

Gwydir Valley Irrigators Association Inc.

458 Frome St, PO Box 1451, Moree NSW 2400

Submission to the “Guide to
the Proposed Murray-
Darling Basin Plan”

December 2010

Table of Contents

Table of Contents.....	2
Executive Summary.....	3
Recommendations.....	4
Introduction.....	6
The Gwydir Valley Regulated River Water Sharing Plan and the Lower Gwydir	
Groundwater Source Water Sharing Plan.....	7
The Water Act.....	8
Engagement.....	9
Stakeholder Confidence.....	10
Terminal Nature of the Gwydir River.....	10
Current Diversion Limits.....	12
Environmental Water Requirements.....	13
Groundwater Requirements.....	16
Socio-Economic Impacts.....	17
Attachment 1:.....	20

Executive Summary

The Gwydir Valley Irrigators Association (GVIA) is extremely disappointed not only in the content of the “Guide” to the Proposed Basin Plan, but also in the manner in which the Murray-Darling Basin Authority has prepared it.

GVIA strongly believes that the development of a Basin Plan is premature, as there is no evidence to suggest Water Resource Management Plans such as the Gwydir Regulated River Water Sharing Plan have failed to deliver their objectives of long-term river sustainability. Plans like the Gwydir WSP deserve to be able to run their full tenure, during both dry and wet cycles, before any judgement should be made on their effectiveness.

Further, if the Authority and Government remain committed to developing a Basin Plan, it should be based on a legislative instrument that not only allows the social, economic and environmental consequences to be considered equally, but should also allow a holistic approach to environmental management, rather than a very narrow focus on hydrological management.

The Commonwealth Water Act is not a sound basis for a Basin Plan and it should be amended.

A sound plan must have clear, specific and measurable catchment level environmental objectives. Those objectives should be achieved through the adoption of holistic management, which could include land management, environmental works and additional flows.

In regards to the Gwydir Valley GVIA calls on the Authority to recognise its lack of connectivity the Murray-Darling Basin in all but major flood periods.

GVIA seeks an urgent review of the flawed hydrological assumptions that underpin the Guide’s Gwydir recommendation.

GVIA also calls for a halt on any further environmental water acquisitions in the Gwydir, until an environmental water plan, backed by adaptive management experience can clearly demonstrate that the existing environmental water holdings are inadequate.

This submission presents 14 specific recommendations that GVIA calls on the Authority and Government to address. In addition it has attached 30 questions from stakeholders who attended the Moree Consultation Session on October 24, which the Authority promised to individually answer.

Recommendations

1. *That the Authority explicitly recommend to the Government that the Commonwealth Water Act be amended so that it can give equal regard to the social, economic and environmental consequences of any proposed feature of the Basin Plan.*
2. *That the Authority recommends to Government that the Water Act and/or the Murray-Darling Basin Inter-Governmental Agreement be amended to allow the Basin Plan to propose the holistic management of the Murray-Darling Basin.*
3. *That the Authority ascertain for itself the true course of the Lower Gwydir and Gingham Channels, and ensure all Authority publications correctly show the terminal nature of the Gwydir Wetlands.*
4. *That similar to the Lachlan Valley, the Gwydir Valley should be recognised by the MDBA as an unconnected catchment.*
5. *That the Authority closely re-examine the “Guide’s” “Without development outflow” assumptions for the Gwydir Valley.*
6. *That the MDBA make available to GVIA the assumptions used in modelling both the pre-development and post-development hydrology of the Gwydir Valley.*
7. *That the MDBA conduct a rigorous mapping and ground-truthing exercise across the area know as the Gwydir Wetlands, to accurately determine the area, vegetation condition and land use.*
8. *That there be no further acquisition of Gwydir water entitlements for environmental use, until the environmental water managers have adequately demonstrated that current holdings and water plan provisions are inadequate to meet the environmental water requirements of the Gwydir Valley.*
9. *That the Authority re-assesses the SRA score given to Gwydir at Collymongle for High Flow Events.*
10. *That if the Authority determines, in its draft plan, that reductions in sustainable diversions are required for the Gwydir Valley, it must specifically identify the volumes required to meet clearly identified goals.*
11. *That the Authority assess the Lower Gwydir Groundwater Source Water Sharing Plan to ascertain whether on the Authority’s criteria it has been set at a level below the long-term sustainable yield.*
12. *That the Authority adopt the Judith Stubbs report “Exploring the Relationship between Community Resilience & Irrigated Agriculture in the Murray Darling*

Basin” as the definitive study into the likely impact of losses in water availability.

