

For the Sake of the Murray-Darling Basin System
A submission in response to “The Living Murray” Programme.
11th February 2003

1. INTRODUCTION

This submission has been written in response to the initiative taken by the Murray-Darling Basin Ministerial Council in its “The Living Murray” Programme.

It addresses many of the issues affecting the state of the River Murray but emphasis is primarily on water quantity and flow aspects.

It is structured such that many subjects are discussed using a combination of information gleaned from many sources and my thoughts and views. From these discussions, the main recommendations are identified and are listed in **Section 4**. Further points can be gleaned from the discussion sections. In this format, some duplication and repetition has been unavoidable but has been kept to a minimum. It concludes with an overall conclusions statement at **Section 5**.

There are many important factors that contribute to the condition of the River, eg water quantity and quality, land management, ecological systems, water use, economic and social effects. They are not all dealt with specifically in any depth, because:

- a. they are significantly affected by water quantity and flow
- b. they are treated in depth elsewhere
- c. I have limited resources to adequately research them
- d. to do them justice would make this submission more voluminous.

The Murray-Darling Basin, although somewhat unique in its characteristics, rates with other National (& International) natural icons such as the Great Barrier Reef and Ayers Rock and must carry the respect and be treated accordingly not primarily as just a resource to be exploited as is the case at present.

From *The Living Murray – A discussion paper on restoring the health of the River Murray*, Murray-Darling Ministerial Council, Stage 1, July 2002, page 37:

“Doing nothing more than maintaining the current Murray-Darling Basin Cap on diversions, and maintaining current river operations, will lead to a continuing decline in ecological condition. If no further imposts on the river system are allowed (i.e. no increase to water abstraction, no more dams, no more worsening of water quality, no more exotic pests) then ecological condition will stabilise at a level worse than today within a few decades.”

Because the Murray-Darling Basin System is a matter of National importance, the irrigators and their governments, who are, collectively, the major water consumers and hence the main impedance to avoiding the above scenario, must be convinced, by whatever means necessary, that they are extracting far too much water from the systems and that “the party is over”. They have been allowed to grow too many and too big! I am sure that most irrigators, particularly the bigger ones, don’t realize or, more likely, don’t want to acknowledge, that a healthy system is ultimately in everybody’s best interest. It has been stated by some that they are unaware of and don’t care what happens down-stream of them. This mentality and attitude must be changed ***for the sake of the Murray-Darling Basin System.***

Recommendation 4.1

The Murray-Darling Basin System is a matter of National importance and the irrigators and their governments, must be convinced, by whatever means necessary, that they are extracting far too much water from the systems and that “the party is over”.

The *Integrated Catchment Management in the Murray-Darling Basin 2001-2010, Delivering a sustainable future*, Murray-Darling Basin Ministerial Council, June 2001, contains the platform from which the necessary reforms to the system can be made if the will, resolve and resources are aggressively applied.

The drought that the Murray-Darling Basin has been experiencing highlights the need to carefully manage the Basin systems, particularly the water and particularly in times of drought. Unfortunately, when the drought breaks - and nobody can predict the extent and timescale of the recovery – the artificial storages will be replenished first and the natural rivers and storages, particularly downstream, could miss out altogether. Steps should be taken now to achieve a better balanced short-term recovery of the systems when the drought has broken.

It should be noted that I live in South Australia, but I am an Australian first and foremost who is passionate about the Murray-Darling Basin systems and other natural assets. I do not represent any organization in this submission.

2. THE HEALTH OF THE RIVER MURRAY

Because the River Murray is but the main “artery” of the Murray Darling Basin System, the other components of the system must be included in any analysis of the River Murray per se. Hence the Murray-Darling Basin System is the subject of the paper.

Large volumes have been written over many years describing the condition of the River Murray. It is amazing that the position has become desperate when all of the problems have been alluded to, some of them many times, in the past.

