Analysis of Agricultural Production and Issues in the Darling Downs: Surat Gas Project Supplementary Report to the Environmental Impact Statement

Report prepared for Arrow Energy Pty Ltd

and Coffey Environments Australia Pty Ltd

Final Report

May, 2013

AECgroup

Outcome Driven

Document Control

Job ID:	16765BNE
Job Name:	Surat Gas Project Supplementary Report to EIS - Economics
Client:	Arrow Energy Pty Ltd (SREIS managed by Coffey Environments Australia Pty Ltd)
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Document Name:	7040_12_Specialist_Economic_Report_Final
Last Saved:	13/5/2013 11:32 AM

Version	Date	Reviewed	Approved
Draft v1.0	28 February, 2012	KL	AP
Draft v2.0	15 March, 2013	KL	AP
Draft v3.0	22 March, 2013	KL	AP
Draft v4.0	19 April, 2013	KL	AP
Draft v5.0	6 May, 2013	KL	AP
Final Report	13 May, 2013	KL	AP

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1. Analysis of Agricultural Industry

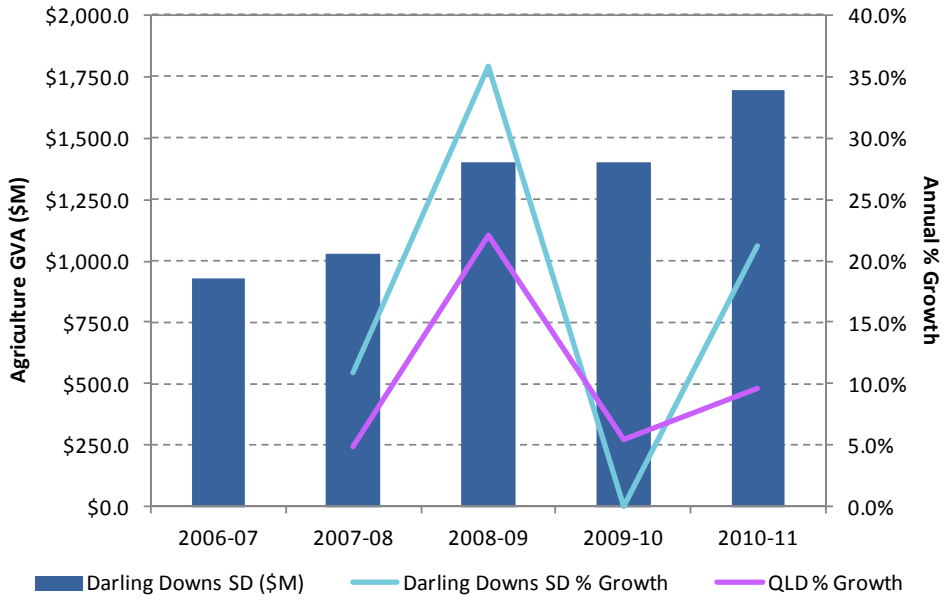
1.1 Introduction

This report has been prepared to update key agricultural production and value statistics and trends for the Darling Downs presented in Appendix F and Appendix O of the Surat Gas Project Environmental Impact Statement (EIS). Data from the 2010-11 Agricultural Census (ABS, 2012) has been used, as well as other relevant data sources. The report also examines current and emerging factors influencing the agricultural industry in the Darling Downs.

1.2 Agricultural Overview

Agriculture is one of the leading sectors within the Darling Downs Statistical Division (SD), contributing 12.9% of the region's total gross value added activity in 2010-11. Figure 1.1 shows the industry has recorded strong growth in recent years in both the Darling Downs SD and Queensland, having rebounded from the drought conditions confronting the industry for the majority of the first decade of the 2000s. The industry is highly volatile and susceptible to changes in various external drivers including weather (e.g. swings between drought and flood) and global economic conditions.

Figure 1.1. Agricultural Gross Value Add, Darling Downs SD, 2006-07 to 2010-11



Source: AEC*group*

The Darling Downs agricultural sector is both significant and diverse, with the region accounting for 88.1% of egg production, 65% of total cotton value, 95.7% of pome fruit value, 66.6% of grain sorghum production, 48.2% of wheat production and 64.5% of pig production in Queensland in 2010-11. Cattle and calves are also one of the largest contributors to the region's total value of agricultural commodities (ABS, 2012 & 2012a).

Table 1.1 shows a comparison of the value of agricultural commodities produced (VACP) across the Darling Downs SD and Queensland in the years 2006-07 and 2010-11. Additional detail regarding agricultural production and value by commodity is provided in Appendix A. Points of interest from the table and Appendix A include:

- The area of land used for agricultural purposes was lower in 2010-11 than in 2006-07 in both Darling Downs and Queensland. A number of factors have contributed to this result, which are examined in section 1.3.

