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Australia

Grain and Feed Update

July 2015

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Report Highlights:
The outlook for winter grains production in Australia from mid-2015 and beyond has been improved by more reliable rainfall. In 2015/16, the harvested area for wheat in Australia is expected to be stable at around 14 million hectares while the harvested area for barley is forecast to rise slightly to 4 million hectares. Wheat production is expected to be around 25 million metric tons; while barley production is expected to be 8.6 million tons. The outlook for summer crops is more difficult to forecast at this time, with the sorghum harvested area expected to fall to 625,000 hectares. Rice production continues to be constrained by water availability with output of around 500,000 tons possible in 2015/16 depending on weather conditions.

Post:
Canberra

Commodities:
Wheat

Barley

Sorghum

Rice, Milled

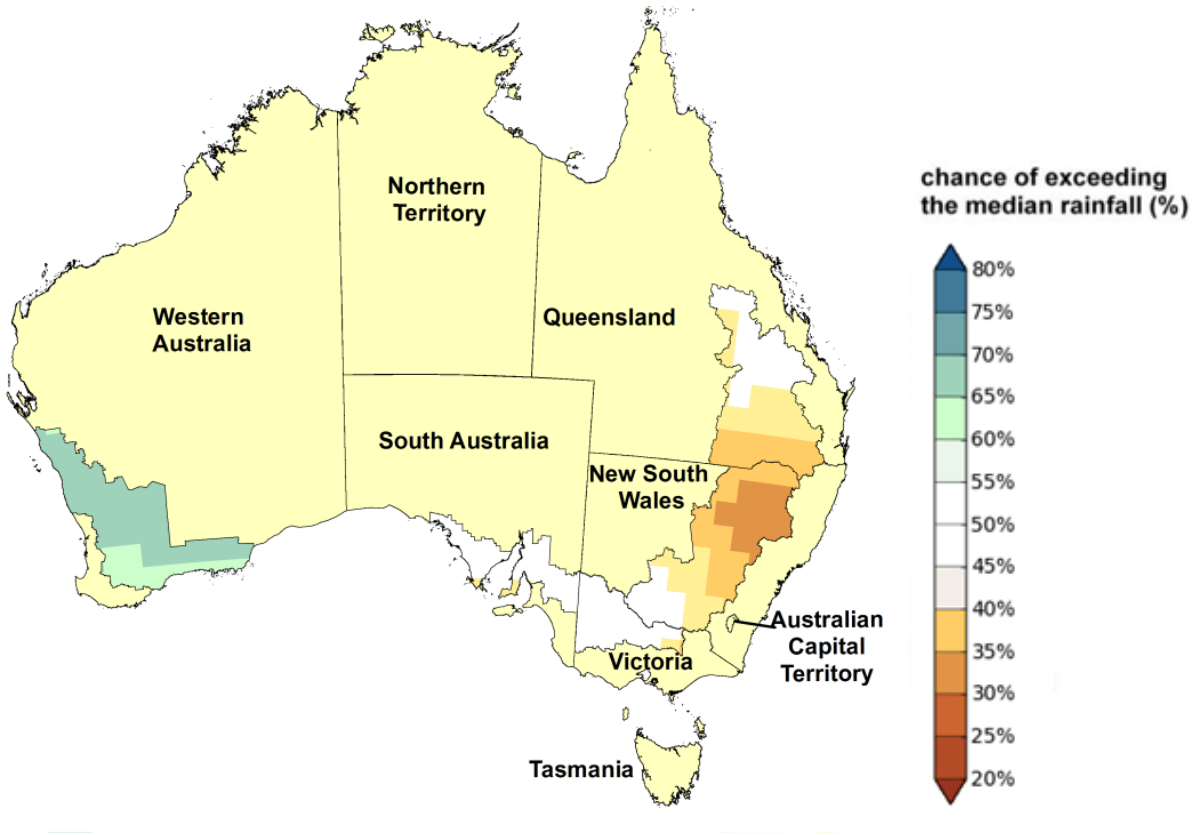
SEASONAL OUTLOOK

Seasonal conditions in Australia for 2015–16 winter crops are better than expected due to above average rainfall since April 2015, which has improved upper layer soil moisture levels. The Bureau of Meteorology forecasts have called for average rainfall over the three months to August 2015 and above average rainfall in Western Australia, the main exporting state. Autumn rainfall has increased upper layer soil moisture levels to above average for most of the WA cropping region.

In addition, the Bureau's three-month rainfall outlook for Western Australia to August 2015 forecasts a 60 percent to 70 percent chance of exceeding median rainfall over winter. This outlook offsets the forecast for below average rainfall over this period for southern Queensland and most of NSW. In Victoria, the opening to the 2015–16 winter cropping season saw below average rainfall in the lead-up to the planting window, but improved rainfall has occurred since then and is also forecast for the three months to August.

The Bureau of Meteorology's findings of above average levels of lower layer soil moisture in most of Australia's cropping regions suggests that crop development will be less reliant on in-crop rainfall. In contrast, in western Victoria, south-west Queensland and the northern and central cropping regions of Western Australia, crop development is likely to be more reliant on timely in-crop rainfall.

Chart 1: Australian winter crop rainfall outlook for June to August 2015



Source: Bureau of Meteorology (2015).

The BOM surveys are supported by the Australian Export Grains Innovation Center (AEGIC)'s Crop Prospects Report for June 2015 which provides an overview of soil moisture reserves, sowing conditions and predicted rainfall and their impact on forecast yields. The report finds good autumn rains occurred across the Australian grainbelt and created early sowing opportunities and good soil moisture reserves. By early June 2015, most seeding was completed and crops were germinating where there had been good soil moisture reserves. According to this report, large areas of Australia have excellent soil moisture reserves with 50 millimetres to greater than 120mm of plant available water. Significant parts of eastern Australia were found to have soil moisture of over 50 millimeters of 'plant available water'. Overall, more than half of the grainbelt was found to have average to above average rankings for soil moisture.

