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Report Highlights:

Another big production year for Australian grains is forecast in marketing year (MY) 2021/22 after a strong drought-recovery year in MY 2020/21. Wheat production is forecast at 27 million metric tons (MMT) in MY 2021/22 and barley at 10 MMT, both down from the huge crops in the previous year. Although overall grain area is expected to be large, yields are forecast to fall to more typical levels from last year's record barley, and near record wheat, yields. Wheat exports are set to decline to 19 MMT in the forecast year from a historically high volume estimated at 23 MMT in MY 2020/21. Similarly, barley exports are forecast to reduce to 4.5 MMT from 7 MMT. Sorghum production is forecast to decline slightly in MY 2021/22 to 1.4 MMT after a strong rebound in MY 2020/21. Rice production is forecast to continue its recovery from the drought and rise to 440,000 metric tons (MT) (milled basis) in MY 2021/22 and Australia is set to shift back to being a net exporter of rice.

EXECUTIVE SUMMARY

In the second growing season since drought, Australia is expected to produce another big grain crop in marketing year (MY) 2021/22. Favorable conditions around the time of winter grain planting across most production regions of Australia bodes well for the forecast year of wheat and barley production in MY 2021/22. However, production is still expected to be down from last year's record-breaking wheat crop, and a barley crop that was the second largest on record. Although overall grain area is anticipated to be large, yields are expected to fall to more typical levels from last year's exceptionally high yields. Consumption of wheat and barley is forecast to remain the same as the prior year, but much lower than the level reached during the drought when the need for supplementary feed was much higher. Wheat and barley exports are set to decline in the forecast year from a historically high volume due to the forecast of reduced production. In addition, although Australian feed barley exports have diversified away from China and into Middle East markets in MY 2020/21, export competition for these markets in MY 2021/22 is expected to intensify.

Sorghum production is forecast to decline slightly in MY 2021/22, after making a strong recovery in MY 2020/21 following poor production in the prior drought-impacted year. Sorghum exports, however, are forecast to rise in MY 2021/22 as a result of larger beginning stocks and limited anticipated growth in domestic demand.

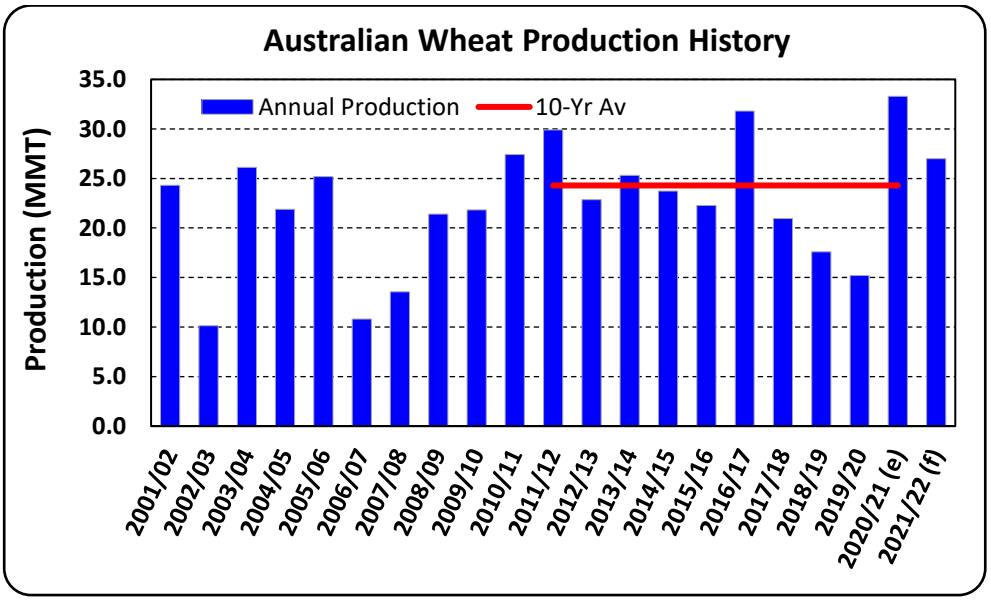
Rice production in MY 2021/22 is forecast to continue its recovery from drought for the second year. This follows a huge rise in production in MY 2020/21 from almost no production in the prior drought-affected year. Further anticipated improvement in irrigation water storages in the lead up to planting the MY 2021/22 crop (from October 2021) is set to drive an increase in planted area and overall production. With the continued forecast production recovery, Australia is set to revert back to becoming a net exporter of rice, after being a net importer across the three previous drought-impacted marketing years.

WHEAT

Production

FAS/Canberra forecasts Australia's MY 2021/22 wheat production at 27 million metric tons (MMT), a 6.3-MMT decrease from the record breaking MY 2020/21 crop of 33.3 MMT. This would still be 11 percent higher than the previous 10-year average of wheat production in Australia (see figure 1). Although there is a slight increase in forecast harvested area to 13.2 million hectares for MY 2021/22, from 13 million hectares in the previous year, yields are expected to return to more normal levels after last year's record production. Robust wheat area in MY 2021/22 is expected to be supported by the high world wheat prices, as well as caution around Chinese import duties on Australian barley resulting in some area shift to wheat. Soil moisture conditions at the start of planting across Australia are broadly as good or better than the same time the previous year. However, the forecast rainfall in the early to mid-growing season is for below-average chance of achieving median rainfall, which is expected to result in lower yields than the previous record-breaking year.

Figure 1 – Australian Wheat Production History



Source: *PSD Online / FAS/Canberra*

Although wheat area last year was extremely large as a result of the return of rains following drought, MY 2021/22 is forecast to see an additional expansion for a number of reasons:

Shift From Barley

The overall area of wheat production in Western Australia is expected to increase according to the Grains Industry Association of Western Australia (GIWA) due to reduction in barley area towards wheat and canola. This is associated with grower sentiment relating to the duties placed on barley imports into China of 80.5 percent. This sentiment is likely to extend to growers in South Australia as both states are heavily reliant on the export market for barley. The duty was imposed on May 18, 2020 and at that stage most of the winter crop from last year had already been planted, allowing growers little scope to adjust their planting program. The barley industry is mindful that while in MY 2020/21 exporters were able to diversify feed barley exports away from China, and especially into Middle East markets, some of this shift was benefited by supply issues and policy decisions in competitor countries located nearer to these markets. As the Chinese duties are scheduled to be in place for five years, there is expected to be continued disruption to export demand for Australian barley.

In the eastern states of Australia there is expected to be less impact from the Chinese duties on grower planting programs as the majority of barley grown in these states goes towards domestic malting and livestock feed. The main driver for planting wheat and other winter crops in the eastern states is the soil moisture and forecast weather conditions around sowing, which at this point are favorable for another big planting in MY 2021/22, similar to that of the last year's record wheat crop. The only factor that

could likely reduce wheat area in northern New South Wales would be if growers with full soil moisture profiles reserve more dryland cropping area for cotton planting in the spring (October – November).

Strong Wheat Prices

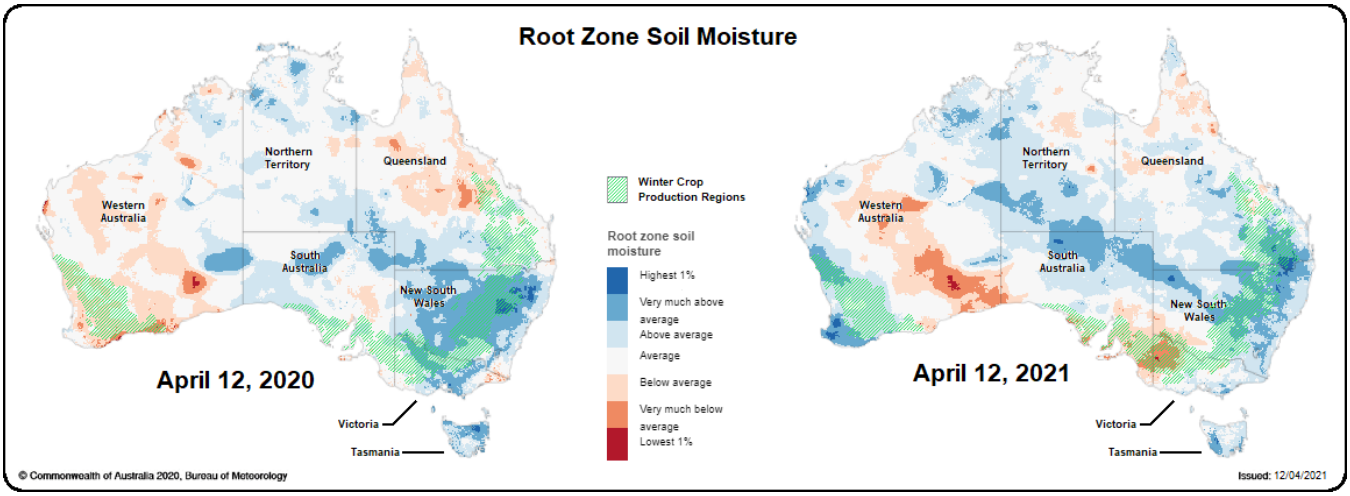
Another factor encouraging a strong year of wheat planting is continued high world wheat prices. This price is supported by strong world feed grain prices, particularly corn and soybean relating to reduced world feed grain stocks. Although wheat prices in Australia have fallen from the highs of the drought years, they remain very high considering the massive supply from the record harvest. These high wheat prices have also boosted farmer returns, as evidenced by a skyrocketing of tractor and agricultural machinery sales to farmers this past year.

Good Soil Moisture at Planting

In the two largest winter crop producing states of Western Australia and New South Wales, which typically account for around two-thirds of national production, the soil moisture profiles in mid-April during the planting period are excellent. For Western Australia this is much improved from the previous year. In New South Wales it is similar to last year where soil moisture levels were very high (see figure 2).

Although soil moisture levels are very positive in these two key states, and this will also support large planting campaigns, levels in other wheat growing areas are not as positive. In South Australia, the third largest producing state, soil moisture is below-average to average and moderately weaker than the prior year. In Victoria, the fourth largest producing state, the soil moisture profile is noticeably poorer particularly in the Mallee area in the northwest of the state. This region is known to have relatively low and varied rainfall conditions from year to year and growers in this region often sow into dry soil taking into consideration forecast rainfall.

