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Grain and Feed Update

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Report Highlights:

Australian winter crops have benefitted from very favorable seasonal conditions, apart from some cases of frost and waterlogging damage which are not expected to have a major impact on production or yields. Post forecasts 2016/17 wheat production to reach 27.5 million MT, matching USDA's official estimate. Similarly, Post forecasts 2016/17 barley production at 9.9 million MT due to considerable rainfall and improving soil moisture. Lower international demand and prices for sorghum are expected to lead to substitution to other crops, including cotton and legumes. Post forecasts the 2016/17 sorghum production at 2 million MT, slightly below the official estimate. The rice crop is expected to recover significantly due to abundant and lower cost water and favorable conditions. As a result, Post forecasts 2016/17 rice production to reach 576,000 MT on a milled basis.

Post:

Canberra

Commodities:

Wheat

Barley

Sorghum

Rice, Milled

EXECUTIVE SUMMARY:

The outlook for Australian winter crops in 2016/17 has improved significantly due to a turnaround in seasonal conditions over the year. Both rainfall and temperatures forecast are expected to support almost record production of wheat and barley. Soil moisture in virtually all wheat and barley cropping areas has markedly improved on the relatively dry conditions which prevailed last year. These better seasonal conditions are also positive for Australian summer crops, with a slight decline in production forecast for sorghum while rice is expected to rebound strongly from water-based constraints on production which were evident in 2015/16.

Production of wheat and barley in Australia in 2016/17 is forecast to reach 27.5 million MT and 9.9 million MT respectively. These forecasts match the official USDA forecast. For 2016/17, the sorghum harvest is expected to decline slightly to two million MT due to lower export demand and a switch to more profitable crops. In 2016/17, the rice crop is forecast to recover significantly to 576,000 MT on a milled basis in response to improved water availability and better seasonal conditions.

Note: The data and analysis presented in this report are current to USDA's September Official estimates.

SEASONAL CONDITIONS

Winter rainfall in 2016 was influenced by the strongest negative Indian Ocean Dipole (IOD) event recorded in 50 years. This provided increased moisture for frontal systems and low pressure systems moving across Australia (Chart 1). As a result, upper layer soil moisture in most cropping regions is very high in southern Queensland, northern NSW and parts of southern Western Australia. It is around average in most other regions. The 3-month temperature outlook for October to December 2016 is for above average temperatures in Victorian and SA cropping regions and average conditions in other cropping regions (Chart 2).

Seasonal conditions have been favorable across most growing areas although intense rain in some regions and waterlogging could lower production and yields slightly. On the other hand, very good soil moisture in almost all cropping regions supports the expectation of higher crops and yields generally. October to December rainfall is also likely to be wetter than average for much of Australia and the accuracy of this forecast by the Bureau of meteorology is moderate to high over most of Australia.

It is notable that September 2016 saw the coldest average minimum temperatures on record across most of the WA grain belt. These frosts have resulted in a slight reduction in the crop forecast for this State – although it is still well above the previous year. The incidence of cool weather will also have a positive impact on crops as evaporation has been low, making grain yield potential more likely to be achieved as the adverse impact of heat shock has been significantly offset.