WHEAT

Production

Wheat is the major winter crop in Australia, with sowing starting in autumn, and harvesting in spring and summer. 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. Major types of wheat include Prime Hard, Hard, Premium White, Standard, Soft and Durum, based on protein, grain size and moisture content, and these have different end-uses.

Australian wheat production in 2015/16 is forecast at 25 million tons, slightly below the official USDA forecast because of seasonal uncertainties and an expected decline in wheat yields. Overall wheat production in 2015/16 is expected to be around five percent above the previous year. The harvested area is expected to be stable despite State-by-State variations, according to official crop reports. The harvested area for wheat in Queensland is forecast to decrease by around ten percent in 2015–16 to 750,000 hectares, while the harvested area in Western Australia is expected to increase by one percent in 2015–16 to 5.2 million hectares, due to favorable planting conditions. The forecast fall in the harvested area for wheat in Queensland is due to increased planting of chickpeas, while the increased harvested area in WA, South Australia and Victoria results from lower canola planting.

Note that the Australian Department of Agriculture (ABARES) has forecast wheat production of almost 24 million tons for 2015/16, assuming average rainfall. It is now probable this level will be exceeded given reasonable rainfall and slightly improved yields. Note that there is some uncertainty in the official statistics for Australian wheat production as final wheat production in 2013/14 was revised upwards by 1.1 million tons compared to the preliminary estimates.

The level of wheat stocks held in Australia in 2015/16 is expected to be stable at around four million tons. Australian grain producers have reportedly increased the use of on-farm grain storage to store and market their crops. Most grain is stored by the large grain handlers which have dedicated silos and related facilities near railways and ports. However, information on the volume of wheat stored in Australia is not readily available from official sources. The Australian Bureau of Statistics no longer collects this data, while neither farmers nor grain handlers appear to have an incentive to disclose available stocks (see statistical note below).

Yields

In 2015/16, wheat yields are expected to be around 1.8 tons per hectare because of better than expected seasonal conditions and soil moisture. This compares with 1.7 tons/ha in 2014/15 and 2.0 tons/ha for the previous year. A recent survey by the Australian Export Grains Innovation Centre (June, 2015) found that the outlook for wheat yields across Australia was generally positive following favorable rains and the early sowing opportunity this presented to growers.

Above-average rains in NSW and south-west Queensland raised soil moisture levels for winter crops although drier conditions are expected later in the year. Across Queensland, NSW and Western Australia, the yield outlook appears to have improved compared to the previous year, although the outlook has worsened slightly for grain growers in Victoria and South Australia.

Australian wheat yields vary significantly by region. Over the five years up to 2014, the wheat yield in Western Australia averaged 1.6 tons per hectare, compared to 1.9 tons per hectare in the northern region of Queensland and northern NSW and 2.2 tons per hectare in the southern region. Yields for large farms in these wheat growing regions were 1.6, 2.2 and 2.3 tons per hectare respectively, according to the ABARES farm surveys series (ABARES, 2015).

Consumption

Wheat is Australia's major grain crop and is used for human consumption in the production of breads, noodles and pastas. Lower quality wheat is used as stock feed while a small proportion of waste wheat starch is used to manufacture biofuel. In recent years, prices for feed grain have increased because of the record number of cattle in lot feeding facilities. This trend has also led to compression of price margins between different quality grades of wheat with even prime wheat bought for feed grain. As a result of this trend, the volume of wheat allocated to the feed market in the official USDA 2015/16 estimate is 100,000 tons greater than in the previous year.

Wheat consumption in Australia has been stable in recent years with around 70 kg of flour per capita consumed on average over the past decade. Flour producers face a mature domestic market. The biggest milling companies in Australia are Allied Mills, George Weston Foods and Manildra.

Trade

Australia is the seventh largest wheat producer in the world and the fourth largest exporter. Over 70 percent of Australian wheat production is exported, with WA the leading exporting state. Half of wheat grown in eastern Australia is consumed locally, while 90 percent of grain produced in Western Australia and South Australia is exported. The major export markets for Australia are in the Asian and Middle East regions and include Indonesia, Japan, South Korea, Malaysia, Vietnam and Sudan.

Australia has the capacity to export wheat during the December to May marketing window when the northern hemisphere season is ending. During this period, seasonal demand for grain, rail and port services and shipping slots increases significantly and a queuing system has been used for bulk grain exporters. A number of Parliamentary inquiries have reported on the market power of grain farmers versus grain handlers and a Code of Practice exists to ensure that a competitive environment prevails.

Australian wheat exports in 2015/16 are expected to reach 18 million tons, driven by higher production than in 2014/15 and by the weaker Australian dollar, which has increased the competitiveness of exports. The higher export price is also expected to limit the diversion of higher grades of wheat to the feed grain markets, although lower grades of the grain would normally be sold in this market. In mid-July 2015, wheat prices for Australian farmers reached the highest level in six years at A$320 per ton.

Australian wheat exports will benefit from a number of recent trade agreements which have increased market access into Asia for Australian wheat exporters. In mid-January 2015, the Japan–Australia Economic Partnership Agreement (JAEPA) came into force, making exports of feed wheat to Japan tariff free. In December 2014 the Korea–Australia Free Trade Agreement (KAFTA) entered into force. Under KAFTA, the 1.8 percent to 3 percent tariff on wheat was eliminated on commencement of the agreement. These changes are expected to strengthen bilateral trade with Japan and South Korea.

