Opportunities for producers to expand their sheep enterprise

DAFWA Project AGR 2015003

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Acknowledgements

This project would not have been possible with the assistance of the 23 sheep producers and business people who took time out of their busy schedules to participate in this survey. We thank them for their contribution and hope that they find something in this report which will assist and encourage them in achieving their goals in the sheep industry.

We would also like to thank Ashley Herbert for his assistance when called on.
Executive Summary

Using historical financial and production data and interviews with top sheep producers this report identifies opportunities for Western Australian producers to expand their sheep enterprise.

Over the past five years, on average cropping margins have exceeded sheep margins by approximately $100/ha for the average mixed farming operation across the survey region. This has provided little incentive for change in enterprise mix from crop to sheep and this is reflected in the overall decline in WA sheep numbers across this period.

At present prices for sheep, wool and grain, sheep can match or exceed crop margins in the wool belt and western parts of the cereal sheep zone. Cropping is still favoured in the eastern parts of the cereal-sheep zone. While the relative future margins between sheep and crop are unknown, Australia’s dominant position in world sheep meat and wool exports, our proximity to growing Asian markets and the low sheep numbers both here and in New Zealand are positives for the sheep enterprise in the medium term.

While the financial incentive to expand the sheep enterprise is now in place at least in the wool belt, our survey of top sheep producers showed that a majority (53%) planned for only a modest increase (5% over five years) in the scale of their individual enterprises. Their focus was on improving production from current resources rather than a large expansion of pasture area. They were interested in new technology but more likely to invest in yards, laneways and basic infrastructure until profits were demonstrated from use of eID and other emerging technologies.

The key findings;

- There is still much that can be achieved by improvements in on-farm management of the average sheep enterprise with a focus on ewe management, pasture production, reducing losses and lambs weaned per ha grazed. These opportunities exist across all regions however the impact of improved management on overall sheep numbers will be greatest in the wool belt where average flocks are larger.
- From the interviews with top producers it is clear that even they see potential for improved profitability and productivity in their own sheep enterprises through better management.
- In the low rainfall cereal-sheep zone, sheep production KPI’s are well behind crop KPI’s when compared with higher rainfall producers. In other words, producers in the low rainfall regions when compared to high rainfall producers were much more efficient at turning rainfall into grain than rainfall into sheep products. A sheep “production gap” is apparent between the wool belt producers and the low rainfall sheep producers which may be indicative of opportunities for low rainfall producers to expand their sheep enterprises.
• In the cereal-sheep zone, the sheep enterprise is seen as complimentary to the crop enterprise but cropping is the priority. Practically this means sheep often graze land unsuitable for crop, and there is a big emphasis on running the sheep as “easily” as possible. While there may be opportunities to expand sheep enterprises in this area, it is more likely producers will focus on running sheep simpler, easier and cheaper rather than necessarily maximising stocking rate.

• The improved margins compared to cropping are likely to encourage more attention to the sheep enterprise and a focus on the key drivers of profitability. In some cases, where pasture area expands at the expense of crop, sheep production will increase disproportionately as sheep move onto better quality land which has historically been more heavily cropped.

• If current relativities in sheep and crop margins persist, there will be more farms where the sheep enterprise generates an equal or better margin than the crop enterprise. The benefits of a mixed farming operation have long been recognised, however too often the lower productivity and profitability of the sheep enterprise has restricted the area left out of crop. With margins between the two much closer, there are opportunities to profitably expand the pasture area, run more sheep and as a result reap more synergistic rotational benefits such as weed control, nitrogen fixation and disease control. While such change could be transformative, producers surveyed and Planfarm client’s both indicate only modest plans to expand their sheep enterprises in future.

• In the wool-belt, enterprise margins are such that there may be opportunities for growth in specialist sheep producers. With sheep being their major enterprise these producers are more likely to be at the forefront of driving efficiencies and profitability by adoption of new management techniques, genetics and investment in technology. There will not be a large number, but their impact on productivity could be significant.

• There is a desire among top producers for more transparency and competition in marketing, and 76% value highly the advice from their agents. Those producers who build relationships with buyers and processors will be better informed and more profitable as a result.
Introduction

DAFWA estimates the Western Australian sheep flock at 13 million head at 1 July 2016, down 1 million over the 2015/16 year and 25 million below the 1990 peak of 38 million head\(^1\). This decline has been happening for the past twenty-five years, however in recent years the decline has slowed since reaching a previous low point of 14 million head following the 2010 drought.

While many factors are involved, the reduction in numbers is primarily due to the relative profitability of cropping versus sheep in the cereal and wool belts of WA. The reduction in sheep numbers is not restricted to Western Australia with similar trends evident Australia wide where numbers have fallen from 170 million to 70 million\(^2\). Statistics New Zealand estimate numbers in that country are now 27.6 million down from a peak of 70 million with the decline attributed to a switch away from sheep to more profitable dairy production.

Despite the massive reduction in flock size, total Australian sheep meat production in 2017 is estimated by MLA at 660,000 t cwt\(^3\). This is comparable with production levels in the early 1990’s from a sheep population 100 million larger than it is today. By contrast, wool production over this time has fallen from 1000 million kg pa to an estimated 332\(^4\) million kg in 2016/17.

Presently export markets for both sheep meat and wool are positive, domestic demand for sheep meat has stabilised and sheep profitability has improved relative to cropping. At the producer level prospects for the sheep industry are encouraging. In addition, WA has some clear competitive advantages in sheep and wool, particularly lower priced land, proximity to Asian markets and a stable processing sector. We are well placed to capitalise on rising demand from traditional sheep consumers in China, Asia, and the Middle East.

There is concern that if the WA industry is to prosper in the future, the decline in sheep numbers needs to be reversed. This may however not be the best metric with which to measure the health of the overall industry. It is a little like gauging the health of the grain industry by the area sown rather than the value produced. At the producer level, the reduction in sheep numbers has been accompanied by improved margins for those still in the industry, and understandably producers have no desire to see overall supply increase to the point where margins on farm again become unsustainable. For other industry participants, especially those whose businesses depend on volume, such as processors, exporters and agents, the continued decline in numbers is a serious and more immediate threat.

This paper makes no judgement on what is the “right” size for the sheep flock, however it is clear for the industry to grow, sheep numbers need to stop declining and ultimately stabilize at levels which provide sufficient return to encourage investment not only by producers but

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\(^1\) Department of Agriculture and Food Sheep Notes Dec 2016
\(^2\) MLA Sheep Industry Fast Facts 2016
\(^3\) MLA Sheep Industry Fast Facts 2016
\(^4\) AWI Australian Wool Production forecasts December 2016
by all sectors of the industry. Ultimately, without adequate returns for all parts of the value chain and the subsequent investment that flows from that, the industry will continue to decline.

The purpose of this report is to look at the opportunities for producers to expand their sheep enterprise in Western Australia and thereby reverse or prevent this decline.

Essentially the fall in sheep numbers over the past decades is the result of individual management decisions by many producers at the farm level. Any expansion of numbers and rebuilding of the industry will also only come about via decisions on individual farms.

There are at least two routes that can be taken to achieve this. These are;

- A change in land use away from cropping and back to sheep production
- A change in productivity and profitability of individual sheep enterprises with or without any change in crop area.