- 13. That the Authority urgently and transparently review its calculation of the LTCE “Closing the Gap” entitlements, and either confirm the numbers used in the Guide, or publish new LTCE figures along with a comprehensive report on any implication from using the incorrect figures.*
- 14. That the Authority review its valley based water balances, and explain their relevance and calculation to stakeholders.*

Introduction

The Gwydir Valley Irrigators Association (GVIA) represents in excess of 250 irrigators in the Gwydir Valley of NSW, centred on the town of Moree.

The organisation is voluntary, funded by a cents/megalitre levy on regulated unregulated and groundwater irrigation entitlement. In 2009/10 the levy was paid on in excess of 90% of the eligible entitlement (excludes entitlement held by the State and Federal Government).

The Association is managed by a committee of 11 irrigators and employs a full-time executive officer and a part-time administrative assistant, as well as hosting a Regional Landcare Co-ordinator.

GVIA is a member of the National Irrigators Council and the NSW Irrigators Council, and as well as providing this submission, the Association endorses the submissions made by those two organisations.

GVIA welcomes the opportunity to provide comment on the “Guide to the Proposed Murray-Darling Basin Plan” through this submission, and looks forward to providing the Authority with additional information, either by request, or when additional information comes available to the Association.

At the conclusion of this submission (Attachment 1) is a list of 30 questions which were sent to GVIA, to pass onto the Authority, at the conclusion of the Authority Consultation meeting held in Moree on October 24, 2010.

At that meeting a clear commitment was given by the Authority that all questions submitted would be individually answered, and GVIA looks forward to the Authority’s responses, and will pass them on to those members of the Gwydir community who submitted them.

GVIA considers this submission as an initial submission on the Guide, and reserves the right to lodge supplementary submissions as additional information becomes available, including independent hydrological assessments that have been commissioned.

Chairman: Joe Robinson,
Chief Executive Officer: Michael Murray
Ph 02 67521399
Fax 02 67521499
Mobile 0427 521399
Email gvia@gvia.org.au

458 Frome St,
PO Box 1451,
Moree, 2400

The Gwydir Valley Regulated River Water Sharing Plan and the Lower Gwydir Groundwater Source Water Sharing Plan

GVIA is strongly of the belief that there is no justification for any significant adjustment of the water sharing rules as they are articulated in the NSW Water Sharing Plans that were introduced in the Gwydir Valley in 2004 and 2006.

These water sharing plans were designed to ensure sustainability, and to operate across the full range of climate cycles.

However, up until the past couple of months, these plans have only had the opportunity to operate during the extended dry period which has been consistently described as a 1-in-100 year drought.

A key feature of the hydrology of the Gwydir Valley is its extreme variability. Significant dry periods and significant wet periods are integral parts of the pattern of the Gwydir Valley.

All water sharing plans operating in the Gwydir Valley have demonstrated their ability to manage prolonged dry sequences. The Gwydir Regulated River Water Sharing Plan is openly acknowledged, by the Authority and others, to fairly share the water resources of the valley in both wet times and dry.

During the drought the Gwydir Plan was never suspended; critical water supplies were never threatened, and the Gwydir Wetlands were maintained at a healthy level, allowing them to fully respond to the increase water availability that has occurred since July. When the drought broke there was still some 17,000Ml of water in the Environmental Contingency Account which demonstrates that environmental managers had adequate resource to manage through this record dry time.

By any measure, the Gwydir Water Sharing Plans have achieved their purpose of maintaining the environment at a level that allows full response to the climatic conditions that its faces.

With the return to what appears to be the start of a wet period, there is no justification to inflict further water resource cutbacks on the community of the Gwydir Valley, at least and until, there is clear evidence that the Gwydir Valley Water Sharing Plans are not delivering long-term sustainability.

Notwithstanding the above comments, GVIA feels it is imperative that it does provide detailed comment on the "Guide" and the process around its development.

The Water Act

GVIA, like many stakeholders, believes that the basis of the Basin Plan - the 2007 Water Act – is a flawed piece of legislation, and therefore any Basin Plan that is derived from the Act, as it stands, will be a flawed plan.

It is GVIA's view that the Act does not allow the intention of the 2004 National Water Initiative (NWI) to see the use of the Basin's water resources to "optimise economic, social and environmental outcomes."

