



GISERA
Gas Industry Social and
Environmental Research Alliance

Newsletter



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Message from the Director

It has been a very busy and successful 2016 for GISERA. We have expanded our research activities into New South Wales and we continue our endeavour to provide trusted and independent information on the impacts and opportunities of Coal Seam Gas (CSG) development to the communities living in regions in which gas exploration and development are occurring. Our work is also valuable to industry and government, assisting with an increase in overall knowledge to ensure best possible outcomes.

As part of the expansion, we have commenced a new research portfolio on potential Health impacts of gas industry development. This research will review the potential for CSG activities to impact on human health, with the first project already approved by the NSW Regional Research Advisory Committee (NSW RRAC) to commence in the Narrabri region.

Further to the health project, seven other research projects to be undertaken in NSW have also been approved by the NSW RRAC. These projects cover groundwater, social and economic impacts, and greenhouse gas emissions.

The work being completed for the greenhouse gas and air quality emissions in Queensland has achieved significant milestones, including [live streaming of air quality data](#) from CSG regions through a network of five ambient air quality stations in the Chinchilla, Miles and Condamine region of QLD. Live streaming of [data](#) was launched on 25 August 2016. Take a look at the [fact sheet for](#) more information about the project.

The [Ensuring biodiversity offsets](#) project looked at identifying genetic and demographic factors that may limit the success of establishing a rare daisy (*Rutidosis lantana*) in new locations. This project's findings were presented in a workshop in September 2016, attended by regulators, industry and consultants.

Information about GISERA and region specific project updates have been provided to NSW stakeholders, including the Narrabri Council, Narrabri Gas Project Community Consultative Committee, and you can find a copy of those presentations [here](#).

In QLD, the 2016 CSIRO [Community Wellbeing and Responding to Change](#) survey was completed and presented publically at meetings and forums in November. The outcomes compared community wellbeing, adaptation and attitudes toward CSG development in the Western Downs and Eastern Maranoa against outcomes from the 2014 survey. The presentations were attended by government, including the Community Development team from the Western Downs Regional Council and community groups such as the Basin Sustainability Alliance and industry stakeholders. The [presentations](#) were made at The University of Queensland-AgForce Projects forum, on Thursday 17 November in Chinchilla, as well as a forum hosted by the Queensland Department of Natural Resources and Mines CSG Compliance unit on 18 November 2016.

With the addition of 10 new research projects and our continued communication and engagement about our research to the community, local, state and federal governments and the gas industry, 2017 will be a big year as we continue to generate research outputs for GISERA.

Your thoughts and comments in relation to our research projects are always welcomed. Please contact us via the GISERA website contact page. I look forward to sharing more research updates with you in the future.

Regards,

Damian Barrett, Director GISERA, CSIRO Energy



News and Events

This year has been a year of expansion for GISERA into new geographic and subject areas.

We have commenced four projects in NSW focussed around the Narrabri region and a further four projects for other areas of NSW were approved in October 2016.

For more information about these projects click on the links below:

[Social baseline assessment of the Narrabri region of New South Wales in relation to CSG development](#)

[Analysing economic and demographic trajectories in New South Wales regions experiencing CSG development and operations](#)

[Regional methane emissions in New South Wales CSG basins](#)

[Impacts of CSG depressurisation on the Great Artesian Basin \(GAB\) flux](#)

[Assessment of water quality risk to farmers' bores and spatial design of groundwater monitoring networks](#)

[Improving the representation of the impact of coal seam gas extraction in groundwater flow models for the Namoi region](#)

[Decommissioning pathways for CSG projects](#)

[Human health effects of CSG Activity: Review and Study Design](#)



Social and economic

A new project, [Social baseline assessment of the Narrabri region of NSW in relation to CSG development](#), was approved by the NSW RRAC in July 2016 and will provide further insight into community wellbeing and function.

This project will complement two existing data sets from the 'Community Well-being and responding to Change' surveys conducted in 2014 and 2016 in the Western Downs and Eastern Maranoa communities of QLD; thereby providing important comparison of community well-being across the NSW and QLD border. Furthermore providing NSW the opportunity investigating wellbeing at an early stage of industry development.

In addition, another new [project](#) has commenced analysing economic and demographic trajectories in NSW regions undergoing CSG development and operations. This project aims to identify current levels and trajectories of economic, social and demographic variables in CSG regions within NSW and investigate what options are available to improve the trajectory of these variables.



Surface and groundwater

Many of our surface and ground water projects in QLD'S Surat basin are being completed, with the future focus on water research moving towards NSW and building on the research we have undertaken in QLD.

A [report](#) has been released showing that injecting large volumes of treated CSG-produced water at suitable locations within the Surat Basin is unlikely to cause any harm to groundwater quality. However, to achieve this the water has to be treated adequately to eliminate the risk of polluting groundwater with arsenic – a generally immobile toxic element that occurs naturally in some of the rock formations being considered for reinjection.

This report follows on from the research of [Reinjection of CSG Water](#) research completed in November 2015.



Agricultural land management

An agricultural land management knowledge transfer session was held in Toowoomba on 2 December 2016, with representatives from government and industry. This was an important meeting to discuss the outcomes of the six current projects; [Preserving agricultural productivity](#), [A shared space](#), [Farm-gas design](#), [Making tracks, treading carefully](#), [Without a trace](#) and [Telling the story](#). This forum provided information and promoted discussion about how government and industry can use outcomes of this research in decision making and policy development. A copy of the presentation can be found [here](#).



Greenhouse gas and air quality

The Greenhouse gas and air quality emissions research looks to improve characterisation and management of gas industry greenhouse gas impacts. You can view data, from several air quality monitoring stations, being streamed live on Queensland's Department of Environment and Heritage Protection [website](#).

Research has also commenced to [identify and quantify methane emissions sources in the Pilliga region](#).



Marine Environment

The [marine project](#) was completed in 2015 and no further projects have been



Terrestrial biodiversity

In July a [report](#) for the GISERA Fire Study was released. This project

developed in the Curtis Island region near Gladstone.

determined how sensitive animals and plants are to burning events in CSG development areas. [Knowledge transfer session](#) on our three terrestrial biodiversity projects ([Fire ecology](#), [Habitat selection by two focal species](#) and [Rare daisy translocation](#)) was provided to industry stakeholders in May 2016.



Health

The [first project](#) for our newest research area focusses on reviewing current information for the purpose of designing a health effects study of CSG activities. The review will receive input from community stakeholders, government, industry, and an expert consultation group to ensure important issues are captured in the study design. The outcome will be a plan for a comprehensive study on potential health impacts, including development of a conceptual model to inform the methodology, for later roll-out in NSW and QLD.



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