This project looks at individual farm data over a five-year period 2011-2015 to firstly quantify the relative profitability of sheep and cropping across the cereal zone and wool zones. From this we draw some conclusions on what changes in profitability would need to occur to change land use in favour of sheep production in each zone. We also examine the relative productivity of sheep and crop production in each zone and use these as an indicator of where opportunities may lie for improvements in profitability of the sheep enterprise and hence drive expansion of the flock.

Because the collective decisions of sheep producers will determine the future flock size, the second part of this project reports on the results of interviews with 23 key producers to learn about their management and intentions for the future. These results provide a valuable insight into the future direction of the industry based on those who hold its future in their hands.
Part 1. Financial analysis of sheep and cropping enterprises in the medium rainfall (wool belt) and the cereal-sheep zones.

Methodology

Our approach to this study has been to interrogate the Planfarm data base of financial and production records from over 350 farm businesses. This data collected over more than thirty years forms the basis for the Planfarm Bankwest benchmarks which are widely regarded as the definitive data on farm production and profitability in Western Australian broadacre agriculture.

We have focussed on the data from three regions the H4, M4 and L4 ag zones.

Using the Planfarm data we have sought answers to the following questions for the five-year period from 2011-2015 inclusive;

What has been the overall average financial performance of farm businesses in these regions over this period?

What has been the relative contribution of the sheep and cropping enterprises to overall business performance?

In arriving at crop and sheep margins we have calculated these on the basis of annual income less direct costs such as fertiliser, herbicides, fodder, shearing, seed and an allocation of common direct costs such as contract, fuel, labour and repairs. We have made allowance for depreciation at 8% of the plant investment per ha. No allowance has been made for finance costs.

We have then extended the analysis to answer the following question;

Under what parameters could a sheep enterprise in each of the regions produce an equivalent return on investment to a cropping enterprise?
Definition of wool belt and cereal zones

This report deals with the profitability of sheep producers in two rainfall zones of South Western Australia known as;

1) medium rainfall wool belt and
2) the cereal-sheep zones.

The medium rainfall wool belt (shown in green) is the higher production zone. It contains predominantly mixed sheep/cropping enterprises with small numbers of cattle. There are also a small number of specialist sheep producers in this zone.

The cereal-sheep zone (red) is of lower rainfall and productivity and is dominated by cropping enterprises some of which also include a sheep enterprise.

We also refer to Agzones which are the basis on which most of the financial and production data used throughout the report are collected.

For the purposes of this study we have taken the H4 agzone as a proxy for the medium rainfall wool belt, while the M4 and L4 agzones are representative of the cereal-sheep zone. As this cereal zone differs considerably in productivity from the western edge to the eastern edge, rather than combine the two zones we have reported separately as we believe this adds to depth of the report.

In effect the M4 can be considered the medium rainfall cereal zone and the L4 the low rainfall cereal zone.

These three regions represent a transect running east west from the sheep dominant shires of Kojonup/West Arthur/Williams (H4) through Dumbleyung/Wickepin/Corrigin (M4) and east to Hyden/Kulin/Lake King (L4).
Results

What has been the overall average financial performance of farm businesses across the three zones over the period 2011 – 2015?

Broadacre farming in Western Australia is dependent upon seasonal rainfall to produce crops and pastures. Any analysis of past performance will inevitably be impacted by both the seasonal conditions and commodity prices over the period.

In choosing the 2011-2015 period for this analysis we have sought to include a range of years which is both broadly reflective of typical seasons and encompassed a range of prices for the major commodities of grain, wool and sheep meat. We consider this period to be broadly representative of the seasonal and market conditions which farm businesses regularly encounter in Western Australia.

To demonstrate the variability involved, Figure 1 (a-d) shows;

- the average growing season rainfall for farms in each region,
- the average harvest price for APW wheat $/t FIS delivered Kwinana
- the indicative wool price c/kg for each of the five years in this period.
- The average Katanning/Muche lamb price c/kg for 18-22kg cwt.

Fig. 1 (a) Growing season rainfall (mm) in H4, M4 and L4 regions 2011-2015

Over this period, the range of growing season rainfall experienced has been 135mm-250mm, 170mm-300mm and 250-380mm in the L4, M4 and H4 regions respectively. When timing of rainfall and the seasonal break is considered, these are widely different seasons with implications for crop and especially livestock management.
Over the 2011-2015 period, sheep prices have experienced the largest range in price moving by +/- 37% from the mid-point, followed by wool +/- 21% and wheat +/- 20%.

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5 Planfarm Marketing – source Daily Grain Pty Ltd
6 AWEX https://www.wool.com/market-intelligence/weekly-price-reports/
7 Source WAMMCO data
The characteristics of the average farm business in each of the L4, M4 and H4 regions is shown in Table 1. As the name implies, the cereal zones are dominated by cropping enterprises with 72% and 66% of arable land sown to crop each year in the L4 and M4 regions respectively. Even in the H4 zone, cropping was still the dominant land use over this period.

Table 1. Key characteristics and historical financial results for farming operations in the L4, M4 and H4 regions of Western Australia over the period 2011-2015 inclusive

<table>
<thead>
<tr>
<th></th>
<th>L4 (cereal zone)</th>
<th>M4 (cereal zone)</th>
<th>H4 (wool belt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Area Ha</td>
<td>5818</td>
<td>3079</td>
<td>2737</td>
</tr>
<tr>
<td>Grow Season Rain (mm)</td>
<td>204</td>
<td>243</td>
<td>328</td>
</tr>
<tr>
<td>Cropping Area Ha</td>
<td>4213</td>
<td>2038</td>
<td>1510</td>
</tr>
<tr>
<td>Area available for grazing Ha</td>
<td>1606</td>
<td>1042</td>
<td>1227</td>
</tr>
<tr>
<td>% Area available to graze</td>
<td>28%</td>
<td>34%</td>
<td>45%</td>
</tr>
<tr>
<td>Opening Sheep numbers</td>
<td>3867</td>
<td>3889</td>
<td>8336</td>
</tr>
<tr>
<td>Ewes mated</td>
<td>2105</td>
<td>2142</td>
<td>3621</td>
</tr>
<tr>
<td>Stocking rate DSE/wgha</td>
<td>2.5</td>
<td>4.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Wool production kg</td>
<td>21192</td>
<td>19815</td>
<td>29531</td>
</tr>
<tr>
<td>Wool kg/wgha</td>
<td>10.3</td>
<td>19.6</td>
<td>31.2</td>
</tr>
<tr>
<td>Lambing %</td>
<td>87%</td>
<td>90%</td>
<td>91%</td>
</tr>
<tr>
<td>Lambs per wgha</td>
<td>0.90</td>
<td>1.75</td>
<td>2.40</td>
</tr>
<tr>
<td>Gross Income $/Ha</td>
<td>$406</td>
<td>$492</td>
<td>$626</td>
</tr>
<tr>
<td>Operating Costs $/Ha</td>
<td>$268</td>
<td>$323</td>
<td>$397</td>
</tr>
<tr>
<td>Operating Profit $/Ha</td>
<td>$138</td>
<td>$169</td>
<td>$229</td>
</tr>
<tr>
<td>Return on capital # % pa</td>
<td>7.4%</td>
<td>6.3%</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

# Earnings before interest and tax

Our data indicate that approximately 30% of farms in the L4 region and 11% in the M4 region do not currently run sheep. Where sheep are run in the cereal zones, they are typically secondary to cropping and major management decisions are made with cropping as the first priority. This can and does have negative impacts on the sheep enterprise which often has to fit in with the cropping programme. On the other hand, those who run sheep in the cereal zone find that the sheep enterprise compliments their overall operation and adds
to profitability by utilising land which would otherwise be unproductive. The sheep are also able to add value by utilising stubbles and low quality feed grain when available.

