OPPORTUNITY FOR PROFIT MANAGEMENT GUIDELINE RDP00013

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

TAS GRAIN GROWING

Contents

Foreword

This Management Guideline has been designed for grain growers as part of the GRDC's Project RDP00013 'The integration of technical data and profit drivers for more informed decisions'. This national project is being delivered across the 14 major grain growing agro-ecological zones in Australia through the collaborative partnering of five agribusiness consulting organisations.

This report identifies the key management profit drivers for the Tasmanial agro-ecological zone and provides some guidelines on how growers can manage them. The profit drivers have been identified through the collection of more than 300 benchmarking datasets nationally. These datasets have been analysed by the respective project partners to identify the key management profit drivers by agro-ecological zone. The quantitative benchmarking analysis has also been complemented by a qualitative survey process with grain growers across each region.

It has been valuable for the project to be driven at the agro-ecological zone level where each of the project partners have been able to draw out local insights and perspectives. There are a range of environmental and enterprise characteristics that are unique to each agro-ecological zone and the applied project methodology allows these to be explored.

A consistent message from the project is that there is a large gap in financial performance between the Top 20% businesses and the average businesses in each agro-ecological zone. There is abundant opportunity for many grain growers to increase profit from the resources that they currently have available to them.

Prepared by Macquarie Franklin on behalf of the Grains Research & Development Corporation.

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There is significant opportunity for most growers to extract higher levels of profitability from their existing resource base.

Executive Summary

This *Management Guideline* for the Tasmanian Grain Growing agro-ecological zone has been developed by Macquarie Franklin on behalf of the GRDC and demonstrates that there is a significant gap in financial performance between the Top 20% and the average farming business within the zone. The Top 20% have been selected based on Return on Equity (ROE).

The Top 20% of grain growers are generating very strong levels of profitability.

In the Tasmanian Grain Growing zone, the Top 20% have generated a Return on Equity (ROE*) of 8.18% during the three year period analysed between 2011 and 2013. This is over four times higher than the average business in the zone which recorded a ROE* of 1.94% during the same time period.

Return on Assets Managed (ROAM) is an alternative ratio which can be used to measure financial performance. In the Tasmanian Grain Growing zone the Top 20% recorded an operational ROAM* of 7.36%, over one and a half times that of the average business at 4.54%.

High Margin, Low Risk Agriculture?

If translated into relative returns, shares will generally provide 9% returns on funds invested over a long term period (50 years). Recent share market performance however has been much lower than this. Shares are widely considered to be a more volatile investment, but yield higher returns. Agriculture is often perceived as a high risk, low margin industry with volatile returns. Yet, the Top 20% of farm businesses in the Tasmanian Grain Growing zone are consistently generating an operational ROE* of over 8% and have an ability to maintain profitability at just Decile 2 prices. These returns become stronger when capital appreciation of land values over time are added in. From a historical perspective it isn't unrealistic for this to add a further 3% to 5% to overall agricultural returns. This has the potential to lift the long term financial performance of the Top 20% to between 13% and 14% ROE*.

This level of return combined with the ability to maintain financial performance in periods of poor pricing clearly demonstrates that low risk, high margin agriculture is achievable, but how exactly can it be achieved? We look to answer this question throughout this *Management Guideline*.

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The Profit Drivers

There are a number of important profit drivers that are influencing variation in farm business performance. The four primary profit drivers driving the difference in long term financial performance have been identified as:

1. Gross margin optimisation
2. Developing a low cost business model
3. People and management
4. Risk management

It is the interaction of these four primary profit drivers that is resulting in very different levels of financial performance being achieved. Interestingly, across most agro-ecological zones there is only a very weak correlation between enterprise scale and ROE performance. This indicates that scale is not an effective profit driver on its own, unless it is successfully matched with each of the four profit drivers detailed above. However, in Tasmania the Top 20% were larger than the average, although it was not able to be determined whether this was cause or effect, or simply a coincidence, given the small size of the data set. Key profit drivers identified for Tasmania are centered on low overhead costs, and relate to total plant machinery and labour efficiency.

While the range in land values per hectare in each region is quite large, the Top 20% and the average business in each dataset are generally farming a land base of similar market value per hectare. Growers that are farming in the very expensive land value regions within each agro-ecological zone may be limited to more modest levels of ROE performance than what the Top 20% are achieving. These businesses however can still generate robust returns when managed effectively in accordance with the identified profit drivers.

Gross Margin Optimisation

In Tasmania, there is significant enterprise choice, particularly for those growers with access to irrigation (poppies, livestock, fodder, seed and grain production enterprises). Managing a multi-enterprise business is common for most Tasmanian grain growers as they have many enterprise choices available to them that offer high gross margin potential. While grain production is often only a small contributor to whole farm revenue, a successful grain enterprise can have a strong positive effect on net profit and reduce business complexity.

At the whole farm level, the Top 20% are generating approximately 70% more income from a land base that is approximately 50% larger. This indicates a higher level of productivity per hectare across the farm through either enterprise choice or per hectare productivity.

While the Top 20% are generating almost 70% more income (and have a 50% larger area to manage), their variable costs are only approximately 60% higher. This allows for a stronger gross margin to be achieved at the whole farm level. At the whole of business level, the Top 20% are investing approximately 40% of business turnover into variable costs which is similar to the average business in the zone that is investing 43% of business turnover into variable costs.

Low Cost Business Model

Developing a low cost business model is a measure of structural efficiency and provides opportunity to increase profitability. Improved overhead cost efficiency is a significant profit driver which varies between the Top 20% and the average business in Tasmania. In Tasmania the Top 20% are 54% more efficient with machinery and labour utilisation. This has been measured through a Total Plant Machinery and Labour (TPML) benchmark which has the benefit of allowing businesses that employ contractors for some operations to be compared on an equal basis to those that own and operate all of their machinery. In Tasmania the Top 20% are investing approximately 15% of business turnover into TPML costs in comparison to more than 30% for the average business. The Top 20% are also generating more income per full time equivalent (FTE), have less invested in machinery capital per hectare, and are managing more hectares per FTE.

The combined impact of stronger gross margin optimisation and developing a low cost business model is allowing the Top 20% to retain a greater percentage of turnover as net profit before tax. The Top 20% are retaining approximately 30% of turnover as net profit before tax in comparison to approximately 15% for the average business in the dataset. This allows the Top 20% to be much more resilient when faced with a production or price shock.

A low cost business model is essentially a disciplined approach to maintaining a low overhead cost structure, and is achieved by keeping general overheads low, ensuring a high level of machinery and labour utilisation and having a serviceable level of debt.

People and Management

Good management is regularly identified as a key profit driver. Good management is required to optimise gross margins and support a low cost business model. To understand potential differences in management approach, a qualitative survey was conducted with a cross section of growers. This survey explored what different farm managers consider to be important for profit, the decision making processes they work through, how they access technical information, and their capacity to implement knowledge gained. The results from the qualitative survey were very insightful. It was identified that it is an implementation gap rather than a knowledge gap that is generally driving substantial differences in performance between the Top 20% and their lower performing peers. There are four key management characteristics of high performing grain businesses that were observed. These were:

1. Business planning approach
2. Understanding of key profit drivers
3. The decision making process
4. Sphere of control versus of sphere of influence

Risk Management

A resilient business is one which can incur a production and/or price shock and maintain suitable levels of financial performance. Adapting to manage key production and business risks is an important characteristic of a successful and sustainable farm business. While developing a resilient business is influenced by gross margin optimisation and developing a low cost business model there are also elements of business resilience which are improved through proactively managing risk.

Some potential measures of well implemented risk management within a business might include:

- Lower income variation from year to year
- Lower long term cost of production by commodity
- Lower variability in profit from year to year
- A greater ability to withstand a business or production shock

Businesses which have effectively identified and mitigated key production and business risks will generally have less income variation from year to year and much lower long term cost of production for the range of commodities that they produce.

Agro-ecological Zone Description

The GRDC has categorised the grain producing regions of Australia to create 14 major agro-ecological zones. These zones are listed below and also shown in the map below.

- Qld Central
- SE Qld & NE NSW
- SW Qld & NW NSW
- NSW Central
- NSW-Vic Slopes
- Vic High Rainfall
- SA & Vic Mallee
- SA Mid North Lower Yorke Eyre
- Tas Grain Growing
- WA Northern
- WA Central
- WA Eastern
- WA Sandplain
- WA Mallee