Chart 1: Likelihood of above median rainfall from October to December 2016

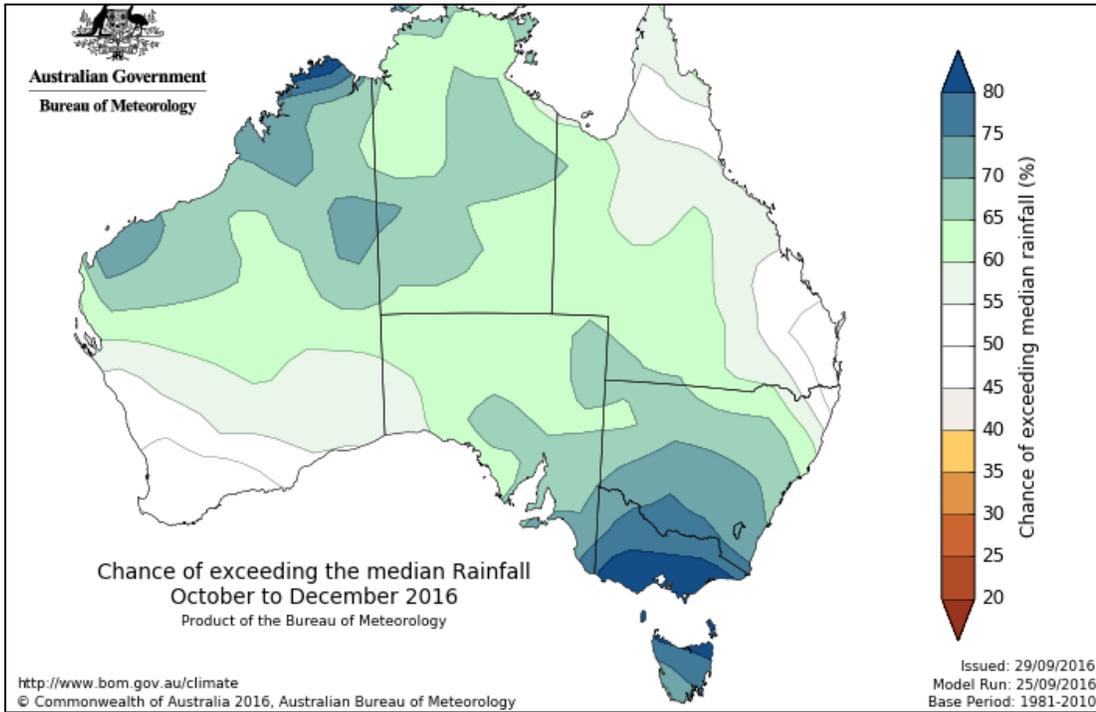
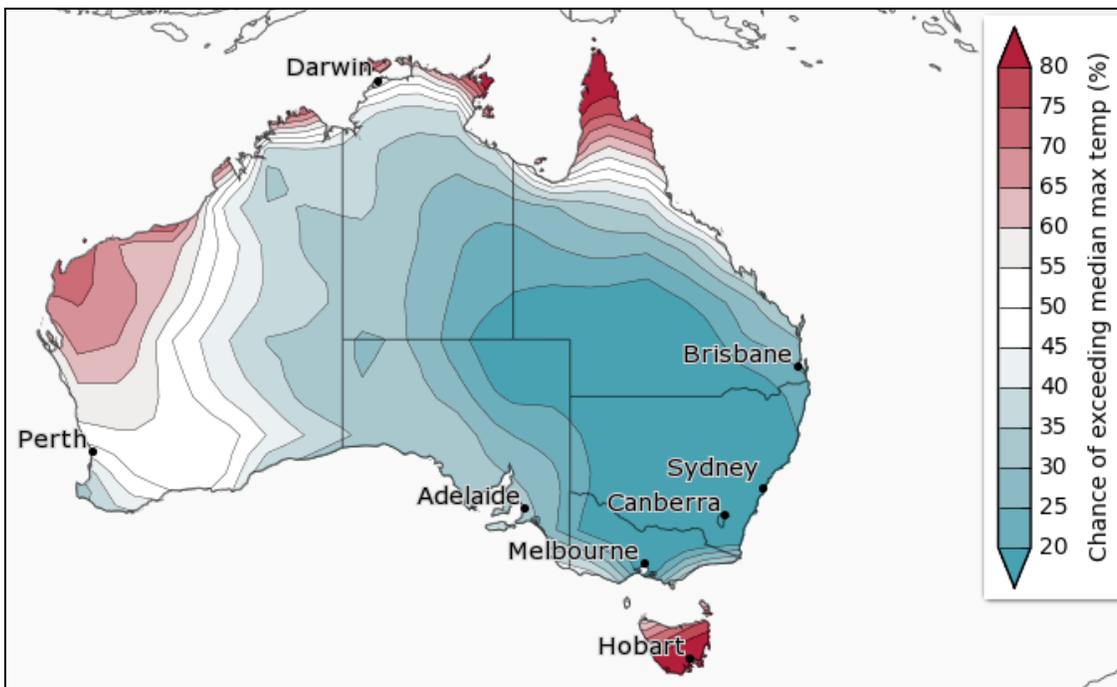


Chart 2: Likelihood of above median temperatures from October to December 2016



Source: Australian Bureau of Meteorology (September, 2016).

WHEAT

Overview

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, New South Wales (NSW), South Australia, Victoria and Queensland. Western Australia accounts for over 40 percent of exports, while a greater proportion of the eastern coast wheat crop goes to domestic consumption.