There is evidence that large areas of the system have deteriorated to varying degrees depending approximately on the distance from the various water sources and catchments. For example, the headwaters of the main tributaries, viz Barwon, Pardoo, McIntyre, Namoi (Darling), Murrumbidgee, Loddon, Goulburn, and others, are relatively healthy and “free” flowing. As the flow is impeded and diverted, the health of the stream deteriorates due to a lower flow regime to maintain general life of the ecology and to reduce the concentration of pollutants, including salt.

This is not some sophisticated scientific theory or hypothesis; it is quite obvious to anybody who cares to think about it.

Likewise most of the remedies are equally simple and obvious, but they require the will, resolve and desire to implement them. With this, though, there must be some doubt and concern. For example, in January 2000 the Prime Minister created a “High Level River Watch – PM’s taskforce to focus on Murray” (*The Advertiser*, 27th Jan 2000) (I am not aware of the outcome) of which John Anderson, National Party Leader, Deputy Prime Minister and Federal Minister for Transport, was a member. In Nov 2002 it was reported (*The Advertiser* on 20th Nov 2002) that “a spokesman for Mr Anderson said “There’s no chance on this Earth the Nationals will ever support a policy that involves closing down farms to improve water quality.””. (See **Section 3.2**)

One wonders if this means a closed mind to something that may be considered to be necessary; even a conflict of interest.

Evidence is abundant that the water extracted from the upstream sections of the system seriously deprives the system progressively down to the Murray Mouth and, in fact, the Coorong and Marine/Estuarine interface. (see **Section 3.4**)

3. SOME OF THE MAIN FACTORS

3.1 Cotton & Rice Growing

Throughout NSW and Queensland, large areas are devoted to cotton growing. These areas are irrigated from water previously confined to rivers and their associated tributaries that, in the situation concerned, constitutes the Murray–Darling Basin systems.

Some of the water used is diverted to storage for use as required to irrigate the cotton crops. Water used, either directly from “natural” flow sources or from holding storages, amounts to 10% of the Nation’s (Comment: Not just M-DB?) (*The Advertiser*, 20th Nov 2002)

The cotton industry claims it is “sustainable”. In fact Queensland Cotton’s Web Page is headed “THE SUSTAINABLE RESOURCE”. This claim means that **it, the cotton industry**, is sustainable if the supply of water is assured. It is clearly not sustainable when the impact of water extraction on the rivers/tributaries systems is considered, which means it is a misleading distortion of the perception of sustainability. This situation should be corrected.

In the case of cotton, but it applies similarly to some other irrigated crops, it defies logic that the vast areas of cotton are grown in a country – the driest continent in the world! – where water is relatively scarce. Not only that, it is a crop that has a relatively low yield per unit of water used ie. \$/ML. The relative water consumption to make \$100* profit were:

Fruit	0.20 ML
Vegetables**	0.46 ML
Dairy Products	0.50 ML
Cotton	0.76 ML
Rice	1.85 ML
Pasture	2.78 ML

** incl. potatoes? Potatoes are probably higher than the average.

Source: *Murray Darling Basin Resources*, The Murray Darling Basin Commission, 1997, Table 3, page111. (Adapted from Hall et al 1994*.)

The Living Murray –A discussion paper on restoring the health of the River Murray, Murray-Darling Ministerial Council, Stage 1, July 2002, page 25, states: “Ricegrowers, for example, have cut their water use per hectare by around 30% (Comment: Does this mean a reduction in total water use? I doubt it. Refer to Recommendation 4.10) while rice yields per ML have risen by 60%”. (Comment: Does this mean \$/ML or tonnes/ML? There is a significant difference due to inflation.) Source: *Nancarrow B.E. and Syme G.J. 2001*.

Assuming that 50% out of the 60% rise has occurred since 1994, this still means that rice uses 0.92 ML per \$100(1994 \$’s). Also, the other crops have probably improved since 1994.

Latest figures across the board are necessary to affect a true comparison. The final decision should be based on absolute yields more so than relative yields.