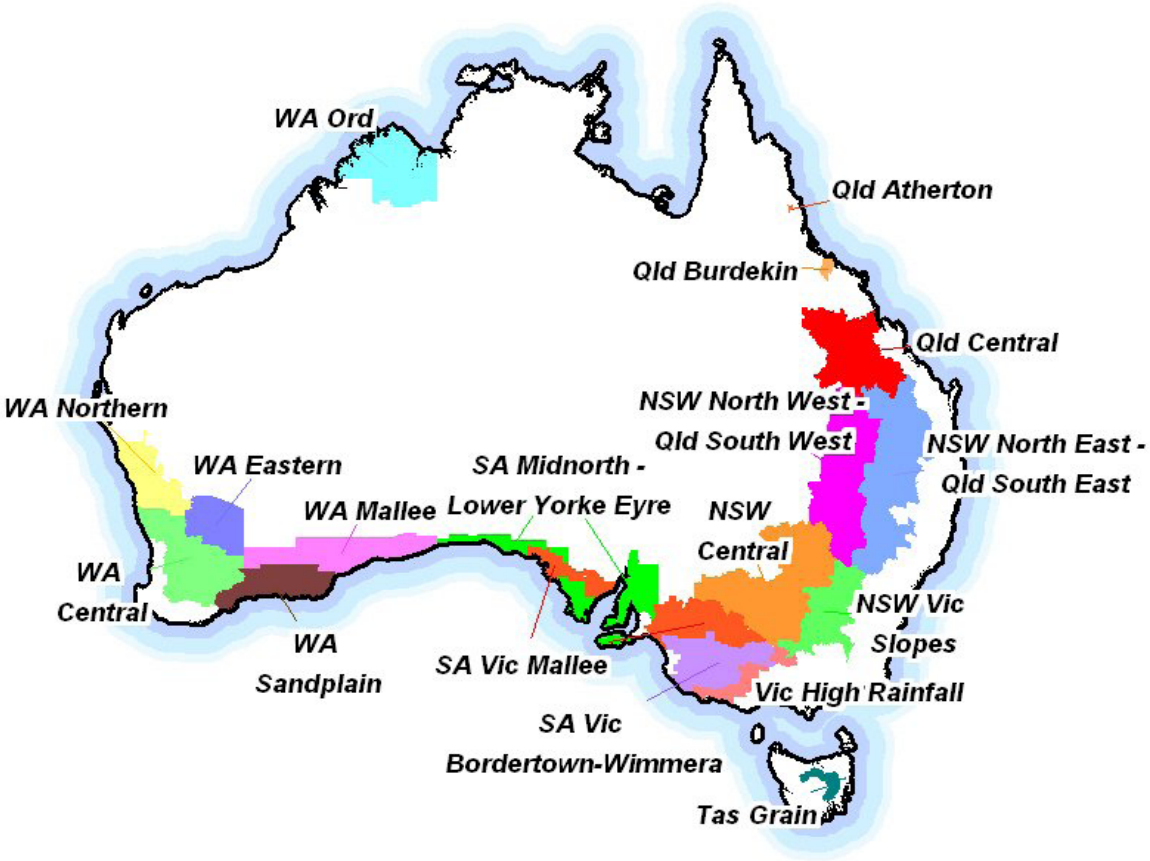

Figure 1: The 14 major agro-ecological zones within the Australian grain producing regions as depicted by the Grains Research and Development Corporation.

What does a Top 20% business look like in the Tasmanian Grain Growing zone?

This zone is representative of the higher rainfall, heavier soil type cropping regions across South Australia.

Soil types	Variable soil types. Duplex soils common, but also deep sands, black cracking clays, clay loam soils on dolerite, and ferrosols
Rainfall	Variable across region, 400-800mm. Survey average 550mm, 250mm for growing season. Irrigation common and increasing
Typical yield	Wheat; 3.5t/ha dryland, 8.0t/ha irrigated – plus grazing component. Barley, 2.5t/ha dryland, 6.5t/ha irrigated. Survey averages, wheat 5.4t/ha, barley 4.1t/ha
Enterprises	Poppies (irrigated) a major component of farm returns - 39% of average income. Limited to a maximum of one year in three. Cereals tend to be grown between poppy crops – 17% of average income. Livestock enterprises more important than cereals – 33% of average survey farm income.
Average farm size	2,040ha across the 10 survey farms - pasture 1,350ha, crop 400ha, other 290ha. Range 920-5,140ha
Average land values	$4,100/ha, range $2,075 to $7,960

Figure 2: A map of the Tasmanian Grain Growing agro-ecological zone

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Statement of Position

Item	Tas Top 20% by ROE	Tas Average
Total assets owned	$14,705,343	$9,893,993
Total assets managed	$15,005,343	$10,164,326
Total liabilities	$3,821,797	$2,573,065
Net worth	$10,883,546	$7,320,928
Equity	76%	73%
Hectares managed	3,116ha	2,083ha
Market value per Ha	$3,505	$4,103

Table 1 - Statement of position

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Statement of Performance

Item	Tas Top 20% by ROE	Tas Average
Total income	$2,455,020	$1,458,252
Total variable costs	$1011,701	$634,160
Gross margin	$1,443,319	$824,091
Total overheads	$297,938	$294,310
Operating surplus	$1,145,380	$529,781
EBITDA	$1,141,630	$521,815
Depreciation	$106,026	$80,450
Total financing costs	$286,978	$203,758
Net profit before imputed labour	$748,626	$237,606
Imputed labour	$48,718	$14,359
Net profit before tax	$699,908	$223,248

Table 2 - Statement of Performance

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How do they compare in performance benchmarks?

Benchmark	Top 20% of businesses as selected by ROE	Average across the dataset
Return on Equity (ROE*)	8.18%	1.94%
Return on Assets Managed (ROAM*)	7.36%	4.54%
Profit as % Income	30.3%	11.8%

Table 3 - Performance benchmarks

Retaining 25% to 30% of farm turnover as net profit before tax is an achievable target.

The following observations can be drawn from Table 3. In the Tasmanian Grain Growing zone, in comparison to average, the Top 20% by ROE are:

- Generating a ROE that is quadruple the average. This represents an additional $65,000 in operating net profit per annum for every $1 million held in net assets.
- Generating a ROAM that is double the average. This represents an additional $46,000 in operating net profit per annum for every $1 million in assets managed.
- Retaining 30% of turnover as net profit before tax. This compares to 15% for the average business in the zone. This equates to an additional $285,000 in net profit before tax being retained per annum per $1 million in business turnover by the Top 20% by ROE. This is a significant difference that is driven by efficiencies created by the Top 20% at both the gross margin optimisation and business overhead level.

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Calculate your: Profit as a % Income

	Your business	Example
Total income (A)		$1,000,000
Total variable costs (B)		$400,000
Gross margin (A – B = C)		$600,000
Total overheads (D)		$100,000
Operating surplus (C – D = E)		$500,000
Lease (F)		$80,000
EBITDA (E – F = G)		$420,000
Depreciation (H)		$65,000
Total financing costs (I)		$50,000
Net profit before imputed labour (G – H – I = J)		$305,000
Imputed labour (K)		$50,000
Net profit before tax (J – K = L)		$255,000
Profit as % income (L / A x 100)		25.5%

Table 4 - Calculate your profit as % income

Terminology explanation

imputed labour involves placing a fair market value on any family member that is not remunerated through a paid salary.

Is high margin, low risk agriculture possible?

What if you could have an investment that consistently generated an operational return of 8% on your capital invested with more stable returns than asset classes such as shares? Most may not consider that Australian agriculture can provide these qualities, as it has long been associated as highly variable, high risk and often low margins. The land of droughts and flooding rains if you like.

However, this is exactly what the Top 20% of farm businesses are able to achieve across a long run analysis; averaging a 14% operating returns and consistent profitability from year to year.

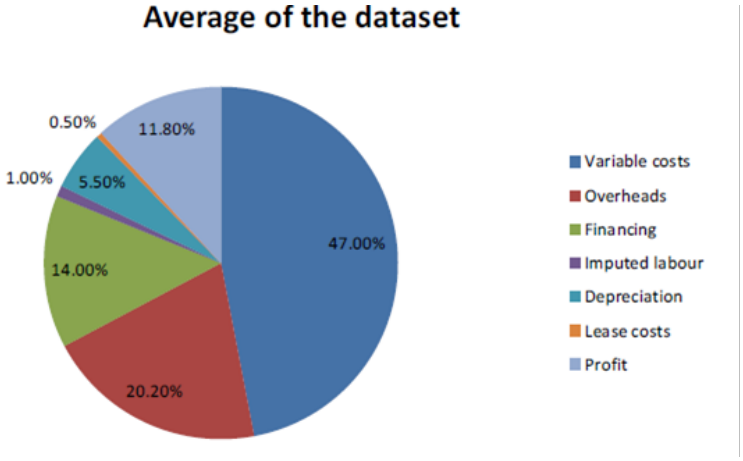
A Top 20% producer is able to maintain profitability at Decile 2 prices while the average producer actually requires Decile 5 or better to maintain profitability.

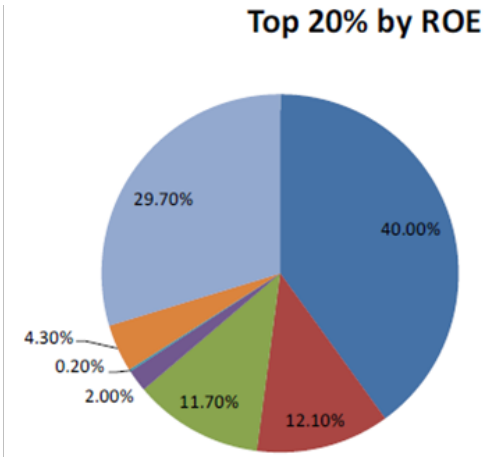
Across the dataset, the average cost of production for wheat was $341 per hectare. In comparison, the Top 20% of businesses as selected by ROE recorded an average cost of production for wheat of $198 per hectare during the same period. In our analysis these cost of production indicators include an allocation for all costs including variable costs, machinery and labour costs, general overhead costs, and financing costs. Given that they are inclusive of financing costs they could more accurately be described as break-even point indicators. Generally cost of production figures are quoted without including finance and lease costs. This convention has been broken in this analysis to assist producers with identifying target pricing and also develop long term strategies to reduce cost of production.

How is such a big difference in financial performance and risk profile being achieved?

The interaction of the four primary profit drivers is crucial in obtaining strong results.

In bringing the gross margin optimisation and low cost business model profit drivers together it can be valuable to look at how business revenue is being divided up between variable costs, overhead costs, and retained profit. This is demonstrated for the Top 20% versus the average business in the data set in the graphs below. By retaining a much greater percentage of turnover as net profit before tax, the Top 20% become much more resilient businesses. Effectively they could cover a short term shock that reduced enterprise income by 35% and still breakeven. By contrast, a production shock of this magnitude on the average business in the zone would result in a significant financial loss being incurred. Such production losses for an average business are likely to contribute to increasing core business debt.





