

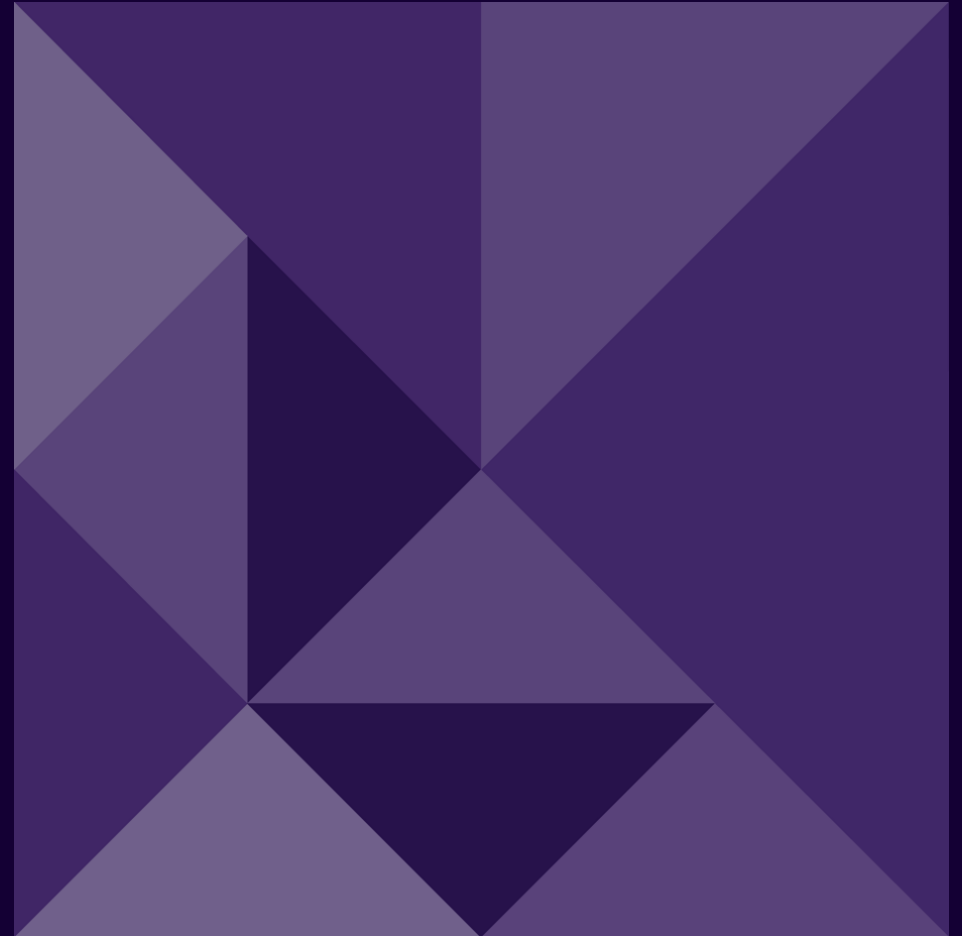
**ACIL ALLEN**

June 2024

Report to Cotton Research and Development Corporation and Cotton Australia

# The Australian cotton industry

An update to the socio-economic study with a focus on 2022



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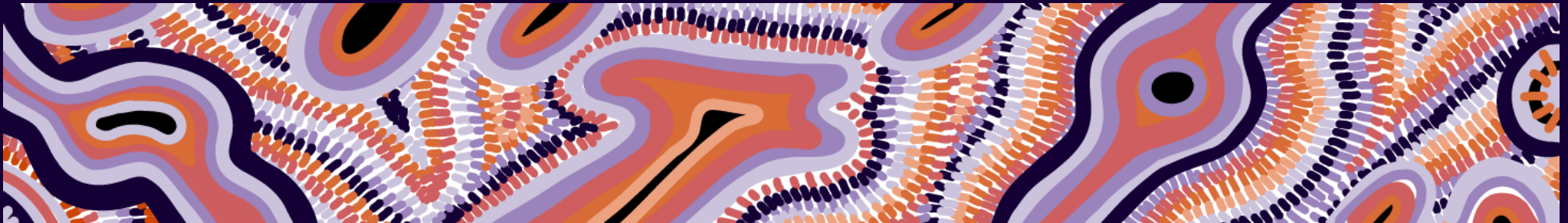
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Goomup, by Jarni McGuire

# Glossary of key terms

Term	Definition
Total economic contribution	Refers to the comprehensive assessment of both direct and indirect impacts of an activity, industry, or entity on an economy.
Direct	Refers to the immediate measurable impacts of a specific activity, industry, or entity on an economy through indicators such as profits, taxes paid, and wages directly associated with the activity.
Indirect	Refers to the economic impact generated by supplier industries that provide goods and services to the primary activity or industry under consideration.
Value add	Refers to the increase in economic worth or utility that a business or process creates through its activities. It represents the difference between the total revenue generated by a business and the cost of inputs purchased from other businesses.
Employment	Employment in economic contribution analysis refers to the number of individuals engaged in productive work within an economy or a specific industry. Employment data helps quantify the workforce impact of an industry, including direct employment within the industry itself and indirect employment in related sectors that support its operations.
Full time equivalent (FTE)	A unit of measurement representing the workload of a group of persons in terms of total hours worked, adjusted to full-time hours.
LGA	Local government area
Input-output analysis	A method used to study the interdependencies between different sectors of an economy by quantifying the flow of goods and services among them.

# Economic impact of cotton on the Australian economy

In 2021-22 the Australian cotton industry directly contribution \$1.8 billion and 7,222 FTE employment to the Australian economy.

When flow on effects are considered the total economic stimulus from the Australian cotton industry in 2021-22 was \$4.7 billion and 21,896 FTEs.

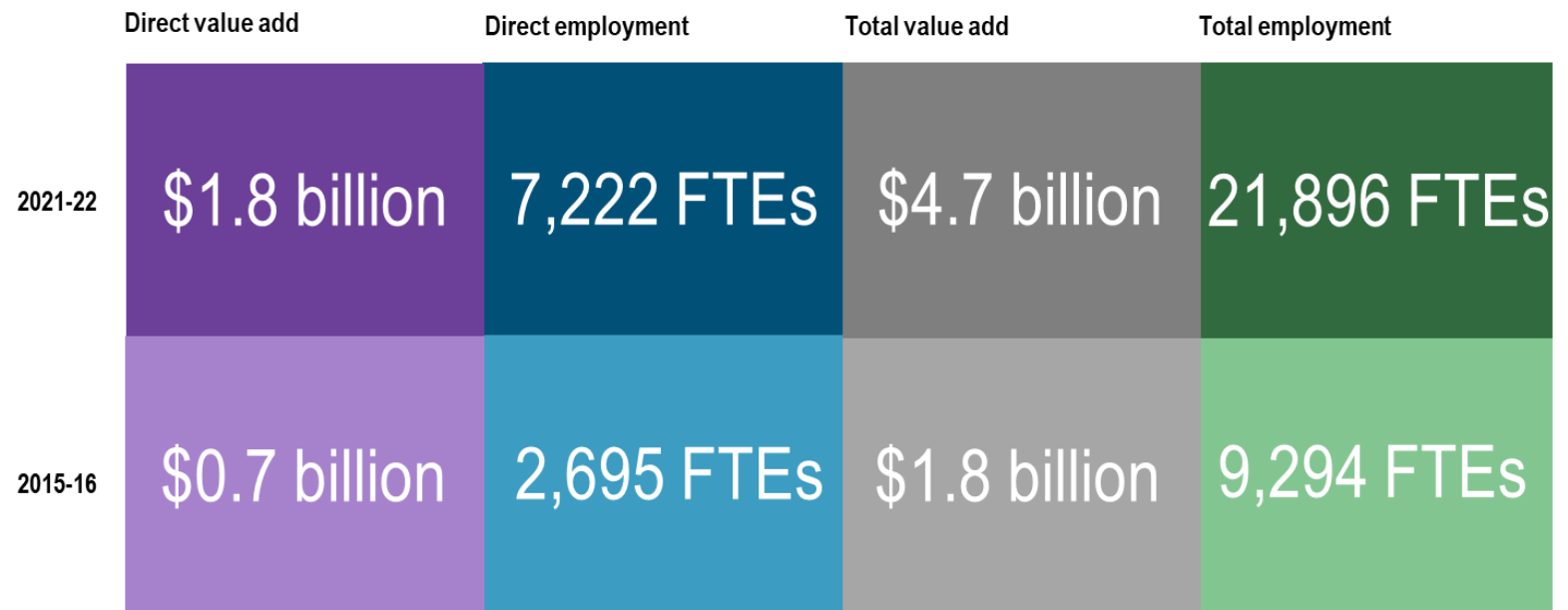
The Australian cotton industry contributes value and jobs to the Australian economy nationally and at a state and regional level.

The 2015-16 and 2021-22 cotton production seasons were very different in scale. Production value more than tripled from \$1.3 billion in 2015-16 to \$4.1 billion 2021-22 due to the twin forces of favourable growing conditions and high prices (refer Figure 1)/

Cotton production is incredibly variable due to its reliance on water availability. Water use efficiency has improved from 0.61 bales/ML in 1997 to 1.23 bales/ML in 2021, a reduction of 52 per cent in the volume of water needed to grow a bale of cotton, but these gains are becoming harder to achieve.<sup>1</sup> Therefore, it is vital that the industry is able to capitalise on favourable conditions to make up for foregone income in drier years. The results of the 2021-22 production season indicate that the industry is successful at achieving this.

Two thirds of cotton production is in northern NSW, with one third in southern Queensland and a very small balance in the rest of Australia. The cotton industry provides significant employment opportunities to those in these regions through farming businesses, ginning operations, and supporting industries.

