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**Report Highlights:**

Cotton production in Australia is primed to set a new record of 6 million bales in MY 2022/23, after a bumper harvest estimate of 5.5 million bales in MY 2021/22. This forecast is due to the strong prospect of increased irrigation water availability at the start of planting in October 2022 along with current high cotton prices and strong futures prices. These conditions are expected to result in an eight percent forecast increase in area, mainly irrigated. Many irrigated cotton production regions have had an extraordinarily high spring/summer rainfall period that has resulted in a highly unusual situation of irrigation water storage dam levels being higher near the end of the summer crop irrigation period than at the start of cotton planting, and dams are at or near capacity. Exports are forecast to increase to 5.8 million bales in MY 2022/23, reaching a near record result.

## **EXECUTIVE SUMMARY**

Cotton production in Australia is primed to set a new record of 6 million bales in MY 2022/23, more than double that of the previous 5 year average. This is due to the strong prospect of increased irrigation water availability at the start of planting in October 2022 along with current high cotton prices and strong futures prices. These conditions are expected to result in a forecast increase in area to 650,000 hectares (Ha) from an estimated 600,000 Ha in MY 2021/22, mainly irrigated. The irrigated cotton production regions, particularly in New South Wales, have had an extraordinarily high spring/summer rainfall period that has resulted in a highly unusual situation of irrigation water storage dam levels being higher near the end of the summer crop irrigation period than at the start of cotton planting, and those dams are at or near capacity.

Exports are forecast to increase to 5.8 million bales in MY 2022/23, reaching the second highest result on record and 65 percent above the previous 10-year average. This strong export expectation is on the back of a big MY 2021/22 estimated harvest of 5.5 million bales. With cotton production in Australia at the tail end of the marketing year, the first nine months of exports in MY 2022/23 is from the cotton pick in MY 2021/22.