How do you compare? Benchmarks and stretch targets - performance

These indicator tables provide an overview of benchmarks relating to the different profit drivers. The benchmark is what the Top 20% are achieving on average and the stretch target is what the Top 10% are achieving. There are also 5 examples of real businesses to show the range in results as well as identifying where each of these five businesses has opportunity to grow without necessarily changing the size of their resource base. There is space provided to place your own benchmark data alongside for comparison.

These "How do you compare" tables are provided in both the Performance, Gross Margin Optimisation and Low Cost Business Model sections of this *Management Guideline* to assist with understanding your own business performance.

Profit Driver	Profit Driver Benchmarks	Benchmark	Stretch Target	Your business	Business 1 Revenue opportunity	Business 2 Variable cost opportunity	Business 3 High overhead structure	Business 4 Top 20% business	Business 5 Gross margin optimisation and overhead cost opportunity
Performance Benchmarks	Return on Equity (ROE*)	5.00%	8.00%		2.50%	4.50%	3.50%	11.50%	0.75%
	Return on Assets Managed (ROAM*)	7.00%	11.00%		1.35%	5.10%	4.90%	11.00%	-1.90%
	Profit as % income	25.00%	35.00%		6.80%	9.40%	5.10%	36.00%	1.60%

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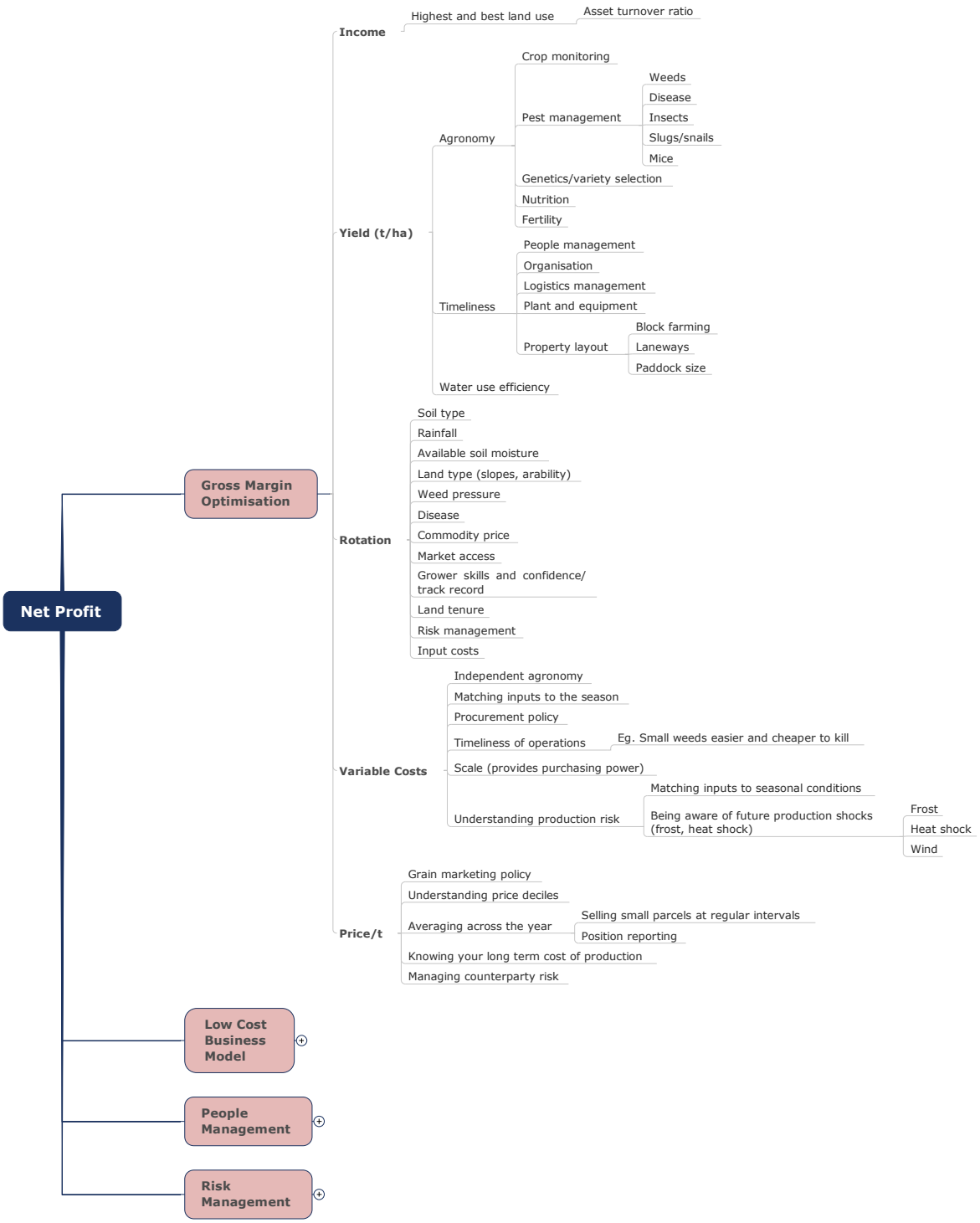
Gross Margin Optimisation

The Gross Margin Optimisation profit driver is influenced by total farm income, crop yield, crop rotation, variable costs and price received. A range of secondary and tertiary profit drivers support the four primary profit drivers.



Benchmark	Top 20% of businesses as selected by ROE	Average across the dataset
Asset turn over ratio (net profit/net assets)	0.16	0.15
Income per Ha (cropping)	$762	$768
Variable costs per Ha (cropping)	$305	$360
Gross margin per Ha (cropping)	$457	$408
Variable costs as a % Income (cropping)	40%	47%
Wheat price/t	$251	$233

Table 5 - Benchmarks that relate to cropping gross margin optimisation

The Top 20% of producers are investing 40% of cropping income into crop related variable costs.

Terminology explanation

Variable costs include:

- Contract work
- Crop selling and storage costs
- Crop insurance
- Fertiliser
- Freight
- Fuel (net of rebate)
- Gypsum and lime
- Hire of plant
- Repairs and maintenance on machinery
- Seed and seed cleaning costs
- Sprays and chemicals
- Livestock variable costs, if relevant

Insights from this table are as follows. In the Tasmanian Grain Growing zone, the Top 20% by ROE:

- Are not generating any more cropping income per hectare than the zone average (in fact their cropping income is slightly less)
- Are investing 5% or $55 less in variable costs per hectare
- Are generating a cropping gross margin that is 12% or $49 stronger per hectare
- Are generating higher prices per tonne in the market place to the zone average ($251/t compared to $233/t, a difference of $18/t). This may be a reflection of data error due to the small sample size or it could be a result of crops being sold on-farm vs off-farm with the difference due to the cartage component in the price
- Are investing 40% of cropping income into variable costs compared to the zone average 47%. This allows a further 7% of income to be potentially quarantined for net profit.

Realising the yield potential

The Tasmanian Grain Growing zone has enormous potential for high yielding cereals (cereals yielding > 10t/ha). It is a high yielding environment due in large part to the addition of irrigation. However, the variation in yield is high, as highlighted in Table 6. Whilst some of this variation may be due to the use of or lack of irrigation and to variation in soil types, there undoubtedly remains a significant cultural practices component and scope for uptake of improved high yielding varieties, highlighting the potential for improvement by shifting the average yield closer to the maximum.

	Yield (t/ha)		
Crop	Average	Maximum	Minimum
Barley	4.1	7.0	0.4
Wheat	5.4	8.6	2.4
Canola	1.5	2.5	0

Table 6: Range in cereal yields from Tasmanian farms surveyed

	Wheat yield under irrigation		
Grazing dry matter utilised	6.0t/ha	8.0t/ha	10.0t/ha
2.0t DM/ha	$930	$1,480	$2,040
3.0t DM/ha	$1,080	$1,640	$2,200
4.0t DM/ha	$1,240	$1,800	$2,380

Table 7: Effect of grain and grazing yields on the gross margin ($/ha) for irrigated wheat

Depending on grain yield and the amount of dry matter utilised by livestock, the gross margin for irrigated wheat might vary from around $900/ha to $2,400/ha (Table 7). An average irrigated wheat gross margin (8 t/ha grain, 3t DM/ha utilised) has the potential to improve by around $800 per hectare if the grain yield was increased to 10t/ha and dry matter utilization to 4t DM/ha.

Assuming that approximately 50% (100 hectares) of the total cereal crop on the average survey farms was irrigated wheat with 10t/ha grain yield and 4t DM/ha dry matter utilised, the potential improvement in total farm gross margin for the average farm would be around $80,000 (100 hectares at $800/ha). This would improve:

- Total farm gross margin ($824,000) by around 10%
- EBITDA ($521,800) by 15%
- NPBT ($223,200) by 36%
- ROE* by 24% (ROE 3.3% increased to 4.1%)

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Cropping variable cost analysis

Variable cost control is well executed by the Top 20%. Cropping variable costs per hectare were broken down into their component parts to understand key differences between the Top 20% and the average business with regard to investment into variable costs.

Benchmark	Top 20% of businesses as selected by ROE	Average across the dataset
Crop selling costs $/ha	16	10.8
Fertiliser $/ha	112	118
Fuel $/ha	65	81
Seed $/ha	21	27
Sprays $/ha	107	134
Livestock $/ha	169	138
Total $/ha	474	498

Table 8 - Cropping and livestock variable cost per hectare breakdown

Calculate your: Variable costs as a % Income

	Your business	Example
Contract work		$30,000
Crop selling costs		$10,000
Crop insurance		$10,000
Fertiliser		$100,000
Freight		$25,000
Fuel		$60,000
Gypsum & Lime		$20,000
Plant hire		$5,000
Plant R&M		$45,000
Seed		$15,000
Sprays		$80,000
Other non specified		-
Total variable costs (A)		**$400,000**
Total Income (B)		**$1,000,000**
Variable costs as % income (A / B x 100)		**40%**

Table 9 - Calculate your variable costs as % income

The following information can be observed from Table 8. In Tasmania Grain Growing zone, the Top 20% by ROE are:

- Investing similar amounts into fertiliser on average at $112 per hectare
- Investing 23% less in seed costs on average $21 per hectare
- Investing 20% less into chemical costs per hectare
- Invest 20% more into livestock costs per hectare

To explore fertiliser and chemical costs further, an analysis was undertaken of investment in these variable costs on a $ per tonne of wheat yield basis across the dataset (Table 10).

