

**SUBMISSION TO THE
MURRAY DARLING BASIN AUTHORITY –
DEVELOPMENT OF SUSTAINABLE DIVERSION
LIMITS**

DECEMBER 2009

Introduction

Queensland Farmers' Federation (QFF) is the peak body representing and uniting 16 of Queensland's rural industry organisations who work on behalf of primary producers across the state. QFF's mission is to secure a sustainable future for Queensland primary producers within a favourable social, economic and political environment by representing the common interests of its member organisations'. QFF's core business centres on resource security; water resources; environment and natural resources; industry development; economics; quarantine and trade.

Our goal is to secure a sustainable and profitable future for our members, as a core growth sector of the economy. Our members include:

- Australian Prawn Farmers' Association,
- CANEGROWERS,
- Cotton Australia,
- Growcom,
- Nursery and Garden Industry Queensland,
- Queensland Chicken Growers Association,
- Queensland Dairyfarmer's Organisation,
- Queensland Chicken Meat Council,
- Flower Association of Queensland Inc.,
- Pork Queensland Inc.,
- Biological Farmers of Australia
- Fitzroy Food and Fibre Association,
- Pioneer Valley Water Co-operative Limited,
- Central Downs Irrigators Limited, and
- Burdekin River Irrigators Association

Submission Overview

Sustainable diversion limits are enforceable limits on the quantities of surface water and groundwater that can be taken from Basin catchments for use by farmers, towns and industries to achieve key environmental outcomes in all parts of the Basin. When the Qld Government's water resource plans for each of the Qld Murray-Darling catchments are reviewed in 2014 they must comply with the Basin Plan and these SDLs.

From QFF's perspective there are three overriding issues of significance with the paper.

1. Insufficient weight has been afforded to economic and social values in the setting of SDLs. The MDBA argues that they are working in accordance with the Water Act which refers to optimising economic, social and environmental outcomes in the Basin's water resources. This allows the Authority to focus on maximising economic and social returns to the Australian community and to effectively avoid giving specific consideration to the trade offs between economic, social and environmental issues particularly at a catchment/water resource plan level. As a result there is a serious disconnect between the development of the Basin Plan by the Authority and measures being implemented by the Department of Environment, Water Heritage and the Arts (DEWHA) to recover water to increase the provision of water for environment, to reduce consumptive water use and

to maintain or improve community and industry resilience. It is important that the Authority makes it very clear that they are not addressing necessary management objectives, outcomes and monitoring programs to address the Basin's economic and social assets as they are not mandated to do so by the Water Act. Embedded plans such as the environmental watering plan are also not required to address economic and social issues.

As a result there is no effective planning process at the Basin level to address these economic and social issues there is just a hope that water recovery spending will somehow make it all right.

2. The paper broadly examines a number of issues the Authority will address in setting SDLs but provides very little advice on the practicalities of defining and applying these SDLs. This issue is compounded by the fact that the Authority is not yet able to table lists of environmental assets and functions. There is little that can be provided in response to this paper but to table a list of questions seeking further clarification.

QFF wants an opportunity well before the release of the draft plan to examine in more detail on how the Authority intends to set these limits and in particular how well the existing water resource plans have addressed the issues of importance to be considered in setting these SDLs. It will also be important for stakeholders to obtain expert independent advice on the veracity and appropriateness of the science input to the development of the plan and any significant gaps.

3. QFF has a very real concern at this stage that the preparation of the Basin Plan is well behind to where it should be to allow adequate development and pre plan consultation with stakeholders sufficiently informed to provide useful feedback. It is our expectation that we will now receive a poorly developed draft. QFF has already raised concerns that the key industry and local irrigator representatives will disengage if there are not opportunities to provide input on key issues such as the SDLs well prior to the release of the draft Basin Plan. The issues raised in this discussion paper skim the surface of the concepts that will be considered, but it does not sufficiently deal with the reality of SDL to allow the industry to sufficiently conceptualise the implications of SDL implementation. This will have ongoing ramifications. It will be exceedingly difficult to provide constructive comment if we have to respond to an underdone Draft Basin plan which shifts critical issues to the jurisdictions to address.

Response to Specific Issues raised in the Paper

Water Resource Plan areas

- a. The boundaries for state water resource plans must be used for the plan areas for the Basin Plan but it is understood that the definition of these plan areas should address connectivity between water resources across the Basin.
- b. Further feedback is requested about the treatment of groundwater in the Qld Murray Darling catchments given that Qld State water resource plans have not been developed to address these resources. For example, what groundwater areas are to be considered, which areas extend beyond catchment or state boundaries and what science will be used to prepare SDLs? The Paper indicates that Expert panels of State groundwater managers and the MDBA are yet to advise on final form of WRP areas for groundwater. What is the timing for this work and will the Authority advise QFF and stakeholders on the outcomes of the Expert Panel deliberations prior to the release of the draft plan?

