



Case study

Improved management practices

The Queensland Government is committed to building a strong and sustainable agricultural industry; which has been demonstrated through its ongoing commitment to the Reef Water Quality Protection Plan and other land management initiatives. Agricultural practices may impact the environment and natural resources that the industry depends on. However, improving agricultural practices may result in a two-fold benefit of improved environmental outcomes and economic benefit over the long term.

Modelling of a typical cane farm near Cairns showed that income increased by improving practices such as reducing tillage and nitrogen application and legume fallow. Although analysis indicated a small reduction in crop yield, financial returns were enhanced through reduced tillage operations, increased efficiencies and inputs over a full crop cycle. Overall, operating with these improved practices provided important economic benefits to a farmer at the plot level and resulted in positive effects on profitability.

A 95 hectare banana farm that adopted improved practices after Severe Tropical Cyclone Larry in 2006, improved its financial viability, with benefits extending to the bordering wetlands. The farm's gross margin improved due to increased yields and savings associated with improved practices, and the net present value of the practice change was positive. Improved practices included:

- nutrient management
 - Soil and leaf analysis
 - Nutrient application matched to crop needs
 - Fertilisation and foliar application allowing smaller and more regular doses

- pest management
 - Targeted chemical application (injecting rather than spraying)
 - Reduced chemical use
- soil and water management
 - Reduced tillage
 - Longer crop cycles
 - Minimised traffic in wet season
 - Soil moisture monitoring
 - Interrow vegetation
 - Composting.

Capital outlay was needed for purchasing three harvesters and a slasher and to make changes to the irrigation and fertigation system. The farmer considered it a worthwhile investment as it led to a 20 per cent reduction in irrigation-related costs and improved soil and plant health.

Water monitoring equipment and a soil analysis was also purchased, which resulted in a considerable reduction in chemical (fertiliser and pesticide) costs. For example:

- herbicide usage reduced by 50%
- fungicide usage reduced by 60%
- granular fertiliser usage reduced by 30%
- no nematicides needed to be used.

There were also production benefits in terms of site preparation as the use of the ripper and plough were down by 60 per cent and irrigation costs reduced.

For more information on the Reef Water Quality Protection Plan, go to www.reefplan.qld.gov.au. For more examples of the economic benefits of improved land management practices, please see the Improved Practices Catalogue at www.daff.qld.gov.au.

Water resources

Agriculture used just over two million megalitres of water in 2011–12, which is equivalent to 60 per cent of Queensland's total demand for water (see Table 2.5). Cropping was responsible for the bulk of water usage.

Table 2.5 Water use in Queensland, 2011–12

	Self-extracted (ML)	Distributed (ML)	Reuse (ML)	Total (ML)
Agriculture				
Nursery and floriculture production	8 505	6 680	19	15 204
Mushroom and vegetable growing	69 060	31 246	309	100 615
Fruit and tree nut growing	75 802	46 606	51	122 460
Sheep, beef cattle and grain farming	212 107	121 435	816	334 357
Other crop growing	815 391	546 309	9 583	1 371 283
Dairy cattle farming	31 014	13 976	95	45 084
Poultry farming	5 031	2 697	0	7 728
Deer farming	2	2	0	3
Other livestock farming	11 015	6 061	19	17 096
Total – Agriculture	1 227 926	775 012	10 892	2 013 831
Aquaculture			0	679
Forestry and logging				3 302
Agriculture, forestry and fishing support services	15 113	9 284	0	24 398
Food, beverage and tobacco product manufacturing	24 039	45 784		70 394
Total of all uses	4 249 354	1 911 183	57 721	3 374 884

Source: Water Account, Australia, 2011–12, ABS 4610.0

Irrigation accounted for agricultural production worth \$3.57 billion in Queensland in 2011–12, which was 35.6 per cent of the State's total. The largest contributions went into the following industries: cotton (\$915 million), vegetables (\$726 million), fruit (\$651 million) and sugar cane (\$646 million). Irrigation's largest contributions by region were: Burdekin (\$719 million), Border Rivers (\$669 million) and Burnett-Mary (\$556 million).¹

Water resources in Queensland are regulated through water resource plans for 23 water resource areas. A water resource plan for the Cape York region is currently under development.

For more information on agricultural water use and water availability, refer to the Land Audit at www.daff.qld.gov.au and the *Minister's Report 2012–2013 for Queensland's Water Resource Plans* at www.dnrm.qld.gov.au.

¹ Gross value of irrigated agricultural production, 2011–12, ABS 4610.0.55.008

Water storage levels

SunWater is a bulk water infrastructure developer and operator of Queensland's major water supply schemes. It supplies approximately 40 per cent of all water used commercially in Queensland. SunWater provides water to over 5000 irrigation customers in the agriculture industry and also provides services for local governments, mining and other industrial customers.

SunWater owns and manages around \$7 billion in water infrastructure assets with a distribution network in Queensland comprising 19 major dams, 63 weirs and barrages, 80 major pumping stations, 2500 kilometres of pipelines and channels, and 730 kilometres of drains (see Figure 2.4).

Table 2.6 outlines water storage levels as at June 2014. Up to date water storage levels can be found on the SunWater website (www.sunwater.com.au).

