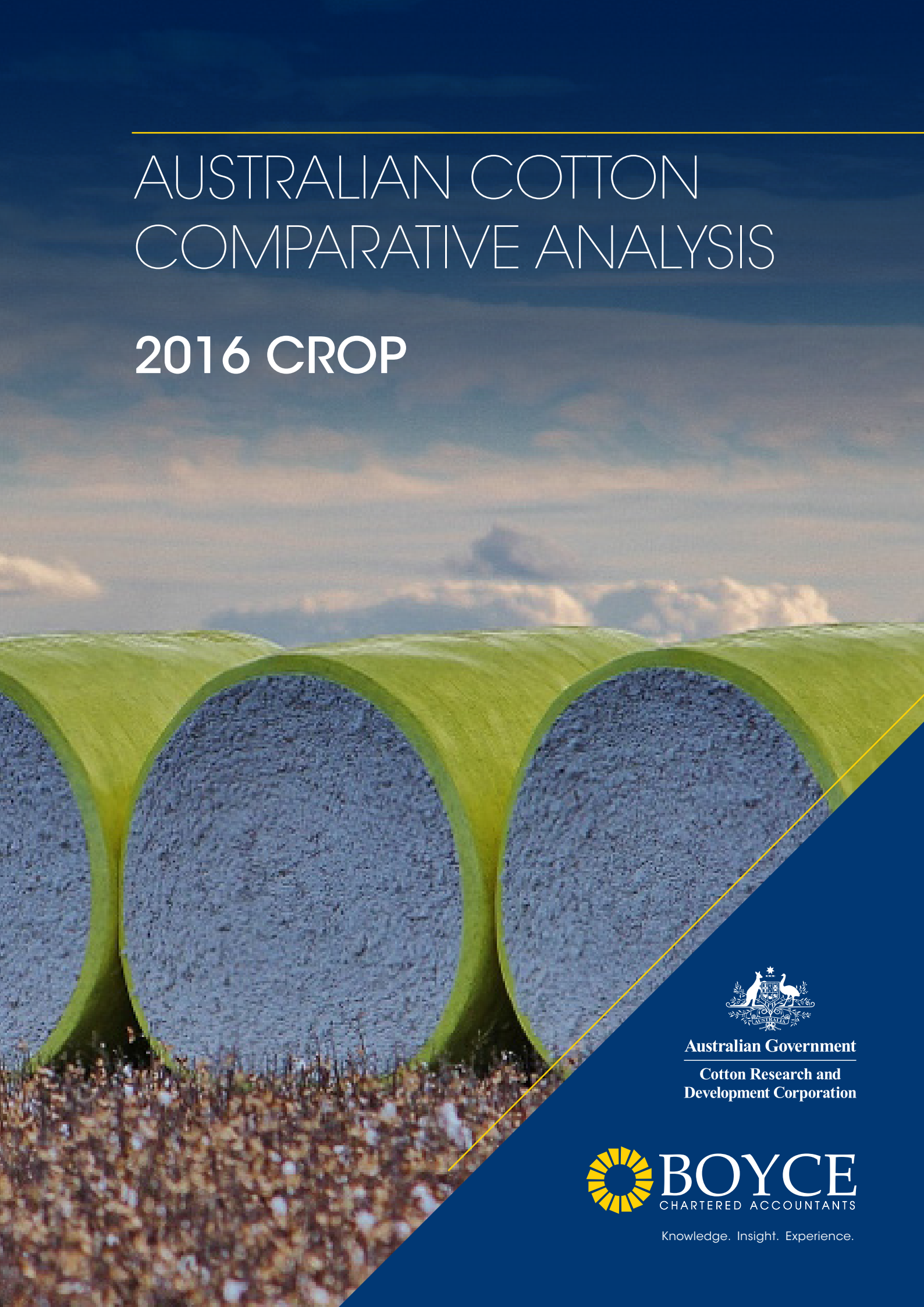
AUSTRALIAN COTTON COMPARATIVE ANALYSIS

2016 CROP



Australian Government

Cotton Research and Development Corporation

BOYCE CHARTERED ACCOUNTANTS

Knowledge. Insight. Experience.

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Images courtesy of Cotton Australia

Dear Grower,

We are pleased to present the 2016 Australian Cotton Comparative Analysis.

The Comparative Analysis is a joint initiative between the Cotton Research & Development Corporation (CRDC) and Boyce Chartered Accountants to produce the industry benchmark for the economics of cotton growing in Australia.

The sample of participants this year again captures a representation from the different cotton-growing valleys. It is always our aim to increase the sample size of the analysis. If you are a grower and find this report instructive but do not currently participate in the analysis, we would welcome your involvement. Participation is free, and while we know that involvement does take some effort, we believe that this effort leads to a greater understanding of the numbers that drive your business with respect to other growers and trends within the industry.

Whilst the report focuses on the 2016 crop, it also presents trends that have been measured against more than ten years of data. In addition to the results and information we have provided in previous years, this year we have included per bale figures and excerpts from three industry reports which analyse cotton growing practices, workforce turnover and water productivity. From this research we provide comments regarding trends between our analysis and these industry reports.

The 2016 Australian Cotton Comparative Analysis has been posted on the websites of Boyce Chartered Accountants (www.boyceca.com) and CRDC (www.crdc.com.au). We welcome use of the figures contained in this report, however it should be noted that the report or any part of it may not be published or reproduced without authorisation.

We look forward to discussing the report with you.

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2016 AUSTRALIAN COTTON COMPARATIVE ANALYSIS

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1 Introduction

INTRODUCTION

The 2016 Australian Cotton Comparative Analysis (ACCA) is the twelfth report produced by Boyce Chartered Accountants in conjunction with the Cotton Research & Development Corporation (CRDC). From 1986 to 2004 the report was compiled independently by Boyce. Having 30 years of data in the same format for any industry is a valuable resource.

In this report we present an analytical review of the 2016 results, a comparison with prior years, and comments on emerging trends.

The primary purpose of the ACCA is to show the income and expenses associated with growing fully irrigated cotton on a per hectare and per bale basis. To get the most out of this report the reader should be fully aware of the methodology:

- It is important to note that the analysis does not necessarily show the health of the cotton industry. Where a cotton grower grew skip row cotton or solid cotton that did not receive full water, or grew no fully irrigated cotton at all, those resulting figures are excluded from the analysis. In most, if not all cases, these alternate crops would have returned a reduced profit per hectare in comparison to growing fully irrigated cotton. Therefore, although the grower may have made a healthy per hectare profit on the hectares of fully irrigated solid cotton grown, the net profit of the total farm would have been significantly less than if fully irrigated cotton was grown across the full area, allowing for usual rotation practice.
- Readers of this study should be aware that these figures show the average results of participants in the sample. It is important that users understand this fully. For example, assume there were only two participants in the sample who grew the same area of irrigated cotton. If one uses contractors for picking and the other owns their own pickers, the figure for contract picking will be approximately 50% of the market rate. Similarly, the figures on a per line basis for expenses such as depreciation, repairs & maintenance, wages etc. will all be less than market rates. With this knowledge, users of this information can get additional information from this analysis.
- It should be remembered that if there is a significant change in per line figures, this may not necessarily be due to price increase. Line items can be made up of price, frequency of operation and volume of input per operation. So where there has been an increase in for example, seed, this could be due to price, number of seeds per metre planted (volume) or the number of plantings, or a combination of all three.
- It is important to understand that where a crop has not been picked due to flooding or some other disaster other than hail, the expenses relating to the affected area have been excluded from the sample.

So care should be taken when using the results from this analysis. Understanding the basis on which the analysis is constructed is the key to getting the most out of this study.

OUR SAMPLE

The analysis includes the results for farmers who were able to plant, grow and pick their crop using close to normal irrigation practices. This year the total number of hectares in the sample decreased due to a decrease in the availability of water throughout many of the cotton growing areas of Australia.

The average hectares planted per participant decreased from 926 hectares in 2015 to 878 hectares in 2016. This is due to water availability and participants in the analysis changing. The total number of bales in the sample was just on 340,000, which is approximately 12% of total Australian cotton production. Final estimates for the 2016 Australian crop were 263,339 hectares and production of 2,742,700 bales, which is an increase of 34% compared to the 2015 planted area (Cotton Australia Statistics). Specifically the average hectares planted per participant has decreased at a time when total Australian output has seen significant increase.

Marketing is an important part of management and can make a significant contribution to the profitability of a cotton farm. For this reason, participants' overall results in the 'Comparison of average income and expense items' are not normalised in respect of income. Whilst recognising marketing as an important part of management, our study does not include or exclude growers from the Top 20% Farmers based on marketing decisions in respect of currency, lint and basis. Our view is that growers should be classified into (or out of) this group based on yield and cost only, as many growers review their operation against the Top 20% Farmers to look for areas of improvement. We have therefore selected the top 20% substituting $507 (the average 2016 net price for all participants) for the average net price that the individual grower actually received.

It should be noted that although the average price of $507 was used to select the participants in the Top 20% Farmers, the growers' actual sales figures are reported in this analysis.

THE NEED TO BENCHMARK

Financial analysis using comparative statistics helps farmers identify relative strengths and weaknesses; accompanying budgets and long term business plans will then focus on ways to overcome weaknesses and build on strengths. In other words, this Comparative Analysis is a management tool to implement change and to identify where effort should be directed on a day to day basis.

Obviously, this analysis does not provide all the answers - it is a benchmark or a standard to strive for. It is up to management to develop and implement specific action plans based on improved knowledge to set and achieve new goals.

The reliable, independent figures in the Comparative Analysis provide the starting point for farmers to develop "best practice".

If growers or other interested parties require more long term data, note that this analysis has been running since 1986.

We encourage participants to discuss the results with us and to clarify any queries so that we all develop a deeper understanding of the industry.

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Report on the 2016 Crop

2.1 ANALYTICAL REVIEW

2.1.1 INTRODUCTION

This years' analysis sees a few changes. Not only are we including per bale figures, we are also including research from other industry experts and looking for correlations between their fields of study and the numbers in this analysis.

Another change to this analysis is that we will not make any general comments on the season. With the geographic spread of the industry which now extends from northern Victoria to Clermont in the northern reaches of Central Queensland, we believe that readers of this study can obtain better information in relation to seasonal weather and the physical impact of same from other local organisations.

Although there were increased overall areas planted and grown in 2016 compared to 2015, most of the traditional areas again had reduced hectares. In our view this has had two impacts on the numbers. Firstly, the overheads in traditional areas remain high due to reduced hectares and secondly, the overheads of growers in newer areas are also high as they establish themselves in the industry.

The traditional cotton growing areas continue to be impacted by lack of stored water that would allow more than one year of full production. In our view, as discussed in previous years' analyses, this is having a negative impact on profits and, following on from that, farm infrastructure.

Many growers in the industry are currently evaluating different watering techniques. In our view, this evaluation is being driven by the decision making process in new areas which then impacts on the more established valleys, labour shortage and farms that require re-lasering and earthworks. Syphons through the bank, permanent syphons which can be moved up and down depending on water height and the bankless channel system are all in use. As with any adoption of new systems and technology with large upfront costs, it will be important to analyse what others have done and what results they are achieving.

The 2017 production is estimated at 4.2 million bales on plantings of 470,000 hectares, of which 77% is irrigated (Cotton Australia Statistics). The ongoing business question here is one of trying to grow similar hectares each year versus maximising yearly production when the water is there.

Highlight numbers for the Average Farmers and Top 20% Farmers are as follows:

Average Farmers;

- Yield (12.95 bales per hectare) increased only slightly from the previous year (2015 was 12.59 bales per hectare). This is 1.7 bales per hectare greater than the five year average, which continues to rise strongly, but not as strong as last year.
- Price per bale was $507 which is $10 lower than last year but $25 above the five year average.
- Operating costs continue to rise. 2016 costs per hectare were $4,500 compared to $4,363 for 2015 and $4,038 for the five year average.
- Fertiliser costs increased to around $591 per hectare, whereas fuel fell to its lowest cost since the 2012 analysis, partly due to prices falling throughout the 2016 year. Chemical herbicides and insecticides were both up again this year.
- Total income was $6,565 per hectare for 2016. This was $1,090 higher than the five year average, but very similar to last years' income of $6,525.

For the Average Farmers, similar to 2015, this was another great season, with profit per hectare of $1,706 being slightly lower than last years' $1,899, but much higher than the 5 year average of $1,106. Based on these figures, a yield of 8.9 bales per hectare is required to cover total expenses, a figure which (worryingly) continues to grow.

Top 20% Farmers;

- Yield (13.69 bales per hectare), a decrease of approximately half a bale per hectare from the previous year (2015 was 14.31 bales per hectare).
- Price per bale was $518, which is $20 down from 2015 and $25 above the five year average.
- Interestingly, operating costs for this group fell by $139 to $3,923, which is $194 above the five year average.
- This group continues to grow more cotton (.7 bales per hectare) than the Average Farmers and do it more cheaply ($3,923 v $4,500).

It was another excellent season for the Top 20% Farmers, with profit of $3,159 per hectare. This was down on last years' profit but still well up when compared to five year average of $2,272. Interestingly, the 2016 result was a combination of a reduction in yield, price and total expenses from the previous year.

In our view, the main focus for growers has to be the low cost options that have the biggest impact on the bottom line. While this may be self-evident, it deserves some serious structured and documented thought by the industry.

This study has shown that being in the Top 20% is predominately driven by yield, so in our view, that's not a bad place to start. 'How can I improve yield as cheaply as possible?' should be a well-considered question, and one which has been raised before. Specifically though, in this 2016 year, if you look at the increase in expenses that was not specifically driven by yield, how much of that contributed to yield?

The industry continues to be an early adopter of technology. At the industry level, this is a tremendous positive as it shows the innovation that has driven the industry. However from a profit perspective, individual growers need to know where their profit comes from, as the early adoption of technology at the micro-level is not always conducive with maximising profit. We believe each technology adoption needs to be framed initially around ongoing cost minimisation or yield maximisation, and secondly from the point of view of the initial capital cost and other benefits. This equation needs to be kept in perspective but the answer could be different for each grower.

The cost of Chipping has increased slightly this year, with resistant weeds needing to be manually controlled. The use of old picking technology continues to decrease, although it should be noted that if pure profit was a motive, old technology would be more prevalent. The cost of herbicides and insecticides (license fees and chemicals) both continue to rise at significant levels (16% and 22% from last years' figures). In terms of insect pressure, this could be a product of growers taking crops later into the season searching for more yield. While growers continue to effectively 'outsource' or 'buy' products and expertise from various providers, growers must continue to monitor the profit motive. From a classic economical point of view, a farming operation with everything outsourced would technically make no profit!

To analyse the industry over a 30 year period in the same format provides valuable information with which to consider where the future will take the industry. We recommend that growers spend some time thinking about where the industry is headed in an attempt to be ahead of the game in the two main areas that impact profit – maximising yields and ensuring costs are at a minimum.

The ability to take advantage of a solid lint price continues to be a big issue for the industry. The lack of stored water and the way that impacts on the ability of a grower to make a good price has been addressed in previous analyses. As discussed at the grower meetings we attend, the ability to lock in a price for lint when water is available has been an important factor in underpinning the profit of the industry. In our view, since the Global Financial Crisis and the cotton price spike to levels over $1,000, and with varied levels of water stored for up to 3 years of production, growers continue to juggle production risk and price per bale. If the price per bale continues to fluctuate but not grow over time in real terms, then it follows that the ability to participate when prices are high will become more important.

This year we have again included trend lines in some of the graphs presented. Some interesting trends from 1997 to 2016 continue to emerge, including:

- The value per bale continues to increase slightly, although we have seen no real growth.
- The trendline in growth of cost per hectare continues to rise.
- Although the yield per hectare fell for the Top 20% Farmers, the upward trend continues. The term 'statistical yield' indicates a fixed ceiling beyond which yield cannot exceed. Without further plant development, this would be a worrying prospect, especially in light of continuing cost increases. Continuing development means that statistical yield is a moving target, but its important to note that we are tending towards a maximum yield, whereas there do not seem to be similar cost constraints.
- This years' reduction in profit per hectare for the Average Farmers and the Top 20% Farmers sees some downward pressure on the profit trendline. However, the industry must be realistic that profits will vary based on seasonal conditions.