In the wool-belt less than 5% of farms do not run any sheep and it is more common to find sheep dominant businesses where more than 50% of the farm arable area is devoted to the sheep enterprise each year. On average however, the dominant land use in the H4 regions is still cropping with 55% of arable land sown to crop each year.

Return on investment as measured by annual net income as a % of gross assets was greatest in the L4 zone, followed by the M4 and lowest in the H4 zone. Anecdotally the rate of capital appreciation of farm land over this period (which is not included in the return on capital figures) has tended to be slightly higher in the high rainfall areas than the lower rainfall zones.

*What have been the contributions of sheep and crop enterprises to overall farm profit across the three zones over the period 2011 – 2015?*

Both crop and sheep margins increase with rainfall moving west from the L4 region to the M4 and H4 regions. The key message from Fig 2. is that crop margins have been substantially higher than sheep margins on average over the 2011-15 period.

In the L4, average cropping margin per ha across the 2011-2015 period was $101/ha higher than the average sheep margin, in the M4 cropping was $105/ha ahead and in the H4 the difference in favour of cropping was $99/ha.

*Fig 2. Average Crop and Sheep Margins per Ha for the L4, M4 and H4 for 2011-2015*

Looking at these differences in more detail on a year by year basis, Figure 3 (a-c) shows the averages for each of the five years demonstrating that the outperformance by cropping has been sustained across all regions in most years, the exception being 2015 in the M4 and 2012 in the L4.
Crop margins are a lot more volatile than sheep margins across all regions being far more responsive to seasonal conditions. One of the attractions of cropping has been the significant upside profit potential when good yields correspond with above average prices. When this happens, crop margins can easily be 100-200% higher than budget and rapidly change the fortunes of a business. Of course, poor yields and/or prices can and do have the opposite result.
Sheep and wool production tend to be more stable than cropping with the most profitable years being determined less by seasonal conditions and more by high sheep and wool prices.

Table 3: Contribution of crop and sheep to total farm profit 2011 – 2015

<table>
<thead>
<tr>
<th></th>
<th>L4 (cereal zone)</th>
<th>M4 (cereal zone)</th>
<th>H4 (wool belt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop margin $/ha crop</td>
<td>$173</td>
<td>$227</td>
<td>$291</td>
</tr>
<tr>
<td>Crop margin $/ha/mm#</td>
<td>$0.84</td>
<td>$0.94</td>
<td>$0.89</td>
</tr>
<tr>
<td>As % total profit</td>
<td>86%</td>
<td>78%</td>
<td>65%</td>
</tr>
<tr>
<td>Sheep margin $/ha pasture</td>
<td>$72</td>
<td>$122</td>
<td>$192</td>
</tr>
<tr>
<td>Sheep margin $/ha/mm#</td>
<td>$0.35</td>
<td>$0.50</td>
<td>$0.59</td>
</tr>
<tr>
<td>As $ total profit</td>
<td>14%</td>
<td>22%</td>
<td>35%</td>
</tr>
<tr>
<td>Gap Crop Margin – Sheep Margin $/ha</td>
<td>$101</td>
<td>$105</td>
<td>$99</td>
</tr>
</tbody>
</table>

The gap between crop margin and sheep margin is the average across the five years and as can be seen from Fig 3 (a-c), this gap varied widely over the period as would be expected with changes in commodity prices and seasons. Most of the outperformance by cropping in the cereal sheep regions (L4 and M4) can be put down to just two years, 2013 and 2014.

Given the five year average differences in enterprise margins, under what parameters could a sheep enterprise in each of the regions produce an equivalent margin to a cropping enterprise?

Bridging the margin gap between the two enterprises could occur by a multitude of changes in price, productivity or costs in the two enterprises. It could be as simple as a substantial fall in crop prices or as complex as a combination of small changes to both enterprises. Table 4 shows the percentage change in sheep and/or crop income required and what this would mean to sheep enterprise KPI’s if each of these alone were to bridge the gap. For example, in the L4 zone, for sheep to be as profitable as cropping at 2011-15 average prices stocking rate would need to increase by 2.9 dse per winter grazed ha over and above the 2.5 dse/wgha currently run, assuming that stocking rate was the only change.

While the changes required in sheep KPI’s to bridge the gap are substantial especially in the L4 and M4 regions, sheep margins can equal crop margins if average grain prices fall by only 13%, 18% and 21% in the H4, M4 and L4 regions respectively. Current benchmark APW price of $245/t FIS, is 17% below the 2011-2015 average of $295/t FIS.
Table 4. Change in sheep KPI’s for sheep margins to equal crop margins on a $/ha basis.

<table>
<thead>
<tr>
<th>Margin gap to cropping $/ha</th>
<th>L4 (cereal zone)</th>
<th>M4 (cereal zone)</th>
<th>H4 (wool belt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Increase in stock income to match cropping margin $/ha</td>
<td>+71%</td>
<td>+37%</td>
<td>+23%</td>
</tr>
<tr>
<td>% decrease in crop income to match sheep margin $/ha</td>
<td>-21%</td>
<td>-18%</td>
<td>-13%</td>
</tr>
<tr>
<td><strong>Change required to match cropping margin $/ha</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra dse/wgha @ estimated $35/dse profit margin</td>
<td>+ 2.9 dse/wgha</td>
<td>+3.0 dse/wgha</td>
<td>+2.8 dse/wgha</td>
</tr>
<tr>
<td>Extra lamb price $/hd net @ current lambs/wgha</td>
<td>+ $112/hd</td>
<td>+$60/hd</td>
<td>+$41/hd</td>
</tr>
<tr>
<td>Extra wool price $/kg net @ current kg wool/wgha</td>
<td>+ $9.83/kg greasy</td>
<td>+$5.34/kg greasy</td>
<td>+$3.18/kg greasy</td>
</tr>
</tbody>
</table>

To put the additional dse/wgha required to bridge the margin gap in perspective, an extra 2.9 dse/wgha would require L4 producers to run a stocking rate 116% higher than the average for that region. In the M4 the extra 3.0 dse/wgha would require a stocking rate 64% higher than average for the region and in the H4 an extra 2.8 dse/wgha would require a stocking rate 34% higher than average for the region. To fully make up the respective margin gaps, these higher stocking rates would need to be run without any additional costs per dse. It is most unlikely that even the top producers could achieve this in the L4 and M4 but quite possible in the H4 region.

One other potential route to bridging the margin gap is via lower costs, however sheep enterprises in general are relatively low cost and especially so in the low and medium rainfall regions. For example in the L4, even if it were possible to run sheep at zero cost, they would still not make up the margin gap of $101/ha. In the M4, sheep costs would need to be reduced by 62% and in the H4 by 42% to make sheep competitive with grain margins.

