



## FOOD SECURITY IN QUEENSLAND

### Food for the future

A project titled Vital Soils is about to get underway in the Mareeba region. The project, proposed by Trust Nature FNQ, in partnership with the Northern Gulf Resource Management Group and Tablelands Regional Council will provide high quality compost at competitive prices to land managers in the region.

The composting technique to be used is a safe, thermal-aerobic process, in which the compost is used as a medium for growing beneficial soil microorganisms, diverting resources from landfill and eliminating potential on-farm environmental hazards. Concepts such as this are becoming a bigger part of our agricultural landscape, known as regenerative agriculture, which promotes regenerative farm management practices - reducing the need for fertilisers and chemicals, supporting soil structure & health, building carbon and reducing overall energy use.

At its core regenerative agriculture aims to;

- support the regeneration of the resource base rather than just 'sustain' it
- enhance natural ecosystem function and
- stimulate soil processes

The composting project in the Mareeba region is just the beginning. Trust Nature FNQ and the Northern Gulf Resource Management Group and partners hope to promote more regenerative agricultural methodologies through education to support land managers. Bio-Vital™ Compost, is a tested, high value, vital, soil amendment offering a range of agricultural and environmental benefits. Results from local trials have been very promising, reducing fertiliser use by a minimum of 60% and fertiliser use has dropped a staggering 90% with the same yield.

The compost can be applied in conjunction with numerous existing and innovative farming techniques to maximize the benefit to soil health. Subjects including composting, compost tea, Keyline farming, bio-fertiliser production and other regenerative agriculture methodologies will be covered in the comprehensive RegenAG workshop series, being organised by Kym Kruse, Director of FreeRange Permaculture, the Queensland convenors of the series.



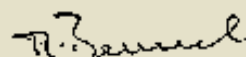
The RegenAG courses are approved under the Australian Government's Farm Ready scheme so Australian land managers, primary producers (and their workers and family members) and Aboriginal & Torres Strait Islanders will be eligible to attend the courses with access to the Farm Ready subsidy. More information is available at [www.RegenAG.com](http://www.RegenAG.com).

### From the Chair

Food security has been defined by the Dieticians Association of Australia as having access by all people, at all times to sufficient food for an active and healthy life. In terms of Natural Resource Management, we most often concern ourselves with land capability and environmental sustainability issues around food production as well as the ongoing viability of Australia's primary industries.

This edition of the NRM Rumble focuses on food security in Queensland and how our regional natural resource management bodies are supporting agricultural industries to respond to modern pressures around food production. The stories are diverse and include the installation of new technology to reduce herbicide usage in the horticultural industry; how resilient farming system trials are helping deal with future fibre security and climate change impacts; how the Grains BMP program is helping growers improve their business and achieve productivity gains; a Vital Soils project which helps build regenerative agriculture in remote Northern Queensland; and how the quality and quantity of water along with good agricultural land is needed to ensure agriculture continues in the Queensland Murray-Darling Basin.

I hope you enjoy this edition of the Rumble. For more information about the work of Queensland's regional natural resource management groups please visit [www.rgc.org.au](http://www.rgc.org.au).



Mike Berwick AM,  
Chair Queensland  
Regional NRM Groups  
Collective



## Protecting resources boost food security: QMDC

Underpinning Australia's food security is the sustainability of its natural resources. In the Queensland Murray-Darling Basin, QMDC is working to secure both the quality and quantity of water available to ensure the existence of a healthy landscape, as well as the protection of prime agricultural land.

Queensland Murray-Darling Committee (QMDC) Chief Executive Officer Geoff Penton said the Queensland section of the Basin provided \$400-600 million of food annually, a resource threatened by any changes to the quality and quantity of both water and prime agricultural land.

A recent report prepared for QMDC by the Department of Environment and Resource Management, Salinity Risk Assessment for the Queensland Murray-Darling Region, clearly outlines a number of areas at high risk from salinity in the future.