The two statistics of relatively static price per bale and increasing costs per unit of inputs acquired confirm the decreasing terms of trade for the industry. Increased profits for the industry are coming from efficiency (less quantity of inputs) and increased yield.

Five Year Average (2012 to 2016)

We believe the message of the average for a number of years is important. In this report we have used the average of this season and the past four seasons – five years in total.

In previous reports we have sometimes used less years for the average to try and reduce the impact of drought on the numbers.

What we are attempting to show by the five year average is the income and expenses on a per hectare basis in a "normal" year.

2.1.2 KEY PERFORMANCE INDICATORS

2.1.2.1 YIELD (BALES / HA)

	AVERAGE	TOP 20%	DIFF
2016	12.95	13.69	0.74
2015	12.59	14.31	1.72
2014	10.24	11.55	1.31
2013	10.69	11.99	1.30
2012	9.71	11.45	1.74
*** Five year average**	**11.24**	**12.60**	**1.36**

What is your water use efficiency in terms of bales per megalitre?
Do your employees know your yield expectations?
Have you reviewed your strategies depending on the availability of water?
What was your maximum yield in a field and do you know why the other fields or areas did not perform as well?

2.1.2.2 VALUE ($ / BALE)

	AVERAGE	TOP 20%	DIFF
2016	$507	$518	$11
2015	$517	$538	$21
2014	$473	$485	$12
2013	$427	$445	$18
2012	$486	$478	($8)
*** Five year average**	**$482**	**$493**	**$11**

- The cash price was between $510 and $480 per bale until February, when it slipped down to as low as $420 in March. By the end of May, prices had recovered to $480.
- The average cash price for the growing period was just on $475 per bale. (Data provided by Independent Commodity Management)

What strategies do you have in place to combat adverse currency and futures?
How much cotton have you sold for the 2017 and 2018 crops?
How do you forward market when there is some water security?
Do you understand all the strategies that are available?
Has the worry and risk of your marketing strategy been worth the benefit you have gained?
Have we seen a change in the way cotton is marketed?

2.1.2.3 OPERATING COSTS ($ / HA)

	AVERAGE	TOP 20%	DIFF
2016	$4,500	$3,923	$577
2015	$4,363	$4,062	$301
2014	$3,918	$3,766	$152
2013	$3,808	$3,371	$437
2012	$3,601	$3,524	$77
*** Five year average**	**$4,038**	**$3,729**	**$309**

- The costs for the Average Farmers and the Top 20% Farmers were relatively static from 2015 to 2016. Having said that, the Top 20% Farmers have had more success than the Average Farmers with controlling costs since 2012. Interestingly, the biggest cost per hectare differences between the Average Farmers and the Top 20% Farmers in the 2016 year were Fuel and Oil, Contract Picking, Depreciation and Water Charges and Purchases. It's interesting that the last three of these are primarily related to a) ownership of picking equipment, b) plant in general and c) water. We will continue to monitor these differences between the two groups.
- The average operating costs for the "low cost growers" were $3,693 compared to $3,643/ha in 2015.

What steps can you take in a "normal year" to keep your operating costs below $3,700/ha?
Are you monitoring the costs which are much higher than the average?
Have you investigated group purchasing arrangements?
Does your strategy in relation to fixed costs need to change to minimise losses in low water years?
Should you be using more contractors so that in low water years you don't have high fixed costs?

2.1.2.4 COST OF PRODUCTION ($ / BALE)

	AVERAGE	TOP 20%	DIFF
2016	$347	$286	$61
2015	$347	$284	$63
2014	$382	$326	$56
2013	$356	$281	$75
2012	$371	$308	$63
*** Five year average**	**$361**	**$297**	**$64**

- A low cost of production per bale (driven by higher yields) is the most significant feature of the Top 20% Farmers. This is achieved by producing more bales of cotton per hectare and from a lower per hectare cost base. Both of these factors contribute to this statistic. There are only three cost areas where the Top 20% Farmers significantly exceeds the average – Contract Picking, Electricity and Wages – Employees.
- Long-term average figures for the top producers prove that it is possible to achieve a benchmark cost of production in the $290 to $350/ bale range in a "normal" year.
- With the extra yield of 0.25 - 0.5 bales per hectare, costs change very little.

Are you continually focusing on your cost of production per bale?
What are the Top 20% Farmers doing differently?

2.1.2.5 COMPARISON OF VALLEYS

	Gwydir	Barwon/McIntyre	Macquarie	Namoi	SouthernValleys
Gross income ($/ha)	$6,662	$7,216	$7,234	$5,284	$6,328
Operating costs ($/ha)	$4,674	$4,181	$5,260	$5,897	$3,988
Operating profit ($/bale)	$153	$222	$139	($48)	$190
Yield/ha	12.95	13.64	14.26	12.69	12.32

- The sample size this year for other valleys was not large enough to be included separately in this years' analysis.

2.1.3 FIVE YEAR AVERAGES TO 2016

As noted in the introduction, we believe the message of the average is important, so we have compared five year average figures for the Average Farmers and the Top 20% Farmers using the 2012, 2013, 2014, 2015 and current year's data.

What makes the Top 20% Farmers so much better than Average Farmers?

In the five selected years, the Top 20% Farmers made 106% more profit (after interest) than the Average Farmers ($2,272/ha compared to $1,106/ha).

The difference is attributed to the following factors:

Land productivity (yield/ha)	58%	or	$676
Price	10%	or	$121
Direct cost savings – excluding Wages – Proprietors (fine tuning)	26%	or	$305
Interest savings (less debt)	6%	or	$65
	100%		**$1,166**

The message from these figures is that better land productivity (measured by higher yield) is overwhelmingly the major feature of the top performers. Farmers should concentrate on growing higher yield within a realistic cost framework rather than searching for dramatic cost cutting measures if they wish to improve their performance significantly.

2.1.4 OTHER OBSERVATIONS

Over the years, many "rules of thumb" have been developed and quoted by farmers, financiers and accountants:

- Cotton farmers are in principle debt free if, at year-end, their equity in cotton pools and any unsold cotton covers their total borrowings.
- The contingent tax liability associated with crop proceeds tipped forward (on hand and in pools) should always be calculated and bought to account at year-end when measuring your wealth.
- Debt in the industry is an issue. Even with interest rates at historically low levels, interest cost per hectare is significant. To overlay current debt with rates of 10 or 12% would have significant impact on the industry. It is difficult to continue with old 'rules of thumb' such as debt should not exceed 150% of average gross farm income (100% when interest rates are above 12%), when profitability is really the key.
- High wage costs and machinery horsepower per hectare are a quick indicator of overall high costs of operations.
- Don't underestimate the value of knowledge, both within your industry and worldwide. It can be difficult to keep up to date with the latest practices, but falling behind will cost you money.
- Because of the high fixed and semi fixed costs in this industry, it is becoming increasingly important to be able to grow enough area every year to cover these costs.

2.1.5 FEATURES OF THE TOP PERFORMERS

Over the past fifteen years many cotton farmers have been able to achieve top-class results, even in years when seasonal or financial circumstances were less than favourable.

Outlined below are some of the distinguishing characteristics and features of successful cotton growers:

- **Controlled operating costs**

  Operating costs (before interest) for farmers have averaged $3,700/ha for the past five years. With fine-tuning, the best farmers have been able to keep their operating costs under control without sacrificing yield and still adequately maintaining all assets.

  The performance of the "low cost" farmers operating at their optimum scale over the past five years proves that a target for operating costs of $3,000 to $3,300/ha is achievable in a normal year. These figures translate to operating costs of $270 to $300/bale.

- **Consistent marketing strategies**

  There are a large number of marketing alternatives available to cotton farmers. The strategies adopted by individual farmers depend on:

  - Individual outlook on risk
  - World-wide economic outlook
  - Taxation implications
  - Cash flow implications
  - Water availability
  - Level of knowledge on how to use the complex alternatives

  To date, the perfect marketing strategy has proved to be elusive. Farmers need to make marketing decisions with the aim of maximising their crop income, keeping production risk in mind and remembering that a net return in excess of $485/bale should produce a sizeable profit.

  In our opinion, the application of consistent marketing strategies on a year in year out basis is the key to maximising per bale prices in the longer term.

  The top farmers know their cost of production per bale. They then base marketing decisions on that known cost.

- **Productive labour**

  Top-class results cannot be produced without having a top-class team of employees who are efficient, focused, motivated and stable.

  The best farms ensure that employees are kept informed, are trained to do their job properly, given responsibility and an opportunity to participate in on-farm decision making. It is also essential that employees are properly remunerated and take their holidays every year. The most efficient farms are operating with one permanent person for every 220 hectares.

- **Reliable machinery**

  All good farmers appreciate the importance of timing and so ensure that they own or have access to sufficient reliable machinery to carry out all operations efficiently and on time. For farmers who decide to own tractors to carry out all field operations, capacity of 350 to 400 engine horsepower per 500 hectares is generally required.

  The ideal picking capacity for farms is subject to a great deal of debate with many efficient operators concluding that the whole picking operation should be carried out by contractors. The best farmers aim to complete their picking operation within 30 days.

- **Sustainable farming techniques (rotation)**

  Many of the benefits of a stringent rotation program are not quantifiable in the short term and the benefits that are quantifiable are often disguised by other variables that can affect yield in any season. Growers however, are rotating to address the issues of disease and to allow for the re-levelling of fields.

  If farmers are going to maintain a sustainable cotton production system, maintain high yields and achieve high levels of profitability in the long term, the issue of rotation needs to be included in the equation.

  Obviously the amount of available water plays a huge role in rotation, however the idea is to aim for a 2:1 rotation in the long term.

  The top performers are continually looking at varied crops for rotation. These decisions are being made for agronomic and financial reasons. Industry awareness is required to learn from these operators.

- **Water use efficiency**

  The timing of when water is applied is critical in the production of high yielding crops.

  As water becomes even more limited, the science behind the timing of watering and understanding each variety's reaction to the timing of water will become even more crucial. Growers are now paying closer attention to measuring water use efficiency.

- **Conservative levels of debt**

  Many farmers are carrying large amounts of debt, with debt levels of 40% to 50% being common. By adopting sound, sustainable practices, the best farmers have been able to generate a significant cash surplus to repay borrowings. The best farmers are in an enviable position of being able to survive in tough times, and in some circumstances expand the scale of their operations.

  It must be noted that debt can only be repaid out of a cash surplus after allowing for taxation, drawings and capital purchases, or from the sale of other assets. During the last 15 years there has been significant capital gain for the holders of water licences. This has allowed debt levels to increase whilst maintaining the debt to equity margin.

  Our current low interest rate environment should encourage growers to look at protecting their borrowings through interest rate management. Financiers are offering many varied products that provide this protection.

  Farmers are considered to be in a very solid financial position (category A) if their debt, net of equity in cotton pools and unsold crop, is less than 20% of assets at 30 June.

- **Efficient financial management**

  Good farmers keep their financial affairs up to date and under control by utilising computerised office tools.

  Annual budgets are prepared by the top performers on a conservative basis with realistic yet challenging targets. Performance is then monitored monthly, comparing actual results with the previously prepared budget. With up-to-date management reports, top performers are able to analyse performance and fine tune operations on a regular basis. They also keep their financiers well informed at all times.

- **Timing**

  The best farms carry out all operations on time. Fields are ready to plant as soon as the season permits, machinery is always ready to carry out the next task and team members always know what they have to do a week or a month ahead. Waterings are never late.

  Being on time is a result of good planning and good communication and leads to increased yields.

- **Planning and long term vision**

  At the heart of every good operation is a person with vision; vision of where the business is going on a day-to-day basis, on an annual basis, and on a long-term basis (ten years plus). The best farmers always seem to have time on their hands because they have clearly defined goals. They have communicated those goals to their team members, and then take on the role of a coach who guides and encourages their team to carry out the day-to-day activities.

- **High yields**

  High yields are the reward for getting all aspects of a farming operation right. No single farming technique, method of operation or management decision is going to have a significant impact. Top performers do all the little things thoroughly and on time and as a consequence "reap the rewards".

  The best farmers consistently achieve yields in excess of ten bales/ha year after year (assuming adequate water availability and no disasters such as hail or floods). Total farm averages of greater than 11.0 bales/ha have been achieved and are now a realistic goal, especially using the excellent cotton varieties that are continually being developed.

2.2 RETURN ON ASSETS

2.2.1 WHAT RETURN ON ASSETS AM I GETTING?

With costs continuing to rise, average cotton prices not growing in real terms, cotton farm sales sluggish and a lot of discussion regarding where capital growth in the industry will come from, growers must continue to look at the return on assets of a cotton farm.

Although a long term view is essential, growers must continually look at alternative investments (allowing for risk) to assess what the return of a cotton farm really is.

As a general statement, the ten year average figures should not be used when analyzing the return on assets of the industry as a whole. This is similar to our comments in the Introduction that this analysis does not necessarily show the health of the cotton industry. Figures resulting from rotation crops, dryland cotton or semi irrigated cotton, are, by definition, excluded from this analysis. To get more realistic ten year figures, more work would have to be done to ascertain an average, probably based on historical water availability.

Trend lines indicate that the operating profit for the Top 20% Farmers and the Average Farmers is only increasing slightly, even with the exceptionally strong results for this year and 2015.

How do I calculate my simple return on assets (ROA)?

The simple ROA is calculated by dividing your operating profit per hectare (before interest) by the value per hectare (which is calculated as the total value of your land, licences and machinery divided by the number of hectares grown during the year).

We have included a worksheet to calculate your individual ROA. The process is easy to follow and is outlined below:-

- From the farm operating profit/(loss) per ha spreadsheet find your yield and price per bale. Match these up to calculate your operating profit (before interest) based on costs of $3,500/ha.
- Find the profit closest to your farm along the base of the return on assets based on various profits and land variations spreadsheets.

- Select a value per hectare (this is calculated as the total value of your land, licences and machinery divided by the number of hectares grown during the year), then:

  a) You should add a value per hectare to allow for country not planted. If you plant 2/3 of your country, increase the value of your investment by 50%.

  b) You also should add a value per hectare based on your machinery investment relating to the cotton operation e.g. $1,500,000 machinery divided by 1,500 hectares increases your investment by $1,000/ha).

- Match the two up and calculate your simple return on assets.

2.2.2 WHY MEASURE ROA?

In isolation ROA provides you with a measure to better assess alternative investments. One year's ROA result should not serve as the yardstick to base decisions such as entry or exit of the industry.

This ROA does not include any increase in the value of your assets. If in a year you achieve 7% ROA and the value of your assets increased by 5% then your total return is 12%.

Linked directly to this is the fact that you now have a higher asset value, and next year if you achieve the same profit, your ROA will be lower.

Use the calculator to predict what your future returns may be.

For example:

- Assume a profit of $800/ha against today's valuation of $10,000 ha – 8% return
- Now use the same profit against an increased market rate of $15,000/ha –5.3% return
- To achieve an 8% return against a $15,000/ha valuation you need to reach a profit of $1,200/ha.

The cotton yield remains the greatest variable when looking forward or doing current comparisons between growers. As discussed in this and prior reports, land productivity (yield) contributes to the majority of the difference between the Top 20% Farmers and Average Farmers. What difference does yield make on ROA?

For example:

- Five year average profit to 2016 (before interest) for the Average Farmers of $1,461/ha against $17,500/ha – 8.3% return.
- Five year average profit to 2016 (before interest) for the Top 20% Farmers of $2,272/ha against $17,500/ha – 13% return.

  (Yield differential of 1.36 bales/ha)

ROA needs to be balanced against such factors as risk, sustainability and reinvestment. If a grower's main aim is to just increase the ROA, this may have a negative impact on sustainability, as they may not reinvest through redevelopment and take other sustainable actions.

There is a direct link between ROA and yield. The industry continues to strive for increased yield with the challenge of balancing long term sustainability.