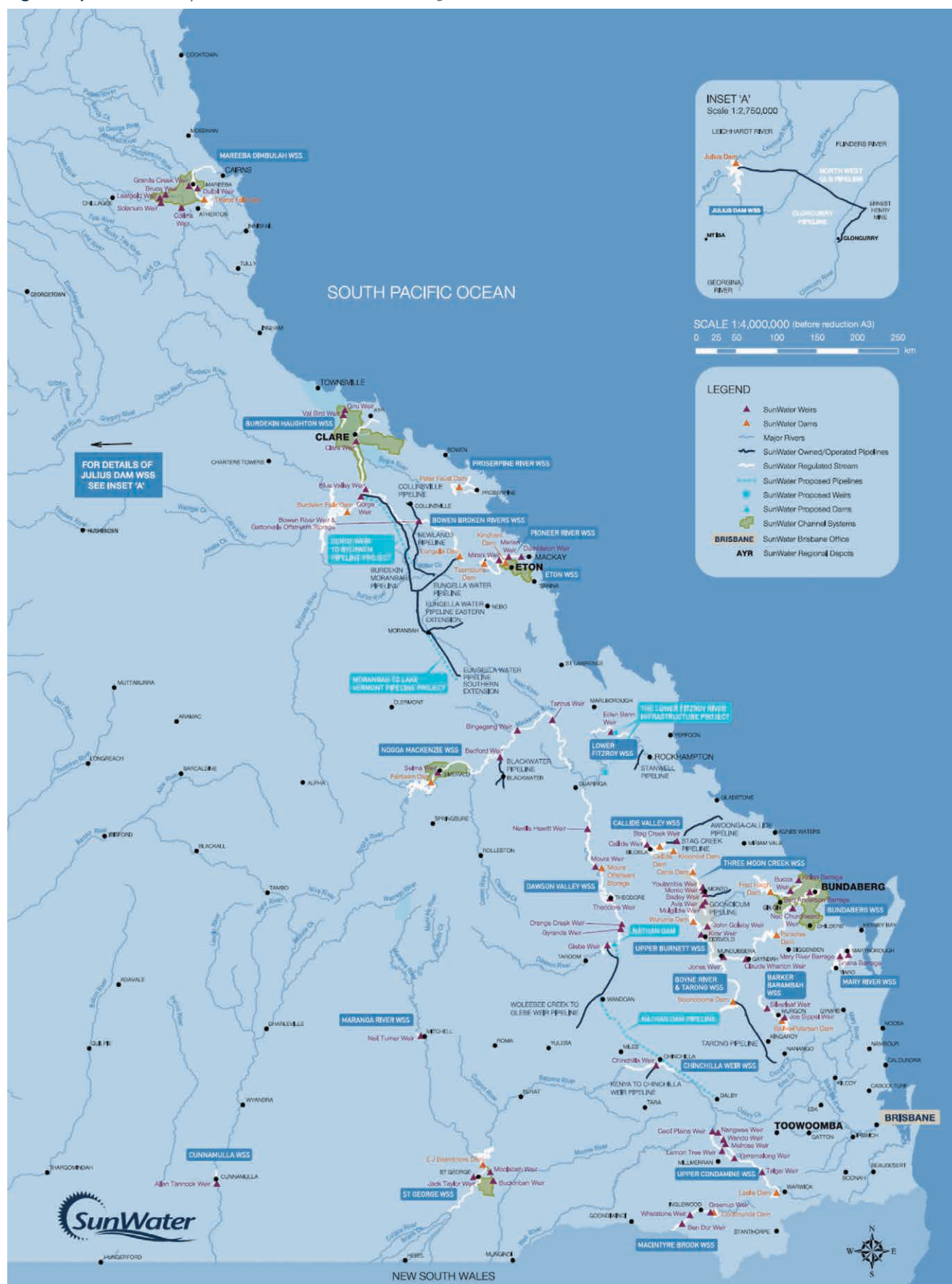
Table 2.6 SunWater storage summary

Water supply scheme	Storage	Full capacity (ML)	Current storage		
			(ML)	Date	% full
Barker Barambah	Bjelke-Petersen Dam	134 900	91 400	06 Jun 2014	68
	Joe Sippel Weir	710	710	05 Jun 2014	100
	Silverleaf Weir	580	550	06 Jun 2014	95
Bowen Broken Rivers	Bowen River Weir	943	940	25 May 2014	100
	Eungella Dam	112 400	112 300	06 Jun 2014	100
	Gattonvale Offstream	5 230	4 920	04 Jun 2014	94
Boyne River and Tarong	Boondooma Dam	204 200	158 000	06 Jun 2014	77
Bundaberg	Ben Anderson Barrage	30 300	22 800	06 Jun 2014	75
	Bucca Weir	11 600	6 770	06 Jun 2014	58
	Fred Haigh Dam	562 000	489 600	06 Jun 2014	87
	Kolan Barrage	4 020	3 750	06 Jun 2014	93
	Ned Churchward Weir	29 500	28 100	06 Jun 2014	95
	Paradise Dam	300 000	165 100	06 Jun 2014	55
Burdekin Haughton	Burdekin Falls Dam	1 860 000	1 847 000	06 Jun 2014	99
	Clare Weir	15 900	15 900	06 Jun 2014	100
	Giru Weir	1 025	930	06 Jun 2014	91
	Val Bird Weir	615	610	03 Jun 2014	99
Callide Valley	Callide Dam	136 370	88 500	06 Jun 2014	65
	Kroombit Dam	14 600	6 610	06 Jun 2014	45
Chinchilla Weir	Chinchilla Weir	9 780	9 410	06 Jun 2014	96
Cunnamulla	Allan Tannock Weir	4 770	2 860	14 May 2014	60
Dawson Valley	Glebe Weir	17 700	17 200	06 Jun 2014	97
	Gyranda Weir	16 500	15 400	06 Jun 2014	93
	Moura Offstream	2 820	740	06 Jun 2014	26
	Moura Weir	7 700	7 400	06 Jun 2014	96
	Neville Hewitt Weir	11 300	N/A	N/A	N/A
	Orange Creek Weir	6 140	6 140	06 Jun 2014	100
	Theodore Weir	4 760	4 350	06 Jun 2014	91
Eton	Kinchant Dam	62 800	61 100	06 Jun 2014	97
Julius Dam	Julius Dam	107 500	81 600	06 Jun 2014	76
Lower Fitzroy	Eden Bann Weir	35 900	35 900	04 Jun 2014	100
Macintyre Brook	Ben Dor Weir	700	670	05 Jun 2014	96
	Coolmunda	69 000	35 300	06 Jun 2014	51
	Whetstone Weir	506	500	05 Jun 2014	99
Maranoa River	Neil Turner Weir	1 470	N/A	N/A	N/A