- The volume and value of production for broadacre crops in the Darling Downs was considerably higher in 2010-11 from a drought affected low level of production in 2006-07. This was despite flooding events in late December 2010 and early January 2011 that affected harvesting of around 20% of winter crop production, and planting of summer crops (ABARES, 2011). Of note:
  - Production of wheat, a traditionally strong winter crop in the Darling Downs SD, increased from 195,353 tonnes in 2006-07 to 734,964 tonnes in 2010-11, driving a four-fold increase in the total value of wheat produced from the region.
  - Sorghum, a staple summer crop in the Darling Downs SD, also experienced an increase in production between 2006-07 and 2010-11, from 562,973 tonnes to 787,648 tonnes, with an associated 41% increase in VACP.
  - The barley and maize cereal crops also both increased considerably between 2006-07 and 2010-11, contributing over $20 million in gross value of production in 2010-11 respectively. The Darling Downs constitutes a sizeable proportion of the total Queensland crop for both of these commodities.
  - Cotton recorded its biggest season on record in 2012 (Davies, 2012), following a strong season in 2010-11 (161,210 tonnes of cotton lint, VACP of $361.3 million). This was considerably higher than the drought affected 2006-07 season, which recorded just 44,319 tonnes of cotton lint and a VACP of $77.8 million.
  - The value of mung bean production was six times higher in 2010-11 than in 2006-07. It should be noted that mung bean production can be highly volatile from season to season.
- The VACP of livestock slaughtering and other disposals in the Darling Downs SD in 2006-07 was 2.4 times higher than that recorded in 2010-11. Flooding events in late December 2010 and early January 2011 were a contributing factor, with some cattle sales being abandoned in the region (ABARES, 2011). Another contributing factor was drought conditions in 2006-07, which combined with high prices for livestock, encouraged producers to cull their herd and flock numbers. Livestock farmers have been rebuilding herd and flock numbers in recent years. The Pittsworth and Killarney abattoirs also closed down during this period as Leitch Pastoral Group went bankrupt, which may account for some of the decline in value outlined.

Table 1.1. Gross Value of Agricultural Commodities Produced, 2006-07 and 2010-11

Commodity	Darling Downs SD		Queensland	
	2006-07	2010-11	2006-07	2010-11
Land Area of Holding				
Land Area Used for Agriculture (ha)	7,620,936	6,052,343	143,870,532	135,513,003
Broadacre Crops				
Crops Cut For Hay ($M)	$55.4	$29.5	$194.4	$111.0
Cereal Crops				
Wheat ($M)	$47.1	$182.5	$187.5	$378.4
Sorghum ($M)	$118.8	$167.6	$189.2	$251.7
Barley ($M)	$12.1	$20.0	$19.2	$26.9
Maize ($M)	$8.0	$23.0	$22.0	$40.0
Other Cereal Crops ($M)	$6.8	$6.8	$11.1	$13.2
Legumes for Grain ($M)				
Chickpeas ($M)	$15.6	$14.9	$35.6	$55.5
Mung Beans ($M)	$1.9	$12.3	$6.8	$35.5
Other Legumes for Grain ($M)	$1.3	$0.5	$2.4	$1.2
Oilseeds ($M)	$0.9	$4.4	$3.8	$10.2
Cotton ($M)	$77.8	$361.3	$121.3	$776.1
Other Crops ($M) [(a)]	$11.6	$4.7	$1,109.3	$936.9
Total Broadacre Crops ($M)	**$357.4**	**$827.5**	**$1,983.7**	**$2,636.6**

