L.MXF.0001 The Profitable Integration of Cropping and Livestock in Southern Australia

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Acknowledgement

‘The profitable integration of cropping and livestock’ an MLA investment

Disclaimer and seasonal influence

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Seasonal influence

The data collected and analysed in these slides was collected for the three year period between 2014 and 2016. The seasonal conditions experienced over these years will have an influence over the results achieved in each agro-ecological zone. If seasonal conditions differ from those experienced during this time period, some of the comparisons within and between the zones and regions may change.

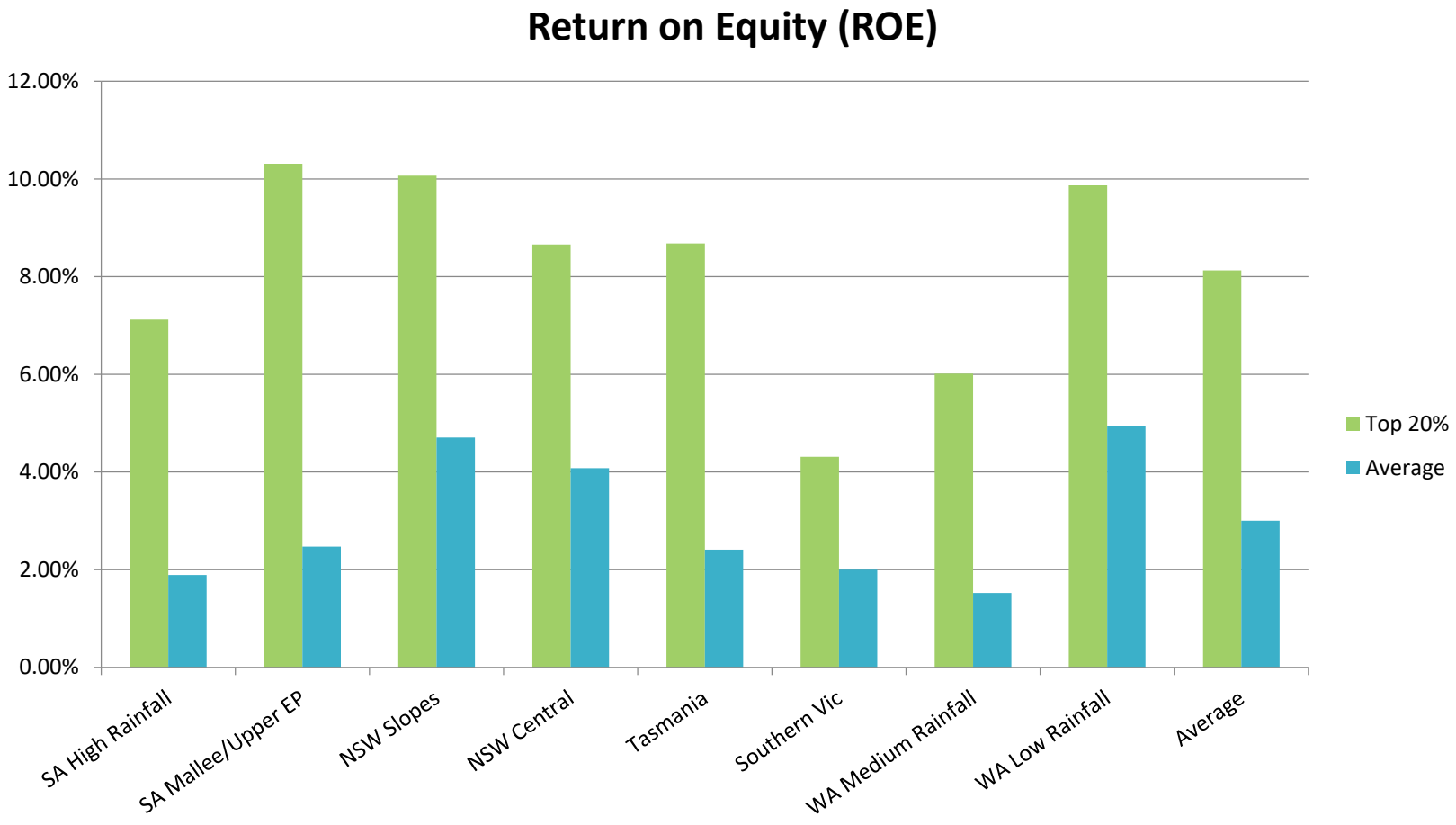
1. Introduction and methodology

- 100 ‘whole of business’ benchmarking datasets collected and analysed nationally by the four project partners
  - Long run analysis to capture the influence of seasonality
  - 3 years of data collected for each business
  - Top 20% selected by either
    - Return on Equity (ROE)
    - Return on Assets Managed (ROAM)