What is far more likely is that the margin gap can be closed by some combination of changes in income, production or costs across all enterprises. Fig 4 (a-c), show the magnitude of changes in crop and sheep income required in combination to bridge the margin gap. They show that relatively small changes in crop and sheep income when combined, have the potential to swing the profitability in favour of sheep across the H4 and M4 regions.
Fig 4(a) The Sheep-Crop Margin ($/ha) assuming various % increases in sheep/wool prices and % decreases in grain prices relative to the average 2011-15 base prices. L4 region.

Fig 4(b) The Sheep-Crop Margin ($/ha) assuming various % increases in sheep/wool prices and % decreases in grain prices relative to the average 2011-15 base prices. M4 region.
Could improvements in sheep productivity also pull area out of crop and into sheep production?

Along with changes in prices, could we see changes in sheep productivity pulling area out of crop and into sheep? In the past twenty years as sheep margins and numbers have fallen there has been little incentive for most producers to invest or innovate in the industry. This is clear from the list of widely adopted on farm grain industry innovations over the past twenty years compared to sheep industry as shown in Table 5.

Table 5. List of grain industry and sheep industry innovations widely adopted on farm

<table>
<thead>
<tr>
<th>On farm Grain Industry Innovations</th>
<th>On farm Sheep industry innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td>No till cropping</td>
<td>Use of terminal sires for meat production</td>
</tr>
<tr>
<td>Deep ripping</td>
<td>Improved ASBVs</td>
</tr>
<tr>
<td>Improved varieties</td>
<td>Improved pasture varieties</td>
</tr>
<tr>
<td>GM Canola</td>
<td>Sheep handling machinery</td>
</tr>
<tr>
<td>Rotation cropping</td>
<td>Self-feeders</td>
</tr>
<tr>
<td>Grass selective herbicides</td>
<td>Pregnancy testing</td>
</tr>
<tr>
<td>Chaff carts</td>
<td>Improved ewe management</td>
</tr>
<tr>
<td>Early/Dry seeding</td>
<td></td>
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<tr>
<td>Autosteer</td>
<td></td>
</tr>
<tr>
<td>Mouldboard ploughing</td>
<td></td>
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<tr>
<td>Chemical containers &amp; handling</td>
<td></td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>-----------------------------</td>
<td>---</td>
</tr>
<tr>
<td>Spading</td>
<td></td>
</tr>
<tr>
<td>Liquid fertilisers</td>
<td></td>
</tr>
<tr>
<td>Well-developed forward selling market</td>
<td></td>
</tr>
<tr>
<td>CBH Loadnet and optimisation</td>
<td></td>
</tr>
<tr>
<td>Spraying, seeding and harvesting technology</td>
<td></td>
</tr>
<tr>
<td>Yield mapping</td>
<td></td>
</tr>
<tr>
<td>Reduction in storage and handling costs</td>
<td></td>
</tr>
</tbody>
</table>

These innovations in the grain industry have come about because of profits and they have energised and attracted the interest of the next generation of grain growers eager to improve production and profits in their own businesses. There is no reason why renewed profitability in the sheep industry could not have the same impact.

Finally, looking at the relative productivity of sheep and cropping across the three regions (Fig 5 a-b) we can see a sheep production gap in the lower rainfall L4 and M4 regions relative to the higher rainfall H4.

Lower rainfall producers are very competitive with their higher rainfall colleagues when it comes to grain yields across all crops. However, their relative performance in the three critical sheep KPI’s of DSE/wgha, wool/wgha and lambs/wgha lag well behind those of the H4 producers. The implications of this are discussed below in the discussion section.

**Fig 5 (a) Sheep production KPI in the L4 & M4 as % H4 region (=100)**
Fig 5 (b) Grain yield for various crops in the L4 & M4 as % H4 region (=100)
Part 2. Sheep producer survey

Methodology

23 producers were interviewed on a range of topics within their livestock enterprise including questions on production issues, motivation and attitudes. Specifically, producers were asked for information about:

- Operations
- Systems
- Management
- Marketing
- Risk
- Financial
- Technology and
- Their views on the future.

The survey questions were structured to draw out the attitudes of producers for each of these important areas of their business. The specific questions asked of producers are included in appendix A.

The producers participating in the survey included clients of Planfarm, Agrarian Management (Ashley Herbert) and one other producer. It was not possible or even desirable to make the selection of participants on the basis of operating profit alone. The reason being that for mixed farmers especially in the low/medium rainfall zone, sheep enterprise performance is often not well correlated with overall farm financial performance because sheep are the minor enterprise and until recently the lower profit enterprise. In the case of Planfarm clients we used our 2015 benchmark data to shortlist a group who were in the top 50% of sheep producers. In arriving at this short list we were conscious of having a spread of businesses across the regions and also ensuring that the producers involved had sheep enterprises of sufficient scale. We then asked individual consultants for their opinion of the overall producer’s sheep enterprise as a further check to make sure we were talking to the right people. In the case of Agrarian clients we did not have access to their financial and production data and relied upon the opinion of the consultant. Finally, we had to get agreement from those short-listed to participate.

In selecting survey participants it was not our brief or intention to drill down into the metrics of this group. Our focus was on ensuring that we captured the opinions/practices of better than average sheep producers across a representative area of the regions.
Results

Operations

The average size of the properties farmed by those surveyed was 3593 effective hectares with 1355 of this being grazed, the average percentage of farms cropped was 59%. Twenty-one producers joined merino ewes and two producers joined other breeds, specifically composites. Ten of the producers that joined merinos joined older ewes to a terminal sire, the remainder were full merino flocks. The average lambing percentage of the group was 97%, an average joining period of six weeks, marking age of 6 weeks from the start of lambing and weaning age of 14 weeks.

The response to why these producers run sheep was a resounding top three reasons in various order for each producer;

- the ability to utilise non-arable (cropping) area,
- weed control and nitrogen for crops and
- spreading the financial risk in the business.

Other notable responses related to cashflow and labour utilisation. These reasons are all indicative of an enterprise which is complementary but secondary to, the main (cropping) enterprise.

There were varied responses for the key drivers of production in the business with the top three being;

- stocking rate
- animal health/nutrition and
- pasture production.

The only one to rate in all respondents was animal health/nutrition which indicates how strongly focussed producers are on the welfare of their animals.

There was not a strong indication of respondents planning to increase pasture area, stocking rate or their current enterprise mix. On average, though, respondents are looking to increase sheep numbers by 5-10% and this is mainly through increasing lambing percentage or keeping more young ewes.

System

An interesting area of questioning showed that no particular system was more common than another. Lambing dates were split evenly between April/May, June and July indicating that whenever these producers decide to lamb they make it work for their enterprise mix and farm. Shearing was conducted by 47% of producers in late winter or spring and 45% in summer. Eight percent of respondents are shearing every six months or three times every two years. All respondents based their decision on shearing time to fit lambing and cropping workload.
In terms of stocking rates and pasture production the results are varied depending on rainfall zone. All producers however target a conservative year in year out stocking rate for their area and when asked how they adjust stocking rate, 90% only considered adjusting down not up. 63% consider the role of pastures in the system as feed/nutrition for sheep and equally important is the rotation for crops. Importantly, 75% of producers have what they consider an improved sub-clover base, 15% utilise an annual weed base and only 5% use improved species such as serradella and bladder clover.