Commodity	Darling Downs SD		Queensland	
	2006-07	2010-11	2006-07	2010-11
Horticulture				
Nurseries, Cut Flowers and Cultivated Turf ($M)	$14.4	$22.4	$287.5	$293.9
Vegetables for Seed ($M)	$0.1	$0.1	$20.8	$31.8
Vegetables for Human Consumption ($M)				
Lettuce	$25.9	$25.9	$98.4	$64.3
Melons	$12.2	$10.2	$85.0	$53.9
Mushrooms	$7.8	$9.6	$46.2	$41.4
Onions	$7.3	$8.5	$33.5	$35.2
Tomatoes	$2.3	$8.4	$169.1	$229.8
Capsicum (excl. Chillies)	$16.3	$5.6	$112.8	$83.0
Broccoli	$5.3	$4.1	$15.2	$28.8
Cauliflower	$9.6	$2.6	$15.3	$11.5
Beans (French and Runner)	$5.5	$2.2	$51.3	$94.3
Other Vegetables for Human Consumption	$56.9	$40.7	$375.5	$435.4
Citrus Fruit ($M)	$11.5	$0.0	$138.5	$133.2
Pome Fruit ($M)	$33.4	$60.0	$33.9	$62.7
Stone Fruit ($M)	$16.6	$11.2	$22.9	$14.8
Other Horticulture ($M)	$10.9	$12.5	$1,264.0	$651.0
Total Horticulture ($M)	**$235.8**	**$224.0**	**$2,769.8**	**$2,265.0**
Livestock Slaughtered and Other Disposals				
Sheep and Lambs ($M)	$13.6	$6.0	$44.8	$54.9
Cattle and Calves ($M)	$981.7	$269.2	$3,815.9	$3,418.1
Pigs ($M)	$126.6	$142.7	$236.6	$221.3
Goats ($M)	$6.1	$5.7	$22.8	$39.2
Poultry ($M)	$8.1	$75.0	$239.4	$395.5
Other Livestock ($M)	$0.0	$0.0	$0.0	$0.0
Total Livestock Slaughtered and Other Disposals ($M)	**$1,136.0**	**$498.6**	**$4,359.5**	**$4,129.0**
Livestock Products				
Eggs Produced for Human Consumption ($M)	$70.6	$131.3	$92.9	$149.0
Wool ($M)	$23.7	$13.1	$120.2	$117.8
Whole Milk ($M)	$40.0	$80.6	$207.1	$257.5
Total Livestock Products ($M)	**$134.2**	**$225.0**	**$420.2**	**$524.3**
Total Agriculture				
Total Agriculture Value ($M)	**$1,863.5**	**$1,775.1**	**$9,533.2**	**$9,554.9**

Note: Agricultural Census data can include some high standard errors at regional geographic levels, and caution should be applied when comparing data between collection years. (a) 'Other Crops' includes lavender, pasture seed, peanuts, sugar cane, coriander and all other crops n.e.c. The vast majority of the value of other crops in Queensland is in sugar cane.
Source: ABS (2008), ABS (2012), ABS (2012a)

Table 1.2 shows a production comparison of various agricultural commodities in the Darling Downs region from 2000-01 and 2010-11. The table highlights the considerable decline in cereal crop and cotton production in the Darling Downs region during the drought, with production considerably lower in 2006-07 compared to 2000-01 and 2010-11. Horticulture and crops cut for hay production followed a different trend, with production in these commodities in 2006-07 outweighing production in both 2000-01 and 2010-11. It should be noted that Agricultural Census data can include some high standard errors at regional geographic levels, and caution should be applied when comparing data between collection years.

The livestock profile of the region has also changed, with the number of sheep and lambs in 2010-11 almost half of the number within the region in 2000-01. In contrast, the number of pigs and poultry have both increased, with the number of poultry in the region in 2010-11 doubling relative to the number in the region in 2000-01. Consequently, the number of eggs produced for human consumption grew substantially, both in number and also the proportion of the Queensland total that the Darling Downs region accounts for. In 2000-01 the Darling Downs region accounted for 56.4% of eggs produced for human consumption in Queensland, however this proportion grew to 88.1% in 2010-11.

The table below also highlights the decline in area used for agriculture between 2000-01 and 2010-11, a decline of approximately 2 million hectares. This has been driven by a number of factors, which are examined in section 1.3.

Table 1.2. Agricultural Commodity Production Comparison (Tonnage), 2000-01, 2006-07 and 2010-11