Figure 2 - Australia Root Zone Soil Moisture – as at April 12, 2020 & 2021



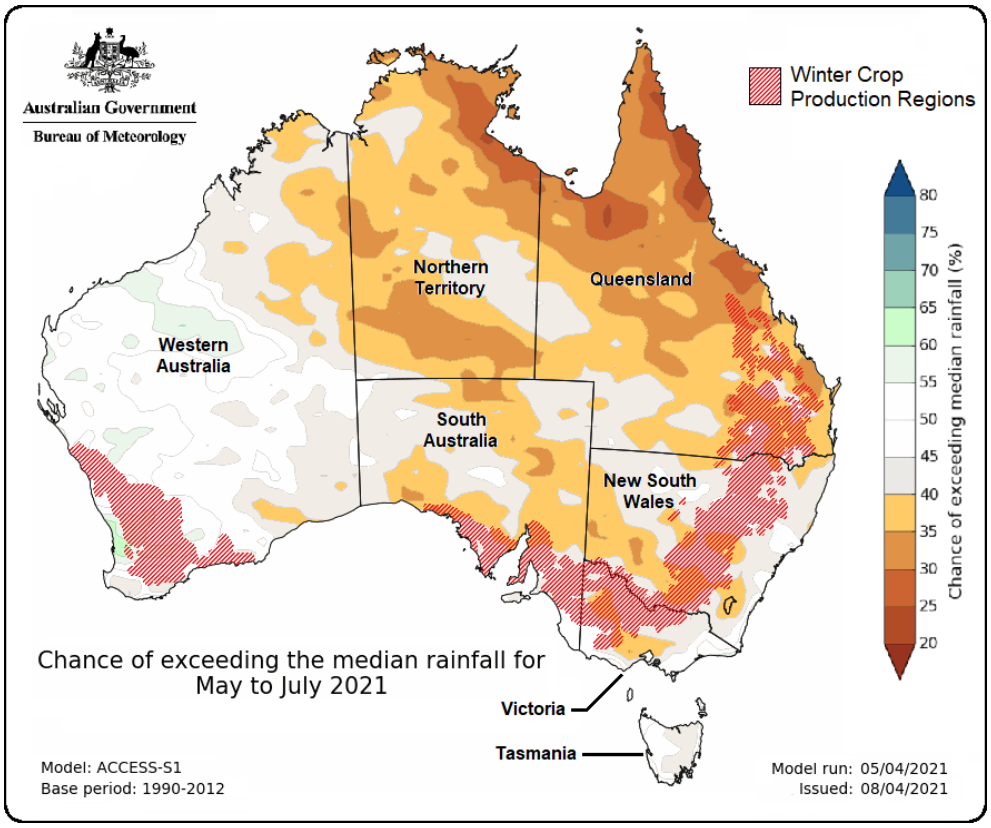
Source: Australian Bureau of Meteorology / FAS/Canberra

While area is forecast to continue to rise, the primary driver of the lower forecast production for MY 2021/22 is a decline in yields. And a key factor for this is expected dryness during the early growing season.

Rainfall Forecast

Although for the past year rainfall levels in much of Australia have been high because of the La Niña weather event, the ending of this event is expected to cause a reduction in rainfall. The forecast rainfall conditions for May to July 2021 are broadly at around average to below-average chance of exceeding median rainfall across the major grain growing regions with Western Australia, South Australia and northern New South Wales having projections of about average (see figure 3).

Figure 3 - Australia Rainfall Forecast – May to July 2021



Source: Australian Bureau of Meteorology / FAS/Canberra

With a broadly very good starting point of soil moisture, crops are likely to perform well in the early growing period. However, without continued top up of soil moisture during the early growing period, growers will be looking for good rainfalls in the August to October period.

Based on overall very good soil moisture conditions at around planting, particularly in the two major wheat production states, but average to well below average chances of exceeding median rainfall in the early growing period, FAS/Canberra forecasts the yield at this point at around the 10-year average of 2.0

metric tons per hectare (MT/ha). However, overall wheat yields will be highly dependent on in-season rainfall levels, especially during the latter half of the growing season.

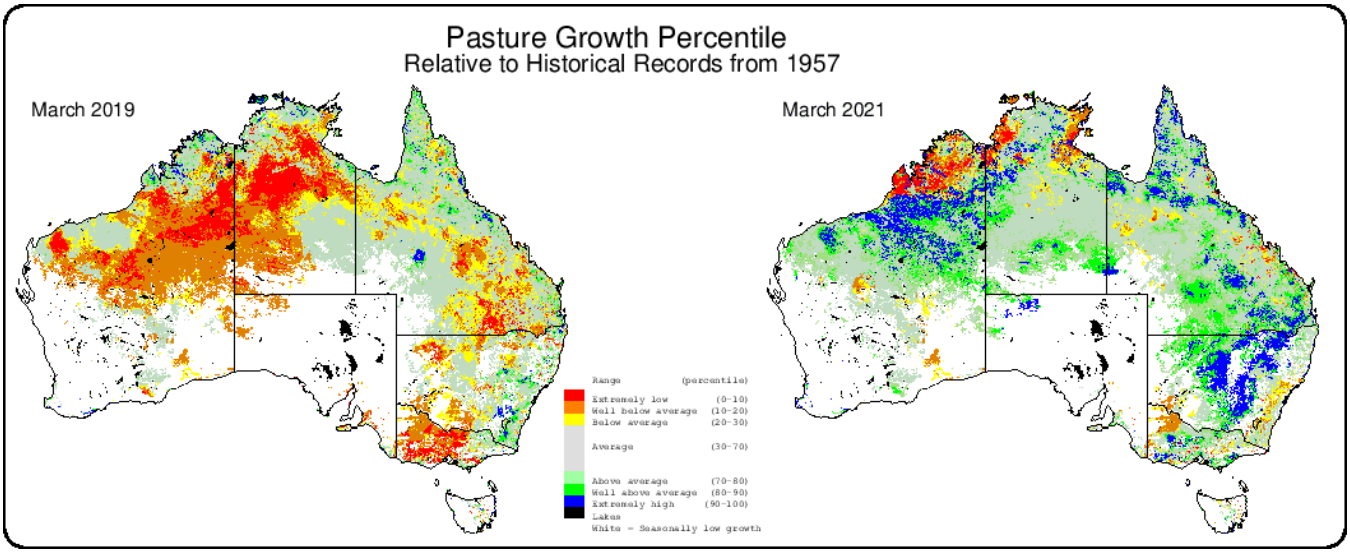
Consumption

FAS/Canberra's forecast for Australian wheat consumption in MY 2021/22 is 7.5 MMT, in line with the MY 2020/21 estimate. Changes in livestock feed consumption is the primary driver of overall wheat consumption in Australia with wheat utilized for milling remaining relatively stable from year to year. In a typical year domestic food consumption of wheat only equates to around one-tenth of overall wheat production in Australia.

Feed demand of wheat spiked during the drought in 2018 and 2019 in the eastern states, peaking at 5.7 MMT in MY 2018/19, as a result of strong demand from the livestock industries. This feed demand has since declined to more typical pre-drought levels of around 4 MMT.

The recent drought had a major impact on pasture production across Australia. This led to strong demand from beef cattle and dairy producers and to a lesser extend sheep producers, for grains for on-farm livestock feeding. The drought also had a major impact on the number of beef cattle being finished through feedlots and therefore increasing feed demand from this sector. Since the drought-breaking rains in early 2020, pasture production conditions have significantly improved to well above average in many areas (see figure 4). This has led to a significant reduction in demand for on-farm grain feeding and a reduction in cattle numbers being finished off in feedlots, therefore also reducing their grain feed requirements.

Figure 4 – Pasture Growth Percentile – 2019 v 2021



Source: www.LongPaddock.qld.gov.au

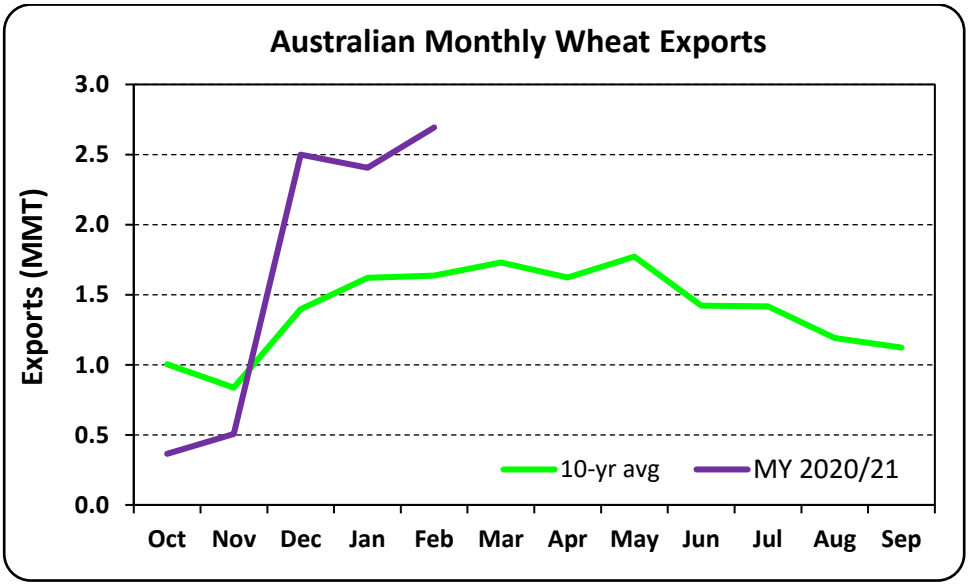
The poultry and pork sectors are also significant consumers of wheat and other grains. However, the meat production of these sectors and their consumption of grains remained relatively stable across the drought and subsequent post drought period.

The official USDA MY 2020/21 feed consumption estimate has been revised downwards from 5 MMT to 4 MMT by FAS/Canberra. This revision is based on the post-drought reduction in livestock feed demand. In addition, due to the price differences there has been a shifting of feed use to barley and away from wheat.

Exports

FAS/Canberra's forecast for wheat exports for MY 2021/22 is 19 MMT, a 4-MMT decline from the revised MY 2020/21 estimate. This is primarily driven by the forecast 6.3-MMT decline in production. In addition, although Australia has benefited this year from high global wheat prices, strong import demand in key markets, and some disruption in competitor countries - any return to a more typical supply and demand situation next year could have a dampening effect on Australia's wheat export prospects.

