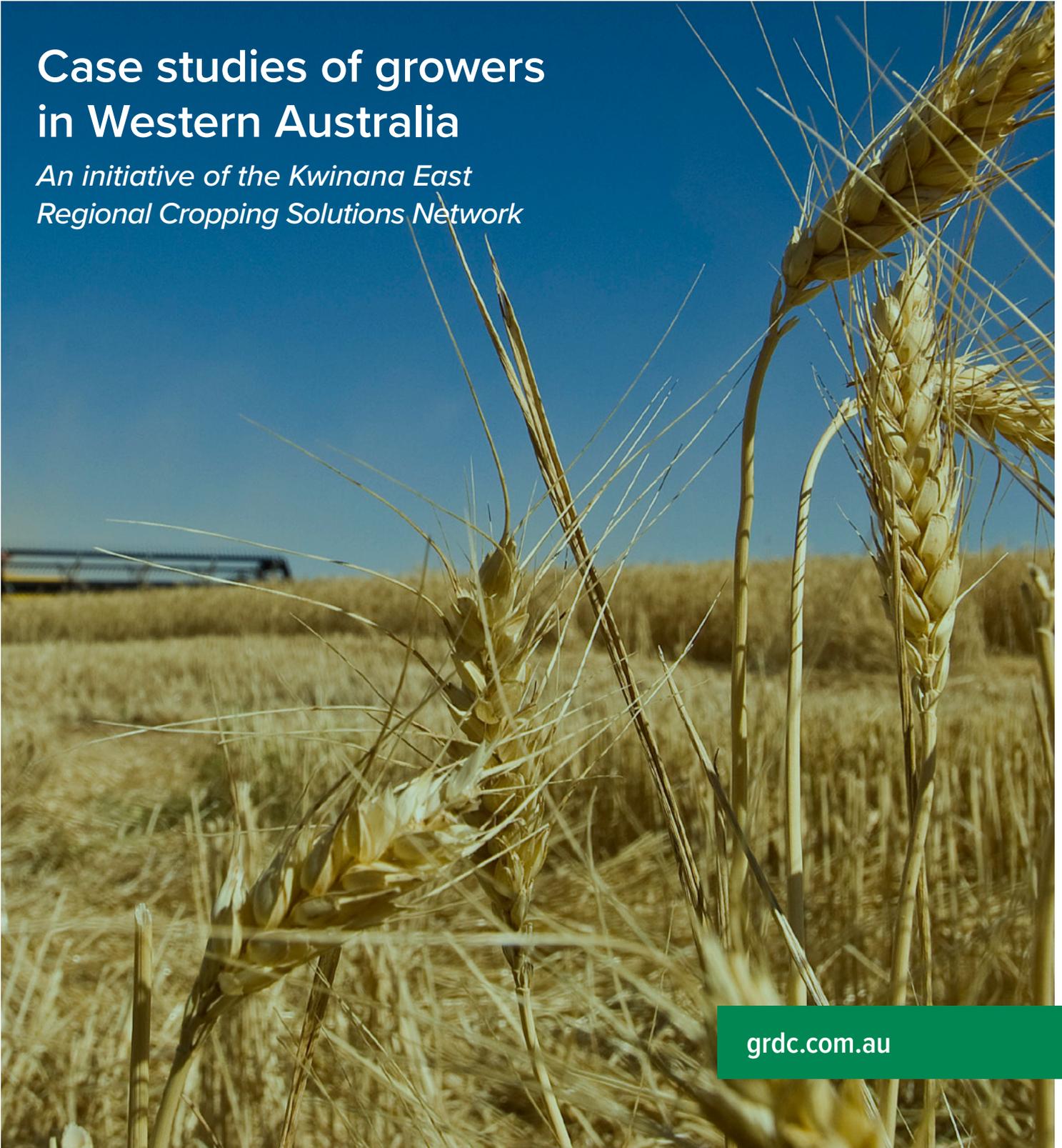


# Business management and farm profitability



## Case studies of growers in Western Australia

*An initiative of the Kwinana East  
Regional Cropping Solutions Network*



[grdc.com.au](http://grdc.com.au)

**Business management and farm profitability**

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Cropping Solutions Network*

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# Introduction

## SNAPSHOT

### KEY FEATURES OF A STRONG BUSINESS IN THE EASTERN GRAINBELT:

- Low break-even yield at average grain prices
- Able to capitalise on good seasons and prices when these occur
- Conservatively geared to cope with inevitable poor seasons
- High labour and machinery efficiency
- Culture of attention to detail and hard work
- Above average management ability, enabling grower/s to consider all relevant information at a point in time and inherently make the correct decision.

Source: GRDC-funded Planfarm report 'How to farm profitably in the eastern wheatbelt'.



Members of the GRDC's Kwinana East port zone Regional Cropping Solutions Network (RCSN) group (pictured in February 2016) have identified pathways to better business profitability as a priority for growers in this region. PHOTO: Cox Inall Communications

As in many regions of Western Australia, the business of farming in the eastern grainbelt is challenging for growers trying to juggle increasing variability in seasonal conditions, commodity prices and terms of trade.

Major characteristics of this region are water-deficient cropping and seasonal shifts. Farm profit margins are being squeezed and debt has typically increased.

Good nutrient uptake occurs from strong soil types, but there are also widespread areas with constraints such as aluminium toxicity and sodicity that impact on grain production.

Not knowing how much rain will fall and when, or what temperatures might be experienced during the growing season, makes it extremely difficult for growers in the eastern grainbelt to make key decisions about crop varieties, time of sowing and input levels.

But demand for their agricultural produce continues to grow and there are good opportunities to be captured, with due consideration to risks of exposure and long-term sustainability.

It is becoming increasingly important to have solid business management skills to meet these challenges.

The Grains Research and Development Corporation (GRDC) is investing in a range of extension projects to help build capacity in this area, especially in terms of managing risk and implementing responsive operational structures.

A high priority identified by the GRDC's Kwinana East port zone Regional Cropping Solutions Network (RCSN) group is the need for in-depth understanding

of the costs involved in farming in the eastern grainbelt and the development of skills to generate profits, rather than to solely lift crop yields.

The Kwinana East RCSN initiated this case study project to gain insights from some of the top performing farm businesses in the zone about their management, agronomy practices and the triggers for key decision-making.

This publication outlines some of the key features of six businesses that differentiate them from more 'typical' eastern grainbelt operations in terms of:

- Business structure and strengths
- Scale and expansion strategies
- Productivity targets and performance
- Integration of technologies and precision agricultural systems
- Paddock planning
- Methods to address soil constraints
- Use of strategic fallow
- Grain storage and marketing.

A previous GRDC-funded analysis into high and low performing eastern grainbelt businesses (from 2006 to 2012) found that relatively small changes in these key areas could equate to big percentage changes in overall business profitability.

This study 'How to farm profitably in the eastern wheatbelt' was conducted by farm business consultancy group Planfarm, based on results from 14 top and 20 low performing businesses.



A better understanding of factors within and beyond the farm gate means more effective management of these forces in a farm business.  
PHOTO: Cox Inall Communications

It found the top performing businesses in the region, for the period 2006-12:

- Covered 5721 hectares (13 per cent larger than the region's average farm size)
- Generated \$42.50/ha more operating surplus than the average in the Planfarm Bankwest Benchmarks analysis for the eastern grainbelt for that period
- Produced an extra \$243,000 total operating surplus per year (60 per cent higher than the region's average)
- Had higher crop yields in both good and bad seasons.

Planfarm director Greg Kirk says cost savings across all facets of the business need to be a priority in the eastern grainbelt, as this is a low risk strategy that can make big improvements to whole-farm profit.

He says major cost savings introduced by the top performing businesses in the Planfarm analysis included less fertiliser use and lower machinery replacement costs.

“Common reasons for (business) success provided by the top performers included a preparedness to work hard, taking a conservative approach, reducing costs, getting key decisions right and paying attention to detail,” Greg says.

A subsequent GRDC-funded 2013-14 report into the economics of break crops in the Kwinana East port zone, also supported by the local RCSN, found using the right rotation for the farm, soil type and management approach is critical to achieving a low-cost, profitable farm business structure in this region.

Conducted by Planfarm using benchmarking data, individual client gross margin analysis and discussions with successful growers in the region, the report highlighted that farming profitability had been difficult to achieve in recent years. But it also identified growers with a proven long-term track record of generating above-average results.

An Australian Government project is investigating novel business structures that might help growers better adapt to climate variability as part of the Department of Agriculture and Water Resources (DAWR) initiative, ‘*Filling the Research Gap*’.

It has found some of the key characteristics for success in WA's eastern grainbelt include:

- Large scale of operation, enabling lower fixed costs
- Adoption of new technology
- Management practices that reduce variable costs
- Use of marketing strategies to exploit supply chain opportunities and reduce break-even points.

The six business case study growers featured in this Kwinana East RCSN-initiated publication are managing complex, multi-layered farm businesses that are well set up and function efficiently.

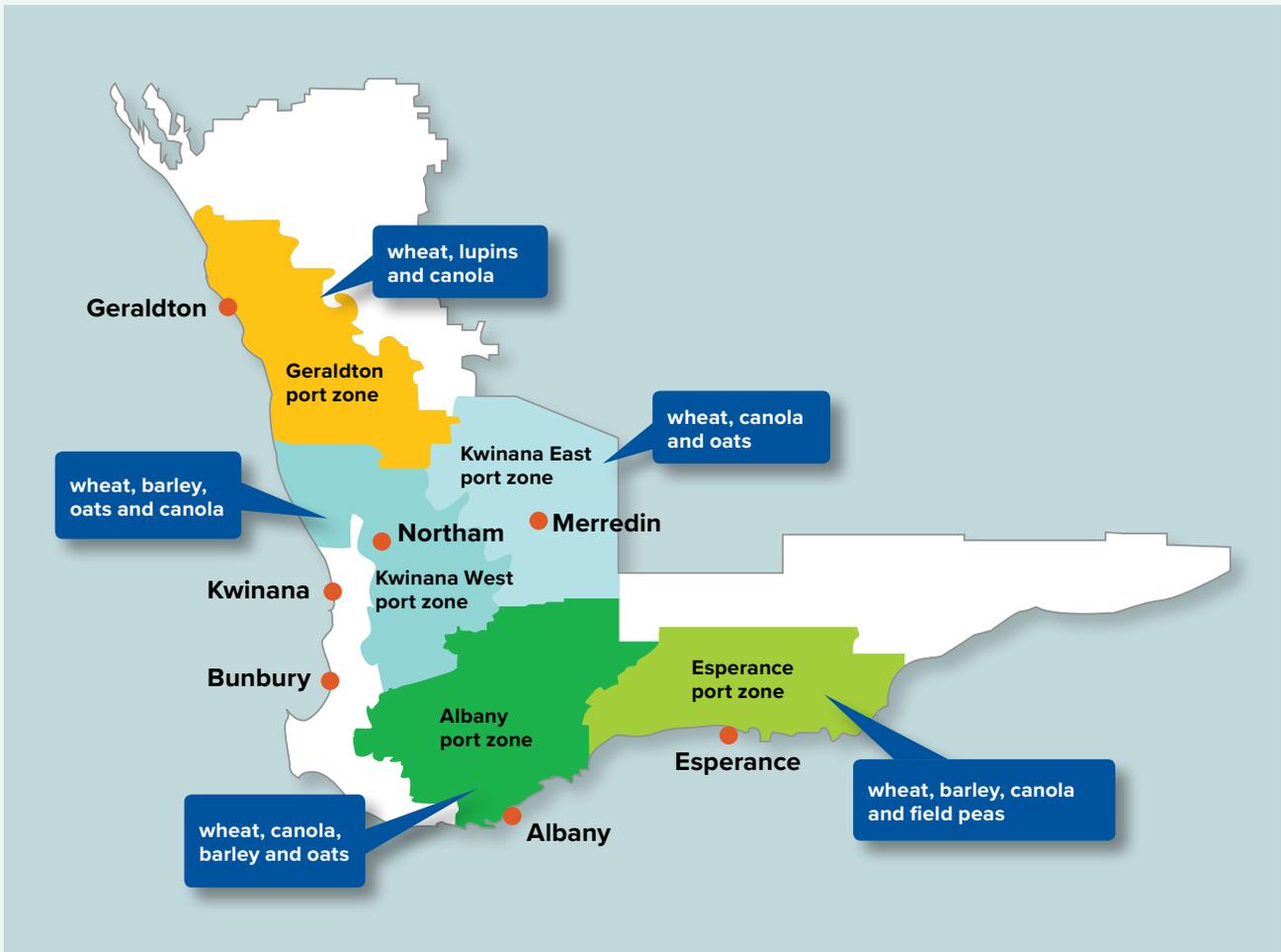
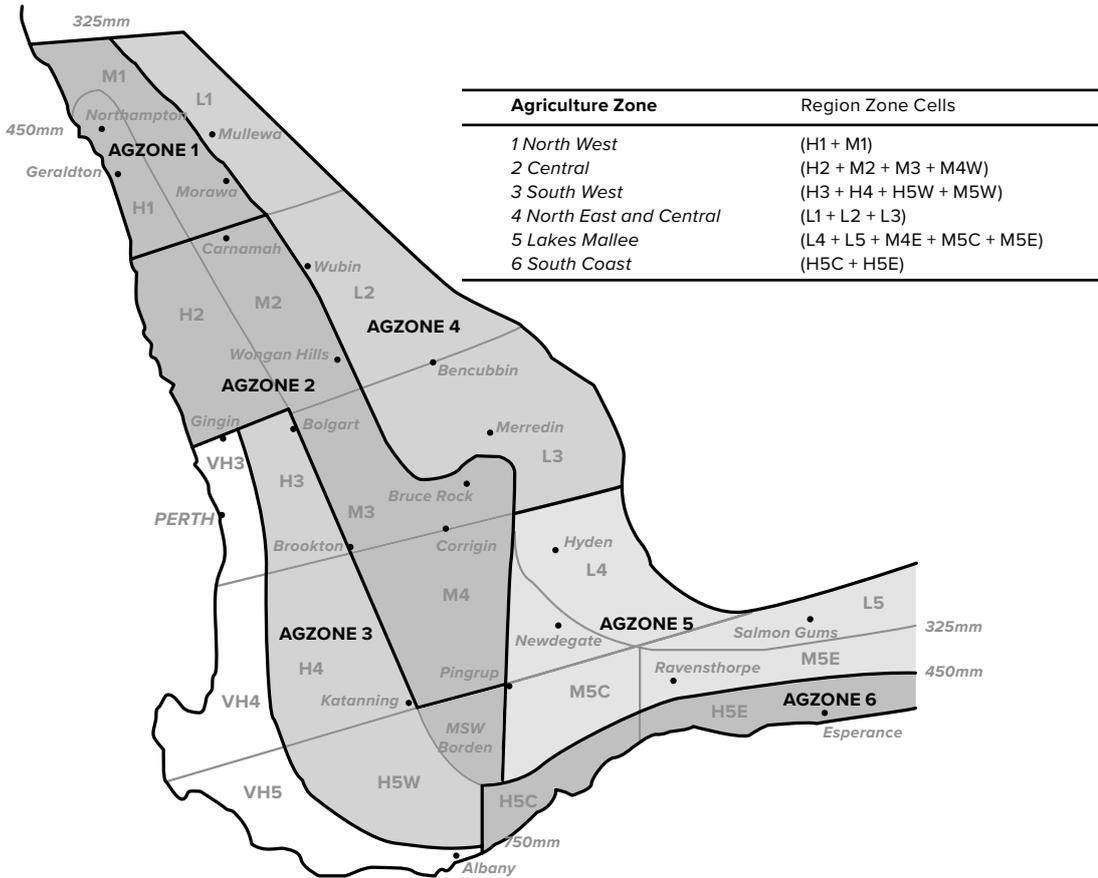
As many of these businesses grow in size and scale in the future, these growers highlight the many positive outcomes that can be achieved from having a willingness to learn and implement new ideas and a desire for continuous improvement.

