COTTON AUSTRALIA
Advancing Australian Cotton

# Submission to the Senate Standing Committee on Rural Affairs and Transport Inquiry

## *Management of the Murray-Darling Basin: Impact of Mining Coal Seam Gas*

## June, 2011



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## Cotton Australia

Cotton Australia is the key representative body for the Australian cotton growing industry. It helps the industry to work together to be world competitive and sustainable, and also tell the good news about the industry's achievements. Cotton Australia determines and drives the industry's strategic direction, retaining its strong focus on R&D, promoting the value of the industry, reporting on its environmental credibility, and implementing policy objectives in consultation with its stakeholders.

Cotton Australia works to ensure an environment conducive to efficient and sustainable cotton production. It has a key role in Best Management Practices (MyBMP), an environmental management program for growers. This work has seen a significant improvement in the environmental performance of the industry, with huge improvements in water use efficiency, significant reductions in pesticide use, and millions of dollars invested into R&D.

The Australian cotton industry directly employs thousands of Australian's and this year will contribute over $2 million to the Australia economy.

Cotton Australia welcomes the opportunity to provide this submission to the Senate Standing Committee on Rural Affairs and Transport Inquiry into the *Management of the Murray-Darling Basin: Impact of Mining Coal Seam Gas.*

Cotton Australia did take the opportunity to lodge a submission to the Management of the Murray-Darling Basin Inquiry in December, 2010.

Cotton Australia is a member of the National Farmers Federation, the National Irrigator's Council, Queensland Farmers Federation and the New South Wales Irrigators Council.

Many of these organisations will also be making submissions to the Inquiry, and while Cotton Australia is confident that these submissions will reflect the views of Cotton Australia, if there is any divergence of views expressed then Cotton Australia's position is the one outlined in this paper.



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## General Comments

Traditionally, although there has been some significant exceptions, mining activity in Australia has occurred away from the highly fertile and intensively farmed areas of the Australian cotton industry.

However, in recent years, the rich, dark floodplain soils of the Australian cotton industry have increasingly attracted the attention of a wide range of mining ventures including coal mining and coal seam gas (CSG) extraction.

Particular hot spots at the moment include the Emerald, Theodore and Darling Downs regions of Queensland and the Namoi and Gwydir Valleys of New South Wales.

Increasingly mining and coal seam gas developments are impacting on the ability of our growers to farm, and to enjoy the amenity of their chosen lifestyle.

Further, and possibly more importantly, the expansion of mining and coal seam gas extraction into these areas poses significant risks to the ongoing productive capacity of the land and water resources.

Cotton Australia has recently taken up the challenge of developing a comprehensive Mining and CSG Extraction policy on behalf of its members.

This policy is still in its early stage of development, and therefore the views expressed in this submission are not formal Cotton Australia policy, but do reflect the views of the organisation at this stage.

Cotton Australia is also an active participant in a number of other policy developing processes including the National Farmers Mining & Coal Seam Gas Taskforce, and the NSW Irrigators Council Mining and Coal Seam Gas Reference Committee.

It is important to note that Cotton Australia is not opposed to the CSG industry, and indeed recognises that it offers many positive economic benefits to not only the country as a whole, but also to our regional and rural communities.



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However, just as the cotton industry must work within a framework that ensures its long-term sustainability, and the sustainability of the environment it operates in, Cotton Australia expects the CSG industry to work within a framework that not only ensures that the cotton industry can continue to prosper alongside the CSG industry, but will have the land and soil resources to thrive long after the CSG industry has moved on.

This submission will address the Inquiry's additional Terms of Reference.

## Additional Terms of Reference

The economic, social and environmental impacts of mining coal seam gas on:

- the sustainability of water aquifers and future water licensing arrangements;
- the property rights and values of landholders;
- the sustainability of prime agricultural land and Australia's food task;
- the social and economic benefits or otherwise for regional towns and the effective management of relationships between mining and other interests; and
- other related matters including health impacts.

### *The economic, social and environmental impacts of mining coal seam gas on the sustainability of water aquifers and future water licensing arrangements*

At present the legislative responsibility for managing mining/CSG extraction and its impacts rests primarily within State Governments.

For Cotton Australia, that means that it has a particular interest in the way that Queensland and New South Wales manage CSG exploration and extraction, and while there are a number of similarities between the approaches of both States, there are also significant differences.



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In Queensland, CSG exploration is carried out under the Petroleum Act 1923 and the Petroleum and Gas (Production and Safety) Act 2004. CSG production is administered under the Petroleum Act 1923, the Petroleum and Gas (Production and Safety) Act 2004 and the Mineral Resources Act 1989.

The Queensland Water Act 2000 has a very limited roll in CSG exploration and extraction. For example, while other users of water all require access and use licences issued under the Water Act, no such licence are required by the CSG industry.

In New South Wales, the legislative and regulatory framework of the CSG industry is being reviewed following the recent election of the NSW government.