Figure 5 – Australian Monthly Wheat Exports – 10-Yr Av v MY 2020/21

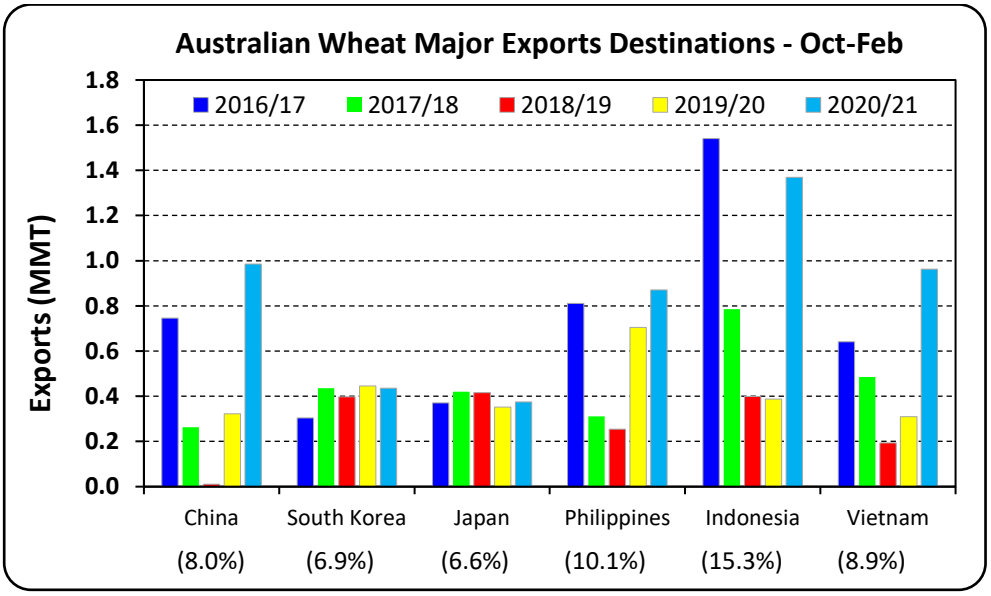


Source: Australia Bureau of Statistics

Australia's export campaign in MY 2020/21 has been extremely strong (see figure 5), and Australia has exported 8.5 MMT from October 2020 to February 2021. This is more than double the same period last year, and this compares favorably to the most recent similarly large export year in MY 2016/17 which in the same period achieved 8.4 MMT and 22.6 MMT for the full year. With a slightly advanced comparative position the MY 2020/21 export estimate is on track to reach near 23 MMT.

Over the last five years Australia has had around 30 significant wheat export destinations and the top six have on average equated to 56 percent of overall exports. During this period South Korea and Japan have remained very stable export destinations for Australian wheat despite large fluctuations in production. An important trend this year has been the return of Australian wheat to key Southeast Asian markets, especially Indonesia, but also Philippines and Vietnam (see figure 6). China has also imported a very large amount of Australian wheat so far this year. Although Australian wheat is surging to nearby Asian markets, because of the massive quantity of exportable supply, Australian wheat is also being shipped to more far-away markets. For example, in February alone about 300,000 metric tons (MT) of Australian wheat was shipped to North Africa/Middle East markets, and another 300,000 MT to various Sub-Saharan African destinations.

Figure 6 – Australian Wheat Major Exports Destinations (Oct-Feb)

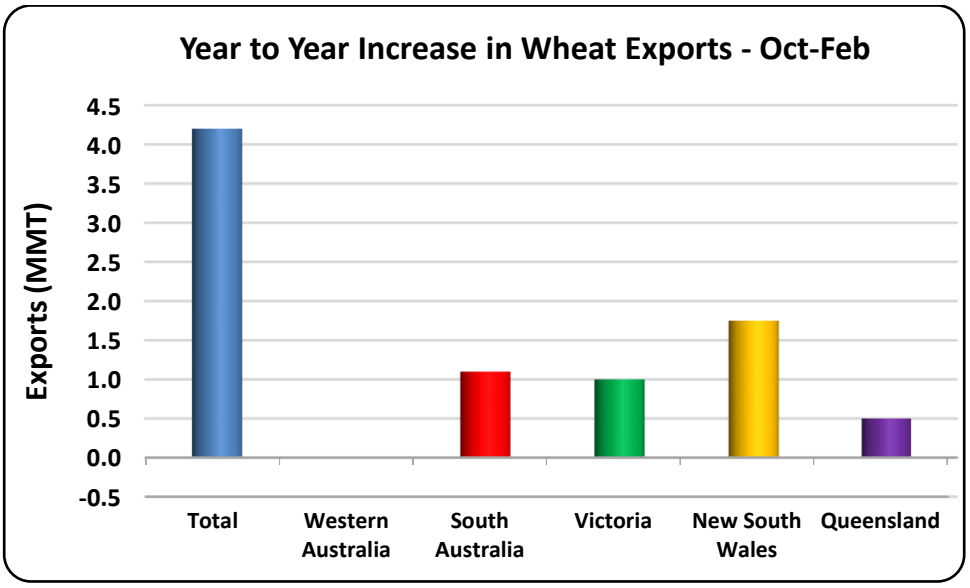


Source: Australia Bureau of Statistics

MY 2020/21 wheat exports have been revised upwards by FAS/Canberra to 23 MMT, compared to the official USDA estimate of 22 MMT based on year-to-date export results and reduced expectations of feed consumption.

The ending of the drought in the eastern states of Australia has also seen the return of exports from this region. As mentioned, overall Australian wheat exports more than doubled between October and February when compared to the previous year. However, exports from Western Australia, by far the largest exporting state, were actually down slightly with all of the export increase coming from the southern and eastern States (see figure 7). New South Wales, which has exported almost no wheat during the previous two years and actually brought in wheat from Canada and from Western Australia during the drought, has seen a huge increase in exports so far in MY 2020/21.

Figure 7 – Year to Year Increase in Wheat Exports by State (Oct-Feb)



Source: Australia Bureau of Statistics

Imports

FAS/Canberra forecasts imports of wheat in MY 2021/22 at 200,000 MT, in line with the estimate for MY 2020/21. Significant shipments of wheat to Australia during the drought were from Canada for processing which are reflected in MY 2018/19 and MY 2019/20 results of 499,039 MT and 894,429 MT respectively. Imports of wheat for the three years prior were stable at around 162,000 to 181,000 MT which primarily consisted of wheat products such as pasta.

With ample supply of wheat in Australia the need to import wheat grain has ceased, and the forecast is a reflection of the expected continued importation of certain wheat products.

Stocks

Australia's ending stocks of wheat in MY 2021/22 are expected to grow slightly as a result of a second year of anticipated above-average production. MY 2020/21 ending stocks are estimated to rise significantly to 5.9 MMT, from the prior 2.9 MMT in MY 2019/20, after a record-breaking crop.

During the multi-year drought, the major bulk handlers in Australia voluntarily reported on their grain stock levels, providing the industry scope to plan for grain demand during tight supply. In the lead up to the large wheat production harvest in MY 2020/21 however, the major bulk handlers have ceased reporting on grain stocks.

During the past decade, there has been robust growth in on-farm storage, especially in eastern Australia. This is primarily due to the fact that many producers have multiple options to market their grains, with a range of livestock feed users and the milling industry focused in the eastern states. In Western Australia

and South Australia, due to the fact the vast majority of these crops are exported through the major bulk handlers, on-farm storage remains relatively low.

Wheat	2019/2020		2020/2021		2021/2022	
Market Year Begins	Oct 2019		Oct 2020		Oct 2021	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	10200	10200	13000	13000	0	13200
Beginning Stocks (1000 MT)	4440	4440	2898	2898	0	5898
Production (1000 MT)	15200	15200	33000	33300	0	27000
MY Imports (1000 MT)	894	894	200	200	0	200
TY Imports (1000 MT)	820	820	500	500	0	200
TY Imp. from U.S. (1000 MT)	3	3	0	0	0	0
Total Supply (1000 MT)	20534	20534	36098	36398	0	33098
MY Exports (1000 MT)	9136	9136	22000	23000	0	19000
TY Exports (1000 MT)	10121	10118	19500	19000	0	19000
Feed and Residual (1000 MT)	5000	5000	5000	4000	0	4000
FSI Consumption (1000 MT)	3500	3500	3500	3500	0	3500
Total Consumption (1000 MT)	8500	8500	8500	7500	0	7500
Ending Stocks (1000 MT)	2898	2898	5598	5898	0	6598
Total Distribution (1000 MT)	20534	20534	36098	36398	0	33098
Yield (MT/HA)	1.4902	1.4902	2.5385	2.5615	0	2.0455

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Wheat begins in July for all countries.TY 2021/2022 = July 2021 - June 2022

BARLEY

Production

FAS/Canberra forecasts Australia's MY 2021/22 barley production at 10 MMT, 3 MMT below the official USDA estimate for MY 2020/21 of 13 MMT. This crop was the second highest on record after 13.5 MMT in 2016/17.

The reduction in production is in part due to a forecast decrease in area from 4.4 million hectares to 4 million hectares. This is due to sentiment in the major barley exporting states of Western Australia and South Australia associated with China imposing an 80.5-percent duty on imports from May 18, 2020 for a period of five years. As previously mentioned, at that point growers were near the end of their planting program for the MY 2020/21 crop and had limited scope to amend their barley planting area. Although this shift from barley is expected to be significant in more export-oriented states, it is anticipated to be less of a factor on barley planting in the eastern states due to the majority of their production being consumed domestically for malting and livestock feed.

Soil moisture conditions at the start of planting across Australia are broadly as good or better than the same time the previous year (see figure 2), as mentioned earlier. Similarly to wheat, world barley prices are also high, and these factors will contribute to partially offset farmer concerns about the Chinese duties on barley.

Barley yields are also forecast to fall from the record levels of MY 2020/21. The forecast rainfall in the early to mid-growing season is for below-average chance of achieving median rainfall (see figure 3) which is expected to result in lower yields. However, FAS/Canberra's MY 2021/22 yield forecast of 2.5 MT per hectare is still slightly above the 2.3 MT per hectare average over the previous 10-years. This is due to an expected shift by farmers from malting barley to higher-yielding feed barley varieties. China has in the past been the major export destination for Australian barley with a high proportion being for malting. The loss of this vital malting barley market is expected to cause growers to shift from malting barley, with a positive impact on yields.