Production

Post forecasts Australian wheat production to reach 27.5 million MT in 2016/17, in line with the official forecast. Since mid-2016, high levels of rainfall have occurred through all cropping regions, significantly improved subsoil moisture. Median wheat yields are therefore expected by Post to increase to over 2 MT a hectare. The area planted to wheat is expected to be stable.

Improved seasonal conditions in Western Australia and Victoria have significantly contributed to this outcome. As the soil moisture profile is full, little further rain is needed to finish grain for the 2016/17 season. The rainfall coverage means even poorer sand soils are expected to have very good yield potential. Periods of cold and frost in the WA wheatbelt throughout September and flooding in South Australia have not significantly reduced likely production in these regions, while other crop growing regions have experienced almost ideal conditions for the 2016/17 harvest.

Consumption

Wheat is Australia's major grain crop and is mainly used in the production of breads, noodles and pastas. 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 been stable in recent years and Post expects this to continue. Around 70 kg of flour are consumed in Australia per capita and the domestic market is mature.

The grain milling industry in Australia is dominated by four companies: George Weston Foods, Uncle Toby's, Manildra and Goodman Fielder. The sector covers flour milling, breakfast cereal production, oils and grain products. Australian consumption of grains is experiencing a shift to products free from gluten, with a recent survey finding that up to ten percent of the population limiting wheat consumption for this reason.

Lower quality wheat is used as stock feed while around 500,000 MT waste wheat starch is used to manufacture biofuel. Demand for low quality wheat for stock feed has increased slightly in recent years, reflecting the large number of cattle in lot feeding facilities, especially in Queensland and NSW. Post has therefore forecast the feed and residual component at 4 million MT, an upward revision of 200,000 MT and in line with the official forecast.

Stocks

In recent years, Australia has seen greater on-farm storage as farmers seek to maintain flexibility in supply markets. No separate estimates are available for wheat storage but overall on-farm grain storage is likely to have increased to 5 million MT in recent years while total storage capacity including off-farm commercial silos exceeds 15 million MT. In addition, new port facilities have been built over the past five years, with an additional 4 million MT of bulk export capacity added. A significant share of Australian wheat is exported in bulk cargoes, especially from Western Australia.

Trade

Post forecasts that Australian wheat exports in 2016/17 will reach 19.5 million MT, in line with the official forecast. This reflects the expected lift in overall wheat production due to favorable seasonal conditions and expected higher yields. The international market for wheat has become increasingly competitive. Australia is facing competition from Black Sea exporters in Indonesia, a traditional Australian market.

Other regional markets such as in Malaysia and Vietnam have been comparatively resilient although the importance of the Middle Eastern and Japanese markets has declined. Table 1 shows the different types of wheat produced in Australia according to its major characteristics, products and export markets.

Table 1: Types of Wheat, Locations and Markets

<i>Type of wheat</i>	<i>Characteristics</i>
<i>Australian Prime Hard (APH): APH is a high protein milling wheat. APH is grown in NSW and Queensland</i>	<i>APH is suited for high-volume European breads, yellow alkaline noodles, fresh ramen noodles, dry noodles and wonton skins</i>
<i>Australian Hard (AH): AH has high-quality protein and strong dough characteristics. It is grown throughout the Australian wheatbelt.</i>	<i>AH is used in a wide range of Asian breads and noodle products, as well as Middle Eastern style flat breads and Chinese steamed products</i>
<i>Australian Premium White (APW) is mid-protein hard white wheat.</i>	<i>APH is used for Hokkien, instant and fresh noodles, as well as Middle Eastern and sub-continental flat breads and Chinese steamed bread.</i>
<i>Australian Standard White (ASW) is medium-to low-protein white wheat for straight milling or blending.</i>	<i>It is used for Middle Eastern, sub-continental flat breads, European-style breads and rolls and Chinese steamed bread</i>
<i>Australian Premium Durum (ADR).</i>	<i>Used for pasta products, as well as North African and Middle Eastern couscous, hearth and flat breads.</i>
<i>Australian Soft (ASFT), with lower protein ND grown on the east coast.</i>	<i>West coast production exported for a range of Asian steamed products. East coast production is mainly used for domestic biscuit and cake production.</i>
<i>Australian Noodle (ANW) mainly produced on west coast.</i>	<i>Suited for making the Japanese Udon-style noodle.</i>
<i>Australian Premium Noodle (APWN), grown on west coast.</i>	<i>Blended with ANW for white salted and instant noodle types in specific Asian markets.</i>

Source: Grain Growers (2016).

