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Australia

Grain and Feed Update

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Report Highlights:
Post has further lowered its estimate for Australian wheat production to 20 million MT for 2017/18, due to continuing adverse seasonal conditions across most cropping areas. This forecast harvest is over 40 percent below the record harvest of 35 million MT in 2016/17. Barley production is forecast by Post at 8 million MT, the same as the official estimate, as rainfall has been sufficient in cropping areas in southeastern Australia. Post expects sorghum production to recover to 1.9 million MT in 2017/18, the same as the official forecast. The increase is based on an expanded harvest area, timely rain in the cropping window and increased demand for feed grains. Post forecasts rice production at 833,000 MT in 2017/18, slightly below the official estimate due to rising prices for water.

Post:	**Commodities:**
Canberra	Wheat
	Barley
	Sorghum
	Rice, Milled

EXECUTIVE SUMMARY

Australian winter crop production is expected to decline significantly in 2017/18 compared to the previous year, as a result of significantly less favorable seasonal conditions. Record low rainfall in June and July and below average rainfall in many cropping areas since then has adversely impacted both production and yields. Further, the Bureau of Meteorology (BOM)'s seasonal rainfall outlook for the three months to December 2017 is only for average to slightly above average median rainfall. Already, soil moisture has fallen in many cropping areas and after months of higher than average temperatures across Australia; the three month forecast of the BOM is for continued high temperatures.

Post has lowered its forecast for Australian wheat production to 20 million MT for 2017/18, due to poor rainfall and high temperatures across most wheat growing areas. This is over 40 percent below the record harvest of 35 million MT in 2016/17. The main reasons are lower yields and a slight decline in harvested area to 12.4 million hectares, below the official forecast. Post has forecast wheat export volumes for 2017/18 to 18 million MT despite the decline in production. Stocks from the record and revised harvest of 2016/17 are expected to supply a proportion of export contracts in 2017/18 and then fall to 3.4 million MT. Rising demand for feed grain in Queensland and northern New South Wales (NSW) is occurring because of lower stocks and the diminished outlook for 2017/18 crops.

Barley production is forecast by Post at 8 million MT, due to apparently sufficient rainfall in cropping areas in southeastern Australia. Barley exports are forecast at 5.8 million MT, the same as the official forecast. Increases in domestic prices for both malting and feed barley have occurred across most regions due to the lower winter crop expected for 2017/18 and stronger domestic demand for feed grain.

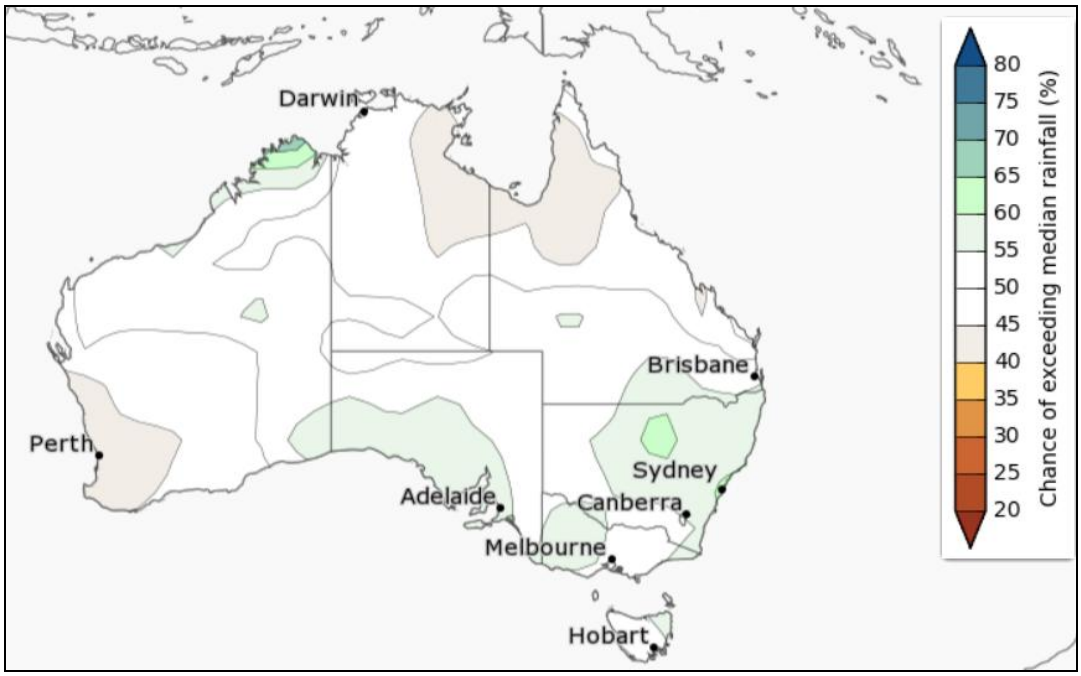
Sorghum production in 2017/18 is forecast by Post to recover to 1.9 million MT due to an expanded harvested area, timely rains in September 2017 and the higher prices for alternative feed grains. Post forecasts rice production at 0.833 million MT in 2017/18, 5 percent below the official forecast, due to competition from other crops and expected increases in the price of water as dam storages fall. Post forecasts rice exports at 320,000 MT in 2017/18 but notes slowing monthly export volumes.