Consumption

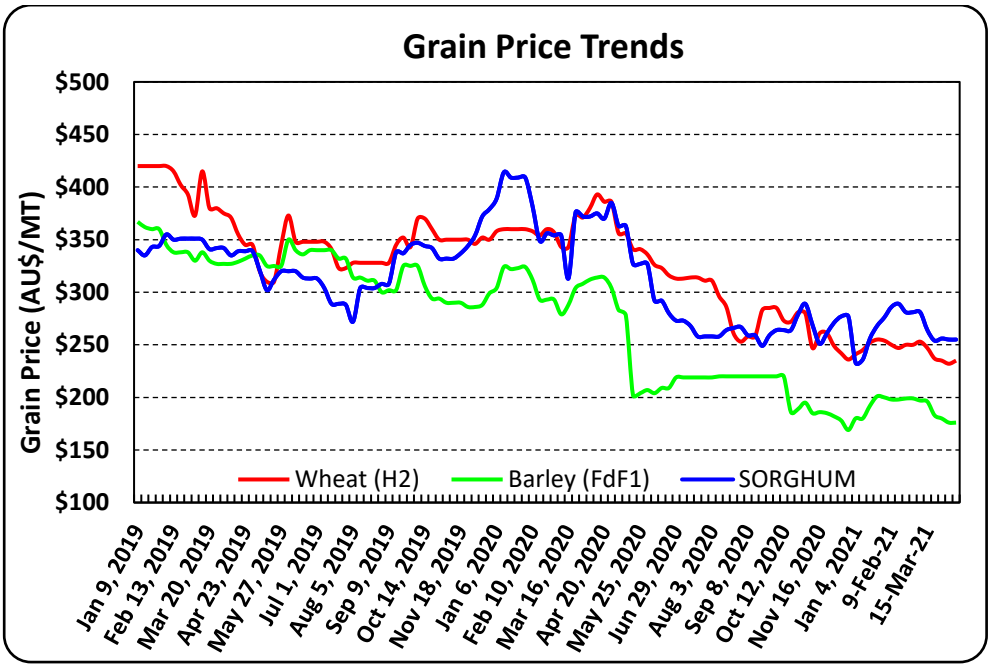
FAS/Canberra forecasts MY 2021/22 barley consumption at 5.5 MMT and in line with the downward revised MY 2020/21 consumption. Domestic consumption for malting purposes is relatively stable with livestock feed consumption being the primary variation in consumption from year to year. A large part of the malt produced in Australia is exported, with malt exports on average around 650,000 MT a year to markets such as Vietnam, South Korea, Thailand, and Japan. In MY 2019/20, a small amount of barley was also processed for fuel ethanol production due to a shortage of domestic sorghum supply. This has since ceased and is not expected to resume.

As mentioned earlier, after drought breaking rains commenced in early 2020 pasture production markedly improved (see figure 4) which has resulted in a significant reduction in on-farm grain feed demand particularly from beef and dairy producers. It also has reduced demand from beef feedlots who have lower throughput as cattle producers focus on grass-fed cattle.

Although overall grain feeding of livestock in Australia is forecast to be similar to MY 2020/21, barley consumption is expected to remain at levels double that of the five-year pre-drought average (MY 2013/14 to MY 2017/18) of 2.0 MMT. Barley has taken an increased share of domestic feed rations at the expense of wheat and sorghum. After a big production season of wheat and barley in MY 2020/21, the price spread between wheat and barley is settling back to typical levels of around AU$50 per MT and the price of sorghum, which is of lower nutritional value, remains higher than barley and wheat (see figure 8). This is expected to support stronger than historical feed barley consumption.

FAS/Canberra has revised the MY 2020/21 barley consumption estimate of 5.5 MMT from the USDA official estimate of 6.5 MMT. This relates to feed consumption being revised down to 4 MMT, a 1-MMT decrease from the official USDA estimate. As mentioned earlier livestock feed demand in Australia has declined since the drought-breaking rains commenced in early 2020. The revised figure for barley remains well above pre-drought levels on the basis of a price differential between barley, wheat and sorghum favoring higher use of barley.

Figure 8 – Grain Price Trends



Source: *The Land newspaper*

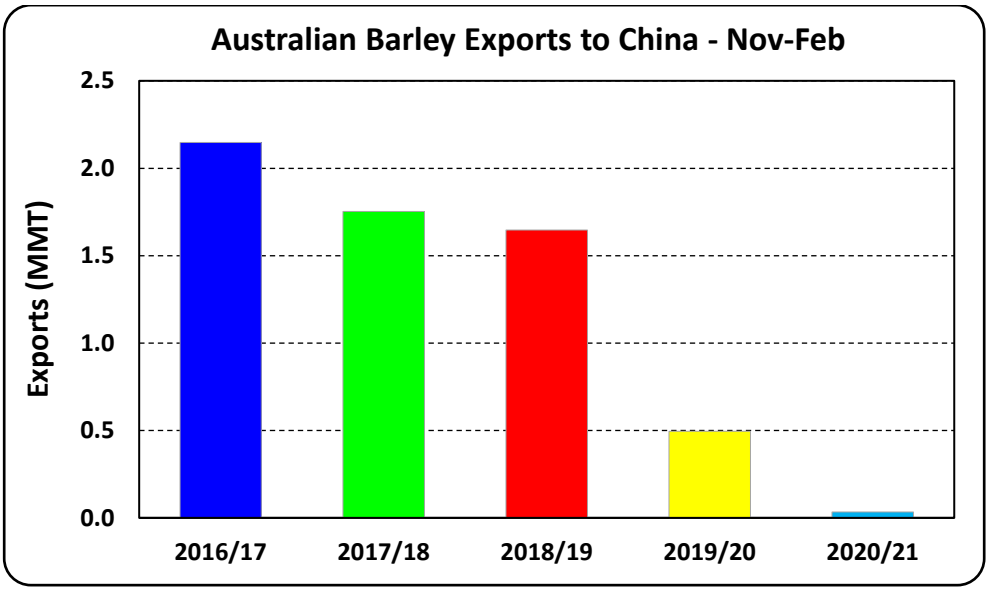
Notes: *Wheat and Barley are cash prices at West Wyalong, New South Wales*
Sorghum is cash price at Moree, New South Wales

Exports

Australia's barley exports for MY 2021/22 are forecast at 4.5 MMT, down 2.5 MT from the revised MY 2020/21 estimate of 7.0 MMT. This is driven by a 3 MMT forecast reduction in barley production while domestic consumption is forecast to remain stable. In addition, there is an expectation that Australian barley will face greater competition in Middle Eastern markets next year.

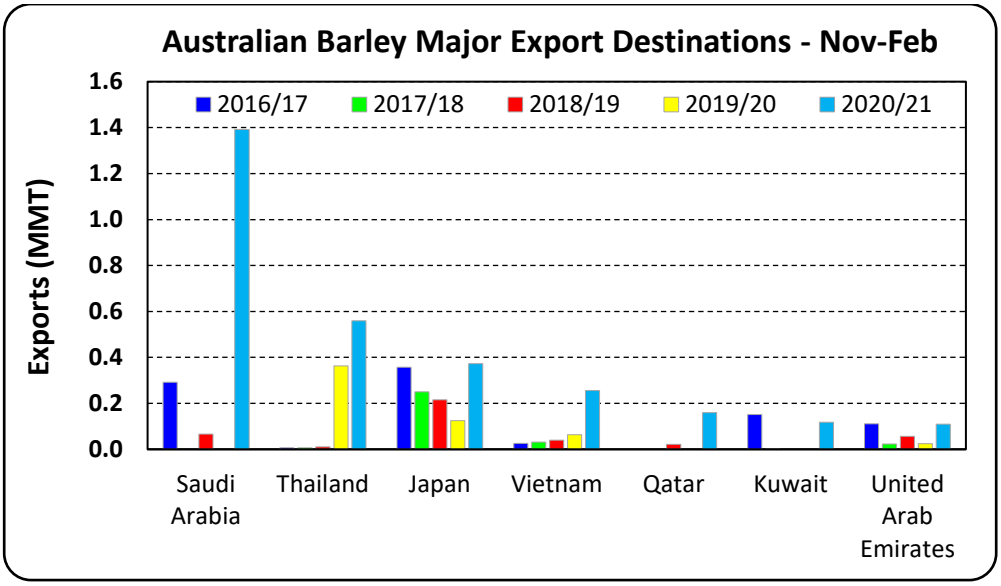
Until China's commerce ministry imposed an 80.5 percent duty on Australian barley in May 2020, China accounted for around two-thirds of Australia's barley exports. For the first four months of MY 2020/21 there have been almost no exports of barley to China because of the duties (see figure 9). Despite this, total Australian exports have skyrocketed with extremely large shipments to Saudi Arabia, as well as to other Middle East markets. Exports to nearby Asian market such as Thailand, Vietnam, and Japan have also risen (see figure 10). In the first four months of MY 2020/21, Saudi Arabia has gone from importing no barley for the same period in the previous year to importing 1.4 MMT, accounting for 44 percent of Australia's barley exports.

Figure 9 – Australian Barley Exports to China – Nov-Feb



Source: *Australia Bureau of Statistics*

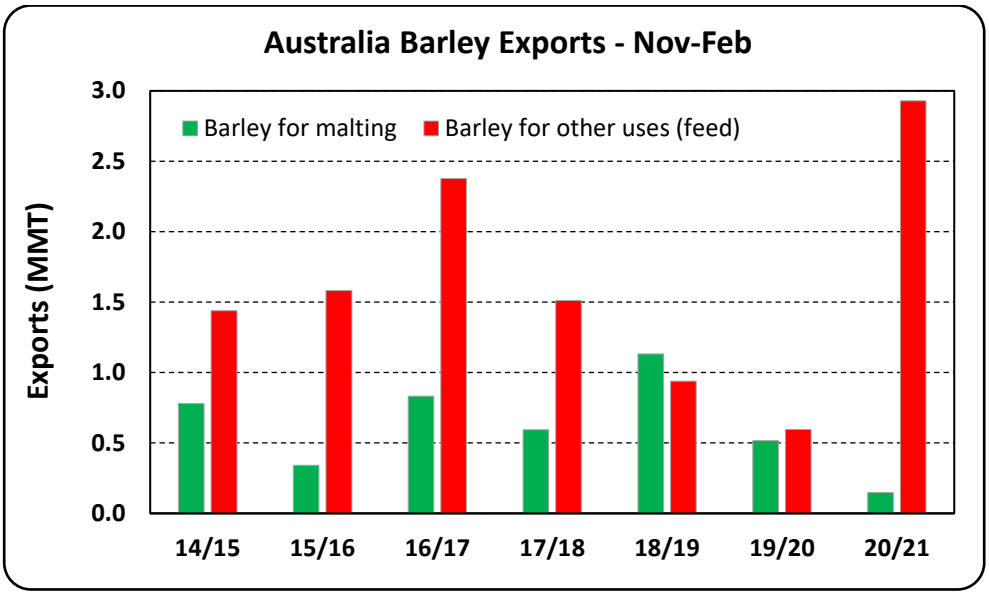
Figure 10 – Australian Barley Major Exports Destinations (Nov-Feb)



Source: *Australia Bureau of Statistics*

Although exporters have effectively been able to diversify feed barley exports away from China and into other markets this year, this has not been the case for malting barley (see figure 11) and malting barley exports have dropped sharply. While typically malting barley accounts for between 20-50 percent of Australia's barley exports, in the first four months of the year this has plummeted to less than five percent.

Figure 11 – Australian Feed and Malting Barely Exports



Source: Australia Bureau of Statistics

As mentioned, although barley exporters have been able to diversify feed barley exports away from China, the Australian barley industry is however conscious that part of the reason for the increase in demand from Middle East countries this year relates to supply constraints and export policy decisions from their usual Black Sea suppliers, as well as high feed prices. A return to more typical prices and trade patterns would likely put pressure on Australian barley exports in light of the continued prohibitive Chinese duties.