Indonesia remains Australia's largest single international market for wheat, accounting for around one fifth of total exports in recent years. A number of Australian companies have invested in the growing milling sector in Indonesia to support demand for flour and flour products including noodles and baked goods.

From 2016, the Australian and New Zealand ASEAN Free Trade Agreement eliminated tariffs on wheat for most ASEAN markets, including Singapore, Malaysia, Thailand and the Philippines which have also been significant markets for Australian exporters. China, South Korea and Japan are among the top ten Australian markets for wheat, with exports to these North Asian markets averaging 3.7 million MT for the 5 years to 2015.

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

Wheat	2014/2015	2015/2016	2016/2017
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Market Begin Year	Oct 2014		Oct 2015		Oct 2016	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Australia						
Area Harvested	12,384	12,384	12,800	12,800	12,800	12,800
Beginning Stocks	4,558	4,558	4,837	4,837	6,262	6,262
Production	23,910	23,910	24,500	24,500	27,500	27,500
MY Imports	159	159	150	150	150	150
TY Imports	162	162	160	160	150	150
TY Imp. from U.S.	3	3	2	1	0	1
Total Supply	28,627	28,627	29,487	29,487	33,912	33,912
MY Exports	16,590	16,590	16,000	16,000	19,500	19,500
TY Exports	16,575	16,575	15,782	15,782	19,500	19,500
Feed and Residual	3,800	3,800	3,800	3,800	4,000	4,000
FSI Consumption	3,400	3,400	3,425	3,425	3,460	3,460
Total Consumption	7,200	7,200	7,225	7,225	7,460	7,460
Ending Stocks	4,837	4,837	6,262	6,262	6,952	6,952
Total Distribution	28,627	28,627	29,487	29,487	33,912	33,912

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

Overview

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. The States of NSW, South Australia and Victoria each account for around one fifth of barley production. Around one third of barley is 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, primarily for the manufacture of beer or spirits.

Production

Post forecasts Australian barley production to reach 9.9 million MT in 2016/17, in line with the official forecast. Favorable seasonal conditions and good soil moisture across all barley growing regions support this forecast. Yields are expected to increase to around 2.4 MT per hectare, compared to 2.1 MT per hectare in the previous year. The area planted to barley is expected to be stable.

In Western Australia, the outlook for barley in many districts is exceptional, with very large crops and a high yield potential. While early sown barley has been affected by frost, the overall impact on production and yields is expected to be relatively modest. Overall, improved rainfall and soil moisture have provided almost ideal conditions for the development of barley crops across the State.

Consumption

Domestic barley consumption has been stable although beer consumption (for which barley is a key input) has declined over the longer term compared to consumption of wine and cider.

Trade

Barley exports are forecast by Post to rise by 26 percent in 2016/17 to 6.7 million MT. Exports of malting barley are forecast to increase strongly in 2016/17 because of lower expected supplies from some other countries including France and favorable prices for malting barley. Australian exporters face greater competition in traditional markets in the Middle East such as Saudi Arabia, Kuwait and the UAE where Black sea exporters of feed barley such as the Ukraine have increased market share.

Australia is the world's largest exporter of barley, accounting for around 30 percent of the malting barley trade and about 20 percent of the global feed barley trade. Around 30 to 40 percent of barley grown in Australia 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 products including confectionary, snack foods, breakfast cereals, miso and barley tea.

Australian exports of barley to China increased from 1.4 million MT in 2010 to 3.6 million MT in 2015, making China the largest single market. Lower demand for feed barley from China is expected in 2016/17 as livestock producers in that country switch to domestic corn for feed use. However, demand for feed barley in the Middle East is forecast to increase as Saudi Arabia is expected to increase its reliance on barley as a major livestock feed grain.

Demand for malt barley is expected to be resilient. Malting grade barley is exported to the Japanese market for Shochu, the Chinese market for Baidu. It is also exported to the beer markets in China, Japan and India. China is the world's biggest beer market at around 50 billion liters annually while Vietnam is an emerging market for Australian exports of malting barley.