The importance of why they have the flock structure they do was primarily about having flexibility in their system and the fact that it suited their farm. Fifty percent were wool producers, 45% specifically lamb producers (Cross bred or merino) and 5% mixed. The lamb producers noted that wool was ‘nice to have”. It was very clear from producers that their main consideration on ideal flock structure is about farm flexibility and a key market focus, they know what they want to produce. Apart from the ‘financial safety’ of sheep 71% of these producers like producing sheep because it is what they do and they are good at it.

While the flexibility of their system is varied, 75% note that they can increase or decrease numbers easily without major effects on farm profitability and also that their livestock system fits well with cropping. There were strong views that it was not one enterprise against the other which is sometimes inferred in the industry, but rather they need to be complimentary and these producers make it work.

Management

A key area of any enterprise is management. There was no resounding trend within these producers for management factors such as utilising ASBV’s, pregnancy testing, management of ewes with multiple lambs, rotational grazing or feed sources other than pastures. What was significant though were some key areas of management that rated highly between all producers:

- 90% conduct pasture improvement which comprises re-sowing pastures (68%) pasture manipulation and or heavy grazing to improve legume content.
- 81% have breeding objectives, both long and short term. They know what type of sheep they want to run and they target their ram purchases for ewe breeding accordingly.
- 85% cull dry ewes.
- All respondents consider livestock health and pasture growth/seasonal conditions as the key indicators they manage throughout the season. 76% consider that focussing on animal husbandry and health rated in the top two most important things they do to maximise returns from sheep. 57% also indicated that maximising stocking rate to the season and/or not over-stocking was also in the top 2 priorities.
- All respondents never compromise on animal husbandry and have a major focus on ewe condition post weaning.
- All respondents understand when their feed gaps occur, 91% use previous seasons experience and are prepared to supplementary feed sooner rather than later. They are proactive towards livestock condition.
• When managing labour for the sheep enterprise, 95% suggested their major tip was to be organised and have a plan and a back-up plan with livestock activities. More than 80% of producers rated their yards, laneways and shearing shed as good or above average.
• All producers assess their performance in the sheep enterprise every year. This is mainly via financial benchmarking or productivity performance (lambs per hectare) with 33% indicating sheep and land condition in their top.

Marketing

These producers understand and know what they want to produce, however there were no key indicators within this group for the marketing of their sheep or wool.

• 76% sell wool if the market price is acceptable to them, hold if not and NIL forward sell.
• 45% sell lambs over a certain planned period which is dictated by the season with the aim to take pressure off ewes and pastures in readiness for the next season.
• 52% are prepared to hold and feed if the pre-summer price is not acceptable. The majority note that there are often not clear market signals to consider when making the decision to hold and sell later.
• Overall 67% sell when seasonal conditions dictate and they are prepared to act earlier.
• 67% of producers consider historical market prices.
• 90% believe they have a good agent and of these 76% consider their agent as important to very important. This indicates that these producers are prepared to seek information on the markets and act according to seasonal and market signals. There was no evidence in this group that they always want the highest price.

Risk

This line of questioning related to both industry and enterprise risks.

• The biggest threat to the sheep industry - 38% consider animal welfare, 37% believe government regulation and red tape and 24% consider reduction in economics of scale in the industry (declining sheep numbers) are a threat.
• It was clear in individual enterprises that the biggest threat was seasonal, the known unknowns as one producer put it. 68% of producers named this as number 1 threat.
• Lack of competition by sheep buyers in markets and price competition from competing products (chicken and pork) were mentioned as minor threats.

More than 90% of respondents indicated that risks on farm were managed rather than controlled. Of equal importance in this group was animal health and welfare and managing stocking rate with proactive management to seasonal conditions. 95% have an exit strategy for their livestock enterprise and these were wide ranging and varied. All respondents explained their exit strategies in detail which indicates that they are well planned and prepared to act quickly.
Financial

Investment into their sheep enterprise varied widely;

- 19% have not invested any capital in the last 5 years in their sheep enterprise
- 43% have invested in the past five years mainly in weighing and sheep handling equipment.
- 71% responded that the major capital investment happened more than five years ago, and they were now just spending on maintenance.
- Nearly half of these producers do not have a targeted annual capital expenditure.

Over 70% understand the gross margins in their sheep enterprise and can tease out the costs associated with the enterprise. Of those that consider they don’t know it well enough, they all believe they need to get better at this. Interestingly within this group, 62% consider stocking rate and lambs per hectare as the driver of profit in their enterprise. 33% see lambing percentage as the key driver alone. In terms of increasing profitability in their livestock enterprise, 43% believe that focussing on ewe nutrition to drive lambs per hectare will be their focus. 29% believe they still need to focus on optimising a sustainable stocking rate.

The profit drivers that are most influenced by these producers and ones that they focus on are;

- pasture production driving stocking rate, in particular management of pastures in different seasons and their ability to retain legume pastures when paddocks are going back into crop.
- ewe management and
- lambs weaned per hectare.

Over 85% of respondents put these profit drivers in their top three. Shearing and supplementary feeding were identified as the biggest costs by over 75% of those surveyed. Management of these is by good relationships for shearing and preparedness to feed earlier for supplementary feeding. They believe the sheep will pay them back. All respondents consider the keys to making money in sheep are producing pasture to drive stocking rate and lambs per hectare with a non-negotiable focus on animal health.

So the message from these producers was even though they focus on these three key components they felt that there was potential for further improvement across these areas.

Technology

Generally, this group does not have a strong focus on technology in their enterprise. Only 9% have or use eID gear but 43% do collect and use data, predominantly (67% of these) for wool. However, 86% are very positive about technology in the industry but most prefer to wait and see evidence and proof that these innovations will increase profits. There were no specific innovations mentioned within this group to reduce labour costs.
The Future

The future plans are for modest (5%) growth in their enterprise over the next 5 years for 53% of this group. These producers were split evenly between acquiring more land, reducing crop area and retaining ewes as the method of growth. The main goals of this group are to either;

- maintain the status quo (28%) indicating that they are comfortable with their enterprise, or
- for the majority (57%) it is to improve productivity through better use of current resources with the focus on the key areas pasture production, ewe management animal health and lambs per ha.

76% believe that the future is exciting in sheep and that the market demand for the product they produce coupled with better marketing will continue to increase farm gate prices. Only 14% believe that technology advancements are opportunities in the sheep business.

When asked about things they would change in the industry;

- nearly 50% believe that more market transparency and competition for the product they produce is required.
- 24% believe that more government contribution to RD & E and brand recognition of the product they produce is needed. They believe this would raise brand awareness, increase market demand and prices.
- There was no specific mention of problems with red tape or compliance burden amongst this group.

When asked what advice they would give to an aspiring sheep producer, we received almost 23 different answers! 38% believe that seeking advice and learning about the industry and your system was important. Most respondents tended to have a theme of being committed to the industry and a longer-term approach to livestock. Decide what you want to do and produce and do it well, don't compromise on management timing.

2017 Plans

In an effort to gauge planned changes in land use and enterprise mix in 2017, we extracted data from a random sub sample of 180 Planfarm client reviews. Specifically we looked at 2017 intentions compared to 2016 actuals and also the trends since 2013 as shown in Table 6.

