

Submission to the Senate Standing Committee on Rural Affairs and Transport

The Management of the Murray Darling Basin

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**Namoi Councils Water Working
Group**

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1. Introduction

This submission is made by the Namoi Councils Water Working Group in response to the invitation provided by the Senate Standing Committee on Rural Affairs and Transport. The invitation was made by the Committee to interested individuals and organisations to make a submission regarding their Inquiry into the Management of the Murray Darling Basin and the development and implementation of the Basin Plan.

This submission is provided as an overview or first stage summary submission. The management of the Murray Darling Basin warrants a lot more discussion and investigation to identify innovative solutions to efficient delivery and application of environmental water, on-farm water use efficiencies and particularly the optimisation of social, economic and environmental aspects. In that regard, the Namoi Councils Water Working Group requests the opportunity to address the Committee to support the evidence provided in this Submission and further discuss how the Namoi Councils Water Working Group can play an active role in the identification and implementation of solutions on-ground that deliver better Natural Resource Management outcomes.

In addition, the Namoi Council's Water Working Group would like to invite the Committee to visit the Namoi Region and meet directly with the Namoi community to gain a thorough, first hand understanding of the key issues and concerns presented in this submission and to canvas opportunities for the development of a more balanced Basin Plan. We believe this is imperative and the only way to ensure practical on-ground solutions to the issues facing the sustainable long term management of the basin's water resources. Engagement and tapping into the knowledge and expertise of people and communities on-ground has been extremely poor to date and the Namoi Councils Water Working Group views this as one of the major hurdles facing the current proposed Basin Plan development and a missed opportunity in delivering a balanced plan that promotes discussion on how to deliver lasting outcomes for the environment and rural communities.

This submission focuses on the Namoi Region specifically and provides the Committee with overarching comments regarding the management of the Murray Darling Basin and the development and implementation of the Basin Plan to date. It also includes the key technical concerns and issues the Namoi Councils Water Working Group has with the Guide to the Proposed Basin Plan released by the Murray Darling Basin Authority (MDBA) and includes suggested recommendations for addressing these matters. Finally this submission provides suggestions for the development and implementation of a Basin Plan.

1.1 Namoi Councils Water Working Group

The Namoi Councils is an alliance of five councils and the Namoi Catchment Management Authority (CMA).

The Namoi Councils Water Working Group reports to and makes recommendations to the Namoi Councils on water policies and reforms that impact on the Namoi regional economy. In addition, it seeks to identify and leverage both Australian and NSW State Government funding (including structural adjustment monies) for the benefit of Local Government Areas in the Catchment.

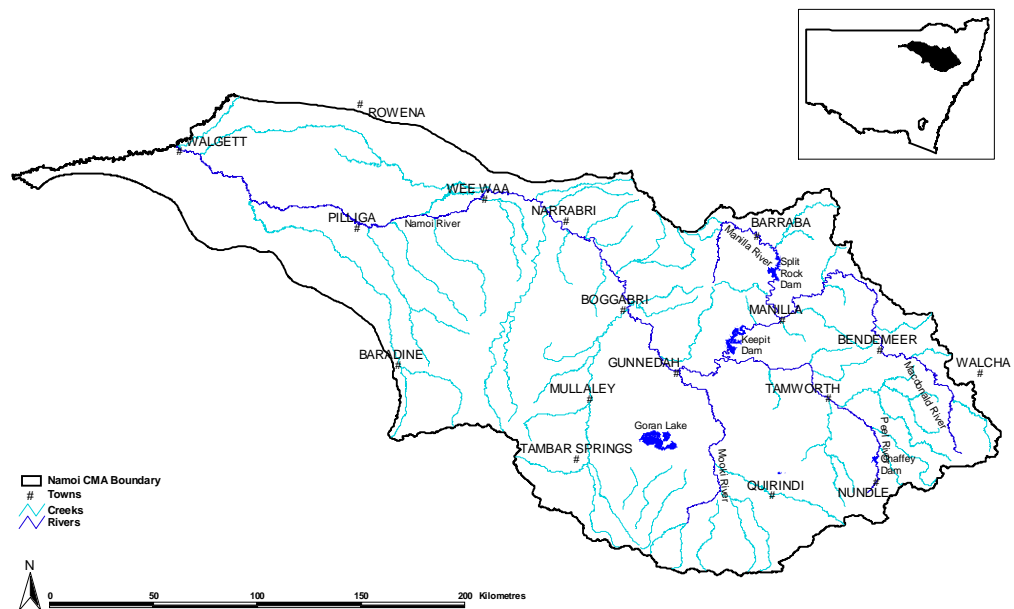
The Namoi Councils Water Working Group membership comprises of representatives of Tamworth Regional Council, Narrabri Shire Council, Namoi Water, Namoi Catchment

Management Authority (CMA), a major agricultural and industrial water user, mining industry and two Local Government representatives with technical skills. The group is chaired/convened by the Namoi CMA

1.2 Overview of the Namoi Catchment

The Namoi Catchment of the Murray Darling Basin is located in north western NSW and represents 3.8 per cent of the total area of the Murray Darling Basin. It consists of three distinct systems: the main Namoi River system, the smaller Peel River system and the Manilla River/Upper Namoi River system. The Namoi region also includes Lake Goran, which is located next to the Liverpool Plains which is listed as a wetland of national importance.

Namoi CMA Catchment Map



The population of the region is approximately 100,000 or 4.6 percent of the Murray Darling Basin total which is concentrated in the towns of Tamworth, Gunnedah, Narrabri, Boggabri and Wee Waa (Namoi CMA 2009).

The river is an area of spiritual and cultural significance for the Gamilaroi people.

