tribunal to independently evaluate why the MDBA has circumvented the academic sanctity of a peer reviewed report and not adhered to the best available science as identified in the SA Royal Commission.
7. A review into whether regulatory changes to the Water Act and Basin Plan have impacted reliability and viability of regional businesses, and if so, seek adequate compensation.
8. Fully implement the National Water Initiative 2004.
9. Localised decision making with longstanding organisations including landholder groups must be paramount along with stability of governmental employees who are often shifted from department to department.
10. No further buybacks from the productive sector, outright or for efficiency projects.
11. Audit, measure and evaluate environmental water and centralise operations into the CEWH, ensuring environmental water is used for environmental purposes only and not sold or swapped.
12. Flood years and major rainfall events must be factored into environmental water allocation to provide a mechanism to deduct water from the environment for productive use.

13. Re-assess, using empirical evidence against modelling to gauge ecosystem requirements, as several peer reviewed reports indicate the magnitude and frequency of watering is not consistent with the needs of the ecosystems.
14. Clearly define trading zones. Develop and apply exchange rates to water traded into different valleys, i.e. up and down the system, to ensure delivery losses are not socialised to users with permanent entitlements, as per the MDB Agreement but conform with modern parameters post land and water title separation, but to the individual demanding water at specific location. This must be published transparently to notify businesses of delivery risks associated with expanded or greenfield developments.
15. Suspend FPH until accurate metering, licensing, and real time compliance of take (using available telemetry) is implemented, ensuring no negative downstream consequences to the triple bottom line. Take in the northern basin far exceeds the licensing limit of 210GL and must be reduced accordingly.
16. 100GL to be shared equally between VIC/NSW by turning on and operating the federally funded Adelaide de-salination plant at full capacity. Decreasing Adelaide's reliance on the Murray River will ease channel capacity concerns and losses and return 100GL to the productive sector.
17. As stated in the NWI 2004 and Water Act 2007 it is imperative a federal water registry is brought online to state unambiguously the ownership of the water entitlement. This has been legislated since 2004 and is yet to be delivered.
18. Move to a user pays system for permanent entitlement water charges. If a particular valley is on zero allocation because of drought, then the irrigator should not bear any costs, this should be underwritten by federal government in the national interest.
19. Review the Murray Darling Basin Agreement, schedule 1 of the Water Act as it prioritises 1850GL of water to the SA border (based on river heights for paddle steamers) in all but the driest of years, often leaving NSW licenses on zero even when the Darling River is dry and not contributing.
20. South Australian Loss and Dilution Flows to be re-credited to the productive sector in NSW and Victoria as they were set aside when Dartmouth was built. Salt interception schemes at various points are no longer impacting water quality and according to the SA Government, 350GL of this 696GL dilution flow ends up in the Lower Lakes.

Infrastructure Solutions

There are various viable infrastructure solutions awaiting commissioning by the federal government as individual or joint state ventures. These will to create wealth and employment and increase business opportunities while harnessing the natural assets of this great nation in a sustainable way.

The water savings once completed to be split evenly between the states that share hydrological connection and have foregone water to achieve a previous target.

21. Simultaneously build Lock Zero and automate the barrages consistent with Ken Jurys 'A Better Way' 2016 and Professor Peter Gell's peer reviewed report - Watching the tide roll away – contested interpretations of the nature of the Lower Lakes of the Murray Darling Basin
22. Reinstate the historical average flows into the Lower Limestone Coast PWA unconfined aquifer that traditionally flowed into the Coorong at, according to the SA Government, 425GL/y. Additionally, according to GeoScience Australia, groundwater discharge was an important factor affecting flow and water quality in the Coorong. This is a key and yet misguided target of the Plan where the MDBA is targeting 660GL/y of discharge through the barrages into the Coorong, which due to the hydrological topography will not travel from the northern end of the Coorong to the southern.
23. The Clarence Scheme - In 1985, Jack Beale (a former NSW Minister for Conservation and Environment) as chairman of the Water Resources Foundation of Australia presented a proposal for a full investigation of the hydro-electric scheme, which he described as a "sleeping giant of water, power and natural wealth". This scheme could divert two million megalitres (four Sydney Harbours) annually to the Murray-Darling Basin. Pump storage of 3000 megawatts could provide peak electrical load to NSW and Queensland and would provide much-required inflows into the Basin with multiple value add opportunities as it moves downstream.
24. Ocean Connection - Pipe (+valve) Infrastructure through Coorong sand dunes to allow marine waters into the southern lagoon. Ocean water replaces the loss of freshwater flows from SE of SA which are currently diverted by drainage schemes away from the Coorong and out to the ocean. Reducing hyper salinity in the southern lagoon delivers ecological health and native fish benefits while providing potential to revive the Mulloway industry.