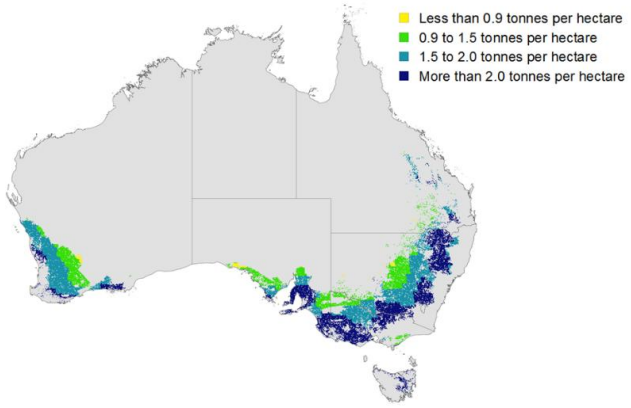
Under the China-Australia FTA (ChAFTA), Australian exports of wheat into the Chinese market have not been given additional access. However, Australian exporters have access to tariff quotas for wheat imports into the Chinese market which were established when China joined the WTO in 2001.

Table 1: Australian Wheat Exports by country, 2010-2014 ('000 metric tons)

	2010	2011	2012	2013	2014
World	15,852	19,684	23,530	18,037	18,276
Indonesia	3,707	3,578	4,585	3,665	4,072
Iraq	247	1,022	561	1,724	810
Vietnam	1,309	2,402	1,992	1,347	1,377
Japan	1,074	1,263	1,367	947	933
South Korea	957	1,935	2,072	892	1,062
China	705	794	2,283	870	1,198
Sudan	627	568	813	849	558
Yemen	937	713	859	816	850
Malaysia	810	951	934	721	1,051
Iran	61	0	848	652	1,048
Share (%)	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Indonesia	23.4	18.2	19.5	20.4	22.3
Iraq	1.6	5.2	2.4	9.6	4.4
Vietnam	8.3	12.2	8.5	7.5	7.6
Japan	6.8	6.4	5.8	5.3	5.1
South Korea	6.0	9.8	8.8	5.0	5.8
China	4.4	4.0	9.7	4.8	6.6
Sudan	4.0	2.9	3.5	4.7	3.1
Yemen	5.9	3.6	3.7	4.5	4.7
Malaysia	5.1	3.3	4.0	4.0	5.8
Iran	0.4	0	3.6	3.6	5.7

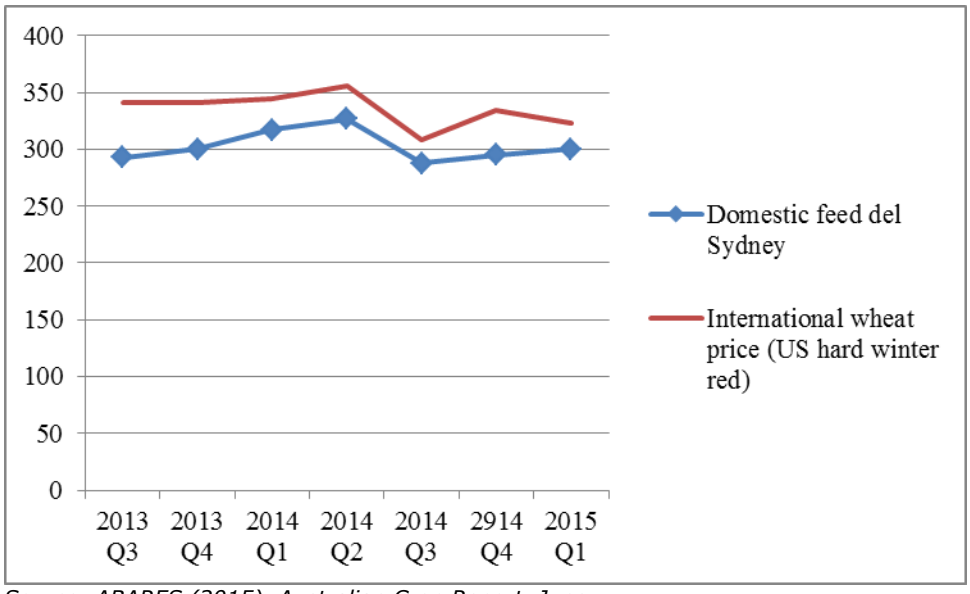
Note: Calendar years
Source: Global Trade Atlas.

Chart 2: Average wheat yields in Australia, 2014



Source: ABARES (2015).

Chart 3: Domestic and international wheat prices (A$/t), 2014-2015



Source: ABARES (2015), Australian Crop Report, June.

PRODUCTION, SUPPLY AND DISTRIBUTION DATA STATISTICS

Wheat	2013/2014		2014/2015		2015/2016	
Market Begin Year	Oct 2013		Oct 2014		Oct 2015	
Australia	USDA Official	New post	USDA Official	New post	USDA Official	New post
Area Harvested	12,631	12,631	13,810	13,810	13,800	13,800
Beginning Stocks	4,670	4,670	4,562	4,562	4,178	4,178
Production	25,303	25,303	23,666	23,666	26,000	25,000
MY Imports	154	154	150	150	150	150
TY Imports	154	154	150	150	150	150
TY Imp. from U.S.	3	3	0	0	0	0
Total Supply	30,127	30,127	28,378	28,378	30,328	29,328
MY Exports	18,615	18,615	17,000	17,000	18,500	18,000
TY Exports	18,339	18,339	17,500	17,500	18,000	17,500
Feed and Residual	3,600	3,600	3,800	3,800	3,900	3,900
FSI Consumption	3,350	3,350	3,400	3,400	3,425	3,425
Total Consumption	6,950	6,950	7,200	7,200	7,325	7,325
Ending Stocks	4,562	4,562	4,178	4,178	4,503	4,003
Total Distribution	30,127	30,127	28,378	28,378	30,328	29,328

1000 HA, 1000 MT, MT/HA						

BARLEY

Production

In 2015/16, Australian production of barley is expected to be 8.6 million tons, slightly below the USDA official forecast of 8.7 million tons but seven per cent above the previous year. One contributing factor is the likely increase in harvested area to four million hectares, compared to around 3.8 million hectares in recent years. This increase reflects expected higher returns of barley relative to crop alternatives such as canola. Another key factor is the expected increase in barley yields due to better soil moisture levels. Barley stocks are expected to be similar to previous years, although uncertainty exists over these statistics (see note below).

