Summary of key issues

- During the week ending 5 December 2018 rainfall was recorded across parts of central, northern, eastern and southern Australia.

- In cropping regions, rainfall totals of between 1 and 5 millimetres were recorded in Victoria, South Australia and parts of northern Queensland. Falls of between 5 and 20 millimetres were recorded in central New South Wales and central Western Australia. For remaining cropping regions, little or no rainfall was recorded.

- November 2018 maximum, minimum and mean temperatures were all above average for Australia as a whole; the national monthly mean temperature was 0.73 °C above average.

- Overall, area-average rainfall in November 2018 was above average for Australia. Rainfall for the month was above average for parts of New South Wales, western Queensland, and much of southern Western Australia, South Australia, and the Northern Territory.

- November 2018 rainfall was generally average to above average for most cropping regions. In contrast, below average rainfall was recorded in parts of northern Victoria, the west of Western Australia and central and northern cropping regions in Queensland.

- Relative lower layer soil moisture in November 2018 was very much below average to below average across parts of eastern New South Wales, Victoria, parts of southern and central Queensland, the far south-east of South Australia, Tasmania, and parts of southern and northern Western Australia.

- During the next eight days, rainfall is expected across all states and territories, with the heaviest falls forecast for eastern, south-western and northern Australia.

- In summer cropping regions, rainfall of between 5 and 15 millimetres is expected across northern New South Wales and southern Queensland, with heavier falls of between 15 and 50 millimetres expected across the remainder of Queensland during the next 8 days.

- Due to technical issues, updates to water storage levels in the Murray–Darling Basin (MDB) and allocation prices in the southern Murray-Darling Basin for the week ending 6 December 2018 were not available at the time of publishing of this week’s Australian Climate, Water and Agricultural Update

- When these technical issues have been resolved we will publish this week’s updated value, on the full interactive weekly water dashboard, please visit http://www.agriculture.gov.au/abares/publications/weekly_update/weekly-update-061218
1. Climate

1.1. Rainfall this week

During the week ending 5 December 2018 rainfall was recorded across parts of central, northern, eastern and southern Australia. Rainfall totals of between 10 and 50 millimetres were recorded across parts of eastern New South Wales, southern Victoria, parts of northern and eastern Queensland, parts of northern South Australia and parts of northern and central Western Australia. Similar totals were recorded across Tasmania and large areas of the Northern Territory.

Higher rainfall totals in excess of 50 millimetres were recorded across the central coast of New South Wales, northern Queensland, eastern Western Australia, western Tasmania and the north and south of the Northern Territory.

In cropping regions, rainfall totals were highly variable. Falls of between 1 and 5 millimetres were recorded in Victoria, South Australia and parts of northern Queensland. Falls of between 5 and 20 millimetres were recorded in central New South Wales and central Western Australia. For remaining cropping regions, little or no rainfall was recorded.

Rainfall analysis for the week ending 5 December 2018
1.2. Monthly temperatures

November 2018 maximum, minimum and mean temperatures were all above average for Australia as a whole. The national mean temperature was 0.73 °C above average. Maximum temperatures were 0.53 °C above average and minimum temperatures were 0.93 °C above average. Both maximum and minimum temperatures were particularly warm across northern Australia. For northern Australia (north of 26°S), the monthly mean minimum temperature for November was the 4th-warmest on record.

Maximum temperature deciles for November 2018

Minimum temperature deciles for November 2018

Note: Maximum and minimum temperatures for November 2018 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

Overall, rainfall in November 2018 was above average for Australia. Above to well above average rainfall was reported across parts of central and southern New South Wales, western Queensland, most of South Australia, the southern half of Western Australia (away from the west coast and southwest), the eastern half of Tasmania and most of the Northern Territory. November rainfall was below average across eastern Queensland, extending into north-eastern New South Wales, and also for smaller areas in northern and west coast Western Australia. Rainfall was close to average across the remainder of the country.

November 2018 rainfall was generally average to above average for most cropping regions. In contrast, below average rainfall was recorded in parts of northern Victoria, the west of Western Australia and central and northern cropping regions in Queensland.

Rainfall percentiles for November 2018

Source: Bureau of Meteorology
Note: Rainfall for November 2018 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 November 2018 was generally average to very much above average across most of Australia. It was below average to very much below average across parts of north-eastern New South Wales, parts of northern Victoria, parts eastern and northern Queensland, and isolated areas in Western Australia and the Northern Territory.

In cropping regions, upper layer soil moisture average to above average for most cropping regions. In contrast, it was below average in parts of northern Victoria, the west of Western Australia and eastern and northern cropping regions in Queensland.