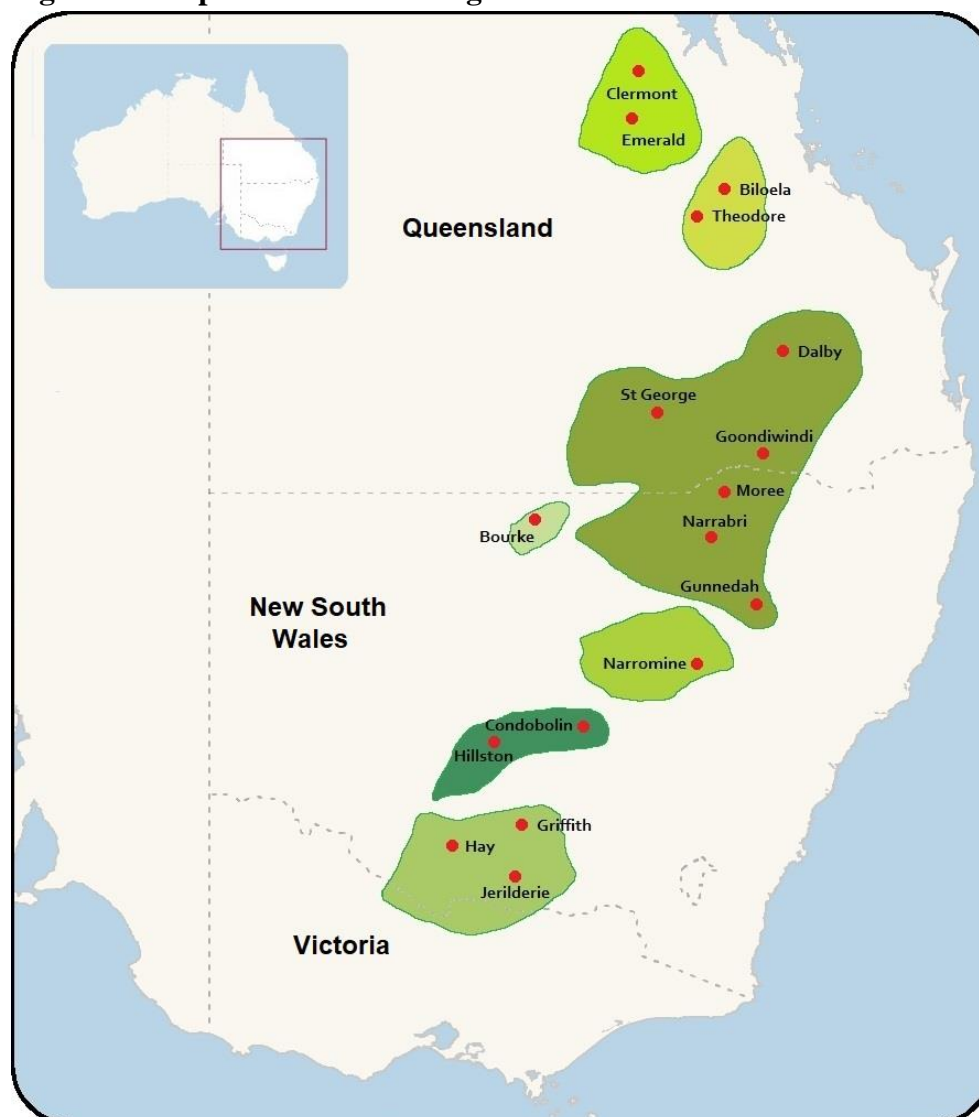
## **COTTON**

### **Overview of Cotton Production**

Australia is a major producer and exporter of cotton, typically representing 10 to 13 percent of world exports. There are up to 1,500 cotton farmers in Australia of which 90 percent are family farms, producing 80 percent of the total crop. Cotton in Australia is primarily grown in the states of New South Wales and Queensland. In a typical year, New South Wales produces around two-thirds of national production and one-third in Queensland. The main growing areas in Queensland are in the central and southern parts of the state. Within New South Wales, the majority of the cotton is grown in north and central areas, although the southern areas are increasing in importance. The map in Figure 1 below shows the cotton growing areas in Australia.

With improvements in cotton varieties suitable for differing growing conditions, there has been some expansion of cotton areas in southern New South Wales and northern Victoria. Cotton growing is also in its early stages of development in far north Queensland, Northern Territory and also in Western Australia in the Ord River Irrigation Scheme. These areas offer substantial scope for expansion. Thus far growers have transported their cotton to southern Queensland for ginning, some 3,400 kilometers (2,070 miles) from the Western Australian production area. An existing grower-owned ginning organization is in the process of building a new facility in the Northern Territory near Katherine and is expected to be operational for the 2022 ginning season. There are also feasibility studies being carried out for a potential additional site in Kununurra in Western Australia to service the cotton growing potential in the Ord River Irrigation Scheme area and nearby areas. Cotton plantings are increasing and the establishment of a new cotton gin and perhaps a second in the near term could trigger significant growth in cotton production in this region.

**Figure 1 - Map of Cotton Growing Areas in Australia.**



Source: Cotton Australia / FAS/Canberra

Cotton is a summer crop and in the major growing regions in Australia soil preparation typically occurs between July and September in readiness for planting in October/November and as late as December. Picking typically occurs from March to June. The further north the growing area (such as central Queensland), the earlier the season can start with a wider growing window due to the warmer climate. Some growers there have successfully trialed planting as early as August. In these regions picking can be as early as January and finish as late as July. In the far northern regions of Queensland, Northern Territory, and Western Australia, where the industry is in its infancy, planting is typically in November/December, prior to the onset of the tropical wet season. In these regions harvesting is typically in June/July. Growers in these regions are yet to invest in cotton picking equipment at this point and rely on contractors to travel from the southern regions after their season is completed.

In a typical season approximately 90 percent of cotton production is irrigated, and 10 percent is dryland. However, cotton classified as having been produced by irrigation includes crops that may have received only one irrigation for the season. Over the last two decades, the Australian cotton industry has improved water efficiency with the advancement of cotton varieties, irrigation techniques, soil moisture monitoring and whole farm irrigation planning to recycle runoff water.

The dependence on irrigation water decreases the further north towards central Queensland due to the northern-most areas being subject to tropical wet season rainfall, primarily between January and March (typically in the mid to late growing period). These regions have a greater proportion of their water requirements met by in-crop rainfall than regions further south, particularly in New South Wales. Similarly, in Far North Queensland, Northern Territory, and the adjacent Ord river region in Western Australia production is mainly based around in crop rainfall. However, there is opportunity for some irrigated cotton crops, particularly in the Ord river area. The major growing regions in New South Wales are highly dependent upon irrigation water availability. Irrigation water is derived from a combination of sources including:

- 1) Water harvested and stored in on-farm dams from overland flow. This can occur after high rainfall events typical in the more northern cotton production regions.
- 2) Water is harvested and stored from waterways during high flow periods also after high rainfall events. This is most prominent across Queensland the northern and central cotton production regions of New South Wales.
- 3) Underground water is also a source of irrigation water although relatively small compared to the combination of other sources. However, this is a reliable source and in drought years with little water from other sources can become very important.
- 4) Irrigation schemes based on large storage dams. There are multiple systems across Queensland and New South Wales cotton producing areas and in a typical year forms the largest part of a range of irrigation water sources for cotton production. The southern cotton production region is almost entirely dependent upon this source whereas the central region and most northern regions have a high dependence on this source.

