

Committee Secretary

Senate Standing Committees on Environment and Communications

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11th January 2018

Dear Standing Committee on Environment and Communications

*Re: Senate Inquiry into Water Use by the Extractive Industry*

Thank you for the opportunity to provide comment into the *Senate Inquiry into Water Use by the Extractive Industry*.

Farmers for Climate Action is an inclusive movement of thousands of Australian farmers, agricultural industry leaders and interested community members committed to putting those on the frontline of climate change front and centre in creating climate solutions.

Farmers for Climate Action believe in preserving the viability of Australian agriculture for future generations of Australian farmers, recognising that Australia's future lies with clean energy, clean water and food security.

Agriculture is Australia's most exposed industry to climate change and that Australian farmers are on the front line of extreme weather events. Right across our country, farmers are already witnessing the impacts of climate change; from increased severity of tropical cyclones in the north, changing rainfall and weather patterns and the increased likelihood of drought and heatwave conditions through vast areas of our country.

Farmers' reliability of production is already challenged and impacted by climate change. Recently compiled data from the Australian Bureau of Agricultural and Resource Economics and Sciences demonstrates that despite on-farm adaptation, climate change is impacting on agricultural productivity across many of Australia's food producing regions.

Emerging social and environmental challenges occurring in Australia and globally demonstrate the need for a proactive, preemptive and innovative response to the way we are managing our environment and food production systems.

In response to the impacts of climate change being felt on Australian farms, Farmers for Climate Action is committed to supporting a rapid transition away from fossil fuels and towards a renewable energy future.

Farmers for Climate Action has worked actively with farmers and graziers across Australia to build awareness of the impacts of extractive industries on groundwater, with our recent petition challenging the granting of a free, unlimited groundwater licence to the Adani Carmichael project gaining the support of over 100,000 Australians. Farmers for Climate Action has actively engaged Central and Western Queensland graziers in protecting groundwater: hosting community workshops and engagement forums across Queensland.

All over Australia, farmers are coming under increasing pressure from competing land uses; including the mineral and extractive industries. As an organisation committed to the long term sustainability of the Australian agricultural sector, Farmers for Climate Action subsequently welcomes the opportunity to provide a submission to the *Senate Inquiry into Water Use by the Extractive Industry*.

Please see below responses to the terms of reference outlined for the inquiry.

**a the social, economic and environmental impacts of extractive projects' take and use of water;**

Water is one of Australia's most vital natural resources, essential to food production and the viability of rural farming communities. Australia is notable for having the lowest average rainfall of all continents, and some of the most variable inflows to river systems. In addition to rainfall, Queensland and much of Eastern Australia relies heavily on groundwater and particularly the water of the Great Artesian Basin.

Farmers for Climate Action believes that social, economic and environmental outcomes must not be compromised. The nature of extractive industries means that they have both positive and negative impacts on rural and regional Australia, with short term economic gain often being negatively outweighed by long term negative environmental and social impacts. Farmers for Climate Action strongly believes that the resource and extractive industries must apply a precautionary principle to take all responsible steps to avoid negative short and long term impacts on Australia's aquifers, water systems, other water users and rural communities.

Farmers for Climate Action believes that agriculture is the backbone of rural prosperity across Australia, highlighting recent findings that agriculture is Australia's fastest growing contributor to national GDP (<http://southburnett.com.au/news2/2017/09/agriculture-fastest-growing-sector/>) and is a significant provider of sustainable long term employment opportunities. Subsequently, Farmers for Climate Action strongly argues that the sustainability, profitability and integrity of Australia's food and fibre production systems must not be compromised in the name of short term extractive industry growth. This includes ensuring that there is no net decline to

the quality of quantity of water available to the agricultural sector as a result of extractive activities.

Although Farmers for Climate Action welcomes coordinated policy efforts to manage Australia's water resources, the National Water Initiative continues to have significant failings, undermining the capacity of the system to achieve a nationally-compatible, market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimises economic, social and environmental outcomes.

As the Standing Committee will recognise, the management of water use in mining has been a particularly difficult issue to address. The National Water Commission's 2010 Mining Position Statement observed that the mining industry's water use poses a number of water management challenges including:

- lack of integration of mine planning and operations in regional water planning processes;
- absence of water markets in some mining areas and barriers to trading where markets are established;
- uncertainty and insecurity in water supply arrangements;
- differences between the mining industry's sectoral regulatory regime and the water sector's regulatory regime, including regulatory changes resulting from the national water reform agenda; and
- increasing community concerns regarding the cumulative impacts of mining on water resources.