GRDC Research Codes: CIC00027, PLN00009



## MORE INFORMATION

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# Business Profitability Case Studies

**JULES AND PEP  
ALVARO, MERREDIN**



**TY KIRBY,  
BEACON**



**PAUL AND COLIN  
GREEN, HYDEN**



**BOB NIXON,  
KALANNIE**



**BRAD JONES,  
TAMMIN**



**MATT STEBER,  
KELLERBERRIN**



PHOTO: Cox Inall Communications

# MANAGING PROFITABLE FARM BUSINESSES

## SNAPSHOT

### TIPS FOR IMPROVING FARM BUSINESS PLANNING:

#### Determine what you need to know to better manage the business for:

- the whole farm system
- leadership and human resources
- short and long-term viability
- risk profile
- succession plans.

#### Measure key aspects of current financial performance:

- liquidity and cash position
- efficiency and profitability
- wealth, net worth and building equity.

#### Determine where the business is heading by:

- setting goals
- implementing sound planning processes
- monitoring performance and progress.

#### Take the business to the next level by:

- assessing finance arrangements
- risk management analysis and strategies
- improving grain selling systems
- considering alternative business models and strategies
- succession planning
- using analytical tools to support decision-making
- potentially using advisory boards.

Source: Adapted from the GRDC manual 'Farming the Business – Sowing for your future', edited by Mike Krause, CEO P2P Agri, 2014 and available at [www.grdc.com.au/Resources/Publications/2015/01/Farming-the-Business-Manual](http://www.grdc.com.au/Resources/Publications/2015/01/Farming-the-Business-Manual)

## IMPORTANCE OF PLANNING TO OPTIMISE RESULTS

Central to operating a high-performing farm business is 'big picture thinking' that involves a commitment to strategic planning.

Eastern grainbelt farm management adviser David Watson, principal of AgAsset based in Northam, says it is important to set short and long-term goals and then measure and manage how these are evolving and being realised.

"Consider the future direction of the business, in terms of expansion (leasing versus purchase), machinery, human capital and succession," he advises.

"It is important to review business plans regularly and potentially look at alternative business structures – such as advisory boards – and non-operational aspects.

"Careful thought should be given to attitudes towards ownership and any capital and/or business structural constraints.



The Grains Research and Development Corporation has produced a comprehensive guide to farm business planning, called 'Farming the Business – Sowing for your success'

"With risk management, it is critical to have a plan A, B, C and D so that if conditions change, there are a range of scenarios clearly mapped out as the season unfolds. These scenarios should include the trigger points for taking action."

David says common business planning strategies being used by the six case study growers featured in this Regional Cropping Solutions Network (RCSN) Kwinana East business case study project include:

- Regular reviews with banks/financiers, farm business and agronomy advisers and agents for inputs such as fertiliser/chemicals/machinery
- Continual planning and reviewing of plans throughout the year
- Ongoing assessment of all key decisions and operations
- A proactive approach to reducing costs, managing risks and comparing options
- Use of objective analysis, as well as intuition and experience
- Adoption of strategies experienced or researched from non-agricultural industries
- Undertaking training or up-skilling when a gap is identified
- Farming for profit or long-term financial sustainability, not solely to lift crop yields
- An aim to achieve a return on capital of 8 per cent or more.

He says most successful farm businesses have a clear vision and well-defined goals that provide direction and focus for management and staff to achieve key Outcomes.

## ANNUAL BUDGETS

All major management decisions have implications for many parts of the whole farm business and require thorough budgeting. This will refine working capital requirements and likely profits from a range of seasonal and economic outcomes – good and poor.

David says key aspects of budgeting include:

- Developing a comprehensive set of management data – both physical and financial, such as profit and loss, cash flow, balance sheets, enterprise profitability analysis, break-even costs and target prices for all commodities
- Using realistic medium-term trends in yields and prices to guide planning
- Adopting economic thinking in decision-making
- Validating and optimising the value of professional advice.

“If you have a good understanding of your costs and question everything, it is easier to develop a budget that allows you to make gains and efficiencies by driving costs down and rates of return up,” he says.

“A good business needs a good understanding of break-even costs and sensitivity analyses of price changes to develop and reach profit goals.”

## CAPITAL EXPENDITURE

This is cash spent on assets, such as the purchase/development of land, buildings, machinery, and principal repayment of debt – all of which have a big impact on cash flow.

Ideally, the aim of capital expenditure should be to improve the productive potential of the business, according to David.

But he says in the case of machinery in particular, periodic replacement can be required and capital spent may not necessarily lead to productivity improvement.

“It is important, then, to have a machinery replacement schedule that prioritises the order in which machines are replaced and when,” he says.

“It can also be useful to prepare capital expenditure budgets based on realistic expectations of likely outcomes – both with and without the proposed machinery expenditure – so you can see the impact before making the decision.

“Ideally, machinery should be matched to the cropping program – or potential program – if expansion is being considered, as you don’t want to be under or over-capitalised.”

## EXPANSION

Farming more land through purchase, lease or share farming is a proven strategy to reduce the fixed costs of production by achieving scale in the eastern grainbelt.

David says effective strategies being used by the featured Kwinana East RCSN business case study growers include:

- Diversifying the type of land they are farming by acquiring different soil types
- Spreading geographic and seasonal risks by buying in other regions
- Consolidating the type of land they are farming, such as only targeting good medium soil types.

“Many of the case study growers carefully soil sample and gather production data (where possible) for any potential land for purchase/lease,” he says.

“They are increasingly valuing acquisitions on the quality of the land in each paddock zone and adjusting prices paid based on this analysis.”

## LONGER-TERM AND STRATEGIC PLANNING

The GRDC has funded a comprehensive guide to improving farm business management and planning skills that is available as a hard copy manual, eBook reference and short videos featuring a range of experts and leading growers from across Australia.

Called ‘*Farming the Business – Sowing for your future*’ it contains information about the thinking behind successful farm business management and advice on how to compile various budgeting tools and business plans.

Produced under the direction of specialist farm business management adviser, Mike Krause, it is a practical resource that comes with templates to help apply the principles to individual farm businesses.



### MORE INFORMATION

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More information can be found at:  
[www.grdc.com.au/Resources/Publications/2015/01/Farming-the-Business-Manual](http://www.grdc.com.au/Resources/Publications/2015/01/Farming-the-Business-Manual)

Hard copies are available from Ground Cover Direct:  
1800 11 00 44, ground-cover-direct@canprint.com.au

# Business Case Study

JULES AND PEP ALVARO, MERREDIN

## SNAPSHOT

**OWNERS:** Julie (Jules) and Joseph (Pep) Alvaro

**LOCATION:** Merredin, WA

**FARM SIZE:** 5250ha (arable)

**ENTERPRISES:** 90 per cent cropping, sheep

**LIVESTOCK NUMBERS:** 700 breeders, 500 lambs

**AVERAGE ANNUAL RAINFALL:** (10-year average): 300mm

**PREDOMINANT SOIL TYPES:** 70 per cent heavy clay/morrell, 15 per cent loam, 15 per cent light gravel/wodjil

**2016 CROPPING PROGRAM:**

3550ha wheat, 370ha lupins, 680ha barley, 600ha pasture

## ALVAROS ADAPT BUSINESS TO CLIMATE AND CROPPING CHALLENGES

Jules and Joseph (Pep) Alvaro are continually seeking out and implementing new technologies and innovations in their pursuit of a low-cost, profit-driven farm business model.

The couple consistently plant 80 per cent of their 5250 hectare arable cropping area to wheat, in one of WA's driest cereal growing environments.

For the past five years, average annual rainfall on their property north of Merredin has been 308mm, of which an average 189mm has fallen in the growing season. They have produced average wheat yields of 1.2 tonnes per hectare in this period.

Having farmed in the eastern grainbelt for 25 years and experiencing three 0.7 decile rainfall growing seasons in the past decade, the Alvaros are now more than ever on the lookout for research, development and technological information to help adapt their land and business to variable climatic and market conditions.

## BUSINESS STRUCTURE

Jules and Pep have set up their business to have joint oversight of the bulk of operations and use part-time, seasonal labour.

They have established a trust for asset ownership, employ three or four full time equivalent (FTE) labour units at seeding and harvest and have one part-time worker for the remainder of the year.

This keeps wage costs down to optimise profits, but means they are undertaking the bulk of crop spraying and other in-paddock operations themselves outside of the six to eight week seeding and harvest windows.



Jules Alvaro farms with husband Joseph (Pep) north of Merredin and says a key factor to business success is seeking knowledge and being open to new ideas.  
 PHOTO: Cox Inall Communications

Jules identifies this as a potential weakness of the business, which in some years can be cash-poor and time-poor for family members. She concedes it probably requires another FTE staff member year-round.

The Alvaros use a farm management adviser for business and financial planning and a private and company-based agronomist on the farm.

They firmly believe in keeping pace with technological advancements, while also keeping an eye on the bottom line.

"To achieve this, we are finding it is essential to be highly disciplined in our strategy, organisation and management," Jules says.