- The quantitative analysis was complemented by a qualitative survey process with producers across each region

- In addition to identifying the profit drivers in each agro-ecological zone consideration was given to the integration of cropping and livestock enterprises

National comparison



2. Mixed enterprise

- Common production system in Southern Australia
- Often promoted on the principle of diversification being beneficial
- Has a stronger fit in some regions than others
  - 40% of high performing businesses in the Mid North are mixed enterprise
  - 75% of high performing businesses in the Mallee & Upper EP are mixed enterprise

Challenges with multi-enterprise

- Can create internal dilution of scale
- Requires duplication of capital
- Potentially creates enterprise conflict that will quietly erode margins in one or more enterprises (internal management risk)
- Diversion of focus and management attention
- Compromises simplicity

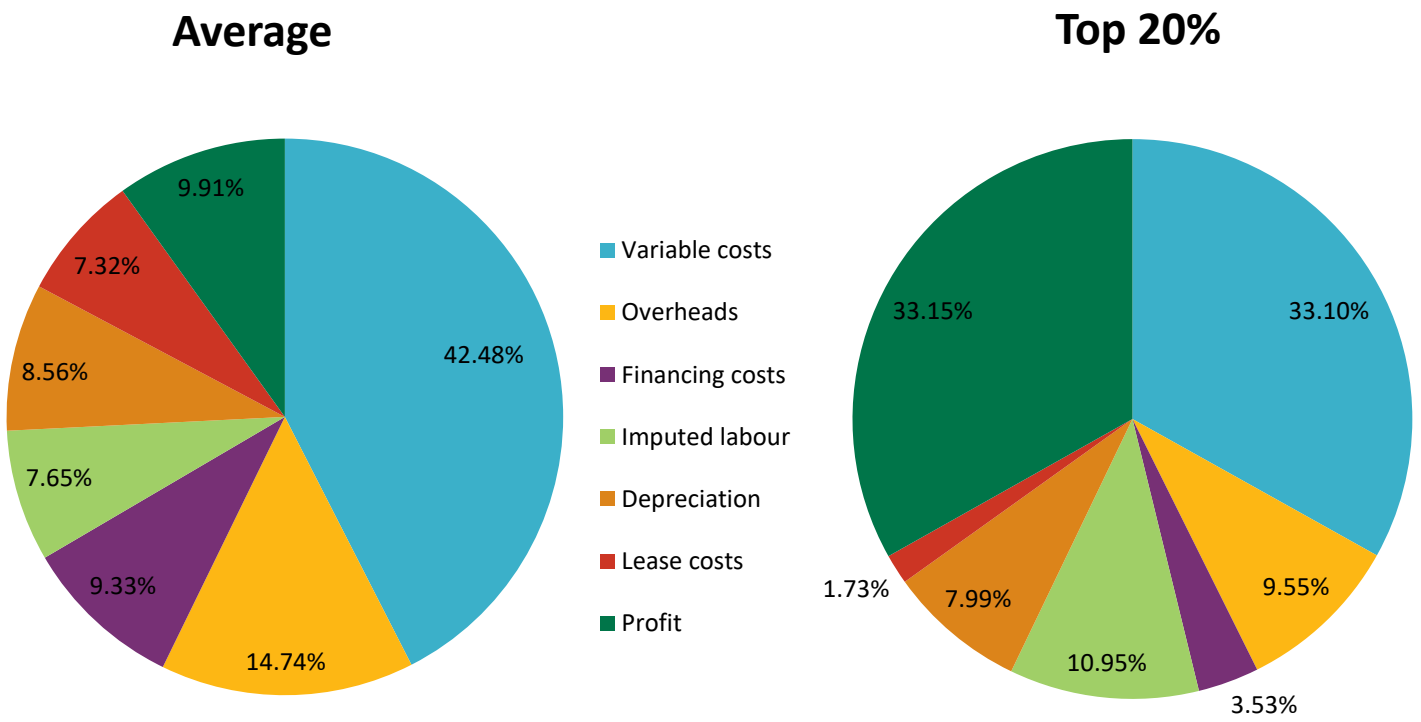

SIMPLICITY
IS
THE
KEY TO
BRILLIANCE.