	Darling Downs SD			Queensland		
	2000-01	2006-07	2010-11	2000-01	2006-07	2010-11
Land Area of Holding						
Area Used for Agriculture (ha) [(a)]	8,189,096	7,620,936	6,052,343	145,955,178	143,870,532	135,513,003
Broadacre Crops						
Crops Cut For Hay (t)	85,631	141,078	127,977	166,287	494,658	985,270
Cereal Crops (t)						
Wheat (t)	471,043	195,353	734,964	1,156,973	776,720	1,523,565
Sorghum (t)	500,507	562,973	787,648	1,155,860	896,405	1,182,799
Barley (t)	98,309	49,796	108,295	114,985	78,960	146,178
Maize (t)	59,023	33,522	98,614	159,061	92,417	171,478
Other Cereal Crops (t)	184,768	645	29,346	309,079	4,253	55,317
Legumes for Grain (t)						
Chickpeas (t)	25,169	26,492	37,334	55,999	60,595	138,868
Mung Beans t)	18,541	2,271	15,549	34,709	8,164	44,903
Other Legumes for Grain (t)	3,196	2,876	17,740	6,020	4,413	48,791
Oilseeds (t)	12,123	2,027	8,680	73,182	8,840	19,797
Cotton (t)						
Irrigated Cotton (t)	77,881	40,237	114,756	190,472	64,900	284,901
Non-Irrigated Cotton (t)	18,107	4,082	46,453	20,948	4,165	61,403
Other Crops (t)	9,281	1,005	753	26,564,418	33,707,851	24,217,519
Total Broadacre Crops (t)	**1,563,579**	**1,062,357**	**2,128,110**	**30,007,993**	**36,202,342**	**28,880,789**
Horticulture						
Nurseries, Cut Flowers and Cultivated Turf (ha)	757	295	278	4,348	4,358	4,343
Vegetables for Seed (t)	652	144	38	1,894	2,208	1,848
Vegetables for Human Consumption (t)						
Lettuce (t)	15,522	22,555	21,901	48,300	84,742	54,351
Melons (t)	16,695	12,852	13,396	99,098	94,548	70,494
Mushrooms (t)	1,319	941	1,344	7,020	5,586	5,804
Onions (t)	4,288	9,041	8,949	19,551	40,152	37,210
Tomatoes (t)	3,802	1,634	4,570	106,999	120,656	126,849
Capsicum (excl. Chillies) (t)	4,060	6,820	2,687	36,853	47,267	39,556
Broccoli (t)	5,032	3,165	1,839	10,564	9,137	12,809
Cauliflower (t)	9,071	12,484	4,022	15,248	19,961	17,771
Beans (French and Runner) (t)	399	1,441	509	16,284	16,130	22,707
Other Vegetables for Human Consumption (t)	40,251	33,691	3,414	328,633	338,871	183,431
Fruit and Nuts (t)	41,756	53,326	44,198	405,202	614,388	489,431
Total Horticulture (t)	**143,604**	**158,390**	**107,144**	**1,099,994**	**1,398,004**	**1,066,604**

	Darling Downs SD			Queensland		
	2000-01	2006-07	2010-11	2000-01	2006-07	2010-11
Livestock						
Sheep and Lambs (n)	1,011,411	866,595	599,951	8,660,071	4,378,429	4,849,741
Cattle and Calves (n)	1,261,086	1,347,557	1,237,700	11,375,841	11,683,616	12,611,874
Pigs (n)	307,174	410,769	412,022	596,808	695,045	638,939
Goats (n)	n.a.	55,631	25,143	n.a.	326,638	166,065
Poultry (n)	1,847,157	3,451,334	3,758,422	13,645,897	15,251,266	19,826,537
Other Livestock (n)	42,644	18,330	23,335	292,345	124,846	196,338
Total Livestock (n)	**4,469,472**	**6,150,216**	**6,056,573**	**34,570,962**	**32,459,840**	**38,289,494**
Livestock Products						
Eggs Produced for Human Consumption (n)	260,630,016	507,610,608	799,889,100	462,315,612	668,301,336	907,524,348

Note: Agricultural Census data can include some high standard errors at regional geographic levels, and caution should be applied when comparing data between collection years. (a) Data between Agricultural Censuses are inconsistent in the approach to reporting the area available to agricultural production. The estimates in this table may be subject to significant error, and should not be used to infer any changes in land area available for agricultural production over time.
Source: ABS (2008), ABS (2008a), ABS (2012)

Organic farming is also undertaken on the Darling Downs and has increased in the past decade following strong consumer sentiment and growth in preferences towards 'clean and green' food products (The Australian, 2011; IBISWorld, 2012). Key organic produce cultivated in the region includes (though not limited to):

- Considerable volumes of organic grains free of artificial fertilisers and synthetic chemicals. For example, Kialla Pure Foods, located in the Darling Downs, is Australia's largest organic cereal grain manufacturer and uses grains sourced from farms in the region.
- A range of free range chicken farms producing organic eggs using organic grain feed.
- Organic beef and other meat products from livestock grown in the Darling Downs on pesticide and fertiliser free land using organic feed.
- A range of organic fruit and vegetables.

1.3 Factors Affecting Agriculture in the Darling Downs

This section looks at some of the trends and factors that have affected the agricultural sector in the Darling Downs over the past decade.

Climatic Conditions and Rural Downturn

Over the past decade many agricultural producers within the Darling Downs region have been affected by extreme weather conditions including drought and flooding. Between 2000 and 2009, parts of Toowoomba Regional Council, Western Downs Regional Council and Southern Downs Regional Council were either partially or fully drought declared, while parts of Goondiwindi Regional Council were drought declared between 2002 and 2009 (DERM, 2011). More recently multiple floods have caused havoc for agricultural producers and the broader Darling Downs community.