The Namoi River system provides a wide range of aquatic habitats and is ecologically important. The floodplain downstream of Narrabri contains large areas of anabranches and billabongs. When flooded, these areas are considered to be important and work on similar rivers has established that they provide large amounts of dissolved organic carbon, which is essential to aquatic ecosystem functioning (Thoms et al., 2005).

The only wetland of listed national importance in the Namoi Region is Lake Goran (EA, 2001), which is located adjacent to the Liverpool Plains. The lake is at the end of an internal drainage basin that does not connect to the Namoi River.

The western parts of the Namoi, that is the area that falls within the Darling Riverine Plains Bioregion, is an important example of an inland drainage system where the streams flow into an arid region. The wetlands of this bioregion are the most important wetland habitats in the inland regions of the state. They provide essential habitat for bird and fish breeding events in otherwise dry environments (Namoi Conservation Strategy 2008).

The Namoi Catchment is a major agricultural, industrial and domestic user of water. Water is a highly utilised resource within the Namoi Catchment from both surface and groundwater.

The region uses 2.6% of the surface water diverted and it has one of the highest levels of groundwater development in the Murray Darling Basin and is 15.2% of the Murray Darling Basin total groundwater use (CSIRO 2007). Water security and quality is a critical need for all the major urban, peri urban and stock and domestic users.

Split Rock Dam on the Manilla River and Keepit Dam on the Namoi River are the two main storages in the Namoi River Valley with Chaffey Dam on the Peel River principally supplying Tamworth city with water supply and minor irrigation supply.

The economy of the Namoi Catchment is highly dependent upon primary production with the dominant landuse being agriculture (cattle, sheep, dryland cropping and irrigated cotton). Irrigated agriculture account for 48% of the gross value of agricultural production in the Namoi Catchment (Namoi CMA, CARE Report 2006). It is important to note that mining, intensive agriculture, for example poultry, and urban water needs have also risen.

The Gunnedah Basin has been estimated by the NSW DPI to have 13.1% of the total coal reserves in NSW. The region is poised for large scale expansion of coal mining and coal seam gas extraction and this needs to be better accounted for in at the catchment scale in all levels of planning to ensure impacts are minimised and opportunities are maximised.

The Namoi region is not foreign to water reform and the people of the Namoi region have played an active and valuable role in contributing to the development of an environmental flow policy, water quality objectives, farm dams policy, floodplain harvesting policy, water sharing plans and the National Water Initiative the over the last 15 to 20 years. This involvement has been a critical component in the delivery of successful on-ground implementation of integrated natural resource management.

2. Overarching comments

There is general agreement and acknowledgement across the Namoi River Valley that water use, management and delivery needs to be improved and that something has to be done to ensure the riverine and floodplain environment remains functional and in turn supports a vibrant agricultural industry and rural communities.

However, this has to be done in a way that balances the social, economic and environmental outcomes that society is seeking to achieve. The current Guide to the proposed Basin Plan does not deliver this balance.

The overarching comments the Namoi Councils Water Working Group would like to make regarding the Guide to the proposed Basin Plan are outlined below.

2.1 Issues with the Water Act

The social and economic considerations able to be undertaken by the MDBA have been the subject of what appears to be conflicting legal analysis. Namoi Councils Water Working Group understands that the MDBA sought advice in the first instance upon which they acted to provide a Guide which focuses solely on environmental outcomes, with social and economic consequences limited in role to description only. We also understand that subsequent to the release of the Guide the Commonwealth Minister for Water Tony Burke obtained (and released) further legal advice in respect of the consideration of social and economic matters. Whilst Minister Burke interpreted that advice such that the Authority *is* able to take social and economic matters into consideration in setting Sustainable Diversion Limits (SDLs) Namoi Councils Water Working Group notes that there remains questions over this interpretation.

The Namoi Councils Water Working Group are not supportive of the process outlined in the Guide to the proposed Basin Plan that does not provide the balance of treating environmental, social and economic outcomes as equivalents. The Guide clearly treats the latter two as secondary considerations which can be taken into account only after the environmental outcome is given primacy.

It is the position of Namoi Councils Water Working Group that the National Water Initiative (NWI), as agreed by all Basin States in 2004, must remain the driver for national level water reform. It is the NWI that was intended by all States as the platform for reform that provided the guiding principles.

Focussing solely on the environmental requirements will not solve the problem, neither will focusing merely on the social and economic impacts. Considering the “trade off” as envisaged by the NWI is an approach that will.

Recommendation/Request:

The Committee in their inquiry determine whether the Water Act is in conflict with the National Water Initiative.

2.2 Need to focus on a “Healthy Working River”

The Namoi Councils Water Working Group suggests the Inquiry focuses on seeking a “healthy working river” outcome in your deliberations on the management of the Murray Darling Basin. The Namoi Councils Water Working Group notes that the process for the development of a Basin Plan to date has not followed this path and we see this as essential in being able to deliver practical solutions on-ground for the sustainable management of the Basin’s water resources. It is clear that we are living and operating in a modified riverine environment and will not return to a natural pre-development condition. However there is scope to develop innovative solutions that will deliver better management and a healthy working river.

The term “Healthy Working River” has been successfully used in past planning processes used to assess the environmental flow needs of various rivers such as for example The Living Murray Initiative and the Murrumbidgee River Water Sharing Plan. A similar concept known as the “living working river” was applied to the Fraser River Estuary in Canada (FREMP 1994). A healthy working river is one that is managed to provide trade-offs, agreed to by the community, between the condition of the river and the level of human use. This definition acknowledges the need for negotiation and compromise between the often competing values and uses of the river.