Bourke cotton grower, Dan Buster, acknowledges that his industry is not as lucrative as less water-reliant horticulture.cotton was returning \$530/ML of irrigation water while navel oranges were earning about \$2000 to \$3000 for the same quantity. (*The Advertiser*,

18th Jan 2000). (Note: By the way we are importing citrus from U.S.A. and Orange juice concentrate from South America!)

Why then are we growing cotton at Bourke? Just because it will grow at Bourke and there happens to be a supply of water nearby?

Also, why has the situation been permitted to prevail and continue virtually unchecked, even with the “Caps” to 1993/94 entitlements (not use) introduced by the M-DB Ministerial Council in 1995? And we are the third biggest producer of cotton in the world.

Watering methods are at present generally inefficient, especially considering the use of large open channels where seepage/soakage and evaporation are high, particularly with the growing season (water demands) mainly in the hot months of summer.

In addition, because furrow watering of plants is used extensively for cotton and flood (paddy field) irrigating is used for rice, evaporation is occurring at the crop.

Throughout the cotton growing regions, typical evaporation rates account for approximately one third of the water diverted.

In South Australia’s Riverland, a scheme which started over 10 years ago, has replaced channels with pipes and stopped flood irrigation in Berri, Chaffey, Cobdogla, Cadell, Kingston, Moorook, Mypolonga and Waikerie. In the Loxton area about 60kms of channels will be replaced with pipes by 2005 (*The Advertiser*, 22nd Jan 2000).

From *The Advertiser* 20th Nov 2002,
Nationals defend ‘flooding’ rice farms

The National Party would never accept a winding down of the thirsty rice and cotton industries to save water. The Deputy Prime Minister John Anderson was responding following a proposal in Cabinet to offer compensation to encourage rice and cotton growers to do something else.

The expansion of rice and cotton farms is the key reason behind a 76% increase in water taken from the Murray – Darling Basin for irrigation in the decade to 1997.

Cotton growers, many of whom flood-irrigate in marginal country, account for 10% of the Nation’s (Comment: What % of M-DB? – Higher.) water use – or the equivalent of the combined use of Australia’s seven million households.

Rice growers account for 7% of the Nation’s (Comment: What % of M-DB? – Higher.) water.

Some of the National Party’s Liberal Coalition colleagues think that flood-irrigation farming on a dry continent is ridiculous.

A spokesman for Mr Anderson said “There’s no chance on this Earth the Nationals will ever support a policy that involves closing down farms to improve water quality.”

Of course, “closing down farms” can have many meanings, but if that, in one form or another, is what is necessary to achieve the desired outcomes, it must be done (with compassion and appropriate compensation). It has been done elsewhere in unviable industries, eg. logging. There are many farmers who are at or near retiring age or who can be enticed away from their properties and duly compensated. This should be done at the earliest possible opportunity and progressively. Some farmers may be deprived of their anticipated assets value, which is bolstered by the inclusion of water allocation/rights, at sale when leaving the land or retiring.

Unfortunately, they are in this situation because they and/or their “cousins”, in many instances, have been allowed to plunder the limited water resources.

Recommendation 4.2

As soon as possible and where appropriate, farmers should be enticed away from their properties and duly compensated.

3.2 Water "Savings"

From *The Living Murray – A discussion paper on restoring the health of the River Murray*, Murray-Darling Ministerial Council, Stage 1, July 2002, page 27:
Murrumbidgee River, NSW

Irrigators have returned almost 4% of their diversions to the (Murrumbidgee) river.

A similar process is taking place across NSW (Comment: How comprehensive and on what scale?), with irrigators on the Macquarie River returning the highest proportion of their diversions to the River (16%). (Comment: Most of the irrigators "surrendered" water unwillingly and as a result of government legislation.)

The quantities stated are small in the broad scheme of things and when it is considered that flows at high river flood levels are stored and diverted, this water would have had a major effect on the extremities of the envelope of the downstream systems. In fact, most, if not all, of the 4 – 16% of diversions (mostly from cotton) returned-to/left-in the river are extracted further downstream and don't achieve a significant environmental effect system-wise.