However, in NSW the Water Management Act 2000 has a significant role to play with all extractions of CSG water, requiring water access licences; and a detailed aquifer interference regime is being developed.

Further, while the Commonwealth now has a significant legislative interest in the management of water resources across the Murray-Darling Basin through the 2007 Water Act, and the development of the Murray-Darling Basin Plan, the Water Act specifically excludes coverage of the ground water that forms part of the Great Artesian Basin (GAB).

This exclusion is highly relevant as it has been strongly argued that the waters primarily associated with CSG mining are contained within the GAB, rather than the sub-artesian aquifers that overlay the GAB.

However, the exclusion of the GAB by the Water Act should not be seen to totally absolve the Commonwealth of responsibility and influence in the area of CSG water management.

Firstly, there does still appear to be some argument as to whether the water within the CSG seams is always within the GAB, or whether in some instances the CSG seams are within sub-artesian aquifers, and therefore subject to the Water Act.

Further, and possibly more importantly, there can be no doubt that there is always some level of connectivity between the GAB and the sub-artesian aquifers. The



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degree of that connectivity will vary widely, from very low levels of connectivity to very high levels of connectivity.

Where connectivity exists it is axiomatic that as the pressure levels are reduced in the CSG aquifers, there will be an increased tendency for the rate of downward movement of water from the upper sub-artesian aquifers to increase towards the CSG aquifers.

Further, the physical process of CSG extraction, be it drilling, "fraccing" or other activities may actually physically damage the separation between the aquifers increasing the risk of upward movement from the GAB aquifers into the sub-artesian aquifers.

As a general rule the quality of water in the GAB, particularly waters associated with the CSG aquifers is of significantly lower quality than the waters of the sub-artesian aquifers. Therefore this upward movement could lead to water quality deterioration in the sub-artesian aquifers.

So we have a situation where artificial legislation specifically separates over-laying water sources, yet those water sources are naturally connected, and the level of that connectivity can be altered by human activity.

Cotton Australia sees the following as the key risks/issues associated with water that surround the CSG industry:

- Falling pressures and/or volumes in the sub-artesian aquifers, resulting in reduced access for domestic, urban, stock, irrigated agriculture and other industrial use.
- Quality contamination risks to aquifers – CSG activities resulting in declining quality levels in overlaying aquifers.
- The safe, economic and environmentally sustainable disposal/re-use of water extracted as a by-product of the CSG industry – this includes the safe disposal of "brine" or further by-products that result from the treatment of CSG extracted water.



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The risk of falling pressure levels/volumes in over-laying aquifers has to be seen in the context of the very significant reforms that Australian agricultural groundwater users have undergone over the past decade.

Almost universally, irrigators have seen significant cuts in their groundwater entitlements and annual allocations, to ensure the long-term sustainability of their aquifers.

In short, governments have consistently said to irrigators (and other water users) you must reduce usage if we are going to have sustainable aquifers. Irrigators have accepted this, and in many cases their access to groundwater has been reduced by in excess of 50%.

Therefore, not only does it make no sense, but it is an insult to those who have undergone the pain of reform, to allow the CSG industry to put the sustainability of those aquifers at risk, without adequate safeguards.

Cotton Australia would support the following actions to protect against the risks identified above:

*Falling pressures and/or volumes in the sub-artesian aquifers, resulting in reduced access for domestic, urban, stock, irrigated agriculture and other industrial use*

This risk of this occurring could be minimised by ensuring all water extractions are made under the conditions of the particular State's water act, which currently occurs in NSW, but not in Queensland.

Under this scenario, any depletion of the sub-artesian aquifers would have to be against a corresponding access licence which was issued in accordance with the appropriate water resource management plan.

While this should have the affect of minimising any unplanned reduction in the aquifer, it may mean the amount of water available for agricultural use could decrease as the most likely avenue of obtaining an aquifer access licence would be through the market.



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However, there are a number of avenues that may off-set the amount of access licencing required.

One option would be to allow substitution. That is the CSG companies would extract water as part of their process, treat it to an agricultural use standard or better, and supply it to irrigators who currently source some or all of their water from a sub-artesian aquifer.

The irrigator would then substitute sub-artesian water use for the treated water, reducing the pressure/volume impact on the sub-artesian aquifer.

This approach should be relatively easy to adopt, however, like most things it would have to be done within the framework of a well thought out policy structure.

Another alternative would be for the water extracted by CSG to be re-injected into the CSG aquifer, maintaining pressure in this aquifer, and therefore reducing the risk of increased downward water movement from the sub-artesian aquifers.

The feasibility of this option has not been fully tested, and there certainly are some practical limitations. The most obvious is that CSG extraction relies heavily on the reduction in pressure the CSG aquifers, so re-pressuring them while extraction is still occurring would be counter-productive.

However, it may work if as the CSG extraction moves across a region, the water is used to re-pressurize the CSG aquifers after gas extraction has ceased in that particular sector.

