



# FOOD SECURITY AND REGIONAL AUSTRALIA 2015-2016

## Program Leader - Associate Professor Vaughan Higgins

**Members** - Associate Professor Branka Krivokapic-Skoko, Dr Joanne Millar

**Adjunct Members** - Ms Janice Sangster, Ms Pennie Scott, Ms Jackie Priestly, Associate Professor Andrew Rawson

## OVERVIEW

This SRA was established in March 2014 with the aim of improving understanding of food system vulnerability in rural and regional Australia by evaluating the adequacy of existing policy and planning responses to vulnerability, and conducting research that contributes to the development of more sustainable and resilient food systems.

In 2015/16 three research projects associated with this SRA were completed. Two of these were cross-centre projects with CSU's Graham Centre for Agricultural Innovation, one of which looked at farm biosecurity practices and the management of Emergency Animal Disease; the other (which was managed by the Graham Centre) involved field trials on a select number of farms across NSW and Victoria to test stubble management practices to see which work best at sequestering carbon.

Associate Professor Vaughan Higgins, a social scientist undertook the social component of this project which involved interviews with growers and grower groups.

The third completed project, done in partnership with Swinburne University of Technology, looked at the social factors influencing technology adoption by rice growers across a number of examples including (but not limited to) new rice varieties, precision farming, electronic communication and biosecurity practices.

There are two on-going projects associated with this SRA, one looking at new immigrants improving productivity in Australia Agriculture which is also aligned with the Regional Entrepreneurship and Development SRA; and another, implemented in the sub-Saharan Africa, on farm power and conservation agriculture. This project is also aligned with the Improving Rural Livelihoods and Environments in Developing Countries SRA. More information about these projects is contained in the respective SRA reports.

In 2016 saw a number of journal publications as outputs from completed SRA research

projects produced.

An interesting project/research activity undertaken by ILWS Adjunct Ms Jackie Priestly, a lecturer in Nutrition and Dietetics with CSU's School of Dentistry and Health Sciences and Mrs Pollyemma Antees, an Accredited Practising Dietitian from North West Nutrition in 2016 looked at access of healthy food and diets in Western NSW 2104.

The project was funded by a NSW Ministry of Health (not administered by ILWS) with in-kind assistance from 22 organisations that helped with data collection.

Results were based on a 2014 survey of grocery and fresh fruit and vegetable stores across the Murrumbidgee, Western NSW, Far West Local Health Districts and the New England section of the Hunter New England Local Health District. The researchers found that a basic healthy diet could cost up to a third of some family's income support payments.

As well as producing information on Food Access and Affordability 2014 for each of the health districts survey, the researchers have produced a summary brochure [Tackling Food Insecurity: getting healthy food on the table](#).

## CURRENT PROJECTS

**New immigrants improving productivity in Australian Agriculture.** Krivokapic-Skoko, B. & Collins, J. (2012-2015) Rural Industries Research and Development Corporation. Total value \$436,932. Led by UTS, ILWS subcontract \$61,634 [Details](#)

**Farm Power and Conservation Agriculture for Sustainable Intensification.** Finlayson, M., Blackwell, J. & Krivokapic-Skoko, B. (2013 -17) ACIAR, via CIMMY (International Maize and Wheat Improvement Centre), \$544,573 [Details](#) (This project is aligned with Improving Rural Livelihoods and Environments in Developing Countries SRA)

## COMPLETED PROJECTS

**Social factors influencing technology adoption in the rice industry.** Higgins, V. & Bryant, M. (2014-16) In partnership with Swinburne University of Technology, RIRDC, \$129,000 [Details](#)

**Farm biosecurity practices and the management of Emergency Animal Disease.** Hernandez-Jover, M., Higgins, V. & Bryant, M. (20013-14) Cross-centre project with the Graham Centre for Agricultural Innovation & Department of Agriculture, \$67,746. [Details](#)

**Engaging landholders to adopt profitable and sustainable carbon cropping practices.** Higgins, V. and other Graham Centre members). (2012-15) Action on the Ground Project, Department of Agriculture (Commonwealth). [Details](#)

## RESEARCH ACTIVITY

**Access and affordability of healthy food and diets in Western New South Wales, 2014.** Priestly, J. & Antees, P. (2016) NSW Ministry of Health, \$66,000 (not managed by ILWS) [Project details](#)

## INTERNATIONAL ENGAGEMENT & LINKAGES

In 2016 Associate Professor Vaughan Higgins gave a presentation on Ordering precision agriculture: The socio-material shaping of technology adoption and farming practices at the XIV World Congress of Rural Sociology, in Toronto, Canada, and on Constructing change readiness: the positioning of change recipients in an agricultural context at the 2016 British Academy of Management Conference, in Newcastle, in the U.K.