In the case of the Macquarie River, the Macquarie Marshes benefit, but to what extent is that water relayed to benefit the river(s) further downstream? Since the original Water Management Plan in 1986 and its review in 1996, against strong opposition from the irrigators, there has been an increase in cotton growing downstream, eg near Bourke on the River Darling, of which the Macquarie River is a tributary (via the Barwon River). **Hence the statement in the document is misleading.**

Also, in the Murrumbidgee Irrigation region alone, they lose up to 40% of irrigation water from leaks and evaporation in their old open-channel system (*The Advertiser*, 28th Feb 99).

3.3 Water Entitlement Caps

See (1) *Water Audit Monitoring Report 2000/01 - Report of the Murray-Darling Basin Commission on the Cap on Diversions*, Murray – Darling Basin Commission, September 2002,

and (2) *Review of Cap Implementation 2000/01 – Report of the Independent Audit Group*, Murray-Darling Basin Ministerial Council, March 2002,

for detailed discussion of the derivation, introduction (incl. monitoring system and processes) and implementation of the Caps on water allocations, entitlements and use.

In 1995 the M-DB Ministerial Council introduced the well known system of "Caps" on irrigators' water entitlements based on a perception of conditions at the time and the realisation that something needed to be done to arrest the pending disaster. Whilst it was a move in the right direction to limit water extraction from the systems, it was closing the door after the horse had bolted and, as subsequent events have shown, was still over generous. Also, the Caps have been breached and Queensland has still not embraced them (that I know of!). It may be remembered that farmers/irrigators in NSW prior to a state election in the late 1990's pushed hard (through the National Party) to have their Caps removed until Tim Fisher, Federal National Party Leader at the time, stepped in and quashed it.

Reference (2) above contains an assessment of the status of the application of the caps and includes overall outcomes thus:

South Australia

"South Australia in 2000/01 maintained its record of utilising less than the Cap in both the urban and irrigation sectors."

“South Australia, through SA Water, transports water from the Murray to other Basins, i.e. Barossa and Clare Valley.”

Despite the favourable report, South Australia should:

- be subjected to the same treatment and assessment when it comes to revising its entitlements/Caps as the other states as in **Sections 3.5**.
- limit its dependence on the River Murray for its water and be prepared for cuts as determined through the previous point.
- revise its mix of allocations of water to provide more water for environmental flows for the Coorong and Murray Mouth and Chowilla Wetlands, for example.
- ensure that more efficient methods than flood irrigation be employed particularly for dairy pastures in the Lower Murray area.
- review, and possibly reverse, the decision to increase water to the Clare Valley via a new 83km pipeline (*The Advertiser*, 5th Feb 2003) and to the Barossa Valley.
- curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.

The measures already taken in the Riverland (see **Section 3.1**) should be noted.

Banrock Station wetlands rehabilitation and management should be used as model for other parts of the Murray-Darling Basin systems.

Victoria

Whilst “Cumulative diversions up to 2000/01 are in credit in all areas” “Murray diversions were above the annual and the average long-term Caps”

As with the other states, Victoria should:

- be subjected to the same treatment and assessment when it comes to revising its entitlements/Caps as in **Sections 3.5**.
- curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.

New South Wales

New South Wales is a much larger and more complex situation. However, “the Namoi, Lachlan and Barwon-Darling/Lower Darling designated river valleys in February 2002..... the long-term diversion Caps have been exceeded in all of these valleys”.

Data for other systems are not available, but a similar situation is likely.

As with the other states, New South Wales should:

- be subjected to the same treatment and assessment when it comes to revising its entitlements/Caps as in **Sections 3.5**.
- curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.

Queensland

The position in Queensland is not clear because of delays in conforming with the Caps. However, Queensland’s diversions almost doubled over the 8 years (to 2000/01).

As with the other states, Queensland should:

- be subjected to the same treatment and assessment when it comes to revising its entitlements/Caps as in **Sections 3.5**.
- curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.

Recommendation 4.3

All states should:

- be subjected to the same treatment and assessment when it comes to revising its entitlements/Caps as in **Sections 3.5**.
- curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.