"There can be big variations in commodity prices mixed with extreme seasonal variations, which can put pressure on our cash flow.

"It is imperative we keep our budgets tight, without skimping on the necessary expenditure and investment to build our business."

***A willingness to learn and implement new ideas are key ingredients of running a successful farming business in the eastern grainbelt.***

**JULES ALVARO, MERREDIN.**

Jules and Pep have three young boys and in future they would like to investigate the use of a corporate board-type structure for their business, but not until (or if) the boys start working on the property.

Jules says her preference would be to have directors with a diverse range of skills, not necessarily in agriculture, to bring new perspective to the table.

## **BUSINESS PLANNING**

After harvest each year, Jules and Pep undertake accurate reporting of the previous season and results including:

- Financial performance, especially close analysis of costs
- Enterprise profitability (including a gross margin (GM) budget for each crop enterprise)
- Agronomic decisions (what worked and what could be improved)
- Crop yields.

This analysis feeds into the next year's planning process, which is continually fine-tuned as rain falls during the summer and early autumn months, and input costs and grain prices change.

Jules says tax planning is vital, especially through self-managed superannuation and succession processes, which she believes should be well set up early.

"Gradually investing off-farm can save a lot of heartache later on and help with our farm succession before the process has even begun," she says.

The Alvaros do not change over their cropping machinery frequently, preferring to buy good second-hand equipment to which new technology is added.

"This enables us to keep capital costs low, help drive water use efficiency in our crop production system and provide good information and data retrieval," Jules says.

"A priority is to keep crop spraying equipment up-to-date with the latest technology.

"During the past five years, our major machinery investments have been into Real Time Kinematic (RTK) guidance, variable rate technology (VRT) and systems to ensure good linkages."

## **MANAGEMENT AND SKILLS DEVELOPMENT**

As an employer of staff, Jules makes sure she is well versed in the latest labour awards and legalities and has undertaken some training in human resources and industrial relations during the past year.

Pep's skill strengths lie in business management, agronomy and knowledge of farming systems.

He continually seeks to boost his knowledge in this area through active involvement in research and development and by attending workshops, field days and other professional development events.

Both the Alvaros attend agronomic field days and have participated in business development workshops and training through various providers, including GRDC's Farm Business Updates.

For them to be attracted to a field day or workshop event, Jules says it needs to have topics and speakers that are highly relevant to their business.

Off-farm, she is a member of the GRDC's Western Regional Panel, which she says gives her the opportunity to contribute to the future strategic direction of the Australian grains industry; Partners in Grain (PinG) group; and the Agricultural Women Wheatbelt East group.

Jules lists her main business strengths as:

- Being pro-active and willing to implement new technologies
- Seeking training/skills where there are knowledge gaps
- Having a focus on profits
- Being able to make decisions and take action when needed
- Having a broad perspective through industry involvement
- Having a strong ability to think strategically and for the long-term
- Having an ability to pinpoint gaps in the farm's production model and make adjustments to lift profits.

Jules perceives that the potential weaknesses in the family's business management include:

- Being time poor
- Not employing enough staff
- A lack of confidence in nitrogen use, due to dry conditions during the past season (in keeping input costs down).

## PRODUCTIVITY

The Alvaro's long term average wheat yield during the past decade has been 1.2t/ha – down from 1.43t/ha in the previous decade.

The biggest cost items for the business are herbicides/fungicides at about \$47/ha, fertiliser at about \$33/ha and fuel at about \$18/ha.

Major strategies to reduce costs per unit of production include adoption of technologies such as VRT for fertiliser – and potentially seeding rates in future – to reduce waste and target inputs where they are needed most.

## TECHNOLOGY AND PRECISION SYSTEMS

Jules and Pep incorporate a range of technologies across their no-till cropping system, including:

- Global Positioning Systems (GPS), auto-steer and yield data collection at harvest
- RTK guidance
- VRT systems on the seeder and boomspray
- Spatial soil mapping tools
- Predictive yield models, including Yield Prophet®
- Soil moisture probes (three installed in 2016).

Historically, they have used a blanket fertiliser rate of about 40kg/ha across the farm.

But by using yield maps from the past 10 years coupled with GPS and RTK guidance they are now identifying paddock variability across the farm, which has meant increasing inputs on lighter soils and applying minimal fertiliser on heavier country.

In 2015, this resulted in wide-ranging fertiliser applications from about 20kg/ha in some paddocks and up to 50-60kg/ha in others, reducing risks of over-fertilising heavy soil types in drier years.

Pep says to keep the VRT system simple, they compile fertiliser prescription maps based on only two zones – a medium rate and a lower rate.

The Alvaros are using the GRDC-supported Yield Prophet® tool with weather station data to track in-season soil moisture conditions and help forecast grain yields for the current season.

Jules says to date, this system has been very accurate and their confidence in using it to assist in decisions about adjusting or not using inputs is growing.

## IMPORTANCE OF SOILS

With 80 per cent of their property comprising heavy clay and morrell soil types, the Alvaros operate at the whim of the weather. Subsoil moisture is the key to their cropping success in any given year.

***We have to do things smarter each year to adjust and adapt to the season as it comes.***

**JULES ALVARO, MERREDIN.**

If there is a lot of summer and autumn rain, the heavy soils will hold this well and can provide up to 20-30mm of stored moisture when seeding starts.

But if the season regresses, these heavy soils need a lot more rain to wet-up – about 20mm in single rainfall events – and inputs are scaled back in these situations.

Pep says lighter soils are more reliable and he was more confident investing in inputs in these areas every year.

Soil testing to 10cm has been a vital component of the farming system for more than 20 years. In 2016, testing to a depth of 60cm found high aluminium readings in the subsoil. Addressing this issue will be a priority for 2017 and beyond.

## CROP PROGRAM PLANNING

Making the best possible use of available moisture is a key factor in the Alvaros crop rotation planning and for maintaining profitability on heavy soil types.

About 10 per cent of arable farm area is left in fallow every year for conservation of moisture and weed control.

Canola has been very unsuccessful as a break crop in the past five years and the family has reverted to planting more area to lupins – the farm's traditional break crop – using double-row spacing.

Their environment allows continuous wheat and barley rotations for several years, as the low rainfall reduces soilborne disease build-up and incidence.

Continuous cereal cropping in a highly variable rainfall climate does make for challenging weed control measures.

Summer weed control is vital to conserve moisture for seeding and the Alvaros start this program immediately after harvest.



## MORE INFORMATION

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# Business Case Study

## TY KIRBY, BEACON

### SNAPSHOT

**OWNERS:** Ty and Rachel Kirby

**LOCATION:** Beacon and Nyabing, WA

**FARM SIZE:** 7700ha Beacon, 3000ha Nyabing (leased)

**ENTERPRISES:** 100 per cent cropping

**AVERAGE ANNUAL RAINFALL:**

300mm (Beacon), 350mm (Nyabing)

**PREDOMINANT SOIL TYPES:**

Loam/sandy loam (Beacon), duplex (Nyabing)

**2016 CROPPING PROGRAM:**

Beacon – 3000ha wheat, 1100ha barley, 330ha canola.

Nyabing – 1550ha wheat, 780ha canola, 500ha barley

**TYPICAL ROTATIONS:**

Beacon light soils – cereal-cereal-fallow or fallow-canola-cereal-cereal; Beacon heavy soils – four consecutive cereals; Nyabing – wheat-wheat-barley-canola or wheat-wheat-canola.

### KIRBYS SPREAD OUT TO MITIGATE CROPPING RISKS

Understanding and improving the fundamental business and agronomic factors driving the success of their cropping operations is a key focus for Beacon-based growers Ty and Rachel Kirby.

They have spread the risks of producing grain in a low and increasingly variable rainfall environment by expanding into an alternative geographic location.

The couple now runs the 7700 hectare Sun Valley Ag property at Beacon and another 3000ha is leased from Rachel's family further south at Nyabing, which receives an extra 50 millimetres of rain on average each year.

In the 15 years that Ty and Rachel have farmed at Beacon (initially with Ty's parents Gerry and Peta) in Western Australia's Low Rainfall 3 (L3) zone), they have been dealt a run of challenging seasons and market conditions.

This has included some of the driest autumns and winters ever experienced in the region, major spring frost events, high grain price volatility, low cropping margins, rising debt levels among local farm businesses and increasing soil acidity that is suppressing crop productivity.

A run of particularly dry seasons leading up to 2006-07 prompted an urgent search for alternative ways to boost profit margins and productivity.



Ty Kirby, a former Grain Grower of the Year finalist in the Australian Farmer of the Year awards, is diversifying business risk by cropping in two geographic and rainfall locations – at Beacon and Nyabing. PHOTO: Cox Inall Communications

In 2009 the Kirbys switched to a zero-till system with discs at Beacon to limit moisture loss at sowing by reducing soil disturbance, maintaining soil cover and minimising compaction. In 2013, in an attempt to further spread production and business risk, they took up the Nyabing lease.

"The opportunity came up when my father-in-law wanted to sell his property there and since taking it on, we have cracked several good years and haven't looked back in terms of improved whole business performance," Ty says.

### EXPANSION WITH GEOGRAPHIC DIVERSIFICATION

Ty says commercial lease rates apply to their Nyabing operation and returns on this investment are still very much seasonally-driven, as is the case with the Beacon property.

But he says a big advantage to cropping in two distinct environments is the ability to spread climatic and soil-based risks to production, including:

- Unreliable season breaks
- Seasonal/out-of-season rainfall variability
- Frost/heat stress in cereal flowering and grain fill windows
- Drought
- Subsurface acidity
- Soil compaction
- Soil water repellence
- Weed control/herbicide resistance
- Crop disease and pest management.

On the downside, Ty says there are logistics issues with remote management and travelling between two properties.

## POINTS OF DIFFERENCE

Key features of the Kirby's business structure that differentiate it from more 'typical' eastern grainbelt operations include:

- Expansion into an alternate geographical region
- Lower rates of fertilisers used
- Variable rate technology (VRT) used for lime and gypsum
- Real Time Kinematic (RTK) satellite navigation employed
- Up to 15-20 per cent of farm area fallowed each year
- Private advisers used for farm business management and grain marketing.

## PRODUCTIVITY TARGETS AND PERFORMANCE

The Kirby's Beacon property consists of predominantly red loams, sandy loams and wodjil soils (typically deep yellow sands with inherent subsurface acidity). It receives about 175-200mm of its 300mm annual average rainfall during the winter growing season.

Long term (10-year) average wheat yields are about 1.3 tonnes/ha and the long-term average break-even wheat yield is about 1t/ha, but this is highly dependent on grain prices.

At Nyabing, the average long-term (10-year) wheat yield is higher at about 1.8t/ha and the break-even wheat yield is also marginally higher at about 1.3t/ha, again depending on grain prices.



In 2008 the Kirby family discovered they could sow more hectares with a disc machine in 24 hours than two tined machines running 18 to 20 hours on their Beacon property. PHOTO: GRDC

Ty says expanding the business across two geographic locations has helped to achieve economies of scale by boosting total cropped area, but the main advantages come from reducing environmental risks and increasing certainty of production.

Fertiliser and herbicides are the biggest costs in the Kirby's cropping enterprise.

"Adoption of technologies such as CTF, RTK and VRT is helping us to contain costs by minimising spending on inputs, reducing waste and achieving more targeted application of fertiliser, lime, gypsum and herbicides where they are needed most," Ty says.

"Just like at Beacon, the Nyabing cropping operation is run 'lean and mean' with a focus on assessing every budget line item, keeping input costs down and generating optimal profit margins."

A run of dry seasons up to 2007 prompted the Kirbys to quit their remaining sheep, as this enterprise was not benefitting the overall farm business.

## BUSINESS STRUCTURE AND PLANNING

The family has one full time equivalent (FTE) employee and Ty says ideally, they would like to employ a second to free up some of his time to concentrate on future expansion of the farm business.

They use seasonal labour during busy periods, such as seeding and harvest, but are finding it increasingly difficult to source good contracting services.

Ty says not having enough staff and difficulties sourcing seasonal staff with agricultural experience are some of the biggest potential long-term risks to the farm business. Much of his own time is absorbed in business operations on the ground and this reduces his capacity to undertake strategic planning and management.

He says the family uses independent farm management and financial advisers and his own priorities for up-skilling include development of his business skills and further assessment of new farming technologies.