RETURN ON ASSETS CALCULATOR 2016

FARM OPERATING PROFIT/(LOSS) PER HECTARE BASED ON ALTERNATIVE YIELDS AND PRICES – BEFORE INTEREST

$ / BALE	7.25	7.50	7.75	8.00	8.25	8.50	8.75	9.00	9.25	9.50	9.75	10.00	10.25	10.50	10.75	11.00	11.25	11.50	11.75	12.00	12.25	12.50
650	1,213	1,375	1,538	1,700	1,863	2,025	2,188	2,350	2,513	2,675	2,838	3,000	3,163	3,325	3,488	3,650	3,813	3,975	4,138	4,300	4,463	4,625
640	1,140	1,300	1,460	1,620	1,780	1,940	2,100	2,260	2,420	2,580	2,740	2,900	3,060	3,220	3,380	3,540	3,700	3,860	4,020	4,180	4,340	4,500
630	1,068	1,225	1,383	1,540	1,698	1,855	2,013	2,170	2,328	2,485	2,643	2,800	2,958	3,115	3,273	3,430	3,588	3,745	3,903	4,060	4,218	4,375
620	995	1,150	1,305	1,460	1,615	1,770	1,925	2,080	2,235	2,390	2,545	2,700	2,855	3,010	3,165	3,320	3,475	3,630	3,785	3,940	4,095	4,250
610	923	1,075	1,228	1,380	1,533	1,685	1,838	1,990	2,143	2,295	2,448	2,600	2,753	2,905	3,058	3,210	3,363	3,515	3,668	3,820	3,973	4,125
600	850	1,000	1,150	1,300	1,450	1,600	1,750	1,900	2,050	2,200	2,350	2,500	2,650	2,800	2,950	3,100	3,250	3,400	3,550	3,700	3,850	4,000
590	778	925	1,073	1,220	1,368	1,515	1,663	1,810	1,958	2,105	2,253	2,400	2,548	2,695	2,843	2,990	3,138	3,285	3,433	3,580	3,728	3,875
580	705	850	995	1,140	1,285	1,430	1,575	1,720	1,865	2,010	2,155	2,300	2,445	2,590	2,735	2,880	3,025	3,170	3,315	3,460	3,605	3,750
570	633	775	918	1,060	1,203	1,345	1,488	1,630	1,773	1,915	2,058	2,200	2,343	2,485	2,628	2,770	2,913	3,055	3,198	3,340	3,483	3,625
560	560	700	840	980	1,120	1,260	1,400	1,540	1,680	1,820	1,960	2,100	2,240	2,380	2,520	2,660	2,800	2,940	3,080	3,220	3,360	3,500
550	488	625	763	900	1,038	1,175	1,313	1,450	1,588	1,725	1,863	2,000	2,138	2,275	2,413	2,550	2,688	2,825	2,963	3,100	3,238	3,375
540	415	550	685	820	955	1,090	1,225	1,360	1,495	1,630	1,765	1,900	2,035	2,170	2,305	2,440	2,575	2,710	2,845	2,980	3,115	3,250
530	343	475	608	740	873	1,005	1,138	1,270	1,403	1,535	1,668	1,800	1,933	2,065	2,198	2,330	2,463	2,595	2,728	2,860	2,993	3,125
520	270	400	530	660	790	920	1,050	1,180	1,310	1,440	1,570	1,700	1,830	1,960	2,090	2,220	2,350	2,480	2,610	2,740	2,870	3,000
510	198	325	453	580	708	835	963	1,090	1,218	1,345	1,473	1,600	1,728	1,855	1,983	2,110	2,238	2,365	2,493	2,620	2,748	2,875
500	125	250	375	500	625	750	875	1,000	1,125	1,250	1,375	1,500	1,625	1,750	1,875	2,000	2,125	2,250	2,375	2,500	2,625	2,750
490	53	175	298	420	543	665	788	910	1,033	1,155	1,278	1,400	1,523	1,645	1,768	1,890	2,013	2,135	2,258	2,380	2,503	2,625
480	(20)	100	220	340	460	580	700	820	940	1,060	1,180	1,300	1,420	1,540	1,660	1,780	1,900	2,020	2,140	2,260	2,380	2,500
470	(93)	25	143	260	378	495	613	730	848	965	1,083	1,200	1,318	1,435	1,553	1,670	1,788	1,905	2,023	2,140	2,258	2,375
460	(165)	(50)	65	180	295	410	525	640	755	870	985	1,100	1,215	1,330	1,445	1,560	1,675	1,790	1,905	2,020	2,135	2,250
450	(238)	(125)	(13)	100	213	325	438	550	663	775	888	1,000	1,113	1,225	1,338	1,450	1,563	1,675	1,788	1,900	2,013	2,125
440	(310)	(200)	(90)	20	130	240	350	460	570	680	790	900	1,010	1,120	1,230	1,340	1,450	1,560	1,670	1,780	1,890	2,000
430	(383)	(275)	(168)	(60)	48	155	263	370	478	585	693	800	908	1,015	1,123	1,230	1,338	1,445	1,553	1,660	1,768	1,875

AVERAGE YIELD PER HECTARE

(COST PER HA USED : $3,500)

Steps

1. Pick your price per bale and yield/ha.
2. Match them up and get your profit per hectare based on growing costs of $3,500.
3. Find your closest profit range on the bottom of the next graph.

RETURN ON ASSETS CALCULATOR 2016

RETURN ON ASSETS BASED ON VARIOUS PROFITS AND LAND VALUATIONS

VALUE /HA	100	300	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,700	1,900	2,000	2,200	2,400	2,600	2,800	3,000	3,200
$35,000	0.3%	0.9%	1.4%	1.7%	2.0%	2.3%	2.6%	2.9%	3.1%	3.4%	3.7%	4.0%	4.3%	4.9%	5.4%	5.7%	6.3%	6.9%	7.4%	8.0%	8.6%	9.1%
$34,000	0.3%	0.9%	1.5%	1.8%	2.1%	2.4%	2.6%	2.9%	3.2%	3.5%	3.8%	4.1%	4.4%	5.0%	5.6%	5.9%	6.5%	7.1%	7.6%	8.2%	8.8%	9.4%
$33,000	0.3%	0.9%	1.5%	1.8%	2.1%	2.4%	2.7%	3.0%	3.3%	3.6%	3.9%	4.2%	4.5%	5.2%	5.8%	6.1%	6.7%	7.3%	7.9%	8.5%	9.1%	9.7%
$32,000	0.3%	0.9%	1.6%	1.9%	2.2%	2.5%	2.8%	3.1%	3.4%	3.8%	4.1%	4.4%	4.7%	5.3%	5.9%	6.3%	6.9%	7.5%	8.1%	8.8%	9.4%	10.0%
$31,000	0.3%	1.0%	1.6%	1.9%	2.3%	2.6%	2.9%	3.2%	3.5%	3.9%	4.2%	4.5%	4.8%	5.5%	6.1%	6.5%	7.1%	7.7%	8.4%	9.0%	9.7%	10.3%
$30,000	0.3%	1.0%	1.7%	2.0%	2.3%	2.7%	3.0%	3.3%	3.7%	4.0%	4.3%	4.7%	5.0%	5.7%	6.3%	6.7%	7.3%	8.0%	8.7%	9.3%	10.0%	10.7%
$29,000	0.3%	1.0%	1.7%	2.1%	2.4%	2.8%	3.1%	3.4%	3.8%	4.1%	4.5%	4.8%	5.2%	5.9%	6.6%	6.9%	7.6%	8.3%	9.0%	9.7%	10.3%	11.0%
$28,000	0.4%	1.1%	1.8%	2.1%	2.5%	2.9%	3.2%	3.6%	3.9%	4.3%	4.6%	5.0%	5.4%	6.1%	6.8%	7.1%	7.9%	8.6%	9.3%	10.0%	10.7%	11.4%
$27,000	0.4%	1.1%	1.9%	2.2%	2.6%	3.0%	3.3%	3.7%	4.1%	4.4%	4.8%	5.2%	5.6%	6.3%	7.0%	7.4%	8.1%	8.9%	9.6%	10.4%	11.1%	11.9%
$26,000	0.4%	1.2%	1.9%	2.3%	2.7%	3.1%	3.5%	3.8%	4.2%	4.6%	5.0%	5.4%	5.8%	6.5%	7.3%	7.7%	8.5%	9.2%	10.0%	10.8%	11.5%	12.3%
$25,000	0.4%	1.2%	2.0%	2.4%	2.8%	3.2%	3.6%	4.0%	4.4%	4.8%	5.2%	5.6%	6.0%	6.8%	7.6%	8.0%	8.8%	9.6%	10.4%	11.2%	12.0%	12.8%
$24,000	0.4%	1.3%	2.1%	2.5%	2.9%	3.3%	3.8%	4.2%	4.6%	5.0%	5.4%	5.8%	6.3%	7.1%	7.9%	8.3%	9.2%	10.0%	10.8%	11.7%	12.5%	13.3%
$23,000	0.4%	1.3%	2.2%	2.6%	3.0%	3.5%	3.9%	4.3%	4.8%	5.2%	5.7%	6.1%	6.5%	7.4%	8.3%	8.7%	9.6%	10.4%	11.3%	12.2%	13.0%	13.9%
$22,000	0.5%	1.4%	2.3%	2.7%	3.2%	3.6%	4.1%	4.5%	5.0%	5.5%	5.9%	6.4%	6.8%	7.7%	8.6%	9.1%	10.0%	10.9%	11.8%	12.7%	13.6%	14.5%
$21,000	0.5%	1.4%	2.4%	2.9%	3.3%	3.8%	4.3%	4.8%	5.2%	5.7%	6.2%	6.7%	7.1%	8.1%	9.0%	9.5%	10.5%	11.4%	12.4%	13.3%	14.3%	15.2%
$20,000	0.5%	1.5%	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.5%	9.5%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	16.0%
$19,000	0.5%	1.6%	2.6%	3.2%	3.7%	4.2%	4.7%	5.3%	5.8%	6.3%	6.8%	7.4%	7.9%	8.9%	10.0%	10.5%	11.6%	12.6%	13.7%	14.7%	15.8%	16.8%
$18,000	0.6%	1.7%	2.8%	3.3%	3.9%	4.4%	5.0%	5.6%	6.1%	6.7%	7.2%	7.8%	8.3%	9.4%	10.6%	11.1%	12.2%	13.3%	14.4%	15.6%	16.7%	17.8%
$17,000	0.6%	1.8%	2.9%	3.5%	4.1%	4.7%	5.3%	5.9%	6.5%	7.1%	7.6%	8.2%	8.8%	10.0%	11.2%	11.8%	12.9%	14.1%	15.3%	16.5%	17.6%	18.8%
$16,000	0.6%	1.9%	3.1%	3.8%	4.4%	5.0%	5.6%	6.3%	6.9%	7.5%	8.1%	8.8%	9.4%	10.6%	11.9%	12.5%	13.8%	15.0%	16.3%	17.5%	18.8%	20.0%
$15,000	0.7%	2.0%	3.3%	4.0%	4.7%	5.3%	6.0%	6.7%	7.3%	8.0%	8.7%	9.3%	10.0%	11.3%	12.7%	13.3%	14.7%	16.0%	17.3%	18.7%	20.0%	21.3%

PROFIT PER HECTARE FROM PREVIOUS WORKSHEET

Steps

1. Select a value of your land, licences and machinery that are applicable to the cotton operation.
2. Divide the value in 1. by the number of hectares grown in the year.
3. Use your closest profit and the value per hectare to work out the return on your investment.

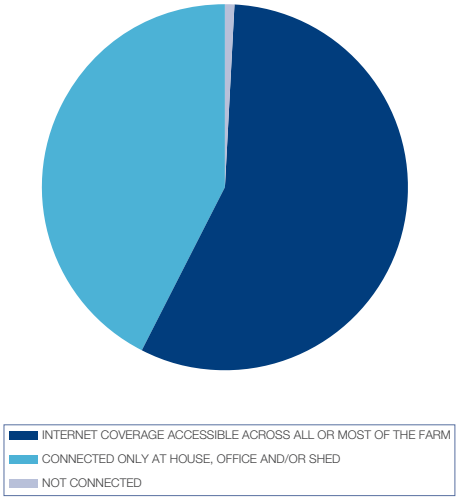
2.3 ASSOCIATED RESEARCH ARTICLES AND COMMENTARY

2.3.1 ROTH RURAL – COTTON GROWING PRACTICES 2015-16

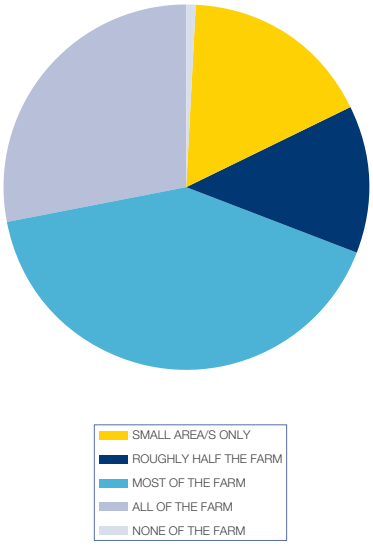
Roth Rural in conjunction with CRDC produces a yearly survey of cotton growers. Out of the many findings contained in "Cotton Growing Practices 2015-16" we have chosen the following graphs to comment on.

MOBILE PHONES/INTERNET

INTERNET CONNECTIVITY ON COTTON FARMS



MOBILE PHONE COVERAGE ON COTTON FARMS



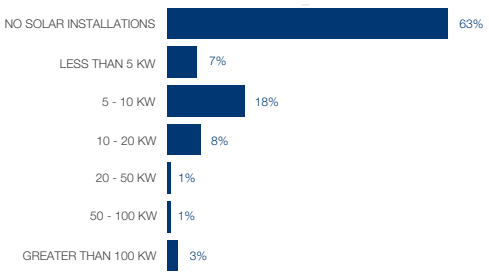
Comments:

Mobile phone and internet connectivity is becoming increasingly important with respect to decision making, getting access to real time data and feeding that data back into various software applications. Without dependable access, decision making in the organisation is sub-optimal. Examples of available information and applications that can assist with real time decision making are satellite imagery, banking, cashbook, stock on hand, chemical prices and commodity prices. Even the ability to text a photo or short video of a cotton plant or insect to a supplier or your agronomist can save time, money and yield.

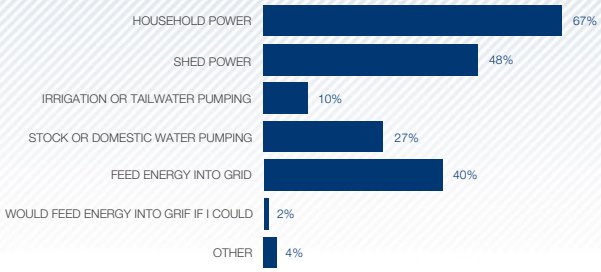
SOLAR ENERGY

37% of respondent cotton farms have solar energy installations.

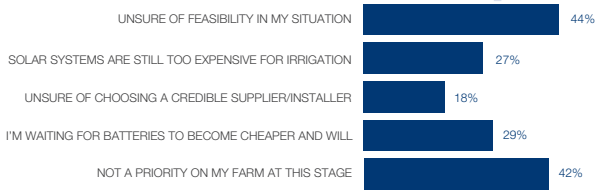
PROPORTION OF FARMS WITH SOLAR INSTALLATIONS INSTALLED, BY CAPACITY



USE OF SOLAR ENERGY



BARRIERS TO INVESTMENT IN SOLAR ENERGY FOR IRRIGATION PUMPING

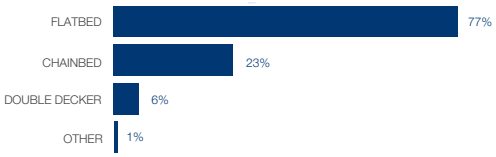


Comments:

With the cost of electricity seeing double digit percentage increases, people are looking for alternatives. It's interesting to note that the Top 20% Farmers have a significantly greater per hectare electricity cost than the Average Farmers, although it's hard to see any correlation between this statistic and the statistics on solar from the Roth Survey. As solar becomes more understood and accessible and gains more popularity with installations other than the home, it will be interesting to see the impact on electricity cost in our analysis.

