



School of Agriculture and Food Sciences

**Press release. Coal seam gas mining assault on farming, water resources and land rights in Queensland (Australia)**

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The Queensland Government and the fossil fuel industry seem intent on ramping up the assault by mining of coal seam gas (CSG, methane) upon arable farming and grazing land and the groundwater aquifers in the iconic Darling Downs. This is one of the most productive agricultural areas in the world, underpinned by fertile Vertosol black soils and the aquifers of the Great Artesian Basin. Farmers have adopted precision agriculture and scientific water management that maintain soil fertility and have enabled continued and record production of food and fibre even through the recent long drought which reduced agricultural production across much of eastern Australia.

In a [scientific paper just published](#) with [supplemental material](#) in the *Proceedings of the Royal Society of Queensland* “I outline the way in which CSG extraction is irreversibly affecting this Darling Downs region.” said Professor Peter Dart.

So, why is extraction of coal seam gas in the Surat Cumulative Management Area in southern Queensland threatening the future viability of this agroecosystem? The gas is extracted by more than 13,000 wells from the Walloon Coal Seams and the four major gas companies involved have been given the go ahead by the State and Federal Governments to expand this to a predicted 22,000 wells.

Applications for permission to drill more than eight thousand more wells by Santos and Origin are currently being assessed for damage to the nation’s water systems by the Independent Expert Scientific Committee on Coal Seam Gas, under the trigger established by the Federal Government. The issue is the acknowledged depletion caused by the CSG mining to groundwater storage aquifers in the GAB on which the agriculture, springs and ecosystems depend.

So why do we need more wells when most of the gas produced is exported overseas from the three large liquefaction plants on Curtis Island near Gladstone? The Queensland Government has not regulated that any of this gas be retained for use in Australia, hence the current gas supply problem for eastern Australia. The predicted flow of gas from individual wells has not eventuated and this has meant more wells need to be drilled to maintain economic production and prevent further write downs of the capital value of the oil and gas industry companies.

Farmers are very concerned about the induced land subsidence that has already occurred from CSG extraction from the Walloon aquifers. The gas is held naturally in small layers of coal, sealed in by water pressure trapped by the depth of rock strata and sediment above the coal seams. This associated water needs to be pumped out to release the CSG from the coal. Currently about 54 gigalitres of water are extracted per year from the Walloon Coal Seam aquifers, a very substantial

volume, equivalent to about 40% of the volume extracted from all the aquifers in the region, used by farmers for irrigation and municipal drinking supply.

Considerable subsidence has occurred across the Surat Basin over the past 10 years as thousands of gas wells have been drilled. Subsidence occurs when the land surface collapses into the voids, or depressurised zones, precipitated by CSG mining, hundreds of metres below the farm. Subsidence can be patchy across the farmer's paddock, leading to ponding of water preventing machinery movement. It disturbs the flow of gravity-fed irrigation water and the management of flood waters and is irreversible.

The associated water by-product itself contains salt which needs to be removed by large reverse osmosis plants, before it can be used for stock and domestic purposes. Large volumes of brine are produced in the process, currently stored in more than 40 large dams because there is no way currently permitted to safely dispose of it except pumping out to sea, but deemed by the gas companies to be too expensive a solution. Someone will need to dispose of about 5 million tonnes of salt. Contamination of the Murray Darling Basin by this salt needs to be prevented, as the basin already has an overload of salt. The State Government is accountable for keeping salinity in control under the Basin Sustainability Management strategic plan 2030.

The prevailing self-regulation, lack of baseline assessment and inadequate monitoring of the mining processes and causal effects, is an abrogation of government responsibility and the precautionary principle which is a key plank of the *National Strategy for Ecologically Sustainable Development* endorsed by governments in 1992. As the industry is still ramping up more CSG production, there is precious little time to protect agricultural land and the natural systems that underpin agriculture from potentially irrevocable damage.

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