The main irrigation schemes in New South Wales cotton growing regions from north to south are;

- Border Rivers
- Gwyder Valley
- Namoi Valley
- Macquarie
- Lachlan Valley
- Murrumbidgee

The locations of the irrigation schemes for cotton are shown in Figure 2 below. These irrigation schemes are part of a wider group of irrigation schemes and are overseen by the Murray Darling Basin Authority.

**Figure 2 – Major NSW Cotton Growing Irrigation Catchment Map**

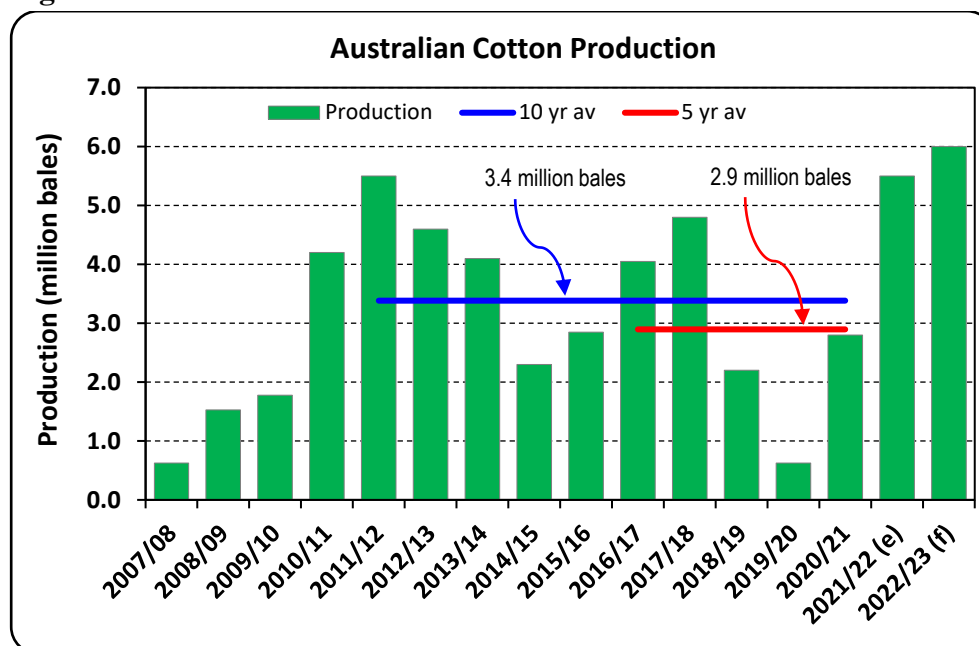


*Source: Murray Darling Basin Authority*

Australian cotton production has extreme volatility from year to year (see Figure 3) as it is primarily driven by irrigation water availability.

Bt cotton was introduced into Australia in 1996 and it is estimated that now 99 percent of cotton grown has some form of genetic modification trait. Bolgard 3 and Roundup Ready varieties are now grown in Australia, and combined with integrated pest management techniques, there have been major reductions in pesticide use, estimated by industry to be down as much as 95 percent since 1993.