Recommendation 4.4

In addition, South Australia should:

- limit its dependence on the River Murray for its water and be prepared for cuts.
- revise its mix of allocations of water to provide more water for environmental flows for the Coorong and Murray Mouth and Chowilla Wetlands, for example.
- ensure that more efficient methods than flood irrigation be employed for dairy pastures in the Lower Murray area.
- review, and possibly reverse, the decision to increase water to the Clare Valley and the Barossa Valley.

3.4 The Coorong and Murray Mouth

The Coorong and the Murray Mouth areas are important parts of the River Murray Estuarine/Marine interface. They represent a very significant indicator of the overall condition of the Murray-Darling Basin systems and hence deserve special attention.

The Coorong constitutes wetlands of major importance and is a Ramsar site. As such, it is required, as Australia's commitment to the Ramsar Agreement, to be maintained in a way that fulfills the obligations of that Agreement. In addition there are obligations to migratory bird agreements eg. JAMBA and CAMBA. These are National obligations and commitments and it is evident that we are failing to meet them. The management requirements thereof are specified in the *Coorong and Lakes Alexandrina and Albert Ramsar Management Plan*, SA DEHAA September 2000, which reflects requirements of the *Wetlands Policy of the Commonwealth Government of Australia*, January 1997.

If the management plans derived in and from the objectives and strategies of these and other principle documents are not given sufficient credence, National support and resources, they will become mere expressions of intent and not the way towards meaningful outcomes.

The Coorong and associated ecologies represent a system that, for the following reasons:

- o It represents a very high order of natural value due to the diverse and rare ecological features,
- o It has been allowed to degenerate to an unacceptable degree – see *The Murray Mouth – Exploring the implications of closure or restricted flow*, A Report to the Murray-Darling Basin Commission, July 2002, *Conclusion*, page 70.

“There is sufficient evidence to show that under the current management regime the estuarine habitats are declining in area and quality, particularly as habitat for migratory waders.”

- o Because it is a National matter, the extractors of water, viz. irrigators, governments and other users, must accept responsibility for the present state and future of the system.
- o Because it represents a natural ecosystem of great National value that is very sensitive to many influences, it must be regarded as more important in the long-term than commercially driven enterprises which may be relatively short-term, particularly given the fickleness of some industries on the world scene. These are currently unsustainable if the conservation and preservation of the highly important natural assets are considered. It must be afforded the protection, support and resources, especially water, to ensure its future as an important National natural asset for future generations, both human and ecological.

is one of the key features and indicators in the Murray-Darling Basin.

The publication *The Murray Mouth – Exploring the implications of closure or restricted flow*, A Report to the Murray-Darling Basin Commission, July 2002, is a comprehensive treatise of the effects of degrees of closure of the mouth and restricted flows. Rather than carry out a repetitious discussion here, it is referred to for more detail. However, the *Common Ground* on page 4 is worthy of repeating here:

- The accumulation of sediment at the Murray Mouth reflects the vastly altered hydrology of the River Murray and is symptomatic of the condition of the entire Murray-Darling Basin
- The implications of closure depend on its duration, timing and frequency – that is, the period for which the Mouth stays closed, the time of year when this happens and the interval between closures
- Short term closure, when the Mouth is reopened before water quality is seriously degraded, is likely to have minimal impacts. However, such impacts would escalate if closure occurred during the warmer months.
- Currently, the risk of long-term closure is greater than ever before due to the condition of the River Murray – that is, negligible river flows reaching the Mouth, and a major reduction in “big flood” events.
- Long-term closure would have serious deleterious, and, in some cases irreversible, impacts on the ecology of the area and those who depend on it.
- South Australia has an international obligation to protect the ecosystems of the Coorong and Lower Lakes.
- All stakeholders recognize the special ecological value of the area and the need to stop further degradation.
- Any solution needs to be considered in the context of the total River Murray System.

I take it that the final point means that the Coorong – Murray Mouth should not be compromised by events upstream and not the converse, which is my second comment/point below!