The drought affected almost all agricultural commodities in the Darling Downs, severely reducing production (particularly for more water intensive commodities) and herd and flock numbers as well as contributing to increased industry costs (IBISWorld, 2012). Production of broadacre crops is highly reliant on rainfall and availability of water. During drought periods, broadacre crop production can decline significantly, as highlighted by 2006-07 broadacre crop production estimates in Table 1.2. In 2010-11 broadacre cropping production was approximately double that in 2006-07 as rainfall events encouraged farmers to dedicate greater areas to crops in anticipation of greater yields. Producers within the sheep and beef cattle industry were restrained in their ability to take advantage of an increase in demand for their products following the recovery from the Global Financial Crisis (GFC) as they replenished their livestock numbers after the period of prolonged drought (see increase in VACP for livestock products and decrease in VACP for livestock slaughtered in the Darling Downs in Table 1.1).

The impact of the drought between 2000 and 2009 is highlighted by the financial position of broadacre farms in the region in the six year period from 2006-07 to 2011-12. The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) undertook an assessment of financial performance of broadacre farms based on farm surveys within ABARES' survey region of the "Eastern Darling Downs", which covers the Toowoomba Regional Council area, the northern part of the Southern Downs Regional Council area (town of Warwick) and eastern part of the Western Downs Regional Council area (Dalby). A summary of the survey findings are presented in Table 1.3 and shows that broadacre farm business profit was negative for four of the six years between 2006-07 and 2011-12. However, the proportion of farms with negative farm cash income has decreased substantially over the latter half of the six year period, as drought affects have eased. Likewise, the provisional estimate for average farm cash income for 2011-12 is up to $99,000, close to its highest level over the six year period.

Table 1.3. Annual Financial Performance of Broadacre Farms in Eastern Darling Downs[(a)]

Financial Performance	2006-07	2007-08	2008-09	2009-10	2010-11 [(p)]	2011-12 [(y)]
Average Farm Cash Income	$46,710	$101,700	$84,000	$75,280	$44,500	$99,000
% of Farms with Negative Farm Cash Income	49%	36%	38%	18%	21%	19%
Average Farm Business Profit/ Loss	-$76,110	$71,900	-$18,000	-$7,190	-$6,000	$32,000

Note: (a) The Eastern Darling Downs region covers the Toowoomba Regional Council area, as well as the northern part of the Southern Downs Regional Council area (town of Warwick) and eastern part of the Western Downs Regional Council area (Dalby).
(b) **p** preliminary estimate, **y** provisional estimate
Source: ABARES (2009), ABARES (2012)

Flooding and heavy rainfall events have also had a significant impact on agricultural production in the Darling Downs. For example, the heavy rain and associated flooding in late December 2010/ early January 2011, delayed harvests, spoiled horticultural production and submerged many crops and pastures (CSIRO, 2011). The floods also removed significant amounts of topsoil, which contain the highest levels of nutrients, organic matter as well as generally being of better structure. Top soil is slow to replace and reduces yields in the short term without a significant increase in inputs (CSIRO, 2011). Additionally, large quantities of fertiliser washed away with the topsoil from actively cropped lands in the Darling Downs, adding to costs for local farmers. In some cases the floods also affected soil and moisture conditions for planting of future crops. Waterlogged areas delayed and in some cases prevented planting and irrigation infrastructure also needed repair. There was also some loss to livestock in the region as well as disruptions to livestock transport and other infrastructure support (Massola, 2011).

There is a general scientific consensus that temperatures will continue to rise over the next few decades and average annual rainfall will decline. There is uncertainty surrounding the impact climate change will have on the Australian agricultural sector, however, research exists suggesting that a reduction in annual rainfall levels would have a significant negative effect on agricultural production (DAFF, 2011). Adapting to climate change will likely be a key concern within the agricultural sector in the Darling Downs region over the coming decades.

Global Financial Crisis

The Global Financial Crisis (GFC) had an impact on the Darling Downs agricultural sector over the past decade. The GFC reduced demand for products within all industries and consequently caused industry commodity prices to fall, cutting into industry revenue and profitability (IBISWorld, 2012).

The GFC also had the effect of reducing credit access for Darling Downs farmers. The banking sector has been supportive of the agricultural sector through periods of drought over the past decade, however, credit access tightened significantly in the wake of the GFC and some loans that would have been available prior to the GFC were no longer available. Similarly, reduced credit access for domestic and global customers of Darling Downs farmers caused difficulties for the industry, as the industry is heavily reliant on overseas markets, which consume a high proportion of its total output (NFF, 2009).

There were some positive benefits to come out of the GFC for the Darling Downs agricultural sector. The depreciation of the Australian dollar against both the US dollar and on a trade-weighted basis that occurred during the GFC provided some temporary

support for commodity exports (NFF, 2009). Concerns about world economic growth and subsequently commodity demand and prices were a factor in the depreciation of the Australian dollar. Similarly, the Reserve Bank of Australia has reduced official interest rates consistently over recent years in response to the GFC (NFF, 2009). This provided some relief to Darling Downs farmers who are required to make interest payments.