SEASONAL CONDITIONS

Over June and July, most cropping regions received very low rainfall and above average temperatures. In August 2017, better rainfall occurred across Western Australia, South Australia and especially Victoria, but generally not in NSW and Queensland. Severe frosts occurred across NSW, Victoria and South Australia during the month. Over September 2017, high temperatures over NSW and Queensland reduced soil moisture levels and crop potential. Western Australia has received below average rainfall and above average temperatures in recent months, but the outlook for crops in the southern regions such as Esperance is more positive. Overall, yields in 2017/18 are expected to fall significantly compared to the previous year due to seasonal changes.

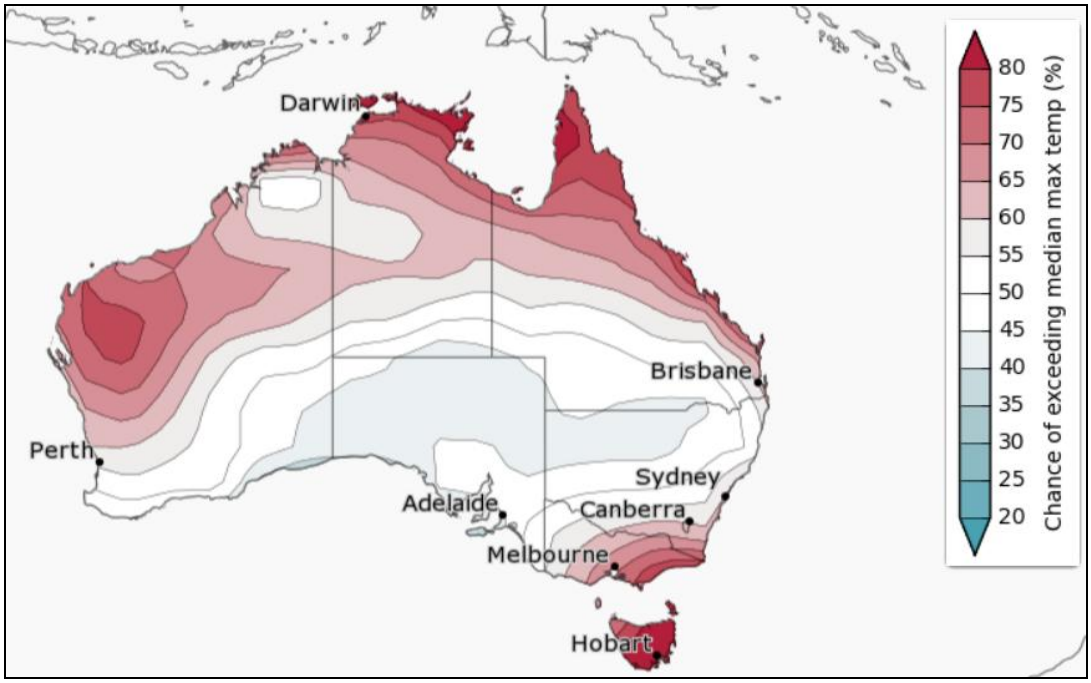
In a special report, the Bureau of Meteorology (BOM) recently noted that eastern Australia experienced its warmest day on September 22, 2017, according to national records dating back to 1911. The BOM noted that a high pressure system contributed to hot dry winds and very low rainfall in September for many of eastern Australia's cropping regions. For the first time in September, temperatures above 40 degrees Celsius (104 degrees Fahrenheit) were recorded in some states. For the three months from October to December 2017, the Australian Bureau of Meteorology has forecast average or below average rainfall for many cropping regions (Chart 1), with temperatures likely to be warmer than average for Western Australia, Queensland and parts of southeast Australia (Chart 2).

Chart 1: The probability of above median rainfall for the three months to December 2017



Source: Australian Bureau of Meteorology (October, 2017).

Chart 2: The probability of above median temperatures for the three months to December 2017



Source: Australian Bureau of Meteorology (October, 2017).