Instead we have an Act that plays lip-service to the NWI in its objectives, but then clearly prioritises environmental outcomes over social and economic outcomes in its body.

This is not only GVIA's interpretation but also that of the MDBA's Chairman Mike Taylor, and the former CEO of the National Water Commission Ken Matthews, who have both publicly stated that a Basin Plan, constrained by the Water Act, will not be compliant with the NWI.

The MDBA has also publicly stated on a number of occasions that the Act did not allow it to fully consider the social and economic outcomes when determining the environmental water requirements of the Basin.

Recommendation

That the Authority explicitly recommend to the Government that the Commonwealth Water Act be amended so that it can give equal regard to the social, economic and environmental consequences of any proposed feature of the Basin Plan.

While the lack of consideration given to the socio-economic consequences of the Basin Plan, as proposed in the Guide, is a fundamental flaw, GVIA would argue that an even greater flaw is the fact that the Act effectively only gives the MDBA one tool to meet the environmental needs of the Basin – volumes of water (and to a lesser degree – water release timing).

GVIA knows that environment is best enhanced with integrated natural resource management; and a simplistic "just add water" approach will invariably fail to optimise social, environmental and economic outcomes, and could quite conceivably lead to environmental degradation.

GVIA proposes a sound Basin Plan would:

1. Clearly identify the environmental, social and economic priorities at an individual catchment level, including development and acceptance of measurable targets.
2. Identify a range of actions/management regimes that could be applied, allowing a genuine choice to optimise the social, economic and environmental outcomes.

3. Initiate selected actions/management regimes, utilising a continuous cycle of adaptive management improvement.
4. Have regular and transparent measurement and reporting of performance against the targets.

By way of example, an identified target may be to restore native fish numbers in a particular stretch of river.

The current Basin plan approach would be limited to two responses – additional water flow and release timing.

However, if the water is to be released from the bottom of a deep storage (for example a headwater storage with no multi level off-takes), it is highly likely that no matter how much additional water was released, it would be too cold to allow for successful fish breeding.

Under this scenario, the provision of the additional water would come at a great social and economic cost, but would provide no environmental benefit.

A more holistic approach might involve the addition of a lesser amount of water, the construction of a multi-level off-take allowing temperature control of water release, the construction of fish ladders and the re-snagging of sections of the stream.

This approach is likely not only to significantly increase native fish breeding, but could come at a much lower social and economic cost to the catchment community.

The approach described above would require genuine co-operation between all levels of Government, but offers a much greater chance of ensuring genuine environmental gains, while optimising the social and economic health of the catchment community.

GVIA does not intend to go into any further detail into the flaws surrounding the Act, but fully endorses the positions put forward by both the National Irrigators Council and the NSW Irrigators Council in regards to this issue.

Recommendation

That the Authority recommends to Government that the Water Act and/or the Murray-Darling Basin Inter-Governmental Agreement be amended to allow the Basin Plan to propose the holistic management of the Murray-Darling Basin.

Engagement

With regards to the performance of the MDBA in taking into account the views and knowledge of the Basin Community, GVIA has been very disappointed.

In GVIA's view, the Authority has quite deliberately developed the "Guide" with very little effective input from those people most affected – the residents of the Basin.

While GVIA has on a number of occasions, prior to the release of the “Guide”, provided input to the Authority, either by way of submissions, letters or attendance at various forums and meetings, it has received virtually no formal feedback on the issues it has raised, and therefore has no confidence that its concerns were taken into account prior to the release of the “Guide”.

Since the release of the “Guide” GVIA has taken advantage of a number of opportunities to engage with Authority staff members, however GVIA strongly believes true engagement will only occur if the Authority provides the time and resources to allow each valley an opportunity to dissect the information provided in the Guide, in a manner which allows direct interaction with the Authority’s technical and policy staff. For this process to be successful, it may require a number of meetings.

GVIA acknowledges that the Authority has confirmed a meeting to be held in Moree, on Tuesday, January 11, 2011. In part, GVIA will judge the Authority’s commitment to engagement by the effort the Authority puts into addressing the issues raised in this submission at that meeting.

Stakeholder Confidence

The MDBA has made much of the fact that the Basin Plan will be based on the “best available science”. If the “best available science” is reflected in the content of the Guide, then GVIA can have no confidence in that science, and therefore no confidence in the Guide.