In addition to the above, Farmers for Climate Action recognises that disjointed management of water resources can lead to substantial conservation risks; impacting the natural environment, primary producers and Australia's traditional owners. This is reflected in the modelled impacts of groundwater extraction from the Great Artesian Basin for the Adani Carmichael mine proposal in the Galilee Basin, with serious concerns that water extractions for mine dewatering purposes will reduce water reaching the Mellaluka and Doongmabulla Springs complexes. These springs are some of the largest examples remaining and provide habitat for many species of specialised plants that are only known from spring-fed wetlands. If the springs go dry, even temporarily, endemic species will not survive and will become extinct at the site.<sup>1</sup>

**b existing safeguards in place to prevent the damage, contamination or draining of Australia's aquifers and water systems;**

The 2013 Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) research priorities have led to improvements in the scientific understanding of the impacts of coal seam gas developments and large coal mining

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<sup>1</sup> Quiggin, J 2017 'Growth Opportunities and Constraints for Agriculture in Northern Australia: Alternatives to the Adani Project'

developments on water resources. However, it is critical to note that the IESC does not extend to shale or tight gas and subsequently requires urgent attention.

Farmers for Climate Action has significant concerns relating to our scientific understanding of underground water resources, the resilience of these systems, the impacts which climate change is likely to have upon in-flows and system pressure and potential chemical contamination arising from extractive processes.

*Hydrology: Understanding individual and cumulative impacts*

Farmers for Climate Action strongly believes that there is a clear need to undertake further research to understand the function of underground water systems and improve the scientific understanding of how extractive industry activities will impact not only as individual projects, but also as cumulative development. Gaps identified across jurisdictions include:

- Structure and composition of sedimentary basins
- Understanding of cumulative impacts over time
- Bore integrity and permeability of seal rocks
- Drawdown - volume and distance
- Compaction and consolidation parameters
- Land subsidence and subsequent aquifer fracturing
- Evaporation and water loss from mine voids at the end of mine life
- The impacts of evaporative dams
- Complexity of movement within groundwater resources, and surface recharge modelling
- The establishment of baselines; particularly as they relate to the implementation of make good agreements and natural fluctuations.
- The impacts of fracturing fluids on the hydrogeological environment; including the residual effects and immediate impacts.
- The disposal of contaminated water resulting from open cut and underground mining operations and the management of flowback, produced water and waste arising from both large scale and coal seam gas production.

Farmers for Climate Action is also deeply concerned with the conditions in some states which allow for the discharge of legacy contaminated water under temporary emissions licenses and believes that inadequate research has been undertaken to assess the impact on landholders and environments down stream.

The above highlights the significant number of areas currently not adequately addressed under the 2013 Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development research priorities. Other issues, including the accumulation of chemicals through the food chain, mitigation costs, cumulative chemical impacts upon the

environment and remediation costs also require urgent consideration to protect the integrity of Australia's food and fibre production systems.

Farmers for Climate Action also urges urgent consideration be given to the changing inflows into water systems as a result of climate change, encouraging a precautionary approach to avoid damage and destruction to Australia's most precious resource.

**c any gaps in the regulatory framework which may lead to adverse social, economic or environmental outcomes, as a result of the take and use of water by extractive projects;**

As identified above, there are significant gaps in the regulatory framework which are likely to lead to adverse social, economic and environmental outcomes. Farmers for Climate Action calls upon the Standing Committee to urgently identify measures to address the known gaps in the regulatory framework in order to ensure the long term sustainability and profitability for Australia's food and fibre production and avoid irreversible damage to our natural systems.

Future research must address all of the points identified above, along with early warning triggers; robust, rigorous and comprehensive oversight of environmental conditions.

### **Protecting the Great Artesian Basin**

The Great Artesian Basin is one of Australia's most essential water supplies, the importance of which cannot be overstated. There is a clear need for greater understanding of the importance of water pressure for agriculture and groundwater dependent ecosystems (as identified above). Resource developments across the Great Artesian Basin, including in the Galilee Basin pose significant risks through potentially triggering a decline in artesian pressure at local and sub-basin scales.