WHEAT

Production

Post has lowered its forecast for Australian wheat production to 20 million MT for 2017/18, due to poor rainfall and high temperatures across most wheat growing areas. This production forecast is over 40 percent below the record harvest of 35 million MT in 2016/17. The main reasons are lower yields and a slight decline in harvested area to 12.4 million hectares, slightly below the official forecast. Low world wheat prices have encouraged a shift in some regions from wheat to higher value crops such as chickpeas, canola and lentils.

Post has forecast wheat export volumes for 2017/18 to 18 million MT despite the decline in production. Stocks from the record and revised harvest of 2016/17 are expected to supply a proportion of export contracts in 2017/18 and then fall to 3.4 million MT. Rising demand for feed grain in Queensland and northern New South Wales (NSW) is occurring because of lower stocks and the diminished outlook for 2017/18 crops.

Wheat is the major winter crop in Australia, with sowing starting between April and July. Harvesting starts in central Queensland during August and progresses down the east coast to Victoria, finishing during January. On the west coast, the wheat harvest starts during October and is completed during January. The main producing states are Western Australia, NSW, South Australia, Victoria and Queensland. Western Australia usually accounts for over 40 percent of exports, while a greater proportion of the east coast wheat harvest goes to domestic consumption.

Consumption

Post forecasts wheat total domestic consumption at 7 million MT in 2017/18, the same as the official forecast. Wheat is Australia's major winter crop and is used mainly in the production of breads, noodles and pastas, while lower grades of wheat are used as stockfeed. Major types of wheat include Prime Hard, Hard, Premium White, Standard, Soft and Durum, based on protein, grain size and moisture content. Wheat consumption in Australia has declined slightly in recent years, due to changes in diets such as a shift to gluten free products by some consumers. Around 70 kilograms of flour are consumed in Australia per capita each year and the domestic market is comparatively mature.

Australia has a number of regional markets for feed grain, which are usually separated by the comparatively high cost of road and rail transport between Western Australia and the east coast; and between South Australia, Victoria and northern NSW and Queensland. Post notes that grain for domestic stockfeed markets is generally transported by road and most domestic milling wheat is transported by rail to manufacturers such as Manildra Mills, Weston Mills and Allied Mills. The movement of grain to port is generally through a combination of road and rail, depending on cost, proximity and available transport. Over time, many regional rail and storage networks have been closed down.

Due to fragmented nature of the domestic market for grain and feed, adverse seasonal conditions in one region can lead to significant variations in grain prices between regions. The lower winter crop outlook for 2017/18 has contributed to rising feed wheat, barley and sorghum prices in Queensland and northern NSW because of domestic demand from large-scale beef, pig and poultry feedlots and processing facilities in these regions, where there is insufficient grain production.

In September and October 2017, eastern Australian domestic wheat and barley prices were at a significant premium to world prices due to domestic demand from feedlots amid diminishing supplies of available grain.

Notably, the price for wheat increased in September 2017 to its highest level since mid-2015, with prices approaching A$320/MT, an increase of over 40 percent for the year. Other factors have also contributed to supply inelasticity, including high transport prices and the long-standing biosecurity barriers to imports into Australia of wheat, barley and some other grains. Stronger domestic grain prices could also be attributed to an illiquid market, with growers holding grain in anticipation of higher prices due to concerns over the size of the 2017/18 crop.

Trade

Post forecasts Australian wheat exports in 2017/18 at 18 million MT, the same as the official forecast and despite lower expected production in 2017/18. Part of these exports are expected to come from a draw-down of stocks from the record 2016/17 harvest. Post notes that worsening prospects for crops in northern and central NSW could limit exports because of strong domestic demand and high prices for grain, in both NSW and Queensland. In October 2017, premium wheat grades were valued at about A$80-100 above export parity for the domestic feed market, making export returns unattractive. However in Victoria, South Australia and Western Australia, domestic grain prices are closer to export parity.

Southeast Asia accounts for over half of wheat exports and has been the fastest growing market. Australian wheat has a quality premium but competes with cheaper wheat from the Black Sea producers (Ukraine, Russia and Kazakhstan) for feed grains. Australian wheat exports also compete in Southeast Asia with premium hard wheat from the United States and Canada. Indonesia traditionally accounts for around 20 percent of total wheat exports but Australian exporters have been facing greater import competition in the feed market, as well as in the baking industry.

A recent Australian industry survey of the wheat preferences of grain end-users in Southeast Asia reportedly found Australian wheat was considered the most suitable wheat for fresh noodles in these markets. However, Australian wheat was considered as less suitable for bread and baking products than North American wheat, which has a higher price. In 2016/17, comparatively low prices for Australian wheat increased its competitiveness in a number of markets, such as the Philippines, India and Iraq, especially in the period before Black Sea harvests were available for the international market.

