Summary of key issues

- During the week ending 4 November low pressure systems, troughs and cold fronts generated thunderstorm activity and showers across parts of eastern, western and northern Australia (see Section 1.1).

- The recent falls across the Western Australian wheat belt have arrived too late to benefit winter crops. Similarly, rainfall across south-eastern cropping regions has likely only benefitted late sown crops continuing to develop (see Section 1.1).

- Across south-west Western Australia above average to very much above average temperature during October coupled with low rainfall are likely to have resulted in significant reductions in crop yields and pasture production at this crucial stage in the production cycle (see Section 1.2).

- Moderate, but variable rainfall during October largely benefitted agricultural production across New South Wales, Victoria, South Australia and the Northern Territory. However, in some growing regions, October rainfall impeded hay production and grain harvest activities and may have impacted the quality of crops that were ready to harvest or had been windrowed. In contrast, low October totals in Western Australia follow below average rainfall during winter and the start of spring, significantly impacting crop yields (see Section 1.3).

- Over the next eight days, troughs and low pressure systems are expected to bring thunderstorms and showers to parts of south-eastern, south-western and far northern Australia. Across cropping regions, rainfall of between 5 and 25 millimetres is expected across much of New South Wales and Victoria, and parts of western Queensland, eastern South Australia and the central-northern and south-eastern Western Australian wheat belt. Little to no rainfall is expected across remaining cropping regions during the next eight days (see Section 1.6).

- Water storage levels in the Murray-Darling Basin (MDB) increased by 278 gigalitres (GL) between 28 October 2020 and 4 November 2020. The current volume of water held in storage is 15,504 GL, which represents 61% of total capacity.

- Allocation prices in the Victorian Murray below the Barmah Choke decreased from $190 per ML to $175 per ML between 29 October 2020 and 5 November 2020. Prices are lower in the Goulburn-Broken, Murrumbidgee and regions above the Barmah Choke, due to binding of the Goulburn intervalley trade and Murrumbidgee export limits, and the Barmah Choke trade constraint.
1. Climate

1.1. Rainfall this week

During the week ending 4 November 2020 low pressure systems, troughs and cold fronts generated thunderstorm activity and showers across parts of eastern, western and northern Australia. Rainfall totals of between 10 and 50 millimetres were recorded across much of New South Wales and south-western Western Australia, and parts of eastern and northern Queensland, eastern and north-western Victoria, south-eastern South Australia, northern Western Australia, the north of the Northern Territory and western Tasmania. Rainfall in excess of 50 millimetres was recorded across isolated parts of south-eastern New South Wales, and south-eastern and northern Queensland.

In Australia’s cropping regions, rainfall totals of between 10 and 50 millimetres were recorded across parts of eastern and southern New South Wales, eastern Queensland and much of Western Australia excluding parts of the central and northern wheat belt. Rainfall totals of between 5 and 25 millimetres were recorded across parts of central and eastern South Australia, and much of Victoria. Little to no rainfall was recorded across remaining cropping regions in Queensland, northern New South Wales and South Australia during the week ending 4 November 2020.

The recent falls across the Western Australian wheat belt have arrived too late to benefit winter crops. Similarly, rainfall across south-eastern cropping regions has likely only benefitted late sown crops continuing to develop.

Rainfall for the week ending 4 November 2020
1.2. Monthly temperatures

October 2020 was warmer than average nationally, with a national mean temperature of 1.05°C above average.

Maximum temperatures for October were above average to very much above average across parts of eastern, western and northern Australia. Similarly, minimum temperatures were above average to very much above average across much of Australia excluding parts of north-western, central and north-eastern Australia. Across south-west Western Australia above average to very much above average temperature coupled with low rainfall are likely to have resulted in significant reductions in crop yields and pasture production at this crucial stage in the production cycle.

Note: Maximum and minimum temperatures for October 2020 compared with temperature recorded for that period during the historical record (1900 to present). For further information go to: http://www.bom.gov.au/jsp/awap/temp/index.jsp.
1.3. Monthly rainfall

October 2020 rainfall was above average to well above average across most of the eastern two-thirds of Australia, and below average across parts of Western Australia. Nationally, rainfall for the month was 35% above average.