TRUCK CONFIGURATION

PROPORTION OF RESPONDENTS USING EACH TYPE OF TRUCK CONFIGURATION



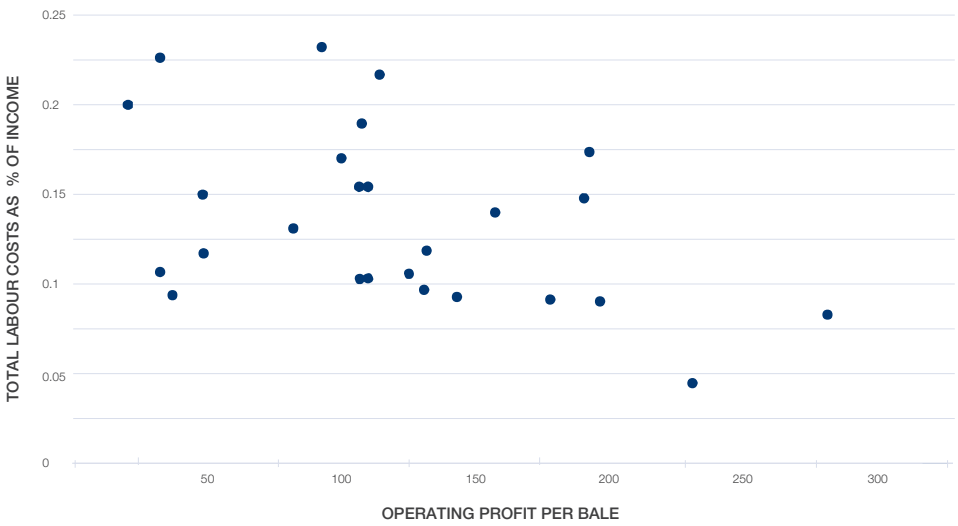
Comments:

Truck configuration statistics confirm the unintended changes from new technology. It's important to note that the impact on profit of the implementation / adoption of one piece of technology cannot be analysed in a narrow sense. So, for example, the implementation of new picking technology has many 'downstream' impacts such as trailer conversion and cost of wrap that need to be taken onto account in the analysis.

2.3.2 THE UNIVERSITY OF MELBOURNE – THE IMPACT OF FARM WORKFORCE TURNOVER IN THE COTTON SECTOR

A team at the University of Melbourne, led by Ruth Nettle, conducted research into "The Impact of Farm Workforce Turnover in The Cotton Sector". The research involved an analysis of profit and labour costs and also interviews with farmers. Below is a summary of their results.

LABOUR COSTS AS A PROPORTION OF INCOME VERSUS OPERATING PROFIT PER BALE (ALL YEARS)



While the evidence is not conclusive, a trend line in the scatter graph would suggest that there is a relationship between lower labour as a percentage of total income and a higher profit per bale.

Growers described workforce strategies revolving around:

- Core-permanent staff (often managers and experienced/senior farm hands) and
- Casual/contract staff that could be skilled and experienced or inexperienced (backpackers).

Farm workforce strategies differed depending on remoteness/isolation of farms; the location of farms and their water security (including the influence of climate/weather) and the investment in technology and infrastructure. Retaining core staff, in particular managers who led the human resource management initiatives on most of the case farms, was a key focus.

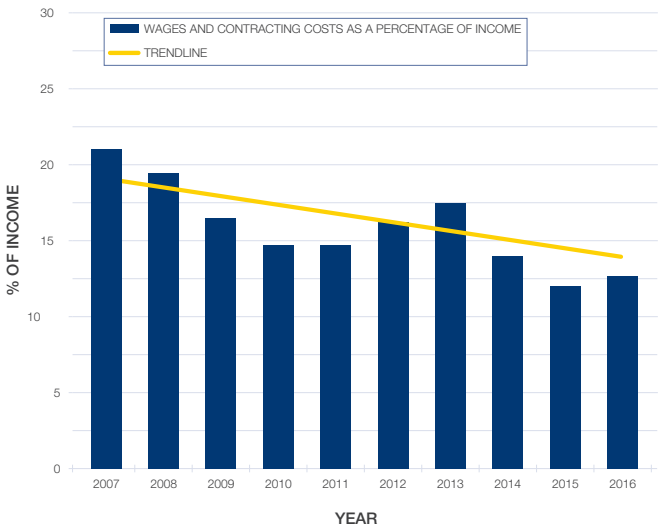
Whilst it was difficult to calculate turnover metrics because of a large number of casuals employed and many on short term arrangements, growers varied in their perceptions of the cost and impacts of employee turnover and in their beliefs about what acceptable levels of turnover are. For instance, some growers consider high workforce turnover as a cost of doing business when there is contraction and expansion of cotton plantings due to fluctuating water availability. Other growers value workforce stability and have structured their business in such a way that they are better able to retain their staff through varying seasonal conditions. Three types of employer responses to workforce management were determined and reflected the relative importance of valuing people and their needs to achieve business outcomes.

- **'Get the job done'**: These growers emphasised efficiency and 'managed' turnover using management practices such as labour contracting (outsourcing HRM), selection favoured particular attributes of employees based on ease of recruitment/short-term (e.g. backpackers; younger or older staff). These growers had high expectations of managers to lead the human resources management tasks/responsibilities and model desired behaviour.

- **'Look after people'**: These growers prioritised employee needs and emphasised retention in order to get the best performance (work output) for the farm;
- **'Get the best people'**: These growers emphasised recruitment, selection and induction in order to find people with the best fit and match with the farm culture and goals.

These last two types of growers 'actively avoided' turnover because the costs of turnover were perceived to be too high in lost time and lost expertise, meaning there was a heavy burden on the manager in continual training, and the negative impact on staff morale/staff productivity. These farms also appeared more likely to consider technology options to improve the employee work environment (and improve efficiency/productivity from the existing workforce) – for instance so they could grow the business without needing to source more employees).

WAGES AND CONTRACTING COSTS AS A PERCENTAGE OF INCOME



Comments:

This graph is taken from the Cotton Comparative Analysis historical data and shows that the percentage of wages and contracting costs as a percentage of income has been declining over many years. There are many reasons for this reduction – rising profit, automation, adoption of new technologies, reduction in the available labour force and the change in work mix from permanent to casual / part time.

2.3.3 NSW DEPARTMENT OF PRIMARY INDUSTRIES – BENCHMARKING COTTON WATER PRODUCTIVITY

Iain Hume, Beverley Orchard, Janelle Montgomery and Robert Hoogers used modern 'cloud based' technology, IrriSAT, and on ground yield measurement to estimate cotton's water productivity. The IrriSAT app calculates water use from crop coefficients (by satellite NDVI) and reference crop evapotranspiration (from Bureau of Meteorology online grids).

Crop water use and yield ranged widely over five cotton seasons (Figure 1). The most striking finding was that for a given amount of water used the yield could vary as much as 12 bales per ha. The 2015-16 season was the most variable (Table 1).

FIGURE 1 COTTON YIELD AND WATER USE OVER FIVE COTTON SEASONS

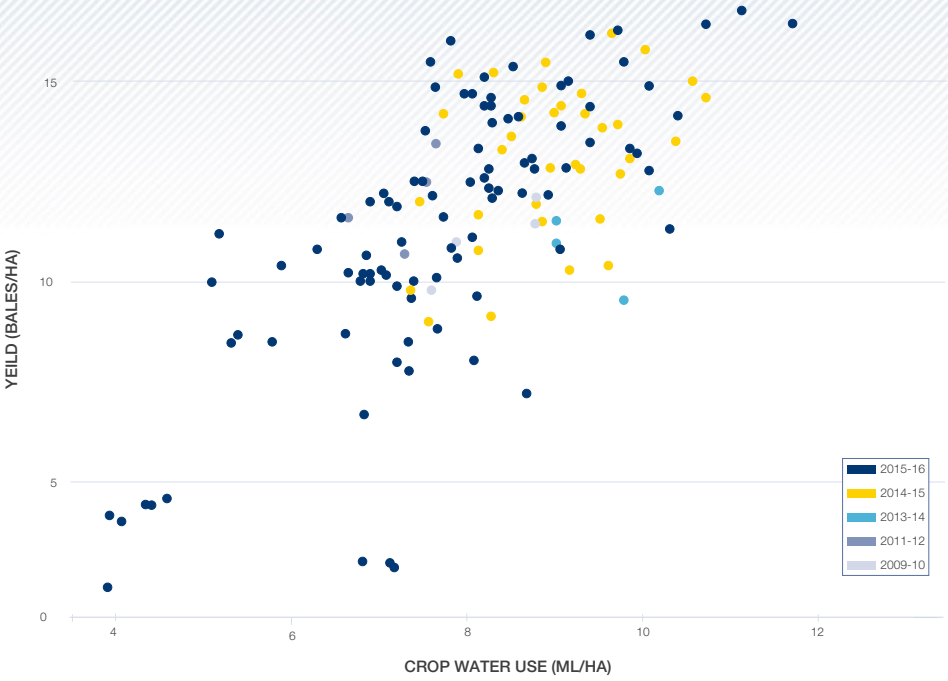


TABLE 1 THE MEAN AND RANGE IN WATER USE EFFICIENCY IN SIX COTTON SEASONS

SEASON	WATER USE EFFICIENCY (BALES/ML) MEAN	RANGE
2009-10	1.34	0.10
2011-12	1.66	0.28
2013-14	1.17	0.30
2014-15	1.47	0.84
2015-16	1.46	1.76

Our small study shows the potential of these new methods for comparative analysis. An extensive water productivity benchmarking system will need to involve those who collect yield data from many farms/fields; agronomic consultants and cotton gins are the most likely candidates.

This study was made possible with funding form CRDC and yield data provided by the CSD ambassador program, BlackEarth Agronomy and the Gwydir Valley Irrigators Association.

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Cottoninfo, Gwydir
NSW DPI, Wagga Wagga

Although the amount of water and the timing and method of application of water is so important, the results from this study are too varied to draw any conclusions from. We look forward to more study in this area and from these studies; we will continue to look for correlations between both data sets.

2.4 CONCLUSION

2015 and 2016 have been the most profitable years in the history of this analysis.

While profit was down slightly in 2016 from the previous year, it was still an exceptional result. With two good years back to back, growers would have the choice of debt reduction, farm improvements or new acquisitions. For some, tax will be an issue.

The outlook for the 2017 season is promising, with increased plantings coming after late rain.

The lack of water and water variability has really been an issue for the more established valleys since 2000. While much effort continues to be invested in trying to argue whether climate change is real, our view remains that growers should spend their efforts on ensuring they can survive and profit during extreme weather events. If this is achieved, profit will be maximised regardless of the outcome of the climate change debate.

Saving labour continues to be a strong focus in the industry. Farmers developing for the first time and others who are looking to re-laser are considering bankless channel farm layout. While the upfront cost is relatively easy to ascertain, the financial impacts (costs, impact on yield etc) are more difficult to consider. The industry continues to learn and adapt and this process is, in our view, being assisted by the practices in the emerging cotton growing areas.

The agricultural sector in general and the cotton industry in particular are known for their early adoption of technology. The technology available today, whether it is genetic, machinery-based or relating to systems and process, is definitely leading to increased yield and reduced labour. The question is, at what cost? If the maximisation of profit is the goal, we think growers should establish the impact of technology on profitability before it is adopted.

There is divergence in the industry between the newer cotton growing areas and the more established valleys. It's exciting to see the different areas learning from each other. The newer valleys are developing land for the first time whereas a lot of growers in the older valleys are looking to redevelop their farms with better layouts and irrigation methods. In our view, it is healthy for the industry to have these different stages in different cotton growing areas.

The 2016 Australian Cotton Comparative Analysis maintains our goal to measure and analyse the components that provide farmers with a stronger financial bottom line.

The cotton industry continues to reinvest in BMP, sustainability programs and in the communities in which it operates.

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3

Comparative Statistics

3.1 SUMMARY

3.1.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE 2016 YEAR

	YOUR FARM (TOTAL)	YOUR FARM	ALL FARMS	TOP 20%	BOTTOM 20%	LOW COST	GROWERS (> 2,000 HA)
INCOME							
Cotton proceeds - Lint			6,449	6,743	5,224	5,637	6,493
Cotton proceeds - Seed			917	1,174	919	941	862
Ginning			(752)	(773)	(649)	(659)	(731)
Levies			(49)	(50)	(44)	(47)	(47)
Cotton proceeds - Hail claims			0	0	0	1	0
			6,565	**7,094**	**5,450**	**5,873**	**6,577**
EXPENSES							
Cartage			103	96	78	127	88
Chemical application			184	184	224	170	162
Chemicals - Defoliants			51	69	44	52	57
Chemicals - Herbicides			153	112	244	97	91
Chemicals - Insecticides			164	117	164	88	100
Chemicals - Others			10	25	6	17	13
Chipping			9	3	0	0	0
Consultants			86	63	58	68	126
Contract picking			145	270	175	257	204
Contract farming and ripping			156	106	317	309	281
Cotton picking wrap and sundries			131	159	116	99	118
Depreciation			298	145	452	122	180
Electricity			109	166	84	89	93
Fertiliser			591	609	628	493	596
Fuel and oil			273	141	357	197	249
Hire of plant			26	6	22	17	38
Insurance			112	107	88	78	85
Licence fee - Bollgard			302	305	286	294	313
Licence fee - Roundup ready			62	74	67	73	58
Motor vehicle expenses			26	25	23	13	21
R & M - Farming plant			162	115	236	119	94
R & M - Pumps and earthworks			179	95	197	53	123
Seed			120	123	108	105	123
Water charges and purchases			310	90	499	271	232
Wages - Employees			547	628	617	411	500
Wages - Proprietors			27	25	20	18	7
Administration			57	27	33	17	47
Other farm overheads			107	38	158	39	68
			4,500	**3,923**	**5,301**	**3,693**	**4,067**
OPERATING PROFIT/(LOSS)			**2,065**	**3,171**	**149**	**2,180**	**2,510**
ADD:							
Wages - Proprietors			27	25	20	18	7
FARM OPERATING PROFIT/(LOSS)			**2,092**	**3,196**	**169**	**2798**	**2,517**

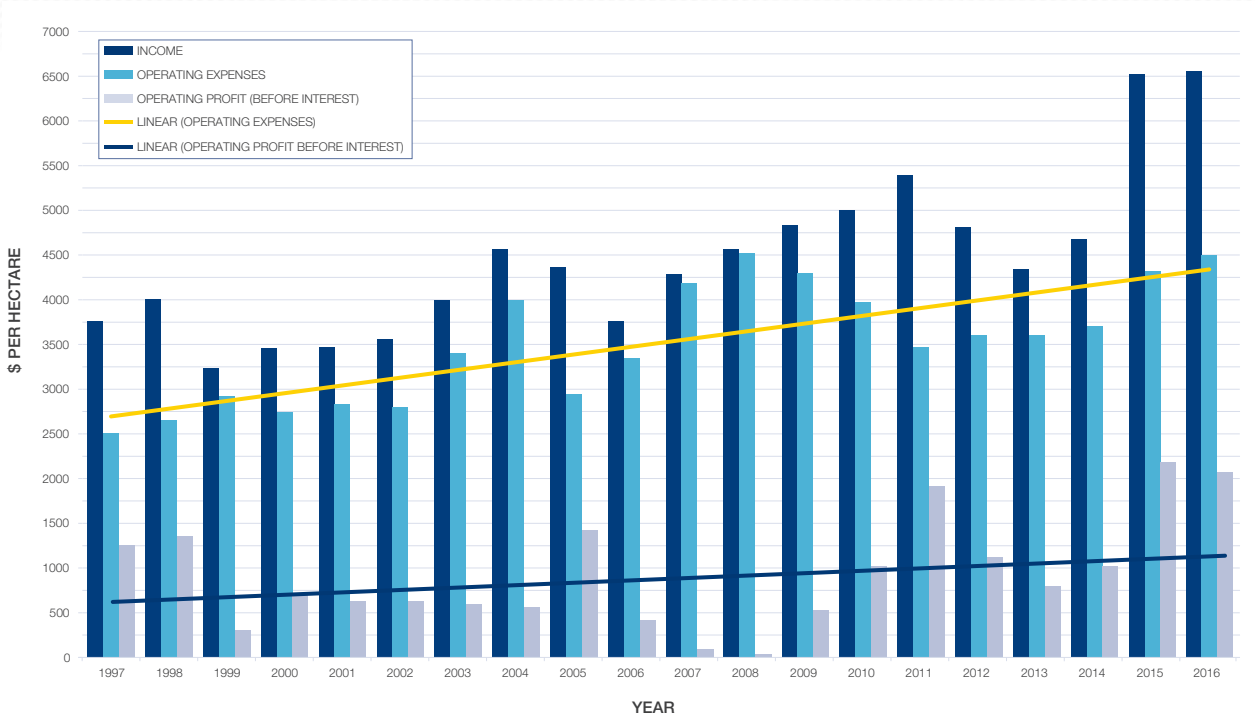
3.1.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE 2016 YEAR (continued)