Water availability and take

a. It is proposed that the CSIRO Sustainable Yields Audit is to be adapted for use in river system modelling to assess the water resources of the Basin. QFF has made previous submissions that the CSIRO analysis is not adequate to inform an effective Basin wide plan. The following issues have been identified in this regard:

- *Climate change predictions* – There is a high degree of uncertainty about the climate change predictions and there has been no attempt to conduct a formal weighting of the global climate models to assess their relative probability of occurrence and therefore probability in each region. The Basin spans a number of different climate zones with different climate drivers. It is also noted that a recent report by CSIRO (Chiew, Cai & Smith 2009) for the Authority confirms that the impacts of climate variability and climate change cannot be separated and that climate change impacts may only have a small impact at this stage.
- *Rainfall runoff estimates* - The CSIRO reports acknowledge this to be a weak point. CSIRO's verification analysis indicates that the mean annual runoffs in un-gauged catchments are under or over estimated by less than 20% in more than half the catchments and by less than 50% in almost all the catchments (Border Rivers report, p 33). Runoff implications are propagated through river system models and inform estimations of current and future water availability. Errors in runoff estimations significantly impact on the certainty of results.
- *Water availability* – The approach of assessing water availability as the flow at the point of maximum average annual flow in the river under pre-development conditions is of limited use.

CSIRO acknowledges that the obvious approach would be to sum all of the inflows into the system but that this was not adopted because of the range of inflow calibration approaches used across the models. However, it is misleading to compare system water use against the water availability measure that has been used in the reports. It is common for water available upstream of a gauge to be significantly greater than recorded at the gauge. Factors such as evaporation, groundwater recharge, riparian vegetation or swamps will not be reflected in main stream gauges. This is particularly so in upper Darling catchments which are characterized by breakouts, anabranches and tributaries.

- *Water Accounts* –The uncertainty of surface water results has been investigated not through independent qualitative assessment but through further water account models i.e. models checking models. The water accounts and river models rely on unsubstantiated balancing items in the water balance estimations. The water accounts use monthly sequences. In the upper Darling, this is likely to produce significant inaccuracies as these systems are characterised by high flow variability and diversion opportunities commonly last for only a few days. Qld IQQM models are based on daily flow sequences to address this problem.
- *Flow estimation* – Unlike other States, river models used in Queensland water resource planning represent the full utilisation of all licences, including sleepers. This point of difference is significant in that it will result in a comparative overestimation of diversions and underestimation of the flows in the Qld systems. This will have a snow balling effect as these systems account for inflows into the downstream Darling catchments.

- *Groundwater analysis in Border Rivers* – The assessment of predicted losses due to groundwater use is questionable. There is insufficient data on the connectivity of surface and groundwater systems and the assumptions made to develop and calibrate the model are largely unsupported. CSIRO recognises that their predictions of drawdown in the lower aquifer may not be logically possible.

A recent report on the uncertainties of river system modelling (Van Dijk, et al 2008) confirm the above comments by indentifying uncertainties such as lack of data on diversions, river losses, the quality of high flow gauging, groundwater exchange, un-gauged losses, simulation of river operations and diversions simulation of low streamflow patterns, simulation of inflows and future diversion subject to economic development. The researchers particularly highlight the significant uncertainties in the lower parts of catchments which are characterised by breakouts, anabranches and tributaries.

QFF is supportive of the use of long term climate scenarios for the preparation of the Basin Plan but clarification is sought about how selected scenarios will be used to determine the SDL. The Authority needs to commission an independent panel of appropriate expertise to advise stakeholders on the adequacy of the science used in the preparation of the plan including the CSIRO analysis referred to above.

- b. It is understood that SDLs must not compromise the productive base of water to support environmental assets and functions, irrigation, drinking water for people & animals, swimming, fishing and boating. While the Paper recognises that if an SDL provides for environmental needs there will in ‘many situations’ be sufficient water for the productive base but it is indicated that this needs to be assessed on a case by case basis. The Authority needs to advise how such an assessment of these productive values is to be conducted. Have values for these issues been assessed as a basis for conducting this assessment? If not how will these issues be assessed given the limited time available for the production of the Plan. There is also little reference to cultural issues in this context. Will cultural values be assessed and included as part of this assessment?
- c. Key environmental assets or ecosystem functions or the productive base or key environmental outcomes are to be examined to determine an environmentally sustainable level of take. It is a concern at this stage of the planning process that the results of these investigations are not yet available. It is imperative that stakeholders have the opportunity to review this analysis prior to the release of the draft Plan to gain some appreciation of environmental priorities at a Basin and catchment level that are to be addressed. It is also important to understand how flow based and non flow based environmental issues are to be considered. It is impossible to provide any constructive input to this paper without this environmental analysis. Again it would be useful for stakeholders to have the advice of an independent panel on the adequacy of the science input to this analysis.
- d. Categories of take
 - SDLs are to limit the take of water for consumptive purposes and six main categories of this take are defined (ie licensed take, authorised take for which a