***The opportunity (to crop at Nyabing) came up when my father-in-law wanted to sell his property there and since taking it on, we have cracked several good years and haven't looked back in terms of improved whole business performance.***

**TY KIRBY, BEACON.**

Ty says his main business strengths are in agronomic practices, farm management and logistics.

He says the biggest weaknesses in the business, which he aims to address in future, are improving human resource management and undertaking more business analysis and strategic planning.

Maintaining a strong network with other progressive grain growers is important to Ty, who is active on social media channels such as Twitter and is a member of the GRDC's Kwinana East Regional Cropping Solutions Network (RCSN).

Through his involvement in the RCSN, he says he can help to identify the research and development needs that are specific to the growing conditions in his local area and promote relevant and timely projects to boost grain productivity in the port zone.

Ty says he maintains his own professional development by attending field days, workshops and seminars, including GRDC Farm Business Updates, based on his interests, mostly in new technology and business skills development.

He and Rachel have regular semi-formal meetings with their farm adviser and accountants to set and review business goals and budgeting. Succession has occurred.

## TECHNOLOGY ADOPTION

Ty and Rachel use a range of incorporated technologies across their farming system, including:

- Global Positioning Systems (GPS), auto-steer and yield data collection at harvest
- GPS and auto-steer on tractors
- RTK plant beside the row
- VRT systems for lime and gypsum
- Spatial soil mapping tools, including satellite-based bio-imagery
- Predictive yield models, including Yield Prophet®
- Operational data such as iPaddockSpray and iPaddockYield, Agworld and ProductionWise apps.

In 2009, they shifted to a zero-till disc seeding system at Beacon on the back of large scale trials the previous year that showed they could save about \$2.30/ha in fuel and labour costs. This was incorporated with CTF to better manage soil compaction.

Before implementation of zero-till, Ty sought information and practical tips from the most successful users of these systems across Australia.

In the first year of trials, he hired an NDF Disc Planter from a local grower, with an option to purchase. This was used next to a tine machine to gain experience, assess crop performance under the two seeding systems and reduce the investment risk if zero-till did not deliver financial improvements for his farm's specific conditions.

The disc seeding system was found to generate significant labour and fuel savings and Ty says he could sow more hectares in 24 hours – and with less capital outlay – than with two tined machines running 18 to 20 hours.

A 2013 GRDC-funded Planfarm study 'How to Farm Profitably in the Eastern Wheatbelt of WA' highlighted that CTF and the use of lime (especially when incorporated into the subsoil) are key practices that growers can use to lift water use efficiency (WUE), grain yields and potential returns in this region, by reducing soil compaction and improving soil pH.

## CROP PLANNING AND INPUTS

The Kirby's crop rotation and variety choice at Beacon and Nyabing is determined by soil type, amount of summer rainfall received and weed burdens. These have been the key drivers of producing break-even and profitable crops in the eastern grainbelt during the past decade.

Typically at Beacon, lighter country has a rotation of cereal-cereal-fallow (C-C-F) or fallow-canola-cereal-cereal (F-C-C-C) and heavier country can have four consecutive years of cereals (C-C-C-C).

If paddocks remain weed-free at harvest, these will be sown to cereals for additional years to optimise the profitability of the whole farm system.

In 2015 at the Nyabing property, about 30 per cent of total crop area was sown to canola for weed control, but typically the rotation plan is wheat-wheat-barley-canola (W-W-B-C) or wheat-wheat-canola (W-W-C).

Ty says the amount of summer rain received largely determines the break crop program at both locations and, in recent years, canola has been the most profitable and least risk option if sown in the right conditions, with access to subsoil moisture and at the correct depth.

The Kirbys use a short fallow system on non-cropped and weedy paddocks, where any crop residue and weeds are knocked down in mid-July or early-August in preparation for sowing again the following autumn.



PHOTO: GRDC

In 2015, about 1500ha or 10 per cent of the total cropping area at Beacon and Nyabing was in a short fallow phase. But in the previous two years, about 15-20 per cent of the total area was fallowed.

The Kirbys undertake soil testing analysis across the Beacon and Nyabing farms on a three-year paddock rotation, monitoring top, mid and subsoil layers for pH and to gauge the effectiveness of their fertiliser program.

Ty says with a run of dry seasons in the past decade, rates of fertiliser have been reduced compared to what was used 15-20 years ago and costs have come down by using more targeted applications based on crop requirements.

***Just like at Beacon, the Nyabing cropping operation is run 'lean and mean' with a focus on assessing every budget line item, keeping input costs down and generating optimal profit margins.***

TY KIRBY, BEACON.



PHOTO: Cox Inall Communications

## GRAIN MARKETING

The Kirbys use an independent grain marketing consultant and aim to have forward sales of up to 30 per cent of expected wheat production locked-in by seeding, or at the completion of seeding.

Ty typically starts to investigate forward sales in August for the next year's crops if the price is right. His trigger point is about \$280/tonne or above for current season wheat.

His early sales are all swaps, so he can trade out of these as required, and his basis threshold is about \$310/t.

"We will do an end of seeding and a pre-harvest review, with an aim to have about 60 per cent of cereal grains hedged by the time harvest starts," he says.



### MORE INFORMATION

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# Business Case Study

PAUL AND COLIN GREEN, HYDEN

## SNAPSHOT

**OWNERS:** Paul and Colin Green

**LOCATION:** Hyden, WA

**FARM SIZE:** 14,300ha

**ENTERPRISES:** 100 per cent cropping

**AVERAGE ANNUAL RAINFALL:** 325mm

**PREDOMINANT SOIL TYPES:**

Highly variable – gravel, loam, sand, clay duplex

**2016 CROPPING PROGRAM:** 5000ha wheat, 4000ha canola, 3000ha barley, 1000ha legumes, 1000ha fallow

**TYPICAL/IDEAL ROTATION:** pulse-canola-cereal

## STRUCTURE AND SURPLUS KEY TO RUNNING A TIGHT SHIP AT HYDEN

Economies of scale in the production system, input cost control and consistent cash flow are the lynchpins to business profitability for the Green brothers at Hyden.

Working together for the past 23 years, Paul and Colin Green co-own and jointly manage a 14,300 hectare, 100 per cent cropping enterprise. They produce wheat, barley, canola, oats, hay, lupins and field peas on widely variable soil types with an average growing season rainfall of 250 millimetres.

The pair operate with minimal outside labour and rely on the use of large scale equipment bought with an eye on boosting cropping efficiencies, cutting operating costs and increasing their quality of life.

Paul says this does not necessarily mean they always seek out the very latest in technology. In some cases they have reverted to purpose-building their own machines.

He says minimum-tillage and associated soil moisture conservation practices have been crucial to the viability of eastern grainbelt cropping businesses in the past decade, on the back of extremely low growing season rainfall in many years.

“These systems allow us to work vast areas of land with limited labour, producing food for export to satisfy the world’s appetite for quality grains,” he says.

“But this does come at a significant financial cost to growers, who are continually faced with a need for bigger machines – often equipped with new technologies – if they want to expand their farming operations.



Hyden grower Paul Green, who farms with his brother Colin, is focused on optimising efficiencies and ensuring steady cash flow.  
PHOTO: Cox Inall Communications

“To justify the expense and be profitable, farm machinery needs to generate production efficiencies.

“This should also help growers to avoid working longer days, or have increased labour requirements.”

## BUSINESS STRUCTURE AND PHILOSOPHY

Paul and Colin are directors of their farm business and hold regular planning and strategy meetings together and – as required – with their private farm management adviser, private agronomist, grain marketing adviser, financial planner and financiers.

In the past five years in particular, the operating business has evolved to be in a position to be separated from the land-holding entities.

“Off-farm investments and land holdings are kept separate from the farm business,” Paul says.

“Part of the reason is to simplify future succession plans and allow for outside investors in our business one day, while keeping our land assets secure.”

The Greens take a long-term view of on-farm business investments, not just injecting capital after good seasons, and prioritise available budget capital expenditure on key criteria of:

- Implications for skilled labour availability
- Increasing production efficiencies
- Reducing operational costs.

“We are always looking at ways to reduce our costs and optimise profits, so all investments are considered in terms of the impact on future cash flow,” Paul says.

## MANAGEMENT STYLE AND SKILLS DEVELOPMENT

Paul is a firm believer that time management costs nothing, but without it, the cost to the business can be high.

His philosophy is to plan ahead, always be prepared – especially for seeding and harvesting periods – and not fall behind on maintenance (in a perfect world) and other on-farm tasks.

“Being flexible with Mother Nature and working to the seasons, not by the calendar, presents many opportunities to maximise profits,” he says.

“Realistically we need a farm manager, but to date we have found it difficult to up-skill the appropriate person to work with us and fit our business model.

“Our labour structure has limited our expansion because we have found it difficult to get the right type of people and our production is too variable for many contract services to be affordable on a year-in-year-out basis.

“We currently have two full-time-equivalent staff and use two casual staff for about 18 weeks a year, so it is mainly machinery and technology that keep us running.”

Paul says he and Colin are self-taught in business, finance, management and implementing profitable production systems on the ground.

“Our income comes from production, so we ensure we are always learning from our experiences each season – both successes and mistakes – and from other growers through participation in grower group and industry events, field days and updates,” he says.

***Scale, with farm rotational diversity, goes a long way in ironing out the financial variability from the seasonal outcomes we get.***

PAUL GREEN, HYDEN.



Seeding underway at the Green's Hyden property in 2016. PHOTO: Paul Green

“I have seen how the mining industry makes money from achieving economies of scale, having the right machinery and available capital with limited labour.

“Agricultural businesses are very similar in many regards and we need to achieve just reward for the work we do.

“Scale, with farm rotational diversity, goes a long way in ironing out the financial variability from the seasonal outcomes we get.”

Paul says the main strengths of their farm business include having:

- A good level of economies of scale
- A high degree of forward planning
- An ability to generate cash flow.

He says potential weaknesses include:

- Lack of staff and no separate farm manager to owners
- Natural environmental limitations to crop production
- Concentration of management to two people.

In future, the Green brothers say they are open to using a true board structure for their farm business, bringing in people with a range of skills within and outside of the agricultural sector.

## BUDGETS AND PLANNING

Seasonal variability is high and the cost-price squeeze strong for growers in the eastern grainbelt.

For this reason, the Green's long-term budget planning takes into account regular, above and below-average seasonal conditions, price scenarios and the predominant crop production risks of cereal frost and heat stress.

***We are always looking at ways to reduce our costs and optimise profits, so all investments are considered in terms of the impact on future cash flow.***

PAUL GREEN, HYDEN.

Paul says annual budgets need to start with a surplus and costs are entered from the production capacity of the farm, averaged across the past 10 years.

He says a gross margin analysis is carried out each year for each paddock and this information is compared across a five and 10-year period, as well as benchmarked against industry peers.

There is a structure for machinery turnover, regardless of seasonal conditions, based on work hours.

Due to their relatively remote location north of Hyden, after-sales machinery service on the farm is minimal, which means purchase decisions are driven primarily by price.

He says the business tends to be over-capitalised because of a need to complete crop seeding operations in a given period of time, with high risks from seasonal conditions such as frost and heat stress later in the year.

Early dry spells and limited moisture at the break of a season are common seeding scenarios, so high seeding capacity is required.

Harvest is the opposite. While it still needs to be completed in a timely manner, generally low humidity and high heat allow for 24-hour harvesting operations that need fewer headers but more grain storage facilities.

## EXPANSION

Extra land can lead to extra income and to grow their business, the Greens are actively assessing expansion opportunities every year.

“My family came to Hyden in 1952 with the purchase of 500ha of virgin bush that had only 20ha cleared from the previous owner,” Paul says.

“As opportunities arose over the years, we have capitalised on them.”

Paul says land acquisition today is very targeted and based on the soil types that will be most profitable to the farm business going forward.

Potential purchases take into account location, soil type, soil test results and production, rotation and weed control history. The aim is to have these purchases paid off within five years.

## PRODUCTIVITY TARGETS AND PERFORMANCE

The Green's Hyden operation has sand, loam, clay, red morrell and yellow acid wadjil soils and typically receives about 250mm of its 325mm annual average rainfall during the growing season.

Long-term average wheat yield is 1.5t/ha (10 years) and the long-term average break-even wheat yield is 1.1t/ha.

Long-term canola yields are 0.9t/ha and the long-term average break-even canola yield is 0.6t/ha.

Estimated total costs for the cropping business are about \$300/ha and biggest line items are herbicides, fertiliser, machinery and capital, followed by labour, repairs and diesel.

## PADDOCK PLANNING

In recent years there have been significant advantages from summer rainfall conservation.