Table 3: Production, Supply and Demand Estimates: Barley ('000 HA and '000 MT)

Barley Market Begin Year	2014/2015		2015/2016		2016/2017	
	Nov 2014		Nov 2015		Nov 2016	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Australia						
Area Harvested	4,078	4,078	4,105	4,105	4,100	4,100
Beginning Stocks	693	693	1,120	1,120	1,213	1,213
Production	8,646	8,646	8,593	8,593	9,900	9,900
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	9,339	9,339	9,713	9,713	11,113	11,113
MY Exports	5,219	5,219	5,500	5,500	6,700	6,700
TY Exports	5,266	5,266	5,200	5,200	6,700	6,700
Feed and Residual	1,700	1,700	1,700	1,700	1,700	1,700
FSI Consumption	1,300	1,300	1,300	1,300	1,300	1,300
Total Consumption	3,000	3,000	3,000	3,000	3,000	3,000
Ending Stocks	1,120	1,120	1,213	1,213	1,413	1,413
Total Distribution	9,339	9,339	9,713	9,713	11,113	11,113

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

SORGHUM

Overview

Australia normally produces around two to three percent of global sorghum output 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 are from September to January. Sorghum is classified as either grain sorghum or forage sorghum according to the tannin content. Grain sorghum is often used for feed grain for the beef, dairy, pig and poultry industries and is the main summer grain crop in most regions of Queensland. In recent years, a significant share of the crop has been exported to China for use as animal feed and as an input in the production of Baijiu, or sorghum wine.

Grain sorghum production, yield and the harvested area have differed significantly in Australia over the last decade because of the highly variable rainfall pattern and fluctuating world prices. The use of no-till and minimum-till fallow farming in Queensland has widened the planting window for sorghum by allowing the crop to be sown up to 6-7 weeks later than normal after good rain. This practice increases the prospects for the crop and the yield potential. The use of no-till fallows has generally increased soil moisture in fields and the prospects for new crops.

Production

Post forecasts Australian sorghum production will decline slightly to 2 million MT in 2016/17. This is below the official forecast as the harvested area is expected to fall by 10 percent to 630,000 hectares. One reason is the spread of dryland cotton in 2016/17 due to higher prices and the favorable seasonal outlook for this crop. In addition, uncertain Chinese demand for sorghum has led some farmers to look to alternative crops. Prices for sorghum have fallen by around 30 percent compared to the previous year.

Trade

Post forecasts that sorghum exports will fall to 800,000 MT in 2016/17 due to lower production and declining international demand. Underlying the revision is the significant uncertainty over the prospects for exports to China, which has been the dominant export market. Chinese demand for Australian sorghum in recent months has weakened and imports from the United States have been generally preferred. One possible reason is the larger scale of U.S. production and its greater reliability as a supplier given that sorghum is sown in Australia as an opportunity crop. The China-Australia Free Trade Agreement (ChAFTA) removed a two percent tariff on sorghum, although this would not have a strong influence on Chinese demand for imported sorghum.

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

Sorghum Market Begin Year	2014/2015		2015/2016		2016/2017	
	Mar 2015		Mar 2016		Mar 2017	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Australia						
Area Harvested	732	732	681	681	700	630
Beginning Stocks	172	172	246	246	178	178
Production	2209	2209	2037	2037	2200	2000
MY Imports	0	0	0	0	0	0
TY Imports	0	0	0	0	0	0
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	2381	2381	2283	2283	2378	2178
MY Exports	1630	1630	1000	1000	900	800
TY Exports	1700	1700	1000	1000	900	800
Feed and Residual	500	500	1100	1100	1200	1200
FSI Consumption	5	5	5	5	5	5
Total Consumption	505	505	1105	1105	1205	1205
Ending Stocks	246	246	178	178	273	173
Total Distribution	2381	2381	2283	2283	2378	2178

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

RICE

Overview

The Australian rice industry has experienced significant variations in production because of water constraints and changing seasonal conditions. While it has the capacity to produce over one million MT of rice, this level of production has not been approached in recent years due to higher water prices and unreliable rainfall. For the 2015/16 season, general security water allocations in the Murray Valley were only one fifth of entitlements at the time of the September planting window. This discouraged many farmers from planting rice, with some selling part of their water entitlements. However, in 2016/17, Post forecasts an upturn compared to the previous year, with an expanded harvest area due to better seasonal conditions and greater availability of lower cost water.