Water supply scheme	Storage	Full capacity (ML)	Current storage		
			(ML)	Date	% full
Mareeba Dimbulah	Tinaroo Falls Dam	438 920	398 200	06 Jun 2014	91
Mary River	Mary Barrage	12 000	12 000	06 Jun 2014	100
	Tinana Barrage	4 750	4 750	06 Jun 2014	100
Nogoa Mackenzie	Bedford Weir	22 900	18 000	02 Jun 2014	79
	Bingegang Weir	8 060	8 030	22 Apr 2014	100
	Fairbairn Dam	1 301 000	664 700	06 Jun 2014	51
	Tartus Weir	12 000	12 000	06 Jun 2014	100
Pioneer River	Dumbleton Weir	8 840	6 260	06 Jun 2014	71
	Marian Weir	3 980	3 980	06 Jun 2014	100
	Mirani Weir	4 660	2 940	06 Jun 2014	63
	Teemburra Dam	147 500	147 500	06 Jun 2014	100
Proserpine River	Peter Faust Dam	491 400	471 400	06 Jun 2014	96
St George	Buckinbah Weir	5 120	4 490	06 Jun 2014	88
	EJ Beardmore Dam	81 700	73 400	06 Jun 2014	90
	Jack Taylor Weir	10 270	9 260	06 Jun 2014	90
	Moolabah Weir	3 950	1 060	06 Jun 2014	27
Three Moon Creek	Cania Dam	88 500	81 200	06 Jun 2014	92
Upper Burnett	Claude Wharton Weir	12 800	8 270	06 Jun 2014	65
	John Goleby Weir	1 690	1 690	06 Jun 2014	100
	Jones Weir	3 720	3 680	05 Jun 2014	99
	Kirar Weir	9 540	9 540	06 Jun 2014	100
	Wuruma Dam	165 400	134 300	06 Jun 2014	81
Upper Condamine	Leslie Dam	106 200	41 400	06 Jun 2014	39
	Yarramalong Weir	390	280	06 Jun 2014	72
Total		6 729 529	5 441 000		81

Source: SunWater current storage summary – April 2014, SunWater

Figure 2.4 SunWater operations and infrastructure 2013



Source: SunWater 2012–13 Annual Report, SunWater

Table 2.7 SEQWater Current Storage Summary

Storage	Full Capacity (ML)	Current Storage		
		(ML)	Date	% Full
Atkinson Dam	30 401	20 069	06 Jun 2014	66
Baroon Pocket Dam	61 000	42 512	06 Jun 2014	70
Bill Gunn Dam	6 947	5 245	06 Jun 2014	76
Borumba Dam	45 952	46 048	06 Jun 2014	100
Bromelton Dam	8 210	5 623	06 Jun 2014	69
Cedar Pocket Dam	730	768	06 Jun 2014	105
Cooloolabin Dam	13 820	7 116	06 Jun 2014	52
Enoggera Dam	4 567	4 565	06 Jun 2014	100
Ewen Maddock Dam	16 587	16 371	06 Jun 2014	99
Gold Creek Dam	801	774	06 Jun 2014	97
Hinze Dam	310 730	287 668	06 Jun 2014	93
Lake Clarendon Dam	24 276	17 969	06 Jun 2014	74
Lake Macdonald	8 018	8 120	06 Jun 2014	101
Lake Manchester Dam	26 217	26 004	06 Jun 2014	99
Leslie Harrison Dam	24 868	18 703	06 Jun 2014	75
Little Nerang Dam	6 705	5 805	06 Jun 2014	87
Maroon Dam	44 319	41 918	06 Jun 2014	95
Moogerah Dam	83 765	78 477	06 Jun 2014	94
Nindooibah Dam	322	212	06 Jun 2014	66
North Pine Dam	214 302	160 812	06 Jun 2014	75
Poona Dam	655	505	06 Jun 2014	77
Sideling Creek Dam	14 370	10 768	06 Jun 2014	75
Somerset Dam	379 849	377 328	06 Jun 2014	99
Wappa Dam	4 694	4 699	06 Jun 2014	100
Wivenhoe dam	1 165 238	1 053 447	06 Jun 2014	90
Wyaralong Dam	102 883	101 435	05 Jun 2014	99
Total	2 600 226	2 342 961		90

Source: SEQWater Latest Dam Levels, June 2014

Declared Fish Habitat Areas

Over one million hectares of Queensland's key coastal fish habitats are protected through the declaration of 70 Fish Habitat Areas (FHAs). These FHAs protect the habitat from development impacts in order to maintain fisheries' productivity.