The producers in this completely random survey had increased their total area farmed by an average of 16.4% over the period since the start of 2013. This includes land purchased and leased. Over this period total crop area has expanded by 13.7% while area available for grazing has risen by 23.2%. However it is important to bear in mind that area available for grazing is not necessarily pasture area as some arable land is left out of crop for fallow and not grazed.
Table 6. Changes in land use/enterprise mix 2017 v 2016 and since 2013

<table>
<thead>
<tr>
<th>Land use</th>
<th>2017 compared to 2016</th>
<th>Change since 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total effective area</td>
<td>+1.1%</td>
<td>+16.4%</td>
</tr>
<tr>
<td>Wheat</td>
<td>-0.2%</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Barley</td>
<td>-6.3%</td>
<td>+35.7%</td>
</tr>
<tr>
<td>Canola</td>
<td>+24.6%</td>
<td>+38.4%</td>
</tr>
<tr>
<td>Lupins</td>
<td>+2.5%</td>
<td>+52.8%</td>
</tr>
<tr>
<td>Oats</td>
<td>-26.2%</td>
<td>+48.9%</td>
</tr>
<tr>
<td>Total crop area</td>
<td>+1.3%</td>
<td>+13.7%</td>
</tr>
<tr>
<td>Pasture (non crop area)</td>
<td>+0.8%</td>
<td>+23.2%</td>
</tr>
<tr>
<td>Ewes mated</td>
<td>+8.3%</td>
<td>+14.6%</td>
</tr>
<tr>
<td>Closing sheep numbers</td>
<td>+1.5%</td>
<td>+3.1%</td>
</tr>
</tbody>
</table>

So over the period there has been a shift away from cropping with total crop area increasing at a slower rate (13.7%) than total effective area (16.4%).

Looking at plans for 2017, it is no surprise that budgets are showing a big increase in planned canola area of 24.6%. Whether all of this happens will depend on rainfall over the next 2-3 weeks however with canola now regularly sown dry it’s a fair bet to assume that most of the planned canola crop will be sown.

The additional canola area has come at the expense of oats and to a lesser degree barley, two crops with the most disappointing price outcomes from 2016.

Interestingly over the five year period, area sown to barley, canola, lupins and oats has all increased significantly with lupins leading the way at 52.8% greater area than in 2013. Much of this increase occurred in 2015 and 2016. The big loser over the period was wheat down 2.5% despite total effective area being 16.4% larger in 2017 than in 2013.

With sheep and wool prices at near record levels, WA farmers plan to mate 8.3% more ewes in 2017 by retaining older ewes and selling lambs and wethers. Total sheep numbers however are only planned to increase by 1.1% in 2017. If this trend applies across the wider agricultural area there is little prospect of a rapid rise in the sheep flock in the near term.

In absolute terms the area sown to wheat still dominates all other crops, while pasture (area not cropped) is actually the second largest “crop” followed by canola, barley, lupins and oats. It seems at least from this sample that the average paddock rotation has become more diverse over the last five years with the rise of canola, pasture, lupins, barley and oats.
Figure 6. Land use, sub set Planfarm clients 2013-2017

Planted Area (ha)

- Wheat
- Pasture
- Canola
- Barley
- Lupins
- Oats

2013 | 2014 | 2015 | 2016 | 2017

- Plant areas for different crops over the years 2013 to 2017.
Discussion

What did we learn from the relative profitability of sheep and cropping across the three regions?

The analysis shows that over the past five years there has been no financial incentive for the average producer in the L4, M4 or H4 regions to reduce crop area and expand their sheep enterprise with cropping on average being in the order of $100/ha more profitable across all regions.

The proof of this is shown in the land use figures which are dominated by cropping except in the H4 region and have shown no indication of declining crop area over the five years. In essence the 2011-15 financial margins confirm why sheep numbers have continued to fall over this period.

However, Fig. 4 (a-c) show that the combination of relatively small rises (10-15%) in sheep/wool prices and similar declines in grain prices from the 2011-15 averages would switch margins in favour of cropping in the H4 and M4 regions. In fact, at current prices (Table 5) it is likely that the profit margin from the average sheep enterprise is already ahead of cropping in the H4 region.

Table 5. Comparison of current wheat, wool and sheep prices with 2011-15 averages

<table>
<thead>
<tr>
<th></th>
<th>2011-15 Avg</th>
<th>Current</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>APW $/t FIS</td>
<td>$295/t</td>
<td>$245/t</td>
<td>-17%</td>
</tr>
<tr>
<td>Wool Price $/kg</td>
<td>$11.38/kg</td>
<td>$14.00/kg</td>
<td>+ 23%</td>
</tr>
<tr>
<td>Lamb Price $/kg</td>
<td>$4.50/kg</td>
<td>$4.80/kg</td>
<td>+ 7%</td>
</tr>
</tbody>
</table>

In the case of the L4 region, a grain price fall of 15-20% in combination with a sheep income rise of 15-20% would be required to lift average profitability in favour of sheep over cropping (Fig 4(a)).

Of course, the fact that sheep margins per hectare may equal or exceed crop margins at this point in time does not necessarily mean that there will be an expansion of the sheep industry at the expense of cropping. Reasons for this include;

- While prices influence paddock use at the margin, major changes into or out of, cropping or livestock are not based on just one year’s prices. For example, many producers have continued to operate a sheep enterprise for many years despite cropping producing significantly better returns over this period. Producers will want to see a sustained lift in favour of sheep before considering wholesale changes to their enterprise mix.
• A reduction in crop area at least in the short term will increase machinery costs per cropped hectare as machinery depreciation has both an annual component as well as an hour used component. This acts as a disincentive to reduce crop area.
• Having suitable plant and machinery for the existing cropping programme, producers tend to want to maximise the crop area. If they were to leave additional paddock to sheep they are most unlikely to downsize machinery, meaning underutilised capital tied up in cropping plant and equipment.
• Producers who no longer run sheep may require a significant investment in infrastructure such as fencing, water, yards and sheds to move back into sheep making it likely that very few 100% croppers will move back into sheep production.
• Producers wishing to reduce their crop area and run more sheep face the disincentive of current high prices for breeding ewes.
• Labour requirements for a sheep enterprise differ from that required in a cropping enterprise. Cropping enterprises tend to employ seasonal labour including back packers to operate machinery at seeding and harvest. While sheep enterprises also make use of seasonal labour for busy times such as shearing and marking, no matter what the size of the flock there is a need to monitor stock on at least a weekly basis almost all year. This means either a full-time person with stock skills or the owner. So, while expanding the crop enterprise may be easily done by keeping the back-packers a few more days, expanding the sheep enterprise often just means more work for the owner. Specialist sheep producers overcome this problem by careful planning of operations, investment in yards, fencing and water and if they have scale employing a full-time stockman.
• Just as some producers stayed with sheep because that was their preference, some producers are committed to cropping and will not re-enter the sheep industry under any circumstances.

In conclusion, while the historical margins and land use give little encouragement for expansion of the sheep industry, the current price relativity between sheep/wool and grain means that sheep can match or exceed crop margins in the H4 and parts of the M4 regions. In the L4 region, cropping is still favoured although the significant frost events of 2016 may have some people questioning this.

Both financial and practical hurdles mean it is unlikely we will see many croppers re-entering the sheep industry. What expansion does occur is likely to come from existing sheep producers who have maintained their sheep infrastructure and have the labour and interest to expand.

What did the producer survey tell us?

The main findings from the survey of top sheep producers revealed that;
• They have only modest plans to grow their sheep enterprise with 53% of respondents indicating growth of only 5% over the next five years. If these intentions hold across the wider population there is little prospect of a rapid increase in sheep numbers.