**Figure 3 – Australian Cotton Production**



Source: Australian Bureau of Statistics / FAS/Canberra

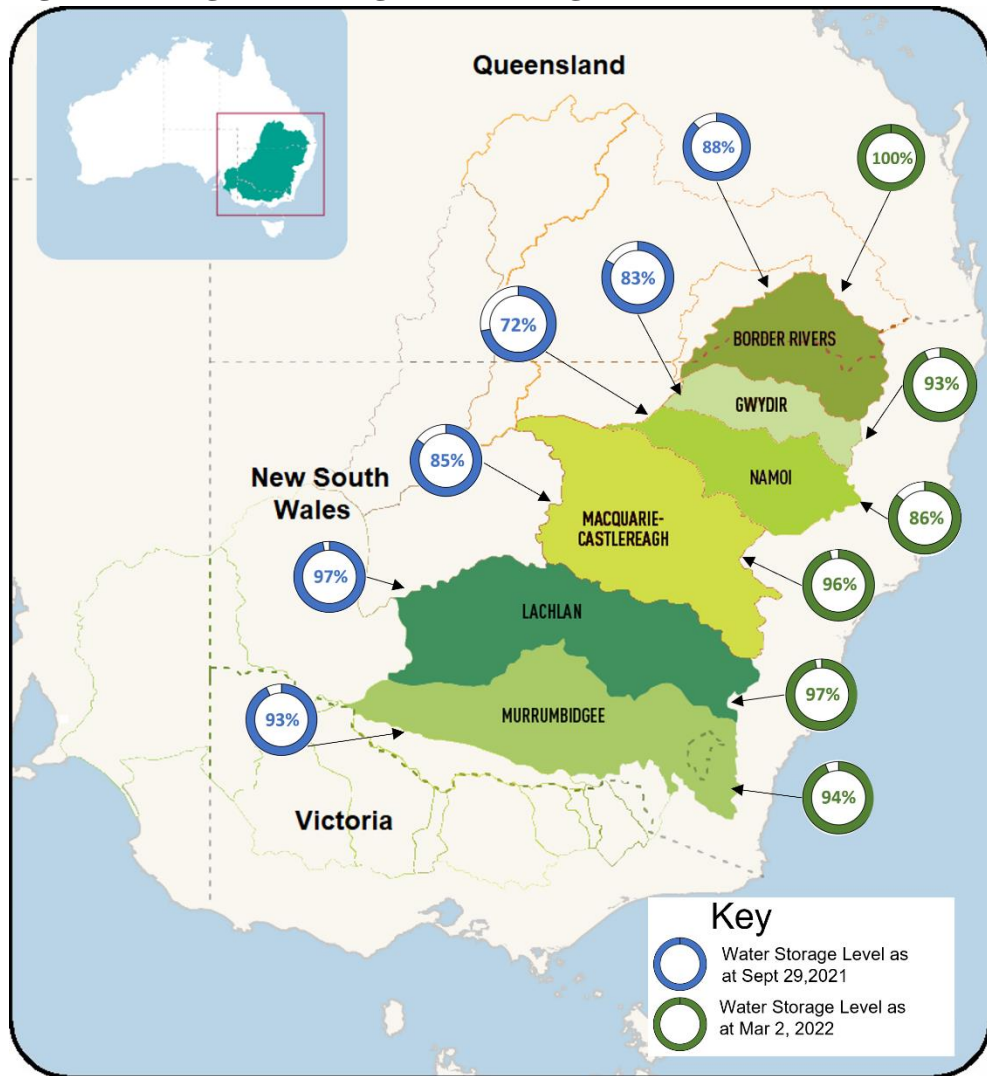
## Production

FAS/Canberra forecasts a record cotton production in marketing year (MY) 2022/23 of 6 million bales, from an estimate of 5.5 million bales in MY 2021/22, which itself is a record-tying level. This bumper MY 2021/22 crop was a result of a major improvement in irrigation water availability and is a 96-percent increase over the MY 2019/20 production of merely 2.8 million bales. The estimated MY 2021/22 crop (to be harvested in April to May 2022), if realized, would be the equal highest production on record (achieved in 2012) and over 60 percent above the previous 5-year average. The nine-percent increase in forecast production for MY 2022/23 is primarily due to an anticipated expansion in crop harvest area forecast to 650,000 Ha, from the MY 2020/21 estimate of 600,000 Ha. This forecast increase in area is mainly a result of a high degree of confidence that there will be a further improvement in irrigation water availability for producers compared to conditions experienced for the MY 2021/22 crop. This is also supported by the current very high cotton prices and the strong futures price of cotton supporting the MY 2022/23 crop. The average yield is forecast to improve slightly, but this is a result of an expectation of an increase in the proportion of higher-yielding irrigated cotton production compared to dryland production in the forecast year.

Rainfalls across the cotton growing season for MY 2021/22 have been so good that irrigation storage dam levels have actually risen from the end of September 2021 (at the start of the main cotton planting period) to the start of March 2022 (nearing the end of summer crop irrigation demands). In fact, the irrigation storage dams at the start of March 2022 are all at or near capacity (see Figure 4). This is very unusual as irrigation storage dams typically rely on winter and spring rainfalls to increase their storage levels. There have been much higher-than-average rainfalls across the irrigated cotton regions in New