**Figure 1** Contribution of cotton to the national economy in 2021-22 and 2015-16



<sup>1</sup> NSW DPI 2022, *Benchmarking water productivity of Australian irrigated cotton – the latest results*, Primefact PUB22/702, available at: [https://www.dpi.nsw.gov.au/data/assets/pdf\\_file/0005/1422293/PDF-Primefact-T-and-D-Aug-2022-FINAL.pdf](https://www.dpi.nsw.gov.au/data/assets/pdf_file/0005/1422293/PDF-Primefact-T-and-D-Aug-2022-FINAL.pdf)

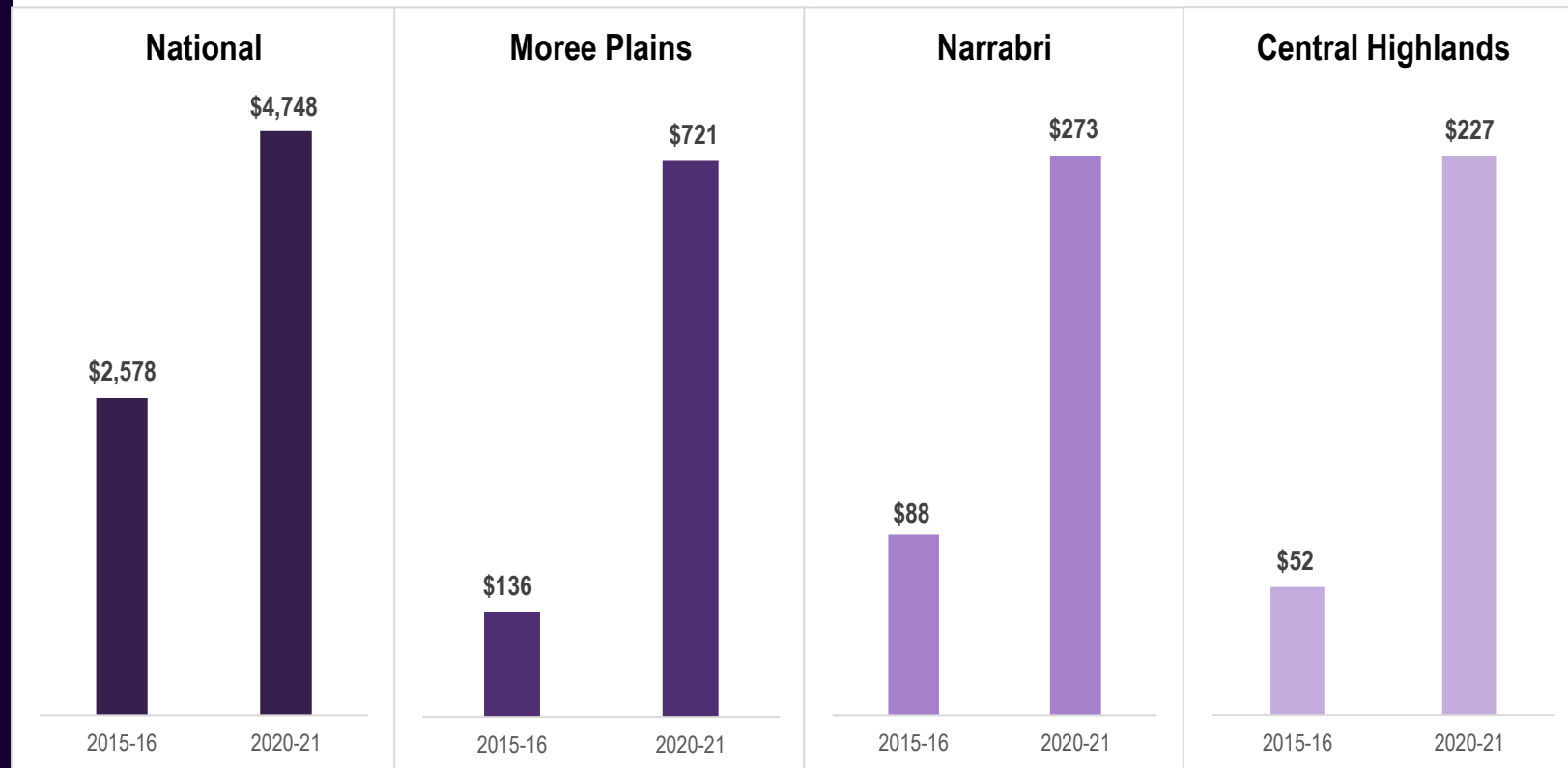
# The importance of cotton to the regions

In good seasons, like 2021-22, the cotton industry makes up a larger proportion of the regional economies in which it operates than in lesser seasons. This is more pronounced at smaller geographic scales.

Figure 2 below shows how the proportional increase in value add becomes larger as the geographic scale decreases. At the national level total value add (direct and indirect) increased by 161%, while at the regional level total value add increased by 430% in Moree Plains, 210% in Narrabri, and 337% in Central Highlands, the three highest producing LGAs. This is due to almost all direct benefits being retained in the regions, and direct benefits increasing by a larger proportion than indirect benefits.

Economies at the regional level are significantly less diversified than those at the state or national level. In 2022 Moree Plains had a Gross Regional Product of \$966 million,<sup>2</sup> while in 2021-22 the direct impacts of the cotton industry to the region were \$506 million, showing the value of the industry to the local economy.

**Figure 2** Increase in value add at national and regional levels from 2015-16 to 2021-22 (\$ million)



<sup>2</sup> Moree Plains Shire Council 2022, *Living the Moree Life*, Available at: [https://www.mpsc.nsw.gov.au/our-services-we-provide/economic-development#:~:text=A%20strong%20economy%20with%20high,\)%20of%20%24966%20million%20\(2022\)](https://www.mpsc.nsw.gov.au/our-services-we-provide/economic-development#:~:text=A%20strong%20economy%20with%20high,)%20of%20%24966%20million%20(2022))

# 1. The Australian cotton industry

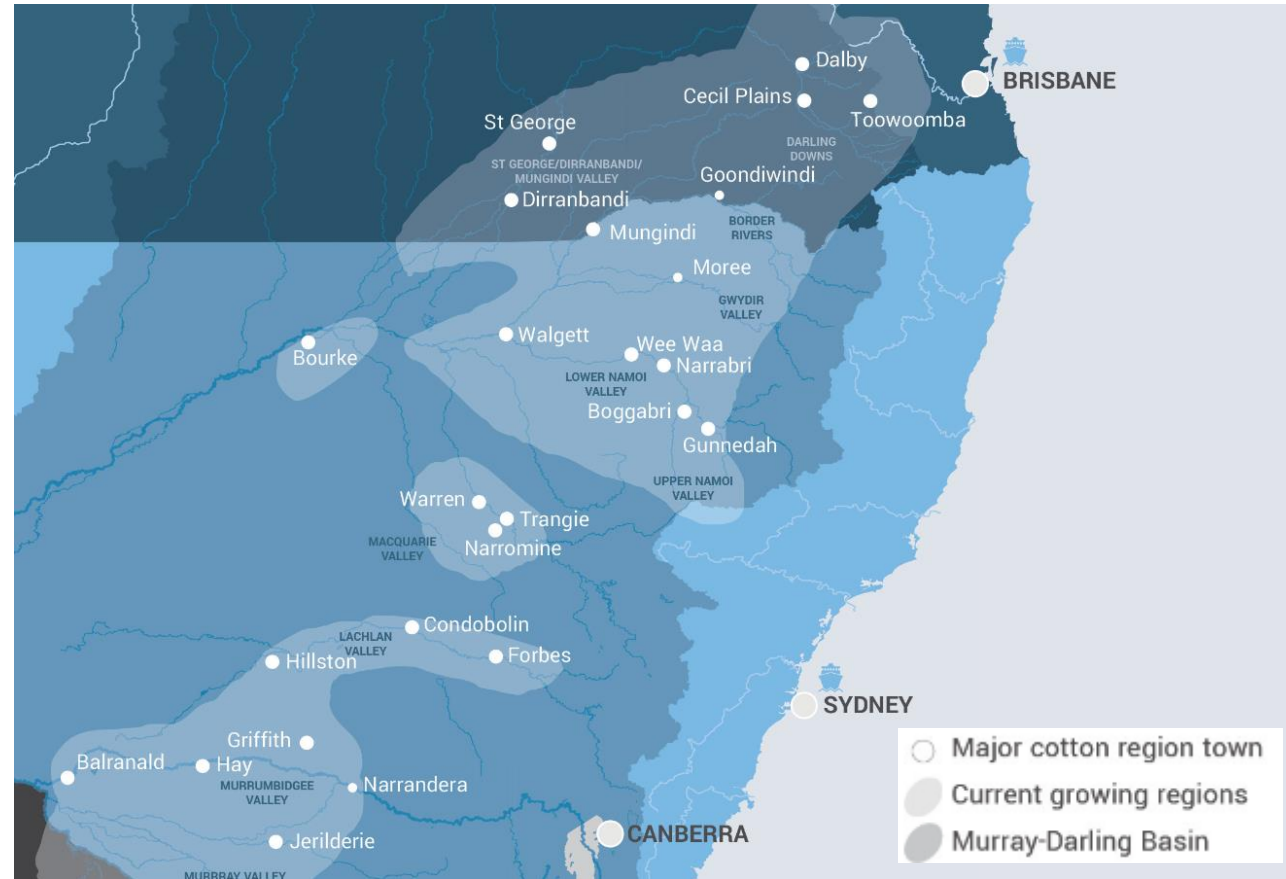
# Production regions

Two thirds of cotton production is in NSW, with one third in Queensland and a very small balance in the rest of Australia. 14 of the highest producing LGAs in Northern NSW and Southern Queensland have been included in the analysis (see section 3 for more information).

Major cotton production areas (see Figure 3) include the Central Highlands, Darling Downs, Border Rivers, St George, Mungindi and Dirranbandi regions of Queensland, and the Gwydir, Namoi, Macquarie, Murrumbidgee, Murray and Lachlan valleys of New South Wales. Smaller amounts of cotton are grown in northern Victoria, in northern Queensland, northern Western Australia, and the Northern Territory.

The number of cotton growers and the intensity of production in each region depends on the availability of water and producers choosing whether to grow cotton instead of other crops.

**Figure 3** Cotton production growing regions and major towns<sup>3</sup>



<sup>3</sup> Cotton Australia, available at: <https://cottonaustralia.com.au/where-is-cotton-grown>

# Cotton value chain

In Australia, the cotton value chain starts at the farmgate with agricultural practices including land preparation, planting, and irrigation, then processing at a gin to separate fibres.

Almost all of Australian cotton is exported as there is no domestic spinning industry.