Early season barley exports in MY 2020/21 have started extremely strong, reaching 3.1 MMT between November and February, compared to just 1.1 MMT the previous year. Although the pace is expected to slow, FAS/Canberra has revised the MY 2020/21 barley export estimate upwards to 7 MMT from the USDA official estimate of 6 MMT because of these strong early export results.

Stocks

Australia's ending stocks of barley are forecast to remain stable at around 2.6 MMT in MY 2021/22. Despite reduced forecast production, the continued need to find ample non-Chinese markets is expected to prevent any major stock drawdown next year.

Barley	2019/2020		2020/2021		2021/2022	
Market Year Begins	Nov 2019		Nov 2020		Nov 2021	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	4050	4050	4400	4400	0	4000
Beginning Stocks (1000 MT)	1908	1908	2083	2084	0	2584
Production (1000 MT)	9000	9000	13000	13000	0	10000
MY Imports (1000 MT)	0	0	0	0	0	0
TY Imports (1000 MT)	0	0	0	0	0	0
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	10908	10908	15083	15084	0	12584
MY Exports (1000 MT)	3325	3324	6000	7000	0	4500
TY Exports (1000 MT)	3231	3228	6000	7000	0	4500
Feed and Residual (1000 MT)	4000	4000	5000	4000	0	4000
FSI Consumption (1000 MT)	1500	1500	1500	1500	0	1500
Total Consumption (1000 MT)	5500	5500	6500	5500	0	5500
Ending Stocks (1000 MT)	2083	2084	2583	2584	0	2584
Total Distribution (1000 MT)	10908	10908	15083	15084	0	12584
Yield (MT/HA)	2.2222	2.2222	2.9545	2.9545	0	2.5

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Barley begins in October for all countries.TY 2021/2022 = October 2021 - September 2022

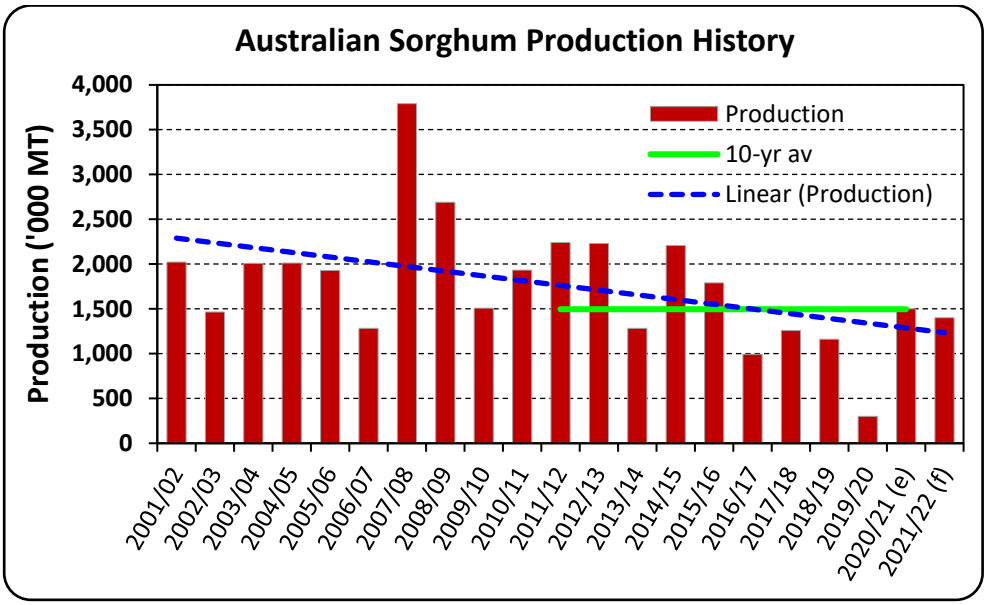
SORGHUM

Production

The FAS/Canberra sorghum production forecast for MY 2021/22 is 1.4 MMT, down 100,000 MT from the revised MY 2020/21 estimate and slightly below the 10-year average (see figure 12). Harvested area is forecast at 500,000 hectares, up from an estimated 450,000 hectares in MY 2020/21, but yield is expected to decline to the 10-year average of 2.8 MT/ha from an estimated 3.3 MT/ha.

With the MY 2020/21 harvest yet to be completed, at this stage the forecast for MY 2021/22 has a low degree of certainty. However, factors including sorghum prices, MY 2020/21 crop performance, soil moisture profile and rainfall forecasts have been taken into consideration in terms of area and yield forecasts.

Figure 12 – Australian Sorghum Production History



Source: *PSD Online / FAS/Canberra*

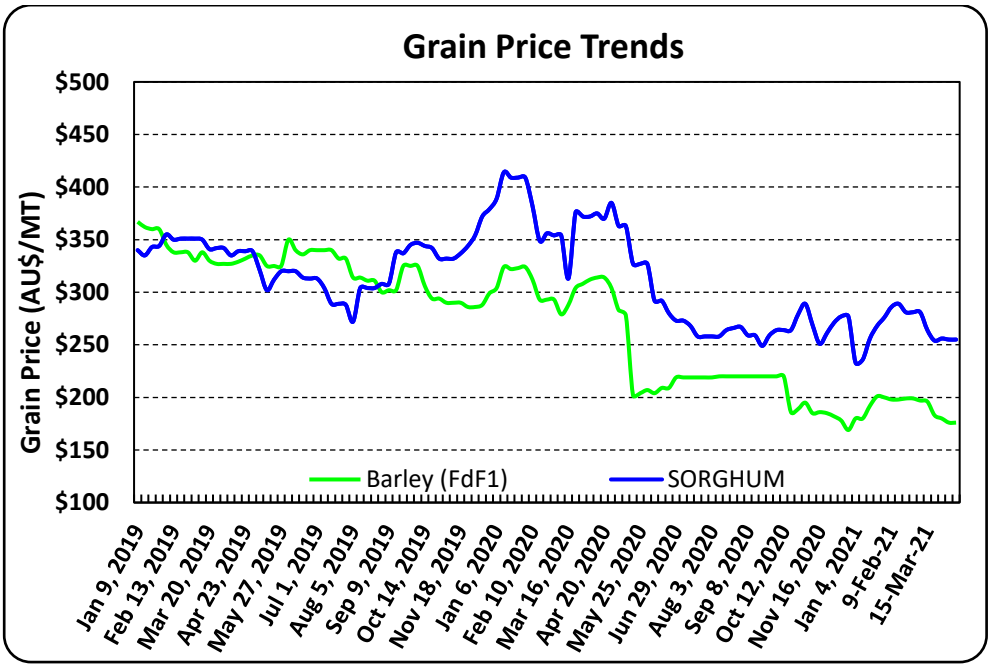
Sorghum Prices

Sorghum is primarily a livestock feed grain and competes with feed wheat and barley. One of the main advantages of sorghum is that it is produced in key livestock producing and feedlot regions. Sorghum is considered by the livestock industry as a nutritionally inferior grain to barley and wheat. Many beef feedlots in particular have adapted by introducing a steam flaking process in the hours prior to adding it to a mixed ration for cattle. Steam flaking improves the digestibility of grains and increases the proportion of rumen bypass protein, significantly improving its value, similar to that of non-steam flaked barley. Non-steam flaked wheat is generally of even higher nutritional value.

Facilities without steam flaking capabilities and ready access to sorghum and cereal grains will weigh up the price differential between sorghum, barley and wheat when procuring grains for their ration requirements. Feedlot facilities with steam flaking capabilities are also able to process barley and wheat further improving their nutritional value. In these circumstances the price differential between the grains remains important.

Domestic grain prices indicate that sorghum prices have been at around or above wheat prices and well above barley prices since late 2019 (see figure 13). Although all prices have declined after the drought as a result of bumper wheat and barley crops after the MY 2020/21 harvest, sorghum has in recent months increased its price premium over wheat and barley. This is in part due to the current bigger sorghum crop (being harvested from around March 2021) not yet having a major impact on its price, as well as because of export demand.

Figure 13 – Grain Price Trends



Source: *The Land newspaper*
Notes: *Barley is cash price at West Wyalong, New South Wales*
Sorghum is cash price at Moree, New South Wales

Over time feedlot facilities with steam flaking infrastructure are moving away from sorghum due to the higher nutritional value of other cereal grains which can increase the energy density of their rations, improving energy intake and growth rates. This factor is contributing to a declining sorghum production trend over the last 20 years (see figure 12). A further contributor is the mothballing of the bio-ethanol refinery in southern Queensland which previously consumed around 150,000 MT of sorghum per annum. Industry sources indicate that sorghum prices have simply been too high and remain too high for an economic return on fuel ethanol production to be achieved. Indications are that the sorghum price needs to be consistently below AU$200 (US$ 154) per MT for fuel ethanol production to be viable.

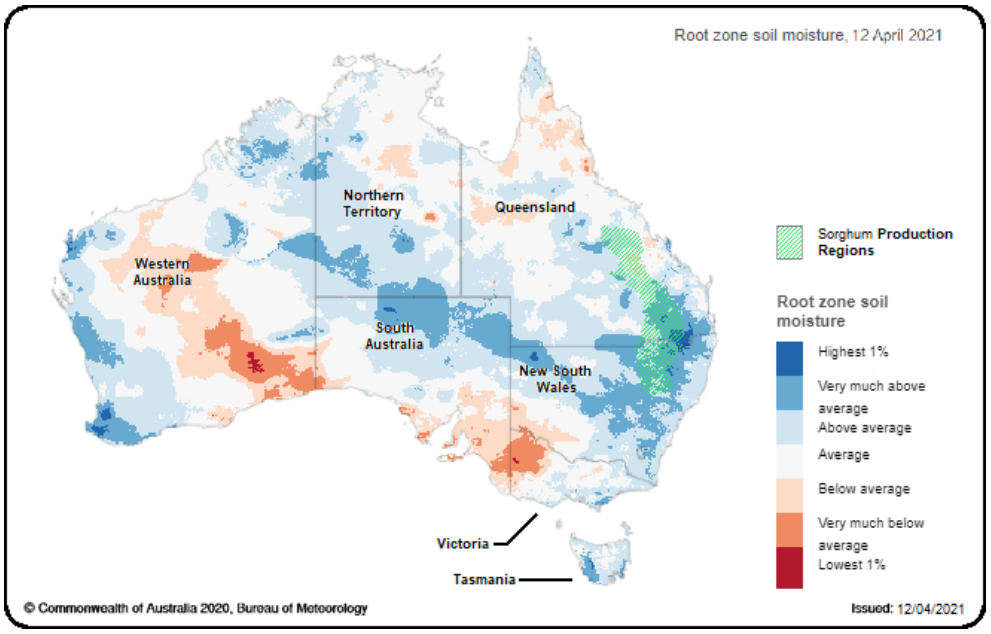
The current high sorghum price will encourage growers to plan for a bigger crop in MY 2021/22. However, with a declining preference for sorghum from the livestock feed industry and the mothballing of the bio-ethanol plant, sorghum prices will become more sensitive to the size of the crop and export demand. It is becoming less likely that production of in excess of 2 MMT will occur in the future unless new export markets are established.