Benchmark	Top 20% of businesses as selected by ROE	Average across the dataset	Range	
			Min	Max
Fertiliser cost per tonne wheat yield	$22	$42	$10	$80
Chemical cost per tonne wheat yield	$14	$25	$5	$42

Table 10 - Fertiliser and chemical costs in $ per tonne of wheat yield.

The information represented in Table 10 demonstrates that high performing grain growers are leveraging more and achieving greater crop performance outcomes from their investment in the key variable costs of fertiliser and chemical. Producers with a lower $/t of wheat yield investment in fertiliser and chemical are not necessarily investing less $ per hectare on these inputs, but have a more balanced approach to variable cost inputs and are able to leverage strong yields from their given investment into variable costs. In general, those that perform well on this indicator are doing one or more of the following:

- Leveraging additional yield from their investment per hectare in chemical and fertiliser through good agronomy and excellent timeliness
- Are balanced in their approach to in-crop nitrogen strategies; they avoid applying in-crop nitrogen that is unlikely to be converted to yield
- Successfully integrating legumes into their crop rotation to fix soil nitrogen that can be utilised by subsequent cereal, hay, or canola crops
- Are skilled in tailoring nitrogen applications to seasonal potential and carry over deep soil nitrogen
- Are balancing the influence of late season production shocks such as frost, lodging, failed spring or heat shock during grain fill

An investment of $30 per tonne of wheat yield in to fertilser costs is profitable, realistic and sustainable.

Some observations from Table 10 include:

Fertiliser

- The Top 20% are 10% more efficient in generating yield from their investment in fertiliser inputs.

While efficiency against this measure is good, it is also important to recognise that these efficiencies are not to be achieved from applying rates of fertiliser that are below that required to replace nutrients removed in produce.

The range on fertiliser costs per tonne of wheat yield, between $10/t and $80/t, indicates that there is both some under fertilisation and over fertilisation taking place within the zone. During the period analysed, DAP and Urea pricing was relatively consistent, averaging approximately $500 per tonne for urea and $780 per tonne of for DAP. If the value of these commodities changes significantly, the $30/t benchmark would need to be recalibrated.

Calculate your: Fertiliser cost per tonne of wheat yield

	Your business	Example
Total fertiliser cost (A)		$100,000
Total cropped hectares (B)		1,000
Fertiliser cost per hectare (A / B = C)		$100/ha
Average wheat yield tonnes per hectare (D)		3.3t/ha
Fertiliser cost per tonne of wheat yield (C / D)		$30/t

Table 11 - Calculate your fertiliser cost per tonne of wheat yield

Chemical

- The Top 20% are investing almost $70 more per hectare into chemical costs. This is demonstrated by chemical costs per tonne of wheat yield being close to $75/t. Once again, the range demonstrates opportunity for improvement for some growers.

Calculate your: Chemical cost per tonne of wheat yield

	Your business	Example
Total chemical cost (A)		$80,000
Total cropped hectares (B)		1,000
Chemical cost per hectare (A / B = C)		**$80/ha**
Average wheat yield tonnes per hectare (D)		3.3t/ha
Chemical cost per tonne of wheat yield (C / D)		**$24/t**

Table 12 - Calculate your fertiliser cost per tonne of wheat yield

Additional observations from the data on gross margin optimisation include:

- There are a number of high gross margin and high water use efficiency businesses in the dataset that actually fell short of the Top 20%. This could be a result of one or more of the following:
  - Having high overhead cost structures that reduce net profitability
  - Being located in the higher land value parts of the zone on a $ per hectare or $ per tonne of wheat yield basis, resulting in a dilution of ROE
  - Not having a strong land leasing component to their business model
- Some of the high income businesses in the zone are also excluded from the Top 20% because of very high variable cost expenditure per hectare. This is often a function of excessive expenditure on fertiliser and chemical inputs.
- Variable cost control is a key profit driver, with the Top 20% achieving cropping variable costs as a percentage of income below 35%. With the average business in the zone achieving 47%, this means that the Top 20% are able to quarantine an additional 12% of revenue that can be retained as net profit before tax purely through variable cost management.
- Interestingly there is evidence to suggest that maintaining cropping variable costs well below 40% is actually achievable. A long running benchmarking group has demonstrated an ability to maintain cropping variable costs as a % of income down to 35%. There are also some Top 20% businesses who are achieving this without compromising productivity or crop yield. The reason why this group of businesses, that are maintaining cropping variables costs at 35% of income, are not perfectly represented in the Top 20% by ROE is that many of them are farming in a part of the zone where land values and land leases are well above productive values. This prevents some of these businesses from being included in the Top 20% despite otherwise being very efficient businesses.
- If businesses are able to limit variable costs to 35% of income rather than 47% of income, this allows an additional 12% of turnover to be quarantined for net profit before tax. This is a significant gain. Achieving a 35% target on variable costs as a % income is a function of crop selection and rotation, good agronomy, efficient and active variable cost management and excellent operational timeliness.
- Profit as a % of turnover is another measure which can be considered to evaluate the efficiency of a business. This can be useful to apply in situations where some businesses are limited on ROE potential as a result of farming a very expensive land basis.

A robust stretch target for cropping variable costs is to keep them below 35% of cropping income.

Calculate your: Gross margin per hectare

	Your business	Example
Total income (A)		$1,000,000
Total variable costs (B)		$400,000
Total gross margin (A – B = C)		**$600,000**
Total hectares (D)		1,000
Gross margin per hectare (C / D)		**$600/ha**

Table 13 - Calculate your gross margin per hectare

Gross Margin Optimisation Diagnostics

Are you short of the benchmark or looking to hit your stretch target? – Diagnostic tool to assist

1. Income		Yes / No / Comment
Is your income per hectare less than the benchmark for the level of rainfall that you receive? If so:		
1.1	How does your seeding completion date compare with best practice?	
1.2	Does your rotation	
	- involve a proven sequence of high return crops?	
	- limit compromise or yield limiters for each crop type?	
	- promote crop health and vigour?	
	- allow competive weeds such as ryegrass to be effectively managed?	
	- fit your skill set and machinery capability?	
1.3	Are there any physical constraints to achieving higher yields that can be cost effectively addressed?	
	- soil pH through liming?	
	- lacking in macro nutrients?	
	- lacking in micro-nutrients?	
	- poor drainage	
	- irrigation system design and effieicncy	
	- soil moisture monitoring	
1.4	Does your farming system promote storage of out of season rainfall?	
1.5	Does your farming system build soil health and organic matter over time?	
1.6	Does crop nutrition and agronomy match crop yield potential?	
1.7	Are you proactively monitoring crops for early disease and nutrition intervention?	
1.8	Does your harvest capacity allow crops to be harvested in a timely manner with minimal losses?	
1.9	Is land type matched to highest and best land use? (consider soil type, frost risk, waterlogging)	

2. Variable cost control		Yes / No / Comment
Are your variable costs as a % of income > 40%? If so:		
2.1	Are you over investing in fertiliser inputs?	
2.2	Are you over investing in chemical inputs?	
2.3	Are you under utilising your irrigation inputs?	
2.4	Do you seek an independent perspective with crop agronomy?	
2.5	Does your crop rotation promote more modest investment into chemical and fertiliser?	
2.6	Is your approach to machinery usage right to ensure low R&M, low fuel costs, and contracting fees only when needed?	
2.7	Are you only using contractors when the cost of using a contractor is less than the cost of ownership?	
2.8	Have you compared a cost of ownership versus the cost of seeking a contractor for each key pass?	
2.9	Do you have an active program of preventative maintenance?	
2.10	Is your property, machinery, and management approach set up for optimising fuel usage? (paddock size and shape, implement width and capacity, essential passes only)	
2.11	Do you limit storage fees and charges by proactively managing grain marketing before and during harvest?	

3. Are you investing more than $15 per tonne of wheat yield per hectare into fertiliser? If so:		Yes / No / Comment
3.1	Do you base fertiliser investment on a combination of long term average yield and in season potential, or just in-season potential? In season potential alone is sometimes risky as it can over look late season production shocks such as frost, lodging, failed spring and heat shock.	
3.2	Do you base your investment in phosphorus fertiliser (MAP/DAP) on previous years phosphorus removal or what you have always done historically?	
3.3	Do you use soil nitrate testing to assist with establishing applied N rates each year? This can assist greatly with matching N supply to N demand.	
3.4	Are you aware of the principle of diminishing marginal benefits with fertiliser applications?	
3.5	Do you stop and ensure that you have a robust business case for applying rates of in-season fertiliser that are greater than long term average wheat yield x $15	
3.6	Do you utilise an independent agronomist or perspective to guide fertiliser applications?	
3.7	Do you avoid applying high rates of fertiliser on crops which are yield compromised? (ie late sown, water logged, high disease pressure, high weed pressure)	
3.8	Is timing of your fertiliser inputs matched with optimising yield?	
3.9	Do you benchmark fertiliser expenditure against high profit businesses?	