Improved Technology / Farming Practices

The continued uptake of new and improved techniques and technology has made the agricultural sector gradually more efficient across Australia over the past decade, allowing the industry to produce more with fewer workers and less land. Table 1.4 shows the tonnage per hectare over time of selected agricultural commodities produced within the Darling Downs region. The table shows that there has been a general increase in tonnage per hectare over time with efficiency increases particularly evident for crops cut for hay, wheat, sorghum and other cereal crops. It should be noted there are a number of factors effecting tonnage per hectare results for each commodity aside from production efficiency increases, most notably weather conditions.

Table 1.4. Yield of Selected Commodities Over Time, Darling Downs (Tonnage / Ha)

Commodity	2000-01 (t/ha)	2006-07 (t/ha)	2010-11 (t/ha)
Crops Cut For Hay	2.4	1.8	3.2
Cereal Crops			
Wheat	1.0	0.9	1.7
Sorghum	2.3	2.2	3.3
Other Cereal Crops	1.3	1.1	2.0
Legumes for Grain	0.6	0.9	0.6
Oilseeds	1.1	0.5	1.3
Cotton			
Irrigated Cotton	1.3	1.8	1.5
Non-Irrigated Cotton	0.5	0.5	0.7

Source: ABS (2008), ABS (2008a), ABS (2012)

Irrigation is a key component of crop production in the Darling Downs, with many cotton, oilseed, cereal and horticulture crops grown using irrigated water systems. Irrigation farming practices have been changing in recent years – the drought during the first decade of the 2000s resulted in lower water allocations for irrigated farmers across the Murray-Darling Basin (ABARES, 2010) and encouraged the development and adoption of more water use efficient irrigation systems.

Other farm management changes have also been occurring in the Darling Downs. Water availability has resulted in some changes to crop varieties planted to meet changes in environmental conditions and improve yields and return on commodities grown in the region. Crops have also been changing to take advantage of greater disease resistance or crop hardiness of some varieties, reducing the reliance on pesticides and fertilisers. The growth in consumer preferences for organic produce has also seen farm management practices adapted to reduce reliance on chemicals and other non-organic inputs to production.

Improved production per hectare of land available is critical for agriculture across Queensland, including in the Darling Downs region. Future population and industry expansion, including expansion of the energy sector, is likely to require development on land currently available for agricultural production. Structural adjustments following drought and flooding events, as well as ongoing trends of young people seeking career paths away from the agricultural sector will also constrain future industry growth. Therefore it is critical for the Darling Downs agricultural sector to make continued efficiency improvements in order to realise the maximum production capability of the agricultural land and labour resources available.

Ageing Agricultural Workforce

The agricultural workforce in the Darling Downs region is ageing, and has a higher average age relative to other industries in the country. The average age of a person

employed within the Darling Downs agricultural industry in 2011 was 49.3 years (ABS, 2012b), up from 47.6 years in 2006 (ABS, 2007). The average age across all industries in Australia was 40.5 years (ABS, 2012b) in 2011. There are several factors contributing to this age profile in the Darling Downs region including:

- Fewer young people entering the industry.
- Low exit rates at traditional retirement age.
- Financial cost/ barrier for farmers wishing to pass their farm onto family members. Under the Social Security Act 1991, if farmers pass on their farm to their children upon retirement they become ineligible to claim the pension for five years (DAFF, 2009).

ABS (2012b) data highlights the tendency for those working within agriculture to work beyond traditional retirement age, with 18.1% of the Darling Downs region's agricultural workforce being aged 65 years and over in 2011 compared to just 3.2% of the total Australian workforce.

Competition for Land and Labour

As outlined previously, future population and industry expansion, including expansion of the energy sector, is likely to compete for land currently available for agricultural production into the future. Additionally, the agricultural industry faces labour and skill shortages. Some estimates suggest that Australia faces a labour shortfall of at least 96,000 full-time skilled workers and approximately 10,000 casual workers, with the problem costing Australian farmers an estimated $150 million a year in lost productivity (Beeby, 2012). The problem has been exacerbated by increasing competition for labour from other industries, particularly the higher paid mining industry (Agrifood Skills Australia, 2011). ABS census data (2012b) shows that the average mining industry income in 2011 was $1,531 per week, over double the average weekly income within the agriculture, forestry and fishing industry ($711). The emergence of the CSG industry in the Darling Downs provides alternative, higher paying employment that can attract labour that may otherwise have been employed within the agricultural industry.