Cotton is an important export product for Australia - but it is more than just production and the cotton farmer. The cotton supply chain encompasses production, transport, through to ginning, the use of cotton seed in livestock feed as well as the export of lint. Figure 4 depicts a simplified cotton supply chain which indicates the focus area for the data framework and the analysis in this report – from production to port.

The cotton industry contributes to the economy beyond its supply chain by providing employment opportunities through the whole supply chain. There are also jobs created indirectly from supporting industries such as agricultural service providers, technical and scientific companies, and transport companies. Additionally, the industry brings broader social and economic benefits to regional communities, including education opportunities and community support.

Figure 4 Cotton supply chain





# Rainfall

Cotton production is heavily dependent on water availability.

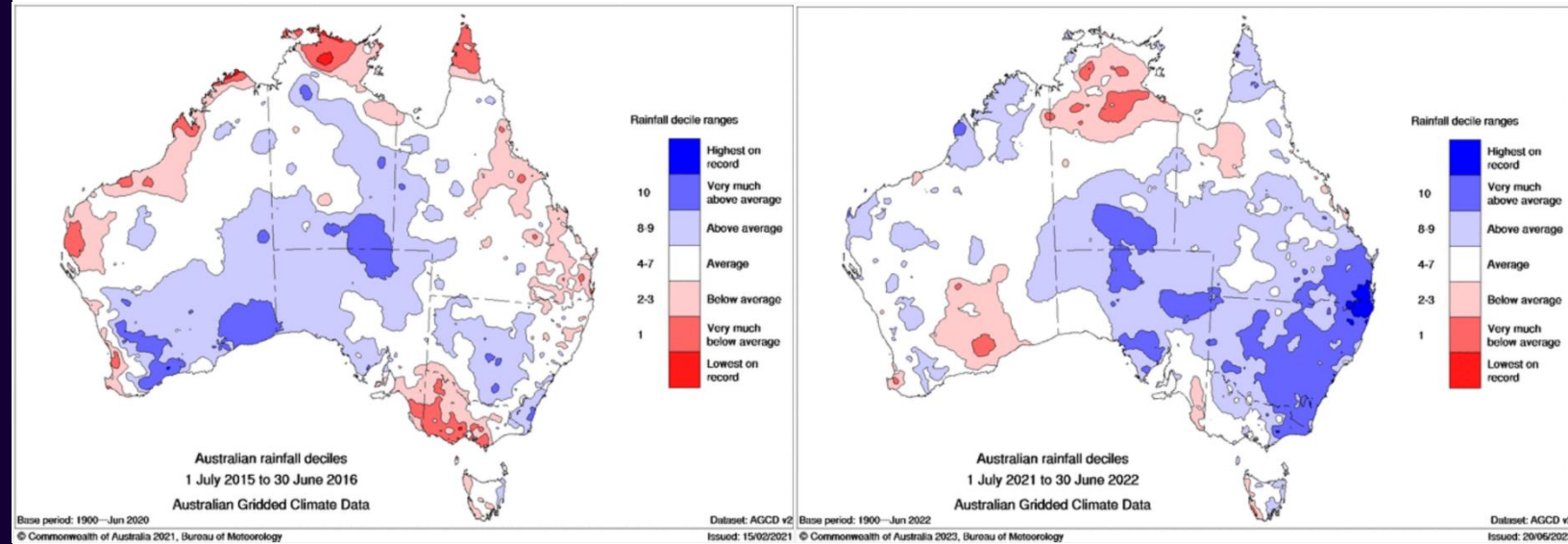
In 2015-16 rainfall was below average in cotton production regions, while in 2021-22 it was above average in cotton production regions, and even the highest on record in some locations. This drove the record high production levels seen in 2021-22.

The Sustainable Water Use Index shows that water productivity of Australian cotton increased from 0.61 bales/ML in 1997 to 1.23 bales/ML in 2021, a reduction of 52 per cent in the volume of water needed to grow a bale of cotton.<sup>4</sup> The reduction rate, however, is declining as efficiency gains become harder to achieve.<sup>5</sup> The annual rate of improvement in water productivity from 1997 to 2007 was 9%, but has slowed since 2007 to less than 0.6%.

Production is heavily influenced by climate, specifically rainfall. In 2015-16 rainfall (Figure 5) was at or lower than average in all major cotton producing regions in NSW and Queensland except for Carrathool, Narromine, and Goondiwindi. The opposite occurred in 2021-22 (Figure 6) with rainfall above average in all regions, and very much above average in many regions.

**Figure 5** Twelve monthly rainfall deciles, 2015-16<sup>6</sup>

**Figure 6** Twelve monthly rainfall deciles, 2021-22<sup>7</sup>



<sup>4</sup> NSW DPI 2022, *Benchmarking water productivity of Australian irrigated cotton – the latest results*, Primefact PUB22/702, available at: [https://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0005/1422293/PDF-Primefact-T-and-D-Aug-2022-FINAL.pdf](https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/1422293/PDF-Primefact-T-and-D-Aug-2022-FINAL.pdf)

<sup>5</sup> Cotton Australia and CRDC 2022, *Australian Cotton Sustainability Update 2022*, Available at: <https://cottonaustralia.com.au/assets/general/Documents/2022-Sustainability-Update.pdf>

<sup>6</sup> BOM 2024, *Recent and historical rainfall maps*, Available at: <http://www.bom.gov.au/climate/maps/rainfall/?variable=rainfall&map=decile&period=12month&region=nat&year=2016&month=06&day=30>

<sup>7</sup> BOM 2024, *Recent and historical rainfall maps*, Available at: <http://www.bom.gov.au/climate/maps/rainfall/?variable=rainfall&map=decile&period=12month&region=nat&year=2022&month=06&day=30>

# Volume of production

Favourable growing conditions led to an increase in the planting area of cotton from 280,000 ha in 2015-16 to 549,000 ha in 2021-22.

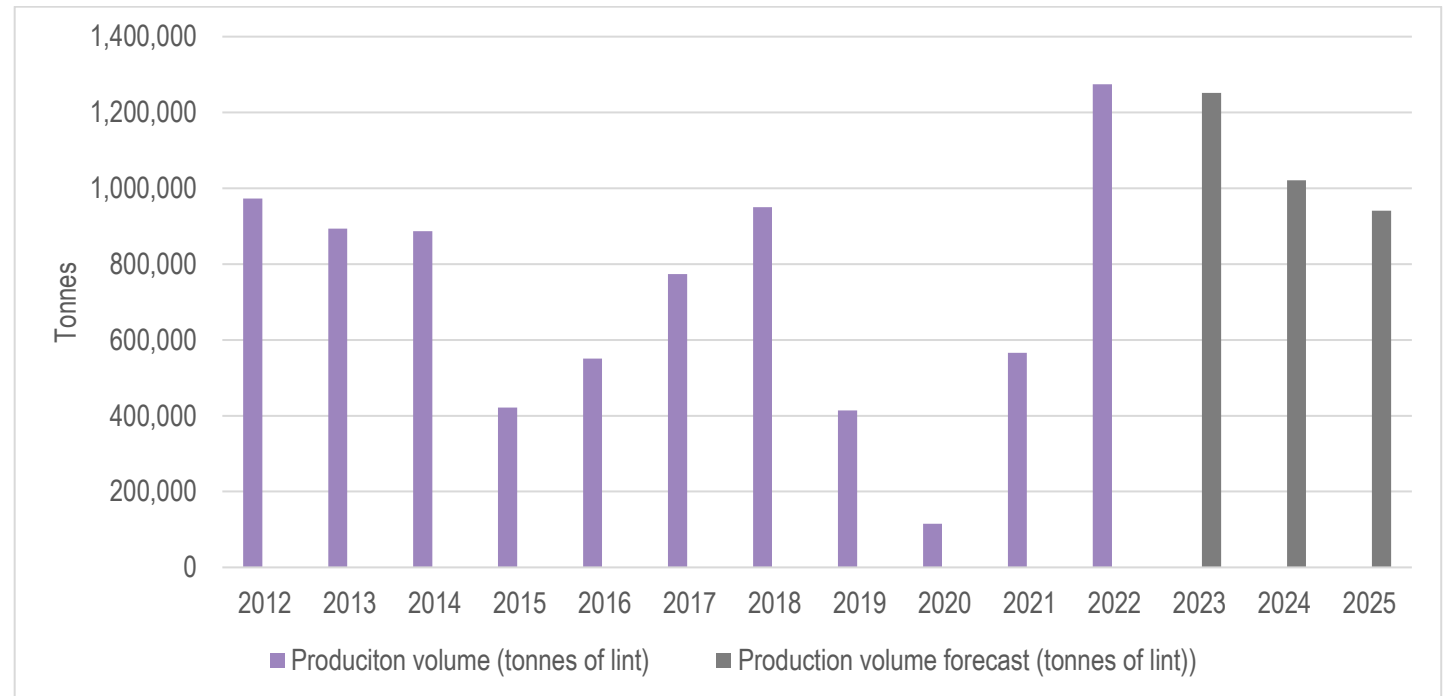
This increase in planting area has meant that production volume increased from 537,000 tonnes in 2015-16 to 1,274,000 tonnes in 2021-22.

Production trends, and the large fluctuations in production, since 2012 are shown in Figure 7 below. In 2019-20 cotton production reached its lowest level since 1982-83.<sup>8</sup> The industry then rebounded to reach record high levels of production just two years later in 2021-22. The previous analysis completed in 2015-16 was for the third-lowest production year out of the last 10 years, offering a meaningful comparison to 2021-22.

Production is forecasted by ABARES to decrease but remain above 2015-16 levels for the next 3 seasons.

Ginning production also increased from 3 million bales to 5.7 million bales from 2015-16 to 2021-22.