Controlling summer weeds early and not allowing them to use this valuable moisture has allowed crops to be sown on a date with confidence, according to Paul.

“Our crops get measured as kilograms of grain grown per millimetre of growing season rainfall and decades of data show a direct and consistent correlation of production to rainfall,” he says.

“At grain prices of about \$300/t every 1mm of rain is worth \$3/ha of crop for us, so it pays to conserve as much summer rain as possible.”

Summer herbicide applications start immediately after harvest as part of an integrated annual weed control program, which also includes weed seed destruction at harvest with a Harrington Seed Destructor, chaff carts and a WEEDit spot sprayer.

Paul says the amount of summer rain received determines the time to start sowing canola. Break crop planning is based on profit projections and canola has been the best option in recent years, based on high gross margins.

Legume plantings have been scaled back significantly due to economics, and brown manuring and canola areas have increased to take their place.

After brown manuring or a legume crop, canola is grown to take full advantage of the early sowing option provided by conserved moisture and higher nitrogen (N) that has been mineralised. Two years of broadleaf crops allows excellent grass weed control for the following cereal.

Paul says crop rotations and sequences are not set, but based on logistics to achieve efficiencies of scale, reduce potential frost and heat stress risk, and account for paddock weed history and weed control measures.



PHOTO: Paul Green

He says continuous cereal production across several years has been tried on many of their blocks to maximise returns, but this tactic always seems to fail.

“Eventually, weeds and disease pressure push the paddock costs up to levels that become too high a risk for our variable production,” he says.

“But new technologies are always allowing the boundaries to expand.”

## MANAGING NUTRIENTS AND SOIL CONSTRAINTS

Soil testing is undertaken across the Green’s farm, with about 50 per cent of cropped area tested every two years (on rotation) and results used as a guide to nutrient and lime applications.

Production zones have been set up based on multiple years of yield and soil test data and all nutrients are applied at seeding.

“There is no ‘playing the season’ as we know we are moisture limited and we fertilise accordingly up front,” Paul says.

“Maintaining high phosphorus (P) levels is also a key consideration for many of our soil types and yield responses to extra P in recent years have been significant.”

**“At grain prices of about \$300/tonne, every 1mm of rain is worth \$3/ha of crop for us, so it pays to conserve as much summer rain as possible.”**

**PAUL GREEN, HYDEN.**

The Greens have been applying lime to the topsoil for decades but have not yet implemented any subsoil incorporation tactics.

“A higher rate used once is better for reaching the acid at depth, than low rates every year,” Paul says.

“We don’t have the capacity for subsoil incorporation yet, but will look at it in the future if it is needed.”

## GRAIN STORAGE AND MARKETING

There is capacity to store 3500t of grain in silos on the Green’s property and the brothers are looking to expand this in future to provide flexibility in selling options.

Back-loading fertiliser and lime is an important factor in the affordability of on-farm grain storage due to the high costs of buying and maintaining silos, according to Paul.

“On-farm storage and the strategic use of professional grain cartage contractors allows more marketing options for us,” he says.

The Greens use a private grain marketer and undertake some forward selling of wheat in November to generate cash flow. But much of their grain selling is seasonally driven.



### MORE INFORMATION

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# Business Case Study

BOB NIXON, KALANNIE

## SNAPSHOT

**OWNERS:** Bob, Daniel and Matthew Nixon, their partners, and parents Robert and Helen

**LOCATION:** Kalannie, WA

**FARM SIZE:** 16,400ha

**ENTERPRISES:** Cropping, Merino sheep

**LIVESTOCK NUMBERS:** 1100 head Merino ewes (phasing out)

**AVERAGE ANNUAL RAINFALL:** 300mm

**PREDOMINANT SOIL TYPES:** Mixed

**2016 CROPPING PROGRAM:** 7300ha wheat, 3770ha canola, 2080ha barley, 200ha oats, 3000ha pasture/fallow

**TYPICAL/IDEAL ROTATION:** Varies according to soil type, weed and disease burden

**Note:** This case study is an edited version of Bob Nixon's 2016 GRDC Farm Business Update paper 'Mitigating risk in a dry and variable climate'. Bob was a 2014 GRDC-sponsored Nuffield Scholar, studying risk mitigation in dry and variable climates in North and South America, Africa and Europe.



Kalannie grain grower Bob Nixon says eastern grainbelt farm businesses require tight management and efficiencies that come from scale.  
PHOTO: Cox Inall Communications

## BUSINESS GROWTH POSSIBLE IN CHALLENGING CONDITIONS

The vagaries of the eastern grainbelt climate during the past decade have not prevented business growth for the well-established Nixon family at Kalannie.

Brothers Bob, Daniel and Matthew, who farm with parents Robert and Helen, are the fourth generation to run the family's cropping and livestock operation.

Bob started work on the family farm in 1993 and enjoyed a nine-year run of good seasons, during which time crop inputs were increased to drive productivity.

"Since then, we have had a reduction in autumn rainfall and a big increase in seasonal variability that has seen us fluctuate from getting no seed back from harvested grain (in 2002) to achieving a 43 per cent return on capital (in 2008)," Bob says.

"Problems arise when multiple poor years occur in a row but in some circumstances, the best break crop can be a drought.

"If losses are managed and a good rainfall season follows, a highly productive low input year is achieved."

Bob says in 2007 and 2010, with only modest average wheat yields of 0.73 tonnes per hectare and 0.95t/ha respectively, the business had a 3 per cent return on capital.

He says this was driven by containing costs and undertaking strategic grain selling.

The Nixon's approach to grain marketing is based on making conservative early sales that are increased when confidence grows about the certainty of the season. Grain is also held for a period of time if prices are poor at harvest.

## SCALE AND EFFICIENCIES

The Nixons have steadily expanded their business to lift efficiencies of scale, mainly by purchasing more 'forgiving' soil types, such as light to medium soils that require less moisture to establish a crop.

Bob says scale is a useful tool for keeping machinery and input costs under control.

Even with more than \$2 million invested in machinery, he says cost per hectare is low in their benchmarking



PHOTO: © Evan Collis Photography/GRDC



PHOTO: © Evan Collis Photography/GRDC

figures, and more importantly, machinery costs per dollar of income produced are \$0.50 for the business.

“A low cost structure and in turn, a low break-even yield helps us to limit financial damage in poor years, and our business can break even or make money even in rainfall decile 0.2 and 0.3 seasons,” he says.

“But it is important to work out when scale stops working for you, what the tipping point is and when management becomes limiting and compromises outcomes.”

Bob says farm businesses in the eastern grainbelt are in some ways advantaged by low land values (by Australian and international standards) and limited external influences, such as high demand from foreign investors.

“In this environment production does not have to be intensive to compete and we can chase the first, low risk part of profit on the law of diminishing returns – and this is then coupled to scale,” he says.

## PRODUCTION SYSTEM

The Nixons crop about 13,000ha of wheat, barley, canola and oats with two sets of plant.

They have another 3000ha that has traditionally been used for pasture but is now increasingly being treated as chemical fallow.

“Fallow is an important way to reduce variability in the production system and it works with the right soil type and when land values are low in the eastern grainbelt,” Bob says.

“Fallow is hard to justify when land prices are high.”

Fallow is often followed by a canola crop to give a ‘double break’ for moisture conservation and weed control, improving canola reliability and then leading into a low-cost cereal phase.

Bob says if the seasons continue to become less favourable to cropping in the eastern grainbelt, taking poor-performing soil types such as heavy clays out of production may become important in future.

## A DOUBLE BREAK STRATEGY

When Bob travelled on his Nuffield Scholarship he visited the government body Agriculture and Agri-Food Canada, based in Alberta, where he saw a rotation trial that included seven years of continuous canola crop.

This sequence had held together well and after the seven years, was yielding only 20 per cent less than the region’s ideal rotation of canola following field peas.

Growing canola after pasture or fallow has been a big success in the Nixon’s cropping system in the past 15 years, providing two years of 100 per cent weed and disease control and leading into an extended low cost cereal phase.

Bob says this ‘double break’ has been particularly valuable in cleaning up purchased land with large weed burdens and effectively ‘re-setting’ the system.

He says canola yields on their farm have been as reliable as wheat yields across multiple years, growing costs are similar (except harvest costs resulting from slower harvesting speed for canola) and the oilseed now makes up about 20 per cent of the total cropping program.

Based on the success of the double break, the family is now trialling a further ‘stacked rotation’, with a trial set up in 2015 of canola following canola following pasture (P-C-C) across half a paddock, with wheat on the other half (P-C-W).

In 2016, the whole paddock has been sown to wheat to assess the yields, productivity and profitability of growing P-C-C-W versus the more traditional rotation of P-C-W-W.

They are also measuring weed numbers and soilborne diseases, such as rhizoctonia and nematodes, in this sequence.

“The idea with canola following canola is to grow a conventional triazine-tolerant (TT) line first, followed by a GM Roundup Ready® canola,” Bob says.

“By using atrazine and propyzamide first and then glyphosate and trifluralin in the second year, no herbicide group is used in the crop twice in two years.

***It is important to work out when scale stops working for you, what the tipping point is and when management becomes limiting and compromises outcomes.***

**BOB NIXON, KALANNIE.**

“This is great for herbicide resistance management and, because the GM canola is grown second, there is no risk of contamination and we can benefit from the superior blackleg resistance of the GM variety.

“But this is not likely to be an option in areas where sclerotinia disease is a problem.”

## ADDRESSING SOIL CONSTRAINTS

A positive outcome of increasing crop inputs in the 1990s was a high application of phosphorous (P), which has led to a significant P bank in the soil that crops can now use.

To ensure the full benefits of this are achieved, the Nixons are working to lift soil pH levels to make P more available.

This will allow them to redirect investments typically spent on P into the application of lime and in turn, increase crop yields and herbicide efficiency.

Bob says the expense of freighting lime to the eastern grainbelt prompted the family to find an alternative on-farm source that has since led to significant cost savings.

“In our areas of low pH soils, we are spreading what was once a poor-performing morrell soil made up of calcium (14.5 per cent) and magnesium (4.5 per cent) carbonate with a 40 to 50 per cent neutralising value (NV),” he says.

“This has half of the NV compared to coastal lime sand, so we double the application rate to 4t/ha.

“With less autumn rainfall, our lighter soil types are playing a bigger role in generating profit, as they require less moisture to germinate seed.

“Removing constraints such as acidity is crucial to improve the productivity of these soils.”

## LIVESTOCK

The Nixons have decided that the negatives of livestock production currently outweigh the positives and are in the process of selling their remaining Merino sheep, which they believe are compromising the cropping system.

Bob says in the past, the sheep enterprise added income diversity to the business and were another tool in integrated weed management.

But he says sheep reduce ground cover and compact and degrade soil structure, which impedes dry seeding – now a key driver of improved machinery utilisation and water use efficiency on the property – and reduce the effectiveness of pre-emergent herbicides.

Bob says he believes for livestock to be profitable and practical in the eastern grainbelt, there is a need to focus on trading rather than breeding, confined feeding and grazing cereals.

## FAMILY AND FUTURE

One of the best ways for an eastern grainbelt farming business to gain or maintain scale is to stick together as a family unit, according to Bob, who says this also generates huge economic and social efficiencies.

“Travelling on a Nuffield Scholarship for 20 weeks was made a lot easier by having someone capable and trustworthy to cover me,” he says.

“In difficult times having someone to share decision making also de-stresses the situation.”

Bob says in the current pattern of seasonal conditions, he believes most low rainfall farming businesses in WA can remain profitable in the future.

“In many ways, on the back of low land values, this area can adapt more readily than the medium rainfall zone,” he says.

“Our businesses need to drive our efficiencies further so that we continue to be the most efficient low cost producers in the world.

“We need to get the whole system right because, at the end of the day, farms are just businesses.

“When a farm is run as a lifestyle it makes a very poor business and when a farm is run as a business it makes a very good lifestyle.”