A key aspect of the healthy working river concept is that the river is managed to sustain an agreed level of work and an agreed state of the river “health” indefinitely. If the level of work reduces the “health” of the river below what the community desires, it is no longer a healthy working river, regardless of the economic gains that are made in the interim and is not sustainable in the long term. The “working” part of the definition refers to the use of water resources for economic gain, water supply or for recreational purposes. Working river objectives are easily quantified using specific measures such as security of supply for irrigation water, end of valley salinity targets, as constrained by channel capacities, capacity of impoundment, legal requirements, minimisation of back erosion, water demands, travel times and other factors. Some stream health characteristics can be similarly well defined.

The Namoi Catchment Community agreed in 2004 in returning water to the environment within the Namoi at their cost, which resulted in a reduction in the long term reliability of supply of surface water licences in the Namoi. Under the scenarios outlined in the Guide to the proposed Basin Plan, the volume agreed on has now been proposed to increase by an additional 31GL – 51GL per annum on average to meet the environmental water requirements within the Namoi valley and a further 41GL – 42GL per annum on average to meet the downstream environmental water requirements of the Barwon Darling i.e. a total long term average of 72 GL - 93 GL per annum. This has been done without any consultation or engagement with the local Namoi Community.

RECOMMENDATION:

The principle of a “healthy working river” be adopted in the management of the Murray Darling Basin and particularly as a key component in the development and implementation of the Basin Plan as the basis for determining a balance between social, economic and environmental aspects.

2.3 Need for integrated NRM Plan

The Namoi Councils Water Working Group is concerned that the current process and the Guide to the proposed Basin Plan is predominantly single focused as a “just add water” solution.

Based on the knowledge and experience we have gathered particularly over the last 20 years the importance of integrated natural resource management is widely acknowledged. It appears we are going backwards.

There is a high priority to integrate land management options with water management on a catchment scale. The implementation and resourcing of a catchment management approach for healthy rivers is the solution and the Namoi Councils Water Working Group would like to further discuss this with the Committee.

2.4 Engagement Process to date

The MDBA has undertaken a large amount of work on an extremely complex issue and should be applauded for the amount of work they have undertaken in an extremely short period of time. However, the management of the Murray Darling Basin is an extremely complex and difficult task that cannot be solved overnight by one organisation and the process deserves a substantial investment of time and resources in both the development and implementation phases of the Basin Plan that draws on local knowledge and expertise.

As outlined in this submission, the Namoi Councils Water Working Group have a number of concerns regarding the process to date and believe if it continues in this manner, will not deliver the outcomes we are all trying to achieve in a balanced triple bottom line. Some of our key concerns regarding the MDBA process to date include;

- During the early stages of plan development the MDBA sought responses from peak groups and others across the Basin as to how they would like to be consulted in the development of the Basin Plan. The peak groups indicated unanimously that they wanted to be sincerely engaged in the development of the Basin Plan and did not wish to be consulted by being asked to provide comments on a “draft” (read Guide).
- An engagement process that allows for the input of local knowledge and expertise has clearly been lacking to date. The reaction by not only irrigators, but support industries, local businesses in rural communities and rural communities themselves have been scathingly critical of both the Guide to the proposed Basin Plan and the MDBA process of consultation and engagement.
- The way in which the MDBA chose to release the Guide to the proposed Basin Plan resulted in placing a large cloud of uncertainty over the future of regional and rural community’s right across the MDB. This in turn has impacted on local investment in farm infrastructure expansion plans and water efficiency measures and property purchases.
- Articles in the media indicated that the banks, as a result of the release of the Guide to the proposed Basin Plan, were considering foreclosing on mortgages in those areas hardest hit by the proposed reductions in current diversions indicated in the Guide.

- There have been other downsides in not truly engaging with rural communities. Locally held data, local knowledge and expertise and fresh ideas on reaching healthy working river status have not been used in the development of the proposed Basin Plan.
- It is also important to note that mental health and stability in already fragile regional communities on the back of the drought, have suffered as a result of additional uncertainty with many serious outcomes.
- People are an important part of the environment and this needs to be acknowledged and recognised in every aspect of plan development and implementation.
- There is a distinct lack of trust related to the data accuracy, targets, variability, and assumptions. This includes environmental, social, economic, cultural disciplines related to the plan. Local input and knowledge should be sought and valued.

RECOMMENDATION:

The development and implementation of the Basin Plan needs to engage with regional and rural communities and draw on their local knowledge and expertise.

3. Key concerns with the Guide to the proposed Basin Plan

This section outlines some of the key/specific technical concerns and issues the Namoi Councils Water Working Group has with the Guide to the proposed Basin Plan.

The Namoi Councils Water Working Group are keen to working through a number of these issues with the MDBA technical staff and would appreciate any support from the Committee in this regard.

3.1 SDLs Methodology used is not clear and transparent

The Namoi community are experiencing serious difficulties in understanding how the reductions in the current diversion limits have been derived and used as the basis to determine the new SDLs.

There is an urgent need for a step-wise process diagram that outlines the methodology used for both environmental water requirements and SDLs. Such a diagram needs to outline what were the steps taken, what were the judgement calls made by the MDBA at different stages and what was the basis of these. It also needs to outline the assumptions made in the process and what were the inputs at what stage of the process.

A process diagram that clearly outlines the methodology used by the MDBA would provide a very useful tool for both the regional community and the MDBA to get on the same page and move forward towards the identification of potential solutions that will work on ground. Currently the community cannot see what has been done and are being asked for blind faith.

Suggested Solution/Recommendation

That the Committee support the Namoi Councils Water Working Group request to be posed to the MDBA for the develop of a process diagram ASAP that clearly outlines the steps, inputs, assumptions and outputs of the SDL methodology including the judgement calls and the basis for these.

3.2 Inaccuracies in the base Namoi data contained in the Guide

The Namoi community has concerns that the data used as the basis for the “current situation in the Namoi has not been tested, verified or ground-truthed with local on-ground experts and that it has just simply been used.