	YOUR FARM (TOTAL)	YOUR FARM	ALL FARMS	TOP 20%	BOTTOM 20%	LOW COST	LARGE GROWERS (>2,000 HA)
DEDUCT:							
Interest and bank charges			385	37	569	201	449
Interest - Crop terms			1	0	4	0	0
			386	**37**	**573**	**201**	**449**
FARM NET PROFIT/(LOSS)			**$1,706**	**$3,159**	**($404)**	**$1,997**	**$2,068**
CROP RESULTS							
Hectares of cotton grown			878	838	1,081.76	1,405.92	2,782.25
Total yield			11,368	11,474	11,382.12	15,717.14	35,270.01
Yield per hectare			13	14	10.52	11.18	12.68
Value per bale			507	518	$517.94	$525.31	$518.86
Cost of production per bale			348	286	$504.00	$330.34	$320.90
Operating profit/(loss) per bale			160	232	$13.94	$195.11	$197.96
Number of bales per hectare required to cover operating expenses			9	8	10.24	7.03	7.84
Number of bales per hectare required to cover total expenses			10	8	11.34	7.41	8.71

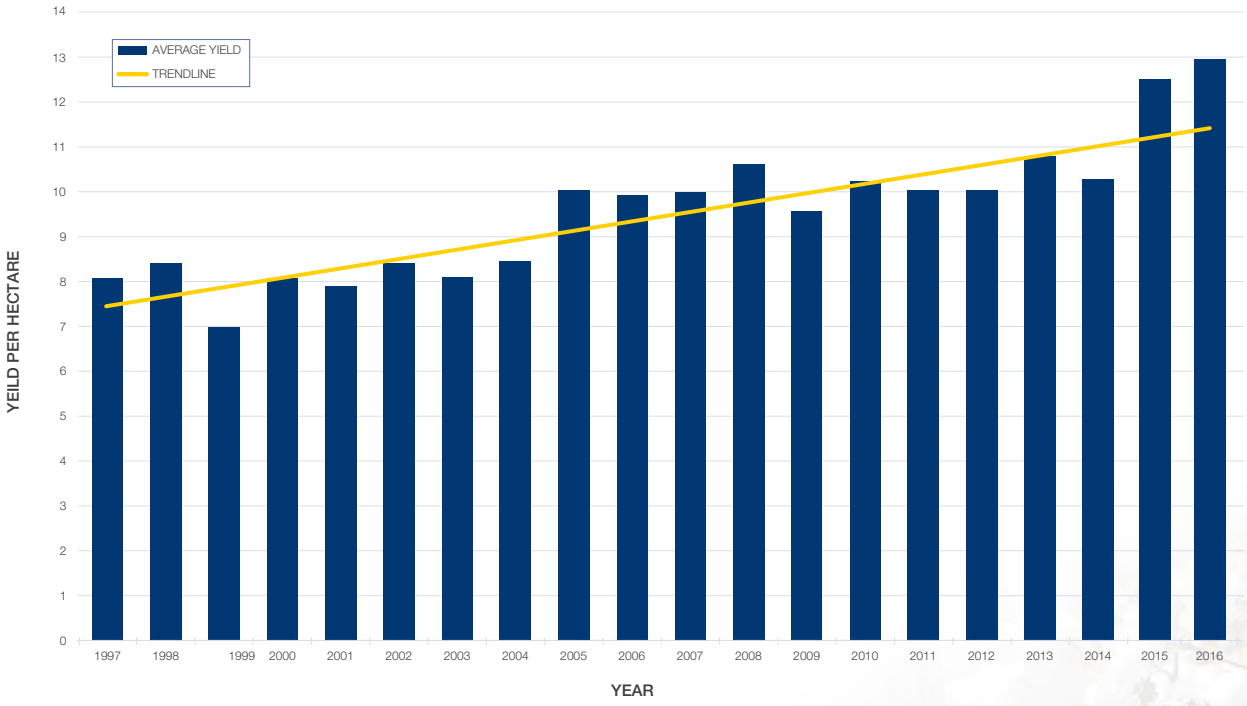
3.2 AVERAGE FARMERS PER HECTARE

3.2.1 GRAPHS

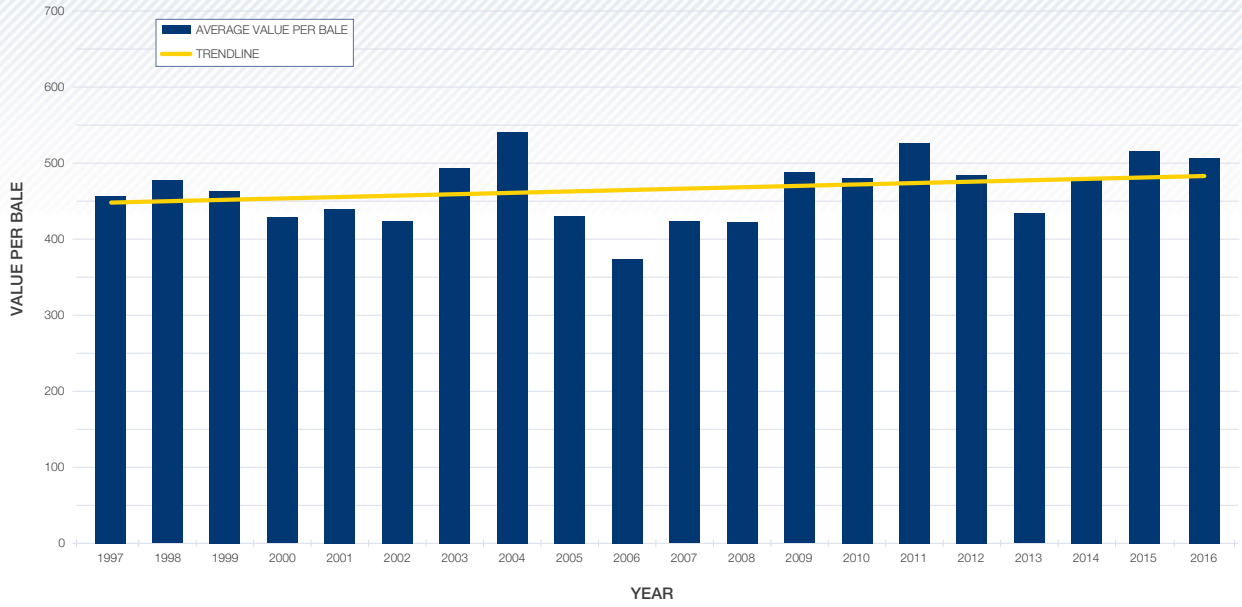
3.2.1.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS



3.2.1.2 YIELD AND TRENDLINE



3.2.1.3 VALUE PER BALE AND TRENDLINE



3.2.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									INCOME	
3,963	4,027	4,265	4,758	5,256	4,866	4,712	4,709	6,133	Cotton proceeds - Lint	6,449
859	1,016	935	742	546	400	524	805	1,180	Cotton proceeds - Seed	917
(551)	(521)	(495)	(542)	(484)	(512)	(630)	(621)	(744)	Ginning	(752)
(38)	(33)	(37)	(35)	(33)	(31)	(36)	(46)	(54)	Levies	(49)
49	73	169	79	106	70	17	57	10	Cotton proceeds - Hail claims	0
4,282	**4,562**	**4,837**	**5,002**	**5,391**	**4,793**	**4,587**	**4,904**	**6,525**		**6,565**
									EXPENSES	
128	101	100	112	136	117	132	86	106	Cartage	103
115	110	87	136	138	131	106	151	146	Chemical application	184
54	71	79	63	55	53	42	49	61	Chemicals - Defoliants	51
159	183	174	108	108	85	84	115	116	Chemicals - Herbicides	153
132	116	144	151	142	84	35	81	112	Chemicals - Insecticides	164
3	4	48	38	11	7	5	4	6	Chemicals - Others	10
91	39	24	15	2	3	3	2	1	Chipping	9
75	63	76	72	64	57	52	43	45	Consultants	86
257	250	255	261	282	241	176	182	151	Contract picking	145
77	85	42	24	122	164	215	100	102	Contract farming and ripping	156
10	6	14	9	55	84	78	75	104	Cotton picking wrap and sundries	131
338	508	372	426	164	178	227	249	354	Depreciation	298
40	46	59	79	76	29	45	50	104	Electricity	109
312	394	428	399	387	517	546	533	478	Fertiliser	591
418	429	327	305	258	271	403	380	377	Fuel and oil	273
9	12	2	7	22	43	32	52	39	Hire of plant	26
227	216	217	179	161	123	110	104	116	Insurance	112
173	232	218	252	286	292	310	305	270	Licence fee - Bollgard	302
26	50	50	62	60	56	39	69	69	Licence fee - Roundup ready	62
30	31	34	35	21	19	19	19	23	Motor vehicle expenses	26
133	139	137	154	121	109	123	113	159	R & M - Farming plant	162
128	133	116	183	61	84	130	159	217	R & M - Pumps and earth-works	179
112	98	105	126	115	146	107	79	140	Seed	120
399	439	486	189	134	141	160	306	343	Water charges	310
473	445	391	384	357	344	380	391	514	Wages - Employees	547
96	105	106	69	20	21	31	17	25	Wages - Proprietors	27
68	58	58	35	49	47	52	56	93	Administration	57
103	162	154	103	65	155	166	148	92	Other farm overheads	107
4,186	**4,525**	**4,303**	**3,976**	**3,472**	**3,601**	**3,808**	**3,918**	**4,363**		**4,500**
96	37	534	1,026	1,919	1,192	779	986	2,162	**OPERATING PROFIT/(LOSS)**	2,065
96	105	106	69	20	21	31	17	25	Wages - Proprietors	27
192	**142**	**640**	**1,095**	**1,939**	**1,213**	**810**	**1,003**	**2,187**	**FARM OPERATING PROFIT/ (LOSS)**	**2,092**

3.2.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS (continued)

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									DEDUCT:	
1,168	1,704	1,137	1,009	380	409	389	292	288	Interest and bank charges	385
0	0	0	0	0	0	11	0	0	Interest - Crop terms	1
1,168	**1,704**	**1,137**	**1,009**	**380**	**409**	**400**	**292**	**288**		**386**
($976)	**($1,562)**	**($497)**	**$86**	**$1,559**	**$804**	**$410**	**$711**	**$1,899**	**FARM NET PROFIT/(LOSS)**	**$1,706**
									CROP RESULTS	
531.13	449.09	486.65	621.17	1,426.48	1,675.67	1,517.64	1,593.12	926.11	Hectares of cotton grown	878.11
5,311.07	4,769.71	4,660.90	6,363.40	14,325.75	16,272.11	16,223.03	16,320.98	11,660.33	Total yield (bales)	11,368.18
10.00	10.62	9.58	10.24	10.04	9.71	10.69	10.24	12.59	Yield per hectare (bales)	12.95
$423.35	$422.66	$487.41	$480.56	$526.23	$486.42	$427.44	$473.05	$517.48	Value per bale	507.15
$418.66	$425.99	$449.40	$388.37	$345.82	$370.77	$356.27	$382.31	$346.53	Cost of production per bale	347.51
$9.61	$3.50	$55.70	$99.94	$190.92	$122.89	$72.75	$96.31	$171.72	Operating profit per bale	159.68
9.89	10.70	8.83	8.28	6.60	7.40	8.91	8.28	8.43	Number of bales per hectare required to cover operating expenses	8.87
12.65	14.74	11.16	10.38	7.32	8.24	9.85	8.90	8.99	Number of bales per hectare required to cover total expenses	9.63

3.2.3 COMPARISON OF AVERAGE RESULTS BETWEEN THE 2016 AND 2015 YEAR

	ALL FARMS 2016	ALL FARMS 2015	DIFFERENCE
INCOME			
Cotton proceeds - Lint	6,449	6,133	316
Cotton proceeds - Seed	917	1,180	(263)
Ginning	(752)	(744)	(8)
Levies	(49)	(54)	5
Cotton proceeds - Hail claims	0	10	(10)
	6,565	**6,525**	**40**
EXPENSES			
Cartage	103	106	3
Chemical application	184	146	(38)
Chemicals - Defoliants	51	61	10
Chemicals - Herbicides	153	116	(37)
Chemicals - Insecticides	164	112	(52)
Chemicals - Others	10	6	(4)
Chipping	9	1	(8)
Consultants	86	45	(41)
Contract picking	145	151	6
Contract farming and ripping	156	102	(54)
Cotton picking wrap and sundries	131	104	(27)
Depreciation	298	354	56
Electricity	109	104	(5)
Fertiliser	591	478	(113)
Fuel and oil	273	377	104
Hire of plant	26	39	13
Insurance	112	116	4
Licence fee - Bollgard	302	270	(32)
Licence fee - Roundup Ready	62	69	7
Motor vehicle expenses	26	23	(3)
R & M - Farming plant	162	159	(3)
R & M - Pumps and earthworks	179	217	38
Seed	120	140	20
Water charges and purchases	310	343	33
Wages - Employees	547	514	(33)
Wages - Proprietors	27	25	(2)
Administration	57	93	36
Other farm overheads	107	92	(15)
	4,500	**4,363**	**(137)**
OPERATING PROFIT/(LOSS)	**2,065**	**2,162**	**(97)**
ADD:			
Wages - Proprietors	27	25	(2)
FARM OPERATING PROFIT/(LOSS)	**2,092**	**2,187**	**95**

3.2.3 COMPARISON OF AVERAGE RESULTS BETWEEN THE 2016 AND 2015 YEAR (continued)

	ALL FARMS 2016	ALL FARMS 2015	DIFFERENCE
DEDUCT:			
Interest and bank charges	385	288	(97)
Interest - Crop terms	1	0	(1)
	386	**288**	**(98)**
FARM NET PROFIT/(LOSS)	**$1,706**	**$1,899**	**($193)**
CROP RESULTS			
Hectares of cotton grown	878.11	926.11	(48.00)
Total yield (bales)	11,368.18	11,660.33	(292.15)
Yield per hectare (bales)	12.95	12.59	0.36
Value per bale	$507.15	$517.48	($10.33)
Cost of production per bale	$347.51	$346.53	($0.98)
Operating profit per bale	$159.68	$171.72	($12.04)
Number of bales per hectare required to cover operating expenses	8.87	8.43	(0.44)
Number of bales per hectare required to cover total expenses	9.63	8.99	(0.64)

3.2.4 COMPARISON OF THE AVERAGES OF THE DIFFERENT VALLEYS

	ALL VALLEYS AVE FIGURES	GWYDIR AVE FIGURES	McINTYRE/ BARWON AVE FIGURES	MACQUARIE AVE FIGURES	NAMOI AVE FIGURES	SOUTHERN VALLEYS AVE FIGURES
INCOME						
Cotton proceeds - Lint	6,449	6,676	7,654	6,842	5,000	6,024
Cotton proceeds - Seed	917	801	422	1,293	955	1,054
Ginning	(752)	(762)	(816)	(846)	(636)	(702)
Levies	(49)	(53)	(44)	(55)	(35)	(48)
Cotton proceeds - Hail claims	0	0	0	0	0	0
	6,565	**6,662**	**7,216**	**7,234**	**5,284**	**6,328**
EXPENSES						
Cartage	103	100	66	196	15	110
Chemical application	184	225	95	114	217	181
Chemicals - Defoliants	51	44	40	59	42	61
Chemicals - Herbicides	153	215	86	173	335	94
Chemicals - Insecticides	164	233	75	58	271	108
Chemicals - Other	10	8	1	5	5	17
Chipping	9	3	1	67	5	0
Consultants	86	61	231	37	30	80
Contract picking	145	32	78	55	146	254
Contract farming and ripping	156	45	44	65	13	346
Cotton picking wrap and sundries	131	129	131	164	211	113
Depreciation	298	439	439	245	603	108
Electricity	109	120	16	41	262	113
Fertiliser	591	613	498	472	683	603
Fuel and oil	273	231	268	204	373	251
Hire of plant	26	16	5	45	6	47
Insurance	112	183	111	108	74	68
Licence fee - Bollgard	302	290	377	346	250	290
Licence fee - Roundup ready	62	67	14	32	59	74
Motor vehicle expenses	26	28	35	27	28	16
R & M - Farming plant	162	248	217	214	262	57
R & M - Pumps and earthworks	179	154	216	353	285	88
Seed	120	107	117	124	126	126
Water charges and purchases	310	237	101	1,437	451	273
Wages - Employees	547	569	673	352	943	419
Wages - Proprietors	27	41	71	84	0	0
Administration	57	75	131	97	38	13
Other farm overheads	107	161	44	86	164	78
	4,500	**4,674**	**4,181**	**5,260**	**5,897**	**3,988**
OPERATING PROFIT/(LOSS)	**2,065**	**1,988**	**3,035**	**1,974**	**(613)**	**2,340**
ADD:						
Wages - Proprietors	27	41	71	84	0	0
FARM OPERATING PROFIT/(LOSS)	**2,092**	**2,029**	**3,106**	**2,058**	**(613)**	**2,340**