4. Are you investing more than $20 per tonne of wheat yield per hectare into chemical costs? If so:		Yes / No / Comment
4.1	Are you applying an Integrated Weed Management approach that utilises effective measures other than chemical control? (rotation, hay, windrow burning, grazing, crop topping)	
4.2	Do you control weeds in a timely manner when they are small and easier to kill?	
4.3	Do you save expensive chemistries for when they are really needed only?	
4.4	Do you seek an independent perspective on chemical inputs and cost effective weed control strategies?	
4.5	Do you benchmark chemical expenditure against high profit businesses?	

5. Are you falling short of the Water Use Efficiency (WUE) targets for your area? If so:		Yes / No / Comment
5.1	Are you growing varieties that are well adapted to variable seasons?	
5.2	Are you using soil moisture monitoring to schedule irrigation?	
5.3	Under irrigation do you achieve yields of 2,000kg grain per 100mm of irrigation water?	
5.4	Does your irrigation system have the correct design parameters? • Can it meet target weekly/daily application requirements? • Following irrigation do you observe surface run off or loss of water down through the soil profile? • Does it achieve adequate pressure at the irrigator?	
5.5	How does your timeliness of sowing compare to the optimum window in your region for each crop type?	
5.6	Are you regularly monitoring crops to assess progress and weed, pest, and disease pressure to make early intervention when needed?	
5.7	Are you maximising stubble retention and ground cover over the Summer and Autumn months?	
5.8	Are you avoiding unnecessary tillage that results in moisture loss?	
5.9	Is land use matched to land type and high frost risk country managed accordingly?	

Case Study 1
What is the yield potential for irrigated wheat crops in Tasmania?

The potential yield of irrigated wheat crops has been modelled for three key growing regions in Tasmania.

Location	Growing Season Rainfall (mm, April to December)	Irrigation Applied (ML/ha)	Grain Yield Potential, T/ha (WUE @ 20kg/ha/mm)
Cressy	510	1.5	10.7
Tunbridge	367	1.5	7.8
Richmond	380	1.5	8.1

Table 14: Potential grain yields for irrigated wheat crops (based on plant available water content)

Trials have shown a gap of 58-100% between achievable and actual WUE. The ability to realise these potential irrigated wheat crop yields is a function of a number of factors, some of which are within growers' control and others which are not. Those which growers can control include:

- Agronomic considerations (such as variety selection, sowing date, crop protection measures, grazing management, plant nutrition and the irrigation management)
- Seedbed preparation
- Growers' agronomic management capability.
- The key areas of management capability include;
    - Planning to ensure the timeliness of all crop inputs and production activities
    - Adoption of decision making support tools including agronomic advice and crop monitoring tools (plant nutrition, soil moisture and growth stages)

Those factors which are outside growers' control are within-season weather influences (such as frost, heavy rainfall resulting in waterlogging, etc). However, growers can influence to some degree the climatic variables which impact crop yield, by ensuring that they select the varieties which are most suited to their local environment (e.g. flowering time). Additionally performance issues based on water logging and/or poor irrigation practices can be addressed by improved drainage, soil moisture monitoring to schedule irrigation and in some cases use of technologies such as Variable Rate Irrigation to differentially apply water to different soils under the one irrigator.

It is important to note that with the adoption of higher yielding plant varieties, the strategic application of N and improved crop agronomy it is possible that wheat crop yields exceeding the modelled potential yields are readily achievable.

Key message

In order to realise potential wheat yields it is important that growers pro-actively manage and undertake all crop production activities in a timely manner.

References

Acuna (2013). Improved water-use efficiency of rain-fed and irrigated farming systems in Tasmania. GRDC Report Code UT00016

Case Study 2
Nitrogen and irrigation management as key drivers for achieving higher cereal crop yields

The adoption of irrigation throughout the traditional dryland grain growing regions of Tasmania has given producers the potential to significantly increase the yield of cereal crops. Where a cereal crop is not limited by available nitrogen, Water Use Efficiency (WUE) increases. Therefore for irrigated cereal crops nitrogen availability is a key driver in realising the full grain yield potential. However due to complexities associated with paddock history, soil type and grazing the optimal amount and timing of nitrogen fertiliser inputs can be difficult to determine.

The impact of nitrogen on total crop yield is magnified for dual purpose crops. The ability to increase the available dry matter for grazing may require the application of nitrogen during mid-autumn - typically an application of 40-50 kg N/ha would provide an additional 400-500kg DM/ha for grazing. Table 15 shows the cost benefit analysis for the application of nitrogen fertiliser to increase the amount of dry matter grown on a winter wheat crop compared to feeding out grain or pasture silage.

Nitrogen fertiliser costs	
Nitrogen fertiliser applied (equivalent to urea @ 110 kg/ha)	50 kg N/ha
Nitrogen DM response	10:1
DM grown	500kg DM/ha
Nitrogen fertiliser cost (urea @ $550/T + spreading cost of $15/ha)	$75/ha
Cost of DM grown as wheat forage	0.15 $ kg/DM
Alternative feed costs	
Wheat grain (grain @ $280/T, feed out cost @ $10/T, 95% feed efficiency using a lick feeder)	0.35 $ kg/DM
Pasture silage (pasture silage @ $300/T DM, feed out cost @ $60/T DM, 80% feed efficiency using a bale feeder)	0.45 $ kg/DM

Table 15: Dry matter production comparative cost benefit analysis

During stem elongation (growth stage 30-39) the application of nitrogen can have significant grain yield benefits where nitrogen is limiting. Research has shown a grain yield improvement of up to 2t/ha for wheat crops is possible.

Irrigation management relating to the timing and amount of water applied is a key factor in capitalising on nitrogen fertiliser, maximising the grain yield and increasing WUE.

Table 16 shows the cost benefit analysis of the application of additional irrigation and nitrogen fertiliser. The combined effect of additional irrigation and nitrogen provides substantial grain yield and gross margin gains.

Irrigation (ML/ha)	Additional irrigation cost* ($/ha)	N applied (kg/ha)	Additional N Cost^ ($/ha)	Average grain yield change (kg/ha)	Increase in gross margin# ($/ha)
Additional Irrigation					
0.6	48	0	0	602	121
1.2	96	0	0	817	133
Additional N					
0	0	70	99	437	24
0	0	140	197	660	-13
Additional Irrigation + N					
1.2	96	70	99	1,577	247
1.2	96	140	197	2,119	315

Table 16: wheat gross margin benefit from the application of additional irrigation water and nitrogen fertiliser (Acuna 2013)

* based on centre pivot irrigator at $80/ML and includes the application cost, plant and equipment and labour

^ based on urea cost @ $550/T and a spreading cost of $15/ha

based on a wheat grain price of $280/T

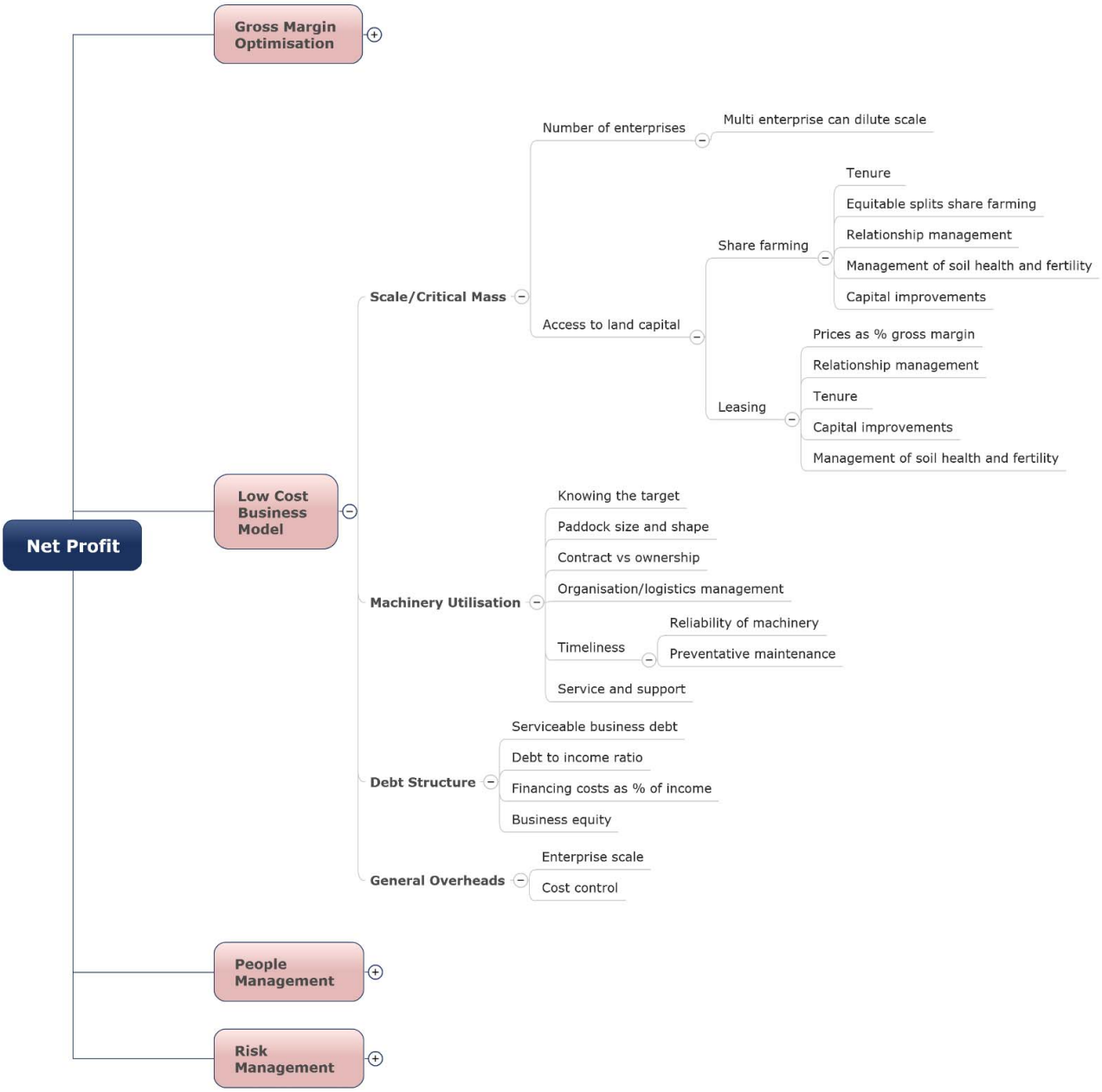
Key message

The ability to successfully manage limitations associated with nitrogen and/or soil moisture have the potential to increase both wheat forage and grain yields. The adoption of crop monitoring tools will assist in identifying when water and nitrogen are limiting, assisting growers optimise crop inputs with respect to increasing crop profitability.