The Namoi Councils Water Working Group has some questions over the accuracy and currency of some of the data used and is following up on these with the MDBA. The currency and accuracy of the base information is of a major concern as if it is not current then it will not accurately reflect the current state of play or condition of the Basin water resources/environment and therefore there is a high risk that decision making process are being mis-informed and actions may actually lead to perverse outcomes.

As an example there are significant queries on the database used to develop the Namoi cutbacks including how the 165GLs in water interceptions arrived at and how the Namoi's water course diversion of 343 GL was calculated is not clear.

Recommendation/Request

- The Committee note there is a distinct lack of trust related to the data accuracy, targets and assumptions.
- State and local input should be sought and valued in the development and implementation of the Basin Plan.
- Peer review the science (i.e. the numbers) both by experts and the local community, which includes the States.
- The Namoi CMA can provide valuable assistance regarding the provision of local NRM data, knowledge and information for the entire Namoi Catchment. They also have established working relationships with other key stakeholder groups.

3.3 Environmental Water Requirements

It is unclear how the MDBA calculated the environmental water requirements included in the Guide for the proposed Basin Plan. There are serious questions regarding how they were determined, what were the steps taken and what was the basis.

There is little confidence from rural and regional communities regarding the basis for environmental water requirements as it is difficult to ascertain what information and science has been taken into account, whether it has been superseded by improved knowledge and whether the assumptions are correct or there are other more innovative ways in regard to local management that has not been considered.

There is a lot of on-ground knowledge and expertise that has not been considered and taken into account that could add value to the development and implementation of a Basin Plan.

It is understood that the "Health rating" of each catchment is predominantly based on only two reports alone – this appears to be very limited. It should also be noted that these reports clearly outline their limitations and assumptions.

The practicalities in delivering environmental water requirements and any constraints in implementing what is proposed by the Guide for the Namoi also appear to have not been adequately considered and the Namoi Councils Working Group is following this up.

The lack of an environmental watering plan is another key weakness in the Guide.

We strongly recommend engagement with local NRM bodies such as the Namoi CMA who already hold a substantial amount of knowledge and information regarding the current state of environmental aspects within the Namoi Catchment. The Namoi CMA also has excellent working relationships with other local experts across the catchment that are able to provide valuable on-ground knowledge, information and input. This input has not been adequate to date but will deliver a workable Basin Plan.

3.3.1.1 Within Namoi catchment targets

- Namoi environmental assets – the guide identifies the key assets for Namoi as the river gauges. The Namoi community feel there is better information on the environmental assets of the Namoi
- The Cotton CRC have also undertaken extensive research into the habitat and biodiversity related to and created by irrigation. This has not been considered.
- The Namoi Councils Water Working Group are currently compiling these and are keen to provide and input to the process for the development and implementation of a Basin Plan.

3.3.1.2 Outside Namoi Catchment targets – i.e. for Barwon Darling

- How the Namoi contribution to downstream targets is not clear and needs to be better explained regarding the basis, assumptions and guiding principles particularly in regard to how the shares across the contributing catchments was determined.

Recommendation/Request

- The Committee note there is a distinct lack of trust related to the data accuracy, targets and assumptions used for to determine the environmental water requirements.
- Local input should be sought and valued in the identification of key environmental assets and functions.
- Peer review the science (i.e. the numbers) both by experts and the local community, which includes the States.
- The Namoi CMA can provide valuable assistance regarding the provision of local NRM data, knowledge and information for the entire Namoi Catchment. They also have established working relationships with other key stakeholder groups.

3.4 Surface Water

The process and methodology by which SDLs are determined is not transparent or can be determined from the Guide to the proposed Basin Plan. Far more information and explanation is needed to allow the reader to gain even a rudimentary understanding of how SDLs have been calculated and how this relates to current arrangements. Suggestions to address this are made in the earlier section of this submission.

3.4.1 Current Diversion Limits

The Namoi local communities were involved in the development and implementation of local water sharing plans and understand how the long term average diversion limits currently used by the Basin state jurisdictions under these plans were derived including the assumptions made in the models and the limitations of the data inputted to the models. Therefore they are able to determine with some degree of confidence the potential long term reliability of supply on which to base planning decisions and identify opportunities for

improved water efficiencies. However, these same community members are finding it extremely difficult to reconcile these current plan limits with the baseline CDLs included in the Guide to the Basin Plan.

The numbers are different and the MDBA have indicated that there are good reasons for this, i.e. for example there is a longer time series for the data. However it is not clear to the community how these were calculated i.e. what's "in" and what's "out", what assumptions have been made and whether these assumptions differ and if so why. Therefore it is difficult to determine whether the "starting point" accurately reflects the current on-ground situation and is appropriate to use as the basis for determining SDLs and applying new sharing arrangements. There is no clear and transparent evidence that the appropriate checks and balances have been included in this process.

One particular area of concern for the Namoi is that the CDL in the Guide does not appear to include an accurate volume for floodplain harvesting activities in the Namoi. It should also be noted that more accurate figures are currently being determined and negotiated with the NSW Office of Water via the implementation of the NSW Floodplain Harvesting Policy. These negotiations need to be taken into consideration when determining the current diversion limits in the development of the Basin Plan.

A full explanation of how the Namoi CDLs included in the Guide to the proposed Basin Plan have been derived including the assumptions taken into account and the data used, would be most helpful to allow the community to have confidence in the starting point.

It is understood that the MDBA are producing a document to reconcile the numbers and explain the linkages between the WSP numbers and the Guide numbers. This is an important and essential tool to ensure people have confidence and trust in the process.

The Namoi Councils Water Working Group are seeking further discussions and meetings with the MDBA technical staff to better understand the figures they have used and we would appreciate the Committees support in this regard.