The FHA network focuses on estuarine and coastal habitats that support up to 75 per cent of Queensland's commercial catch and most of the recreational and traditional fishing catch. For more information on the status of Queensland's declared FHAs, refer to the *Declared Fish Habitat Area Network Assessment Report 2012* at www.nprsr.qld.gov.au.

People

Queensland's agriculture, forestry and fishing sector directly employed around 60 000 people in 2013.

- The 2013 figure is down from over 80 000 in 1985, which is a rate of decline of 1.1 per cent per annum. This rate of decline is projected to continue in the medium term to 2018.²
- 76 per cent of these people were employed full-time.³
- In 2011–12, an estimated 36 610 were employed in sheep, beef and grain, 2250 in dairy, 5710 in fruit and tree nut growing, 6130 in vegetables, 4560 in agriculture and fishing services, and 3010 in other livestock farming.⁴
- 70 per cent were male employees. Gender balance has not changed since the early 1990s after recording strong increases in women's participation in the 1970s and 1980s. The increase probably reflected the ability of women to more accurately describe their farm management role, rather than an increase in participation per se.
- 48 per cent of those employed in agriculture, forestry and fishing were managers and 29 per cent were labourers. Other major occupational groups were technicians and trades, clerical and administrative, machinery operators and drivers (accounting for 6 per cent) and professionals (accounting for 2 per cent).
- 61 per cent were employees, 29 per cent were self-employed and 9 per cent were employers.
- In 2012 the average age of owner-managers of Queensland broadacre farms was 61 years, up from 54 years in 1990.⁵ A recent Rural Industries and Research Development Corporation (RIRDC) study largely attributes the increasing age of farmers to the decline in the number of farms.⁶

² *Employment projections*, Department of Employment, <http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections>

³ Although not necessarily full-time in agriculture, agriculture was their main job but some would have second jobs in other industries. These figures also do not include people who are employed part-time in agriculture and have a full-time job in another industry.

⁴ *Employment and Workplace Relations 2012*, Department of Education, <http://www.deewr.gov.au/lmip/default.aspx?LMIP/Publications/IndustryEmploymentProjections>

⁵ AgSurf database, ABARES

⁶ *New entrants to Australian agricultural industries – Where are the young farmers?* February 2014, RIRDC

The food and beverage processing sector in Queensland is made up of approximately 1200 businesses. The majority of the sector (95 per cent) comprises micro- or small-sized businesses (under 20 staff) and medium-sized businesses (under 200 staff).

An estimated 300 000 people are employed across the agricultural supply chain as a whole:

- 4000 in the production of inputs to the Queensland agriculture, fisheries and forestry sector⁷
- 62 000 in agriculture, fisheries and forestry in 2013⁸
- 42 000 in food processing as at June 2013⁹
- 97 500 in food wholesale and retail in 2013¹⁰
- 58 000 in food service in 2013¹¹
- 37 000 employed in the transport and logistics of food between these sectors in 2013¹²

An ageing workforce, combined with increased competition and decreasing enrolments in agricultural courses is impacting on the productivity of the industry, and this is likely to continue.

At the same time, there has been a shift towards the use of contract workers by agribusinesses to enable more efficient use of workers at peak times. This alleviates some of the additional requirements and costs associated with, but not limited to, leave entitlements, insurance and workplace health and safety.¹³

For further information at a national level, refer to the *Blueprint for Australian Agriculture 2013–2020* at www.nff.org.au.

⁷ Labour Force, Australia, detailed, quarterly, Feb 2014, derived from ABS 6291.0.55.003; *Food for a growing economy*, 2011, Queensland Government

⁸ Labour Force, Australia, detailed, quarterly, Feb 2014, ABS 6291.0.55.003

⁹ Australian industry, 2011–12, ABS 8155.0

¹⁰ Labour Force, Australia, detailed, quarterly, Feb 2014, derived from ABS 6291.0.55.003; *Food for a growing economy*, 2011, Queensland Government

¹¹ Labour Force, Australia, detailed, quarterly, Feb 2014, derived from ABS 6291.0.55.003; *Food for a growing economy*, 2011, Queensland Government

¹² Labour Force, Australia, detailed, quarterly, Feb 2014, derived from ABS 6291.0.55.003; OESR Input–Output tables 2005–06

¹³ *Agriculture: ISB 2013 Workforce development and planning*, DAFF

Labour shortfall

In 2013, only 2100 people whose last job was in agriculture, forestry or fishing, were identified as being unemployed. This represents an unemployment rate of 3.3 per cent, which is well below the all-industry average, suggesting that labour supply for the sector is limited.