The business case for multi-enterprise

There are a number of situations where the inclusion of livestock into a cropping enterprise has a strong fit:

- Using a pasture phase to manage or prevent the build up of resistant ryegrass
- When livestock gross margins are stronger than alternative break crop choices
  - Incorporates managing production risk
- Making use of non-arable land classes
- Making beneficial use of a by product (bean stubbles)
- Livestock enterprises representing highest and best land use
  - Frost prone landscapes
  - Soils prone to waterlogging or sodic soils
  - Paddocks with low arability (native vegetation, slope, soil depth)
- Creates some level of diversity

3. Mixed enterprise done really well…



Retaining 30% of turnover as net profit

30% (of turnover retained as net profit)

What are these businesses doing differently?

Profit Driver Framework

4. Profit Driver Framework

- The following four primary profit drivers have been identified nationally:

    1. Gross margin optimisation *(Operational)*
    2. Low cost business model *(Structural)*
    3. People and management
    4. Risk management

- It is the interaction of these four primary profit drivers that is resulting in different profit outcomes

- If one of these four is overlooked it will compromise profit potential and long term financial performance

Gross Margin Optimisation

5. Gross Margin Optimisation in a mixed context

Key principles

1. Target superior gross margin performance in both your cropping and livestock enterprise

2. Aim to optimise crop yield in a cost effective manner
   a) $2.50 vs $1.90 in crop revenue per $1.00 invested into variable costs

3. Aim to optimise livestock income in a cost effective manner
   a) $3.40 vs $1.95 in livestock revenue per $1.00 invested into variable costs

Gross Margin Livestock

Gross margin per hectare

= Stocking rate

x individual animal performance

less variable costs

Building blocks to optimise gross margin

Gross margin optimisation - livestock

Each of the four primary profit drivers are supported by a range of secondary and tertiary profit drivers

Behind gross margin optimisation in a livestock context are:

- Turn-off weight
- Reproduction rate
- Adult fleece value
- Stocking rate
- Grazing management
- Feed base
- Price received
- Variable costs
- Supplementary feed

Balance of performance across key flock traits

Dual purpose flock targets

120 : 120 : 60

Dual purpose flock targets

120% weaning

$120 per head minimum for lambs

$60 adult fleece value

Reproduction rate

- Optimising fertility and lamb survival
- Condition Score (CS) 3 at joining and lambing
- Lamb survival*
  - Extra 0.5 of a CS on twin bearing ewes
    - Has a positive influence on lamb birth weight
  - Mob size at lambing
  - Feed on Offer at lambing (>2,000kg DM/Ha)
  - Shelter
- Reduce the 30% leakage

* Andrew Thompson, Murdoch University, Maternal Productivity

Maternal composite flock targets

150 : 135 : 15

Maternal composite flock targets

150% weaning

$135 per head minimum for lambs

$15 adult fleece value

Grazing management

- Replacement phosphorus
  - 1 DSE per hectare removes 1 unit of P per annum
  - Replacement P a foundation stone to dry matter production
  - Soil pH also a foundation stone

- Setting a sustainable stocking rate
  - Increasing stocking rate is rarely just about putting more stock in the paddock and shutting the gate
  - Requires a corresponding increase in dry matter production and/or harvest per hectare
  - Target 1.0 to 2 DSE per hectare per 100mm depending on land class and soil type
    - > 400mm of annual rainfall
    - Improved pasture species
    - Heavy soil type that is responsive and cost effective to fertilise

Lamb growth rate – 40kg lambs

Daily Growth Rate (grams)	Maintenance Intake (kg/day)	Growth Intake (kg/day)	Total Intake (kg/day)	% diet going towards production
100	0.8	0.4	**1.2**	33%
150	0.8	0.6	**1.4**	43%
200	0.8	0.8	**1.6**	50%
250	0.8	1.0	**1.8**	55%
300	0.8	1.2	**2.0**	60%
Pasture Principles – A practical guide to pasture management				
Doonan B, Sherriff L, Hooper P, Macquarie Franklin				

Prime lamb stretch target

55 : 5

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Gross margin per hectare = stocking rate x gross margin per DSE