While higher wages in the mining industry can attract farm labour and place upward pressure on wages and salaries in the agriculture industry, it should also be recognised the mining industry provides opportunities for supplemental incomes for the farming community and farmers themselves. For example, Solum; Wheatbelt Business Solutions, which received funding in 2012 from the Western Australian Government as part of the Royalties for Regions program, has commenced a project aimed at securing off-farm supplementary incomes for Western Australian wheatbelt farmers, including part time jobs at mining operations (Varischetti, 2012). Off-farm incomes can provide much needed financial support for the farming community as it provides a base level income to help mitigate variable seasonal production and farm incomes.

The encroachment of the resources sector on agricultural practices has raised community concerns regarding the introduction of invasive weeds, pests and disease to the region. Biosecurity is a key issue for agriculture where weeds, pests and disease can result in significant losses of production and incomes. Prevention is widely acknowledged as the best and most cost effective measure of biosecurity (DAFWA, 2007).

Government Policy

Government policy can play a significant role in the viability of the agricultural industry. A notable example is the month long suspension of live cattle exports to Indonesia in June 2011 following evidence of animal cruelty once Australian animal exports had arrived within the country (DAFF, 2012a). The suspension ended when new animal welfare safeguards were established for live export trade. The new regulatory framework for live animal exports requires the exporter to supply evidence of an acceptable Exporter Supply Chain Assurance System (ESCAS) before the exporter can be issued with approval to export from the Department of Agriculture, Fisheries and Forestry (DAFF, 2012a).

The new regulations had an impact on the live cattle industry in Australia, with Australian live cattle exports falling short of their target of 500,000 by 105,000, partly due to the month long suspension of live cattle exports in June of that year. Also hurting the live animal export sector is the Indonesian Government's continued cutting of its live animal

import quota as part of the country's aim to become self-sufficient in beef production by 2014 (Willingham, 2011). Indonesia is Australia's largest market for cattle exports, receiving 56% of Australia's total live cattle exports in 2003-05 (MLA, 2006).

There are instances of Government policy that support the agricultural sector. Since 2001 the Australian Government has provided approximately $4.5 billion in 'exceptional circumstances' (EC) assistance to Australian farmers. EC assistance allowed drought affected farmers to receive interest rate subsidies and income support payments of $400-$600 per fortnight (Cranston, 2012). The last drought hit regions of Australia were phased out of EC support in May 2012 (Cranston, 2012).

Areas of the Darling Downs have been identified as containing potential strategic cropping land (SCL), requiring protection under the Queensland Government's SCL state planning policy (SPP) (DNRM, 2013). The SPP is supported by extensive SCL mapping which identifies potential SCL located within Queensland Government defined protection areas and management areas.

The Queensland Government has also set out a planning policy to avoid development on good quality agricultural land (GQAL) (DNRM, 2013a). GQAL is identified as land which is capable of sustainable use for agriculture, with a reasonable level of inputs, and without causing degradation of land or other natural resources (DPI, 1993).

The Queensland Government's renewed emphasis on agricultural production is evidenced by the current focus on developing strategies to grow a four pillar economy, incorporating tourism, agriculture, resources and construction.

Global Demand and Preferences

Global demand and preferences for agricultural products is a key driver of farm decision making. The strong economic growth of developing countries (for example, China, India and Russia) is an increasingly growing driver of demand for agricultural products. In particular, the rapidly expanding middle class and growing disposable incomes in each of these countries is expected to change individual diet profiles, shifting demand towards more high protein agricultural products (DAFF, 2011). This will having a large impact on the make-up of agricultural businesses across Australia and within the Darling Downs as farms shift their commodity focus in order to meet growing demand from developing countries.

Competing Exporters

The Australian agricultural sector faces growing competition from both established and emerging agricultural export markets (for example, Brazil), particularly within the beef and cotton export markets (Indexmundi, 2012), which are key commodities within the Darling Downs agricultural sector. Other countries producing significant volumes of key Darling Downs' agricultural commodities (including beef, wheat, sorghum and cotton) include the United States (beef, wheat, sorghum and cotton), India (beef and cotton), Canada (wheat) and Argentina (sorghum) (Indexmundi, 2012). Staying competitive in an increasingly competitive global agricultural export market will be one of the key issues facing the Darling Downs agricultural sector in the future.

1.4 Conclusion

Despite the rebound in production and value, the issues confronting the agriculture industry outlined in EIS Appendix F (Agriculture Report) and EIS Appendix O (Economic Impact Assessment) remain relevant as do the identified project impacts on agricultural productivity. Climate variability continues to impact on production, with recent flooding events impacting on the industry. Encroachment of the resources sector is increasing the importance for agricultural lands to be highly productive, which combined with water availability concerns during drought periods has seen efficiency and productivity gains realised in the region, although the overall area dedicated to agriculture has declined.