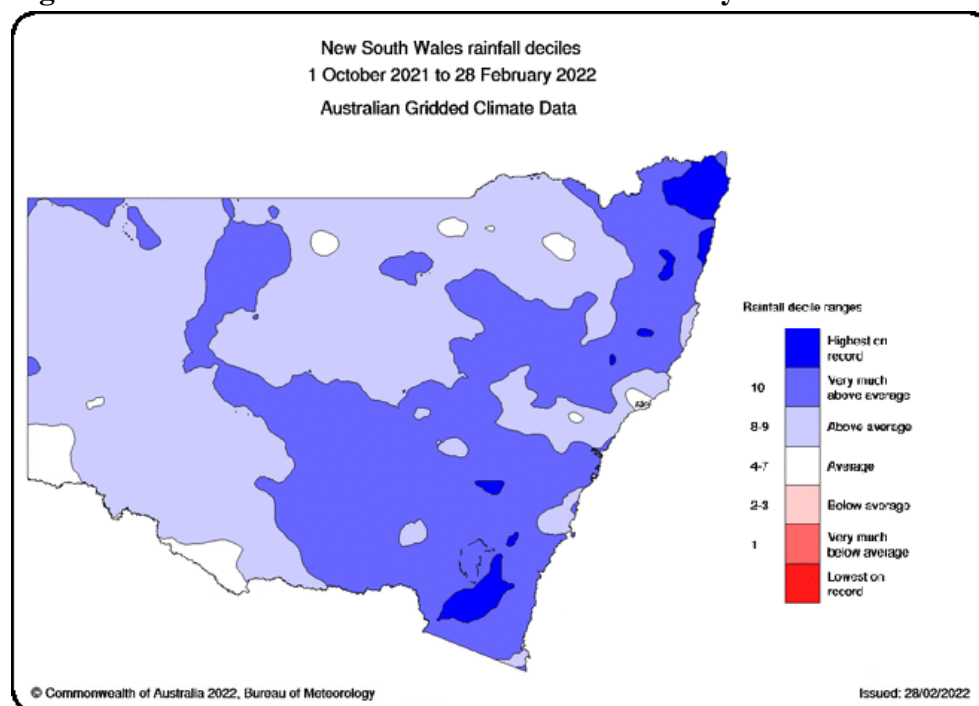
South Wales since the start of this season’s planting (see Figure 5). This has led to much reduced irrigation water use combined with high inflows into the irrigation storage dams. The last time that irrigation storage dam levels in New South Wales which support cotton production had actually risen during the cotton growing period, and also been at or near capacity near the end of the cotton growing season, was 10 years ago in 2011/12.

**Figure 4 – Irrigation Storage Level Changes 2021/22**



Source: Murray Darling Basin Commission

**Figure 5 – NSW Rainfall – October 2021 to February 2022**



Source: Australian Bureau of Meteorology

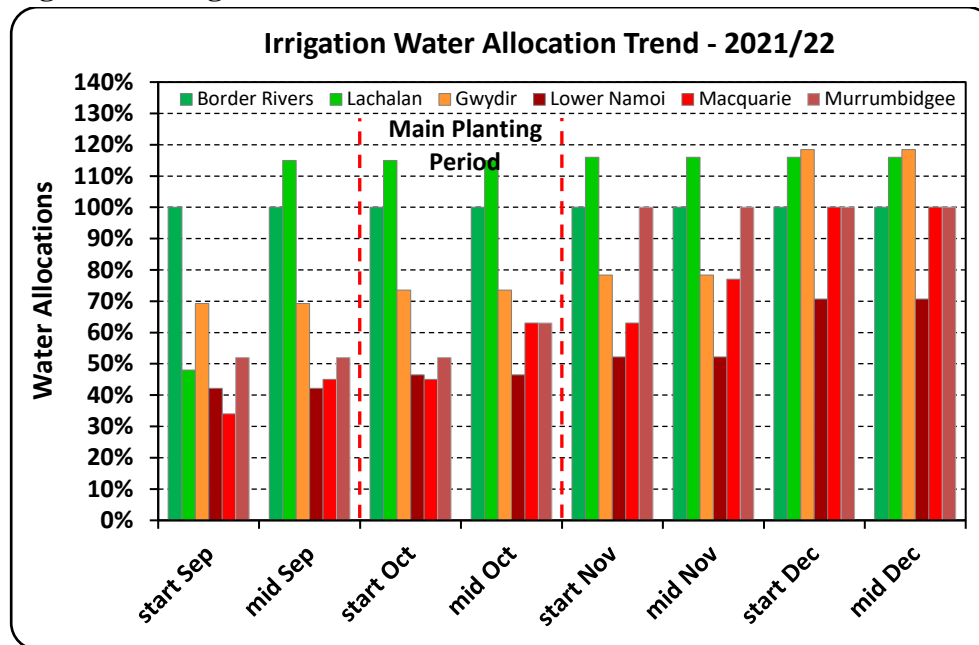
Cotton producers are buoyed by the prospect that they are very likely to receive much higher water allocations by the start of October 2022. The cotton industry at this early stage has received indications from its growers that they are likely to significantly increase their planting area for MY 2022/23.