**Figure 7** Cotton production volume time series



<sup>8</sup> ABS 2021, *Australia's cotton production at a 37-year low*, Available at: <https://www.abs.gov.au/media-centre/media-releases/australias-cotton-production-37-year-low>

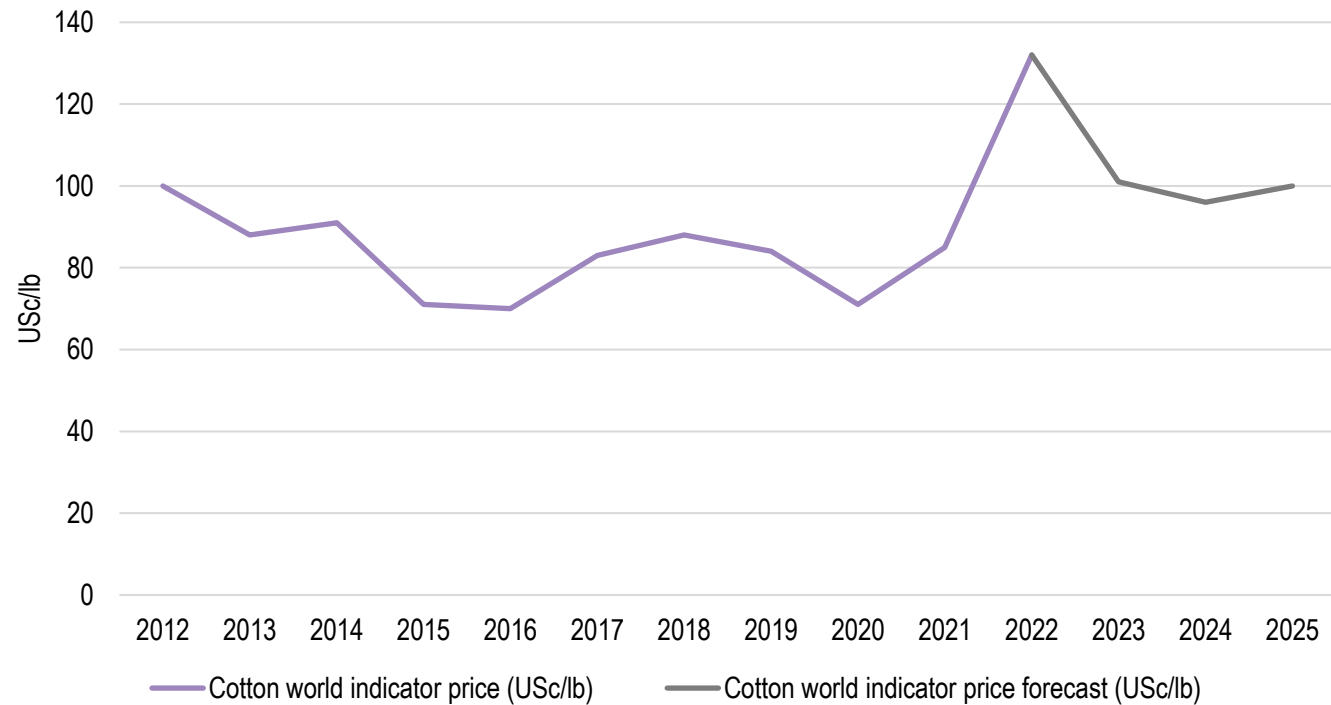
# Price increases

Prices were also at favourable levels in the 2021-22 season compared to the 2015-16 season.

As almost all cotton is exported, the world price is an important indicator. Prices have decreased from recent highs but remain above the long-term average.

Australian cotton prices (see Figure 8) were at a high in 2022 due to several factors, including strong global demand for cotton products, particularly from key importing countries like China and India. Additionally, reduced cotton production in major exporting countries like the United States and Pakistan, as well as logistical challenges and supply chain disruptions caused by the COVID-19 pandemic, contributed to price increases.

**Figure 8** Cotton world price time series



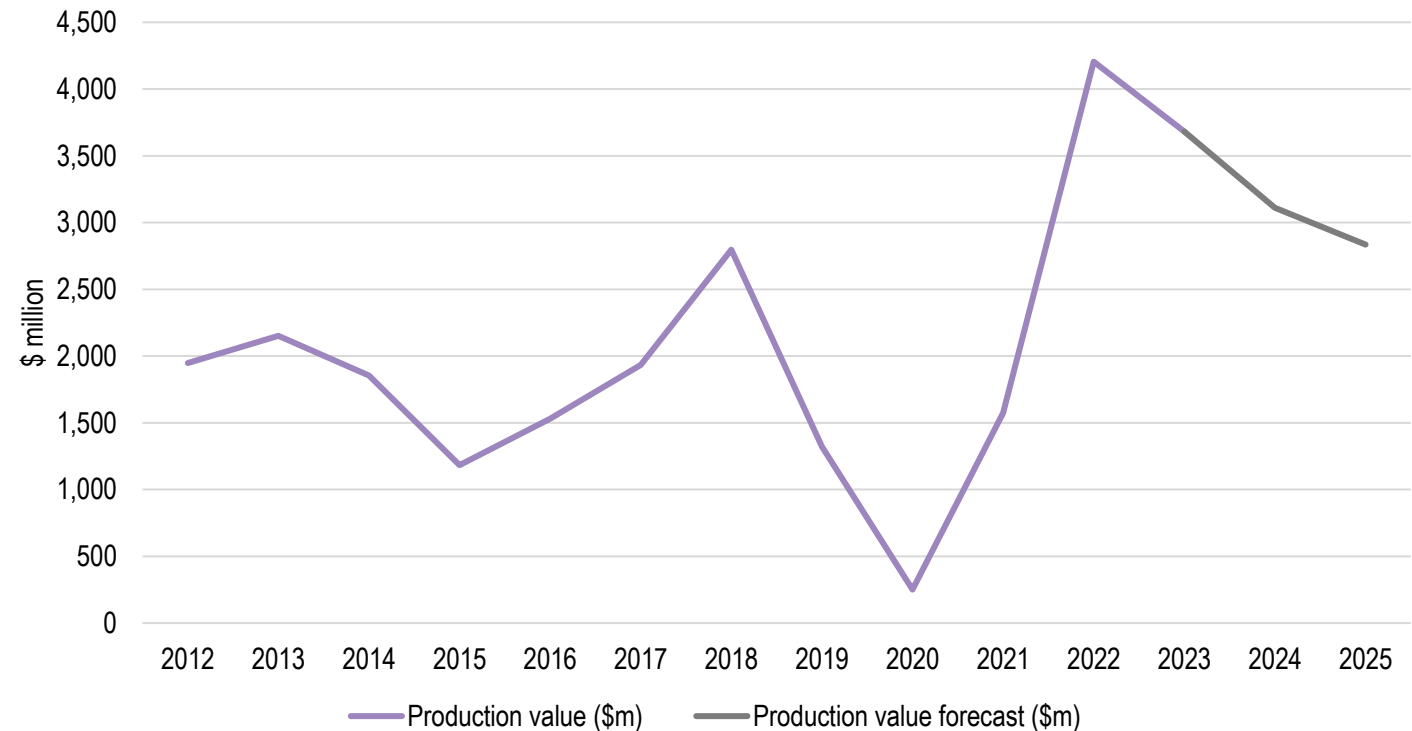
# Prices and volume driving value increase

The twin forces of favourable growing conditions from higher-than-average rainfall and high world prices drove record levels of production value to over \$4 billion in 2021-22, up from \$1.5 billion in 2015-16.

The industry reached record high levels of production value in 2021-22 of just over \$4 billion (refer Figure 9) from \$1.5 billion in 2015-16. The industry did an exceptional job of capitalising on favourable production conditions and prices. This is vital for the sustainability of the industry, with as much value as possible needing to be gained during these positive periods to compensate for losses of income during drought as shown in the 2019-20 season.

The value of cotton production decreased by 12% to \$3.6 billion in 2022-23, and further falls are forecast to \$3.1 billion in 2023-24, and to \$2.8 billion in 2024-25. Production volumes are forecast to fall to 1 million tonnes in 2023-24 as less favourable conditions reduce area planted. These production levels, however, are still above the industry 10-year average of 721,000 tonnes due to relatively high water storage levels.<sup>9</sup>

**Figure 9** Cotton farmgate production value time series



<sup>9</sup> <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/outlook-crops#value-of-crop-production-to-rise-in-202425>

## 2. The Economic contribution of the Australian cotton industry

# How the results were calculated

Economic contribution analysis assesses the direct and indirect impacts of a specific industry on a region's economy, including factors such as employment and value added.

Both the direct and indirect contribution of the cotton industry were calculated to arrive at the total contribution of the industry to the Australian economy.

**Direct** contribution reflects the cotton industry's immediate economic activities:

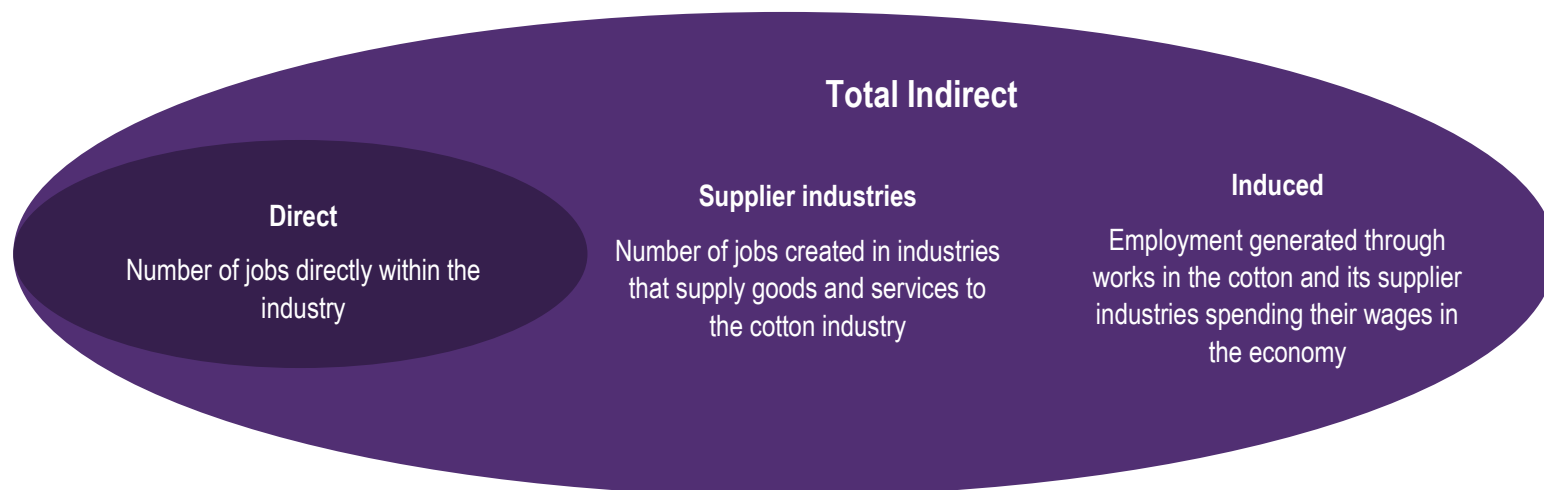
- **Value added** is the total value of goods produced by the cotton industry minus the value of goods and services purchased from other industries that are used in the cotton production process.
- **Employment** is calculated by the number of jobs directly within the cotton industry.