The *2012 Agriculture Workforce Development and Planning Report* identified a labour shortfall in Australia of 96 000 full-time workers.¹⁴

AgForce has quantified the labour shortfall in Queensland's beef and sheep meat and grain industries as 5000 skilled full-time employees and 17 000 casual employees.¹⁵

Apprenticeships and traineeships

Approximately 1600 young people enter agriculture-related apprenticeships and traineeships each year, although the combined intake slumped to under 900 in 2012–13. The completion rate averages over 60 per cent, which is slightly below the all-occupations average of 67 per cent.

Little growth in the uptake of apprenticeships and traineeships may be partly due to industry preferences for skill sets, training and non-accredited extension. The relatively low completion rate may be attributed to participants failing to continue to accreditation stage once they have learnt the required skills.

Skills demand

Many industries have identified their future training needs as technology and innovation in new processes and machinery.

Based on intelligence from 11 of Queensland's agricultural peak bodies, the two key training areas demanded by most agricultural industries in Queensland are business and professional services, and maintenance and farm assistance skills.

Workers are increasingly being shared across industries, emphasising the need for common skills, such as:

- succession planning, reflecting an ageing workforce
- workplace health and safety
- business and financial management across industries
- mechanical and machinery maintenance
- farm assistance skills
- biosecurity (pest and disease identification and management).

¹⁴ *Agriculture: ISB 2013 workforce development and planning*, DAFF

¹⁵ *Skills and labour news review analysis*, 2012, AgForce

Investment

Industry investment

In 2011–12, \$16.2 billion was invested in the agriculture, fisheries and forestry sector nationally. This represents 6.6 per cent of the total \$246.5 billion invested across the four major sectors—services, manufacturing, mining, and agriculture, fisheries and forestry.

The \$16.2 billion investment represents an 18.7 per cent annual growth in investment for agriculture, fisheries and forestry. This was a higher annual growth rate than in the services and manufacturing sectors, but lower than mining. While investment projects can be irregular and averages are often skewed by large transactions, it suggests that agriculture is receiving its share of investment.

Table 2.8 Australian industry investment, 2011–12

	Services	Manufacturing	Mining	Agriculture, forestry and fishing	Total
Levels (\$b)	106.9	20.8	102.6	16.2	246.5
Industry share (%)	43.4	8.4	41.6	6.6	100.0
Annual growth (%)	0.0	5.6	57.1	18.7	20.0

Source: Key facts Australian industry 2011–12, Department of Industry

Across the agribusiness supply chain, which includes first round processing, there was significant additional investment in 2011–12 in the manufacturing sector.¹⁶ This additional investment was in the following manufacturing industries:

- food, beverage and tobacco products (\$4.28 billion)
- wood, pulp and paper products (\$2.05 billion)
- furniture and other manufacturing (\$2.21 billion).

An alternative measure of investment for Australia as a whole can be derived from ABS estimates of capital inputs. These estimates account for depreciation of capital assets and exclude land purchases. In 2012–13, the estimated value of capital inputs to agriculture increased by \$6.6 billion in real terms to \$177.3 billion (see Figure 2.5). This represents an average increase of 1.1 per cent per annum since 1989–90. However, all of the increase has occurred since 2002–03, suggesting a significant improvement in business confidence in the sector since that time.

It is clear that investment funds continue to flow to agriculture suggesting a level of confidence in the future of the sector.

¹⁶ Key facts Australia Industry 2011–12, Department of Industry

Figure 2.5 Change in productive capital stock chain volume measure in Australia – agriculture, fisheries and forestry



Source: Estimates of industry multifactor productivity, 2012-13, ABS 5260.0.55.002

Foreign investment

Foreign investment in land is a significant issue in Australia, with concerns about potentially adverse impacts on the competitiveness of the agriculture, fisheries and forestry sector and, more broadly, on national identity. Such concerns need to be weighed against the potential benefits of foreign investment, including access to markets, technology and capital.

In December 2010, 99.4 per cent of Queensland farm businesses were wholly Australian-owned, covering 88.2 per cent of the area of agricultural holdings and 92.0 per cent of water entitlements. An estimated 16.3 million hectares was under foreign ownership, in whole or part.¹⁷ As there has been some level of foreign ownership of the sector for decades, this information does not suggest that the level of foreign ownership is increasing rapidly.

The Foreign Investment Review Board (FIRB) examines proposals by foreign investors in Australia and makes recommendations to the Federal Treasurer on investments that are subject to the *Foreign Acquisitions and Takeovers Act 1975* and Australia's foreign investment policy. In 2011-12, agriculture, fisheries and forestry accounted for \$3.6 billion in FIRB approvals. This was only 2 per cent of total approvals, compared with 35 per cent for real estate and 30 per cent for mineral exploration and development.

¹⁷ Agricultural land and water ownership, December 2010, Australian Bureau of Statistics 7127.0

Foreign investment also occurs in processing assets. For example, this was demonstrated by the takeover of Sucrogen (previously CSR Sugar) by Singaporean agribusiness giant, Wilmar International Limited, in late 2010. This was followed by the purchase of Mulgrave Mill and Bundaberg Sugar's Far North Queensland mills by Maryborough Sugar Factory (MSF). MSF brought about the closure of the Babinda Mill; and in early 2012, Thailand's biggest producer of sugar, Mitr Phol Sugar Corp, stepped up its stake in MSF. Chinese company, COFCO, took a controlling interest in the Tully Mill in mid-2011 and Sucrogen acquired Proserpine Mill in mid-2012.¹⁸

Table 2.9 Foreign investment application – agriculture, fisheries and forestry, Australia

	2009–10	2010–11	2011–12	Three-year average
Number of approvals	17	17	49	28
Proposed investment (\$b)	2.3	1.4	3.6	2.4
Percentage of all proposals	2.00	0.79	2.00	1.60

Source: FIRB Annual Report 2011–12, Foreign Investment Review Board

Over the five years to 2011–12, the average level of foreign investment in the agriculture sector has been almost \$2.5 billion per annum. It should be noted that investment proposals vary greatly in size and averages can be skewed by large transactions.