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Appendix A: Agricultural Production Statistics[1]

Area of Production

Table A.1. Area of Agricultural Production, Darling Downs SD

Type of Land Area	2006-07 (ha)	2010-11 (ha)
Total Land Area of Holding	8,749,797	6,430,019
Area of Holding Used for Cropping	752,396	1,446,401
Area of Holding Not Used for Agricultural Production	1,128,861	377,676

Source: ABS (2008), ABS (2012), ABS (2012a)

Value of Production Within the Darling Downs SD, 2006

Table A.2. Value of Agricultural Commodities, 2006 ($ Million), Statistical Local Areas (SLAs) in Darling Downs

SLA	Gross Value of Crops ($M)	Gross Value of Livestock Slaughtering ($M)	Gross Value of Livestock Products ($M)	Total Gross Value of Agricultural Production ($M)
Dalby (R) - Chinchilla	$30.6	$99.0	$1.5	$131.1
Dalby (R) - Dalby	$0.3	$0.0	$0.0	$0.4
Dalby (R) - Murilla-Wandoan	N.a.	N.a.	N.a.	N.a.
Dalby (R) - Tara	$36.7	$98.3	$2.5	$137.6
Dalby (R) - Wambo	$106.4	$102.5	$2.9	$211.8
Goondiwindi (R) - Goondiwindi	$0.0	$0.0	$0.0	$0.0
Goondiwindi (R) - Inglewood	$7.8	$83.7	$5.2	$96.7
Goondiwindi (R) - Waggamba	$182.7	$84.4	$4.4	$271.5
Southern Downs (R) - Allora	$12.0	$22.5	$2.5	$37.0
Southern Downs (R) - Killarney	$11.8	$22.8	$12.1	$46.8
Southern Downs (R) - Stanthorpe	$110.0	$5.9	$3.6	$119.5
Southern Downs (R) - Warwick	$1.8	$0.9	$0.2	$2.9
Southern Downs (R) - West	$1.4	$10.2	$2.3	$14.0
Clifton	$25.2	$25.9	$4.3	$55.4
Crow's Nest	$23.3	$14.6	$6.1	$44.0
Greenmount	$4.6	$10.7	$5.0	$20.3
Jondaryan	$48.5	$106.1	$4.4	$159.1
Millmerran	$52.8	$81.0	$37.6	$171.4
Pittsworth	$45.7	$25.2	$28.6	$99.5
Rosalie	$15.0	$53.1	$15.4	$83.5
Total	**$716.6**	**$846.8**	**$138.6**	**$1,702.5**

Source: ABS (2008)

[1] Estimates presented in this section are subject to some sampling error. Please refer to http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/7121.0Explanatory%20Notes12010-11?OpenDocument for more detail regarding sampling errors of agriculture data.

Value of Production Within the Darling Downs SD, 2011

Table A.3. Value of Agricultural Commodities, 2011 ($ Million), SLAs in Darling Downs

SLA	Gross Value of Crops ($M)	Gross Value of Livestock Slaughtering ($M)	Gross Value of Livestock Products ($M)	Total Gross Value of Agricultural Production ($M)
Western Downs (R) - Chinchilla	$26.8	$49.4	$1.4	$77.5
Western Downs (R) - Dalby	$16.4	$3.0	$0.0	$19.4
Western Downs (R) - Murilla-Wandoan	$44.6	$64.0	$0.1	$108.7
Western Downs (R) - Tara	$61.9	$36.6	$3.0	$101.6
Western Downs (R) - Wambo	$164.9	$45.0	$2.3	$212.2
Goondiwindi (R) - Goondiwindi	$9.2	$1.5	$0.2	$10.9
Goondiwindi (R) - Inglewood	$12.0	$18.3	$3.6	$33.9
Goondiwindi (R) - Waggamba	$237.3	$52.8	$5.3	$295.4
Southern Downs (R) - Allora	$11.3	$7.8	$2.8	$21.9
Southern Downs (R) - Killarney	$9.3	$13.0	$14.0	$36.3
Southern Downs (R) - Stanthorpe	$166.6	$8.2	$1.3	$176.1
Southern Downs (R) - Warwick	$1.4	$2.4	$2.5	$6.3
Southern Downs (R) - West	$3.2	$7.5	$0.5	$11.2
Clifton	$19.3	$20.6	$3.8	$43.6
Crow's Nest	$11.0	$14.1	$7.9	$33.0
Greenmount	$13.3	$5.2	$6.1	$24.5
Jondaryan	$77.4	$11.9	$5.2	$94.5
Millmerran	$53.2	$55.5	$70.0	$178.7
Pittsworth	$69.2	$54.2	$70.4	$193.8
Rosalie	$26.9	$18.8	$19.0	$64.7
Total	**$1,035.2**	**$489.8**	**$219.4**	**$1,744.2**

Source: ABS (2012), ABS (2012a)

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