Seasonal conditions for the barley crop have improved due to above average rainfall from April 2015, which has increased topsoil moisture levels. The Bureau of Meteorology has forecast average rainfall over the three months to August 2015 and above average rainfall in Western Australia. Autumn rainfall has increased upper layer soil moisture levels to above average for many cropping regions, although some face below average soil moisture levels and uncertain rainfall. Drier weather over 2015/16 due to the El Niño weather pattern could affect this forecast, although rainfall projections so far are offsetting this risk to barley production.

In most States, harvested area for barley is expected to rise, according to official crop reports. This trend is influenced by the more positive outlook for rainfall, improved soil moisture and higher relative prices for barley. The harvested area for barley in Victoria is forecast to increase by two percent in 2015/16 to around 950,000 hectares. The harvested area for barley in South Australia is forecast to increase by seven percent in 2015/16 to 935,000 hectares. The harvested area for barley in Western Australia in 2015/16 is expected to reach 1.35 million hectares while the harvested area for barley in NSW is forecast to increase by five percent in 2015/16 to 670,000 hectares.

Consumption

Australian barley is used in the malting, brewing, distilling and feed industries, both domestically and in export markets. Malt barley is for human consumption, while feed barley is for animal feed. Malt from barley is used in beer and liquor production while malt extract is used in the food industry.

Technology

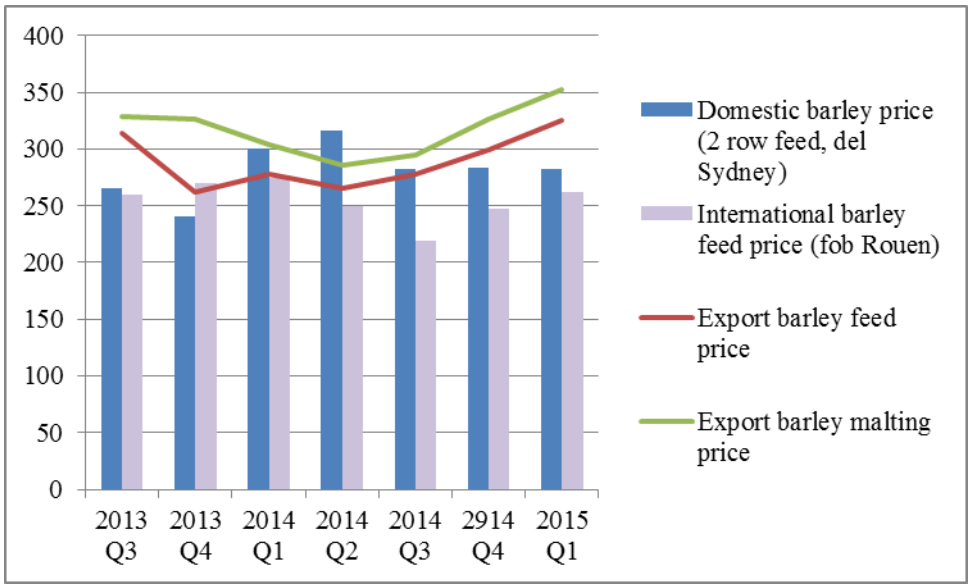
Australian barley farmers have increased productivity through the development of new crop varieties, conservation farming and the use of new technology such as GPS guidance systems. These innovations have contributed to increased yields and reduced labor needs. This trend has also encouraged industry consolidation and an increase in average farm size, as larger farms tend to be more productive.

Trade

In 2015/16, barley exports are forecast at six million tons. Official USDA export estimates for Australia for 2014/15 were revised upwards from 4.5 million tons to 5.5 million tons. Australia normally supplies around 30 percent of global trade in malt barley and 20 percent of global trade in feed barley. Australia's three largest identified barley importers are China, Saudi Arabia and Japan, although a fourth unidentified country ranked second as an export market in 2014.

Chinese demand for barley has increased sharply in recent years, both for feed grain and for other uses. One reason for stronger Chinese demand was the Chinese government's 2014 ban on US and Argentinian GM corn, which led livestock feed buyers in China to substitute feed barley and sorghum for corn. The recent China-Australia Free Trade Agreement (ChAFTA) provides for the removal of a three percent duty on Australian barley imported into China and is expected to be implemented before the end of the year. This tariff removal is expected to contribute to a further increase in exports to China.

Chart 4: Domestic and international barley prices (A$/t), 2013-2015



Source: ABARES (2015), Australian Crop Report, June.

Under the Japan–Australia Economic Partnership Agreement (JAEPA), Australian exports of feed barley now enter the Japanese market tariff free. Further, special safeguard measures will no longer apply to imports of Australian feed barley. The JAEPA also created an Australia-only duty-free quota for unroasted malt of 8,600 tons from 15 January 2015 to 31 May 2015, with the quota limit growing to 86,000 tons by April 2024. These developments are expected to strengthen Japan's position as an export market for Australian barley exporters.