Production

Post forecasts that the area planted to rice will increase to 80,000 hectares in 2016/17, significantly higher than in the previous season, due to abundant irrigation water being available to rice producers at a much lower price. Post forecasts that production of rough rice in 2016/17 will increase to 800,000 MT while production of milled rice will reach 576,000 MT, up from USDA's official estimate of 450,000 MT for a number of reasons. These include better seasonal conditions, a significant carryover of untraded water entitlements from the previous season, the low cost of irrigation water and a high guaranteed price for rice by the industry body SunRice.

Currently, the water supply for the NSW rice crop is abundant as most major supply dams (such as the Hume, Burrinjuck, Blowering, Lake Victoria and Dartmouth dams) are nearly at full capacity. As a result, water allocations for irrigators are increasing. In addition, water trade prices have fallen by A\$110 a megaliter or half the cost which prevailed in the previous year. These changes have made rice more competitive with alternative crops such as tree nuts and cotton. Rice farmers are also able to benefit from sowing follow-up winter crops using the soil moisture remaining in their fields.

There are over 1,000 rice farms growing irrigated rice in the Murrumbidgee Valley of NSW and the Murray Valley of NSW and Victoria. There is only one rice crop harvested per season, with planting from September and harvest from March. Virtually all of the rice produced in Australia is comprised of medium and short grain Japonica varieties, while long grain varieties such as Basmati and Jasmine are imported. The average size of a rice farm is 400-500 hectares and rice production uses similar agricultural techniques and equipment as winter crops such as wheat and barley, such as aerial sowing and standard crop harvesters.

The typical yield on irrigated rice production in Australia is one of the highest in the world at over 10 MT per hectare. However, uncertainty over water costs in NSW has encouraged the rice industry to expand into the more water abundant regions in Queensland and northern Australia. Some Queensland sugar growers are beginning to incorporate rice into their sugarcane rotation and over 3,000 hectares will eventually be harvested. This rice growing area extends through the whole of tropical North Queensland from Tully down to Mackay, with the main growing regions being the Burdekin, Mackay and Tully. Rice would be a complementary crop to sugar, as it has a different growing season.

Consumption

Post expects that consumption of rice in Australia will continue to be stable at 350,000 MT as the population is growing slowly while demand for rice products is relatively mature.

Rice Marketing and Distribution

The rice industry in Australia is predominantly based in NSW where the State government regulates a rice export marketing single desk. Recently, the federal government's Productivity Commission found that the single desk arrangement had not resulted in an export price premium for growers and suggested that it be abolished. The NSW State government reviews the single desk every four years and a review is currently under way.

While the domestic rice market is open to traders and importers, around 80 percent of the national crop is exported by SunRice and regulated by the NSW legislation. Under this arrangement, SunRice has exclusive rights to sell overseas on behalf of the NSW Rice Marketing Board (RMB), which holds compulsory vesting rights over the NSW crop. The Rice Growers Association of Australia continues to support the single desk for rice marketing and exports.

Trade

Post forecasts that rice exports will be 300,000 MT in 2016/17, which is 50,000 MT higher than the official forecast due to higher expected production and stocks. Imports of 160,000 MT are expected by Post in line with the official forecast. Most Australian rice exports go to Papua New Guinea (PNG), where Australian national rice marketer SunRice supplies around 75 percent of imports in an open market. However in August 2016 the PNG Agriculture Minister announced that a quota arrangement would be eventually introduced for rice, with 80 percent of imports allocated to another company. The proposed import quota would also affect rice exports from other countries, including the United States.

Table 5: Production, Supply and Demand Estimates: Rice ('000 HA and '000 MT)

Rice, Milled Market Begin Year	2014/2015		2015/2016		2016/2017	
	Mar 2015		Mar 2016		Mar 2017	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Australia						
Area Harvested	70	71	23	23	60	80
Beginning Stocks	241	241	223	223	53	53
Milled Production	497	497	180	180	450	576
Rough Production	690	690	250	250	625	800
Milling Rate (.9999)	7200	7200	7200	7200	7200	7200
MY Imports	155	155	180	180	160	160
TY Imports	151	151	180	180	160	160
TY Imp. from U.S.	11	11	0	10	0	10
Total Supply	893	893	583	583	663	789
MY Exports	308	308	180	180	250	300
TY Exports	323	323	180	180	250	300
Consumption and Residual	362	362	350	350	350	350
Ending Stocks	223	223	53	53	63	139

Total Distribution	893	893	583	583	663	789
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Note: 'New Post' data reflect author's assessments and are not official data.