**Indirect** contribution reflects the broader economic impacts that results from the cotton industry's interactions with other industries:

- **Value added** by supplier industries, which is calculated by the value of goods and services produced by suppliers to meet the cotton industry's demand minus the value of intermediate inputs that these suppliers purchase from their own suppliers.
- **Employment** is the jobs created in industries that supply goods and services to the cotton industry.
- **Induced impacts** through spending by the spending of wages and salaries of workers employed in the cotton industry and its supplier industries in the local economy.

Figure 10 below outlines the employment impacts of the industry, broken down into direct and indirect contribution. Further detail on the approach is located on pages 18-20.

**Figure 10** Overview of direct and indirect employment contribution



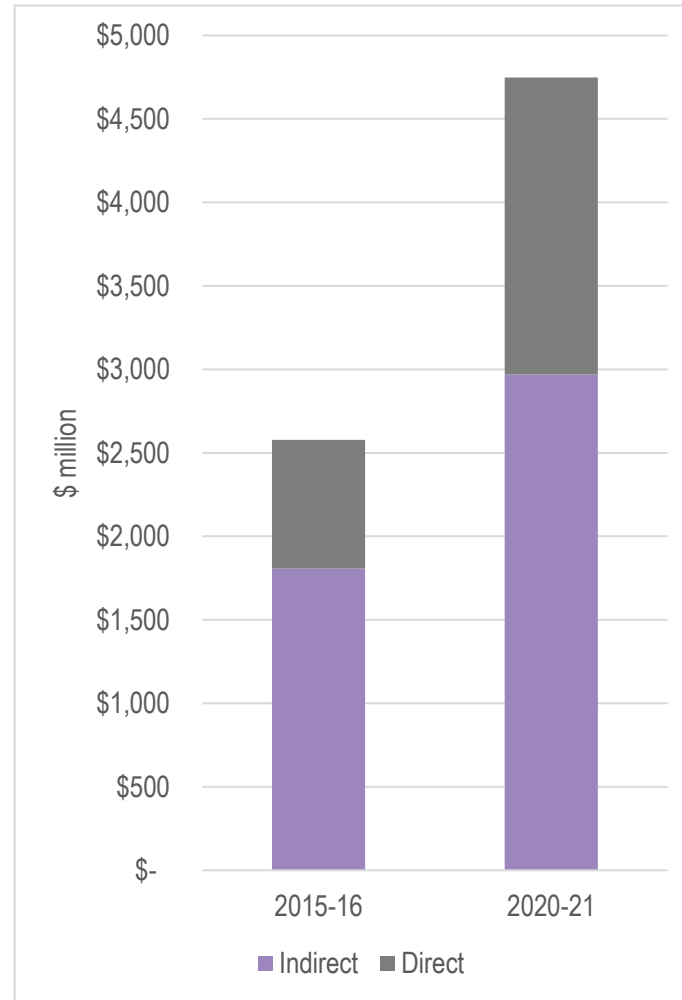
# National results

Across Australia, the cotton industry contributes more than \$4.7 billion value add and it employs 21,896 full time equivalents.

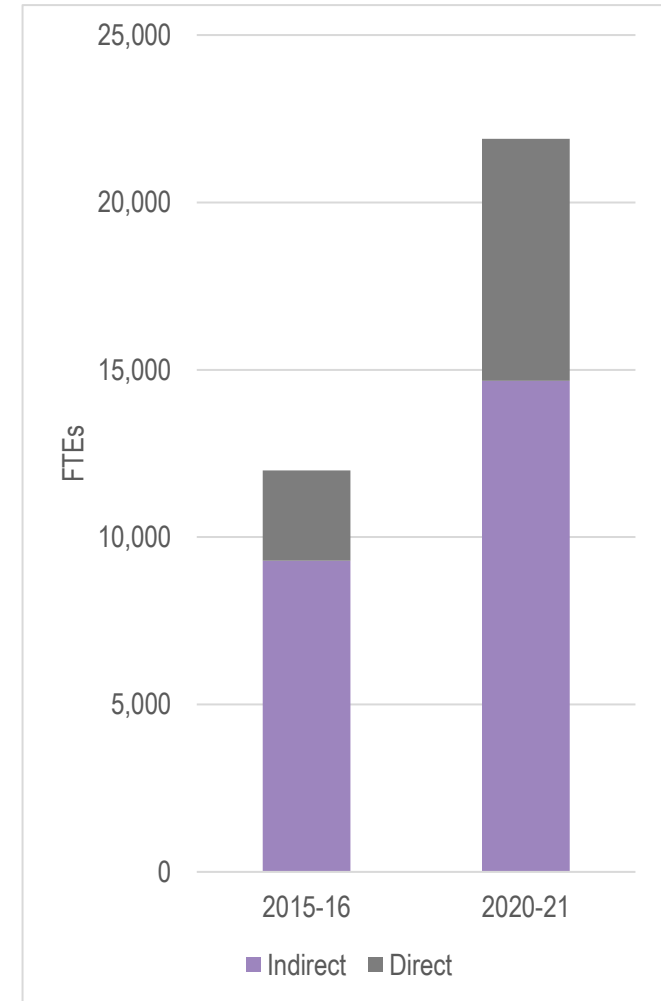
The industry directly contributes \$1.8 billion and employs 7,222 full time equivalents.

Figures 11 and 12 show total industry direct and indirect value add and employment for 2015-16 and 2021-22. The comparison with 2015-16 indicates the vast difference between a high production and low production year. In particular, the direct industry contribution is approximately three times as large in 2021-22 as in 2015-16 for both value add and employment.

**Figure 11** Total industry value add



**Figure 12** Total industry employment



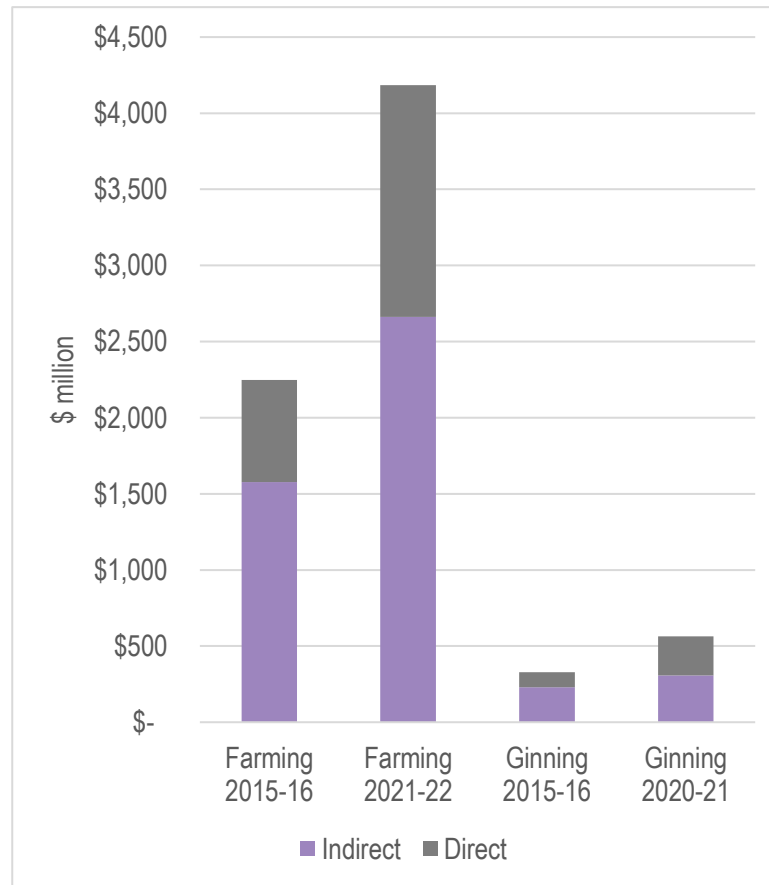
# Cotton farming and ginning contribution

The majority of the industry contribution is due to cotton farming accounting for 85 per cent of direct value add and 80 per cent of full-time equivalent jobs.

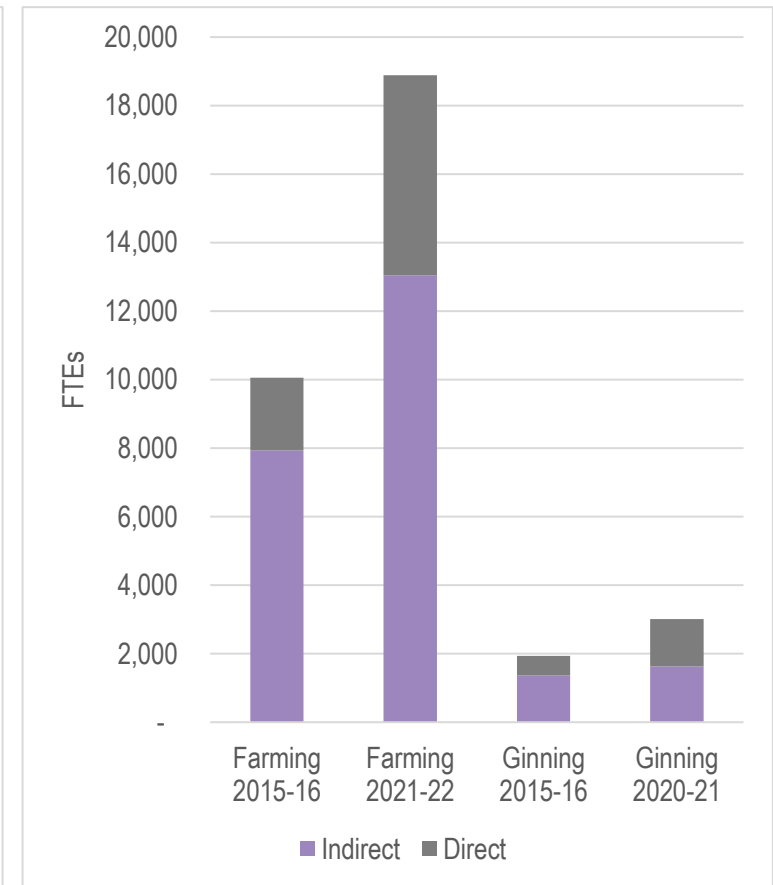
Figures 13 and 14 show total direct and indirect value add and employment for 2015-16 and 2021-22 split into cotton farming and cotton ginning. Nationally, cotton farming contributes an upper bound total economic stimulus of more than \$4.1 billion to the Australian economy and 18,886 full time equivalent jobs.