## REGIONAL & NATIONAL ENGAGEMENT

As it was social research, Associate Professor Vaughan Higgins' projects involved engaging with landholders, growers, grower groups and other stakeholders through in-depth qualitative interviews and focus groups. The technology adoption by rice growers project for example meant engaging with growers and stakeholders across the Murrumbidgee Irrigation Area (MIA), Murray Valley Irrigation Area (MVIA) and Coleambally Irrigation Area (CIA).



The findings from the access and affordability of healthy food and diets in Western NSW project certainly attracted plenty of radio (across Australia) TV and print media coverage after CSU media issued a [release](#).

There were also ‘launches’ of the resulting info graphics highlight action options at Wagga Wagga and Dubbo in local community gardens in November 2016.

## KEY PUBLICATIONS

Hernández-Jover, M., **Higgins, V.**, Bryant, M., Rast, L. & McShane, C. (2016) Farm biosecurity practices and the management of emergency animal disease among commercial beef producers in Australia. *Preventive Veterinary Medicine* 134: 92-102

Richards, C. & **Higgins, V.** (2016) Trade liberalisation and Australian biosecurity: opportunities and challenges under the ‘Shared Responsibility’ approach. *Farm Policy Journal* 13: 1-9

**Higgins, V.**, Bryant, M., Hernández-Jover, M., McShane, C. & Rast, L. (2016) Harmonising devolved responsibility for biosecurity governance: the challenge of competing institutional logics. *Environment and Planning A* 48: 133-1151

**Higgins, V.**, Dibden, J. & Cocklin, C. (2015) Private agri-food governance and greenhouse gas abatement: Constructing a corporate carbon economy *Geoforum* 66: 75-84

## In Focus

### Social Factors Influencing Technology Adoption in the Rice Industry (2014-16)

#### Funding

Rural Industries Research and Development Corporation, \$129,000

#### Investigators/Researchers

Associate Professor Vaughan Higgins and Associate Professor Melanie Bryant (Swinburne University of Technology)

#### Description

The Australian rice industry has engaged in a number of change initiatives involving technologies aimed at increasing on-farm production efficiency, water use efficiency and environmental management. However, little is currently known about the range

of influences on growers’ adoption practices, including why and how they adopt or do not adopt, or the challenges that both stakeholders and growers face in implementing new technologies. This research makes an important contribution by investigating the social factors that influence rice growers’ adoption of technology, and how the industry can work better with growers to ensure that the rice industry maintains and increases competitive advantage.

The main aim of this two-year project was to investigate the social factors influencing technology adoption by Australian rice growers across the Murrumbidgee, Murray and Coleambally Irrigation Areas. In doing so the project focused on four specific objectives:

1. Identify specific enablers that will encourage late or non-adopters to engage in change practices (Grower level);
2. Investigate the key social drivers that will enable increased technology adoption across the rice industry (Industry level);
3. Explore communication methods that growers use to become informed of changes in the rice industry, and provide recommendations as to whether or how current communication methods are effective;
4. Develop a set of priorities and recommendations that RIRDC and rice industry stakeholders can implement to drive further change adoption.

The project used qualitative research methods consisting of semi-structured interviews undertaken in two concurrent phases. In the first phase, interviews were conducted with 20 key rice industry stakeholders, including farm advisors and agronomists as well as representatives from organisations such as Rice Research Australia, Ricegrowers Association of Australia, Rice Research and Development Commit and NSW DPI.

In the second phase, interviews were conducted with 59 rice growers from across the three main rice growing regions – Murray (25 interviews); MIA (25 interviews), and CIA (9 interviews). A purposive sampling technique was used to ensure that a diversity of enterprises and growers were represented.

## Outputs

A final report was submitted to RIRDC in October 2016 outlining key findings and recommendations. The report will be available on the RIRDC website.

## Outcomes

Expected outcomes from this research include:

Providing information to industry stakeholders about key contributors to late or non-adoption of technology (e.g. economic, skills-based, resources, education, sources of information etc.) as well as reasons why early adopters are willing to engage in change. This information can be used by stakeholders to develop specifically targeted change strategies or to consider ways in which skills training and education can be extended, developed and communicated to growers.

Developing an understanding of effectiveness of current information dissemination strategies used to inform growers of grower technologies. This information can provide stakeholders involved in communicating information with data to inform the development of more effective communication strategies including the nature of information used; how it is targeted to growers; and use of appropriate media to meet growers’ needs