• Most saw the sheep enterprise as complimentary to the cropping enterprise with the major reasons for being in sheep given as 1) ability to use non-arable land, 2) weed control and nitrogen for cropping and 3) spreading the financial risk of the business.

• As a group, cropping used 59% of arable land so was the major enterprise.

• While there was no strong indication of expansion of the sheep enterprise, there was a clear message that these producers wanted to improve productivity by producing more by better use of current resources.

• As a group, they saw potential to lift production and profits in their own sheep enterprise. The key profit drivers that they focus on to lift productivity are;
  o Pasture production driving stocking rate
  o Ewe management and
  o Lambs weaned per ha

• They were not big users of technology. Positive and interested in what is available but waiting to see the impact on profit margins before committing.

• Over 80% of this group rated their yards, laneways and shearing shed as good or above average however the majority had invested little capital in the enterprise in the past five years.

• 90% of these producers conducted pasture improvement with 68% re-sowing paddocks coming out of crop.

• Animal husbandry and health was noted as a key priority and non-negotiable by all respondents.

• They were excited about current and future market opportunities for their sheep products but 50% believe there should be more market transparency and competition for their product.

• 90% of those surveyed believe they had a good stock agent and 76% considered their agent as important to very important to their sheep business.

• 71% of these producers are in the sheep business because they enjoy it and believe they do it well. Nb. The other 29% may also enjoy it but this was not listed as their reason!

In conclusion, the feedback from this group of committed and professional sheep producers was along the lines of continued incremental productivity growth rather than radical expansion of their sheep business.

**So where are the opportunities for producers to expand their sheep enterprises?**
Expansion of the industry is in the hands of producers who can be expected to act in their own best interests and be influenced by both sheep profitability and the margins obtainable from alternative land use which in Western Australia is predominantly cropping. At present prices, the margin differentials between crop and sheep are favouring expansion in the wool-belt and western parts of the cereal-sheep regions.

**Cereal Sheep Zone**

On a productivity basis, the L4 region lags well behind the higher rainfall M4 and H4 regions in converting growing season rainfall into sheep and wool (Fig 5.) While L4 grain growers achieve 60-75% of the grain yields of the H4 region, they only achieve 30-35% of the sheep productivity as measured by wool per wgha, lambs/wgha and dse/wgha.

A similar situation can be seen in the M4 zone where grain production is at 80-85% of that in the H4 region but sheep production only around 60% of H4.

So, on the face of it, there is a production gap in the cereal sheep (L4,M4) region which may be worth further investigation.

Possible reasons for this include;

- Operating with lower growing season rainfall they adopt a very conservative stocking rate which essentially drives the sheep enterprise KPI’s shown.
- With a high % of the farm in crop (72%/66% v 55%) the average quality of the land grazed is lower in the L4/M4 than in the H4. The grazing land on farm is often the non-crop land and country not well suited to crop often grows less feed than more productive land.
- Sheep in the wool-belt graze at least to some extent, improved pastures whereas sheep in the cereal-sheep belt often just graze paddocks coming out of crop.
- The sheep enterprises in the L4/M4 are smaller scale than the H4 and represent a much lower percentage of total farm income. It may just be a case that the sheep get the attention they deserve at least relative to their net income.
- Alternatively, it may also be that there is an opportunity for sheep producers in these regions to improve their management to expand the profitability of this component in their business.

In the absence of a sustained fall in grain prices, sheep production in the low rainfall part of the cereal sheep zone is however likely to remain a secondary component of the farm business on most farms. It must by definition be a low-cost operation. Producers looking to expand their sheep enterprise in this zone will be focussed on innovation and management which can reduce workload, make the enterprise easier and cheaper. Particularly in the eastern parts of this region, it is unlikely that lifting stocking rate will be a priority due to seasonal variability and the secondary nature of the sheep enterprise to cropping.

**Wool belt**
It is in this region that producers have the most opportunity to expand their sheep enterprise and by doing so boost sheep numbers. The reasons being;

- Most producers in the region have sheep and average flock sizes are significantly larger than the M4 or L4 regions. Because of this, small percentage changes in productivity via management, breeding or technology can be leveraged to produce significant changes in sheep numbers and hence industry size.
- The required percentage change in grain/wool/sheep price to make sheep more profitable than crop is lower in the H4 than in the M4 or L4 regions.
- There are some sheep dominant enterprises in this region who are well placed to take advantage of wool and sheep prices and drive investment in innovation in the industry.
- Switching some paddocks from crop to sheep can actually improve overall production and profitability of both the crop and the sheep enterprise. The reason being that cropping is generally carried out on the most productive paddocks and sheep are run on the less productive paddocks and non-arable areas. This is especially the case when crop percentage is high. When a producer decides to move from say 65% crop to 50% crop this will usually involve lower yielding crop paddocks being moved back to pasture. Often the quality of the 50% of the farm that is now crop land is on average higher than the overall quality when 65% was cropped and the new yields reflect this. On the pasture side, the overall quality of land available to grow pasture has improved with the 15% of area now dropped out of crop providing the opportunity for average stocking rate to increase. A win: win is possible.
- If, in the future sheep margins are routinely superior to crop margins in the wool belt there is the potential that more producers will focus on sheep as their dominant enterprise with cropping being the secondary enterprise. The re-emergence of the specialist sheep producer would have implications for the adoption of new management techniques and technology and also the upskilling of labour. There is no doubt that being a secondary enterprise at the farm level has limited investment and innovation in the sheep industry at the farm level.

Both survey participants and Planfarm clients were not indicating large increases in their sheep numbers in 2017. However there has been a clear trend since 2013 (Fig 6) of increasing ewes mated and non-crop grazing area. With current price relativities it would be surprising if this trend towards sheep and away from cropping in the wool zone does not continue.

Key opportunities for management focus include;

- Continuing to lift lambing percentage economically. Large gains can be made from nutrition, attention to detail and ewe management. The recipe is well known.
• Reducing sheep losses especially lambs. This may be almost excusable where sheep are a distraction more than an enterprise but it’s an absolutely critical KPI for serious producers who are netting more than $100/lamb.

• Investment in better sheep handling equipment, yards, fencing and shearing facilities. Helps drive labour efficiency but just as importantly makes the job more enjoyable and keeps the operator sane. Producers with poor infrastructure will be the last to get excited about running more sheep.

• Animal health and nutrition. Key focus for the survey group. Common sense, but not always common enough.

• Optimising paddock use. With sheep margins, equivalent or better than crop, each producer will need to decide, “What is now the optimum % crop?” Previously the answer was often, “Whatever fits around the cropping programme.” At present margins, the question deserves a lot more attention and getting this right is an opportunity.

• Efficiency and planning of the sheep operations to lower labour requirements and costs per head.

• Recruitment and training of labour. Specialist stockmen are rare, endangered and old.

• Marketing. The perception among producers is that the marketing of their sheep lags behind the marketing of their grain or wool. Of course, marketing sheep is different, wool and grain are easily stored, live animals present a challenge for buyers and sellers. However, there are opportunities here for both producers, to engage and learn more and buyers to engage and educate. Each spending some time in the others shoes might be a good starting point.

• Demonstrating commercial viability of new technologies such as eID and virtual fencing.

The re-emergence of the specialist sheep producer?