licence is not needed, licensed interception, authorised interception, incidental interception, unauthorised take). Unmetered take is to be estimated by models or landholder surveys, however, it is unclear how these types of take are to be assessed for the purposes of SDLs. It is imperative that the practicalities of assessing SDLs are understood for the purpose of responding to the draft Plan.

- The definition of take includes all impoundment of water. Current State water resource plans do not make allowances for impoundment of water which involves the storage of water for delivery. QFF is opposed to the approach proposed in the discussion paper.
- Unauthorised take should be addressed as a compliance issue ie jurisdictions must have adequate arrangements to ensure unauthorised take is dealt with.
- Interception activities are to be included in the SDL. MDBA proposes to catalogue interception activities and to estimate water being intercepted to determine which activities have a significant impact on water resources. QFF seeks further clarification about the interception activities that will be subject to assessment and how thresholds will be defined to assess significance. It is also suggested that the Authority apply a risk assessment as part of the significance assessment eg risk assessment could take account of the rigour of the process implemented by jurisdictions for dealing with interception under current water plans across the Basin.
- It is proposed that SDLs include unmetered types of take including stock and domestic use. Stock and domestic use is an as of right use for the purposes of water resource plans in the Qld Murray Darling catchments. To go back now and attempt to assess and provide for this take is questioned in terms of the cost relevant to the benefit achieved. This take is also unmetered take and accordingly it is questioned how an accurate assessment can be made for the purposes of assessing SDLs. If growth in this take has to be addressed then the cost benefit of such regulation should be assessed.
- It is unclear what is being proposed for the sharing of environmental water contributions between valleys. This matter needs to be clarified as soon as possible.

SDL provisions and the optimisation of economic, social and environmental outcomes

It is indicated in the Paper that initially, economic and social assessments will be undertaken across the Basin as a whole and for irrigation areas 'which account for the largest proportions of diversions and which might potentially be significantly affected' to determine potential implications of changes in water availability. The economic and social implications of SDL options to meet environmental requirements are then to be assessed as an input to second stage investigations at the local level. This methodology fails to take account of the relative impact of SDLs for smaller irrigation communities. The Authority is asked to rectify this oversight. If it is not proposed to undertake this level of assessment for small communities then the Authority should at the very least undertake a specific socio-economic study in the Northern Basin to benchmark current socio-economic performance at a regional level as a basis for evaluating the impact of the Basin Plan including the buyback program? The study must take into account aspects which are peculiar to the Northern Basin such as the lack of connectedness between headwater systems, the relative lack of public water infrastructure, the wide geographical spread of water dependent communities and the significant costs of

making on farm infrastructure redundant. An approach of this nature would help to redress concerns addressed in the introduction of this paper to the insufficient weight being afforded to economic and social values in the setting of SDLs

Surface-groundwater connectivity

River system modelling is to be used as a basis for quantifying surface water resources based upon adapting the approach applied by CSIRO in the Sustainable Yields studies. On the other hand it is understood that the annual average yield of groundwater sources is to be estimated rather than full assessment of the groundwater storages. Separate SDLs are to be assessed for surface and groundwater to assess connectivity. The Authority must clarify which groundwater areas within the Qld Murray Darling catchments are to be included in the assessment process and advise the results of the proposed approach to assessing the resource.

Setting of SDLs

- a. As outlined above, QFF seeks further advice on progress being made in determining these environmental requirements well prior to the release of the draft Basin Plan. It will also be useful to explore how the Environmental Water Plan will safeguard existing environmental water, guide the recovery of additional environmental water and coordinate the management of this water.
- b. The proposed 3 stage approach to developing SDLs with the assistance of river system models is supported. However the Authority is asked to consult on the prospect of developing subcatchment SDLs to provide communities with a clear indication whether cut backs to take are required in their areas to achieve environmentally sustainable levels of use.
- c. It is unclear how the annual audit and compliance process will be implemented. The Authority is asked to provide updated advice on what is proposed when details are available.
- d. Further advice is sought about how water quality and salinity targets will be applied in the Northern Basin. It is understood these targets are of an aspirational nature in the Qld section of the Basin so it is questioned as to whether SDLs can be set to ensure water is available to meet these requirements where it is considered that flow may be contributing factor.