Soil Moisture Profile

The summer and early autumn period in the majority of the sorghum producing regions have had average to above-average rainfalls which has boosted soil moisture profiles to well-above-average levels. For those areas being fallowed and not returned to a winter crop this will underpin the yield potential of the MY 2021/22 crop.

The northern Queensland sorghum producing areas have not been as fortunate in terms of rainfall in recent months as the monsoonal wet season rains were not as strong as usual resulting in soil moisture profiles at average to below-average levels (see figure 14). This area now enters the dry season when limited rainfall is expected. However, growers in this region are opportunistic in terms of their cropping programs and will await sporadic localized storms during the spring months (September to November) before deciding whether or not to plant sorghum.

Figure 14 – Root Zone Soil Moisture – as at April 12, 2021



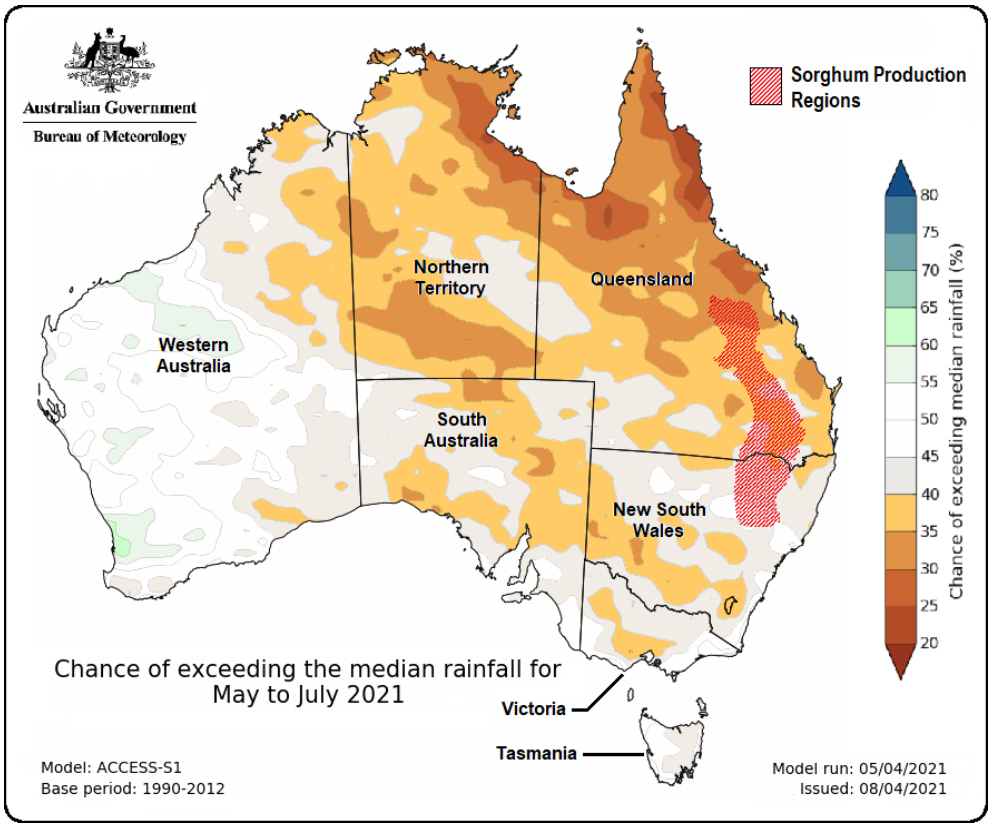
Source: *Australian Bureau of Meteorology / FAS/Canberra*

Although soil moisture profiles are strong in the major sorghum producing areas, top-up rains in the lead up to planting will be sought by growers.

Rainfall Forecast

The rainfall forecast for the May to July period is well before the typical start of planting around October, but important to maintaining a good soil moisture profile. The forecast for May to July 2021 is for below-average chances of exceeding median rainfall in Queensland and around average for the New South Wales sorghum growing areas (see figure 15). If this forecast is realized, this will maintain New South Wales sorghum growers in a good soil moisture profile position, however, those in Queensland will be seeking better rains in the lead up to planting.

Figure 15 – Rainfall Forecast – May to July 2021



Source: *Australian Bureau of Meteorology / FAS/Canberra*

The combination of high sorghum prices and good soil moisture profiles in the major sorghum growing areas leads to expectations of increased planting area in MY 2021/22. However, if the rainfall forecast in the coming months that suggests below average rains is realized, it could, impact planting intentions.

MY 2020/21 Crop Performance

The MY 2020/21 sorghum crop production is a good reference point to take into consideration in forecasting the MY 2021/22 production. The season provided very mixed results for growers. Southern Queensland is the largest sorghum producing region in Australia and this region had relatively dry conditions in the pre and early planting period around September to November 2020. There were reports of failed crops particularly in the western parts of the region, as well as reports of those crops that did progress not yielding well after a poor start. However, crops planted late after good December rains across southern Queensland and northern New South Wales, in particular, were blessed with average to above-average rains through to harvest with early reports of the best crops reaching as high as 9 MT per hectare. These are exceptional results when compared to the 10-year national average of around 2.8 MT per hectare.

The outstanding growing conditions in southern Queensland and northern New South Wales have bumped up the national yield estimate for MY 2020/21 to 3.3 MT per hectare, some seven percent above the long-term average.

The MY 2020/21 sorghum production estimate has been revised up by FAS/Canberra to 1.5 MMT from the official USDA estimate of 1.35 MMT. This improved estimate is due to stronger than expected yields achieved in the major sorghum growing areas after above-average summer rainfalls.

Consumption

FAS/Canberra forecasts sorghum consumption in MY 2021/22 at 610,000 MT, which is 100,000 MT higher than the revised MY 2020/21 estimate. This is primarily a result of a 100,000-MT increase in the forecast feed consumption. The higher expected supply of sorghum from the much improved MY 2020/21 harvest is anticipated to result in greater opening stocks in the forecast year. With this there is an expectation that sorghum prices will decline attracting an improvement in domestic livestock feed demand.

There is no expectation of industrial consumption of sorghum for the production of fuel ethanol as the only processing facility in Australia remains mothballed. The facility in the past has consumed around 150,000 MT of sorghum but indications are that prices would need to fall significantly to attract the recommissioning of the facility.

The disparity in prices between the major feed grains, wheat, barley and sorghum as previously mentioned (also see figure 8) is not attractive for livestock feed grain users to significantly increase their use of sorghum. However, with an increasing supply and availability of sorghum there is an expectation that the relative price of sorghum compared to wheat and barley will decline which will attract a moderate increase in consumption for livestock feeding.

The MY 2020/21 sorghum consumption estimate has been revised down by FAS/Canberra to 510,000 MT from the official USDA estimate of 700,000 MT. This relates entirely to the revision of food, seed, and industrial consumption, and FAS/Canberra estimates this at 10,000 MT for seed only. As of now indications are that industrial processing of sorghum for fuel ethanol is not expected to occur for the remainder of the year due to the only processing facility in Australia remaining mothballed.

Exports

The FAS/Canberra sorghum export forecast for MY 2021/22 is 800,000 MT and a 100,000-MT (14 percent) increase over the MY 2020/21 estimate. Expected larger crops in both MY 2020/21 and MY 2021/22 are anticipated to help replenish stocks and offer scope for increased exports.

China in past years has typically accounted for nearly all of Australia's exports, for use as livestock feed and for making traditional liquor. However, in September 2020 and January 2021 (MY 2019/20) there

were large shipments to Kenya as part of a food aid program which accounted for 25 percent of overall exports, reducing China's overall share to 62 percent. The Philippines and Japan have also become a significant destination accounting for seven and five percent respectively of overall exports in MY 2019/20.

The MY 2020/21 sorghum export estimate has been revised upwards by FAS/Canberra to 700,000 MT from the official USDA estimate of 450,000 MT. This revision is in light of a larger-than-previously-anticipated crop, as well as limited domestic industrial consumption of sorghum allowing more to be redirected to exports.

Stocks

Stocks are forecast to remain stable in MY 2021/22 after being replenished in MY 2020/21 on the back of much improved production. This is subsequent to the drought affected very low production in MY 2019/20, resulting in very low ending stocks in that year.

Sorghum	2019/2020		2020/2021		2021/2022	
Market Year Begins	Mar 2020		Mar 2021		Mar 2022	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	150	150	510	450	0	500
Beginning Stocks (1000 MT)	287	287	37	57	0	347
Production (1000 MT)	300	300	1350	1500	0	1400
MY Imports (1000 MT)	0	0	0	0	0	0
TY Imports (1000 MT)	0	0	0	0	0	0
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	587	587	1387	1557	0	1747
MY Exports (1000 MT)	250	250	450	700	0	800
TY Exports (1000 MT)	107	102	450	700	0	800
Feed and Residual (1000 MT)	200	250	500	500	0	600
FSI Consumption (1000 MT)	100	30	200	10	0	10
Total Consumption (1000 MT)	300	280	700	510	0	610
Ending Stocks (1000 MT)	37	57	237	347	0	337
Total Distribution (1000 MT)	587	587	1387	1557	0	1747
Yield (MT/HA)	2	2	2.6471	3.3333	0	2.8

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Sorghum begins in October for all countries.TY 2021/2022 = October 2021 - September 2022