Grains Industry Research

In October 2017, a new A$11 million grains research center was opened near Toowoomba in Queensland, jointly funded by the Grains Research Development Corporation (GRDC) and the Queensland Government. The 740 hectare farming property will be developed into a grains applied research, development and extension (RD&E) facility, which will be operated by the trust on behalf of Australia grain growers. The location of the research facility will allow for both summer and winter farming systems trials. The facility will be open to both public and private organisations to undertake R&D. Two years ago, the GRDC and the industry invested in a A$80 million R&D center in Western Australia.

Over 2017/18, nine new locally developed wheat varieties will be available for growers, while three varieties have been upgraded to a new classification. The wheat variety master list for 2017/2018 released by Wheat Quality Australia also included several reclassifications. Coolah wheat has been upgraded to Australian Hard in Victoria and South Australia and Australian Premium Hard in southern NSW. The Scepter variety is expected to eventually replace the popular variety Mace, which accounts for over 50 percent of the crop in South and Western Australia. Crop trials have shown that the Scepter variety has higher resistance to the wheat rust disease and higher yields compared to the Mace variety.

Table 1: Australian exports of wheat by country, volume and average value, 2011-2017 ('000 MT)

Country	2011	2012	2013	2014	2015	2016	2017 (a)
Indonesia							
('000 MT)	3,593	4,594	3,665	4,072	4,153	3,469	3,913
(US$/MT)	325	299	317	280	250	210	196
China							
('000 MT)	794	2,283	870	1,198	1,378	1,499	1,295
(US$/MT)	279	259	314	296	258	219	192
Vietnam							
('000 MT)	2,403	1,994	1,347	1,377	1,306	1,507	1,350
(US$/MT)	298	284	326	292	254	220	209
Yemen							
(US$/MT)	713	859	816	850	1,057	782	772
(US$/MT)	300	286	318	284	251	215	203
South Korea							
('000 MT)	1,935	2,072	893	1,062	1,054	1,056	656
(US$/MT)	305	276	246	296	256	245	201
Malaysia							
('000 MT)	952	934	721	1,051	891	873	693
(US$/MT)	330	298	322	291	245	213	203
Japan							
('000 MT)	1,263	1,369	951	933	882	839	636
(US$/MT)	379	295	367	308	271	252	223
Philippines							
('000 MT)	1,281	1,675	355	550	673	1,026	1,702
(US$/MT)	259	267	330	286	254	214	187
India							
('000 MT)	1	4	13	22	438	919	1,765
(US$/MT)	..	..	..	..	242	220	205
Other	6,798	7,792	8,406	7,161	5,241	4,167	
World							
('000 MT)	19,733	23,576	18,037	18,276	17,073	16,137	16,234
(US$/MT)	320	288	331	294	259	224	204

Note: Calendar years, (a) First seven months.
Source: Global Trade Atlas

Table 2: Production, Supply and Demand Estimates: Wheat ('000 HA and '000 MT)

Wheat		2015/2016		2016/2017		2017/2018
Market Begin Year		Oct 2015		Oct 2016		Oct 2017
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	11,282	11,282	12,400	12,835	12,500	12,400
Beginning Stocks	4,670	4,670	3,850	3,850	6,731	8,231
Production	22,275	22,275	33,500	35,000	21,500	20,000
MY Imports	154	154	131	131	150	150
TY Imports	154	154	154	154	150	150
TY Imports from U.S.	2	2	2	2	0	2
Total Supply	27,099	27,099	37,481	38,981	28,381	28,381
MY Exports	16,124	16,124	23,000	23,000	18,000	18,000
TY Exports	15,782	15,782	22,070	22,070	20,000	20,000
Feed and Residual	3,700	3,700	4,300	4,300	3,500	3,500
FSI Consumption	3,425	3,425	3,450	3,450	3,500	3,500
Total Consumption	7,125	7,125	7,750	7,750	7,000	7,000
Ending Stocks	3,850	3,850	6,731	8,231	3,381	3,381
Total Distribution	27,099	27,099	37,481	38,981	28,381	28,381
Yield	1.9744	1.9744	2.7016	2.7269	1.72	1.6129
(1000 HA), (1000 MT), (MT/HA)						

Note: 'New Post' data reflect author's assessments and are not official data.

BARLEY

Production

Barley production is forecast by Post at 8 million MT, the same as the official estimate. Post notes that rainfall has been timely in the main cropping areas for barley in southeast Australia. Currently, the barley harvest is underway in parts of Queensland and over the next two months will proceed in the southeast of Australia, where water availability has not been a major issue for 2017/18. Barley production in eastern Australia is expected to be 5.3 million MT. Eastern Australia's harvest area for barley has declined in recent years as higher value crops such as canola, lentils and chickpeas expand their harvested area.