Nationally, cotton ginning contributes a total economic stimulus of \$565 million to the Australian economy and 3,010 full time equivalent jobs.

**Figure 13** Cotton farming and ginning value add



**Figure 14** Cotton farming and ginning employment





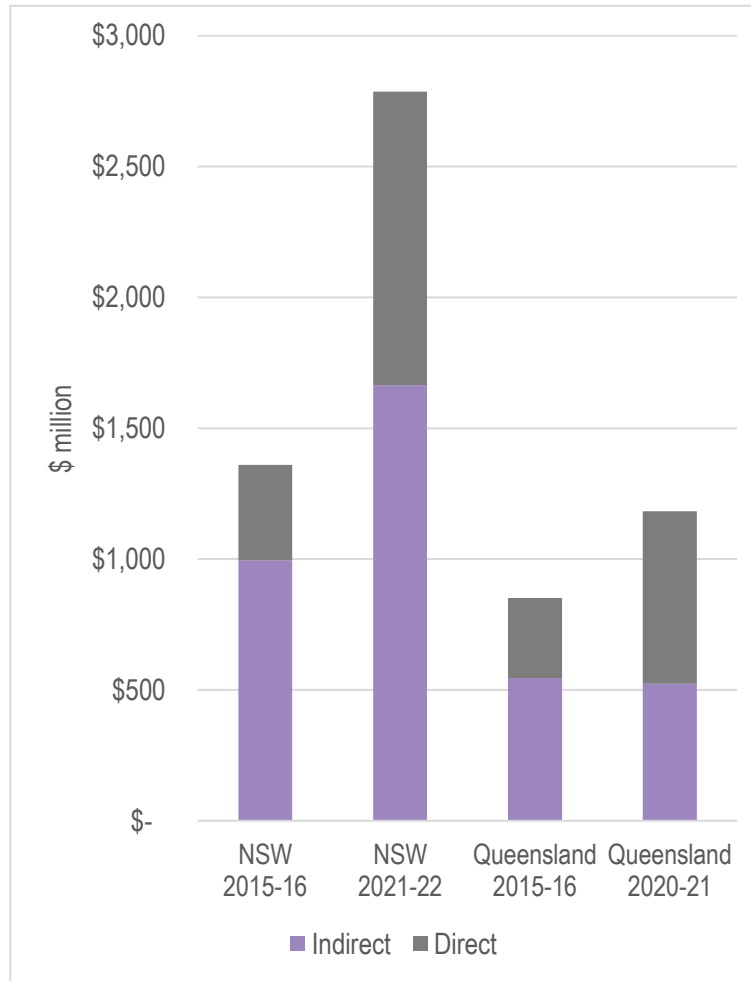
# State results

The majority of the industry contribution is to the NSW economy at over \$2.5 billion.

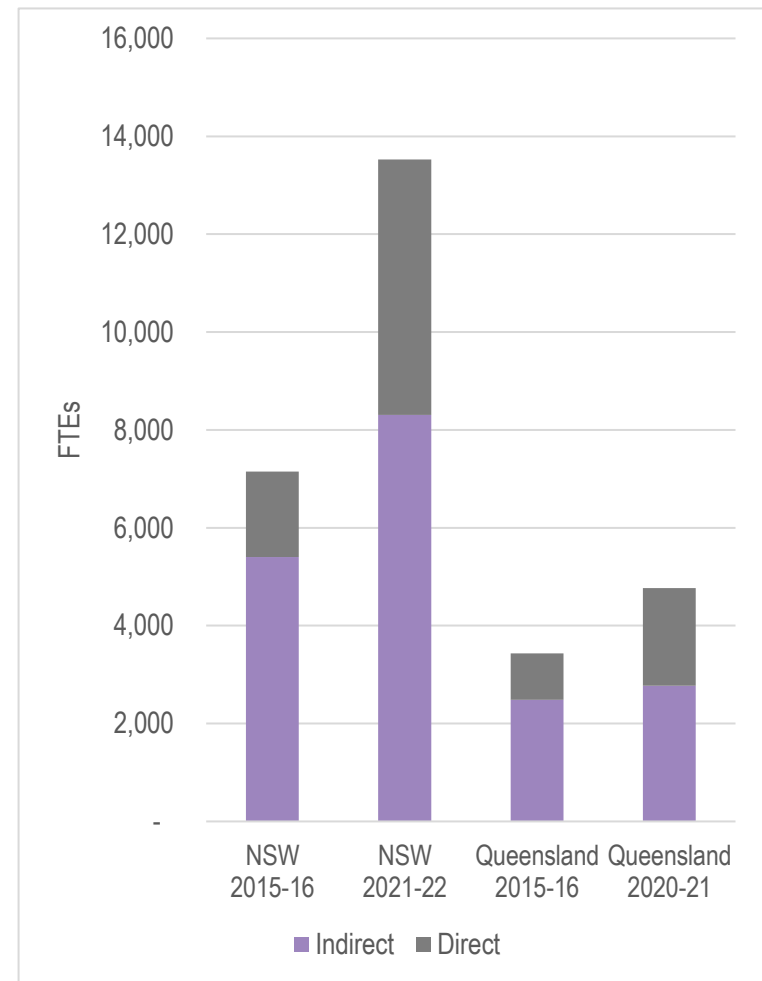
Contribution to Queensland is still significant, for example in 2021-22 the direct value add to the Queensland economy was \$659 million, a similar level to the whole industry direct contribution in 2015-16 of \$671 million.

Figures 15 and 16 show direct and indirect contribution broken down into NSW and Queensland. In 2021-22, total value add in NSW was \$2,786 million and \$1,183 in Queensland. The total employment impact was 13,529 FTEs in NSW and 4,766 FTEs in Queensland. The balance of \$780 million and 3,599 FTEs is in the rest of Australia. This shows the importance of the cotton industry to NSW and Queensland.

**Figure 15** NSW and Queensland value add



**Figure 16** NSW and Queensland employment



# Regional results – Value add

The impacts on cotton production growing regions are significant.

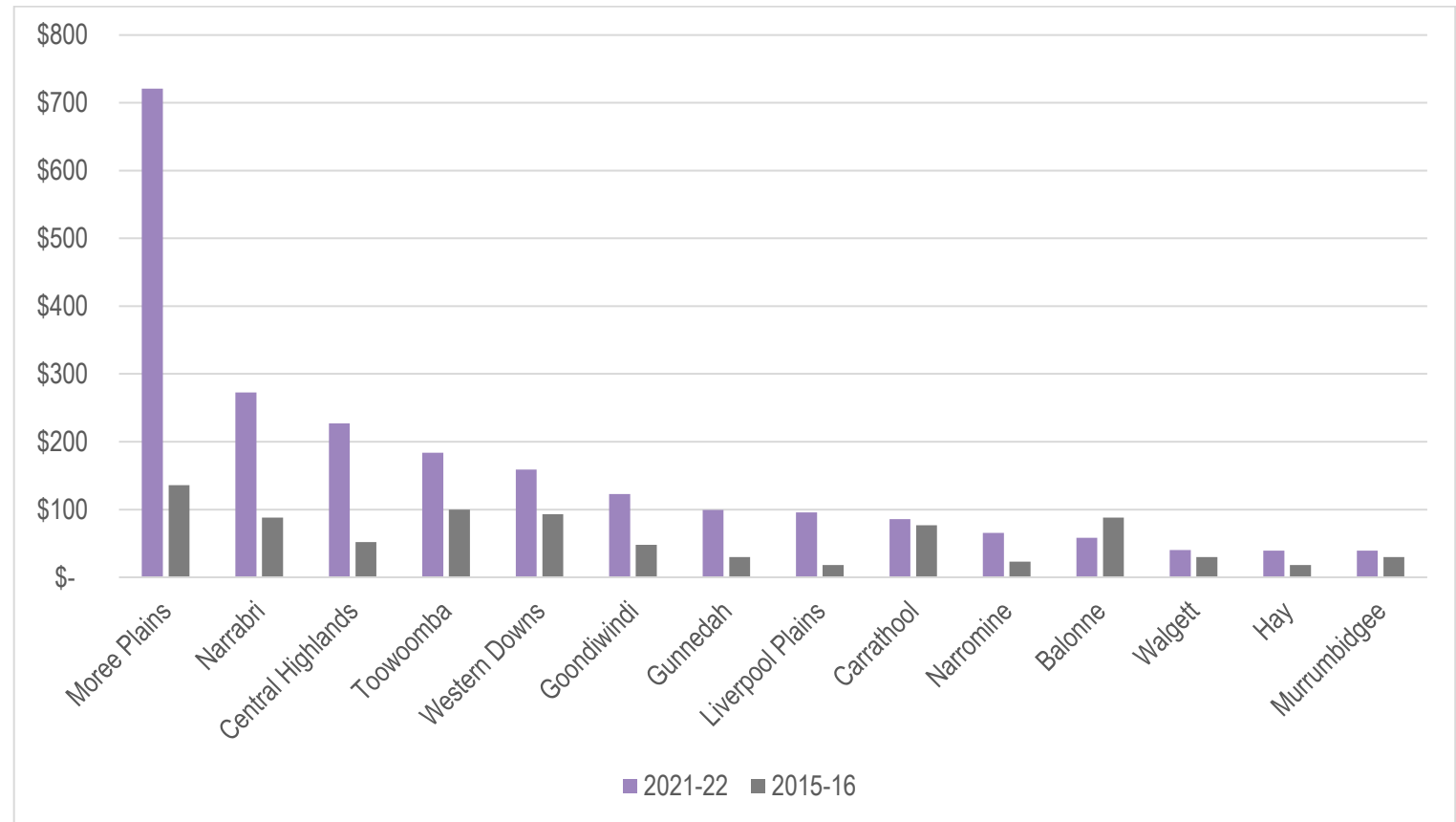
Value add contribution has more than tripled in Moree Plains, Narrabri, and Central Highlands from 2015-16 to 2021-22.