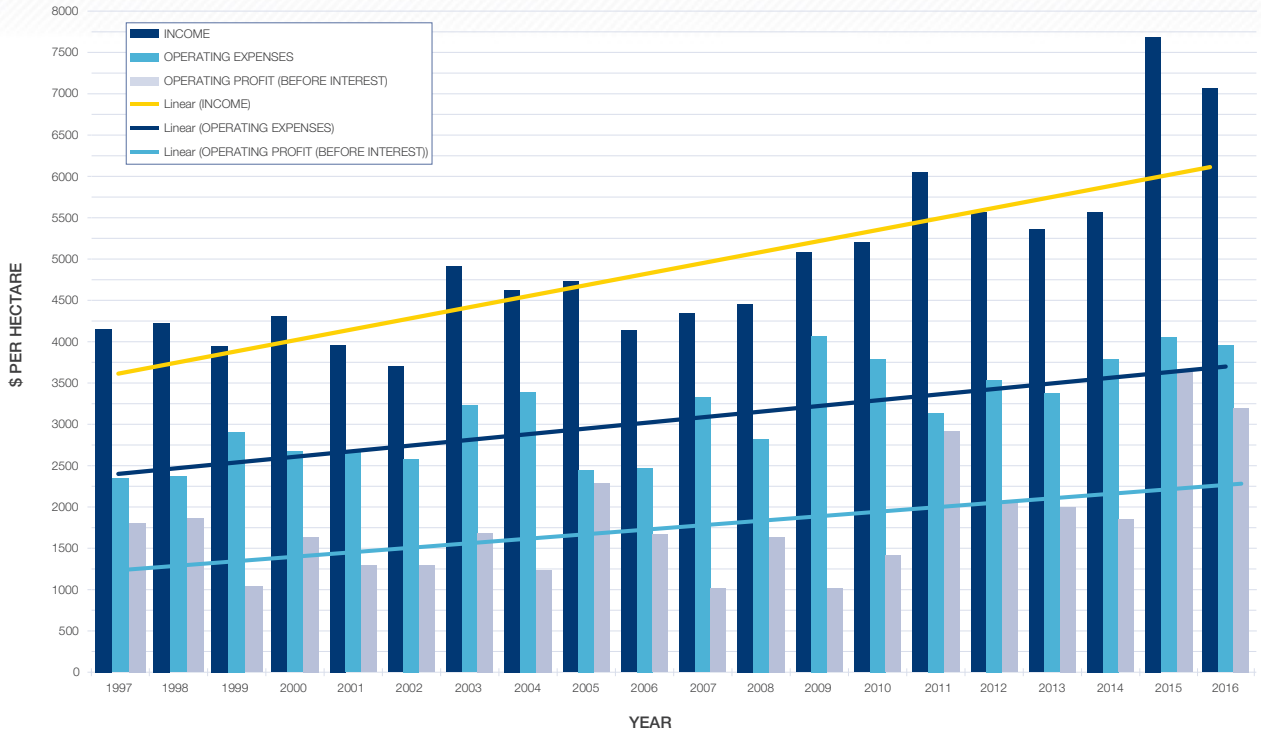
3.2.4 COMPARISON OF THE AVERAGES OF THE DIFFERENT VALLEYS (continued)

	ALL VALLEYS AVE FIGURES	GWYDIR AVE FIGURES	McINTYRE/ BARWON AVE FIGURES	MACQUARIE AVE FIGURES	NAMOI AVE FIGURES	SOUTHERN VALLEYS AVE FIGURES
DEDUCT:						
Interest and bank charges	385	632	412	70	25	434
Interest - Crop terms	1	4	0	0	0	0
	386	**636**	**412**	**70**	**25**	**434**
FARM NET PROFIT/(LOSS)	**$1,706**	**$1,393**	**$2,694**	**$1,988**	**($638)**	**$1,906**
CROP RESULTS						
Hectares of cotton grown	878.11	572.64	648.30	379.75	519.50	2196.50
Total yield	11368.18	7418.52	8844.25	5413.84	6593.87	27070.01
Yield per hectare	12.95	12.95	13.64	14.26	12.69	12.32
Value per bale	507.15	514.29	528.86	507.46	416.22	514.17
Cost of production per bale	347.51	360.85	306.52	368.65	464.64	323.45
Operating profit/(loss) per bale	159.68	153.44	222.34	138.81	(48.43)	190.04
Number of bales per hectare required to cover operating expenses	8.87	9.09	7.91	10.36	14.17	7.75
Number of bales per hectare required to cover total expenses	9.63	10.33	8.69	10.49	14.23	8.60

3.3 TOP 20% FARMERS PER HECTARE

3.3.1 GRAPH

3.3.1.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS



3.3.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									INCOME	
3,950	3,997	4,368	5,067	5,659	5,509	5,502	5,270	7,071	Cotton proceeds - Lint	6,743
848	871	1,081	753	584	484	629	1,046	1,467	Cotton proceeds - Seed	1,174
(508)	(499)	(518)	(581)	(560)	(478)	(740)	(677)	(789)	Ginning	(773)
(38)	(34)	(40)	(37)	(36)	(40)	(49)	(41)	(54)	Levies	(50)
89	123	188	0	404	112	33	9	0	Cotton proceeds - Hail claims	0
4,341	**4,458**	**5,079**	**5,202**	**6,051**	**5,587**	**5,375**	**5,607**	**7,695**		**7,094**
									EXPENSES	
94	125	113	123	148	114	166	113	74	Cartage	96
95	99	77	152	149	125	96	142	148	Chemical application	184
43	63	59	45	50	54	51	57	58	Chemicals - Defoliants	69
117	97	154	108	112	61	66	152	140	Chemicals - Herbicides	112
113	67	160	175	146	89	58	126	174	Chemicals - Insecticides	117
4	6	79	61	12	10	8	4	10	Chemicals - Others	25
70	38	14	14	0	6	4	2	1	Chipping	3
63	49	73	81	60	71	51	61	70	Consultants	63
258	321	201	192	253	292	237	153	144	Contract picking	270
133	126	30	17	97	114	208	154	152	Contract farming and ripping	106
7	3	24	8	51	64	98	90	98	Cotton picking wrap and sundries	159
251	208	298	423	112	183	158	226	411	Depreciation	145
15	16	76	124	115	20	93	13	31	Electricity	166
207	169	422	299	353	544	453	580	485	Fertiliser	609
411	280	444	298	213	233	244	418	349	Fuel and oil	141
0	0	3	0	35	6	16	42	1	Hire of plant	6
207	195	238	204	174	125	94	90	159	Insurance	107
152	259	220	221	298	287	305	300	192	Licence fee - Bollgard	305
22	50	45	60	43	51	42	69	63	Licence fee - Roundup ready	74
37	26	37	36	17	25	14	12	14	Motor vehicle expenses	25
103	64	147	145	87	66	103	118	146	R & M - Farming plant	115
141	70	114	221	54	122	119	174	334	R & M - Pumps and earthworks	95
84	99	112	108	102	136	103	87	154	Seed	123
14	1	107	30	61	126	150	238	184	Water charges	90
484	273	453	428	274	300	269	277	338	Wages - Employees	628
88	29	114	76	20	27	27	8	12	Wages - Proprietors	25
65	32	65	24	50	39	70	29	33	Administration	27
50	56	189	118	51	234	68	31	87	Other farm overheads	38
3,328	**2,821**	**4,068**	**3,791**	**3,137**	**3,524**	**3,371**	**3,766**	**4,062**		**3,923**
1,013	**1,637**	**1,011**	**1,411**	**2,914**	**2,063**	**2,004**	**1,841**	**3,633**	**OPERATING PROFIT/(LOSS)**	**3,171**
									ADD:	
88	29	114	76	20	27	27	8	12	Wages - Proprietors	25
1,101	**1,666**	**1,125**	**1,487**	**2,934**	**2,090**	**2,031**	**1,849**	**3,645**	**FARM OPERATING PROFIT/(LOSS)**	**3,196**

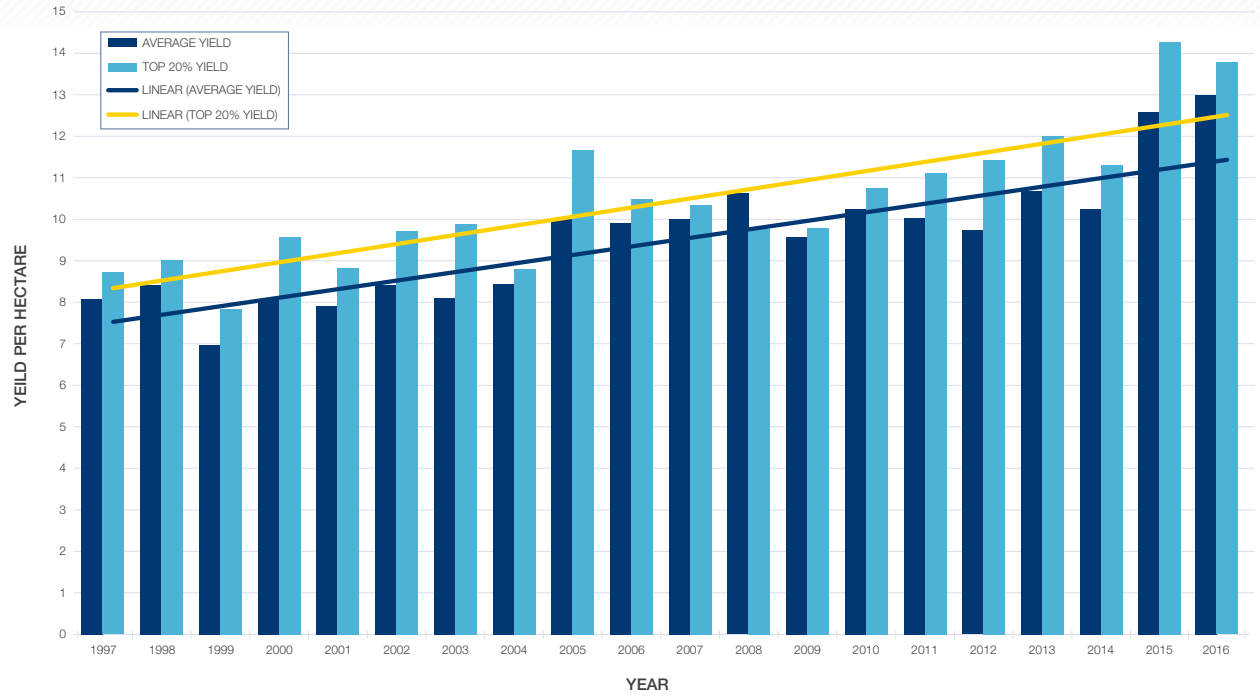
3.3.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS (continued)

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									DEDUCT:	
981	711	872	797	185	353	496	306	257	Interest and bank charges	37
0	0	0	0	0	0	0	0	0	Interest - Crop terms	0
981	**711**	**872**	**797**	**185**	**353**	**496**	**306**	**257**		**37**
$120	**$955**	**$253**	**$690**	**$2,749**	**$1,737**	**$1,535**	**$1,543**	**$3,388**	**FARM NET PROFIT/(LOSS)**	**$3,159**
									CROP RESULTS	
644.33	701.35	556.97	789.00	1,124.75	1,186.93	833.94	2,365.17	997.79	Hectares of cotton grown	838.00
6,666.75	6,847.50	5,451.00	8,480.00	12,506.75	13,596.12	9,999.47	27,308.14	14,283.13	Total yield (bales)	11,473.66
10.35	9.76	9.79	10.75	11.12	11.45	11.99	11.55	14.31	Yield per hectare (bales)	13.69
$410.89	$443.99	$499.72	$484.00	$507.94	$477.90	$445.47	$484.87	$537.62	Value per bale	$518.14
$321.74	$288.83	$415.45	$352.51	$282.04	$307.69	$281.13	$326.34	$283.59	Cost of production per bale	$286.43
$97.78	$167.74	$103.46	$131.48	$262.27	$180.02	$167.08	$159.32	$254.03	Operating profit per bale	$231.70
8.10	6.35	8.14	7.83	6.17	7.37	7.57	7.77	7.55	No. of bales per hectare required to cover operating expenses	7.57
10.49	7.95	9.88	9.47	6.54	8.12	8.68	8.40	8.03	No. of bales per hectare required to cover total expenses	7.64

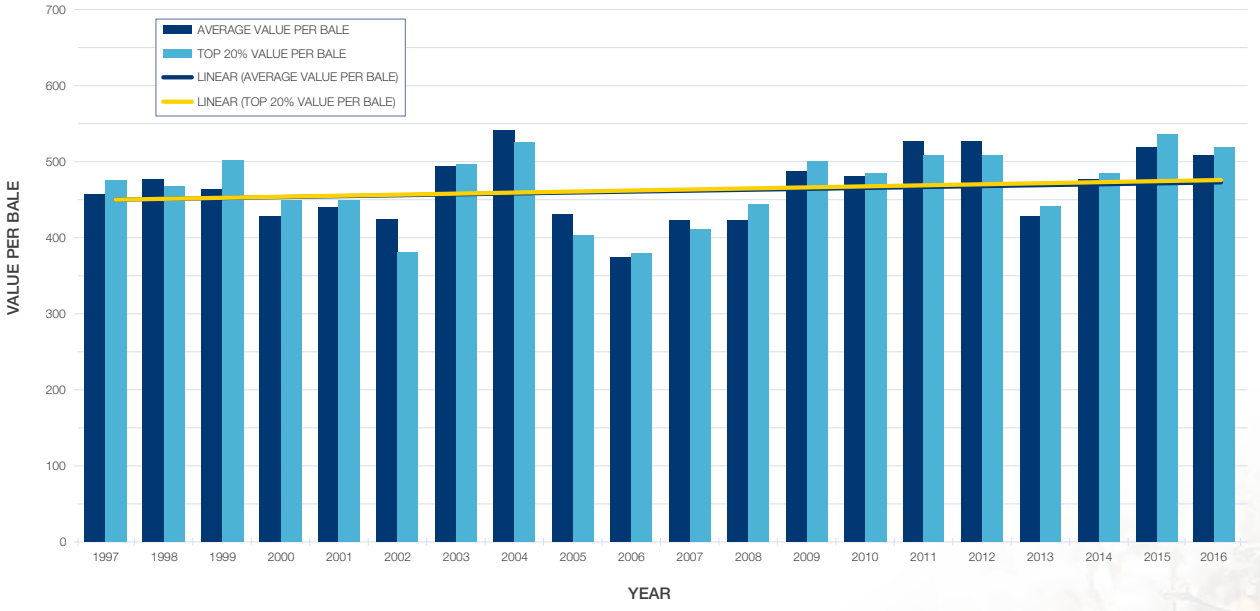
3.4 TOP 20% FARMERS VERSUS AVERAGE FARMERS PER HECTARE