"Here in the Basin, we have some considerable areas with salinity levels where water is effectively half seawater and less than 15 metres deep and added to this threat is that some of these areas have been rising up to half a metre a year, even during the drought," Mr Penton said.

"Obviously, any increase in salinity not only produces a loss of biodiversity, a decline in surface water quality and damage to infrastructure but also leads to a loss of agricultural productivity."

Mr Penton said as the headwaters of the Murray-Darling Basin, water quality in the region – whether surface or underground – had the potential to impact across a wider geographic area.

"About 10,000ha of secondary salinity already exists in the Border Rivers and Maranoa-Balonne catchments but the report makes it clear this is likely to be an under estimate

with major landscapes at risk in the Maranoa-Balonne and Border Rivers," he said.

"QMDC will use the report to prioritise investment and identify monitoring sites to make early detection possible to help reduce the impact on the region's landscapes."

As well as this, Mr Penton said QMDC also had an independent technical report prepared in 2009 to outline the wins available to agriculture, regional communities and the environment through large scale water use efficiency measures.

"Up to 200 gigalitres of water can be saved through \$200 million worth of investment in best management practice across the Queensland Murray-Darling's irrigation areas as part of a proposed six-year plan," Mr Penton said.

He said the QMDC had consistently advocated for a larger investment in rural water use efficiency.

"Not only does this technical report demonstrate what is feasible through such investment, we also have landholders within the region already trialling new water use efficiency measures and technologies and a large number of their fellow producers are interested as well," he said.

"Currently the Murray-Darling is under threat of climate change potentially destroying the ability of the system to cope with that demand now and into the future. This impacts directly on the food security of our nation for the future."

Mr Penton said the Queensland Murray-Darling Basin was a key contributor to the Australian economy predominantly based on its soil and water resources.

He said water use efficiency measures had the potential to enhance food production

through applying best management practice, increase environmental flows and downstream river benefits, sustain rural communities, reduce salinity risks in priority areas and through specific projects targeted at the control of aquatic pests and weeds, protecting riparian areas and promoting fish migration it would also boost river health.

Mr Penton said the ability of the Basin to play a vital role in food production into the future would also be impacted by mining.

"QMDC is involved in the State Government's policy development process of what development – whether that might be mining or new housing estates – takes place on prime agricultural land," he said.

"Based on feedback gathered as QMDC developed its response to the growth in the mining and energy sector, we have raised the issue of the potential impact of the resource and energy sector on our natural resources, including on good quality agricultural land, the region's water resources, biodiversity and vegetation.

"QMDC is not opposed to mining and energy sector activities in the Queensland Murray-Darling Basin because of the important economic and social development they bring to the region.

"What we do want, however, is to avoid or minimise the potential impact of the industries on both natural resources and agricultural production.

"The Australian population will continue to grow and we need to ensure that regional Queensland can play its part in providing food and fibre but also protect our natural resources for future generations."

For more information, visit [www.qmdc.org.au](http://www.qmdc.org.au).



A Murray-Darling waterway with riparian vegetation.



## Growing a better future in the Fitzroy Basin

Landholders are at the coalface when it comes to managing landscapes. As such they are key partners of natural resource management groups in helping to protect our environment.

However, the actions of farmers at the local level also have wider implications for our world. Best practice land management is also the foundation for mitigating the effects of climate variability, and ensuring we can produce enough food to continue to feed ourselves and meet export demand.

Across the globe, food production is constrained by the availability of natural resources and by the uncertainty of a changing climate. Australian graziers and farmers will be called upon to meet increasing demands for food and fibre.

The key driver in meeting these demands is improved productivity. Australian land managers need to apply the best available knowledge and technology to maximize efficiency while maintaining sustainability in the long-term.

Environmentally sustainable land use is being embraced by grain growers in the Fitzroy Basin thanks to a collaborative approach to business development. The Grains Best Management Practice (BMP) program allows growers to improve their business to achieve productivity gains, while at the same time achieving environmental benefits.