Figures 17 and 18 further break down the direct and indirect impacts to the LGA level.

The difference between the large production season in 2021-22 and the small production season in 2015-16 is felt acutely at the regional level. Moree Plains is a good example of this. The direct contribution of the industry to Moree Plains LGA increased from \$89 million and 355 FTEs in 2015-16 to \$506 million and 1,902 FTEs. This represents an increase of 469% in value add and 435% in FTEs, much larger than the percentage increases in direct impacts felt at the national level.

In addition to impacts in cotton production regions, there are indirect impacts outside production regions which are significant, at almost \$800 million. This is higher than the LGA with the largest value add, Moree Plains, of which most of the value add is through direct impacts. Employment follows a similar trend.

**Figure 17** Value add by LGA



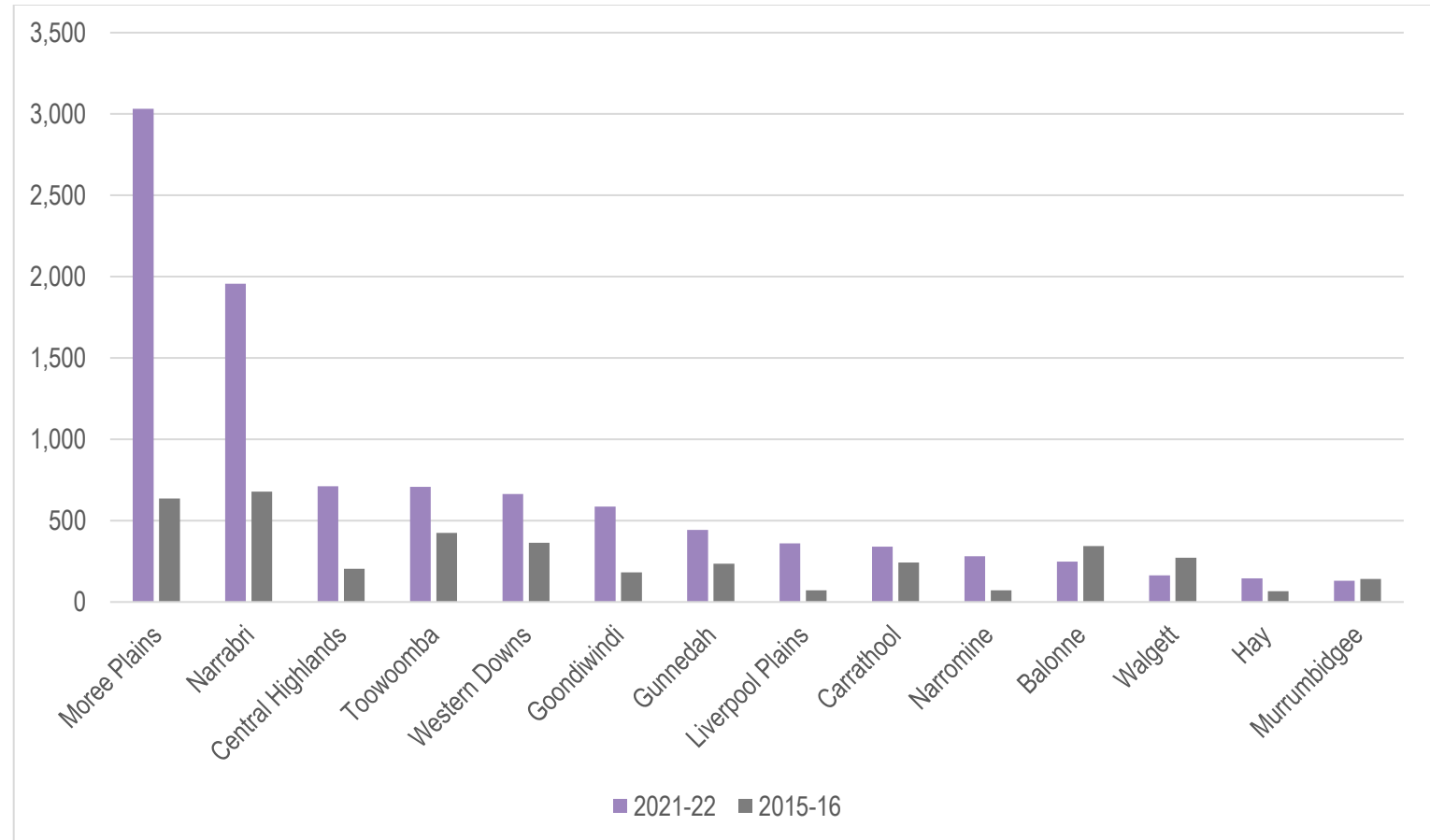
# Regional results – Employment

Cotton cultivation has significant employment impacts on regions, providing jobs in farming and related industries.

Gins are also located in production regions, providing further employment.

Economies at the regional level are significantly less diversified than those at the state or national level. This compounds the larger scale of the impact. In 2022 Moree Plains had a Gross Regional Product of \$966 million. In 2021-22 the direct impacts of the industry of \$506 million show the magnitude of importance to the local Moree Plains economy. If we compare this to the state level, Gross State Product for NSW in 2021-22 was \$706,732 million, while direct contribution of the cotton industry for NSW was \$1,121 million, representing 0.16% of the NSW economy. Even if indirect impacts are included, this increases to 0.39%.

**Figure 18** Employment by LGA



### 3. Development of the data framework

# The scope and approach

This study aims to assist the cotton industry in understanding how it contributes to the regional, state, and national economy.

Cotton RDC commissioned this research to assist the cotton industry in understanding how it contributes to the Australian economy. The project has established a data framework and analysis that can be cost effectively updated and replicated over time.

There are two main outputs of this project:

- The value and importance of the cotton industry to the Australian economy.
- An update to the results of the last study and comparison of the results between the 2021-22 and 2015-16 production years.

The framework was built at the LGA level. The rationale for building the framework from an LGA level is that it provides more detail than a regional level, is better for statistical accuracy and Census data is reported at this level.

Cotton is grown in 32 LGAs in Australia. Some of these LGAs produced very little cotton in 2016, and 14 LGAs (all located in NSW and Queensland) produced 88 per cent by volume in 2016.

Unfortunately, 2021-22 production data was only available at the state level, not by LGA. 2020-21 was used as the base for breaking down state production into production by LGA, as it was the most recent year with production reported on by LGA. As the production seasons in 2015-16 and 2021-22 were very different, LGA production proportions in 2011-12, 2012-13, and 2016-17 (high production years) were applied to adjust this base to 2021-22 production levels. The same 14 LGAs were used as in the previous analysis. The data used in the analysis covered 99.5% of production in 2021-22.

Note that ABS are changing the way they measure and report agricultural data, with LGA data expected to be reported on again in the future.

## Data inputs

ACIL Allen derived regional and state multipliers using:

- ABS LGA level data
- National Accounts Input-Output tables
- Additional industry level data from CRDC, Cotton Australia, and ABARES
- A survey of 87 per cent of cotton gins in 2020 of 2015-16 operations, and forecasts to 2021-22.

The use of additional industry level data ensures important factors such as price impacts, opportunity cost, returns to scale of production, where the employment is drawn from and how the industry and production structure change over time are considerations examined as part of a complete socio-economic contribution analysis. Together this creates a deeper understanding of the economic contribution of the cotton industry that is rigorous and repeatable.

# The framework

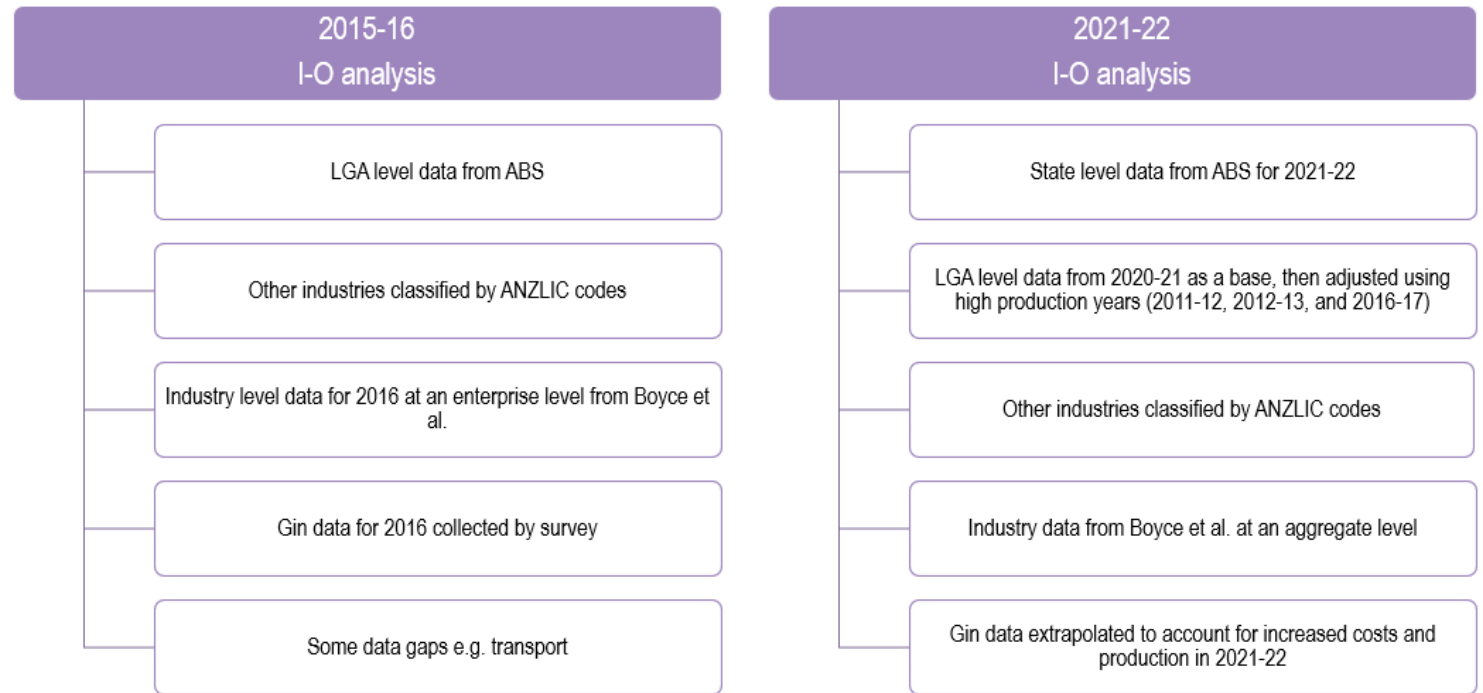
The framework was designed to be repeatable over time, in order to compare results.