While this submission will examine all the following points in greater detail, undeniable inaccuracies in the Guide include the mapping, calculation of pre-development valley outflows, and the socio-economic impacts.

GVIA considers that it is deeply disappointing that the MDBA was not prepared to informally “road-test” the Guide with key stakeholders prior to its release. Had this been done, obvious inaccuracies could have been addressed prior to the release of the Guide.

Terminal Nature of the Gwydir River

A key concern for GVIA is the Guide’s calculation of the level of without development outflows from the Gwydir catchment.

GVIA is disappointed by the use of numerous maps by the Authority (both in the Guide and public presentations) that shows a defined river course linking the Gwydir River with the Barwon.

No such defined courses exist, and GVIA challenges the Authority to ground-truth the course of the Gwydir Wetlands. Both the Gingham and the Lower Gwydir watercourses terminate on the floodplains to the west of Moree. Direct flows into the Barwon would only occur during major floods, in a manner not much different pre- or post- development.

Recommendation

That the Authority ascertain for itself the true course of the Lower Gwydir and Gingham Channels, and ensure all Authority publications correctly show the terminal nature of these systems.

GVIA maintains that for all intent and purpose GVIA is naturally an unconnected system (with the exceptions of flows out of the Gil Gil) in all but the wettest years that result in major floods.

Further, the connection that occurs during large floods cannot be either enhanced or diminished by Basin Plan rules, as those events are outside the scope of human intervention.

Recommendation

That similar to the Lachlan Valley, the Gwydir Valley should be recognised by the MDBA as an unconnected catchment.

Table 5.1 (pg 47 Vol 1) shows the Gwydir as having total inflows of 1,131Gl (compared with 1,141Gl in the Gwydir Regulated River Water Sharing Plan), pre-development outflows are shown as 429Gl or 38% of inflows.

The pre-development outflow percentage for the Border Rivers is shown as 36% and for the Namoi River is 39%.

Given that the Gwydir catchment is in effect an inland delta with a terminal wetlands system, it fails the “commonsense” test that its pre-development outflows could be greater, or virtually the same as the two adjacent river systems which are classic “flow-through” river systems with no terminal wetlands.

While GVIA is not in the position to provide detailed hydrological information to refute the “Guide’s” outflow assumption, it does provide the following information for consideration by the Authority:

1. The assumption fails the “commonsense” test, as the pre-development outflow percentage figure for the Gwydir is greater than percentage figure for the Border Rivers.
2. Historically, the people of the Gwydir Valley have been told by the NSW Office of Water (NOW) and its various predecessors that outflows from the Gwydir system were in the order of 7-10%, with almost all the outflows occurring during period of significant flooding.

3. There is ample anecdotal evidence and observations from long-term residents of the Gwydir Valley that can confirm that significant outflows only occurred during periods of major floods. GVIA can provide the Authority with contact details of Gwydir Valley residents who can clearly articulate the flow patterns of the Gwydir Valley.
4. There has been significant re-engineering of the Mehi River and Carole Creek channels, which allows a level of outflow that was ever possible pre-development, and GVIA does not believe these changes have been fully considered in the Authority's modelling.
5. The Murray-Darling Basin Commission's *State of the Darling Hydrology Report* – March 2007 Table 7 (p22) flagged considerable uncertainty re the contribution of the Gwydir to the Darling due to the lack of pre-development data on the division of flows between the Mehi and the Gwydir.
6. Figure 6.1 in the Guide indicates the level of wetland and floodplain inundation thought to occur in a 1 in 10-year flood. It should be noted how little the inundation spreads to the bottom of the Gwydir Valley, confirming GVIA's position that there was only significant contribution during large to very large floods (there has been approximately five of that magnitude since 1945), and that in most events the floodwaters are soaked up by inundation across the extensive floodplains of the Gwydir Valley.
7. GVIA believes that river gauge data, obtained at the bottom of the Mehi and Gwydir system is flawed because it has been influenced by water backing up from the Barwon River, rather than accurately recording flows that originate from the rivers that the gauges purport to measure. GVIA believes it is imperative that the Authority investigate the accuracy of these gauges, and determine the impact inaccurate readings have had on the modelled outcomes.

In summary, the Gwydir Catchment has only ever contributed to the Murray-Darling system during periods of major floods.

Recommendation

That the Authority closely re-examine the "Guide's" without -development outflow assumptions for the Gwydir Valley.