3.4.2 Interception Activities

It is understood that the modelling used by the MDBA is based on the state river system models and these do not recognise some interception activities i.e. for example farm/hillside dams in the upper catchments and the impact of plantations etc. The MDBA advise that they have made allowance for these interception activities and included a volume for interception activities in the CDLs. However, it is difficult to understand how the figure of 165 GL for interception activities in the Namoi has been arrived at, particularly given the definition for interception activities included in the Guide and what is actually on-ground in the Namoi Region. This is another issue requiring clarification and explanation. There is a concern that these figures have not been ground-truthed or validated for accuracy and water may be double counted.

As outlined in the above issue, the Namoi Councils Water Working Group are also seeking further discussions with the MDBA technical staff to also better understand these interception figures.

3.4.3 End of system flows

There is some uncertainty as to how end of system flows have been determined or calculated in the modelling used by the MDBA to determine surface water SDLs.

Once again the Namoi Councils Water Working Group are seeking further discussions with the MDBA technical staff to clarify how end of system flows are considered and accounted in the current methodology.

Recommendations & Requests

- The Committee note there is a distinct lack of trust related to the data accuracy, targets and assumptions. State and local input should be sought and valued.
- The Committee support the Namoi Councils Water Working Group request to the MDBA to provide a specific briefing on the hydrologic modelling used in the determination of SDLs for the Namoi. Also support a request to the MDBA to grant access to the models used by the MDBA. This will assist in clarifying our issues and concerns and determine whether the methodology adopted in the Guide works practically on ground.
- The Committee support the request for the MDBA to provide an explanation of how they determined the CDL for the Namoi and reconcile this number with the current WSP limits for the Namoi.
- The development and implementation of the Basin Plan takes into account the current negotiations with NSW to confirm a more accurate long term average volume allowance for floodplain harvesting activities in the Namoi

3.5 Groundwater

3.5.1 Sustainable Diversion Limits and the Achieving Sustainable Groundwater Entitlements (ASGE)

The Achieving Sustainable Groundwater Entitlements (ASGE) Program was a major water reform program announced in June 2005. The program was designed to help water users in the Upper and Lower Namoi, Lower Macquarie, Lower Lachlan, Lower Murray, Lower Gwydir and Lower Murrumbidgee groundwater sources in the NSW manage the reductions required in their entitlements to achieve sustainable yields. These reductions were necessary to achieve sustainable use of these groundwater resources and also formed part of the NSW Government's commitment to the implementation of the National Water Initiative (NWI).

The reform comprised of a range of measures including perpetual licences, a financial assistance package, groundwater trading and a ten year transition period. The relevant Water Sharing Plans set out details for how and over what timeframe the entitlements in the groundwater source were to be reduced to achieve sustainable yield. The available

extraction from these groundwater sources are gradually being reduced to the sustainable yield via the implementation of the WSPs over their 10 year term.

The Namoi Councils Water Working Group is unable to reconcile the differences between the sustainable yield for the Namoi and Peel Groundwater Sources defined in the WSP, and based on detailed hydrogeological models, and the new SDLs included in the Guide to the proposed Basin Plan. It is unclear what has changed over the last 4 to 5 years to indicate further reductions. The proposed cuts for groundwater users are particularly significant for the Groundwater users in the Lower Namoi which over some 4 years have suffered an average cut of 60% under the Achieving Sustainable Groundwater Entitlements Program (ASGE) – they now face a further 13% cut in the current diversion limit under the Guide to the proposed Basin Plan – noting that this is based on the new current diversions of only 40% of those existing only 4 or 5 years ago, prior to the implementation of the ASGE program.

The question needs to be asked what is the difference between “sustainable yield” (the basis for the ASGE Program) and the “sustainable diversion limits” that warrants a further 13% in the Lower Namoi Alluvium diversions? It is not clear what new information or science the MDBA has obtained and used post the ASGE program that suggests further reductions are required.

Also the difference in the definitions and basis for “Sustainable Yields” used in the WSP and ASGE program and the new SDLs is not clear – what is the difference, what is the basis for the change and are the assumptions correct.

Members of the Namoi Councils Water Working Group were heavily involved in the roll-out of the ASGE program across the Namoi which was successfully delivered on-ground.

Recommendations & Requests

- The Committee support the Namoi Councils Water Working Group request to the MDBA to explain the difference between “sustainable yield” (the basis for the ASGE Program) and the “sustainable diversion limits” that warrants a further 13% in the Lower Namoi Alluvium diversions.

3.6 Peel River Valley

3.6.1 Surface Water

Peel Valley water users contend that the Peel Valley should have a separate SDL rather than being included with the Namoi under a combined SDL. The irrigation characteristics of the Peel Valley are distinctly different from the Namoi Valley, for example, in the Peel Valley the farms are smaller, landuse is different, irrigation licences are smaller, and the irrigation methodology, behaviour and commodities are different. Furthermore, all hydrologic modelling for the Peel Valley has been undertaken separately from the Namoi River Valley and the Peel (combined water sources) has a separate Water Sharing Plan to the Namoi water sources. These are all examples of why consideration should be given to designating the Peel River Valley as a separate area for the development and implementation of SDLs.

Under the 3,500GL scenario outlined in the current Guide to the proposed Basin Plan there is a proposed reduction of 25% to current diversion limits for the Namoi. If this was to be applied across the total Namoi, including the Peel, this would reduce the current diversion limit in the recently made water sharing plan for the Peel from 15.1GL to 11.2GL. Given that town water supply for Tamworth makes up a large component of the entitlement in the Peel and are likely to be quarantined from any impacts associated with the implementation of SDLs, the proposed reductions or additional environmental water requirement would need to be met from a much smaller number of licence holders and would result in a much higher percentage impact - i.e. long term average current diversion limit component for irrigation in the Peel would be reduced from 6.1.GL to 2.3 GL. This is not sustainable and will put irrigators out of business in the Peel.