References

Acuna (2013). Improved water-use efficiency of rain-fed and irrigated farming systems in Tasmania. GRDC Report Code UT00016

Low cost business



Scale can be helpful but it is not the sole driver of high profit farms.

The Low Overhead Cost Business Model profit driver is influenced by a farm's structural efficiency. This can be influenced by reaching a suitable critical mass and is potentially also influenced by the level of enterprise simplicity employed within the business. These factors can have an influence on machinery utilisation, labour utilisation, and maintaining low general overhead costs. It is not necessarily scale that drives high machinery and labour utilisation, but rather how your investment in machinery and labour is matched to the size of your business. Utilising contractors requires consideration when designing a low overhead cost business model, particularly if contracting is more cost effective than owning and operating a piece of equipment for a required operation. Debt positioning and land lease rates can also have an influence on the overhead cost structure of a farm business.

The Top 20% retain an extra 10% of business turnover as net profit before tax from increased machinery and labour utilisation. This is driven through the investment of 25% of income going towards TPML costs by the Top 20% versus 35% on average.

Benchmark	Top 20% of businesses as selected by ROE	Average across the dataset
Total Plant Machinery and Labour (TPML) a.) TPML as a % income b.) TPML ($/Ha)	 14.5% $107	 31.7% $235
Machinery investment to income ratio	0.55	0.65
Investment in machinery capital per hectare	$1,194	$1,756
Hectares managed/FTE	934	554
Turnover per FTE	$664,300	$389,475
Equity %	76%	73%
Debt to income	1.18	1.73
Finance costs as a % of income	8.9%	14.6%

Table 17 - Benchmarks relating to a low overhead cost business

Terminology explanation

Total Plant, Machinery and Labour (TPML) is used to compare businesses that employ an own and operate model with a contractor model for their machinery and labour. This benchmark is also useful to measure how well a grain business is utilising their investments into machinery and labour.

High profit farming businesses are able to generate more than $100,120 in income per Full Time Equivalent (FTE) employee. They achieve this in a sustainable manner by creating simple and scalable farming systems.

The Top 20% have $560 less per hectare invested in machinery capital without drawing on contractors.

The following information can be drawn from this data. In Tasmanian Grain Growing zone, in comparison to the dataset average, the Top 20% are:

- 54% more efficient with machinery and labour utilisation, as measured by TPML as a % of income. This is potentially allowing an additional 35% of turnover to be retained as net profit before tax within these businesses.
- Have a machinery investment to income ratio of about 1:1 on average.
- Have $560 less per hectare invested in machinery capital without drawing on contractors.
- Are managing an additional 380 hectares per FTE, 68% more than the average business for the zone.
- Are generating $274,800 or 70% higher turnover per FTE. The Top 20% are achieving this without compromising productivity as they are managing 60% more area per FTE and generating 32% more income per FTE. This is achieved through either enterprise and crop selection or increased per hectare productivity from timeliness and good agronomy.
- Have a debt to income ratio of 0.39 on average compared to 1.73. This indicates a higher level of debt serviceability amongst the Top 20%.

High profit farming businesses are able to achieve a machinery investment to income ratio of 0.36 without compromising operational timeliness.

Calculate your: Total Plant, Machinery and Labour (TPML) as % income

	Your business	Example
Contract work (A)		$30,000
Fuel (B)		$60,000
Freight (C)		$25,000
Plant hire (D)		$5,000
Plant R&M (E)		$45,000
Depreciation (F)		$65,000
Machinery lease (not hire purchase) (G)		$0
Plant & equipment interest (H)		$15,000
Wages & on-costs (I)		$50,000
Imputed labour (J)		$50,000
Total TPML costs (A + B+ C + D + E + F + G + H + I + J = K)		$345,000
Total Income (L)		$1,000,000
TPML costs as % income (K / L x 100)		34.5%

Table 18 - Calculate your Total, Plant, Machinery and Labour costs as % income

The Top 20% are more conservatively positioned in regard to debt to income ratio at 0.39 rather than 1.73

TAS GRAIN GROWING MANAGEMENT GUIDELINE 39

How do you compare? Benchmarks and stretch targets – Low cost business model

Profit Driver	Profit Driver Benchmarks	Benchmark	Stretch Target	Your business	Business 1 Revenue opportunity	Business 2 Variable cost opportunity	Business 3 High overhead structure	Business 4 Top 20% business	Business 5 Gross margin optimisation and overhead cost opportunity
Low cost business structure	TPML as % Income	30%	20		29.30%	26.37%	40.85%	13.00%	42.50%
	Machinery investment to income ratio	0.6:1	0.4:1		0.99:1	0.6:1	1.18:1	0.3:1	1.28:1
	Investment in machinery capital per hectare	$500	$300		$566	$407	$1,400	$175	$1,000
	Hectares managed/FTE	600	800		475	378	670	1,123	245
	Turnover/FTE	$400,000	$550,000		$176,148	$292,761	$400,108	$757,000	$231,353
	Equity %	75%	90%		62%	62%	70%	95%	56%
	Debt to income	1 : 1	0.7 :1		0.55:1	1.45:1	2.20:1	0.391	2.89:1
	Finance and lease costs as % income	15%	10%		25.4%	17.16%	32.17%	2.63%	26.62%
	Overhead costs ($/ha)	$150	$100		$85	$217.75	$250	$85	$406.69
	Financing costs ($/ha)	$90	$60		$94.50	$125.68	$156.58	$39.38	$200.31

Low Cost Business Model Diagnostics

Are you short of the benchmark or looking to hit your stretch target? – Tool to assist

6. Is your machinery investment to income ratio higher than 0.55? If so:		Yes / No / Comment
6.1	Are you leveraging the best possible level of income from your machinery investment through	
	- excellent timeliness?	
	- a robust crop rotation?	
	- good agronomy?	
	- applying highest and best land use?	
6.2	Does your investment in machinery match the scale of your cropping enterprise?	
	- How does your machinery capital per hectare compare to the benchmark for your region?	
6.3	Do you have any machinery that is rarely used and surplus to your requirements? If so it is best to sell off this machinery rather than keep it.	
6.4	Does every piece of machinery that you own perform an essential function for your business? If not, should you really own it?	
6.5	Is your farm set-up for high machinery utilisation?	
	- Large paddock size	
	- Wide gates and good access	
6.6	Are you organised well ahead of time to ensure that you are able to get high levels of productivity from your kit?	
	- Preventative maintenance complete well before key operations?	
	- Machinery ready to go 2 or 3 weeks before you need to start?	
	- Do you set a seeding start date that allows for a 25% contingency for unexpected break downs and weather interruptions?	
	- Are all employees well inducted to machinery operation before peak periods commence?	
6.7	Can you cost effectively increase shift length during peak periods rather than upsize?	
6.8	Have you simplified your enterprise mix and number of crop types to avoid unnecessary duplication in machinery capital?	
6.9	Can you cost effectively access more land to achieve a greater level of utilisation from your machinery?	
6.10	Can you delay your next machinery upgrade and get by comfortably with your existing kit?	
6.11	Do you give adequate planning and thinking to logistics management and how to get more from each existing piece of equipment?	
6.12	Are you able to observe and review machinery logistics during peak periods, identify bottlenecks, and effectively overcome them?	
6.13	Is optimising machinery utilisation one of your key goals?	

Case Study 3
Low overhead approach to boost business profitability

The key driver identified for profitable grain growing businesses throughout Australia is the ability to adopt a low overhead cost business model and maximise efficiencies relating to machinery and labour utilisation.

In Tasmania's key grain growing region there is opportunity to run a number of different farm enterprises ranging from sheep and cattle (agistment, breeding and finishing), cereals (wheat, canola and barley), poppies, seed crops (grass, clover and vegetable), fodder production and vegetable crops. The ability to successfully integrate dual purpose crops, such as cereals and pasture seed crops, into grazing systems offers an additional source of farm income, ability to increase animal production and reduce/offset the risk associated with cash cropping returns.

When selecting farm enterprises it is important that a business approach is used to avoid making decisions that while providing potentially higher gross margin returns at the paddock scale, increase risk, and have the potential to lead to over capitalisation on machinery, increased labour costs and greater operational and farm management complexity. Too much complexity within a business can lead to the dilution of skills and divert attention away from the core profit generating enterprises.

A recent survey of Tasmanian grain growing businesses identified key overhead cost benchmarks as outlined in the Table 19.

Benchmark	Average of businesses	Top 20% of businesses by ROE
Total Plant Machinery and Labour (TPML)		
a) TPML as % of income	31.7%	14.5%
b) TPML ($/ha)	$235	$107
Machinery investment to income ratio	0.65	0.55
Investment in machinery capital per hectare	$1,756	$1,194
Hectares managed/FTE	554	934
Turnover per FTE	$389,500	$664,300

Table 19: Benchmarks relating to low overhead cost business model

The ability to simplify production systems by specialising in fewer enterprises offers growers the opportunity to fine tune management practices, focus their attention on details and ensure timeliness of operational activities. Specialisation allows growers to consider investment in new technology and equipment which enables improved operational efficiencies and reduced labour costs.