Current Diversion Limits

GVIA notes the Diversion Limits as they appear in Table 5.2 of the Guide. At this stage GVIA neither accepts nor rejects the modelled numbers, as it has not been provided with any detailed information on how they have been calculated. The numbers certainly do not correspond directly with the numbers used in the Gwydir Regulated Water Sharing Plan, and therefore they are not familiar to GVIA.

The estimates on diversions in particular, and lack of clear information on what has been included or not included make it extremely difficult for GVIA to assess what level of confidence it can have in the Authority's numbers.

GVIA requests that the MDBA make full details of its modelling available to GVIA for review.

Recommendation

That the MDBA make available to GVIA the assumptions used in modelling both the pre-development and post-development hydrology of the Gwydir Valley.

Environmental Water Requirements

As GVIA understands the Guide, it is proposing a decrease in the Gwydir's current diversion limits (as determined by the Authority) by between 89Gl and 121Gl (The range is determined by whether the overall target reduction for the Basin is 3000Gl or 4000Gl).

Further, GVIA understands that the additional environmental water is being sourced for in-catchment health and not to provide additional flows in the Barwon-Darling.

However, as a consequence of providing additional in-catchment flows, catchment outflows will increase by between 47Gl and 64Gl.

GVIA understands that in the in-catchment health drivers for the Gwydir are the water requirements for the hydrological indicator site of the Gwydir Wetlands, and the requirements of the four ecosystem function sites.

However, GVIA has not been able to identify in the Guide any justification for the additional water sought by the Guide. In fact the Guide, and supporting documentation, appears to indicate that no further water is needed.

Appendix B (Vol 2) starting at page 535 details in the Authority's view the environmental water requirements of the Gwydir Wetlands.

Tables B5.3 & Table B5.4 documents the Guide's view on the current areas of wetland vegetation in the Lower Gwydir and Gingham Channel regions.

The total area of semi-permanent wetlands of between 8,192 and 6,829ha appears to be in the order of what GVIA would expect, although GVIA has done no mapping or ground-truthing and is relying on information supplied to the Gwydir Environmental Contingency Allowance Operations Advisory Committee (GECOAOC).

However, GVIA strongly disputes the areas outlined in Table B5.4 of the various levels of floodplain vegetation. There simply is not anywhere near 70,000ha's of natural Coolibah or Coolibah-Black Box Woodland within the Gwydir Wetlands area.

For a whole range of reasons, primarily lippia control and the expansion of dryland cereal farming, the areas of natural woodlands have been reduced, and cannot be restored.

It is imperative that prior to the Authority determining the environmental water requirements of the Gwydir Wetlands that it conducts a rigorous vegetation mapping process of the area known as the Gwydir Wetlands.

Recommendation

That the MDBA conduct a rigorous mapping and ground-truthing exercise across the area known as the Gwydir Wetlands, to accurately determine the area, vegetation condition and land use.

In reviewing the Environmental Water Requirements for the Gwydir Wetlands, as they appear in Table B5.9 (P 544, Vol 2, Part II) GVIA believes it confirms its view that the environmental water needs of the Gwydir Wetlands (despite the inflated vegetation figures discussed above) are being more than met by the current water management regime, as determined by the Gwydir Regulated River Water Sharing Plan.

The table lists Seven Flow rules that need to be met to ensure the environmental health needs of the Wetlands.

Of the seven, current conditions exceed the pre-development achievement of these conditions, and the other four fall within the range identified by the Guide to meet the environmental objectives.

An eighth flow rule, designed to meet the needs of the Mallowa Floodplain Wetlands, is by the Guide's own admission, a manufactured flow rule, and it is already being largely met by provision of the Mallowa replenishment flow.

Therefore, there does not appear to be any argument identified in the Guide to suggest any of the additional 89Gl to 121Gl of water is required to meet the requirements of the Gwydir Wetlands.

Further, there is on-ground evidence, resulting from the improved inflow conditions of the valley, that confirm that the environmental water needs of the Gwydir Wetlands are being met by the requirements of the Gwydir Regulated Water Sharing Plan.

The Authority needs to consider that:

- natural inflows, occurring since July 2010 under current water sharing plan rules, have completely inundated the Gwydir Wetlands
- The inundation is to the extent that the Commonwealth Water Holder has opted not to take supplementary flows allocated to it over the Spring
- No water that has accumulated to the 105,000 megalitres of general security entitlement owned by the NSW Government and the Commonwealth has been used. Both the NSW Government (through its Environmental Contingency Allowance and River Bank Licences) and the Commonwealth Water Holder now have in excess of 85,000 megalitres of water stored in Copeton Dam, and the previous greatest release of environmental water was approximately 20,000 megalitres to sustain a bird breeding event.