Rainfall occurred across most grain-growing regions of Western Australia during August 2017 but significant damage had already occurred to crops in the north and eastern regions of the state. Barley production in Western Australia is expected to reach 2.7 million MT in 2017/18. The yield for barley improved during the dry period of June to September 2017, especially in southeastern Australia. A recent BOM forecast for October suggests that good rainfall will help finish the barley crop, especially in South Australia and Victoria.

Barley is usually sown during May and harvested from November. The crop grows through the winter months in Australia, typically in rotation with wheat, canola, oats and pulses. Western Australia is the major barley producing state with over one third of the harvested area and output. NSW, South Australia and Victoria each account for around one fifth of barley production. One third of barley is usually used in Australia for food and beer production, animal feed and seed. The remainder is exported with around half used as feed barley, one third as malting barley, and the rest as malt for the manufacture of beer or spirits.

Consumption

Post forecasts domestic consumption of barley at 3 million MT in 2017/18, the same as the official estimate. This represents a decline from the level of consumption reached in 2016/17 of 3.5 million MT when record production and low feed barley prices encouraged greater use of this relatively low cost grain in livestock feeding.

The Australian barley industry produces grain for standard and craft beer and distilled spirits production, as well as feed grain for domestic and overseas livestock industries. Demand for malt barley is increasing and over 20 percent of barley grown in Australia usually achieves malting grade, with the remainder consumed as food and feed barley. Malting barley is used primarily to produce alcohol (beer and distilled spirits such as Shochu, a Japanese distilled spirit) and food including confectionary, snack foods, breakfast cereals, miso and barley tea.

Normally, Australia produces over 2 million MT of malting barley. Around 900,000 MT of malt can be produced from 1 million MT of barley. Annual malt exports are around 700,000 MT mainly to Asia. Post estimates that domestic brewing consumption of malt is around 170,000 MT. Australia's per capita beer production fell 14 percent to 92 liters from 108 liters in the six years to mid-2014, although more recent official statistics are unavailable. The market share of craft beer is estimated at around 5 percent.

Trade

Post forecasts barley exports at 5.8 million MT in 2017/18, the same as the official estimate. China has been by far the biggest destination for Australian barley exports, ahead of markets such as Saudi Arabia and Japan. The Australian barley industry has sought to strengthen links with buyers in Asia through investment in malting plants in a number of countries. In mid-2017, the Western Australian grain growers cooperative CBH Group opened a US$70 million 110,000 MT malt plant in Vietnam to provide barley growers in Western Australia with a stronger link to the Vietnamese beer market, which is the fastest growing in the region.

Table 3: Australian exports of barley, 2011-2017 by country, volume and average value ('000 MT)

Country	2011	2012	2013	2014	2015	2016	2017 (a)
China	1,268	2,102	1,766	4,377	3,586	3,516	na
(US$/MT)	301	273	297	259	255	193	
Saudi Arabia	1,667	1,153	1,702	471	525	304	na
(US$/MT)	272	259	275	253	182	181	
Japan	962	769	967	605	217	1,058	na
(US$/MT)	292	265	293	262	273	194	
UAE	160	350	130	164	118	367	na
(US$/MT)	287	259	292	251	247	180	
Kuwait	336	185	175	111	44	393	na
(US$/MT)	272	265	279	244	186	176	
Other	665	552	381	395	252	219	na
World	5,058	5,111	5,121	6,123	5,188	5,857	3,618
	282	267	289	259	255	193	

Note: Calendar year (a) First seven months of 2017.
Source: Global Trade Atlas

Australia normally accounts for around one fifth of the global feed barley trade. China has been the largest single market for Australian feed barley exports in recent years, but demand has fluctuated. In early 2017, Australian feed barley prices declined to a 15-year low allowing a significant increase in exports to markets such as China and South-East Asia. Since then, there has been a surge in domestic barley prices compared to export prices. This is attributable to general expectations of a lower winter crop in 2017/18 due to increasingly dry conditions in northern NSW and southern Queensland.