A gap analysis was conducted which highlighted the data that was available, determined through analysis, surveys and stakeholder work and data that remains a gap (i.e., detailed information on the transport of cotton from farm to gin and from gin to port). Refer to Figure 19.

The framework was designed around the cotton supply chain and had the following aims:

- Design a repeatable data framework to integrate all available data and report robust results.
- Develop a baseline for future studies to be updated every five years in line with the Census.
- Be considerate of issues such as aggregation, different units, new data and balancing quantitative modelling with case studies to tell a story beyond economic impacts.

Figure 19



# Economic contribution is measured by Input-Output analysis

Input-Output (I-O) analysis can report the economic contribution of an industry using key measures:

- Value added — this measures the contribution of the industry to the size of the economy (i.e., its contribution to Gross State Product or Gross Domestic Product) by measuring the impact of the industry on wages, salaries, profits and indirect taxes. Value added is the preferred measure of economic contribution.
- Employment — this measures the industry's contribution in terms of the number of direct and indirect jobs (as full-time equivalent FTE)) supported. The data used for this analysis are primarily derived from official statistics for the 2021-22 financial year from the Australian Bureau of Statistics (ABS) and enhanced with industry specific data (collected through an industry survey) to make the analysis more relevant to the organic sector.

The estimated value added and employment contributions from the industry to the national, state and regional economies are presented as direct impacts and broader economic impacts (indirect impacts) for an upper and lower bound.

- Upper bound is the impact including the direct effects plus flow on effects from inter-industry purchases plus the flow on effects from working spending.
- Lower bound is the impact including the direct effects plus flow on effects from inter-industry purchases.

The standard measure of economic contribution is the extent to which an industry increases the value of goods and services generated by the economy. The direct contribution of an industry to the Australian economy can be estimated by determining their payments to the factors of production plus the taxes (less subsidies) payable on production and imports.

Indirect effects are a broader notion of the economic contribution that includes supply-side effects beyond the direct component. For example, when a farmer buys fertiliser, indirect effects are generated for the businesses supplying the product, the transporter who made deliveries to the supplier, the electricity company and other businesses that provided the inputs required to operate the supplier's business.

## Appendix – Data tables



# Cotton industry impacts - National

Industry impacts	Upper bound		Lower bound	
	Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
Agriculture, forestry and fishing	255.2	1039	148.0	459
Mining	89.3	88	3.9	9
Manufacturing	241.6	1377	18.2	169
Electricity, gas, water and waste services	193.8	549	23.2	80
Construction	69.0	500	39.9	308
Wholesale trade	110.0	428	52.3	266
Retail trade	133.3	1434	22.8	295
Accommodation and food services	60.3	899	10.5	146
Transport, postal and warehousing	120.0	843	74.0	552
Information media and telecommunications	65.6	219	31.5	129
Financial and insurance services	492.6	1363	366.9	857
Rental, hiring and real estate services	145.7	490	122.5	520
Ownership of dwellings	284.4	0	0.0	0
Professional, scientific and technical services	243.9	1591	130.7	1129
Administrative and support services	138.6	562	77.1	442
Public administration and safety	33.0	267	25.3	216
Education and training	50.5	395	4.0	27
Health care and social assistance	85.4	780	4.0	45
Arts and recreation services	16.2	172	2.7	39
Other services	140.7	1678	128.0	1517
<b>Direct</b>	<b>\$1,779.4</b>	<b>7,222</b>	<b>\$1,779.4</b>	<b>7,222</b>
<b>Total economic stimulus</b>	<b>\$4,748.4</b>	<b>21,896</b>	<b>\$3,468.4</b>	<b>16,764</b>

# Cotton farming impacts - National

Industry impacts	Upper bound		Lower bound	
	Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
Agriculture, forestry and fishing	246.5	1007	190.2	1270
Mining	80.2	79	42.4	84
Manufacturing	213.7	1164	171.2	982
Electricity, gas, water and waste services	169.4	476	146.0	446
Construction	61.8	447	36.5	281
Wholesale trade	98.3	383	48.5	246
Retail trade	116.4	1252	20.1	260
Accommodation and food services	52.8	787	9.3	130
Transport, postal and warehousing	108.3	763	68.6	517
Information media and telecommunications	57.8	193	28.4	116
Financial and insurance services	444.1	1230	336.3	790
Rental, hiring and real estate services	136.1	459	117.0	499
Ownership of dwellings	248.1	0	0.0	0
Professional, scientific and technical services	220.8	1440	120.8	1043
Administrative and support services	125.9	504	71.2	402
Public administration and safety	26.2	211	19.3	164
Education and training	43.7	343	3.2	22
Health care and social assistance	75.0	685	3.9	44
Arts and recreation services	14.0	148	2.2	31
Other services	123.0	1472	111.8	1328
<b>Direct</b>	<b>\$1,521.7</b>	<b>5,843</b>	<b>\$1,521.7</b>	<b>5,843</b>
<b>Total economic stimulus</b>	<b>\$4,183.9</b>	<b>18,886</b>	<b>\$3,068.6</b>	<b>14,499</b>

# Cotton ginning impacts – National

Industry impacts	Upper bound		Lower bound	
	Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
Agriculture, forestry and fishing	8.7	33	2.0	13
Mining	9.0	9	3.9	9
Manufacturing	27.9	213	18.2	169
Electricity, gas, water and waste services	24.4	73	23.2	80
Construction	7.3	53	3.5	27
Wholesale trade	11.7	45	3.8	19
Retail trade	16.9	182	2.7	35
Accommodation and food services	7.5	112	1.2	16
Transport, postal and warehousing	11.7	80	5.4	36
Information media and telecommunications	7.8	26	3.1	13
Financial and insurance services	48.6	133	30.5	68
Rental, hiring and real estate services	9.6	31	5.5	21
Ownership of dwellings	36.2	0	0.0	0
Professional, scientific and technical services	23.1	151	9.9	85
Administrative and support services	12.7	59	5.9	40
Public administration and safety	6.8	56	6.0	52
Education and training	6.8	52	0.8	5
Health care and social assistance	10.4	94	0.1	1
Arts and recreation services	2.2	24	0.5	8
Other services	17.7	206	16.2	188
<b>Direct</b>	<b>\$257.6</b>	<b>1,379</b>	<b>\$257.6</b>	<b>1379</b>
<b>Total economic stimulus</b>	<b>\$564.5</b>	<b>3,010</b>	<b>\$400.0</b>	<b>2264</b>

# Cotton industry, farming, and ginning impacts – State

Cotton industry contribution for NSW and Queensland

	Production (tonnes)	Direct		Indirect	
		Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
NSW		1,120.9	5,225	2,786.1	13,530
Queensland		658.6	1,996	1,182.1	4,767
National		\$1,779.4	7,222	\$4,748.4	21,896

Cotton farming contribution for NSW and Queensland

	Production (tonnes)	Direct		Indirect	
		Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
NSW		965.2	4,337	2,466.6	1,506
Queensland		556.7	11,734	1014.4	3,925
National		\$1,521.7	5,843	\$4,183.9	18,886

Cotton ginning contribution for NSW and Queensland

	Direct		Indirect	
	Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
NSW	155.7	889	319.4	1,795
Queensland	101.9	490	167.8	842
National	\$257.6	1,379	\$564.5	3,010

# Cotton industry, impacts – Local Government Area

Industry impacts	Upper bound		Lower bound	
	Value add (\$ million)	Employment (FTEs)	Value add (\$ million)	Employment (FTEs)
Carrathool	86	248	76	250
Gunnedah	99	712	82	673
Hay	40	130	36	126
Liverpool Plains	96	360	89	352
Moree Plains	721	3,031	666	2,941
Murrumbidgee	39	146	37	148
Narrabri	273	1,956	238	1,925
Narromine	65	164	62	170
Walgett	40	341	34	326
Rest of NSW	2,786	6,442	2,134	4,085
Balonne	58	281	52	497
Central Highlands	227	708	214	677
Goondiwindi	123	443	112	458
Toowoomba	184	664	162	594
Western Downs	159	587	145	565
Rest of Queensland	431	2,084	281	1,221
Rest of Australia	780	3,599	369	1,754

**Melbourne**

Suite 4, Level 19; North Tower  
80 Collins Street  
Melbourne VIC 3000 Australia  
+61 3 8650 6000

**Canberra**

Level 6, 54 Marcus Clarke Street  
Canberra ACT 2601 Australia  
+61 2 6103 8200

ACIL Allen Pty Ltd  
ABN 68 102 652 148

[acilallen.com.au](http://acilallen.com.au)

**Sydney**

Suite 603, Level 6  
309 Kent Street  
Sydney NSW 2000 Australia  
+61 2 8272 5100

**Perth**

Level 12, 28 The Esplanade  
Perth WA 6000 Australia  
+61 8 9449 9600

**Brisbane**

Level 15, 127 Creek Street  
Brisbane QLD 4000 Australia  
+61 7 3009 8700

**Adelaide**

167 Flinders Street  
Adelaide SA 5000 Australia  
+61 8 8122 4965