## MORE INFORMATION

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Note: Bob's full paper presented to the GRDC Farm Business Update series in February 2016 can be found at:  
[www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/02/Mitigating-risk-in-a-dry-and-variable-climate](http://www.grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/02/Mitigating-risk-in-a-dry-and-variable-climate)

To see Bob speaking about his Nuffield Scholarship experience, go to:  
[https://www.youtube.com/watch?v=szjgk1X1j0o&feature=em-share\\_video\\_in\\_list\\_user&list=PLWdEyVDhYCclDCEwgn2kp\\_9nYeNMrDBAr](https://www.youtube.com/watch?v=szjgk1X1j0o&feature=em-share_video_in_list_user&list=PLWdEyVDhYCclDCEwgn2kp_9nYeNMrDBAr)

# Business Case Study

BRAD JONES, TAMMIN

## SNAPSHOT

**OWNERS:** Brad and Kate Jones

**LOCATION:** Tammin, WA

**FARM SIZE:** 11,000ha

**ENTERPRISES:** 100 per cent cropping

**AVERAGE ANNUAL RAINFALL:** 300mm

**PREDOMINANT SOIL TYPES:** Sand over clay, some duplex

**2016 CROPPING PROGRAM:** 5150ha wheat, 1835ha canola, 1830ha barley, 1000ha fallow, 715ha field peas, 585ha oats

**TYPICAL ROTATION:** fallow-cereal-cereal-canola-hay-legumes

## KEY FEATURES OF A STRONG BUSINESS IN THE EASTERN GRAINBELT:

- Low break-even yield at average grain prices
- Able to capitalise on good seasons and prices when these occur
- Conservatively geared to cope with inevitable poor seasons
- High labour and machinery efficiency
- Culture of attention to detail and hard work
- Above average management ability, enabling grower/s to consider all relevant information at a point in time and inherently make the correct decision.

## ABILITY TO ABSORB RISK IS KEY TO SUCCESS AT TAMMIN

In an environment of tight margins, variable climate and fluctuating commodity prices, Brad and Kate Jones are firmly focused on generating whole-system profits relative to risks in their Tammin farm business, Bungulla.

Management is concentrated on returns and sustainable margin growth through increased business scale, reduced fixed costs and efficient use of inputs.

Adoption of latest technologies, especially for on-farm grain storage and to address soil constraints, is lowering variable costs and helping to minimise risk exposure.

Marketing strategies are designed to optimise prices received for grain and take advantage of supply chain opportunities. This has led to an expansion of on-farm grain storage capacity to 6500 tonnes in recent years.

Brad says the business is not about using low inputs, but managing fertiliser, herbicides and other inputs to the highest level of costs possible to still attain a profitable outcome.



Ability to store grain on-farm, with silo capacity for 6500 tonnes, is a key component of optimising returns and business profits for Tammin grower Brad Jones. PHOTO: Cox Inall Communications

To this end, he has become an accumulator of vast amounts of data to help in decision-making.

"I get courage for change from data and analysing data because it tells me how our paddocks and business are faring and how well we are dealing with risks," he says.

## RAPID EXPANSION

Brad and Kate have grown Bungulla farm from 4870 hectares in 2007 to its current size of 11,000ha using a lease and follow-on purchasing approach. The priority is acquisition of neighbouring land parcels.

Their property, which is mostly located in Western Australia's Medium Rainfall 3 (M3) zone, is triple the size of the average farm in the M3 zone (at 3600ha) and almost double the average farm size in the Low Rainfall 3 (L3) zone that it borders (at 5800ha).

**I get courage for change from data and analysing data because it tells me how our paddocks are faring and how well we are dealing with risks.**

**BRAD JONES, TAMMIN.**

This large scale of operation is generating efficiencies in machinery use, reducing weed and pest control costs, paving the way for aerial fertiliser, herbicide and fungicide applications and improving salinity control.

## PRODUCTIVITY AND PERFORMANCE

Bungulla farm is part of a national study into 'Novel business structures for adaptation to a changing climate', which aims to identify how Australian farmers are adapting to climate variability.

This is an initiative of the Australian Department of Agriculture and Water Resources (DAWR) 'Filling the Research Gap' program and has support in WA from The University of Western Australia (UWA), Department of Agriculture and Food WA (DAFWA) and Charles Sturt University, at Muresk.

As part of this project, an analysis of Bungulla business performance in 2013 by DAFWA trade and agribusiness development senior economist, Brad Plunkett, showed the Jones family achieved:

- Average wheat production of 12.56 kilograms/millimetre of rain (M3 zone average was 13.34kg/mm and L3 average was 10.45kg/mm)
- Average wheat yields of 2.7t/ha (M3 average was 2.69t/ha and L3 average was 1.7t/ha)
- Higher yields than the average for the top 25 per cent of growers in L3 (at 2.14t/ha)
- Average operating costs \$36/ha lower than the M3 average and \$150/ha lower than L3 average
- Higher wheat prices than the average in M3 and L3.

**Note:** Break-even wheat yields for Bungulla are estimated to be 0.7-0.9t/ha, depending on grain prices.

Brad Plunkett attributes the success of the business to a focus on lifting margins by increasing outputs to spread input costs, as well as adopting strategies to improve grain prices received.

## BUSINESS STRUCTURE

Bungulla has a quasi-board and uses private advisers for business management, agronomy and grain marketing.

Brad and Kate run three years of consecutive budgets that focus on break-even points and managing to targets for return on capital.

The Plunkett analysis showed Bungulla has higher than average labour costs, at about \$19.70/ha, compared to the M3 average of \$10.10/ha and L3 average of \$8.10/ha.

Brad attributes this to seeking and retaining staff with higher than average skill sets (including an aeroplane mechanic/pilot) but says these costs can be partly offset by contracting labour off-farm for aircraft and freight tasks.

"Our labour structure also gives our business the operational flexibility to respond to seasonal changes and opportunities," he says.

Brad says he has a strong focus on staff training and development and his priorities for his own professional development include training days, courses and farm occupational health and safety. He has completed a Master of Business Administration (MBA).

## USE OF DATA AND TECHNOLOGY

The Jones family uses wide-ranging and incorporated technologies across their farming system, including:

- Global Positioning Systems (GPS), auto-steer and yield data collection at harvest
- GPS and auto-steer on tractors
- WeedSeeker® on the boomspray
- GPS flow control on the farm's turbine aeroplane
- Spatial precision agriculture tools
- Soil test mapping
- Predictive yield models.

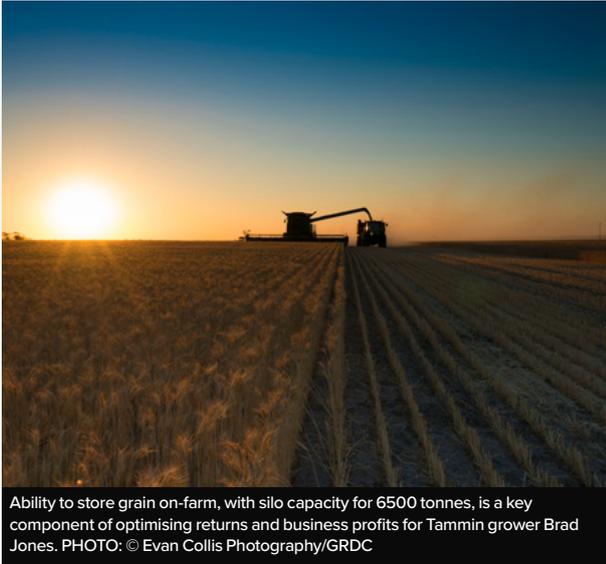
Machinery is turned over about every two years to keep abreast of latest technologies, minimise repair and maintenance costs and reduce downtime in the face of weather risks at harvest and seeding.

In 2008, Brad and Kate started to concentrate resources on crop nutrition and weed control systems and methods to improve soil pH in their quest to lift productivity.

This led to the introduction and integration of GPS, yield mapping, camera recognition and soil mapping using gamma-ray radiometrics, spectrometry and electromagnetic induction (EMI).

Gamma-ray and EMI maps have been 'ground truthed' with extensive physical soil testing to a depth of 30cm and some core testing to 1.2m on a small number of sites.

"We are using our combined data sets to pin-point areas of acidity that need liming to improve crop root nutrient uptake and to identify areas of the farm that require a specific fertiliser," Brad says.



“We do scenario plans to determine the best returns on investment for fertiliser and monitor crop extraction of nutrients, such as phosphorus (P), each year.

“On two paddocks in 2015 we also trialled the collection of real-time, zone-specific soil nitrogen (nitrate) data using the portable 360 SOILSCAN™ system.

“Results are fed into an iPad app to produce nitrogen (N) curves and the information is used in our nutrient prescription maps.”

Brad says paddock zones have been created for VRT and soil-specific, prescription fertiliser, lime and herbicide maps, which are uploaded to tractor cab software.

“We are identifying the areas of the farm that will respond most profitably to the ‘prescription’ and therefore justify the investment,” Brad says.

“For example, WeedSeeker® technology on the boomspray has cut herbicide use on some paddocks to as low as 10 per cent of previous levels.

“We use higher rates of herbicides – up to 3 litres/ha of glyphosate – but by reducing fuel, machinery and labour costs, we can treat a 10 per cent weedy paddock for about \$5/ha.

“This is well below our previous cost of blanket herbicide applications at about \$30/ha. With fertiliser, using liquid product for N, P and potassium (K) in a VRT system is giving us an 11.3 per cent better net return than granular fertiliser.”

Brad describes the farm’s crop nutrition system as balanced, versus volume, and estimates it has increased wheat net margins by about 20 per cent in the past three years.

Total N rates have been cut to about of 15 units of N averaged across the whole property, with areas coming out of fallow receiving no N and second-year consecutive cereal paddocks receiving higher rates of N.



Low rates of liquid calcium, P, K and micro-nutrients are applied at seeding to help correct pH levels in soil immediately surrounding the germinating crop and improve root growth.

## Paddock Plans

About 35 per cent of the Bungulla crop program is dry sown each year and, as the season unfolds, paddocks are ranked and dropped off if rains are not forthcoming.

Break crops, mostly field peas and canola, and chemical fallow make up about 30 per cent of farm area each season.

Brad says incorporating fallow in the production system is a key factor in maintaining soil health and improving plant available moisture. The area put to fallow is projected to rise from about 8 per cent to 20 per cent during the next decade.

## Grain Storage and Marketing

Bungulla farm has capacity to store 6500t of grain, or about 40 per cent of the annual crop produced, and this enterprise – averaging 9 per cent return on investment – is in an expansion phase.

About 4000t of the Jones’ on-farm storage is aerated and silos are fitted with latest technology to allow quality analysis, aggregation and blending of high and low protein grain to optimise returns. This allows extraction of supply chain efficiencies and tax advantages.

Brad says the harvest is now a 24-hour operation, no longer restricted by receival point opening hours or poor weather, and can be carried out with one farm-owned harvester (plus one contract harvester).

There is ability to store grain for delivery later in the year and this has led to efficiencies in back-loading fertiliser and lime for Bungulla and other local farms.

***It is vital we keep raising the bar in the face of operating a complicated, multi-layered modern farm business that is dynamic and continually evolving.***

BRAD JONES, TAMMIN.

Other benefits of the on-farm storage, according to Brad, include insect control, overcoming falling numbers and other potential grain quality downgrade issues and reducing the risk of weather damage to the crop, which in turn has slashed insurance premiums.

The Plunkett analysis found that because Bungulla relies on Australian dollar swaps (derivatives) to manage price risk, the business benefits from being able to lock-in grain price spikes earlier in the season for a portion of the crop.

This portion can be increased if production becomes more assured during the season, and when grain starts coming into the storage system, if the price spike persists.

The analysis suggests a lower target grain yield, associated with a target break-even that is based on a lower cost structure, leads to more of the break-even target being met with a locked-in price at lower risk.

## WHAT THE FUTURE HOLDS

Brad cites his business strengths as:

- Having the ability to execute tasks and strategy
- A willingness to try new products, innovations, procedures and technologies
- Leading a workforce that is fully engaged and involved in short and long-term planning.

Brad says potential weaknesses in the business include:

- Self-funding of on-farm research and development (R&D)
- Low peer adoption of new R&D and innovations, meaning collaboration is low
- Lack of time.

For the Jones family, longer-term business priorities are to continue implementing new technologies to drive efficiency gains, training staff to higher levels to operate increasingly sophisticated machinery and development of infrastructure through the grain supply chain.



PHOTO: GRDC

“We are continuously thinking strategically about our business and then developing the skills to back that up in human resources and financial modelling,” Brad says.

“It is vital we keep raising the bar in the face of operating a complicated, multi-layered modern farm business that is dynamic and continually evolving.”