In September 2017, the price of feed barley exceeded A$300/MT, up over 50 percent for the year, while prices for feed sorghum were A$300/MT, up around 35 percent for the year. These price and demand trends could reduce the amount of grain available for export markets, although contractual obligations will be met. Higher domestic demand in Queensland could lead to expanded intrastate trade in feed barley from Western Australia and southeast Australia. Already, the feedlot industry charters a cargo of feed wheat from Western Australia every year to ensure the reliability of supply. However, Post notes that high transport costs are a major barrier to a switch away from export markets

Table 4: Production, Supply and Demand Estimates: Barley ('000 HA and '000 MT)

Barley		2015/2016		2016/2017		2017/2018
Market Begin Year		Nov 2015		Nov 2016		Nov 2017
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	4,108	4,108	4,035	4,100	3,900	3,800
Beginning Stocks	1,120	1,120	1,069	1,069	1,483	1,483
Production	8,993	8,993	13,414	13,414	8,000	8,000
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imports from U.S.	0	0	0	0	0	0
Total Supply	10,113	10,113	14,483	14,483	9,483	9,483
MY Exports	5,744	5,744	9,500	9,500	5,800	5,800
TY Exports	5,401	5,401	9,500	9,500	5,800	5,800
Feed and Residual	2,000	2,000	2,200	2,200	1,700	1,700
FSI Consumption	1,300	1,300	1,300	1,300	1,300	1,300
Total Consumption	3,300	3,300	3,500	3,500	3,000	3,000
Ending Stocks	1,069	1,069	1,483	1,483	683	683
Total Distribution	10,113	10,113	14,483	14,483	9,483	9,483
Yield	2.1891	2.1891	3.3244	3.2717	2.0513	2.1053
(1000 HA), (1000 MT), (MT/HA)						

Note: 'New Post' data reflect author's assessments and are not official data.

SORGHUM

Production

Post expects sorghum production to rebound to 1.9 million MT, the same as the official forecast. The increase is due to an increased harvested area, favorable seasonal conditions during the planting window and rising prices for alternative crops, such as feed wheat. The area harvested is expected to increase to 630,000 hectares, in line with the official forecast. The previous season was difficult for sorghum because of the low prices during the early planting window, which discouraged sowing especially in northern NSW. In addition, the late finish of the 2016/17 winter crop reduced the duration of the planting window for sorghum farmers.

Prospects are brighter for the 2017/18 crop as water shortages in southern Queensland and northern NSW mean that many farmers are likely to plant sorghum or soybeans instead of cotton for the 2017/18 summer crop. In the last week of September 2017, over 50 mm of rain fell in southern and central Queensland, which is likely to support sorghum planting from October. These levels of rainfall are insufficient for planting of cotton. The forecast for 2017/18 assumes average seasonal conditions over summer.

For the 2017/18 season, sorghum plantings are likely to be encouraged by higher prices of almost A$300 delivered to some ports, while cotton prices have moderated. In addition, higher prices for wheat mean that sorghum is priced more competitively as a feed grain for domestic livestock industries, such as poultry and beef feedlots. Post notes that a larger sorghum crop would help meet increasing domestic feed demand in Queensland and northern NSW.

The biofuels industry also contributes to domestic demand for sorghum. The Dalby ethanol plant in Queensland is currently expanding operations to meet a new state government ethanol mandate. When the Dalby operation is running at full capacity, around 200,000 MT a year of sorghum is used for ethanol production and this amount could increase in the future. The biofuel plant also produces dried distillers' grains (DDG) which is sold mainly as a high-protein stockfeed for pigs, dairy cows and lot-fed cattle.

Australia normally produces around two to three percent of global sorghum production and accounts for five percent of global exports. Sorghum is a summer crop mainly used for livestock feed. Around seventy percent of the Australian crop is grown in Queensland, and the remainder in northern NSW. Sorghum is typically grown as a rotation crop as it is relatively drought tolerant and can tolerate more acid soils. Planting times for sorghum extend from September to January each year.

Consumption

Post forecasts domestic consumption of sorghum in 2017/18 at 1 million MT, in line with the official estimate. Sorghum has traditionally been used domestically for feed grain for the beef, dairy, pig and poultry industries, and is the main summer grain crop in most regions of Queensland. Sorghum is classified as either grain sorghum or forage sorghum according to the tannin content.

Trade

For 2017/18, Post forecasts sorghum exports of 0.8 million MT, in line with the official forecast. Export demand for sorghum has varied significantly in recent years. One unknown factor is the extent of Chinese demand for sorghum imports, as livestock producers in that country are switching to domestic corn for feed use. Over the last year, Australian sorghum has been less competitive into the Chinese feed market, with prices significantly above

prices for US origin sorghum. However, Chinese demand for sorghum by the Chinese bajiu spirits industry is expected to be resilient.