Table 2: Australian Barley exports by country, 2010-2014 ('000 metric tons)

	2010	2011	2012	2013	2014
World	3,950	5,058	5,111	5,121	6,123
China	1,392	1,268	2,102	1,766	3,795
Saudi Arabia	761	1,667	1,153	1,702	471
Japan	1,067	962	769	967	575
Kuwait	199	336	185	175	111
United Arab Emirates	305	160	350	130	122
Oman	30	23	53	55	45
Jordan	0	153	52	53	0
South Korea	34	51	58	46	59
Taiwan	46	30	52	39	32
Vietnam	16	15	81	32	36
Unidentified country	0	0	0	0	701
Share (%)	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
China	35.2	25.1	41.1	34.5	62.0
Saudi Arabia	19.3	33.0	22.6	33.2	7.7
Japan	27.1	19.0	15.0	18.9	9.4
Kuwait	5.0	8.5	3.6	3.4	1.8
United Arab Emirates	7.7	3.2	6.8	2.5	2.0
Oman	0.8	0.5	1.0	1.0	0.7
Jordan	0	3.0	1.0	1.0	0
South Korea	0.9	1.0	1.1	0.9	1.0
Taiwan	1.2	0.6	1.0	0.8	0.5
Vietnam	0.4	0.3	1.6	0.6	0.6

Note: Calendar years.
Source: Global Trade Atlas.

PRODUCTION, SUPPLY AND DISTRIBUTION DATA STATISTICS

Barley	**2013/2014**		**2014/2015**		**2015/2016**	
Market Begin Year	**Nov 2013**		**Nov 2014**		**Nov 2015**	
Australia	**USDA Official**	**New post**	**USDA Official**	**New post**	**USDA Official**	**New post**
Area Harvested	3,814	3,814	3,836	3,836	4,000	4,000
Beginning Stocks	539	539	697	697	511	511
Production	9,174	9,174	8,014	8,014	8,700	8,600
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	9,713	9,713	8,711	8,711	9,211	9,111
MY Exports	6,216	6,216	5,600	5,600	6,000	6,000
TY Exports	6,262	6,262	5,500	5,500	6,000	6,000
Feed and Residual	1,500	1,500	1,300	1,300	1,300	1,300
FSI Consumption	1,300	1,300	1,300	1,300	1,300	1,300
Total	2,800	2,800	2,600	2,600	2,600	2,600

Consumption						
Ending Stocks	697	697	511	511	611	511
Total Distribution	9,713	9,713	8,711	8,711	9,211	9,111
1000 HA, 1000 MT, MT/HA						

SORGHUM

Production

Sorghum is a summer crop used for livestock feed, liquor production and food manufacturing. Around two thirds of sorghum is grown in Queensland and the remainder in northern NSW. Planting times are from September to January and harvest occurs from March to May each year. 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. The grain, stalks and leaves can all used for animal feeding products.

In Australia, demand for sorghum has been mainly from the livestock industry, partly due to the significant growth in the number of cattle in feedlots because of continuing drought in Queensland and northern NSW. A small part of production of grain sorghum is used to make products such as gluten free breakfast cereals for the domestic market. Grain and forage sorghum are also exported as feed grain for livestock industries and for liquor production. In recent years the Chinese import market has become an important destination for Australian sorghum, although demand has fluctuated.

The level of Australian production of sorghum varies considerably over time because of changes in seasonal conditions. Sorghum is often seen as an 'opportunity' crop because it is comparatively drought tolerant and can be sown when the outlook for other crops is less positive. Most sorghum is grown in Queensland and has traditionally been a staple for livestock feed.

In 2015/16, sorghum production in Australia is forecast at 1.8 million tons, almost the same as the USDA official forecast for 2014/15, but 14 percent below the USDA forecast for 2015/16. This revision is partly due to the lower harvested area of 625,000 hectares, according to official crop surveys. It also takes account of the continuation of the extended drought in Queensland and northern NSW and its impact on likely yields for sorghum.

In terms of upside risk to this forecast, it is possible that below average but well-timed rainfall could lead to better than expected production of sorghum. Alternatively, a worsening of drought conditions or poor timing of received rainfall could lead to a downgrade in area harvested and production. In 2013/14, for example, output declined by over 40 percent as a result of lower plantings and yields. The following year then saw higher plantings in Queensland due to timely rainfall in the planting window which led to a significant recovery in sorghum yields and harvested production.

Exports

Australia normally produces around two to three percent of global sorghum and accounts for five percent of global exports. In 2015/16, sorghum exports are expected to fall by one third to 600,000 tons compared to the official USDA forecast of 900,000 tons. This change is due to weaker Chinese demand for Australian-sourced sorghum compared to sorghum imported from the United States. However, Chinese import demand for sorghum continues to be strong and is reportedly due to a switch away from GM stock feeds. This demand appears to be primarily for livestock feed in China.

Australian sorghum exports recovered in May 2015 to over 100,000 tons in that month according to the Global Trade Atlas – although future month-to-month movements in demand are difficult to predict. Australian sorghum imports into China could become more competitive because of the lower Australian dollar. In addition, the China-Australia Free Trade Agreement (ChAFTA) will

commence in late 2015 and provides for the removal of China's two percent tariff on grain sorghum imports from Australia.