GM/DSE SR/Ha	$25	$35	$45	$55
8 DSE	$200	$280	$360	$440
10 DSE	$250	$350	$450	$550
12 DSE	$300	$420	$540	$660
14 DSE	$350	$490	$630	$770

GM = gross margin
SR = stocking rate
Revenue less variable costs = gross margin

Low Cost Business Model

6. Low cost business model – mixed enterprise

- >$600k (turnover per labour unit)
- 0.8 : 1 (machinery investment to income ratio)
- 25% vs 35% (of turnover into TPML costs)

Labour productivity

- Labour productivity targets
  - 8,000 DSE or $600,000 in turnover per labour unit

- Simple and scalable systems
  - Efficient patterns of work
  - Harnessing the power of enterprise simplicity
  - Optimise how often handling is required

- Quality infrastructure that saves labour
  - Doing things once
  - Quality fencing, laneways, and grids
  - Quality yards and handling systems
  - Replacing labour with technology (based on cost : benefit)
  - Excellent water infrastructure

People and Management

Management traits and characteristics of the Top 20%

The following six management characteristics were commonly noted amongst Top 20% producers during a qualitative survey process undertaken by Rural Directions Pty Ltd

1. Having a systems focus
2. Taking a ‘helicopter’ view when under pressure
3. Internalising and taking responsibility for key business decisions
4. Focusing energy on the things within their control
5. Superior implementation ability
6. Strong observational skills

Risk Management

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8. Risk Management

Key principles

1. Low risk, high margin agriculture is possible

2. Aim to develop a resilient business model that can withstand production and business shocks

3. Identifying and mitigating key production and business risks is all part of good management

Effective integration

7. Effective integration between livestock and cropping enterprises

- Effective integration requires a high level of implementation skill
- Consideration to the cross over between enterprises is required
- The risk of enterprise conflict quietly eroding profit margins in one or more enterprises needs to be managed
- Do you have the available skill sets within the business to get the best out of both enterprises?
- Need to optimise the win : wins

True Win : Win

True win : win scenarios

- When a livestock enterprise offers the most profitable legume (or break crop) available to the crop rotation
  - Legume based pastures can add $30 to $100 worth of soil nitrogen per ha

Long term crop yield	0.5t/ha	1.0t/ha	1.5t/ha	2.0t/ha
Break crop type	**Gross Margin $/Ha**			
Canola @ $530/t	-$56	$171	$346	$572
Beans @ $355/t +N +G	-$5	$159	$242	$391
Lentils @ $720/t + N	$139	$482	$788	$1,138
Sheep $35/DSE + N	$138	$225	$312	$400
Sheep $45/DSE + N	$163	$275	$387	$500
Sheep $55/DSE + N	$188	$325	$462	$600
Stocking rate/Ha	**2.5 DSE**	**5.0 DSE**	**7.5 DSE**	**10.0 DSE**

True win : win scenarios

- Lamb finishing making very effective use of grain legume stubbles
  - Can add $50 to $100 per hectare to faba bean gross margins
  - Can assist lamb enterprise with achieving heavier turn-off into favourable market conditions
- The availability of legume stubbles enhancing a producers ability to spring lamb in dryland production systems

True win : win scenarios

- Integration of hay and livestock on high frost risk landscapes

- Integration of Lucerne and livestock
  - Lucerne seed and livestock
  - Hay and livestock
  - Productive use of summer rainfall

- Wheat/Medic or Cereal/Medic systems
  - Non selective grass control

True win : win scenarios

- Using a pasture phase to build organic carbon / soil health
  - However it is a long journey in dryland systems
- Utilisation of cereal stubbles as a maintenance diet for breeding stock also assisting with stubble management and mice control

True win : win scenarios

- Ability to utilise livestock for canopy management in early sown cereal crops…provided the crops have low ryegrass pressure
- Using the opportunity to sow feed paddocks to test equipment and operators

Potential Win : Lose

Potential win : lose scenarios

- Grazing livestock on volunteer cereals or summer weeds
  - The cost to the cropping enterprise is too great
  - Moisture, nutrients, disease, Russian wheat aphid
  - Preferably not at all…and never past 15th March!