**Modelled upper layer soil moisture for November 2018**

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

Note: This map shows the levels of modelled upper layer soil moisture (0 to 10 centimetres) during November 2018. This map shows how modelled soil conditions during November 2018 compare with November conditions modelled over the reference period (1911 to 2015). Dark blue areas on the maps were much wetter in November 2018 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 a useful indicator of the availability of water, particularly for germinating seed.
Lower layer soil moisture for November 2018 was below average across parts of eastern New South Wales, Victoria, parts of southern and central Queensland, the far south-east of South Australia, Tasmania, and parts of southern and northern Western Australia. It was average or above average across the remainder of the country.

In cropping regions, lower layer soil moisture was below average across parts of eastern New South Wales, Victoria, and western and southern cropping regions in Western Australia. It was generally average or above average across remaining cropping regions.

Modelled lower layer soil moisture for November 2018

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 November 2018. This map shows how modelled soil conditions during November 2018 compare with November conditions modelled over the reference period (1911 to 2015). Dark blue areas on the maps were much wetter in November 2018 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. Rainfall deficiencies

The rainfall deficiencies presented below are sourced from the Bureau of Meteorology’s monthly ‘Drought Statement’. As short to longer-term deficiencies become evident the Bureau of Meteorology monitors these events through their lifecycle – from emergence through to their dissipation – with the time-period of analysis each month increasing from a fixed starting point to the easing of the deficiencies.

For further information, go to http://www.bom.gov.au/climate/drought

For the year to date (1 January 2018 to 31 November 2018) rainfall deficiencies have decreased slightly in severity across most of the affected area following above-average November rainfall. Serious to severe rainfall deficiencies persist across much of New South Wales, much of eastern and northern Victoria, parts of southern and central Queensland, large areas of eastern South Australia and parts of southern Western Australia.

Serious to severe rainfall deficiencies continue to persist at longer timescales. For the 20-months starting in April 2017, serious to severe rainfall deficiencies are evident across large areas of eastern and northern New South Wales, much of eastern Victoria, large areas of eastern South Australia, south-western and central Queensland, and parts of western and southern Western Australia (Bureau of Meteorology ‘Drought Statement’, 5 December 2018).

Rainfall deficiencies for the 11-month period 1 January 2018 to 30 November 2018
Rainfall deficiencies for the 20-month period 1 April 2017 to 30 November 2018

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Issued: 04/12/2018
1.6. Rainfall forecast for the next eight days

During the next eight days, rainfall is expected across all states and territories, with the heaviest falls forecast for eastern, south-western and northern Australia.

Rainfall totals of between 10 and 50 millimetres are forecast for parts of eastern New South Wales, eastern Victoria, eastern and northern Queensland, parts of southern and north-east of Western Australia, and the far north of the Northern Territory.

In summer cropping regions, rainfall of between 5 and 15 millimetres is expected across northern New South Wales and southern Queensland, with heavier falls of between 15 and 50 millimetres expected across the remainder of Queensland during the next 8 days.

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

Total forecast rainfall (mm) for the period 6 to 13 December 2018

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Issued: 6/12/2018
2. Water

2.1. Water markets - current week

Due to technical issues updates to water storage levels in the Murray–Darling Basin (MDB) and allocation prices in the southern Murray-Darling Basin for the week ending 6 December 2018 were no available at the time of publishing of this week’s Australian Climate, Water and Agricultural Update when these technical issues have been resolved we will publish this week’s updated value, on the full interactive weekly water dashboard, which contains the latest and historical water storage, water market and water allocation information, please visit