The program is delivered by the region's leading natural resource management group, Fitzroy Basin Association Inc., together with

the Queensland Department of Employment, Economic Development and Innovation (DEEDI), and AgForce.

With the ultimate aim of improving water quality in local rivers and the Great Barrier Reef lagoon, Grains BMP enables growers to assess how their business is operating and where improvements could be made - and then offers real help to make those changes happen.

Growers can apply for grants to modify their equipment, purchase new equipment, and get specialist advice. Growers like Ben Lawrie of 'Evergreen' at Westwood just south of Rockhampton are reaping the rewards of the program, increasing farm efficiency as a result.

Ben was funded for a number of projects including purchasing new fertiliser distributors, a new planter, a weather meter, low drift spray nozzles and a front tank assembly for his tractor.

"The planter has great ground following ability and resulted in a more even plant stand and better ground cover has resulted," he said.

"The wind meter is amazing and it is easy to use. The Delta T reading makes it easy to decide when to spray or stay at home. The new nozzles have been great - more spraying is now hitting the target."

He says the improvements have the potential to boost productivity on 'Evergreen'.

"The new planter enables me to moisture seek crops when needed to ensure crops are



Grower, Ben Lawrie

planted at the right time, in the absence of a planting rain. On-time planting has a big impact on yield potential."

Grains BMP has shown that if you give growers the chance to update their knowledge and practices, they will. More than 100 enterprises have already taken part, with participating growers completing self-assessment modules in a workshop setting.

An economic analysis prepared by DEEDI showed the economic benefits of adopting improved practices in dryland cropping. It demonstrated that the move from conventional farming systems to a full controlled traffic farming system could more than triple farm business profit.

These figures win the hearts and minds of growers, and the uptake of Grains BMP continues to expand.

Ben Lawrie strongly recommends the program to other growers, which he said has prompted him to consider the future direction of his business and strive for best management practice.

"Grains BMP showcases better farming practices, which should lead to better crops, better environmental outcomes, improved sustainability and better profits," he said.

## Resilient farming system trials to help cope with future fibre security and climate change impacts

Project Catalyst is the result of many years of work and development between Reef Catchments Mackay Whitsunday and global partners WWF (USA and Australia) and The Coca-Cola Company (USA and Australia). Innovation is at the core of this unique initiative to improve water quality in the Great Barrier Reef through using our natural resources more sustainably and communicating these messages to other people within the industry.

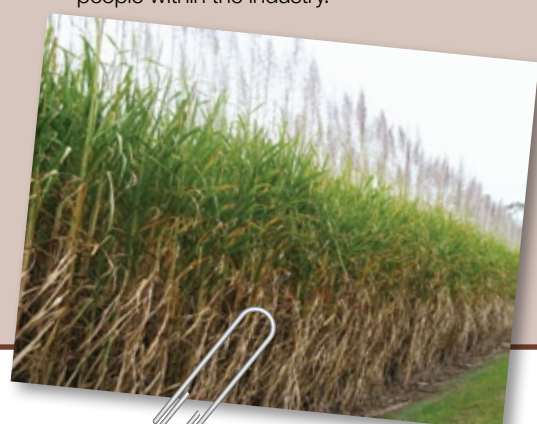
Another key component is to ensure that the farmers involved and the sugar industry are able to continue to farm into the future and deal with major issues such as climate change and food/fibre security at a local level.

In Australia, Project Catalyst's focus is on cutting-edge innovation that provides the missing piece to current state and federal programs aiming to increase adoption of improved land management practices. Globally, Project Catalyst provides an exciting opportunity to connect agricultural leaders to environmental icons such as the Great Barrier Reef. It is a partnership which aims to expand to involve other national and global players with the overall aim to foster farmer innovation which will improve water quality, soil health, food security and farm viability.

The first year of Project Catalyst has seen 19 farmers involved in the Mackay Whitsunday region who collectively manage 4800 ha.