RICE

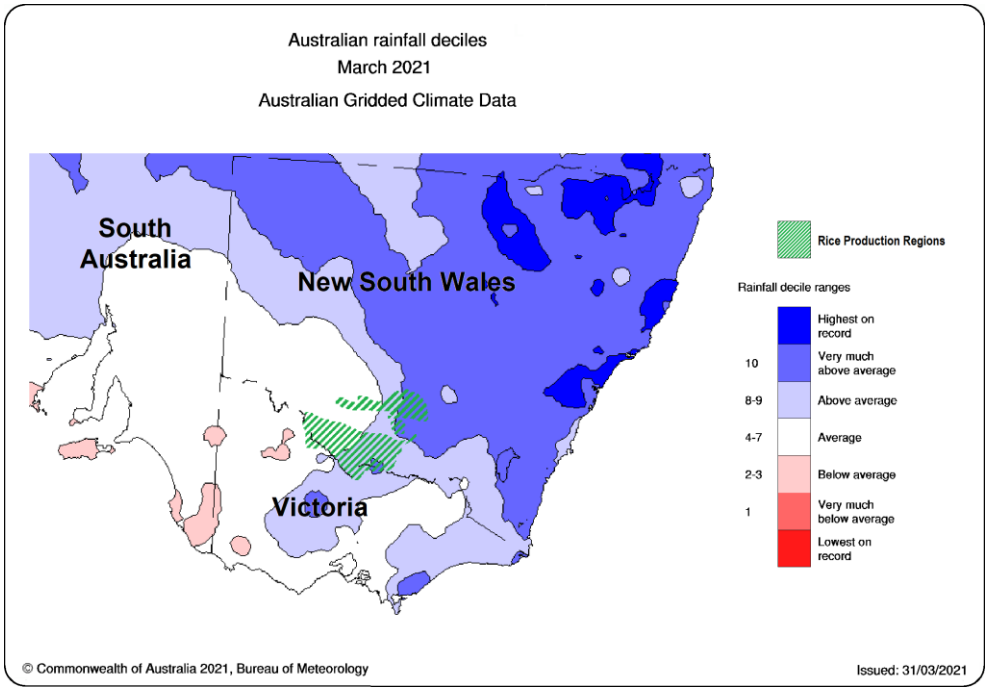
Production

FAS/Canberra forecasts milled rice production at 440,000 MT in MY 2021/22, a 35-percent increase over the revised MY 2020/21 estimate. The forecast increase is primarily as a result of an expected improvement in irrigation water storage levels and associated improvement in irrigation water availability for the MY 2021/22 rice crop (to be planted from October 2021). The forecast production, if realized, would be around four percent higher than the previous 10-year average.

After receiving large rains in parts of northern New South Wales in March 2021 (see figure 16), many growers in the central and north of the state are reported to have taken advantage of the overland and high waterway flows, and have filled their on-farm storage dams in readiness for the MY 2021/22 season. These rains have also resulted in significant inflows into the major irrigation systems which are now beyond expectations for this time of the year and are anticipated to help boost irrigated rice area for MY 2021/22.

Although all irrigation water sources are important, the strongest influence is from water allocations provided from the major irrigation schemes. The rice producing regions in southern New South Wales are highly dependent upon this source.

Figure 16 – Rainfall Decile Map – March 2021



Source: Australian Bureau of Meteorology / FAS/Canberra

After drought years in 2018 and 2019 with low inflows into the major irrigation storage dams, their water levels declined as did the licensed allocations provided to irrigators. Water allocations at the start

of planting in October 2019 in the Murrumbidgee and the New South Wales Murray Irrigation systems were either zero or almost zero and far below the two-year average (2016 and 2017) prior to the onset of the drought (see table 1). The majority of the rainfalls influencing water catchment levels occur in the winter and spring months and any summer rainfalls reduce the demand for water from the catchments.

Although the drought began to break around February 2020 across the eastern states, which significantly improved storage levels, these storages were still not fully replenished. The Murrumbidgee system water allocation recovered to around the two-year pre drought level, and the New South Wales Murray Irrigation water allocation at around half the two-year pre drought level in October 2020 (see Table 1). These irrigation water allocations still limited the irrigated rice area planted in MY 2020/21.

Table 1 – Irrigation Water Allocations in Cotton Production Regions

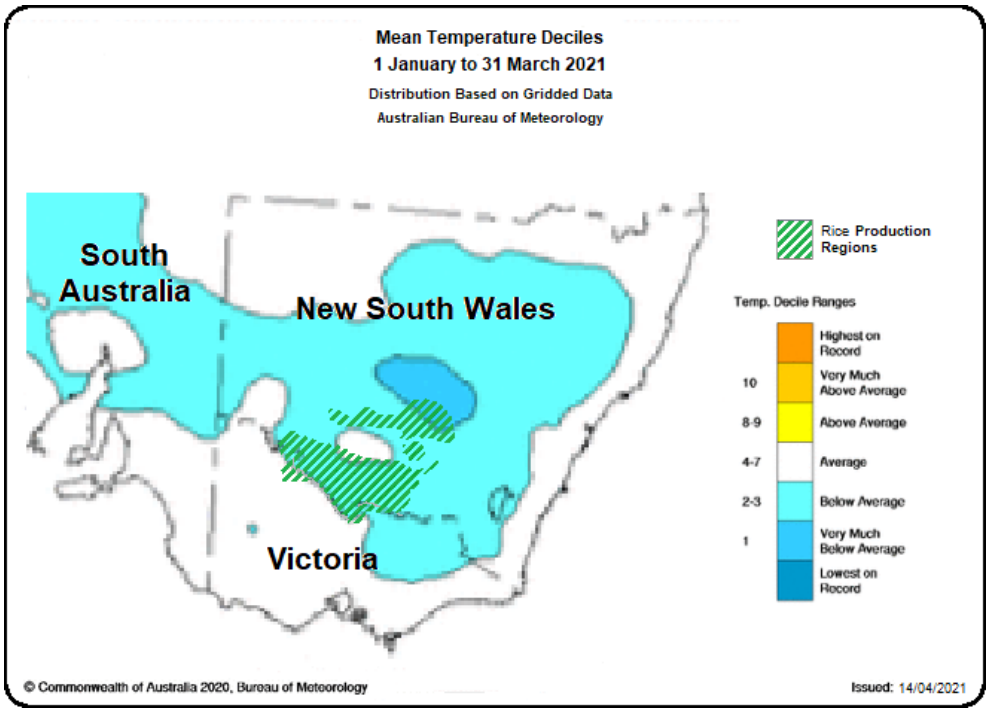
Irrigation Catchment	Capacity (GL)	Water Allocation as at October			
		Pre-drought Av. (2016/17-2017/18)	Drought 2018/19	Drought 2019/20	Transition from drought 2020/21
Murrumbidgee	2,659	52%	7%	6%	54%
NSW Murray	1,600	47%	0%	0%	26%

Source: Murray Darling Basin Authority
Notes: GL = Giga Liters (1.0 GL = 1.0 billion liters)
Water Allocation = percent of irrigators licensed water holdings

A significant improvement in water allocations is anticipated in the lead up to the planting of the forecast crop (to be planted from October 2021) after above-average rainfall over the summer reduced irrigation water requirements for a range of crops in the rice growing region, allowing this water to instead replenish water storages. In combination with well-above-average rains in most of New South Wales in March, irrigation system water reserves have been bolstered above expectations. This will enable rice growers to plan for a much bigger planting area.

The harvest for the MY 2020/21 rice season is well advanced and the milled-production estimate has been revised downwards by FAS/Canberra to 325,000 MT from the official USDA estimate of 380,000 MT. The primary factor for this downward revision is that according to industry sources, after a positive start to the growing season the crop encountered mild temperatures hindering it from reaching its yield potential. In December 2020 the Bureau of Meteorology forecasts indicated that there was a strong chance of exceeding median minimum temperatures in January to March 2021 and an average to good chance of exceeding median maximum temperatures in the same period. The actual outcome, however, was below-average temperatures across almost all of the rice growing areas (see figure 17).

Figure 17 - Australia Mean Temperature Deciles – Jan to Mar 2021



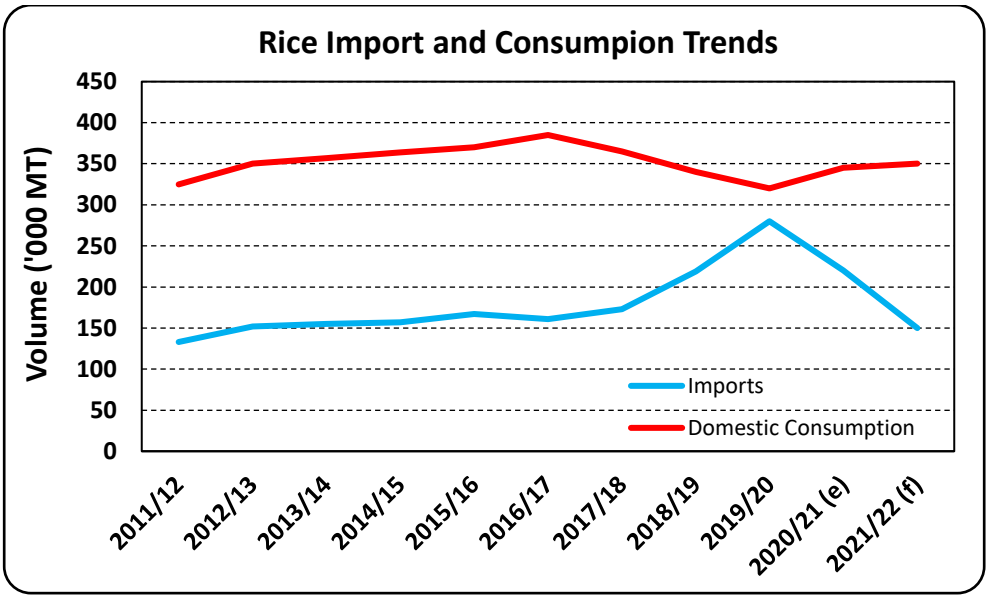
Source: Bureau of Meteorology

Consumption

Forecast rice consumption by FAS/Canberra in MY 2021/22 is 350,000 MT, a modest 5,000 MT higher than the MY 2020/21 estimate.

Rice consumption in Australia is typically relatively stable from year to year, with consumption demands met by changes in trade (see figure 18). However, consumption did fall in MY 2019/20 affected by the COVID-19 pandemic lockdowns. Although there was a large increase in rice imports this was a little short to meet typical consumption requirement, likely due to shipping challenges faced by importers during the pandemic. Rice consumption in MY 2020/21 is estimated to have recovered to 345,000 MT from 320,000 MT in the prior pandemic affected year. The forecast consumption is a recovery back to the previous 10-year average.