Moderate, but variable rainfall totals across the eastern two-thirds of Australia during October 2020 are likely to benefit agricultural production across New South Wales, Victoria, South Australia and the Northern Territory. This rainfall is likely to support or lift yield prospects in later sown winter crops, benefit late spring pasture growth, provided a boost to soil moisture for the planting of summer crops and support continued inflows into water storages. In contrast, these falls are likely to have impeded the progress of hay production in New South Wales, Victoria and South Australia, and grain harvest activities in northern New South Wales and southern Queensland.

During the end of the month, substantial but patchy rainfall was recorded across cropping regions in New South Wales, Queensland and parts of eastern and northern Victoria and western and northern South Australia. These falls have raised some quality concerns for cereal crops that were ready to harvest and canola crops that had been windrowed, particularly in New South Wales. Isolated hail storms in New South Wales and southern Queensland resulted in significant crop losses on some farms but are unlikely to result in significant production downturn at the state or national level.

As many growers in Queensland are likely to only produce modest winter crops due to the dry growing season this year, there is substantial interest in sowing a large summer crop. In some areas these falls should be sufficient to stimulate further summer crop planting and benefit earlier sown crops, while not delaying the winter crop harvest for too long.

In Western Australia most cropping regions received very much below average to below average rainfall during October. These low October rainfall totals follow below average rainfall during winter and the start of spring, significantly impacting crop yields in Western Australia.

Rainfall deciles for October 2020

Source: Bureau of Meteorology
Note: Rainfall for October 2020 is compared with rainfall recorded for that period during the historical record (1900 to present). For further information, go to http://www.bom.gov.au/jsp/awap/
1.4. Monthly soil moisture

Upper layer soil moisture in October 2020 was above average to well above average for this time of year across most of the eastern two-thirds of Australia, largely reflecting rainfall patterns during the month. Modelled soil moisture was average across parts of western and north-eastern Australia, with well below average soil moisture in parts of Western Australia. Upper layer soil moisture is important at the beginning of the summer cropping season since plant germination and establishment utilise this moisture.

Relative upper layer soil moisture was generally average for this time of year across cropping regions in Queensland and above average across cropping regions in New South Wales, Victoria and South Australia. Upper layer soil moisture was well above average in parts of western and northern cropping regions in South Australia. Upper layer soil moisture was well below average to below average across most cropping regions in the Western Australia wheat belt.

Modelled upper layer soil moisture for October 2020

![Map showing modelled upper layer soil moisture for October 2020.](source)

Note: This map shows how modelled soil conditions during October 2020 compare with October conditions modelled over the reference period (1911 to 2016). Dark blue areas on the maps were much wetter in October 2020 than during the reference period. The dark red areas were much drier than during the reference period. The bulk of plant roots occur in the top 20 centimetres of the soil profile. Soil moisture in the upper layer of the soil profile is therefore useful indicator of the availability of water, particularly for germinating seed.

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)
Lower layer soil moisture for October 2020 was above average to extremely high for this time of year across much of the eastern two-thirds of Australia. Soil moisture was below average to average across parts of north-eastern Australia and extremely low to below average across large parts of Western Australia.

In cropping regions, lower layer soil moisture was average to above average for New South Wales and Victoria and generally average for Queensland. Soil moisture was above average to extremely high for most cropping regions in South Australia.

Relative lower layer soil moisture was extremely low to well below average for cropping regions across much of the Western Australia wheat belt. Production outcomes in Western Australia were relying heavily on further rainfall during spring which has not eventuated.

**Modelled lower layer soil moisture for October 2020**

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)

Note: This map shows the levels of modelled lower layer soil moisture (10 to 100 centimetres) during October 2020. This map shows how modelled soil conditions during October 2020 compare with November conditions modelled over the reference period (1911 to 2016). Dark blue areas on the maps were much wetter in October 2020 than during the reference period. The dark red areas were much drier than during the reference period. The bulk of plant roots occur in the top 20 centimetres of the soil profile. The lower layer soil moisture is a larger, deeper store that is slower to respond to rainfall and tends to reflect accumulated rainfall events over longer time periods.
1.5. Pasture growth

Modelled pasture production in October 2020 was mixed across Australia, with much of the mainland in a period of seasonally low growth as the southern wet season comes to an end and the northern wet season begins.