The three main investment strategies used by recent foreign buyers of agricultural land in Australia appear to be:

- agribusiness companies (private or government-owned) seeking to extend their activities up the supply chain to secure supply sources
- investment or pension funds seeking profits from owning and operating Australian agricultural land
- mining companies seeking land predominantly for mining activities, while maintaining some agricultural activities.

In 2011–12 the largest source countries of investment in the agriculture sector by value were:

- Canada (\$1.4 billion)
- UK (\$0.6 billion)
- USA (\$0.5 billion)
- Thailand (\$0.3 billion)
- Singapore (\$65 million)
- China (\$27 million).

18 Statistics – Facts and Figures, CANEGROWERS

Foreign Ownership of Land Register

The Foreign Ownership of Land Register is a public register of all land in Queensland held by foreign persons or foreign companies, as defined in the *Foreign Ownership of Land Register Act 1988*. This is a tighter definition of foreign ownership than that used in the ABS survey quoted previously.

The Act provides for the disclosure of foreign ownership of land in Queensland. All foreigners, defined under the Act, are required to notify the Registrar of Titles of any acquisition or disposal of land or a relevant interest in land.

An interest in land, as defined under the Act, can include an interest in freehold land, state leasehold land and other specific types of interests. The register is available online at www.dnrm.qld.gov.au.

As at 30 June 2013, foreign-owned interests in land totalled 5 084 200 hectares, representing less than 3 per cent of Queensland's land area. There were 129 countries of origin recorded in the register.

While the register does not specifically identify foreign-owned land used for agricultural purposes, it does highlight that there is significant foreign investment in land within Queensland.

Cattle and calves micro view – case study¹⁹

The northern Australian beef industry is currently suffering the bust stage in a two decade cycle of boom and bust. Survey data from the ABARES and ABS for specialist beef producing farms in Queensland reveals progression of the cycle but not the outcomes.

The rate of return on equity generated by a business drives its capacity to expand or service debt.

Specialist Queensland beef businesses showed a marked improvement in the average rate of return on equity (net of capital appreciation) over the period 1997–98 to 2001–02. This improved profitability was based on productivity improvements made during earlier decades and the rising price of beef. Expectations that this would continue stimulated a round of capital expenditure that included significant purchases of additional property and saw many beef producers trading up.

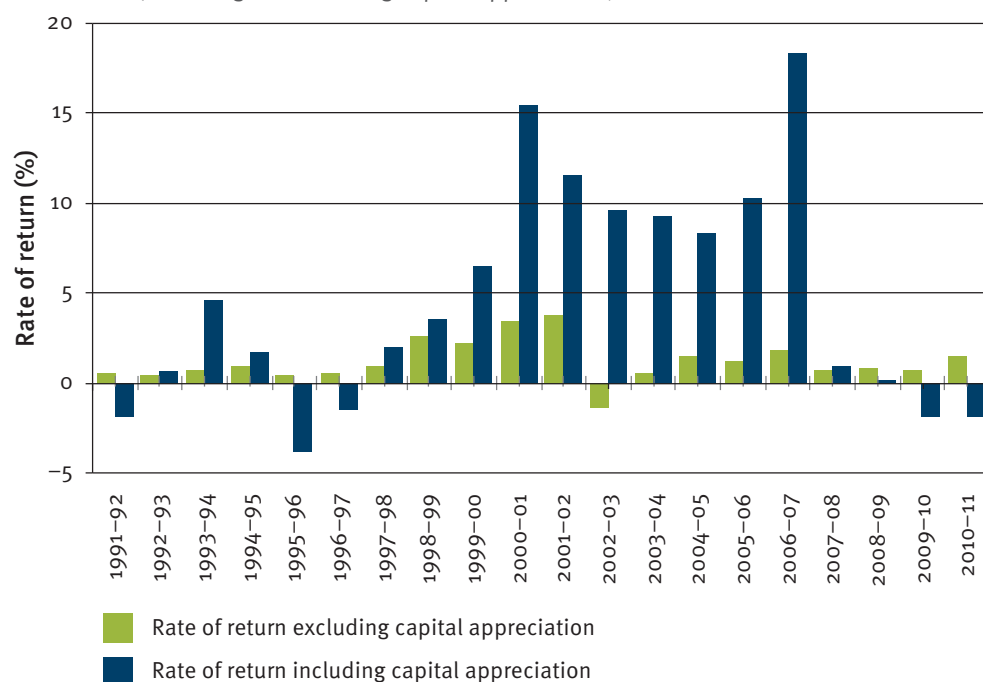
Figure 2.6 Queensland Cattle Market Index



Source: Damon Holmes, Livestock Market Analyst, Meat and Livestock Australia

¹⁹ The farm survey data used in this analysis is available at <http://abares.win.hostaway.net.au/AME/mla/mla.asp>

Figure 2.7 Rate of return on equity for specialist Queensland beef producers (excluding and including capital appreciation)



Source: <http://abares.win.hostaway.net.au/AME/mla/mla.asp>

The initial round of enthusiasm for property expansion and aggregation led to an across-the-board increase in asset valuations. By the mid-2000s lenders were funding a bubble in land values of major proportions. As is generally the case in a bubble, the lending was based on rapidly improving property valuations, not the long-term prospects of success for the borrower.