Three additional comments are warranted if the document is to be used as a reference/guide to establishment of flow regimes and patterns for the system, viz.

- What constitutes “good” or even “ideal” conditions is not discussed sufficiently for striking rehabilitation objectives.

- A “minimum” situation should not be an objective that is compromised by over extraction of water from the upstream reaches of the system primarily for financial gain.
- The sea environment adjacent to the estuary and mouth relies heavily on seasonal outflows of fresh water, nutrients etc. as is the case with any river system – marine interface. The “big flood” events probably contribute most.

Recommendation 4.5

A “minimum” situation should not be an objective
Cyclic flood events should be an essential part of the water management plans for the systems.

In addition to quantifiable parameters to represent the condition of the Coorong – Murray Mouth area, other intangible characteristics such as the aesthetics (incl. turbidity of the water itself), culture, lifestyle, tradition, history, “romance”, “at peace with nature”, etc., should be given more emphasis in the debate and decision-making process. Many of these characteristics are often considered to be the exclusive domain of our aboriginal people and this should not be the case.

Recommendation 4.6

Many intangible factors should be given more emphasis in the debate and decision-making process.

3.5 Some Corrective Measures (Incl More Efficient Water Use and Practices)

The 750 GL additional annual flows should be implemented forthwith or as soon as practicable because:

1. It will provide a short-term remedial flow to revive parts of the system
2. It will thus provide validation data for models, predictions and other estimates, and some qualitative, as soon as possible
3. It will avoid much of the long lead time of the proposed timescale for Stage 3 – Implementation of Council decisions (November 2003 – Onwards. For which there is no definitive timescale at this stage*)

* It could take twelve months or more to “negotiate details of and timeframes for the implementation of Council decisions” and this is a conservative estimate if significant changes to industries are necessary (involving “politics”!) and significant amounts of compensation are required.

Recommendation 4.7

The 750 GL additional annual flows should be implemented forthwith or as soon as practicable.

As a means of reducing water diversion and providing the incentive for higher efficiency, entitlements and allocations to larger operations should be reduced by (at least) 20%# where irrigation practices deemed to be efficient are in place and (at least) 40%# where irrigation practices deemed to be efficient are not in place. This should also be “weighted” according to the yield (\$/ML) of their crops and value adding in-country, which would augment their operations and profit making.

These % figures will need to be adjusted to equate to the total amount of water needed for maintaining healthy systems. It has been estimated that some 4000GL of additional flows annually will be necessary to restore its health, (*The Advertiser*, 27th Dec 2002 and 9th Jan 2003). I have not seen the case for this, but it comes as no surpr

Recommendation 4.8

Entitlements and allocations to larger operations should be reduced by (at least) 20% where irrigation practices deemed to be efficient are in place and (at least) 40% where irrigation practices deemed to be efficient are not in place.

A programme of “efficiency” assessment and follow up will need to be implemented and resourced within an urgent timeframe. Gains or “savings” resulting from efficiency improvements must not be available for increasing irrigation areas.

Recommendation 4.9

A programme of “efficiency” assessment and follow up will need to be implemented and resourced within an urgent timeframe.

Recommendation 4.10

Any reductions in water use due to efficiency improvements and better irrigation practices must not result in an increase in irrigated areas to use the water “saved”.

These “rules” should apply to all states concerned including South Australia and Queensland regardless of its current position with “Caps”.

I am unable, in the time frame available with the very limited resources at my disposal, to conduct a rigorous analysis of the above factors in the cotton and rice industries and others. This, however, should be done by or on behalf of the M-DBC.

However it must be done to test the value of the industry in our situation.

Apart from assessment of absolute value and even viability in terms of yield per ML of water, the amount of employment and wealth created within Australia must be carefully analysed and assessed.

Out of all this should be a National decision on what should be being produced. Value adding, even close to the source of the primary products, should be part of the equations. There will be hard decisions to be made that will result in a certain amount of pain in some quarters, but, in the end, it must be done to return the M-DB systems to an environmentally acceptable condition.