Above average October 2020 rainfall and ample soil moisture benefitted pasture production across much of Victoria and parts of south-eastern and western New South Wales, southern South Australia, the north of the Northern Territory and eastern Tasmania. In contrast, below average rainfall and low soil moisture limited pasture production in south-western Western Australia. Similarly, little to no rainfall during the first three weeks of October in south-eastern Queensland, limited pasture production.

Rainfall at the end of October is likely to improve pasture production across south-eastern Queensland, however livestock producers will be reliant on late spring and summer rainfall and some supplementary feeding to maintain current stock numbers. In contrast, average to extremely high pasture production across parts of New South Wales, Victoria, and South Australia is likely to support stock numbers and provide opportunities to replenish fodder supplies.

Relative pasture growth for October 2020

Notes: AussieGRASS pasture growth estimates are relative to the long-term record and shown in percentiles. Percentiles rank data on a scale of zero to 100. This analysis ranks pasture growth for the selected period against average pasture growth for the long-term record (1957 to 2016). Pasture growth is modelled at 5km2 grid cells.

Source: Queensland Department of Science, Information Technology and Innovation
1.6. Rainfall forecast for the next eight days

Troughs and low pressure systems over western, northern and eastern Australia are expected to generate thunderstorms and showers during the next eight days. Rainfall totals of between 10 and 25 millimetres are forecast for parts of eastern New South Wales, central and eastern Queensland, central Victoria, south-eastern South Australia, south-western Western Australia and the north-west of the northern Territory. Rainfall in excess of 25 millimetres is expected across western Tasmania and isolated parts of eastern New South Wales.

In cropping regions, rainfall of between 5 and 25 millimetres is expected across much of New South Wales and Victoria, and parts of western Queensland, eastern South Australia and the central-northern and south-eastern Western Australian wheat belt. Little to no rainfall is expected across remaining cropping regions during the next eight days.

Total forecast rainfall (mm) for the period 5 November to 12 November 2020

Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.
2. Water

2.1. Water markets – current week

Water storage in the Murray–Darling Basin (MDB) increased by 278 gigalitres (GL) between 28 October 2020 and 4 November 2020. The current volume of water held in storage is 15,504 GL, which represents 61% of total capacity. This is 54% or 5,443 GL more than at the same time last year.

![Water storages in the Murray-Darling Basin, 2013–2020](image)

Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke decreased from $190 per ML to $175 per ML between 29 October 2020 and 5 November 2020. Prices are lower in the Goulburn-Broken, Murrumbidgee and regions above the Barmah Choke, due to binding of the Goulburn intervally trade and Murrumbidgee export limits, and the Barmah Choke trade constraint.

<table>
<thead>
<tr>
<th>Region</th>
<th>$/ML</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW Murray Above</td>
<td>119</td>
</tr>
<tr>
<td>NSW Murrumbidgee</td>
<td>80</td>
</tr>
<tr>
<td>VIC Goulburn-Broken</td>
<td>115</td>
</tr>
<tr>
<td>VIC Murray Below</td>
<td>175</td>
</tr>
</tbody>
</table>

Surface water trade activity, Southern Murray–Darling Basin

The trades shown reflect estimated market activity and do not encompass all register trades. The price is shown for the VIC Murray below the Barmah choke. Historical prices (before 1 July 2019) are ABARES estimates after removing outliers from BOM water register data. Prices after 1 July 2019 and prior to the 30 October 2019 reflect recorded transaction prices as sourced from Ruralco. Prices after the 30 October 2019 are sourced from Waterflow. Data for volume traded is sourced from the BOM water register. Data shown is current at 5 November 2020.