This survey has demonstrated that the most likely way in which the sheep industry will expand in WA is via improvements in management of individual sheep enterprises. This is essentially what happened in the grain industry during the 1990’s with the advent of improved crop husbandry including direct drilling, grass selective herbicides, deep ripping, rotation cropping, early seeding and more recently liming, spading, controlled traffic and so on. These techniques not only lifted productivity and profitability but spurred the interest of a generation of young producers to improve their knowledge and grow their businesses.

Productivity growth in the Australian sheep industry has historically lagged that in the cropping industry\(^8\). The sheep industry may well be on the verge of a similar wave of technical improvements including improved meat producing genetics, better knowledge of

strategic feeding, eID and even electronic fencing. While the benefits of better productivity apply across all regions it is our opinion that the drive for improvement will come first from the specialist sheep producer in the wool belt. They have the most to gain and the incentive to invest.

The sheep enterprise in the cereal belt has always taken second priority to the cropping enterprise. Indeed, one of the reasons that sheep margins and KPI’s are so low in this region is that sheep often run on the least productive paddocks, those that are too acid, shallow or frosty to produce a reliable crop. Little wonder that cropping margins look much better on paper in these regions.

Whilst the sheep and crop enterprises are complementary in many cases, it is a difficult task to run both a high stocking rate sheep operation and a high yielding cropping programme. Often the performance of one enterprise will suffer, for example delayed seeding to provide extra paddock feed in early autumn. It’s not impossible, just difficult, which means that the astute producer will often accept that one enterprise has to be run at a lower level and this has typically been the sheep operation. Specialist sheep producers where crop is sown only as a supplement to the stock enterprise can focus solely of lifting overall sheep production and profitability and will not be compromised by cropping considerations. We should expect that industry leading production and profit metrics will emerge from such producers.

It is quite possible if sheep margins continue to compare favourably with crop margins in the wool belt, that we will see more businesses in this area become specialist sheep producers. It is likely that the early adopters of new sheep technology and management practices will come from the ranks of this group. It is also likely that their livestock margins will be far superior to those generated by businesses where sheep are a supplement to the crop operation.

While we do not expect there will be a large number of specialists, rather that this group will lead innovation and productivity improvements that have been lacking to date.

Should more specialist producers emerge it is also possible that there will be an opportunity for more corporate and investor activity at the farm level. In recent years, there has been significant investor and corporate interest focussed on crop production within Western Australia. If specialist sheep production becomes attractive we may also see investor interest in the WA sheep industry.
Appendix A.

List of questions posed to sheep producers surveyed.

**Operations**

1. What is the size of your property (effective Ha)?
2. What is your winter grazed area (Ha)?
3. What % of your farm is cropped?
4. Please indicate the number of Merino sheep by class on your property at 1 July 2016
5. Please indicate the number of non-Merino sheep by class on your property at 1 July 2016
6. What is your average lambing % for the last five years?
7. What is your usual time of marking (No. of weeks past lambing)?
8. What is your average age at weaning (in weeks)?
9. Why do you run sheep?
10. What are your plans for the next 3-5 years (please indicate % change from current)
    a. Pasture area?
    b. Stocking rate?
    c. Sheep numbers?
11. Please list what you consider to be the top three key drivers of production?

**System**

12. What is your lambing date (early, mid, late, month)?
13. What is your shearing date?
14. What is your timing of sheep sales for each class?
15. What is your target stocking rate on a year-in year-out basis?
16. What is the role of pasture in your system? What is your pasture base?
17. What is the role of sheep in your business? (Top 3 reasons).
18. Why do you have the flock structure you have?
19. Please indicate your main considerations when deciding;
    a. What flock to run?
    b. Which markets to target?
    c. What time to shear?
    d. What time to lamb?
20. What is it you enjoy about producing sheep?
21. What do you consider to be the backbone of your current system?
22. What do you consider to be the weakness of your current system?
23. How do you alter your stocking rate during the season?
24. What is the flexibility in your livestock system?
25. How do the other enterprises on the property fit in with the sheep enterprise?
26. What is the number of weeks ewes are joined?

Management

27. What are the three main factors you consider in choosing your rams?
28. Do you make use of ASBV’s in selecting rams?
29. Do you usually try to maximise stocking rate?
30. Do you pregnancy test?
31. Please indicate why you do/do not preg test
32. Do you cull dry ewes?
33. Do you manage multiple bearing ewes separately?
34. What types of feed do you utilise?
35. What DSE do you run per full time labour unit?
36. Do you conduct pasture improvement? If so, what do you do?
37. What management do you apply to pastures post crop?
38. Do you use any form of rotational grazing? If so please explain.
39. Can you assess food on offer (FOO) or reasonably match stocking rate to available pasture?
40. Do you use breeding objectives?
41. If yes, what are your breeding objectives
42. What do you see as the limitations with sheep?
43. What do you find difficult to manage in your sheep enterprise?
44. What involvement do you or your staff have in sheep operations and which tasks do you use contractors for?
45. What is your main strategy with sheep in drought? Do you;
   a. Sell down
   b. Feed
   c. Agist
   d. Other
46. What are the key indicators you monitor throughout the season?
47. What are the most important things you do to maximise your returns from sheep?
48. What are the tasks in managing your sheep enterprise that you never compromise on?
49. Do you know/understand your feed gaps and what tools are you using to manage them?
50. How do you manage the labour required for the sheep enterprise? What tips do you have?
51. What infrastructure is on your property?
52. How do you assess your business and enterprise performance?

Marketing

53. Do you have a marketing strategy and if so what is it?
54. What drives your selling decisions?
55. How do you assess price on offer?
56. Do you have a good agent that you use regularly to assist in sales and purchase decisions (yes/no).
57. If yes, how important is this person to your sheep enterprise?

Risk

58. What do you see as the biggest threats to the sheep industry?
59. What are the biggest risks in your sheep enterprise? How do you manage these?
60. What risks can you control?
61. Do you have an exit strategy for a late break to the season?
62. How do you manage seasonal variability?
63. When did you last invest capital into the sheep enterprise and what was it for?
64. What is your target annual capital expenditure in the sheep enterprise?
65. Do you know/understand the gross margins and/or sheep/wool income per hectare for your enterprise?
66. Can you tease out the true costs in the business between cropping and livestock?
67. If you wanted to improve the profitability of your sheep enterprise by 20% in the next two years, what are the steps you would take and what would be the key focus?
68. What do you see as the main driver of profitability in your sheep enterprise?
69. What are the profit drivers you have most influence over?
70. What profit drivers do you focus on?
71. What are the three largest costs to your sheep enterprise and how do you manage them?
72. What do you see as the keys to making more money in sheep?

Technology

73. Do you use iED Tags in your commercial flock?
74. Do you own any iED Gear?
75. Do you collect and use any livestock data?
76. If so, what data and how do you use it?
77. Do you use technology to understand pasture growth rates? If so, what technology?
78. What attitude do you have towards technology in sheep production? What are you looking for?
79. What innovations do you currently use to minimise labour costs?

Future Plans

80. Do you intend to grow your sheep enterprise over the next 3-5 years? If so, how?
81. What are the opportunities you see in the sheep business?
82. Name one thing you would change about the industry that would improve your business?
83. If you were to give one piece of advice to an aspiring sheep producer what would it be?
84. What are your plans/goals for your sheep business in the future?