There has been significant flooding of dryland wheat fields above, below and adjacent to the Gwydir Wetlands this season, further demonstrating that the environmental water requirements of the remaining wetlands are a lot lower than has been argued.

It is important that the authorities use this period (when environmental water is available) to determine, through adaptive management, the true environmental water requirements of indicator sites such as the Gwydir Wetlands.

Recommendation

That there be no further acquisition of Gwydir water entitlements for environmental use, until the environmental water managers have adequately demonstrated that current holdings and water plan provisions are inadequate to meet the environmental water requirements of the Gwydir Valley.

As GVIA understands, the second requirement for in-catchment health is to restore the hydrological performance of the various streams by returning flow regimes to between 60% & 80% of pre-development flows.

The four sites chosen are the following gauges; Gwydir at Collymongle; Gwydir at Pallamallawa; Gwydir Downstream of Copeton Dam; and Gwydir at Stonybatter.

GVIA notes that these four sites are four of the five sites assessed as part of the 2007 Sustainable Rivers Audit (SRA) conducted by the then Murray-Darling Basin Commission.

As an aside, GVIA is very disappointed, that despite receiving a letter dated 24-9-2009 from the Authority's Dr Michael Wilson acknowledging the SRA was in error in its assessment of the hydrology of Tycannah Creek at Horseshoe Lagoon, and undertaking to correct it in both the print and web version of the SRA, the correction has not taken place.

This lack of action makes it very hard for GVIA to put much faith in the Authority's commitment to the "best available science".

With regards to the selected hydrological indicator sites, judging on the score received by the sites in the SRA the hydrology is already operating within the "moderate to good" level sought by the Authority, and therefore there is no justification for reduced sustainable diversion limits to meet hydrological requirements.

However, GVIA would recommend that the Authority review the High Flow Event score received by Gwydir at Collymongle as this appears to be an anomaly having only scored 33.

GVIA does not believe that it makes sense that this site should be severely affected by changes to High Flow events, but score highly for all the other measures.

Recommendation

Gwydir Valley Irrigators Association Inc
Chairman: Joe Robinson CEO: Michael Murray
ABN 49 075 380 648
Ph 02 67521399 Mob 0427 521399
gvia@gvia.org.au www.gvia.org.au

That the Authority re-assesses the SRA score given to Gwydir at Collymongle for High Flow Events.

In summary, the Authority has failed to make a case for additional in-catchment environmental health water for the Gwydir.

The Authority's assessment shows the water needs of the Gwydir Wetlands are being met by the provisions of the Water Sharing Plan, and this position is supported by the current experiences of the environmental water managers.

With regards to the requirement to restore flow regimes to 60-80% of their pre-development level, as measured at four hydrological indicator sites, the Authority has singularly failed to present any detailed information to justify its claim.

In the absence of that information GVIA has relied on the SRA, and it shows that the Gwydir Catchment is already operating at the "moderate to good" level desired by the Authority.

Should the Authority, after reviewing this submission, still argue that additional in-stream health water is required, then it must clearly, and specifically articulate the drivers for the additional water.

Recommendation

That if the Authority determines, in its draft plan, that reductions in sustainable diversions are required for the Gwydir Valley, it must specifically identify the volumes required to meet clearly identified goals.

GVIA takes this opportunity to point out that it believes the approach taken by Authority to try and justify additional environmental water for in-catchment health is flawed. It has failed to:

1. Identify the specific environmental problem.
2. Identify the range of actions that might be taken to remedy the problem.
3. Determine the least impact way of remedying the problem.
4. Identify how a successful remedy may be measured.

In GVIA's view, the Authority has adopted a simplified, one-size-fits-all approach that fails to take into account the environmental characteristics of all catchments.

Groundwater Requirements

Due to the fact that the Guide has not identified any need for additional cuts to the Sustainable Diversion Limits for the three groundwater zones in the Gwydir Valley, GVIA has not as closely studied this section of the Guide, as it has other parts.

However, GVIA is unclear how the Authority could assess all the major NSW Groundwater Zones that were subject to the Achieving Sustainable Groundwater Entitlement (ASGE) programme, and find some were at sustainable yield and other were not.