### 3. Commodities

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Week ended</th>
<th>Unit</th>
<th>Latest price</th>
<th>Previous week</th>
<th>Weekly change</th>
<th>Price 12 months ago</th>
<th>Annual change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selected world indicator prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUD/USD Exchange rate</td>
<td>04-Nov</td>
<td>A$/US$</td>
<td>0.70</td>
<td>0.71</td>
<td>-1%</td>
<td>0.68</td>
<td>3%</td>
</tr>
<tr>
<td>Wheat – US no. 2 hard red winter wheat, fob Gulf</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>276</td>
<td>276</td>
<td>0%</td>
<td>218</td>
<td>26%</td>
</tr>
<tr>
<td>Corn – US no. 2 yellow corn, fob Gulf</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>190</td>
<td>195</td>
<td>-2%</td>
<td>167</td>
<td>14%</td>
</tr>
<tr>
<td>Canola – Rapeseed, Canada, fob Vancouver</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>393</td>
<td>395</td>
<td>0%</td>
<td>371</td>
<td>6%</td>
</tr>
<tr>
<td>Cotton – Cotlook 'A' Index</td>
<td>04-Nov</td>
<td>USc/lb</td>
<td>76</td>
<td>78</td>
<td>-2%</td>
<td>75</td>
<td>1%</td>
</tr>
<tr>
<td>Sugar – Intercontinental Exchange, nearby futures, no.11 contract</td>
<td>04-Oct</td>
<td>USc/lb</td>
<td>15</td>
<td>15</td>
<td>0%</td>
<td>13</td>
<td>18%</td>
</tr>
<tr>
<td>Wool – Eastern Market Indicator</td>
<td>28-Oct</td>
<td>Ac/kg clean</td>
<td>1,138</td>
<td>1,219</td>
<td>-7%</td>
<td>1,542</td>
<td>-26%</td>
</tr>
<tr>
<td>Wool – Western Market Indicator</td>
<td>28-Oct</td>
<td>Ac/kg clean</td>
<td>1,181</td>
<td>1,219</td>
<td>-3%</td>
<td>1,760</td>
<td>-33%</td>
</tr>
<tr>
<td><strong>Selected Australian grain export prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milling Wheat – APW, Port Adelaide, SA</td>
<td>04-Nov</td>
<td>A$/t</td>
<td>365</td>
<td>374</td>
<td>-2%</td>
<td>350</td>
<td>4%</td>
</tr>
<tr>
<td>Feed Wheat – ASW, Port Adelaide, SA</td>
<td>04-Nov</td>
<td>A$/t</td>
<td>348</td>
<td>359</td>
<td>-3%</td>
<td>340</td>
<td>2%</td>
</tr>
<tr>
<td>Feed Barley – Port Adelaide, SA</td>
<td>04-Nov</td>
<td>A$/t</td>
<td>302</td>
<td>300</td>
<td>1%</td>
<td>307</td>
<td>-2%</td>
</tr>
<tr>
<td>Canola – Kwinana, WA</td>
<td>04-Nov</td>
<td>A$/t</td>
<td>666</td>
<td>677</td>
<td>-2%</td>
<td>648</td>
<td>3%</td>
</tr>
<tr>
<td>Grain Sorghum – Brisbane, QLD</td>
<td>04-Nov</td>
<td>A$/t</td>
<td>368</td>
<td>362</td>
<td>2%</td>
<td>437</td>
<td>-16%</td>
</tr>
<tr>
<td><strong>Selected domestic livestock indicator prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beef – Eastern Young Cattle Indicator</td>
<td>04-Nov</td>
<td>Ac/kg cwt</td>
<td>820</td>
<td>787</td>
<td>4%</td>
<td>534</td>
<td>54%</td>
</tr>
<tr>
<td>Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic</td>
<td>14-Oct</td>
<td>Ac/kg cwt</td>
<td>626</td>
<td>616</td>
<td>2%</td>
<td>591</td>
<td>6%</td>
</tr>
<tr>
<td>Lamb – Eastern States Trade Lamb Indicator</td>
<td>14-Oct</td>
<td>Ac/kg cwt</td>
<td>773</td>
<td>822</td>
<td>-6%</td>
<td>888</td>
<td>-13%</td>
</tr>
<tr>
<td>Pig – Eastern Seaboard (60.1–75 kg), average of buyers &amp; sellers</td>
<td>14-Oct</td>
<td>Ac/kg cwt</td>
<td>338</td>
<td>328</td>
<td>3%</td>
<td>379</td>
<td>-11%</td>
</tr>
<tr>
<td>Goat – Eastern States (12.1–16 kg)</td>
<td>21-Oct</td>
<td>Ac/kg cwt</td>
<td>818</td>
<td>818</td>
<td>0%</td>
<td>876</td>
<td>-7%</td>
</tr>
<tr>
<td>Live cattle – Light steers ex Darwin to Indonesia</td>
<td>21-Oct</td>
<td>Ac/kg lwt</td>
<td>355</td>
<td>355</td>
<td>0%</td>
<td>315</td>
<td>13%</td>
</tr>
<tr>
<td>Live sheep – Live wether (Muchea WA saleyard) to Middle East</td>
<td>11-Dec</td>
<td>$/head</td>
<td>105</td>
<td>140</td>
<td>-25%</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Indicator</td>
<td>Week ended</td>
<td>Unit</td>
<td>Latest price</td>
<td>Previous week</td>
<td>Weekly change</td>
<td>Price 12 months ago</td>
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</tr>
<tr>
<td>-----------------------------------</td>
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<td>---------------</td>
</tr>
<tr>
<td>Dairy – Whole milk powder</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>2,985</td>
<td>3,037</td>
<td>-2%</td>
<td>2,768</td>
<td>8%</td>
</tr>
<tr>
<td>Dairy – Skim milk powder</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>2,722</td>
<td>2,851</td>
<td>-5%</td>
<td>1,980</td>
<td>37%</td>
</tr>
<tr>
<td>Dairy – Cheddar cheese</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>3,786</td>
<td>3,803</td>
<td>0%</td>
<td>3,503</td>
<td>8%</td>
</tr>
<tr>
<td>Dairy – Anhydrous milk fat</td>
<td>04-Nov</td>
<td>US$/t</td>
<td>4,002</td>
<td>4,110</td>
<td>-3%</td>
<td>5,294</td>
<td>-24%</td>
</tr>
</tbody>
</table>

*Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.*
3.1. Selected world indicator prices

![AUD/USD Exchange rate graph]

![Wheat – US no. 2 hard red winter wheat, fob Gulf graph]

![Corn – US no. 2 yellow corn, fob Gulf graph]

![Canola – Rapeseed, Canada, fob Vancouver graph]
3.2. Selected domestic crop indicator prices
3.3. Selected domestic livestock indicator prices

Beef – Eastern Young Cattle Indicator

Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic

Lamb – Eastern States Trade Lamb Indicator

Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers
3.4. Global Dairy Trade (GDT) weighted average prices
3.5. Selected fruit and vegetable prices

[Graphs showing selected fruit and vegetable prices]
4. Data attribution

**Climate**

Bureau of Meteorology

- 3-month global outlooks: Environment and Climate Change Canada, NOAA Climate Prediction Center, EUROBRISA CPTEC/INPE, European Centre for Medium-Range Weather Forecasts, Hydrometcenter of Russia, National Climate Center Climate System Diagnosis and Prediction Room (NCC), International Research Institute for Climate and Society

**Water**

New South Wales


Queensland


South Australia


Victoria


**Commodities**

Fruit and vegetables


Pigs


Dairy


World wheat, canola

- International Grains Council
- World coarse grains
- United States Department of Agriculture

World cotton

- Cotlook: [www.cotlook.com/](http://www.cotlook.com/)

World sugar

- New York Stock Exchange - Intercontinental Exchange

Wool


Milling wheat

- ProFarmer
- Domestic wheat, barley, sorghum

Domestic canola

- The Weekly Times: hardcopy
- Cattle, beef, mutton, lamb, goat and live export