Even prior to reductions in surface water access imposed by the recent NSW Water sharing plan for the Peel Valley the long term average annual extraction in the Peel regulated river water source was about 5% of the long term average annual flow.

3.6.2 Ground Water

3.6.2.1 Peel Valley Alluvium

The Guide to the proposed Basin Plan suggests an SDL of 7,300 ML for the Peel Valley Alluvium which equates to 14.4% of the current licensed entitlement in this system. The Water Sharing Plan implemented in July 2010 this year (i.e. less than 6 months ago) determined a long term average extraction limit of 9,344ML/annum – this was based on comprehensive modelling. The Namoi Councils Water Working Group questions why the SDL included in the Guide differs so dramatically (i.e. some 20% lower) from the WSP limit calculated only a matter of weeks earlier and what scientific modelling or information this is based on. The Water Working Group suggests the SDL be revised to align with the NSW WSP plan limit of 9,344ML.

3.6.2.2 Fractured Rock

The Water Working Group notes there has been no reference made to the fractured rock groundwater system that exists in the Peel Valley. This system has a long term average annual extraction limit of 71,218ML.

Recommendations & Requests

- The Committee support the request to the MDBA to consider separating the Peel Valley from the Namoi SDL and provide a separate SDL for the Peel.
- The Committee support the request to the MDBA to align the SDLs for the Peel Valley Alluvium to the recently completed WSP limit which is based on comprehensive modelling.
- The Committee support the request to the MDBA for the Peel Fractured Groundwater system to be included and considered in the proposed Basin Plan.

3.7 Socio-economic considerations – triple bottom line

Whilst not denying the need to return more water to the environment, the proposed SDLs in river diversions and further cuts in groundwater use will have very significant impacts on agricultural production in the Namoi Catchment and indirect impacts on the industries and towns servicing the irrigated industries (e.g. Wee Waa and Narrabri). This is especially the case given 48% of the Namoi Valley's agricultural output comes from the irrigated industries, most notably cotton (CARE Report).

The Guide to the proposed Basin Plan indicates that depending on which of the 3 scenarios are utilised, the loss in irrigated agricultural production will be \$0.8b - \$1.1b (13-17% of the Basin's gross value of irrigated agricultural production) and the loss of 800 full-time jobs. Given the magnitude of the Basin-wide cuts (27-37%) it cannot be believed that only 800 jobs will be lost. This is even more the case given the Guide estimates the following production losses if the proposal is accepted;

- Rice – 30%
- Cotton – 25%
- Dairy – 10%

It appears that the Guide has not “factored in” the impacts on industry and communities “past the farm gate” – this is especially significant since the MDBA in the Guide notes that food processing makes up to 33% of the Basin's manufacturing activities. Subsequently, it appears that the Guide ignores the economic multipliers (up to 1:3.5, ABARE) that apply to the utilisation of irrigated products “past the farm gate”. Despite estimating 800 job losses, the MDBA acknowledges the paucity of socio-economic data in the Guide given it states *“there is an urgent need to undertake a comprehensive assessment of the social and economic impacts at the community and industry level.”*

Namoi Councils, some 12 months ago, realised the importance of accurate socio-economic modelling when assessing the impacts of the diversion of water for environmental purposes. To this end, the WWG was established (representatives include local government, Namoi CMA and industry representatives). Subsequently, Namoi Councils won a “Strengthening Basin Communities Program” Grant (\$760K) to enable it to conduct an in depth socio-economic analysis of the impacts of water cutbacks on the Namoi Catchment Community. This modelling will explore not only the direct impacts on irrigators – but also the impacts on households, towns and the general Catchment Community

Study to look at the potential socio-economic impacts of the proposed Murray Darling Basin Authority Plan on the Namoi Catchment Community. The study is to provide detailed input/output modelling and the development of a socio-economic stress and resilience micro-simulation model (tool) to inform on the impacts of reduced water availability at the household level.

This study is an initiative of the Australian Government's Strengthening Basin Communities Program and has a maximum project value of \$760,000 (ex GST) and will assist in all levels of planning.

The project has four key components with each component placing a strong emphasis on stakeholder engagement. The four key components are;

1. A triple bottom line (economic, environmental and social) assessment of the value of water to the entire Namoi catchment
2. A synthesis and on-going monitoring of the climate change projections for the Namoi Region
3. The development of a socio-economic resilience model and a risk assessment tool for future scenarios
4. Develop a catchment wide framework to facilitate regional climate change and water planning, including a review of existing plans and/or development of new plans to include strategies to account and mitigate climate change and water scarcity risks and implications.

The entire project is to be completed by mid 2012. However, the input/output modelling and resilience micro-simulation model (tool) is to be completed by mid 2011. This will provide an extremely useful tool to better inform a balanced approach to the setting and implementation of SDLs.

While the MDBA have recognised the need for more comprehensive data and modelling, the timeframes to adequately do what is required so it is useful and effective in informing decisions is not possible.

Recommendations and Requests

- The Committee note and acknowledge the project and its relevance to the development of the Basin Plan and any associated mitigation or structural adjustment measures that may be required.
- The Namoi Councils Water Working Group meet with the Committee to further outline the detail and use of this study during their Inquiry.

3.7.1 NSW vs Vic Commencement Dates

The Namoi Councils Water Working Group are concerned about the different timeframes for the implementation of the SDLs which will occur via the new water resource management plans i.e. 2014 for NSW and 2019 for Victoria. The potential impacts will be felt by NSW 5 years before that of Victoria. The Namoi Councils Water Working Group suggest the Committee consider ways to better align the implementation and minimise any potential third party impacts by either deferring NSW implementation or look at other options i.e. for example compensate NSW for potential loss of income.