## MORE INFORMATION

Brad Jones – Tammin  
0427 632 244, [brad@bungulla.com.au](mailto:brad@bungulla.com.au)  
Brad Plunkett – DAFWA  
08 9368 3541, [brad.plunkett@agric.wa.gov.au](mailto:brad.plunkett@agric.wa.gov.au)

DAFF *Filling the Research Gap* initiative analysis:  
<http://www.aegic.org.au/media/news/2013/04/can-novel-farm-business-structures-help-farmers-tackle-climate-variability.aspx>

Full copy of Brad Plunkett’s Bungulla case study:  
<http://www.agrifood.info/perspectives/2015/Plunkett-pers.pdf>

# Business Case Study

MATT STEBER, KELLERBERRIN

## SNAPSHOT

**OWNERS:** Matt and Allie, Lou and Lyn Steber

**LOCATION:** Kellerberrin, WA

**FARM SIZE:** 12,040ha (10,800ha cropped)

**ENTERPRISES:** 100 per cent cropping

**AVERAGE ANNUAL RAINFALL:** 315mm

**PREDOMINANT SOIL TYPES:**

Medium, sand-over-clay/gravel and some loam

**2016 CROPPING PROGRAM:**

5760ha wheat, 2130ha canola, 1620ha barley, 510ha lupins

**TYPICAL ROTATION:**

fallow-cereal-cereal-canola/hay-legumes

## KEY FEATURES OF THE STEBER'S BUSINESS THAT DIFFERENTIATE IT FROM MORE 'TYPICAL' EASTERN GRAINBELT FARM BUSINESSES INCLUDE:

- A target return on capital of 15 per cent
- A focus on the long-term, with decisions centred on achieving long-term benefits
- Extensive long-term liming program
- Use of Variable Rate Technology (VRT) for fertiliser
- Use of the Yield Prophet® tool for in-crop decision making and grain marketing support
- Use of strategic fallow
- Push for economies of scale.

## STEBER FAMILY STRIVES FOR MARGIN GROWTH

Having limited control over the key cropping profit drivers of rainfall and commodity prices has reinforced the need for tight business management by south Kellerberrin growers Matt and Allie Steber.

Recently quitting their small sheep flock, the couple is now wholly focused on grain production. This is undertaken with Matt's parents Lou and Lyn, the Steber's sons Tom, Rory, Lachie and Paddy (who are in various stages of secondary education), and two full-time staff.

The Steber's business goal is to generate profit from the cropping enterprise and Matt says there is little room for error, given the high input costs, variable growing season rainfall and stagnant commodity prices of recent years.



Matt Steber is firmly focused on profit margins in his eastern grainbelt cropping enterprise at Kellerberrin. PHOTO: Cox Inall Communications

## BUSINESS EXPANSION AND STRUCTURE

Matt and Allie are third generation farmers and have grown the family's Kellerberrin property from 7600 hectares in 2010 to its current size of 12,040ha, of which about 95 per cent is cropped each year.

The Steber landholding is almost double the size of the average farm (5800ha) in the Low Rainfall 3 zone (L3), where it is located on the western edge.

Matt says he is very selective when making land purchases. He calculates a value for each paddock based on likely production, the need for inputs and potential costs to address any soil constraints.

If a whole farm is being offered, he will determine a discount figure for land that falls below his productivity targets.

The Steber's large scale of operation is generating efficiencies in machinery costs and use per hectare, reducing the costs of addressing weed and pest issues, contributing to lower overall average input costs and improving profit margins.

***We have confidence in our ability to grow our farm business, even when we are dealing with challenging seasons.***

**MATT STEBER, KELLERBERRIN.**

The farm business is structured as a trading trust with a corporate beneficiary. This helps to keep marginal tax rates down.

Strategic and operational business planning and budgeting is a year-round process, primarily led by Matt and Allie.

After harvest and before the following year's crop planting, there is detailed and accurate analysis and reporting of the season's results in terms of:

- Budget actuals
- Enterprise gross margin (GM) analysis
- Business position summary (to check progress)
- Return on equity.

These analyses, coupled with a review of the effectiveness of agronomic decisions, drive the planning process and budgets for the coming season, covering enterprise mixes, crop types and varieties, time of sowing and how crops will be treated during the growing season.

"We have confidence in our ability to grow our farm business even when we are dealing with challenging seasons," Matt says.

He says the overriding goal is to farm for profit and long-term sustainability, not solely for higher yields.

Major factors underpinning the Steber's success include intricate knowledge of the property, expected crop productivity based on seasonal prospects and a preparedness to take a short-term loss to make long-term gains.

Matt says potential productivity in his region is largely – and increasingly – driven by the amount of out-of-season rainfall received prior to seeding (summer rain) and how this is stored, in terms of timing of summer weed control and fallow.

Realistically, he says 50 per cent of crop yield is then reliant on spring rainfall and the focus is on setting the system up to be in a good position by then.

Matt employs two full-time-equivalent staff members, one of whom has been with the business for more than 30 years and has wide-ranging responsibilities.

He does not use a private agronomist or farm business adviser, but backs his own knowledge and seeks upskilling opportunities for himself as required, looking both within and outside the agricultural sector to fill any perceived skills gaps.

## PRODUCTIVITY PERFORMANCE

The Steber's long-term (10-year) average wheat yield is 1.72 tonnes per hectare – down from 1.95t/ha in the previous decade.

Their long-term average break-even wheat yield during the past decade has been about 1.2t/ha, depending on grain prices.

Matt estimates his total cropping operating costs are about \$310-350/ha and variable operating costs are about \$230/ha, depending on herbicide and fertiliser prices.

His biggest line items are herbicides/fungicides at about \$55/ha, fertiliser at about \$50/ha and fuel at about \$20/ha.

Increasing the size of the farm has been a major strategy to reduce costs per unit of production, along with adoption of technologies such as variable rate technology (VRT) for fertiliser, to reduce waste and target inputs where they are needed most.

## USE OF TECHNOLOGY AND DATA

Matt and Allie use a range of incorporated technologies across their farming system, including:

- Global Positioning Systems (GPS), auto-steer and yield data collection at harvest
- GPS and auto-steer on tractors
- Seeding sectional control technology (Morris Industries Input Control Technologies)
- VRT systems on the seeder and boomspray
- Spatial soil mapping and precision agriculture tools
- Predictive yield models, including Yield Prophet®.

Machinery is turned over regularly to ensure use of latest technology, minimal repair and maintenance costs and less potential downtime in the face of weather risks at harvest and seeding.

Matt says building a good working relationship with his machinery dealer and ensuring the farm business is in a strong position to make decisions quickly has led to opportunistic machinery purchases at lower prices.

He has been investing in soil mapping using biomass/spatial imagery for many years and this information is overlaid with yield data to create paddock zones for VRT application of fertiliser and, from 2016, lime.

Matt says yield maps highlight parts of paddocks that don't perform, but do not provide answers about why.

He says building comprehensive multi-layers of long-term data for individual paddocks that include information about soil constraints has the potential to significantly lift productivity.



PHOTO: Cox Inall Communications

## CUTTING INPUT COSTS

At seeding, the Stebers use sectional control technology or Input Control Technology (ICT) on their Morris Industries air seeder for overlap control.

This is designed to stop the flow of seed and/or fertiliser over sections that are not required and prevents overlapping.

Matt estimates this system saves about \$20,000-\$22,000/year on seed and fertiliser costs and is a key tool in setting input levels to match yield targets for specific paddock zones.

He says biomass imaging has shown variable plant growth across certain paddocks on his property consistently, year-on-year.

“VRT and ICT are low cost tactics that I can use to manipulate inputs to better match the requirements of the farm’s wide-ranging soil types, from predominantly sand over clay with good phosphate to morrells and quality tama sandplains with low pH,” he says.

The Stebers classify each paddock into three zones of poor, average and high yield potential.

At the start of each growing season, the basal rate of fertiliser is used on the average zone; the lower rate of fertiliser (25 per cent less than the basal) is used on the lower performing zone; and the higher fertiliser rate (25 per cent more than the basal) is used on the higher performing zone.

Where known frost risk is high, inputs – including sowing rates – are reduced to keep vegetative growth lower and help mitigate risk.

Matt says he plays the season with top-up nitrogen (N) fertiliser, but consistently lower yielding cereal paddocks typically receive only three to four units of phosphorus (P) per hectare and about 10 units N/ha during the season.



PHOTO: Cox Inall Communications

He says other parts of paddocks that consistently produce high yielding cereal crops typically receive 12-14 units P/ha and 30 plus units N/ha.

## ADDRESSING SOIL CONSTRAINTS

Matt carries out limited physical soil testing of topsoil to a depth of 30cm and the family has had an extensive liming program for the past 20 years, using surface spreading.

He says they do not yet see any economic advantages of incorporating lime to depth and would prefer to spend the money saved from any amelioration tactic on buying and spreading more lime.

Matt says a Kellerberrin Demonstration Group trial set up in the 1990s using a one-off lime treatment of 5t/ha was still showing yield benefits today, compared to an adjacent area with no lime.

## CROP PROGRAM PLANNING

Matt uses a set crop rotation of lupins, followed by two cereals, followed by canola followed by two cereals on good sandplain soil. Four or five consecutive cereal crops are grown on heavier soils after canola, but he ranks paddocks for sowing as the season unfolds.

“If conditions are unfavourable for optimising profit margins, traditionally poor performing cereal paddocks are dropped back to fallow to set up potentially better results the following year,” he says.

The farm’s main cereal break crop is canola, which is planted on about 22 per cent of cropped area in any given year and needs to yield about 0.4-0.6t/ha – depending on soil type and variety – to break even on most parts of the farm in most years.

Lupins are grown on about 10 per cent of cropped area each year and strategic fallow is used for soil moisture conservation and weed control.

***If conditions are unfavourable for optimising profit margins, traditionally poor performing cereal paddocks are dropped back to fallow to set up for potentially better results the following year.***

MATT STEBER, KELLERBERRIN.

Dry seeding is routinely used, with the trigger being the calendar date, as an early start improves machinery efficiencies and provides management flexibility in terms of total area sown and weed control.

## GRAIN MARKETING

Matt's philosophy is that it is possible to manipulate grain prices and returns to some degree by hedging.

He is aggressive in hedging grain prices when he perceives them to be high or above the median and then passive when prices are under the median. His trigger point is \$300/t and he will often lock-in prices up to three years in advance.

"History will show that wheat is the most volatile commodity in the world, but in a three-year period it will hit \$300/t at some point," he says.

Matt reviews his grain marketing plan regularly and will seek some independent grain marketing advice at times.

He will carry over grain across financial years for tax purposes, sometimes holding stocks for eight to nine months in the CBH Group system, and he uses futures and currency trading for risk management.

Matt sees limited value in investing in significant on-farm grain storage facilities due to the high capital costs involved, double handling of grain and pest control issues.

He says the economics of storing grain on-farm or any potential extra returns from holding grain do not stack up for his own operation, which is close to a CBH Group receival site on a standard gauge rail line.

## LIVESTOCK

Matt and Allie quit the last of their remaining small sheep flock at the end of 2015, as they found it interfered too much with the cropping program in terms of restricting decisions and operations.

Despite the sheep enterprise being profitable in recent years, Matt says the potential returns were outweighed by the bigger benefits to the cropping operation from not running sheep.



PHOTO: Cox Inall Communications

## THE FUTURE

Matt says a key strength of the modern farm business owner/manager is to have an open mind and be open to ideas.

He says his main business strengths include being a good decision maker who takes action at the right time and is focused on getting big decisions right, not sweating the small decisions.

Matt says potential weaknesses in his business style include occasional poor communication and limited ability to delegate responsibilities.

In the future, as the Steber farm business continues to grow, Matt recognises the next generation of managers may require a different ownership structure. For this reason, he says he is open to pursuing a corporate-type model.



### MORE INFORMATION

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# The State of Agricultural Businesses in WA

By David Ward, Farmanco adviser

## SNAPSHOT

### KEY FINDINGS FROM THE FARMANCO PROFIT SERIES DATA (1997-2016) INCLUDE:

- WA farm incomes are highly variable
- Operating returns are as variable as the seasons
- Total farm equity has increased from \$2.7M in 1997 to \$7M in 2016
- Average net equity has been relatively static at 83 per cent
- Crop yield and quality in all zones in 2015 was impacted by the hot and dry finish.

Source: Farmanco, 'The State of Agricultural Businesses', May 2016.

During the past four years, many of Western Australia's farm businesses have been able to recover some strength in financial positions following the widespread devastating season across much of the State in 2012.

Latest Farmanco Profit Series data indicates that across the grainbelt during this period, average farm incomes have increased by more than \$100 per effective hectare, operating returns on farm production assets have generally been positive and net equity has stabilised at about 83 per cent (reaching 90 per cent in some areas).