Available water allocations are announced by the major cotton related irrigation schemes at the start and middle of each month during the irrigation season, which has a large bearing on cotton planting programs. At the start of October 2021, only in two of the six main irrigation regions (Border Rivers and Lachlan) did cotton producers have the security of a 100-percent allocation of their water entitlements. Cotton producers in the other four main irrigation systems at the start of October had water allocations ranging from 45 percent to 74 percent of their entitlement, with little or no increase in mid-October, which is half-way through their planting period (see Figure 6). In circumstances such as these, cotton producers typically limit their irrigated cotton crop planting to ensure the crop can be fully irrigated, based on water use per hectare in a typical season. Any increase in water allocations in November may encourage some to increase their planting area, more so for those in the southern areas, but announcements at this point are generally too late to support any significant increase in cotton planting.

With irrigation storage levels already at or near capacity at this point prior to the typical winter/spring inflows, growers are confident that they will have irrigation water allocations at or near 100 percent of their entitlements at the start of planting in October 2022. If this is realized as anticipated, and if cotton prices remain strong, growers have already indicated that they will increase their planted area of irrigated cotton.



**Figure 6 – Irrigation Water Allocation Trend – 2021/22**



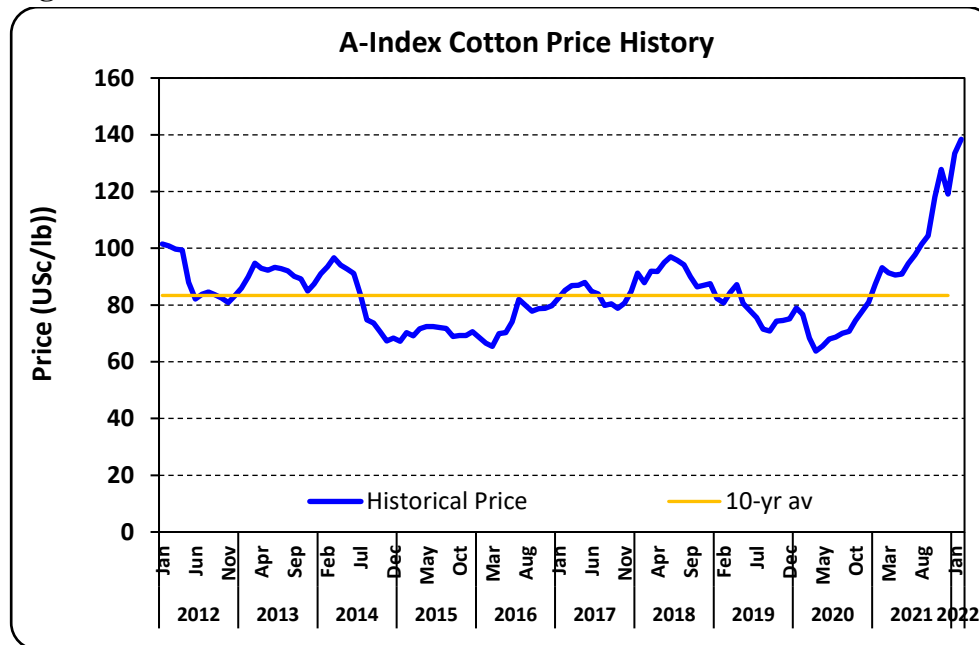
Source: WaterNSW

As Australia exports virtually all of the cotton that is produced, the price growers receive is directly linked to world prices and that of major exporters such as the United States. Cotton price data from USDA’s Economic Research Service shows that current prices, just prior to the MY 2021/22 cotton pick in Australia, are the highest since 2011 and are 65 percent higher than the previous 10-year average (see Figure 7). Further to this, as of March 16, 2022, the futures price 14 months from now for May 2023 (during cotton picking in Australia relating to MY 2022/23) is at only a 20 percent discount to the current (March 2022) cash price, and clearly remains well above the previous 10-year average. At this point, the price is certainly at a level that would encourage an increase in cotton planted area.

Based on the current circumstances of a strong likelihood of higher irrigation water allocations by the start of planting in October 2022, with high current and futures prices for cotton, the scene is set for a record production of 6 million bales in MY 2022/23. This does of course assume that there are no major weather or disease pressure events impacting next year’s crop, and there are adequate supply of fertilizers and herbicides which at present are tight.

FAS/Canberra estimates cotton production for MY 2021/22, with harvest just about to commence in April 2022, at 5.5 million bales and is in line with the official USDA estimate. This is in accordance with industry expectations and a little above the Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES) estimate from March 1, 2022, of 5.3 million bales.