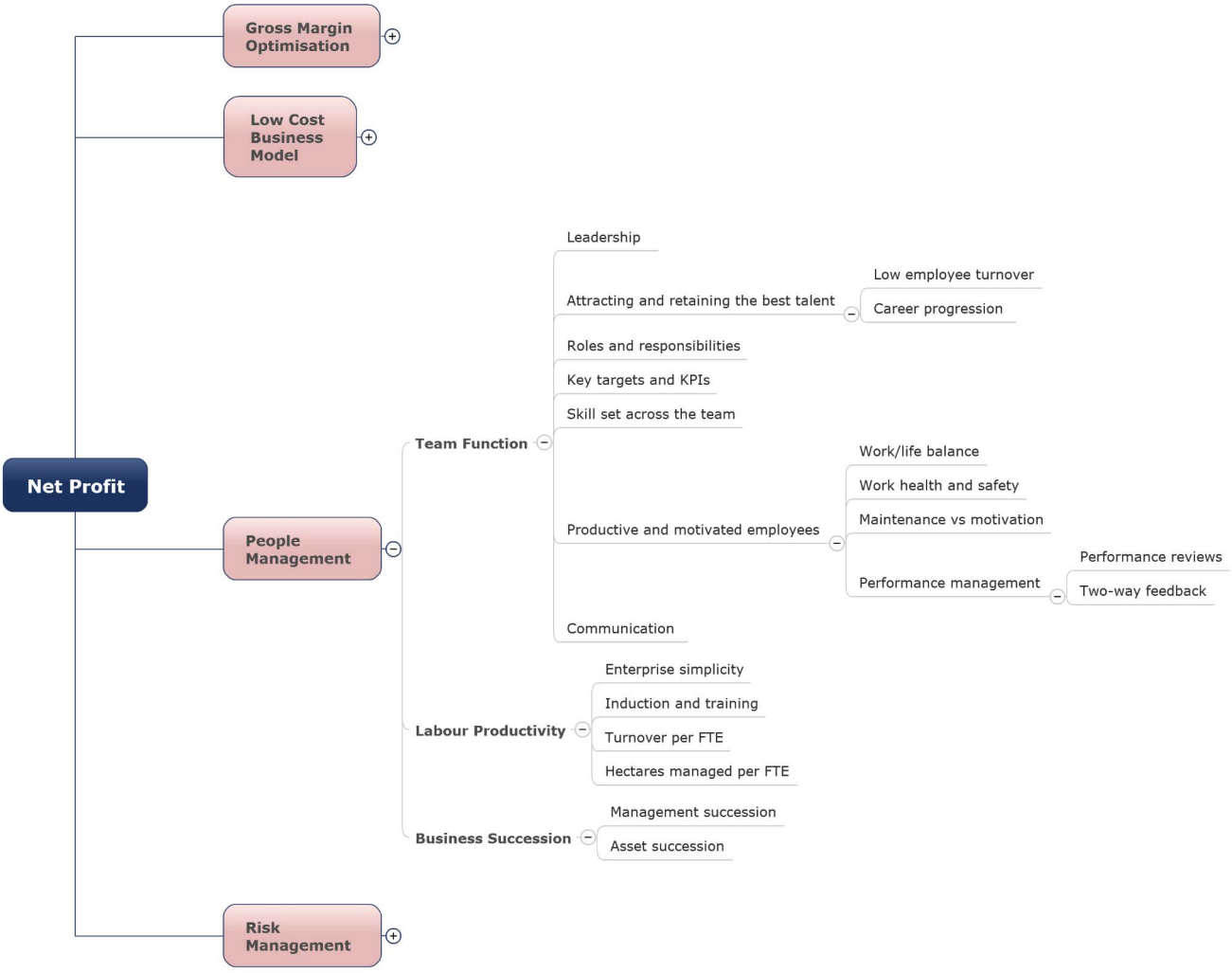
Key message

Careful consideration and a business case approach must be given to the mix of enterprises undertaken on a property. Cropping and livestock production activities are best integrated so that they are mutually beneficial. Reducing enterprise complexity will avoid over capitalisation on machinery, excessive labour inputs and the diversion and dilution of management skills and attention.

Reference

Macquarie Franklin 2015, The integration of technical data and profit drivers for more informed decision making. Tasmanian grain growers benchmarking survey. GRDC

People and Management



Management traits and characteristics identified

The People and Management profit drivers is influenced by skill set across the production and management team, team productivity, and the ability to perform well and make the right business decisions at the right time.

A number of differences were identified between producers consistently achieving Top 20% results and their lower performing peers. These key differences can be summarised around the following four themes.

1. Business planning approach
2. Understanding of key profit drivers
3. The decision making process
4. Sphere of control versus of sphere of influence

These are explored in further detail below.

1. Business planning approach

Highlighted by a question in the grower survey regarding the use of decision support tools, the Top 20% had a broader definition of the requirements to run a successful business, going beyond technical support tools and including business analysis tools. The Average tended to not be familiar with or use business analysis tools. Both groups used irrigation monitoring devices with the Average using agronomists to tell them and the Top 20% consulting with their agronomists.

The Top 20% consulted and monitored on a daily/weekly basis whereas the Average tended to be seasonally prompted at critical times by their agronomist. Both groups indicated that their agronomist used other tools to support decisions in fertiliser, plant nutrition and pest and disease management but growers were unable to name any of these tools.

A higher level of performance drives the need for Decision Support Tools, and this includes supporting technical and operational activities in addition to business management analysis and planning.

2. Understanding of key profit drivers

Profit was seen as a manageable outcome, and that profit could then be used to effectively grow the business or reduce business risk. The profit drivers ranked as being the most important for the top 20% (in order of priority) were:

- Yield
- Rotation
- Variable costs
- Price
- Overhead costs

A key difference between the Top 20% and the Average was that the Top 20% understood that "crop rotation" was critical to long term sustainable profit as well as short term yields. Crop rotation was not identified by the Average as a profit driver at all.

The Top 20% noted that price was influential as a profit driver but recognised that there was little they could do to control it so they focussed their energy on the profit drivers within their control (yield, rotation, and variable costs). For the Average, price, although not within their control, was their number one profit driver. Debt was noted as top 3 profit driver by the Average whereas the Top 20% did not consider debt as a profit driver. This may be due to the associated returns – ie if a business is achieving a return to capital higher than the interest rate then debt won't be seen as an issue. The Top 20% ranked advice and planning very highly as profit drivers whereas the Average mentioned price and weather, both out of their control, as the key drivers.

In terms of the things they can do to increase profit without spending a lot of money the Top 20% highlighted things like timing of decisions, good preparation and recognising limitations within the business. The average couldn't clearly identify a lot of opportunity here with the exception of looking for new varieties and crop options.

3. The decision making process

The Top 20% go through a wide-ranging consultative process which always included a paid agronomist. In addition to that it appeared that they were reluctant to adopt unproven technologies or techniques and if they did it was at small scale. It was interesting that when given a problem (reducing frost risk) that the Top 20% considered they may not do anything different given that they had factored the risk in and expected to be negatively affected at times (managed risk still has downside). The Average reacted by automatically reducing exposure, which suggests they automatically assume they make poor decisions.

- The Top 20% were more pro-active during the growing season monitoring on a daily / weekly basis and consulting regularly with their agronomist whereas the Average tended to be seasonally prompted at critical times by their agronomist.
- While the Top 20% utilised a number of different advisors, they commonly used them as a third party to challenge decisions and provide them with technical information. Much of the ground work needed to make such decisions was already undertaken by the producer and they placed accountability on themselves for the decisions that they made.
- When asked what decision making process they follow, many of the producers generating more modest returns often quoted a wide range of external sources and/or technical information to help them make the decision. "Observing what others do in the district" was a common response. While seeking external perspectives is a valuable process, there is a risk that this can externalise decision making, potentially to someone that doesn't have a strong connection to long term business objectives. This can result in delays in the decision making process, or no decision being made at all.

- What differentiates the Top 20% is that by internalising key decision making against internal benchmarks, they know the decision they have made suits their system and their long term goals. Sole reliance on technical information or what others recommend or suggest is potentially risky as their comments and recommendations might not suit the production system followed or particular circumstances. Without carefully considered internal benchmarks it is difficult to make consistent decisions that are always in the long term interests of the business. Additionally, in mixed farming businesses overall business profit is often optimised by making trade offs. Advice from agronomists or field officers is typically limited to their area of expertise and is often about maximising the returns from only one part of the business, not optimising the overall system and business performance.

Top producers make considered decisions and judgements which use internal resources and external technical and management specialists. They adopt a monitor to manage approach to proactively dealing with seasonal challenges and general business management.

Insights came from a question pitched around “the block of land next door has come up for sale, how do you go about assessing the opportunity and establishing what purchase price you would be willing to pay?”

The Top 20% assessed the opportunity against their business plan and goals, and involved consultants, advisors and the bank in the process. The Top 20% focused on the long term strategic nature of the decision and the fit with their business. The Average conducted limited analysis and did not undertake any strategic assessment (external advice was limited to field agronomist and the likelihood of obtaining crop contracts). Consultation with the bank was also limited to the bank agreeing to loan them the money.

4. Sphere of control versus of sphere of influence

Some different observations were made between Top 20% and Average producers in relation to where they focus their energy. This included differences in where producers identified opportunities to intervene and make changes or refinements to their production and management systems. The Top 20% are very good at identifying where they will get the best return for their effort. In principle, this often came across as a strong focus on the things that they can change and control rather than unnecessarily investing valuable energy into factors over which they have little or no control (e.g. price or weather, as outlined in the profit drivers section). This is further explained by the sphere of control and influence.