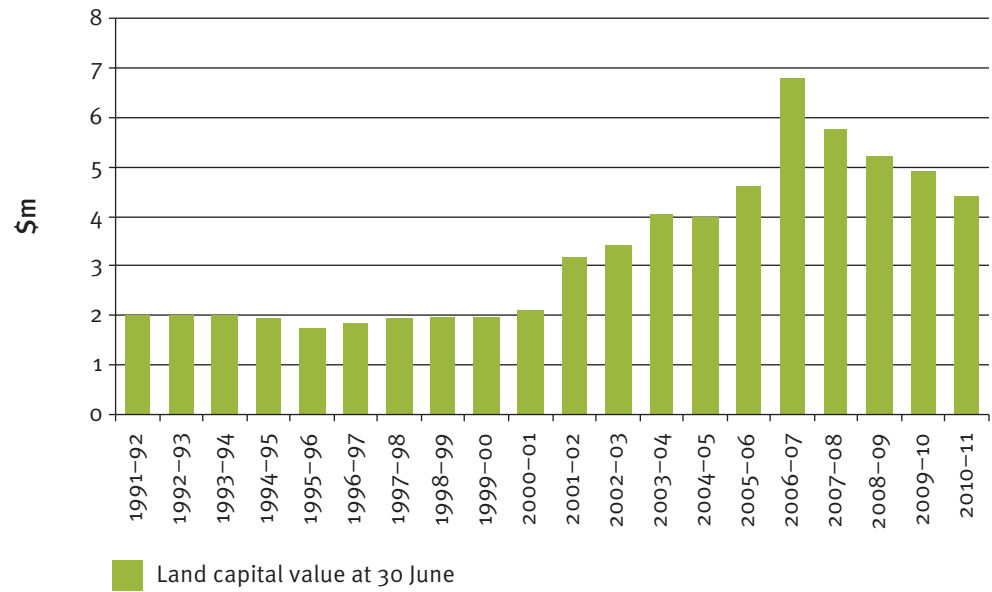
Rates of return on capital (including capital appreciation) of 8 per cent to 15 per cent per annum during this period caused some lenders and investors to seriously over extend themselves. Essentially, they were paying prices for assets that could not be justified by the underlying capacity of the beef business to service those debts.

Profitability improvements ceased from the early 2000s, partly reflecting the long series of dry seasons in Queensland. While product prices remained high they stopped increasing in Australian dollar terms. Expectations of future profitability remained high, particularly as a result of growing demand from emerging economies such as China.

This bubble was evident in many property markets around the world, bringing about the GFC in 2008. The GFC inhibited lenders from funding new loans and the market for beef properties became very subdued. The capital value of surveyed specialist beef properties in Queensland peaked (in real terms) in 2006-07 then subsequently declined.

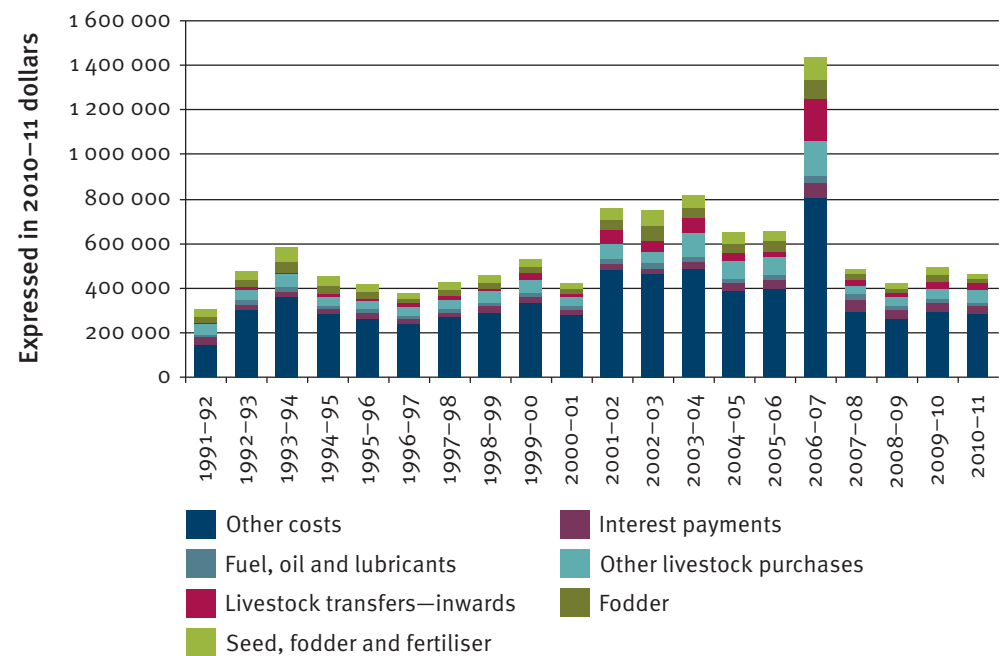
This process is expected to continue until the relationship between land value and expected profitability is restored. While markets are notoriously liable to overshoot in such circumstances, it is unlikely to occur because of the continued positive outlook for the global beef market.