Through a one-on-one precision planning process and numerous group forums, these 19 farmers have adopted a range of improved soil, nutrient, chemical, irrigation and storm water management practices on farm. Practices have included adopting GPS-based controlled traffic farming systems and the use of variable rate technology on nutrient, chemical and irrigation inputs.

These changes to land management practices across the Mackay-Whitsunday region have subsequently improved the water quality of more than 24,000 ML of runoff and drainage water, which is equivalent to 10,000 Olympic swimming pools. More importantly, these land managers are implementing a more resilient farming system able to cope with the impact of climate change and resulting in a greater security to be able to provide food and fibre sustainably into the future.





BMRG "new technology uses sensor to selectively spray"

## New technology helps growers reduce herbicide use

The Reef Rescue program has helped macadamia growers to save chemicals and water by installing new spraying technology.

With the assistance of funding from the Australian Government program, Bundaberg macadamia company Macadamia Farm Management has purchased new sensor technology for spraying equipment to allow selective spraying of foliage.

The previous practice of under tree weed control meant herbicide was sprayed on a path approximately 1.2 m either side of the tree line, from three jets spaced 500 mm apart. On average they were using approximately 300 L of water per hectare.

The new technology was fitted to their existing double sided herbicide rig. The result is herbicide is now being applied to the weeds only, while bare soil is being left unsprayed.

"Use of the technology is so far resulting in approximately a 45 per cent reduction in total herbicide application," said Scott Gregson-Allcott, farm manager of Macadamia Farm Management.

The technology can be retro-fitted to many spray rigs. It consists of sets of sensors and nozzles spaced along the boom. The sensor emits light towards the target, which reflects light back towards the sensor. A detector on the sensor calculates whether the reflected light is coming from a green plant or not. If a green plant is detected the sensor triggers a solenoid to open the spray jet, to apply herbicide to the plant. Each jet works

independently of each other.

"The independence of each sensor along the boom allows selective spot spraying of the section under the boom, rather than spraying the entire area," said Mr Allcott.

Whilst the technology has been in Australia for more than 20 years it has only recently been adopted by farmers and local councils with the commercial release of such systems as Weedseeker ®.

Manufacturers of the Weedseeker ® equipment claim pesticide applications using the equipment can be reduced by more than 75 per cent.

"The savings don't just stop with the amount of herbicide that is used," said Mr Allcott.

"Reducing the volume of herbicide that is applied means we can travel much further on the one spray tank, before having to return to the filling area. This is saving us diesel, water and precious labour resource required to manage the same amount of orchard."

"The macadamia industry is aware of the consumer pressures facing our industry and both growers and processors are working to meet the challenges," he said.

The horticultural industry is promoting the adoption of improved farm practices to assist growers meet consumer expectations.

"Our industry is under pressure from two angles," said Growcom Field Officer Robert Doyle.

"We are being asked to increase farm productivity to feed a growing population and to demonstrate our positive environmental credentials," he said.

The Australian Government's Reef Rescue program allows horticulture growers to access funding of up to 50 per cent to a maximum of \$10,000 for out of pocket expenses to implement farm management practice changes to reduce the risk of sediment, pesticides or nutrients leaving their farm.

Projects that have received funding over the past two years include installation of: GPS guidance systems; fertigation applicators; low volume spray technology; mulch applicators; soil moisture monitoring systems; and sediment traps.

"Obvious benefits for growers are either a lowering of the costs of production, increased productivity for the same inputs, or both," said Mr Doyle.

In the Burnett Mary region, the program is delivered to landholders under a partnership arrangement between BMRG and farming industry bodies. Growers are assisted in submitting applications which are competitively assessed by a panel and the incentive funding is awarded based on the best value for money for the Great Barrier Reef. Unsuccessful applicants can re-submit again next round.



To find out more about natural resource management projects or contact details for your regional natural resource management group, visit the

Queensland Regional NRM Groups Collective website - [www.rgc.org.au](http://www.rgc.org.au) or ph 07 4699 5000.

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