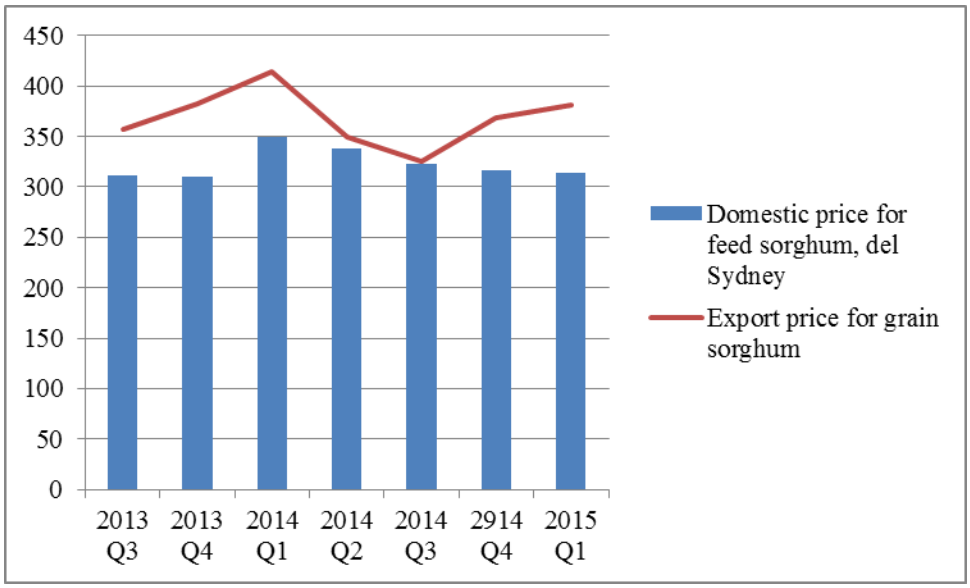
Table 3: Australian sorghum exports by country, 2010-2014 ('000 metric tons)

	2010	2011	2012	2013	2014
World	51	116	205	797	356
China	25	0	39	758	349
Taiwan	10	19	34	13	3
Japan	1	39	1	13	..
Philippines	4	3	5	7	2
New Zealand	0	16	27	2	0
Share (%)	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
China	49.0	0	19.0	95.1	98.0
Taiwan	19.6	16.4	16.6	1.6	0.8
Japan	2.0	33.6	..	1.6	0
Philippines	7.8	2.6	2.4	0.9	0.6
New Zealand	0	13.8	13.2	0.3	0

Source: Global Trade Atlas.

Australia enjoys the advantage of earlier harvests than some sorghum producers, such as the United States, but the timing of storage and export is important for the industry. From July each year, Australian sorghum competes directly with US sorghum crops in the Chinese market but the factors mentioned above are expected to support a recovery in Australian exports to China.

Chart 5: Domestic and international prices for sorghum (A$/t), 2013-14



Source: ABARES (2015), Australian Crop Report, June.

PRODUCTION, SUPPLY AND DISTRIBUTION DATA STATISTICS

Sorghum	2013/2014		2014/2015		2015/2016	
Market Begin Year	Mar 2014		Mar 2015		Mar 2015	
Australia	USDA Official	New post	USDA Official	New post	USDA Official	New post
Area Harvested	532	532	603	603	700	625
Beginning Stocks	195	195	187	187	170	170
Production	1,282	1,282	1,788	1,788	2,100	1,800
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	1,477	1,477	1,975	1,975	2,270	1,970
MY Exports	385	385	600	600	900	600
TY Exports	405	405	600	600	900	600
Feed and Residual	900	900	1,200	1,200	1,200	1,200
FSI Consumption	5	5	5	5	5	5
Total Consumption	905	905	1,205	1,205	1,205	1,205
Ending Stocks	187	187	170	170	165	165
Total Distribution	1,477	1,477	1,975	1,975	2,270	1,970
1000 HA, 1000 MT, MT/HA						

RICE

Production

The production forecast for the 2015/16 rice crop is revised downwards due to water constraints. The rice crop is expected to be 500,000 tons on a milled basis in 2015/16, or four percent below the 2014/15 season. The revision is above the USDA official forecast for 2015/16 which assumed a decline in the harvested area for rice. More recent crop surveys suggest the harvested area in NSW will be comparatively stable. Rice production in Queensland is expected to increase over time, albeit from a small base. Stocks are forecast to be similar to previous years, but statistics are limited (see note below).

In 2014/15, the rice harvest fell by 12 percent to 724,000 tons due to a six percent decline in both the area planted and the average yield as a result of reduced availability of irrigation water in NSW. The 2015/16 crop is expected to have a similar harvested area as the year before but well timed rain in the planting season could lead to an expansion in harvested area.

The Bureau of Meteorology expects average summer rainfall but actual access to water entitlements will not be apparent until mid-October during the rice planting season. In the 2014/15 season, rice growers were only able to access around 40 percent of their entitlement because of demand from other quota holders with more assured access. A similar outcome for 2015/16 would also constrain both plantings and expected production. Greater water availability from rainfall or irrigation entitlements would boost planted area and acreage as medium grain rice prices have increased partly due to the continuing Californian drought.

The industry body SunRice has sought to diversify its domestic supply sources because of continual problems with water supply in NSW. In 2014 it acquired rice milling assets in the Burdekin River region of North Queensland. This region holds Queensland's largest dam and irrigation network and could support a significant expansion of rice production over the longer term. The industry has estimated that a further 10,000 tons of rice could be produced annually in northern Australia over the next few years.

Industry Background

Australia specializes in medium grain rice production, which is a niche variety produced by only a few countries. The industry has the capacity to produce one million tons of rice, but limits on irrigated water supply and below average rainfall have constrained production. Rice is a summer cereal crop grown mainly in the Riverina region of NSW, with planting in October and harvesting from March to May.

There are around 1,500 rice farming concerns in Australia and the average size of a rice farm is 400-500 hectares. There is only one rice crop harvested per season, with planting from September, harvest from March and commercial availability from May. Most of the rice produced is medium and short grain *japonica* varieties, while long grain varieties are imported.

There is significant regulation of rice production in Australia. To grow rice, a farmer needs to gain approval from the regional irrigation infrastructure operator who is responsible for complying with a licence issued by the State Government. The irrigator must follow the rice water use policies of the various irrigation corporations (Murrumbidgee Irrigation, Murray Irrigation and Coleambally Irrigation Cooperative).