Table 5: Australian exports of sorghum by country, volume and average value, 2011-2017 ('000 MT)

Country	2011	2012	2013	2014	2015	2016	2017 (a)
China	0	39	758	349	1,512	752	182
(US$/MT)	..	248	327	302	272	203	214
Japan	39	1	13	0	0	0	..
(US$/MT)	292	356	326	..	..	..	
South Africa	35	90	0	0	0	0	0
(US$/MT)	279	256	..	..	..	..	
Taiwan	19	34	13	3	4	19	6
(US$/MT)	319	244	300	327	284	184	249
Other	23	41	13	4	8	23	27
World	116	205	797	356	1,524	794	215
(US$/MT)	300	257	327	303	273	203	244

Note: Calendar year (a) First seven months of 2017.
Source: Global Trade Atlas

Table 6: Production, Supply and Demand Estimates: Sorghum ('000 HA and '000 MT)

Sorghum	2015/2016		2016/2017		2017/2018	
Market Begin Year	Mar 2016		Mar 2017		Mar 2018	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	521	521	386	400	630	630
Beginning Stocks	252	252	234	234	96	99
Production	1,791	1,791	1,017	1,020	1,900	1,900
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imports from U.S.	0	0	0	0	0	0
Total Supply	2,043	2,043	1,251	1,254	1,996	1,999
MY Exports	904	904	550	550	800	800
TY Exports	717	717	550	550	600	600
Feed and Residual	900	900	600	600	1,000	1,000
FSI Consumption	5	5	5	5	5	5
Total Consumption	905	905	605	605	1,005	1,005
Ending Stocks	234	234	96	99	191	194
Total Distribution	2,043	2,043	1,251	1,254	1,996	1,999
Yield	3.4376	3.4376	2.6347	2.55	3.0159	3.0159
(1000 HA) ,(1000 MT) ,(MT/HA)						

Note: 'New Post' data reflect author's assessments and are not official data.

RICE

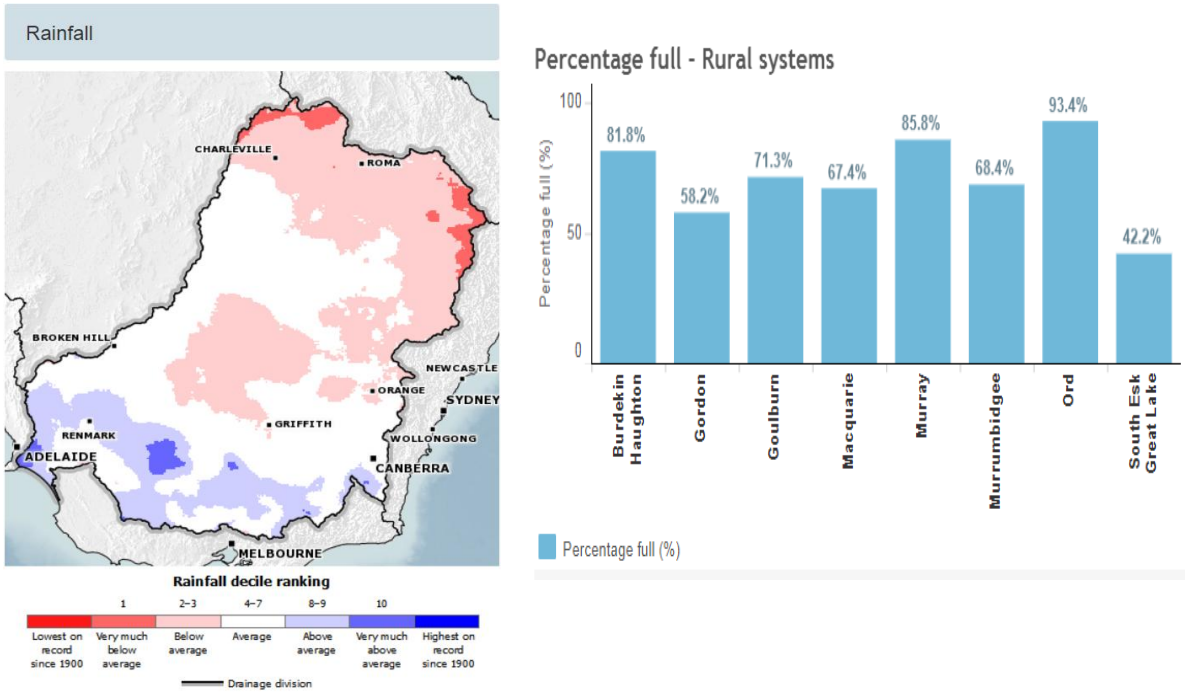
Production

Post forecasts rice production at 833,000 MT in 2017/18, around 5 percent below the official forecast. This change is due to higher water prices, falling dam levels and Bureau of Meteorology forecasts for only average rainfall in rice cropping areas. The area harvested is expected to be 84,000 hectares in 2017/18, due to increased competition from other irrigated agricultural industries including tree crops and cotton. Post notes that the sole Australian marketer SunRice will not set a guaranteed price for rice for the 2017/18 season, after two seasons of a set price. This could increase industry uncertainty about the likely return to investment for rice crops. Owners of water licenses can sell these entitlements to other agricultural industries needing irrigation instead of sowing the new season crop. Smaller rice farmers could be more reluctant to purchase water entitlements to grow rice in this situation.