On the back of this improved position, it appears farm business management strategies for 2016 will centre on:

- Containing costs without limiting production potential
- Replacing machinery
- Improving soil health
- Undertaking expansion opportunities.

In 2016, WA has come off a reasonably good run of seasons in most areas and businesses are considering the many investment opportunities available to them.

As with all decisions in agriculture, just because you 'can' does not mean you 'should'.

My advice is to undertake necessary thorough analysis to ensure you are not placing your business at significant risk and that you can proceed with greater confidence, or vary your plan to more manageable levels.



PHOTO: GRDC

Farmanco compiled its latest Profit Series data using financial information from 260-270 selected clients spread across the WA grainbelt for the period 1997-2015. This was to assist our clients with region-specific benchmarking tools and provide industry with an overview of the health of WA's agricultural businesses.

A summary of highlights from the data is outlined below.

## FARM INCOMES AND NET EQUITY

Average farm incomes in 1997 were \$211/effective hectare and at that time, businesses were generating an operating return of 4.62 per cent off a net equity of \$2.7 million.

Despite wide variations in farm incomes in the past decade, by 2013 and 2014 average incomes had increased to \$624/ha and \$592/ha respectively and by the start of 2016, net equity has risen to about \$7 million.

WA came out of the 1990s with average farm business equity of about 92 per cent, but the drought in 2000 took a significant toll and led to average equity losses of 4 per cent before some recovery the next year.

Through the late 2000s, with generally good management decisions, sound (but fluctuating) equity positions were maintained above 85% from 2003 to 2008. The 2009 and 2010 seasons then hit hard, with average equity falling below 78%. The 2011 season put many back on track, and while 2012 was a challenge, most businesses held their ground.

2013 and 2014 were good seasons for most, and 2015 – while poor in the Great Southern – has seen many central and northern grainbelt and Esperance growers in a good position.

## OPERATING RETURNS

Variability in income has significantly influenced returns on on-farm production assets.

On average, the data from the Farmanco clients has shown these businesses have generated positive returns in 14 out of the past 18 years.

For three of the poor years, returns were likely to be less than the financing costs, or 'break even' at best. But in many cases, farm businesses were able to minimise financial losses.

Average losses have not exceeded 2.12 per cent since 1997 and average gains have exceeded 9 per cent three times. In my view, this is a function of an ability to manage costs when required.

## DEBT TO INCOME RATIO

It is important to keep net debt per hectare in line with, or below, preferred benchmarks. A good rule of thumb would be to understand average farm income (for example \$500/ha) and aim to have net debt at around 80 per cent of this (say \$400/ha). If your farm is 3000ha, this would mean you want to maintain your net debt below \$1.2M.

Keeping your net debt to income ratio to manageable levels may not always be enough for your financiers. This will be particularly important if you are leasing or share farming larger areas and don't have the land value to give your bank a 'safe' security to lending ratio.

A year in, year out (YIYO) budget is used to 'shore up' any analysis to assess the business capacity to service and repay debt, meet its personal and taxation obligations, replace machinery and produce cash surpluses.

## CROP PROFITABILITY – EASTERN GRAINBELT

After a challenging decade to 2012, farm businesses in the eastern and central grainbelt have tended to hold their positions, manage costs and sow crops with limited resources to be mostly producing profits ranging from \$100 to \$400/ha.

With the seasonal outlook improving, these businesses are now able to look at replacing machinery, undertaking expansion opportunities or investing off-farm.

## BUSINESS HEALTH

The average farm business in the Profit Series analysis spends about 57 cents in every dollar on input costs (including wages, fuel, pesticides, fertiliser, repairs, other crop costs and grain handling fees).

This leaves 43 cents with which to run the business and drive profit. Of this, the estimated spending breakdown is:

- 7 cents in overheads (including electricity, phones, professional fees, rates, office costs etc.)
- 3 cents on farm leasing
- 8 cents on personal costs
- 10 cents on machinery capital
- 1 cent on infrastructure
- 7 cents on finance costs (including machinery loans)
- 7 cents of surplus.

When earning a dollar, it is very important to understand where it is going. Ultimately if any of these costs stray from these average levels there is rapid erosion of the surplus.

If a business can manage its operating and fixed costs more effectively, it will free up funds towards debt reduction or investments in other areas.

## INVESTMENT AND RISK

Following budget analysis, it can prove useful to seek non-emotional advice about the risks of investments, such as buying or leasing more land.

Advisers can help classify investments into high risk (in which we would suggest it did not proceed), moderate risk (where the investment should be avoided or very carefully considered) and acceptable or low risk.

Acceptable risk should mean the investment is sound, given average seasons and prices, but it might not take much to push the investment into the moderate risk category. If it is a low risk, then all things being equal, the investment should proceed comfortably.

**NOTE:** This is an edited version of an article written by David Ward and reviewed by Ben Curtis, both Farmanco advisers, Western Australia.



### MORE INFORMATION

For the full Farmanco report 'The State of Agricultural Businesses' or more information, contact David Ward: 0428 953 327, [dward@farmanco.com.au](mailto:dward@farmanco.com.au)

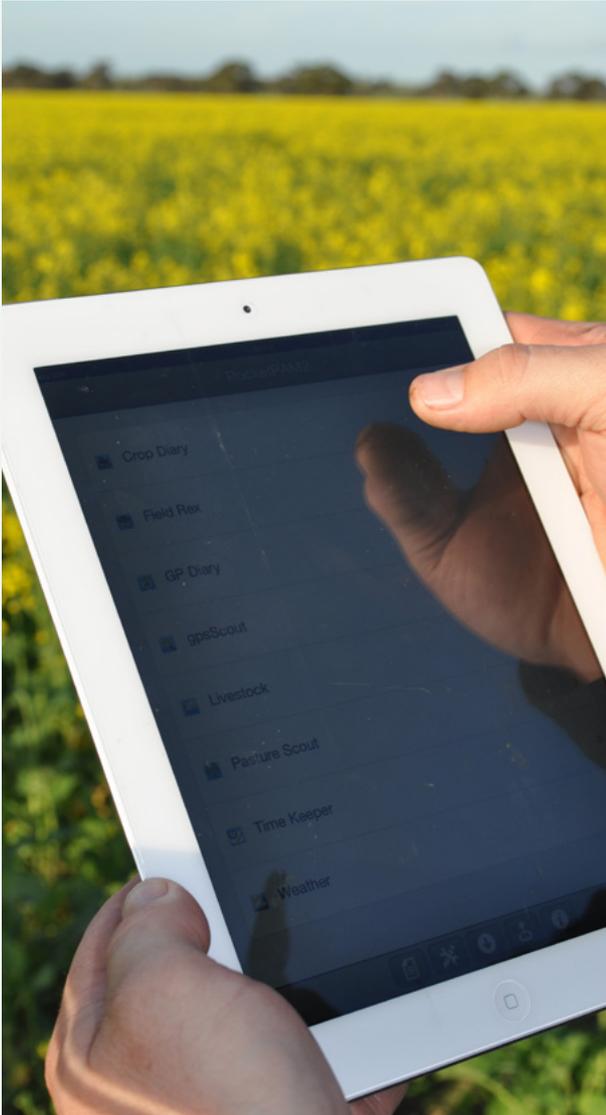


PHOTO: GRDC

## USEFUL RESOURCES

GRDC Regional Cropping Solutions Networks:  
[www.rcsn.net.au](http://www.rcsn.net.au)

GRDC Farm Business Management hub:  
[www.grdc.com.au/Resources/Farm-Business-Management](http://www.grdc.com.au/Resources/Farm-Business-Management)  
 (Includes Farming the Business Manual; Farm Business Gross Margin Guide; Farm Business Fact Sheets; Update Papers)

GRDC-funded study '*How to farm profitably in the eastern wheatbelt*':  
[www.giwa.org.au/2014-crop-updates](http://www.giwa.org.au/2014-crop-updates)

GRDC western region Wheat, Canola and Oats GrowNotes:  
[www.grdc.com.au/GrowNotes](http://www.grdc.com.au/GrowNotes)

DAWR *Filling the Research Gap* initiative Analysis:  
<http://www.aegic.org.au/media/news/2013/04/can-novel-farm-business-structures-help-farmers-tackle-climate-variability.aspx>

GRDC '*Soil Testing for Crop Nutrition (western region)*' Fact Sheet:  
[www.grdc.com.au/GRDC-FS-SoilTestingW](http://www.grdc.com.au/GRDC-FS-SoilTestingW)

GRDC '*Better Fertiliser Decisions for Crop Nutrition*' Fact Sheet:  
[www.grdc.com.au/GRDC-FS-BFDCN](http://www.grdc.com.au/GRDC-FS-BFDCN)

Select Your Nitrogen (SYN): [www.climatekelpie.com.au](http://www.climatekelpie.com.au)

GRDC '*Crop Nutrition Phosphorus Management*' Fact Sheet:  
[www.grdc.com.au/GRDC-FS-PhosphorusManagement](http://www.grdc.com.au/GRDC-FS-PhosphorusManagement)

GRDC '*Crop Micronutrients and Trace Elements*' Fact Sheet:  
[www.grdc.com.au/GRDC-FS-CropNutrition-Micronutrients](http://www.grdc.com.au/GRDC-FS-CropNutrition-Micronutrients)

*Soil Analysis: an interpretation manual*:  
[www.publish.csiro.au/pid/1998.htm](http://www.publish.csiro.au/pid/1998.htm)

*Australian Soil Fertility Manual*:  
[www.publish.csiro.au/pid/5338.htm](http://www.publish.csiro.au/pid/5338.htm)

Yield Prophet®: [www.yieldprophet.com.au](http://www.yieldprophet.com.au)

GRDC Reference Guide: '*Applying PA – A reference guide for the modern practitioner*': [www.grdc.com.au/ApplyingPA](http://www.grdc.com.au/ApplyingPA)

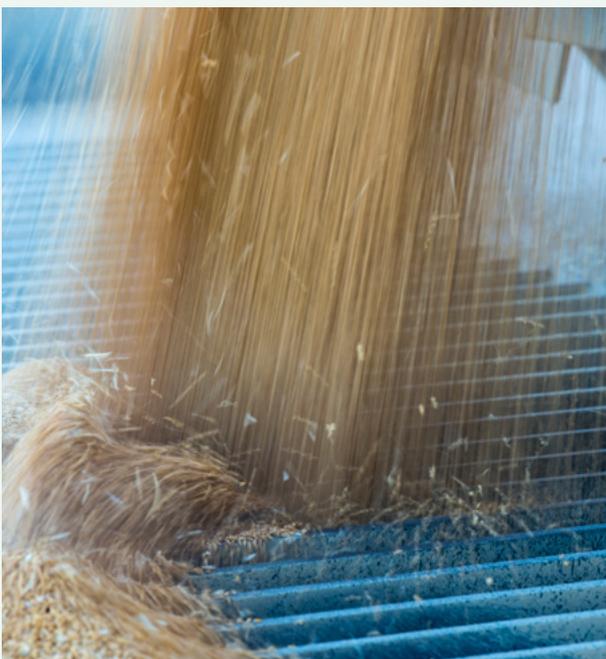


PHOTO: GRDC

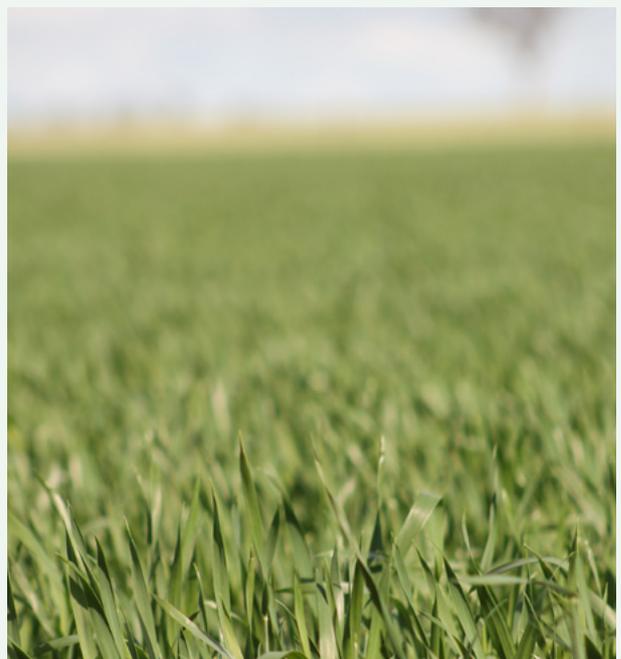


PHOTO: GRDC