Rice can only be grown on approved soils and only one-third of each farm can be planted with rice to better allocate available water. Generally, rice can only be grown on approved heavy, clay soil

that minimizes seepage into water tables. Soil tests indicate that over three meters of heavy, continuous clay are needed for unrestricted rice growing (Ricegrowers Association, 2015).

Virtually all rice grown in Australia is sold to the Ricegrowers cooperative and then marketed under the SunRice brand. SunRice is the sole rice processor in Australia and also packages and exports rice products. The company has unsuccessfully called for a 20 percent increase in water for rice growers to allow them to increase production by an estimated 100,000 tons a year. Low water allocations led SunRice to close its Coleambally rice mill for the harvest in 2015, after it had re-opened the site in 2013.

Consumption

The Australian rice market is supplied by both domestic production of medium grain rice and by imports of all rice grains, although predominately from Thailand, Pakistan and India. Demand for rice in Australia is comparatively mature and stable. SunRice has expanded into a range of processed rice products.

Trade

In 2015/16, Australian rice exports are expected to fall to 300,000 tons because of production limits due to water availability. Australian rice is exported to over sixty countries but the composition of trade by export markets is not published in official trade statistics because of confidentiality provisions. Details of imports of rice into Australia are given in the table below. Imports from South Asia and Southeast Asia include fragrant rice varieties such as basmati rice. In a non-drought year, 80 percent of rice is exported, accounting for two percent of world trade, and a quarter of trade in medium grain rice.

Table 6: Australian Milled Rice Imports by country, 2010-2014 ('000 metric tons)

	2010	2011	2012	2013	2014
World	193	160	134	142	156
Thailand	121	95	68	69	81
India	13	16	23	27	30
Pakistan	22	21	18	19	18
United States	21	11	12	13	11
Vietnam	7	8	6	6	8
Share (%)	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Thailand	62.7	59.4	50.7	48.6	51.9
India	6.7	10.0	17.2	19.0	19.2
Pakistan	11.4	13.1	13.4	13.3	11.5
United States	10.9	6.9	9.0	9.2	7.1
Vietnam	3.6	5.0	4.4	4.2	5.1

Source: Global Trade Atlas.

PRODUCTION, SUPPLY AND DISTRIBUTION DATA STATISTICS

Rice, Milled	2013/2014		2014/2015		2015/2016	
Market Begin Year	Mar 2012		Mar 2014		Mar 2015	
Australia	USDA Official	New post	USDA Official	New post	USDA Official	New post
Area Harvested	75	75	71	71	60	70
Beginning Stocks	238	238	241	241	152	152
Milled Production	590	590	521	521	425	500
Rough Production	819	819	724	724	590	694
Milling Rate (.9999)	7,200	7,200	7,200	7,200	7,200	7,200
MY Imports	155	155	150	150	150	150
TY Imports	155	155	150	0	150	150
TY Imp. from U.S.	11	11	0	0	0	0
Total Supply	983	983	912	912	727	802
MY Exports	385	385	400	400	300	300
TY Exports	404	404	400	400	300	300
Consumption and Residual	357	357	360	360	370	370
Ending Stocks	241	241	152	152	57	132
Total Distribution	983	983	912	912	727	802
1000 HA, 1000 MT, MT/HA						

THE FEED GRAIN SECTOR

Overview

The Australian intensive livestock or feedlot sector is a major domestic user of grain. There are 400 accredited feedlots in Australia situated close to cattle and grain supplies. The sector reportedly uses over 20 percent of grain production or two thirds of domestic grain consumption in good seasons and higher shares of grain production during drought. The livestock sector includes dairy, feedlot beef, pork and chicken production and feed grains account for 60 percent of on-farm input costs for these industries.

Table 7: Cattle in Australian feedlots, 2014-2015

State	March 2014	December 2014	March 2015
NSW	265,227	315,863	308,274
Victoria	57,804	60,394	58,582
Queensland	484,534	522,997	519,248
South Australia	27,398	31,033	33,108
Western Australia	38,821	34,682	39,929
Australia	873,783	964,968	959,141

Source: Australian Lot Feeders (ALFA) and Meat and Livestock Australia (MLA) quarterly survey.

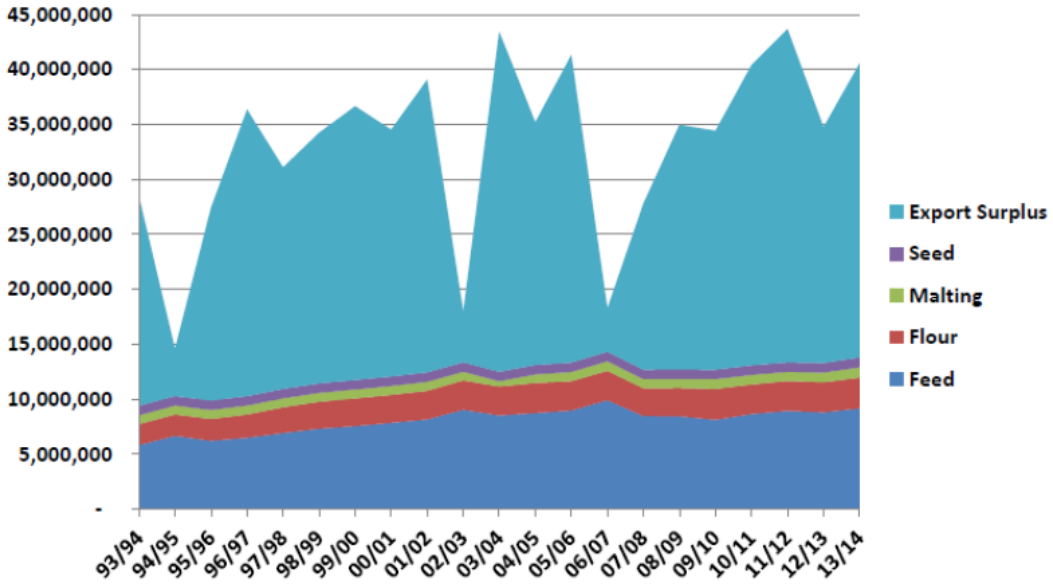
The Australian Lot Feeders (ALFA) and Meat and Livestock Australia (MLA) quarterly survey issued in May 2015 found that cattle numbers on feed remained very high at over 960,000 head, ten percent above a year before. This trend occurred across Queensland, NSW and Victoria and has been influenced by the ongoing drought in the northern grain region.