The rice industry is mainly based in NSW but hopes to expand into the more water abundant regions in Queensland and northern Australia. Initial rice crops in Queensland have been developed mainly as a summer crop for sugar farmers. The Australian government recently provided A$4 million in funding to support research into the viability of a northern Australian rice industry because of the long-term problems with water availability and cost in southern Australia.

Two new shorter season varieties have been tested by the Australian rice industry. These could change rotations by allowing growers to double crop into rice out of winter cereals. Compared to the longer season varieties, the new shorter season varieties YRM70 and YRK5 could be planted later, offering the opportunity for double or even triple cropping. The short season varieties would allow growers to make better use of late allocations of water but have not yet been scheduled for full commercial release.

Chart 3: Rainfall and dam storage in the Murray-Darling Basin (NSW, Victoria and Queensland)



Source: Bureau of Meteorology (October, 2017).

Table 7: Survey of water usage on Australian rice farms, 2016

	Australia	NSW	Queensland
Area of rice crop ('000 hectares)	26.6	24.7	1.7
Number of businesses	335	283	49
Area watered ('000 hectares)	26.2	24.3	1.7
Water volume applied (GL)	317	302	15
Application rate (ML/hectare)	12.1	12.4	8.8

Source: Australian Bureau of Statistics (September, 2017).

Consumption

Post forecasts that consumption of rice in Australia in 2017/18 at 390,000 MT, the same as the official forecast. Domestic demand for both rice meals and products is slowly expanding. Overall, the Australian population is growing slowly while demand for rice products is relatively mature.

Trade

Post forecasts rice exports at 320,000 MT in 2017/18, slightly below the official estimate because of lower expected production. The Australian marketer SunRice is concerned about access to the Papua New Guinea (PNG) market, which can account for a significant share of Australian rice exports. So far this year, it appears that market access for Australian rice in to this market has not been reduced. Post notes that official statistics of rice exports do not have country detail because of confidentiality provisions. Imports of other types of rice into the domestic market in 2017/18 are forecast at 155,000 MT, the same as the official forecast.

Table 7: Australian exports of rice, 2011-2017 ('000 MT)

Country	2011	2012	2013	2014	2015	2016	2017 (a)
World	314	452	466	410	325	168	85
(US$/MT)	870	786	796	861	920	927	913

Note: Calendar years, country detail unavailable because of confidentiality provisions.
(a) First seven months of 2017.
Source: Global Trade Atlas.

Table 8: Australian imports of rice, 2011-2017 ('000 MT)

Country	2011	2012	2013	2014	2015	2016	2017 (a)
Thailand	95	68	69	81	73	77	45
(US$/MT)	969	1082	1082	921	863	765	708
India	16	23	27	30	34	33	22
(US$/MT)	1384	1289	1382	1514	1206	1068	1150
Pakistan	21	18	19	18	17	21	12
(US$/MT)	979	1038	974	1228	989	747	804
United States	11	12	13	11	10	10	6
(US$/MT)	984	909	888	1023	1041	934	844
Other	17	13	14	16	18	22	12
World	160	134	142	156	152	163	97
(US$/MT)	1024	1103	1106	1094	975	850	850

Note: Calendar year (a) First seven months of 2017. *Source*: Global Trade Atlas

Table 9: Production, Supply and Demand Estimates: Rice ('000 HA and '000 MT)

Rice, Milled		2015/2016		2016/2017		2017/2018
Market Begin Year		Mar 2016		Mar 2017		Mar 2018
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	27	27	80	80	90	84
Beginning Stocks	223	223	77	77	218	218
Milled Production	197	197	586	586	630	600
Rough Production	274	274	814	814	875	833
Milling Rate (.9999)	7200	7200	7200	7200	7200	7200
MY Imports	167	167	155	155	155	155
TY Imports	163	163	155	155	155	155
TY Imp. from U.S.	11	11	0	0	0	0
Total Supply	587	587	818	818	1,003	973
MY Exports	140	140	220	220	350	320
TY Exports	165	165	180	180	325	320
Consumption and Residual	370	370	380	380	390	390
Ending Stocks	77	77	218	218	263	263
Total Distribution	587	587	818	818	1,003	973
Yield (Rough)	10.1481	10.1481	10.175	10.175	9.7222	9.9167
(1000 HA) ,(1000 MT) ,(MT/HA)						

Note: 'New Post' data reflect author's assessments and are not official data.