4. Suggestions & recommendations for the development and implementation of the Basin Plan

4.1.1 Environmental Water Management and Delivery

As the SDLs are based on the watering requirements of key environmental assets with no allowance made for proposed engineering works and measures, it is assumed that the future installation of engineering works and measures to improve the delivery efficiency to environmental assets would practically result in higher SDLs across the Basin. This issue is not explicitly stated in the Guide and the Namoi Councils Water Working Group strongly recommends that this assumption is incorporated into the development and implementation of the Basin Plan. It is understood that the acceptance of such works and measures allowing for an increase in the SDLs would rely on whether or not the consequent effect on flows jeopardised other key assets.

Further, the Namoi Councils Water Working Group suggests that detailed investigations be undertaken on a Basin wide basis to determine the feasibility of engineering works to deliver environmental water requirements using lower volume releases from storages than under current conditions.

Environmental water management and delivery just like irrigation water management and delivery needs to be efficient. Currently, rural communities have little confidence in the Commonwealth Environmental Water Holder (CEWH) to manage the significant volumes of environmental water proposed for the environmental assets and functions of the Basin. Considerable expertise and a particularly well thought through Environmental Watering Plan will be essential to the efficient and targeted management of environmental water. There will be a need for the CEWH to elicit the advice of experienced river operators to “get it right”. The lack of an environmental watering plan is a key weakness of the Guide and does not assist in gaining community confidence in the Government’s ability to effectively and efficiently manage the large volumes of held environmental water across the Basin to maximise environmental outcomes and minimise impacts on consumption.

The Namoi Councils Water Working Group seeks to ensure that the appropriate expertise including local knowledge and experience is employed in the development and implementation of an Environmental Watering Plan, which must include best practice management and an adaptive approach. In this regard, the Namoi Councils Water Working Group suggests the implementation of case studies in environmental water management that are fully resourced and employ good governance and local input. Consideration should also be given to the Namoi CMA, as the key on-ground NRM body in the Namoi, playing a major role in the coordination and local management of Commonwealth and State held environmental water as well as providing input into the development of a water buying strategy for the Commonwealth Environmental Water Holder for purchases in the Namoi.

Another issue the Namoi Councils Water Working Group has identified as requiring clarification by the MDBA is how the use of environmental water will be accounted for. What is the point of measurement for debiting environmental water accounts – when released from the dam or at the point of delivery to a particular point downstream?

Recommendations and Requests

- Environmental works and measures that improve the delivery of environmental water be considered in the development and implementation of the Basin Plan to offset the volume of environmental water requirements and minimise the impacts on current diversion limits.
- Detailed investigations be undertaken across the Basin to identify options for engineering works and measures that will more efficiently deliver water to the environment including cost estimates and estimated water savings.
- The Committee note that rural communities have little confidence in the CEWH ability to manage considerable volumes of environmental water effectively and efficiently. The involvement of local river operators and other local input and expertise is essential in the development and implementation of any environmental water management plans. The Namoi CMA is well placed to coordinate the management and delivery of government held environmental water at the local Namoi Catchment level.
- The Committee support the request to the MDBA to clarify and advise on the process for debiting environmental water accounts.

4.1.2 Monitoring and Evaluation/Benchmarking and Adaptive Management

The Namoi Councils Water Working Group suggests that the Namoi CMA, as the key NRM body covering the entire Namoi Catchment could provide valuable assistance and play an important role in benchmarking the present/current conditions concerning the six key Basin Plan elements as well as monitoring and reporting on these key elements into the future. This is a critical aspect in the development and implementation of the Basin Plan.

The six key elements to be addressed in the Basin Plan's Monitoring and Evaluation Program's framework are

- Ecosystem outcomes from the implementation of long-term average SDLs and the environmental watering plan
- The water quality and salinity management plan
- Critical human water needs
- Risks to the condition and availability of Basin water resources
- Water trading and transfer rules
- Socio-economic impacts.

The Namoi Councils Water Working Group would like to further discuss this potential role with the committee and suggest that such a program would need to be well resourced to allow the necessary benchmarking, monitoring and reporting of tasks under the Basin Plan conceptual framework. The Namoi CMA is well placed to undertake this role particularly given their local knowledge and expertise particularly the work they have done to date in this

area through the successful development and implementation of a Catchment Action Plan and benchmarking NRM for the entire Namoi Catchment that provides for and delivers on-ground integrated NRM. They also have excellent working relationships with the Namoi Catchment stakeholders and broader community and could build this into and complement their existing role.

The Namoi Councils Water Working Group also suggests that benchmarking and on-going monitoring and evaluation would cater for a staged implementation to environmental watering requirements and hence SDLs. The staged implementation under an adaptive management approach, it is suggested, may gain better ownership and confidence in the process from rural communities.

Recommendations and Requests

- The Committee consider the local CMA playing a key role in undertaking the benchmarking, monitoring and reporting for the six key Basin Plan elements and that this be funded by the Commonwealth.
- The Committee consider a staged approach to the implementation of the Basin Plan particularly regarding the environmental watering requirements and SDLs which is based on adaptive management informed by appropriately resourced monitoring and evaluation programs.

4.1.3 Need for better measurement

With water availability becoming scarcer across the Murray Darling Basin and competition for the resource increasing, more accurate measurement is vital to support management decisions and to assist more efficient water use. Recent studies have recognised that quantifiable water savings can be realised in regulated river water sources through the replacement of current non-urban meter installations with meters that are compliant with the new Australian National Water Meter Standards. These studies found that the replacement of pre-National standard propeller meters with compliant electromagnetic meters is likely to realise water savings of around 8% of long term average diversions.