Overall, the feedlot industry handles around 40 percent of total beef output and 80 percent of beef sold in domestic supermarkets, according to the Australian Lot Feeders' Association (ALFA). It tends to use lower quality wheat, barley and sorghum grains for intensive animal production. These can be used interchangeably in feed formulations, so that substitution can occur depending on price.

Restrictions on Imports of Feed Grain

Australia appears to have relatively conservative quarantine and biosecurity policies for the importation of grain. Imported grain requires 'devitalization' (i.e. hammer milling and steam palletisation) in dedicated stock feed manufacturing plants in metropolitan areas in order to treat pathogens, pests and weeds. These processes increase the cost of imported grain and are likely to reduce its quality. Devitalisation must occur in stock feed manufacturing plants in metropolitan areas. The Australian feedlot industry and a number of grain importers consider these regulatory barriers are the main reason for the limited supplies of feed grain imports into the Australian market, from sources such as the United States.

Chart 6: Australian grain use by sector



Source: Australian Lot Feeders' Association, Evidence to the Senate Rural Affairs Committee, 2015

STATISTICAL NOTE ON GRAIN STORAGE DATA

The Australian Bureau of Statistics (ABS) compiled monthly data on stocks and commitments of wheat grain in Australia until late 2012 but this data is no longer collected. This survey covered licensed exporters and bulk grain handlers and were derived from the Grain Handlers Stocks Survey, the Wheat Export Sales Survey and administrative data relating to wheat grain exports. From 2013 onwards, there has been comparatively little data publicly available on grain storage capacity or actual storage.

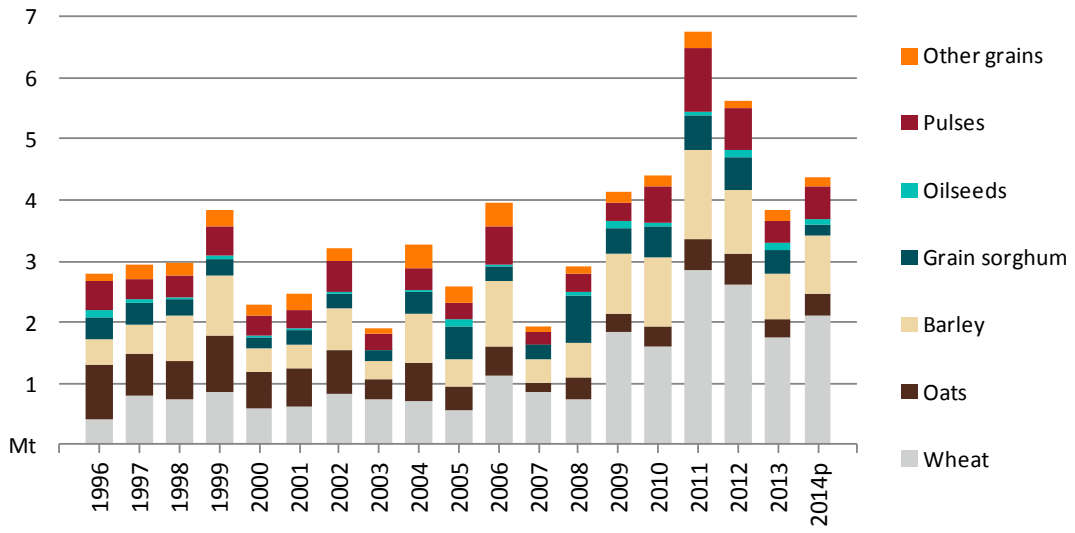
The ABARES Australian Agricultural and Grazing Industries Survey (AAGIS) is a record of unsold grain stocks held by farms at the end of June. As the winter crop is harvested from October to January, stocks in this month are unsold or held over for seed. By contrast, stocks of grain sorghum are relatively high in June as the harvest ends around this time. ABARES has estimated that the aggregate tonnage of grains retained on Australian grain producing farms increased significantly over the six years to 2014. Australian grain producing farms appear to have increased their use of on-farm grain storage to store and market their crops more flexibly.

Some grain users have argued that available information on the volume of grain stocks held in Australia is inadequate. One possible reason is that farmers and grain handlers do not have an incentive to disclose available stocks. The Australian Lot Feeders Association has argued that:

> The lack of accurate and timely grain stock data leads to information asymmetries whereby bulk handlers have superior knowledge and hence commercial advantage over grain growers and users. Ultimately, the lack of robust and timely data held in a central repository leads to distorted market signals, market inefficiency and potential market failure - a substandard outcome particularly when compared to the data and transparency provided in the US grain market' (Evidence to the Senate Rural Affairs Committee, April 2015).

Australian grain users argue that they are at a competitive disadvantage because of the perceived shortage of data on grain storage, especially during drought periods when prices can rise because of apparent shortages of grain.

Chart 7: Survey of on-farm grain storage in Australia, 1996 to 2014



Source: ABARES (2015), Australian Agricultural and Grazing Industries Survey.

Currently, the Australian Bureau of Statistics is reviewing its statistical collections and surveys for agricultural production and stocks in order to improve the timeliness and accuracy of these statistics.