Figure 2.8 Land capital value for surveyed specialist Queensland beef producers (expressed in constant 2010–11 dollars)



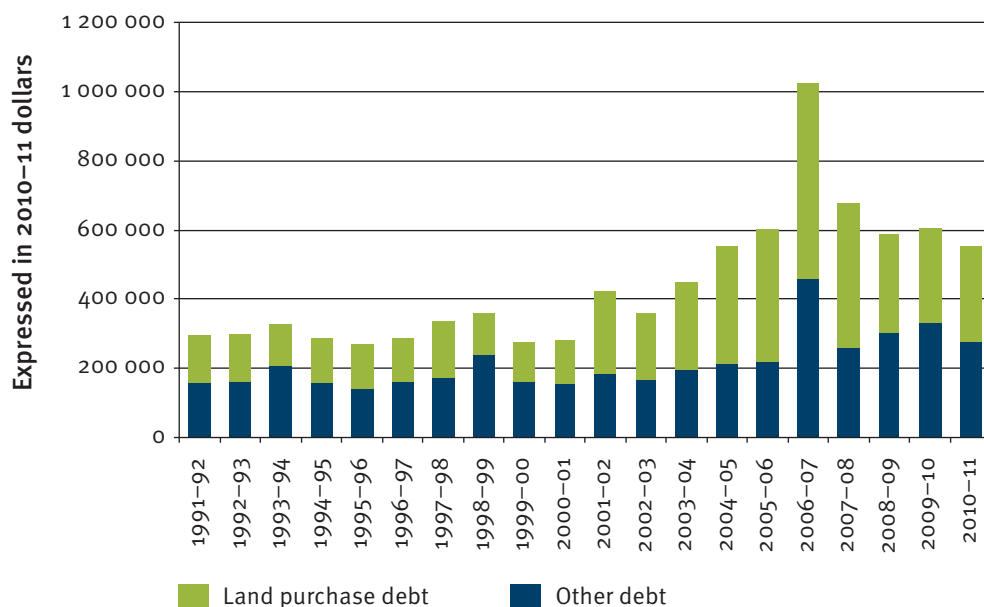
Widespread drought during the early and middle part of the last decade significantly increased cash and non-cash costs, with 2006–07 being something of a watershed year for both costs and asset values. The reduction in costs to their long-term level (in real terms) since 2006–07 reflected the massive efforts of producers reducing costs to survive. Better seasons in recent years have also contributed to the relative reduction in costs.

Figure 2.9 Cash and non-cash costs incurred by surveyed specialist Queensland beef farms



One of the consequences of the asset price bubble was a build-up of debt levels (see Figure 2.10). Profitability has been sufficient to enable significant reductions in debt since the 2006–07 peak, and has been assisted by falling costs and interest rates since that time. However, this remains a risk for the future of the industry, particularly as current low interest rates cannot be expected to last indefinitely.

Figure 2.10 Debt levels for surveyed specialist Queensland beef farms



The *Northern beef report – 2013 Northern beef situation analysis*²⁰ reaffirms these trends by outlining the performance of the northern beef industry across Western Australia, the Northern Territory and Queensland over the last 12 years.

Interestingly, while profits remain stable across the region, the increasing debt of top performers has eroded profitability with wide variation across producers. The superior performance of the top 25 per cent of producers can be attributed to higher incomes from better herd productivity (through higher reproductive rates, lower mortality rates and heavier sale weights) and lower operating expenses (through better labour efficiency). There is little correlation with beef prices, rainfall and land quality.

Importantly, there appears to be an optimal operating scale range, with herd sizes on either side of the scale leading to reduced performance.

²⁰ McLean et al (2014), *The Northern beef report – 2013 Northern beef situation analysis*, Meat and Livestock Australia, B.COM.0348

Case study

Information to support producers

As the production of food and fibre has changed, so have sources of information available to industry. In Queensland, extensive use of online technologies by the FutureBeef eExtension team has enabled rapid, targeted and interactive information sources in response to Queensland's worsening drought situation.

A dedicated drought page on the FutureBeef website (<http://futurebeef.com.au/topics/drought/>) provides 24/7 access to the latest drought information and management options. The web page receives almost 100 unique visits per week.

The webinar 'Decisions for drought affected producers' was developed and presented in February 2014, attracting over 260 registrations. The webinar focused on the current drought situation and decisions that producers need to be making. Attendees were also introduced to an interactive tool to help them better calculate the financial options of selling versus feeding stock. The webinar was posted on the FutureBeef website and has already received over 100 views in three months.

As social media continues to be a vital, word-of-mouth tool, FutureBeef social media champions use Twitter and Facebook to keep producers connected, included and informed. More in-depth information is available in *FutureBeef eBulletins* which are sent to nearly 3000 subscribers.

Because producers don't all access information in the same way, drought-focused articles will soon appear in all three FutureBeef newsletters—*Northern Muster*, *BeefTalk* and *CQ BEEF*. They will also appear as feature articles in the *North Queensland Register* and *Queensland Country Life* (both in hardcopy and online), which will communicate the information to over 50 000 readers.