Accurate water metering is pivotal to any water savings proposal, particularly as the nature of most mechanical water meters (such as in-line flow meters) generally under-record water use due to wear and tear and physical blockages within the meter apparatus. This is a critical issue as these mechanical meters are the most common metering device used for river extractions and represent a significant opportunity to realise water savings from improved meter accuracy.

In addition to the potential water savings that can be realised through the installation of more accurate meters and associated telemetry, there are many other broader natural resource management (NRM) benefits to be gained by water entitlement holders, the environment and water managers and operators in the regulated river systems.

The installation of more accurate metering will result in improved monitoring of water extraction and verifying water usage which has many broader benefits including, but not limited to;

- More clearly defining property rights in water

- Ensuring that a scarce and valuable resource is taken according to a licensee's volume share.
- Protecting all individual's, including the environment's rights by preventing excess extraction. Particularly given the increasing competition between consumptive and non consumptive groups – agriculture, urban, environment and to a lesser extent industrial all having different needs
- Providing an accurate record of how much water is taken and where and when at the local, regional and state level. This is essential for a range of planning purposes and to encourage water use efficiencies.
- Supporting evidence and data-based water planning, management and decision making. The rural community demands that water should be better managed so as to maximize value for the community, region and nation.
- To better inform and enable more accurate reporting for the National Water Account and MDBMC Cap accounting
- Verifies usage and provides charging equity for the component of bulk water charges that are based on water extraction

To realise on water savings derived through the installation of more accurate meters, the long-term average diversions (i.e. Cap) must be adjusted to more accurately reflect what actually has been diverted from regulated river systems. This is essential in eliminating potential third party impacts when creating adaptive environmental water licences from these savings.

The Namoi Councils Water Working Group contends that the installation of more accurate meters, coupled with real-time monitoring of water extraction using cost effective telemetry equipment would not only return water savings to the environment through more accurate measurement but would also reduce losses in delivery of consumptive volumes through much improved river operations. These savings, the Namoi Councils Water Working Group suggests may be significant and provide a reasonable contribution to the additional environmental water being sought to meet the requirements of the Namoi catchment's key assets and functions.

4.1.4 Mitigation measures - Buyback vs Infrastructure investment

The Commonwealth buyback is focussed on mitigating the impacts of the reductions to the current diversion limits on irrigators only and does not address the flow-on impacts to support businesses and services in rural communities. Under the buyback program, impacts on individual irrigators of the new SDLs will of course be more severe if there are too few willing sellers found to fully mitigate the required reduction in the current diversion limits. The other debilitating impact of the buyback scheme are the potential area concentrations of willing sellers. For information, members of the Namoi Council Water Working Group has undertaken an analysis of the current distribution of licences and the location of potential willing sellers. This analysis has indicated that the potential willing sellers are likely to be concentrated in the Wee Waa area which would lead to devastating socio-economic impacts on Wee Waa.

The Namoi Councils Water Working Group sees it as essential to recover as much of the volume of water required for the environment from investment in infrastructure both on and

off farm and asks that the Commonwealth Government be directed to expedite the roll-out of their irrigation infrastructure modernisation program funding.

The Namoi Councils Water Working Group recognises that investment in improved infrastructure delivers broader NRM outcomes and recommend that it should be the priority focus for recovering the required environmental water. This should be done in consultation and with input from the local communities.

Taxation issues associated with the infrastructure payments also need to be resolved. This is currently a stumbling block in the up-take of on-farm programs.

Recommendations and Requests

- The Committee supports the expedited roll out of the Irrigation Infrastructure Modernisation Program funding with input from local communities.
- The Committee support the call for a basin wide study to identify areas of potential major savings in river system management including evaporation and delivery losses.

4.1.5 Research & Development - New technology

The Namoi Councils Water Working Group would suggest to the Committee that most opportunities for on-farm water use efficiencies in the Namoi have been implemented via past water reforms and best management practices by the majority of irrigated farms and although there may still be some opportunities to recover water via on-farm efficiencies, this will be limited.

However, is it suggested that Research and Development (R&D) and its adoption is a key missing link in the Guide to the proposed Basin Plan and in the SEWPaC programs. R&D could well drive new technologies that further improve water use efficiency as well as identify and investigate new innovative methods and options particularly regarding environmental water management, irrigation modernisation and river operations.

With the suggested decline in water available for production, it will be necessary to produce more food and fibre per megalitre – this will necessitate advances in technology and knowledge.

Recommendations and Requests

- The Committee recognise the importance of R&D in the better management of the Murray Darling Basin and support funding and resourcing in this area to assist in mitigating the impacts of the proposed Basin Plan.

4.1.6 Water use efficiency opportunities

As indicated above to make any further substantial water use efficiency savings it will be necessary to initiate research and development programs and undertake detailed feasibility studies on priority projects.

There are potential water savings to be gained through improved river operations that reduce delivery losses. These improvements can be in the form of better measurement, real-time remotely sensed information or in the installation (and in some cases removal or modernisation) of infrastructure.

Recommendations and Requests

- That investigations be initiated into improved river operations, both at the local Namoi River system level as well as at the total Basin wide scale.

4.1.7 Structural Adjustment

Members of the Namoi Councils Water Working Group have been involved in the successful on-ground administration and implementation of the previous Government structural adjustment programs within the Namoi Valley, including for example, the Achieving Sustainable Groundwater Entitlements (ASGE) Program.

The Namoi Councils Water Working Group would like to discuss with the Committee options with the committee for the design, development and implementation of potential structural adjustment programs that will promote social, economic and environmental outcomes for the regional and rural communities within the Namoi Region.