Both these models would require extensive monitoring and evaluations systems, which would detect any early negative impacts on aquifers, and most importantly a pre-existing plan by government on how it is going to act to reverse any negative effects if an early trend is detected.

In Queensland, the Government is relying heavily on “make-good” provisions, which oblige CSG companies to develop an alternative water supply plan for landholders should hydrological modelling indicate that there is a risk that a landholders water supply could be negatively affected.



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While this approach should be applauded, to a degree, because it is pro-active, there are likely to be a number of practical limitations including a limited amount of baseline information, and the real possibility that there may be no feasible alternative water source.

However, Cotton Australia greatest concern about this approach is that while it attempts to address an individual's on-going access to water, and that should be supported, there does not appear to be any government plan to ensure that the overall sustainability of the State's water resources is not impacted on.

Cotton Australia is aware that there are a number of proposals to use CSG water to create additional irrigation and use opportunities.

And while this may initially appear attractive, Cotton Australia believes the focus should be on trying to maintain a sustainable water balance, rather than encouraging new use.

Cotton Australia is strongly opposed to the:

- release of treated or untreated CSG water into natural streams, even during high dilution opportunities.
- evaporation of CSG water as a disposal option.
- use of CSG water to support "new use", when there are other feasible options which help sustain the existing water balance.
- Use of "fraccing" technology due to the greatly increased risk of chemical contamination of the aquifers

Cotton Australia strongly believes that the existing conditions imposed on CSG companies for exploration and extraction are entirely inadequate to ensure the protection of groundwater aquifers, and there is an urgent need to review the adequacy those conditions from within a framework where the long-term protection of the aquifer is paramount.



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While this is occurring, all exploration and extraction activity should cease on land which overlays significant production aquifers.

***The economic, social and environmental impacts of mining coal seam gas on the property rights and values of landholders***

While Cotton Australia's greatest concern focuses on the sustainable protection of production aquifers, it is also concerned about the impact of CSG mining on the property rights and values of landholders.

There is significant anecdotal evidence that CSG activity on a property reduces, rather than enhances that property's financial value.

Further, it significantly impacts on the ability of the landholder to fully enjoy the social amenity of the property.

Currently, landholders are at a significant disadvantage, as they do not have any right of veto over a CSG company carrying out mining activities, because the ownership of the resource rests with the Crown.

This gives the CSG companies a huge advantage when it comes to negotiating land access agreements with landholders. The CSG companies know that at the end of the day they cannot be denied access and if they wish to pursue access by purely following the legal minimum requirements, they will gain access at a minimum cost.

Ideally, to equalise negotiations landholders should be given an ultimate power of veto. If this is not possible, government's should require CSG companies to compensate landholders to a level that does not just recognise the strict loss of production capability caused by their activities, but also compensates for the overall inconvenience to their operation and the alienation from their land.

Compensation agreements should include annual payments, tied to the land. This should go some way towards underpinning the value of properties.



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Ideally, compensation should be at a level where a reasonable landholder would see CSG activities on his or her land not as an intrusion, but as a valuable source of diversified income.

***The economic, social and environmental impacts of mining coal seam gas on the sustainability of prime agricultural land and Australia's food task***

Cotton Australia cannot understand the headlong rush of the CSG industry seeking to extend their activities across some of Australia's most valuable cropping land, with the active support of State governments who must of course issue exploration and extraction licences.

While Cotton Australia is no expert on the spread and size of CSG reserves, its limited knowledge suggest that there are adequate reserves in areas overlaid with secondary quality agriculture land to allow at least initial developments to occur on that country.

As Cotton Australia understands it, the Queensland Strategic Cropping Land Policy is unlikely to protect high value cropping land from CSG activity as it is considered that CSG extraction will not cause permanent alienation of the cropping land for more than 50 years.

The truth of the matter is that while CSG companies may be able to argue in theory that they will be able to rehabilitate once they have finished extraction, there is no evidence to prove this will be the case.

The situation in NSW is not clear, with the coalition government in the midst of developing its strategic regional land use policy. Once this is finalised, there should be greater clarity on the degree of protection given to highly productive cropping land.

To provide time for this to occur, and for Australia to fully debate the merits of mining verus food and fibre production Cotton Australia believes there is a strong case for a moratorium to be placed on mining developing on first class cropping land.



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***The economic, social and environmental impacts of mining coal seam gas on the social and economic benefits or otherwise for regional towns and the effective management of relationships between mining and other interests.***

As stated from the outset Cotton Australia is not opposed to the sustainable development of a CSG industry. Cotton Australia is also mindful of the fact that many of our regional towns that rely strongly on traditional agriculture need to diversify their economic base if they are to survive.

CSG may offer that diversification, but it can't be allowed to develop if it is at the cost of maintaining sustainable water resources.

***The economic, social and environmental impacts of mining coal seam gas on other related matters including health impacts.***

This is well outside Cotton Australia's expertise, however it is clear that all industry must take every possible step to mitigate negative health outcomes, and governments must ensure companies act, even when they are reluctant to do so.



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