**Figure 7 – A-Index Cotton Price Trend**



Source: *USDA - Economic Research Service, Cotton and Wool Yearbook*

Note: *A-Index is intended as a representation of the international raw cotton market offer prices and is the average of the five cheapest quotations (quality being Middling 1<sup>1/8</sup>) for Cost and Freight (CFR) at a Far Eastern Port.*

The well-above-average rainfall during the growing season to date for MY 2021/22 has resulted in cooler conditions which was a concern, particularly around the flowering period. However, at the same time there have not been extreme temperatures which are detrimental to flowering and boll size. Overall, even with lower than ideal heat units the crop has developed very well. The wetter and cooler than usual conditions have also resulted in higher than usual pest and disease pressure, but industry reports that this has been manageable. Dryland producers this year planted into paddocks with very good soil moisture levels which also encouraged some double cropping by planting in December after the winter crop harvest. Good soil moisture, along with ample in crop rainfall, is anticipated to produce dryland cotton yields that will be higher than usual.

### **Consumption**

Manufacturing in Australia is uncompetitive due to the high cost of labor relative to the major cotton processing countries such as China, Vietnam, Indonesia, Bangladesh and India. There is no anticipated change to this situation and domestic consumption is forecast to remain at very low levels.

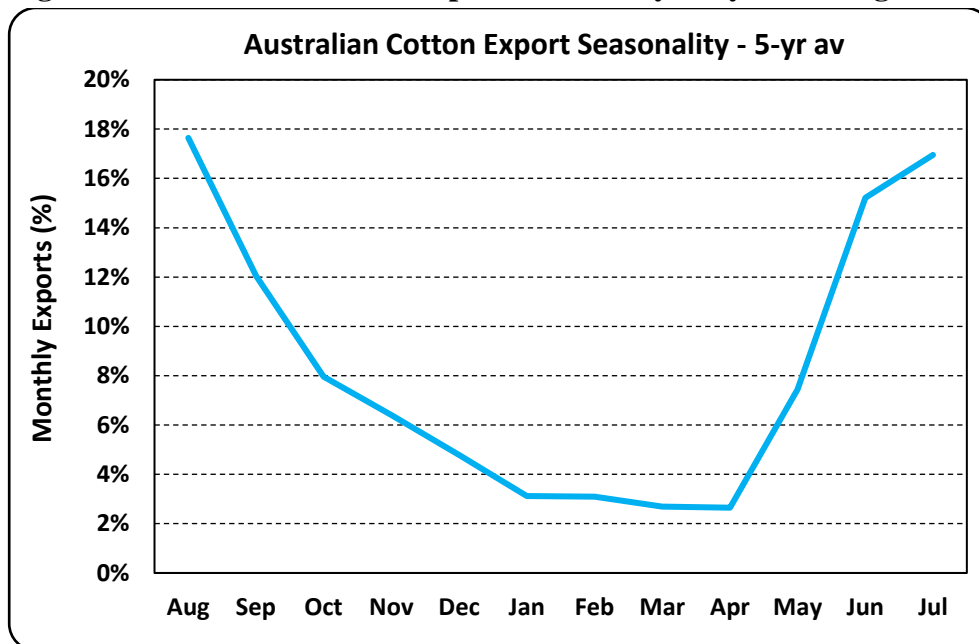
### **Trade**

FAS/Canberra forecasts cotton exports to increase by 23 percent to a near record 5.8 million bales in MY 2022/23 from an estimated 4.7 million bales in MY 2021/22. With Australia processing virtually no

cotton domestically it is no surprise that exports are expected to rise with an increase in forecast production.

A key to forecasting exports is understanding the seasonality of trade in conjunction with cotton picking and ginning, particularly when there is significant variation in production from one year to the next. For Australia, cotton picking and ginning is mainly from April to June which is at the tail end of the August to July marketing year. So, production from one marketing year mainly influences exports during the last three months (May to July) of that marketing year (see Figure 8). Exports from the preceding nine months (August to April) are from the crop harvested in the previous marketing year. With supplies from two bumper crops contributing to MY 2022/23 exports, shipments are expected to reach near record levels.