Potential win : lose scenarios

- Shearing in April
  - April is a ‘golden’ month for cropping businesses…don’t interfere with it!
  - February and March are very close to being ‘golden’ months too
  - Being late with 10% of your seeding program can reduce total farm profit by 20%
- Large paddock size
  - Great for cropping enterprise
- Influence of diversification on implementation

Potential win : lose scenarios

- Delaying grass freeing a medic, clover, or vetch pasture
- Cereal or grassy based pastures
- Grain & Graze on a cereal crop with ryegrass present
- Grazing stock on paddocks to be windrow burnt

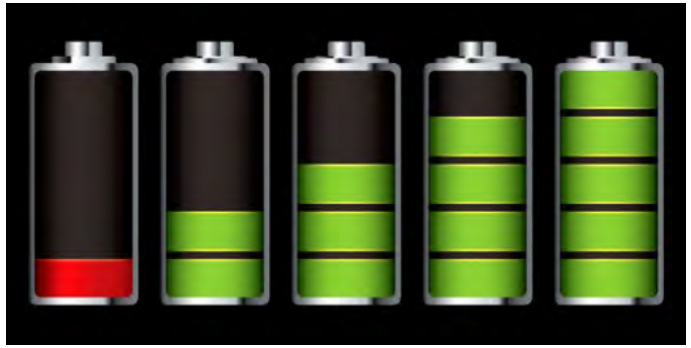
Likely Lose : Lose

Likely lose : lose scenarios

- Sowing feed or fodder crops in late April, May, or June
  - Late April is interfering with the ‘golden’ window for Canola and other break crops
  - May is well and truly interfering with the ‘golden’ window for all crop types
  - May or June sown feed or fodder crops are also compromising the ability of these feed paddocks to productively accumulate dry matter before winter sets in with
    - Reduced day light hours
    - Colder temperatures (soil and air)
    - Frost
    - Slow leaf emergence rate
    - All reducing pasture growth rates in kg of dry matter per hectare per day

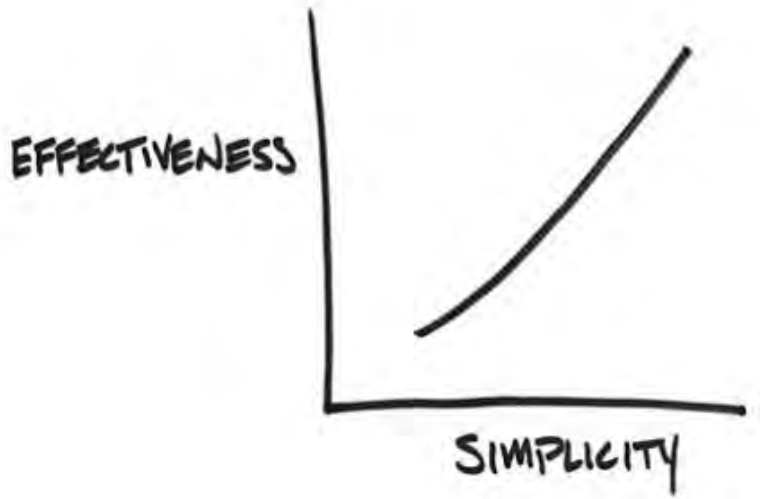
Likely lose : lose scenarios

- Unnecessary complexity
- Inability to have effective recharge
  - Weekly
  - Monthly
  - Quarterly
  - Yearly



8. The principle of simplification

- Greater focus
- Greater labour productivity
- Enhanced mind set and well being
- Less enterprise conflict



9. Summary of key integration messages

- The business case for multi-enterprise must be strong
- Internal management risk must be managed to overcome any enterprise conflict that can quietly erode margins
- Optimise the win : win’s
- Make sure you are hitting the key profit drivers
- Simplicity pays!

Best practice integration – key indicators

- Retaining 30% of turnover as net profit
- All fodder crops sown by the end of March
- Seeding consistently completed by 20th May
- Legume based pasture phase
- Adult fleece value > $60
- Average turn-off weight > 52kg LWT
- Variable costs less than 40% of turnover
- TPML costs ideally at 25% of turnover
- Lambing percentage near 120%

Summary of key messages

- Replicating Top 20% performance is **within your control**
- **Low risk, high margin** agriculture is possible!
- The **implementation** gap is bigger than the knowledge gap
- Replicating Top 20% performance requires **optimising gross margins** and developing a **low cost business model**
- It requires **skill**, **courage**, and **discipline** to achieve this!

Thank you