3.4.1 GRAPHS

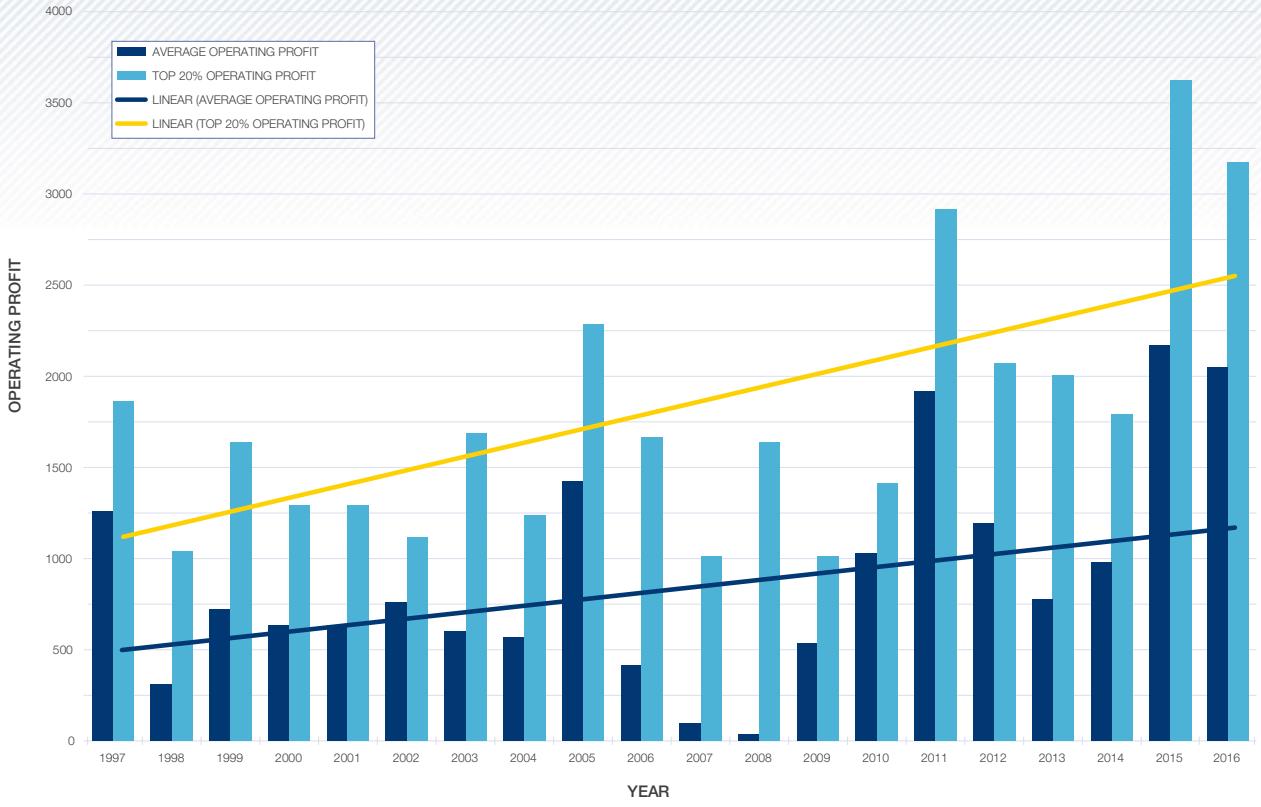
3.4.1.1 COMPARISON OF YIELD



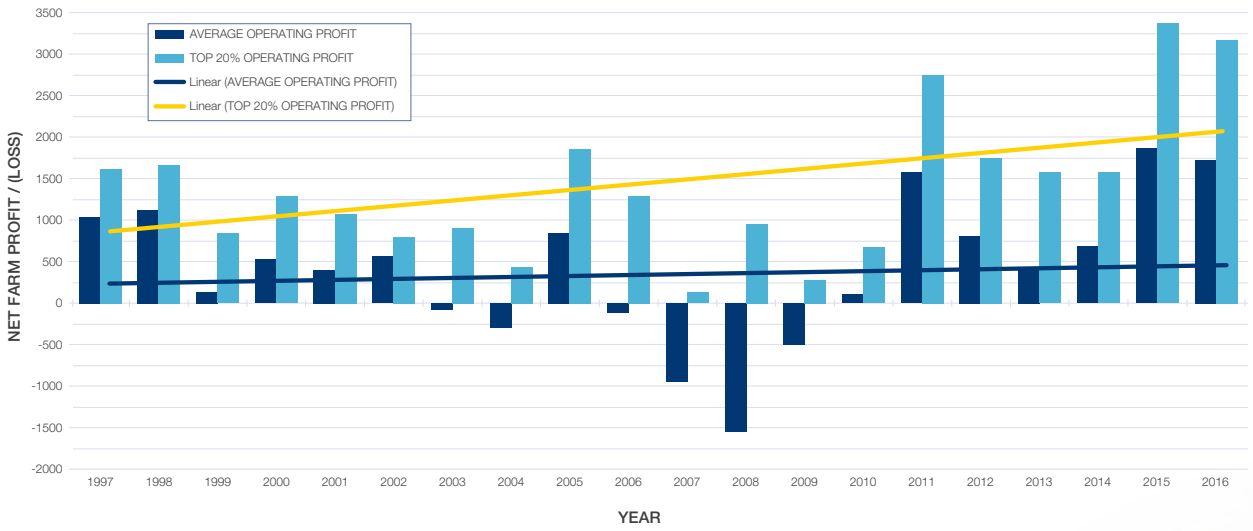
3.4.1.2 COMPARISON OF VALUE PER BALE



3.4.1.3 COMPARISON OF OPERATING PROFIT



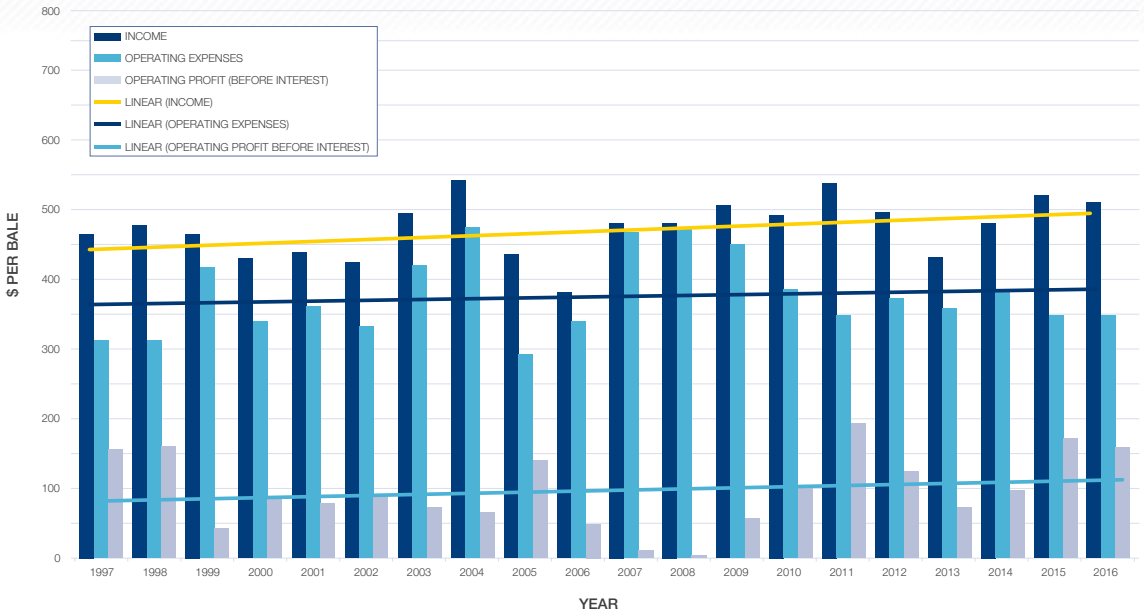
3.4.1.4 COMPARISON OF NET FARM PROFIT/(LOSS)



3.5 PER BALE FIGURES

3.5.1 GRAPH

3.5.1.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS



3.5.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									INCOME	
396	379	445	464	523	501	441	460	487	Cotton proceeds - Lint	495
86	96	98	72	54	41	49	79	94	Cotton proceeds - Seed	79
(55)	(49)	(52)	(53)	(48)	(53)	(59)	(61)	(59)	Ginning	(60)
(4)	(3)	(4)	(3)	(3)	(3)	(3)	(4)	(4)	Levies	(4)
5	7	18	8	11	7	2	6	1	Cotton proceeds - Hail claims	0
428	**430**	**505**	**488**	**537**	**494**	**429**	**479**	**518**		**511**
									EXPENSES	
13	10	10	11	14	12	12	8	8	Cartage	9
12	10	9	13	14	13	10	15	12	Chemical application	13
5	7	8	6	5	5	4	5	5	Chemicals - Defoliants	4
16	17	18	11	11	9	8	11	9	Chemicals - Herbicides	13
13	11	15	15	14	9	3	8	9	Chemicals - Insecticides	12
0	0	5	4	1	1	0	0	0	Chemicals - Others	1
9	4	3	1	0	0	0	0	0	Chipping	1
8	6	8	7	6	6	5	4	4	Consultants	5
26	24	27	25	28	25	16	18	12	Contract picking	13
8	8	4	2	12	17	20	10	8	Contract farming and ripping	10
1	1	1	1	5	9	7	7	8	Cotton picking wrap and sundries	10
34	48	39	42	16	18	21	24	28	Depreciation	25
4	4	6	8	8	3	4	5	8	Electricity	7
31	37	45	39	39	53	51	52	38	Fertiliser	42
42	40	34	30	26	28	38	37	30	Fuel and oil	26
1	1	0	1	2	4	3	5	3	Hire of plant	2
23	20	23	17	16	13	10	10	9	Insurance	10
17	22	23	25	28	30	29	30	21	Licence fee - Bollgard	23
3	5	5	6	6	6	4	7	5	Licence fee - Roundup ready	5
3	3	4	3	2	2	2	2	2	Motor vehicle expenses	2
13	13	14	15	12	11	12	11	13	R & M - Farming plant	14
13	13	12	18	6	9	12	16	17	R & M - Pumps and earthworks	14
11	9	11	12	11	15	10	8	11	Seed	9
40	41	51	18	13	15	15	30	27	Water charges	25
47	42	41	37	36	35	36	38	41	Wages - Employees	39
10	10	11	7	2	2	3	2	2	Wages - Proprietors	4
7	5	6	3	5	5	5	5	7	Administration	5
10	15	16	10	6	16	16	14	7	Other farm overheads	9
419	**426**	**449**	**388**	**346**	**371**	**356**	**382**	**347**		**355**
10	**3**	**56**	**100**	**191**	**123**	**73**	**96**	**172**	**OPERATING PROFIT/(LOSS)**	**156**
									ADD:	
10	10	11	7	2	2	3	2	2	Wages - Proprietors	4
19	**13**	**67**	**107**	**193**	**125**	**76**	**98**	**174**	**FARM OPERATING PROFIT/ (LOSS)**	**160**

3.5.2 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS (continued)

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									DEDUCT:	
117	160	119	98	38	42	36	29	23	Interest and bank charges	31
0	0	0	0	0	0	1	0	0	Interest - Crop terms	0
117	**160**	**119**	**98**	**38**	**42**	**37**	**29**	**23**		**31**
($98)	**($147)**	**($52)**	**$8**	**$155**	**$83**	**$38**	**$69**	**$151**	**FARM NET PROFIT/(LOSS)**	**$129**
									CROP RESULTS	
531.13	449.09	486.65	621.17	1,426.48	1,675.67	1,517.64	1,593.12	926.11	Hectares of cotton grown	878.11
5,311.07	4,769.71	4,660.90	6,363.40	14,325.75	16,272.11	16,223.03	16,320.98	11,660.33	Total yield (bales)	11,368.18
10.00	10.62	9.58	10.24	10.04	9.71	10.69	10.24	12.59	Yield per hectare (bales)	12.95
$423.35	$422.66	$487.41	$480.56	$526.23	$486.42	$427.44	$473.05	$517.48	Value per bale	$507.15
$418.66	$425.99	$449.40	$388.37	$345.82	$370.77	$356.27	$382.31	$346.53	Cost of production per bale	$347.51
$9.61	$3.50	$55.70	$99.94	$190.92	$122.89	$72.75	$96.31	$171.72	Operating profit per bale	$159.68
9.89	10.70	8.83	8.28	6.60	7.40	8.91	8.28	8.43	Number of bales per hectare required to cover operating expenses	8.87
12.65	14.74	11.16	10.38	7.32	8.24	9.85	8.90	8.99	Number of bales per hectare required to cover total expenses	9.63

3.5.3 COMPARISON OF TOP 20% FARMERS AND AVERAGE FARMERS FOR THE PAST FIVE YEARS
(2012, 2013, 2014, 2015, 2016)

	ALL FARMS AVERAGE	TOP 20% AVERAGE	DIFFERENCE
INCOME			
Cotton proceeds - Lint	5,374	6,019	645
Cotton proceeds - Seed	765	960	195
Ginning	(652)	(691)	(40)
Levies	(43)	(47)	(4)
Cotton proceeds - Hail claims	31	31	0
	5,475	**6,272**	**797**
EXPENSES			
Cartage	109	113	(4)
Chemical application	144	139	5
Chemicals - Defoliants	51	58	(7)
Chemicals - Herbicides	111	106	4
Chemicals - Insecticides	95	113	(18)
Chemicals - Others	6	11	(5)
Chipping	4	3	0
Consultants	57	63	(7)
Contract picking	179	219	(40)
Contract farming and ripping	147	147	1
Cotton picking wrap and sundries	94	102	(7)
Depreciation	261	225	37
Electricity	67	65	3
Fertiliser	533	534	(1)
Fuel and oil	341	277	64
Hire of plant	38	14	24
Insurance	113	115	(2)
Licence fee - Bollgard	296	278	18
Licence fee - Roundup ready	59	60	(1)
Motor vehicle expenses	21	18	3
R & M - Farming plant	133	110	24
R & M - Pumps and earthworks	154	169	(15)
Seed	118	121	(2)
Water charges	252	158	94
Wages - Employees	435	362	73
Wages - Proprietors	24	20	4
Administration	61	40	21
Other farm overheads	134	92	42
	4,038	**3,729**	**309**
OPERATING PROFIT/(LOSS)	**1,437**	**2,542**	**1,106**
ADD:			
Wages - Proprietors	24	20	(4)
FARM OPERATING PROFIT/(LOSS)	**1,461**	**2,562**	**1,101**

3.5.3 COMPARISON OF TOP 20% FARMERS AND AVERAGE FARMERS FOR THE PAST FIVE YEARS (2012, 2013, 2014, 2015, 2016) (continued)

	ALL FARMS AVERAGE	TOP 20% AVERAGE	DIFFERENCE
DEDUCT:			
Interest and bank charges	353	290	63
Interest - Crop terms	2	0	2
	355	**290**	**65**
FARM NET PROFIT/(LOSS)	**$1,106**	**$2,272**	**$1,166**
CROP RESULTS			
Hectares of cotton grown	1,318.13	1,244.37	(73.77)
Total yield (bales)	14,368.93	15,332.10	963.18
Yield per hectare (bales)	11.24	12.60	1.36
Value per bale	$482.31	$492.80	$10.49
Cost of production per bale	$360.68	$297.04	$63.64
Operating profit per bale	$124.67	$198.43	$73.76
Number of bales per hectare required to cover operating expenses	8.38	7.57	0.81
Number of bales per hectare required to cover total expenses	9.12	8.17	0.95