Figure 3 shows the sphere of control/influence. It can be used to determine what can be actively controlled, what factors may influence your business but over which you may have only limited control, and then those factors which you have no control over and may only have very limited influence on your business anyway.

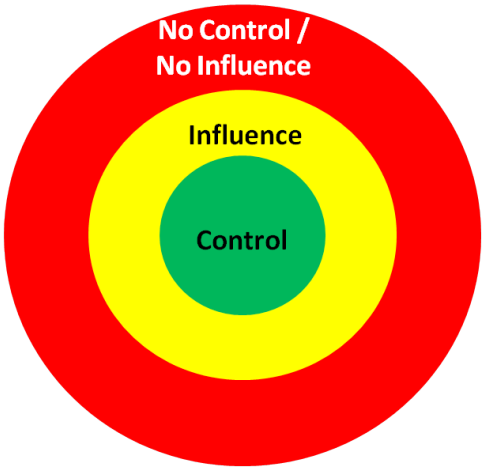


Figure 3: Sphere of influence and control

Examples of no control include:

- Weather
- Political priorities and policy
- Commodity price volatility
- Currency volatility
- Global input pricing

Examples of influential factors include (note, some overlaps):

- Grain marketing
- Final crop yield
- Business succession
- Debt and financing levels
- Unavoidable variable costs
- Frost

Examples of control include:

- Adverse readiness
- Rotation
- Business systems
- Labour
- Timeliness and organisation
- Agronomic practice
- Moisture conservation
- Building in contingencies to allow for unknown variables such as weather and machinery breakdown

Top 20% producers focus their energy on things within their control.

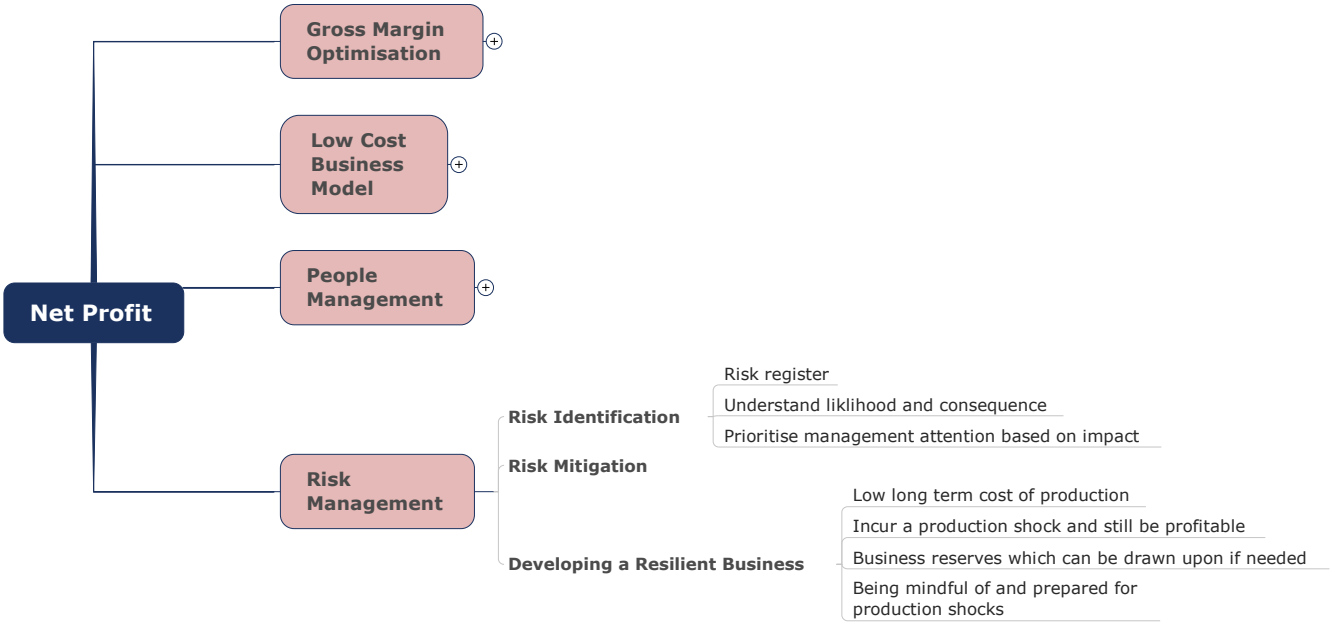
When asked “what issues in your farming business keep you awake at night or worry you the most?”, there were some differences in responses between the Top 20% and average. Some of these differences were being driven by sphere of control and sphere of concern influences. High performing producers were happy to accept the events over which they have no control such as price and weather and rather invest their energy into developing systems that will allow them to internally to manage these risks.

It wasn’t uncommon for some producers to unnecessarily invest energy and concern over factors over which they have limited or no control. It was felt focusing energy on this sometimes very wide ‘sphere of concern’ was potentially distracting them from identifying the opportunities where they could positively interfere and move across into the ‘sphere on control’.

It is the shift in focus from ‘fear of the variable’ to ‘what can I do to manage the variable’ that makes the difference. The only variables that really concerned the Top 20% were uncommon major production shocks over which they perceived they had very limited control such as a particularly unusual frost, heat or rainfall event. If these were a common part of their landscape then good producers in these regions learned how to manage this.

The Midlands grain growing area is subjected to frosts that typically occur from May to October. For example, Cressy experiences nearly 100 frosts per year during this period (Bureau of Meteorology). The ability to mitigate the risk associated with frost damage to cereal crops is best managed by the selection of long growing season varieties that have a late flowering date (mid/late October) and a high winter vernalisation requirement, and are therefore less predisposed to experiencing frost damage during the early grain fill period (growth stages 70-79). Additionally these long season varieties should be sown at the correct time, typically during March. Sowing too early may result in an earlier flowering and therefore subsequently increases the risk of frost damage during the early grain fill period.

Risk Management



Business resilience is very important in agriculture, particularly in managing climate variability. Business resilience is certainly tested across the grain production zones in Australia through seasonal variation, commodity price fluctuation, and input cost variation. Risk Management as a profit driver is influenced by a business's ability to identify and mitigate key risks. A resilient business is one which can incur a production or business shock and yet maintain suitable levels of financial performance. While developing a resilient business is influenced by gross margin optimisation and developing a low cost business model there are also elements of business resilience which are improved through proactively managing risk.

Some potential measures of well implemented risk management within a business might include:

- Lower income variation from year to year
- Lower long term cost of production by commodity
- Lower variability in profit from year to year
- A greater ability to withstand a business or production shock

Businesses which have effectively identified and mitigated key production and business risks will generally have less income variation from year to year and much lower long term cost of production for the range of commodities that they produce.

Key risks to be managed in the Tasmanian Grain Growing agro-ecological zone include the following, understanding that there is land type and climate variability within the zone.

Production risks include:

- Frost risk
- Dry or failed springs
- Late breaks
- Enterprise conflict that creates compromise (i.e. poor integration of livestock and cropping)
- Waterlogging (in some parts of the zone)
- Herbicide resistant ryegrass
- Cereal rusts
- Lodging

Business risks include:

- Catastrophic events (fire, flood, hail etc)
- Debt serviceability
- Price risk
- Workplace Health and Safety
- Key person risk
- Wills/succession/asset protection
- Human resources (employee turnover is a risk that requires management)

Case Study 4
The reliance upon poppies as the key income source

Poppies have the potential to be the highest returning cash crop available for many Tasmanian grain growers, offering producers the opportunity for typical gross margin returns of greater than $2,500/ha, contributing a significant proportion of total farm income.

	Average	Minimum	Maximum
Poppy income as % of total farm income	34.2	0	63

Table 20: Poppy income as a % of total farm income for grain growers surveyed

Poppy returns have been a key driver in servicing the capital required for irrigation development. In turn it has provided an opportunity to grow irrigated cereals and grass seed crops, and intensify livestock production systems, and as a result increase farm profit.

Whilst poppies offer the potential for high returns, this comes with a higher level of risk including availability of crop contracts and managing agronomic issues to achieve target yields and alkaloid assay levels.

The high reliance on poppies to increase farm income has the potential to create a significant negative impact on total business profitability if contracts are not obtained or yields not realised.

The top 20% of farmers in a recent GRDC study had a higher proportion of their income coming from livestock enterprises which while less profitable, are also less risky.

While poppies are expected to continue to remain a key crop option for Tasmanian grain growers, the contribution to overall business performance, taking into account reliability and risk, should be analysed. Figure 1 demonstrates that the proportion of a business' income generated by poppies is not correlated with overall business performance, measured as EBITDA.

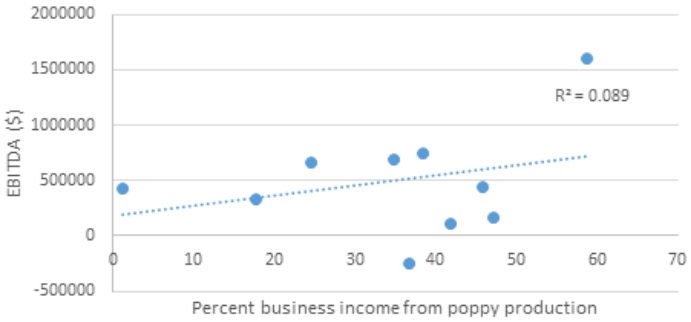


Figure 4: The percent income from poppy production compared with business EBITDA

Key message

Poppies are an attractive crop in terms of gross margin returns, however they come with a higher risk profile. Growers are advised to carefully consider how poppy production contributes to the overall total farm profitability and enterprise performance during both the start-up phase following irrigation development and as the business settles into a sustainable cropping rotation.

Reference

Macquarie Franklin 2015, The integration of technical data and profit drivers for more informed decision making. Tasmanian grain growers benchmarking survey. GRDC

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