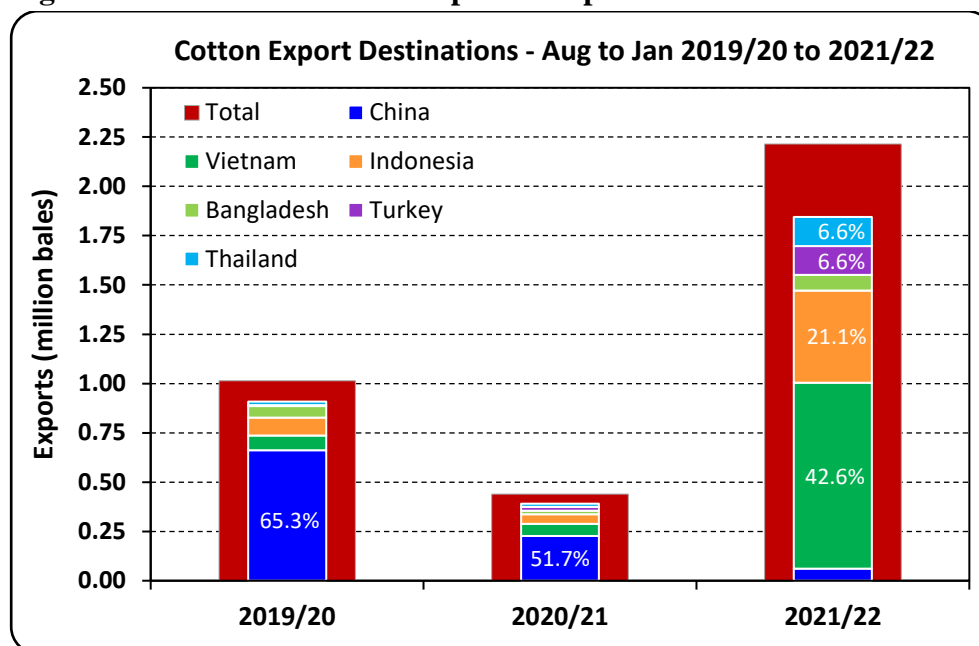
**Figure 8 – Australian Cotton Export Seasonality – 5-year average**



Source: Australian Bureau of Statistics

In the recent past China has been the major destination for Australian cotton exports, with Vietnam, Indonesia and Bangladesh also being important destinations. However, recent trade tensions between China and Australia have had a dramatic impact on the volume of cotton trade between these nations. In the marketing year to date for 2021/22 (August 2021 to January 2022) there has been almost no cotton traded to China. Vietnam and Indonesia have emerged as major export destinations, and increased trade to Turkey, Thailand and to a lesser extent Bangladesh have emerged (see Figure 9). This has clearly highlighted that Australia has strong trade relations with numerous nations and is not highly dependent on trade with China.

**Figure 9 – Australian Cotton Export Comparisons**



Source: Australian Bureau of Statistics

Australia in typical years is the third or fourth largest exporter of cotton at around 10 to 13 percent of overall world exports behind the United States, Brazil, and India. Australian cotton exports fell to only four percent of world trade in MY 2019/20 and MY 2020/21 due to low production caused by a drought impacting irrigation water supplies. However, exports in MY 2021/22 and MY 2022/23 are expected to bring Australia back towards or beyond its more typical world trade contribution.

The MY 2021/22 cotton export estimate has been revised upwards by FAS/Canberra to 4.7 million bales from the official USDA estimate of 4.4 million bales. The revised position is based on FAS/Canberra anticipating stronger export results for the last three months of the marketing year (May to July 2022) after the currently estimated record-equaling crop begins to be ginned and exported.

### Stocks

With two successive big cotton crops expected in MY 2021/22 and MY 2022/23, ending stocks are forecast to increase modestly. However, with strong cotton futures prices at the time of ginning the forecast crop, it is anticipated that demand will be strong and there will be limited opportunity for ending stocks to increase significantly.

Cotton Market Year Begins Australia	2020/2021		2021/2022		2022/2023	
	Aug 2020		Aug 2021		Aug 2022	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Planted (1000 HA)	0	0	0	0	0	0
Area Harvested (1000 HA)	275	275	600	600	0	650
Beginning Stocks 1000 480 lb. Bales	802	802	2003	1987	0	2752
Production 1000 480 lb. Bales	2800	2800	5500	5500	0	6000
Imports 1000 480 lb. Bales	0	0	0	0	0	0
MY Imports from U.S. 1000 480 lb. Bales	0	0	0	0	0	0
Total Supply 1000 480 lb. Bales	3602	3602	7503	7487	0	8752
Exports 1000 480 lb. Bales	1564	1580	4400	4700	0	5800
Use 1000 480 lb. Bales	35	35	35	35	0	35
Loss 1000 480 lb. Bales	0	0	0	0	0	0
Total Dom. Cons. 1000 480 lb. Bales	35	35	35	35	0	35
Ending Stocks 1000 480 lb. Bales	2003	1987	3068	2752	0	2917
Total Distribution 1000 480 lb. Bales	3602	3602	7503	7487	0	8752
Stock to Use % (PERCENT)	125.27	123.03	69.18	58.12	0	49.99
Yield (KG/HA)	2217	2217	1996	1996	0	2010

(1000 HA) ,1000 480 lb. Bales ,(PERCENT) ,(KG/HA)

**Attachments:**

No Attachments