Governments, in particular the Commonwealth Government and its agencies established to direct the Murray-Darling Basin Agreement, must have the resolve and strength to ensure a satisfactory outcome. Unfortunately, the present organisation, structure and processes must accept much of the responsibility for the demise of the Murray-Darling System over which it has presided, at its various levels, for the past two or three decades.

The “centre of gravity” of the decision-making mass is well within the Eastern States!

How much has it cost to produce this disaster? I don’t know; enormous amounts, I suspect!

Recommendation 4.11

The structure, composition, role, performance over the last twenty or so years of the Government bodies and agencies involved in directing the Murray-Darling Basin Agreement, should be the subject of a high level inquiry, if not a Royal Commission. Any such inquiry should not impede other courses of action.

3.6 Funding, including Compensation

The rescue of The Murray-Darling Basin system is a more important National issue than retiring National debt in the short-term. Hence, if it is decided to go ahead with the sale of the remainder of Telstra, it could provide funds for the rehabilitation of the system including compensation. If Telstra is not sold, the funds should come from other sources. Regardless, it is too important to not carry it out and it is imperative that it be done as a high priority programme with as short timescales as possible.

4. SUMMARY OF RECOMMENDATIONS

The following summarises the main recommendations emanating from the above discussions. They appear in the sequence in which they are derived and not in order of priority or implementation.

- 4.1 The Murray-Darling Basin System is a matter of National importance and the irrigators and their governments, must be convinced, by whatever means necessary, that they are extracting far too much water from the systems and that “the party is over”.
- 4.2 As soon as possible and where appropriate, farmers should be enticed away from their properties and duly compensated.
- 4.3 All states should:
 - be subjected to the same treatment and assessment when it comes to revising their entitlements/Caps as in **Sections 3.5**.
 - curtail any further increases in water allocations until the outcomes of the *Living Murray* Programme are known.
- 4.4 In addition, South Australia should:
 - limit its dependence on the River Murray for its water and be prepared for cuts.
 - revise its mix of allocations of water to provide more water for environmental flows for the Coorong and Murray Mouth and Chowilla Wetlands, for example.
 - ensure that more efficient methods than flood irrigation be employed for dairy pastures in the Lower Murray area.
 - review, and possibly reverse, the decision to increase water to the Clare Valley and the Barossa Valley.
- 4.5 A “minimum” situation should not be an objective. Cyclic flood events should be an essential part of the water management plans for the systems.
- 4.6 Many intangible factors should be given more emphasis in the debate and the decision-making process.
- 4.7 The 750 GL additional annual flows should be implemented forthwith or as soon as practicable.

- 4.8 Entitlements and allocations to larger operations should be reduced by (at least) 20% where irrigation practices deemed to be efficient are in place and (at least) 40% where irrigation practices deemed to be efficient are not in place.
- 4.9 A programme of “efficiency” assessment and follow up will need to be implemented and resourced within an urgent timeframe.
- 4.10 Any reductions in water use due to efficiency improvements and better irrigation practices must not result in an increase in irrigated areas to use the water “saved”.
- 4.11 The structure, composition, role, performance over the last twenty or so years of the Government bodies and agencies involved in directing the Murray-Darling Basin Agreement, should be the subject of a high level inquiry, if not a Royal Commission. Any such inquiry should not impede other courses of action.

5. CONCLUSIONS

The situation in which the systems of the Murray-Darling Basin currently find themselves is grave and could have been avoided with more responsible and astute management, particularly on the part of Governments, their agencies and administrators.

To rectify the situation will require very strong resolve from all parties concerned. It is a National problem and, accordingly, a united effort backed by strong leadership and appropriate resources is essential. There will be sacrifices and some pain; unfortunately not all those who will suffer most are responsible for the present situation.

The Murray-Darling Basin is bigger than any individual or group and must be conserved, not exploited. But what does it take to get some real action?

“For the sake of the Murray-Darling Basin System, let’s do something before it’s too late”

S. John Caldecott