Therefore, GVIA asks the question that if some groundwater sources were found by the Authority to be operating at above sustainable yields, were any of the ASGE groundwater sources assessed as operating below sustainable yield?

If such an assessment was not done, GVIA request that it be done.

Recommendation

That the Authority assess the Lower Gwydir Groundwater Source Water Sharing Plan to ascertain whether on the Authority's criteria it has been set at a level below the long-term sustainable yield.

Socio-Economic Impacts

One of the very disappointing aspects of the Guide is the blatant attempt to underestimate the social and economic impacts of the proposal.

The ridiculous assumption that the proposal would only cost 800 jobs across the Basin (an assumption that the Authority stopped defending almost immediately) clearly indicates that the Authority was not serious about truly calculating the human cost of the plan.

GVIA does note that the Authority recognises that the impacts on highly water dependant communities like Moree will be significantly affected.

GVIA believes one of the most telling graphs in the whole Guide appears on Pg 130 (Vol 1) that clearly shows that if the Guide was adopted at the 4000Gl level, water availability across the basin would be at the same level as experienced over the past eight severely drought affected years.

A simple way of calculating the economic impact on Moree would be to record the level of population and business loss that occurred between 2001 and 2010.

More Plains Shire Council data estimates that approximately 2000 people were lost from the Shire, and over 150 businesses closed their doors.

GVIA would recommends that the Authority adopt the Judith Stubbs report "Exploring the Relationship between Community Resilience & Irrigated Agriculture in the Murray Darling Basin" as the definitive study into the likely impact of losses in water availability.

The report identifies that a reduction in water availability in the Gwydir of 25% (just less than the impact of the 3000GJ proposal) would result in the loss of 232 jobs and 649 people from the shire. It should be noted that by the report’s own admission job loss estimates are considered to be very conservative.

Recommendation

That the Authority adopt the Judith Stubbs report “Exploring the Relationship between Community Resilience & Irrigated Agriculture in the Murray Darling Basin” as the definitive study into the likely impact of losses in water availability.

GVIA’s analysis suggests that average irrigated production would fall by somewhere between 15,000ha and 20,000ha (current average 60,000ha), result in a loss of farm-gate value in the order of \$70 million to \$120 million.

While GVIA supports the Authority carrying out more detailed and relevant socio-economic studies, GVIA is concerned that the studies will in effect become nothing more than a “body count”, when the real emphasis should be placed on finding ways to achieve the desired environmental outcomes at the least possible cost to the community.

This can only be achieved if the Authority is given the mandate to extend “tool-kit” to include non water volume solutions.

Closing the Gap Calculations

GVIA’s limited confidence in the “science” presented in the Guide is further challenged by the Guide’s assertion that the Federal and State Government have already secured approximately 64GJ of Long-Term Cap Equivalent Gwydir entitlement to meet the target reductions in the Sustainable Diversion Limits of between 89GJ and 12GJ.

However, no where in the document is it referenced as to what conversion factor as been applied to the entitlement holding to calculate the LTCE.

GVIA has prepared the following table, which shows there is a great discrepancy between the Authority’s, the Commonwealth Environmental Water Holders (CEWH) and GVIA’s views on the amount of LTCE water that is being held.

GVIA contends that the Authority has grossly over estimated the amount of water it holds, and therefore the “Gap” is much largely than argued in the Guide.

Entitlements	MDBA LTCE	GVIA Average Reliability	CEWH Average Reliability
General security – 105GJ		.38 = 40GJ	.36 = 37.8GJ
Supplementary – 19GJ		.55 = 10.45	.19 = 3.61GJ
Total	64GJ	50.45GJ	41.41GJ

Apart from anything else, a much larger Gap, will consequently lead to much larger social and economic consequences should the government pursue the stated aim of recovering the water required to “bridge” the Gap.

Recommendation

That the Authority urgently and transparently review its calculation of the LTCE “Closing the Gap” entitlements, and either confirm the numbers used in the Guide, or publish new LTCE figures along with a comprehensive report on any implication from using the incorrect figures.

Water Balances

GVIA does not profess to understand the role, or importance, of the valley-based water balances that appear in the Guide.

GVIA calls on the MDBA to fully explain their purpose, and transparently review the numbers which have been used.

While GVIA has not comprehensively reviewed the numbers it is struck by figures being quoted for transfers out of the Gwydir Valley, something which is not allowed by or Water Sharing Plan Rules.