In the comprehensive 2013 report '*Draining the Lifeblood*' asserts that risks to the Great Artesian Basin as a result of extractive industries in the Galilee Basin have not been sufficiently assessed despite the close proximity to the Great Artesian Basin recharge beds, and the likelihood of significant impacts on regional groundwater resources.

'The allocation of water to the Adani project has been the subject of substantial controversy. The main debate concerns the grant of an unlimited license to use groundwater, free of charge. The Queensland government claims that this is only a matter of dewatering the mine and that the amounts of groundwater taken will likely be modest. However critics have claimed that the amount will be substantially greater than the government suggests, and that damage to the

resource for neighboring landholders may be substantial as result of the development of the Adani project and subsequent mines in the region.’<sup>2</sup>

**e the effectiveness of the ‘water trigger’ under the Environment Protection and Biodiversity Conservation Act 1999 , and the value in expanding the ‘trigger’ to include other projects, such as shale and tight gas; and**

Farmers for Climate Action is strongly supportive of the establishment and enforcement of comprehensive regulatory frameworks for large scale mining and coal seam gas operations which will protect agricultural production from any negative impacts. Adequate protection for agricultural production has not been forthcoming under the current regulatory framework, with examples including the granting of approval to the Adani and Shenua projects, both indicating a broken system failing to protect agriculture.

At this point in time, it is impossible to assert whether the ‘water trigger’ provisions will be effective, however there are significant concerns among Australian farmers and graziers that oversight will be inadequate and responses delayed. Subsequently we call for greater transparency over the implementation of the ‘water trigger’ and urge this to be incorporated into supplementary legislation.

The above gaps in knowledge highlight the importance of improving the regulatory framework, particularly as it relates to onshore gas extraction (shale / tight/ coal seam). Failure to address these gaps is likely to lead to irreversible damage to Australia’s precious water resources.

Farmers for Climate Action strongly urges the Standing Committee to advance additional protective measures for the agricultural sector, including bioregional assessments to accurately assess cumulative impacts of multiple projects within a region / catchment / sub-basin and the application of the precautionary principle

**f Other: Scientific information, adequate monitoring and the application of the precautionary principle.**

The above points have highlighted the critical need for investment in the development of a scientific basis for making decisions which are likely to have irreversible impacts. Examples of the types of investment required in order to address the identified gaps – include the investments made in the CSIRO Sustainable Yields analysis, and the investment made through the National Environmental Science Programme Earth Systems and Climate Change Hub that is examining Australia’s water futures.

In a water constrained country like Australia, it is essential that adequate investment in research underpins our scientific understanding of water resource planning into the future.

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<sup>2</sup> Quiggin, J 2017 ‘Growth Opportunities and Constraints for Agriculture in Northern Australia: Alternatives to the Adani Project’

Farmers for Climate Action is strongly supportive of the implementation of adequate monitoring and independent oversight to ensure that environmental conditions placed upon extractive industries are strictly adhered to. With particular reference to the Adani Carmichael proposal, both the Queensland and Federal Government's have repeatedly claimed that the mine has the strictest environmental conditions in Australian history, yet little detail has been provided as to the enforcement and oversight of the conditions.

Lastly, Farmers for Climate Action again highlights the irreversible nature of damage to Australia's ground and surface water resources, particularly in light of the impacts of climate change already being felt across the country. Subsequently, Farmers for Climate Action endorses the application of the precautionary principle in considering potential impacts arising from extractive industry activities. With unknown tipping points threatening to undermine the resilience of water systems, the eco-systems dependent on our water resources, the agricultural sector and regional communities; Farmers for Climate Action strongly urges the Standing Committee to recommend a cautious approach to extractive development and to place long term sustainability at the heart of decision making.

### **Conclusion**

Thank you for the opportunity to provide feedback to the *Senate Inquiry into Water Use by the Extractive Industry*.

Please do not hesitate to contact me to discuss this submission in further detail.

***Please note, as an Associate Member of the National Farmers Federation, Farmers for Climate Action also support and endorse the core recommendations contained in the the National Farmers Federation submission to this inquiry.***

Sincerely

Verity Morgan-Schmidt

CEO Farmers for Climate Action