Figure 18 – Rice Production, Trade & Consumption Trends



Source: Australian Bureau of Statistics / PSD Online / FAS/Canberra

Trade

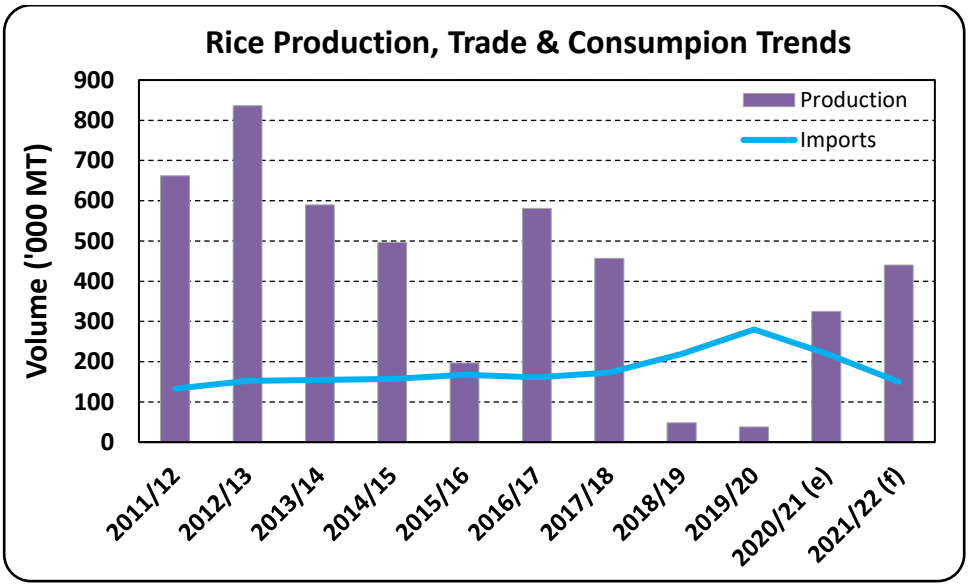
Imports

FAS/Canberra forecast imports of 150,000 MT in MY 2021/22, a 70,000-MT (32 percent) decline from the MY 2020/21 estimate. This decline directly relates to the large increase in rice production, as it is expected to return to around the 10-year average.

Over the last 10 years imports have been relatively stable with a slight increasing trend, parallel to a small increasing consumption trend. However, when production was very low in MY 2018/19 and MY 2019/20 imports increased to compensate for the lack of domestic supply to meet consumption requirements (see figure 19). With improved forecast production in MY 2021/22 and consumption anticipated to return to long-term average levels, there is an expectation that imports will revert back to pre-drought levels.

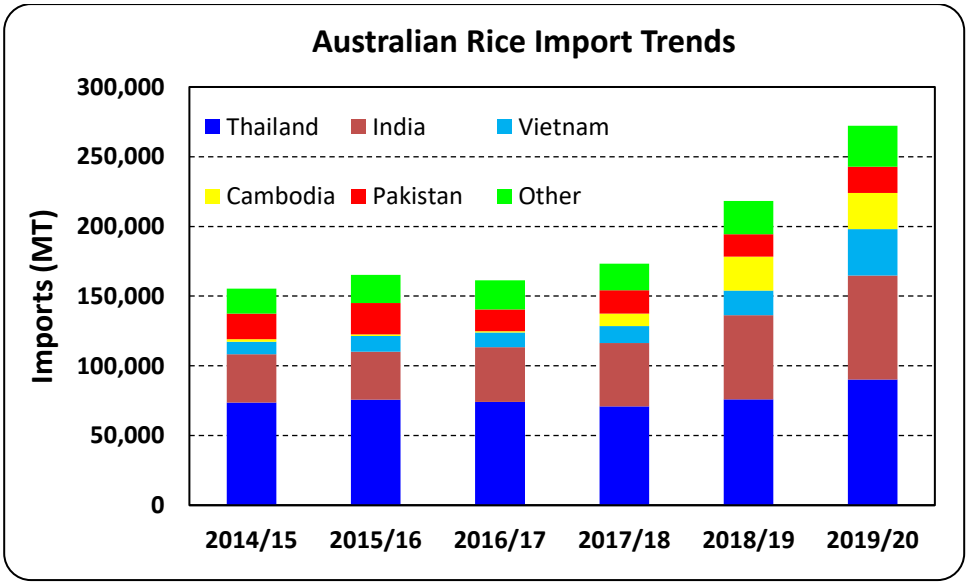
Thailand and India are by far the two largest rice suppliers to Australia consistently at around two-thirds of total imports over the last five years. The increase in imports over the last two years has been met by all of the top five trading partners, Thailand, India, Cambodia, Vietnam and Pakistan (see figure 20). Overall, the top five suppliers of rice imports to Australia represent over 95 percent of all imports. Although Australia has in the past consistently imported around six and two percent of its rice demands from the United States and Italy, respectively, the volume of imports from these two nations has not increased over the last two years.

Figure 19 – Rice Production, Trade & Consumption Trends



Source: Australian Bureau of Statistics / PSD Online / FAS/Canberra

Figure 20 – Australian Rice Import Trends

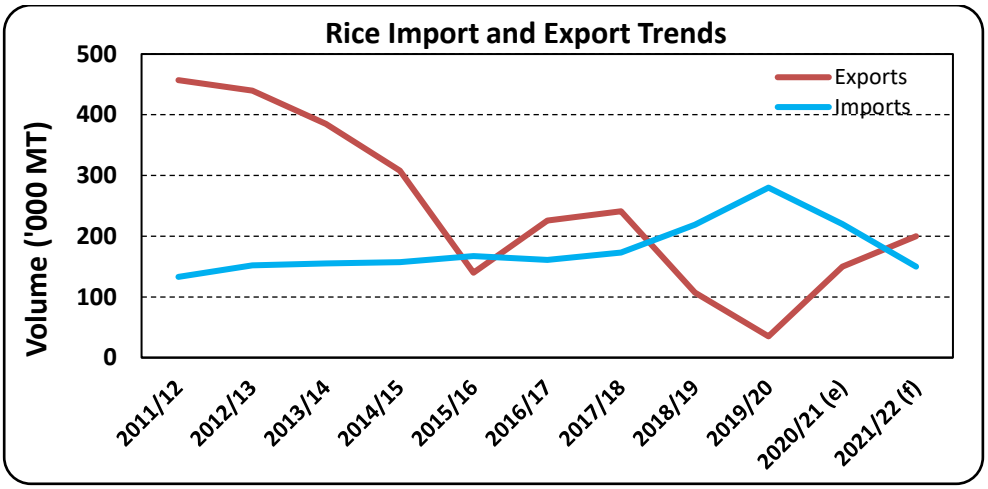


Source: Australian Bureau of Statistics

Exports

FAS/Canberra forecast exports for MY 2021/22 at 200,000 MT, some 50,000 MT (33 percent) higher than the MY 2020/21 estimate. The increase in production is the main driver for the forecast improvement in rice exports, and Australia is expected to return as a net exporter in MY 2021/22 (see figure 21).

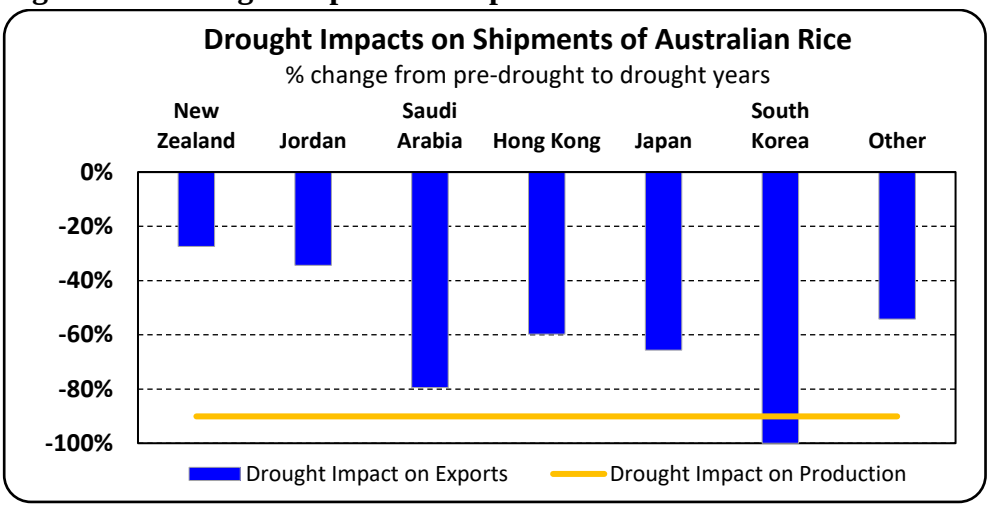
Figure 21 – Australian Rice Import and Export Trends



Source: *Australian Bureau of Statistics / FAS/Canberra*

The major importers of Australian rice prior to the drought-impacted years (MY 2014/15 to MY 2017/18) were Japan, Saudi Arabia, New Zealand, Jordan, South Korea, Hong Kong and Taiwan, representing around 80 percent of trade. During the drought-impacted years of MY 2018/19 and MY 2019/20, only New Zealand and Jordan maintained large imports of Australian rice with their volumes falling around 30 percent compared to the drop in Australian production of 90 percent (see figure 22). Japan and South Korea have imported almost no Australian rice over the two drought impacted years. Australia is expected to seek to re-establish rice trade with its key rice importers in MY 2020/21 and beyond with the recovery of production.

Figure 22 – Drought Impacts on Imports of Australian Rice



Source: *Trade Data Monitor / PSD Online. As Australia does not report export destinations, importing country data is used as a proxy for exports*

Note: *Average of drought years (MY 2018/19 MY 2019/20) is compared against the previous four pre-drought years (MY 2014/15 to MY 2017/18) for trade and production*

The MY 2020/21 rice export estimate has been revised downwards by FAS/Canberra to 150,000 MT from the official USDA estimate of 180,000 MT. This revision primarily relates to the reduced production estimate, restricting supply available for exports.

Stocks

Rice stocks are forecast to recover somewhat further in MY 2021/22 on the back of a much-improved forecast rice crop production at around the long-term average. Rice stocks were heavily depleted at the end of MY 2019/20 due to drought affected poor production and are expected to partially recover after much improved production in MY 2020/21.

Rice, Milled	2019/2020		2020/2021		2021/2022	
Market Year Begins	Mar 2020		Mar 2021		Mar 2022	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	6	6	50	45	0	60
Beginning Stocks (1000 MT)	52	52	15	14	0	64
Milled Production (1000 MT)	38	38	380	325	0	440
Rough Production (1000 MT)	53	53	528	451	0	611
Milling Rate (.9999) (1000 MT)	7200	7200	7200	7200	0	7200
MY Imports (1000 MT)	280	272	220	220	0	150
TY Imports (1000 MT)	276	276	220	220	0	150
TY Imp. from U.S. (1000 MT)	9	0	0	0	0	0
Total Supply (1000 MT)	370	362	615	559	0	654
MY Exports (1000 MT)	35	28	180	150	0	200
TY Exports (1000 MT)	42	33	150	130	0	200
Consumption and Residual (1000 MT)	320	320	345	345	0	350
Ending Stocks (1000 MT)	15	14	90	64	0	104
Total Distribution (1000 MT)	370	362	615	559	0	654
Yield (Rough) (MT/HA)	8.8333	8.8333	10.56	10.0222	0	10.1833

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Rice, Milled begins in January for all countries.TY 2021/2022 = January 2022 - December 2022

Attachments:

No Attachments