3.6 LOW COST FARMERS

3.6.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									INCOME	
3,669	3,997	4,769	4,268	4,508	4,749	4,313	4,444	5,699	Cotton proceeds - Lint	5,637
757	871	1,078	718	440	382	302	746	1,156	Cotton proceeds - Seed	941
(468)	(499)	(520)	(498)	(445)	(561)	(523)	(604)	(710)	Ginning	(659)
(35)	(34)	(46)	(30)	(29)	(31)	(28)	(51)	(56)	Levies	(47)
106	123	0	0	350	9	27	4	7	Cotton proceeds - Hail claims	1
4,029	**4,458**	**5,281**	**4,458**	**4,824**	**4,548**	**4,091**	**4,539**	**6,096**		**5,873**
									EXPENSES	
81	125	171	91	122	88	121	100	109	Cartage	127
98	99	144	123	129	116	80	132	140	Chemical application	170
43	63	60	79	69	58	49	48	58	Chemicals - Defoliants	52
121	97	193	89	108	69	66	99	101	Chemicals - Herbicides	97
132	67	26	140	80	61	47	74	109	Chemicals - Insecticides	88
4	6	4	5	11	10	5	3	5	Chemicals - Others	17
70	38	11	14	0	2	0	1	1	Chipping	0
55	49	64	62	57	38	35	44	16	Consultants	68
302	321	339	361	258	295	90	246	169	Contract picking	257
104	126	23	29	64	130	380	102	33	Contract farming and ripping	309
6	3	38	3	43	61	72	61	90	Cotton picking wrap and sundries	99
176	208	191	332	141	179	207	189	269	Depreciation	122
12	16	29	7	66	33	29	21	37	Electricity	89
188	169	174	518	296	448	410	505	444	Fertiliser	493
356	280	272	347	201	202	299	337	284	Fuel and oil	197
0	0	1	3	11	52	67	70	21	Hire of plant	17
244	195	228	148	141	119	45	104	87	Insurance	78
110	259	310	308	315	281	175	317	277	Licence fee - Bollgard	294
19	50	60	53	55	53	29	67	66	Licence fee - Roundup ready	73
30	26	33	33	18	15	28	15	18	Motor vehicle expenses	13
89	64	110	147	77	80	60	115	84	R & M - Farming plant	119
107	70	86	88	58	49	51	79	124	R & M - Pumps and earthworks	53
85	99	114	160	101	165	104	75	133	Seed	105
9	1	26	13	144	181	192	308	303	Water charges	271
415	273	659	286	285	287	193	319	525	Wages - Employees	411
62	29	0	49	7	22	33	13	8	Wages - Proprietors	18
43	32	66	43	38	48	42	56	55	Administration	17
60	56	80	43	65	38	97	62	77	Other farm overheads	39
3,021	**2,821**	**3,512**	**3,574**	**2,960**	**3,180**	**3,006**	**3,562**	**3,643**		**3,693**
1,008	**1,637**	**1,769**	**884**	**1,864**	**1,368**	**1,085**	**977**	**2,453**	**OPERATING PROFIT/(LOSS)**	**2,180**
									ADD:	
62	29	0	49	7	22	33	13	8	Wages - Proprietors	18
1,070	**1,666**	**1,769**	**933**	**1,871**	**1,390**	**1,118**	**990**	**2,461**	**FARM OPERATING PROFIT/ (LOSS)**	**2,198**

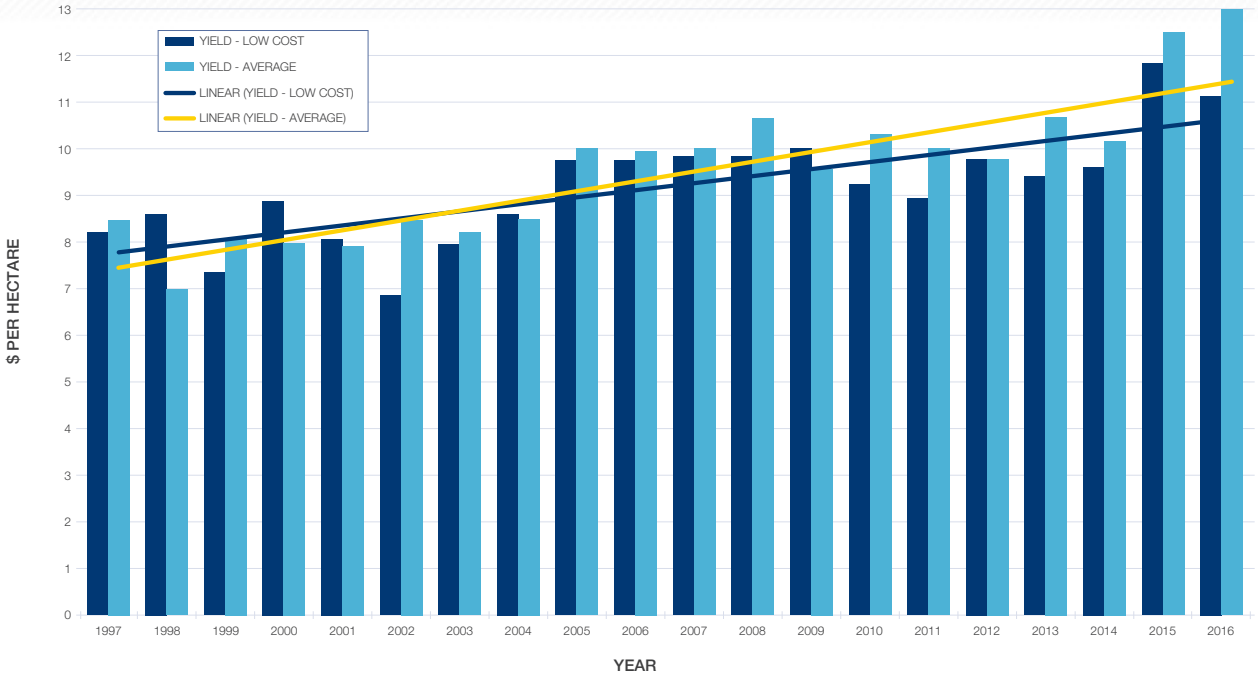
3.6.1 COMPARISON OF AVERAGE INCOME AND EXPENSE ITEMS FOR THE PAST 10 YEARS (continued)

2007	2008	2009	2010	2011	2012	2013	2014	2015		2016
									DEDUCT:	
976	711	76	1,418	333	345	543	357	194	Interest and bank charges	201
0	0	0	0	0	0	65	0	0	Interest - Crop terms	0
976	711	76	1,418	333	345	608	357	194		201
$94	**$955**	**$1,693**	**($485)**	**$1,538**	**$1,045**	**$510**	**$633**	**$2,267**	**FARM NET PROFIT/(LOSS)**	**$1,997**
									CROP RESULTS	
812	701	568	713	1,276	1,532	1,014	1,934	1,242	Hectares of cotton grown	1,405.92
7,886.50	6,847.50	5,676.00	6,535.00	11,428.00	14,857.26	9,539.47	18,683.35	14,707.30	Total yield (bales)	15,717.14
9.72	9.76	9.99	9.17	8.95	9.70	9.41	9.66	11.84	Yield per hectare (bales)	11.18
$403.66	$443.99	$528.61	$486.02	$499.65	$468.02	$431.96	$469.31	$514.36	Value per bale	525.31
$310.51	$288.83	$351.21	$389.29	$330.42	$327.83	$319.61	$368.46	$307.83	Cost of production per bale	330.34
$104.07	$167.74	$177.40	$96.73	$208.27	$141.11	$115.23	$101.28	$207.08	Operating profit per bale	195.11
7.48	6.35	6.64	7.35	5.92	6.79	6.96	7.58	7.09	Number of bales per hectare required to cover operating expenses	7.03
9.89	7.95	6.78	10.26	6.59	7.53	8.37	8.35	7.46	Number of bales per hectare required to cover total expenses	7.41

3.7 LOW COST FARMERS VERSUS AVERAGE FARMERS

3.7.1 GRAPH

3.7.1.1 COMPARISON OF YIELD



4 Appendices

APPENDIX A

DEFINITION OF TERMS

TOP 20% AND BOTTOM 20% (AVERAGE)

These figures represent the average results of those farmers who achieved the highest and lowest farm operating profit (after using an average cotton price for all growers).

BEST "LOW COST" FARMERS

These figures represent the average results of those farmers who had the lowest farm operating expenses (before interest).

LARGE GROWERS

These figures represent the average results of those farmers who grew more than 2,500 hectares.

COMBINED AVERAGE OF FIVE YEARS TO 2016

These figures represent the average of the annual results of farmers in each category of the comparative analysis, over a five year period. We have also analysed the combined average of the Top 20% Farmers for comparative purposes.

LABOUR

These figures include all permanent employees or equivalent casuals (two casuals employed for three months each would represent half of a permanent employee). Proprietors have been excluded.

AVAILABLE TRACTOR HORSE POWER (ENGINE)

Includes all field tractors used for ripping, listing, spraying and cultivating, but excludes tractors used to operate module builders.

AVAILABLE PICKING CAPACITY

Only includes pickers owned by the farmer.

ROTATION

The portion of the current year's crop grown on fields fallowed in the previous year, or developed over the past four years, expressed as a percentage.

WATER USAGE

Includes the total megalitres of irrigation water used to grow the crop as well as the impact of beneficial rain. Rainfall figures during the growing season have been converted to megalitres after excluding light falls and a portion of falls over 100 mm per month.

APPENDIX B

GUIDE TO INCOME AND EXPENSE ALLOCATIONS

COTTON PROCEEDS

Cotton Proceeds – Lint is net of premiums and discounts.

For farmers who received hail insurance claims, the amount received has been shown separately in the analysis. Where possible the hail claim has been grossed up to reflect the bales lost due to hail and the costs saved or additional costs incurred have been added or subtracted to reflect comparable figures.

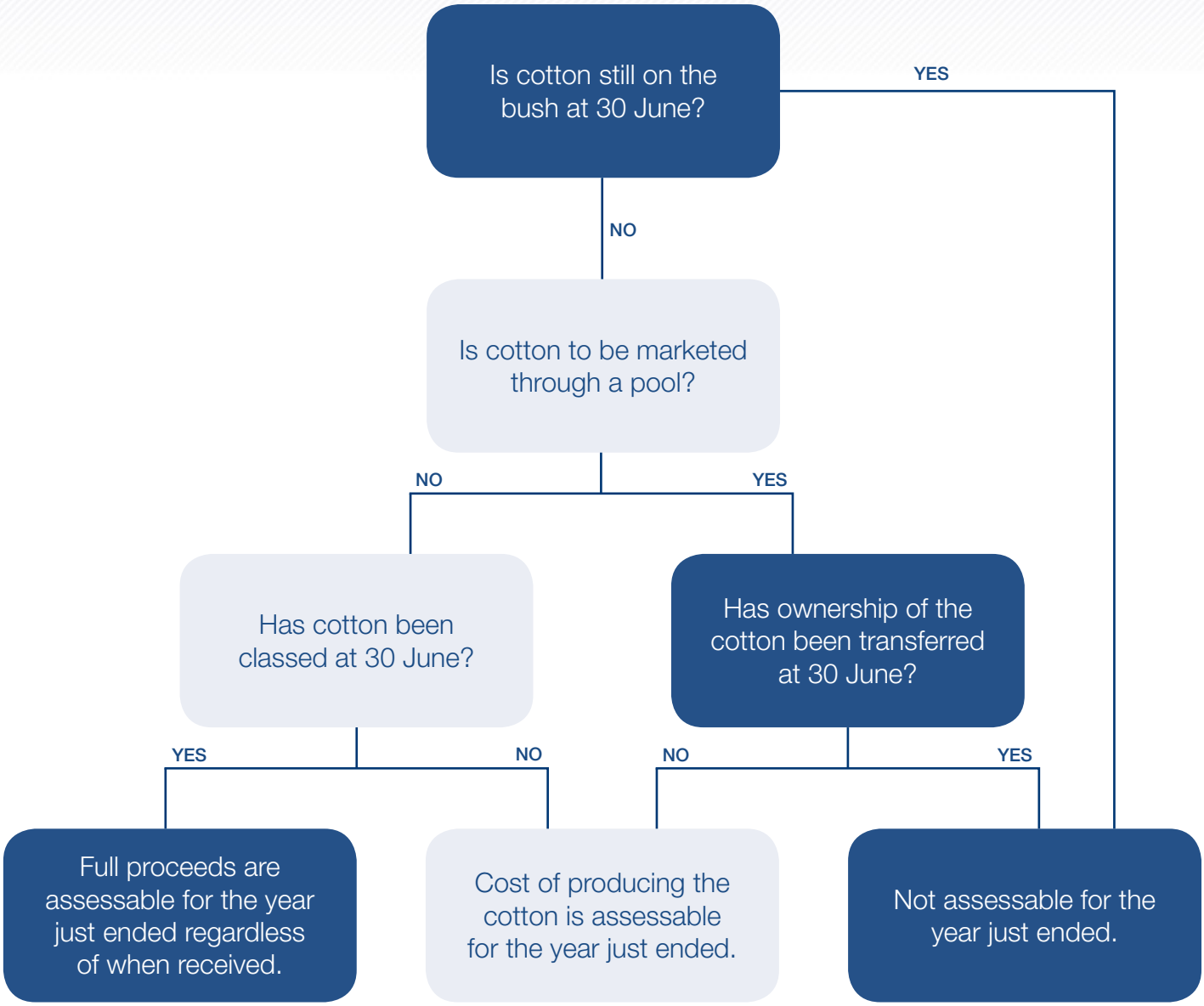
EXPENSES

Cartage	cartage (cotton module cartage, general cartage)
Chemical application	application by aircraft, application by ground rig
Chemicals – Defoliants	all defoliants and conditioners
Chemicals – Herbicides	herbicides used in field and on ditches, channels etc.
Chemicals – Insecticides	all insecticides
Chemicals – Other	growth regulants (pix) and all other chemicals
Chipping	chipping (chipping contractors, chipping wages), row weeders
Consultants	consultants (external and internal agronomist, bug checkers, marketing consultants)
Contract picking	contract picking (net of contract picking income on a swap basis, ie. hectare for hectare)
Contract farming and ripping	contract farming, contract ripping, contract stalk pulling, stick picking
Cotton wrap and picking sundries	cotton wrap and sundries (tarps and ropes, repairs to tarps)
Depreciation	depreciation
Electricity	electricity (electricity for bores, general electricity)
Fertiliser	fertiliser, gypsum
Fuel and oil	fuel and oil (net of diesel fuel rebate)
Hire of plant	hire of plant
Insurance	crop insurance, general insurance
Licence fee – Bollgard	licence fees paid to Monsanto for the Bollgard licence
Licence fee – Roundup Ready	licence fees paid to Monsanto for the Roundup Ready licence
Motor vehicle expenses	motor vehicle expenses (registration, motor vehicle insurance, R & M motor vehicle)

R & M – Farming plant	R & M pickers, R & M plant, R & M tractors, R & M small tools and hardware, R & M motor bikes
R & M – Pumps and earthworks	R & M irrigation earthworks, R & M irrigation pumps and motors
Seed	seed
Water charges and Purchases	water charges (charges from a state body, charges from a local water scheme, water purchases and temporary transfer water purchases
Wages – Employees	external wages (excluding chipping), payroll tax, secretarial fees, superannuation, workers compensation insurance, FBT
Wages – Proprietors	wages paid to a proprietor. If no wage is paid a notional amount, based on their involvement in the operation, has been included for each working proprietor. If the farm has more than one enterprise, the proprietors wage is split in accordance with normal allocation criteria
Administration	accountancy (all general work), administration, advertising, computer costs, computer processing, entertainment, filing fees, licences permits and fees, medical supplies, newspapers and periodicals, printing stationery and postage, protective clothing, seminars and conferences, staff amenities, staff training, subscriptions and donations, telephone, travel and accommodation
Other farm overheads	special accountancy work, audit, legal, rates, rent, R & M homestead, R & M employees' houses, R & M farm buildings, R & M fences, shade and shelter trees
Interest and bank charges	bank charges, borrowing expenses, bank interest, leasing, and hire purchase interest charges
Interest – Crop terms	interest on crop term finance (chemical suppliers and cotton merchants etc)

APPENDIX C

CHART OF ASSESSABILITY OF COTTON PROCEEDS



Notes:

- The guaranteed minimum price of a GMP pool is assessable as cash. The balance is treated as a pool.
- 'Cost of producing' is the cost of severing the cotton from the land plus any other costs spent directly on the lint or seed prior to 30 June of that year.

The marketing of cotton is a complex issue. The taxation treatment relies on the wording of a particular contract.

This schedule is designed to provide general advice only. If you need specific advice, please contact us. On this basis, we accept no liability for any errors or omissions.

APPENDIX D

COMMON SHAREFARMING AND LEASING ARRANGEMENTS

Below are some details of common practices.

- **Sharefarming (80% – 20% deal)**

  80% of income to the sharefarmer.
  20% of income to the landholder.

  - Sharefarmer pays all operating costs.
  - Landholder pays landholder's costs (rates) and costs to deliver water to the head ditch (pumping, water charges, and main channel maintenance).

- **Sharefarming (82% – 18% deal)**

  82% of income to the sharefarmer.
  18% of income to the landholder.

  - Sharefarmer pays all costs except rates.

- **Leasing**

  - A starting point is generally 4% – 6% of the value of the full watered developed area.

Australian Government

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