Recommendation

That the Authority review its valley based water balances, and explain their relevance and calculation to stakeholders.

Submission Concludes

Attachment 1:

Questions Arising out of the MDBA Consultation Meeting Held in Moree, 24 October, 2010

- Q1. In the Murray System what are the ten most important environmental assets that are stressed and unhealthy (give scientific references for each please), plus the causes of this situation (scientific references please)?
- Q2. Please explain how the plan will correct the issues of each of the ten environmental assets (scientific references please for each)?
- Q3. As above for the Darling System
- Q4. As above for the Gwydir System
- Q5. Would stopping all irrigation in the Darling System ensure that the rivers and wetlands would be unstressed and healthy in the Darling system?
- Q6. As above for Murray system
- Q7. Why in the 1800's when the explorer Sturt discovered the Darling river near Bourke, was the river in your terms unhealthy and stressed? Sturt described it as salty, with little or no flow.
- Q8. In the Darling system, under a no irrigation scenario, why would a state of no flow or low river flow (less than 20% of the median flow) occur in large stretches of the streams of the river system from time to time?
- Q10. Would the streams of the Darling system with no flow qualify in your terms as stressed or unhealthy?
- Q11. What is the median percentage contribution from the Darling system to the median Murray flow? What is the average percentage contribution from the Darling system to the average Murray flow?
- Q12. With the no irrigation scenario would the state of no river flow/low flow be common in parts of the Darling system over the last 10 years?
- Q13. What is a healthy river?
- Q14. What is a stressed river?
- Q15. What is a healthy wetland?
- Q16. What is a stressed wetland?

- Q17. Is an inland wetland that is dry and dusty unhealthy, or stressed? Or is this state, part of the normal ecological cycle for the bulk of the "wetlands" you have listed in the Darling system?
- Q18. What, if any, allowance on modelled river flow has been made for the changes in farming practices (to reduce soil erosion and runoff in dryland farming and grazing) that has revolutionised agriculture in the last 25 years in the catchments of the Darling System?
- Q19. Why is it reasonable or optimal to take 30% of the water from irrigation communities to aim to give more water to over 2000 inland wetlands?
- Q20. If there were no irrigators on the Darling system would we still have times of dry rivers and dustbowl wetlands?
- Q21. Why do you not present the data on river flows as median figures as that has much more meaning in the Darling system than averages which are strongly biased to the odd flood years? A median figure is far more meaningful to most people and the Bureau of meteorology uses medians to present data to farmers for this reason.
- Q22. In the Darling system in what percentage of the total length of the streams in that system is from time to time a dry or no flow river part of the normal ecology?
- Q23. I consider that the normal healthy environment of the Darling system includes long periods of drought and the ecology of the rivers and wetlands are adapted to this. Is this true in the view of the Authority?
- Q24. In the Darling system rivers with no flow are caused by drought. Is this true in the view of the Authority?
- Q25. The Gwydir is an inland delta system. Before Europeans interfered, when a big rain would fall in the upper reaches of the Gwydir, it would split the river into creeks as it got to the alluvial plains, spread out on the floodplain and form a shallow swamp. Then when the dry times came the water would evaporate, and during droughts it would be a dustbowl until the next big rains.

During big floods like 1976 the water would run to the Barwon/Darling and be 100km wide from north to south, but mostly the Gwydir did not run into the Darling system; when it flowed it would spread onto the Gwydir floodplain and eventually evaporate.

So why do you claim that the Gwydir contributes about 30% to 40% of its flow to the Darling system?

- Q26. In the 80's the NSW Department of Water Resources maintained that less than 10% of the Gwydir flow got to the Barwon-Darling, and that was only in big floods like the 1976 flood. Were they wrong?

- Q27. Irrigation or no irrigation will not change those flood flows significantly so why do you need to take any water from the Gwydir, as its contribution will be maintained near historical levels, dependent on flooding rains?
- Q28. What are the long term average watercourse diversions? What is the figure for the Darling system? What is the figure for the Murray system? What is the figure for the Gwydir? What are the corresponding median figures? For the Murray system, Darling System and Gwydir what are average and median figures for system flows?
- Q29. Where in the Guide to the plan are local irrigation dependent communities compensated for their loss of resource dependent income and loss of asset value?
- Q30. Is there any guarantee that water acquired for the environment under the Basin Plan will not be sold on to extractors at a later date?