### 3. Commodities

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Week ended</th>
<th>Unit</th>
<th>Latest price</th>
<th>Price week prior</th>
<th>Weekly change</th>
<th>Price 12 months prior</th>
<th>Year on year 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>
</tbody>
</table>
| Australian Dollar – AUD/USD Exchange Rate | 05-Dec | US$/A$ | 0.73 | 0.72 | 1% ↑ | 0.76 | -4%  
<p>| | | | | | | | |
|  |  |  |  |  |  |  |  |
| Wheat – US no. 2 hard red winter wheat, fob Gulf | 04-Dec | US$/t | 235 | 228 | 3% ↑ | 219 | 7% ↑ |
| Coarse Grains – US no. 2 yellow corn, fob Gulf | 05-Dec | US$/t | 165 | 158 | 4% ↑ | 152 | 9% ↑ |
| Canola – Rapeseed, Europe, fob Hamburg | 04-Dec | US$/t | 425 | 423 | &lt;1% ↑ | 437 | -3% ↓ |
| Cotton – Cotlook 'A' Index | 05-Dec | USc/lb | 87.2 | 86.2 | 1% ↑ | 83.3 | 5% ↑ |
| Sugar – Intercontinental Exchange, nearby futures, no.11 contract | 05-Dec | USc/lb | 12.8 | 12.4 | 3% ↑ | 14.9 | -14% ↓ |
| Wool – Eastern Market Indicator | 29-Nov | Ac/kg clean | 1,860 | 1,858 | &lt;1% ↑ | 1,676 | 11% ↑ |
| Wool – Western Market Indicator | 30-Nov | Ac/kg clean | 2,009 | 2,016 | &lt;1% ↓ | 1,725 | 16% ↓ |
| <strong>Selected domestic crop indicator prices</strong> | | | | | | | |
| Milling Wheat – ASW1, track quote, Port Adelaide, SA | 04-Dec | A$/t | 373 | 357 | 4% ↑ | 238 | 57% ↑ |
| Feed Wheat – General purpose, Sydney, NSW | 21-Nov | A$/t | 440 | 440 | 0% ● | 258 | 71% ↑ |
| Feed Barley – Sydney, NSW | 05-Dec | A$/t | 410 | 410 | 0% ● | 245 | 67% ↑ |
| Canola – Portland, Vic. | 29-Oct | A$/t | 597 | 642 | 7% ↓ | 536 | 11% ↓ |
| Grain Sorghum – Sydney, NSW | 05-Dec | A$/t | 410 | 410 | 0% ● | 304 | 35% ↑ |
| <strong>Selected domestic livestock indicator prices</strong> | | | | | | | |
| Beef – Eastern Young Cattle Indicator | 22-Nov | Ac/kg cwt | 528 | 517 | 2% ↑ | 577 | -8% ↓ |
| Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic | 30-Nov | Ac/kg cwt | 413 | 412 | &lt;1% ↑ | 476 | -13% ↓ |
| Lamb – Eastern States Trade Lamb Indicator | 29-Nov | Ac/kg cwt | 684 | 693 | -1% ↓ | 613 | 12% ↓ |
| Pig – Eastern Seaboard (60.1–75 kg), average of buyers &amp; sellers | 23-Nov | Ac/kg cwt | 302 | 296 | 2% ↑ | 277 | 9% ↑ |
| Goat – Eastern States (12.1–16 kg) | 03-Dec | Ac/kg cwt | 548 | 548 | 0% ● | 490 | 12% ↑ |
| Live cattle – Light steers ex Darwin to Indonesia | 24-Nov | Ac/kg lwt | 325 | 310 | 5% ↑ | 330 | -2% ↓ |
| Live sheep – Live wether (Muchea WA saleyard) to Middle East | 03-Dec | $/head | 108 | na | na | 121 | -11% ↓ |</p>
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Week ended</th>
<th>Unit</th>
<th>Latest price</th>
<th>Price week prior</th>
<th>Weekly change</th>
<th>Price 12 months prior</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Global Dairy Trade (GDT) weighted average prices a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dairy – Whole milk powder</td>
<td>04-Dec</td>
<td>US$/t</td>
<td>2,667</td>
<td>2,599</td>
<td>3%</td>
<td>2,830</td>
<td>-6%</td>
</tr>
<tr>
<td>Dairy – Skim milk powder</td>
<td>04-Dec</td>
<td>US$/t</td>
<td>1,970</td>
<td>1,965</td>
<td>&lt;1%</td>
<td>1,774</td>
<td>11%</td>
</tr>
<tr>
<td>Dairy – Cheddar cheese</td>
<td>04-Dec</td>
<td>US$/t</td>
<td>3,184</td>
<td>3,252</td>
<td>-2%</td>
<td>3,696</td>
<td>-14%</td>
</tr>
<tr>
<td>Dairy – Anhydrous milk fat</td>
<td>04-Dec</td>
<td>US$/t</td>
<td>4,755</td>
<td>4,577</td>
<td>4%</td>
<td>6,836</td>
<td>-30%</td>
</tr>
</tbody>
</table>

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

**World wheat indicator price**
US No. 2, hard red winter wheat, fob Gulf
Week ended 4 December 2018

**World coarse grains indicator price**
US corn No. 2, fob Gulf
Week ended 5 December 2018

**World canola indicator price**
Europe fob Hamburg
Week ended 4 December 2018

**World cotton indicator price**
Cotlook 'A' index
Week ended 5 December 2018
3.2. Global Dairy Trade (GDT) weighted average prices

![Chart 1: Whole milk powder price](image1)

4 December 2018

- US$/t
- Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- 2016, 2017, 2018

![Chart 2: Skim milk powder price](image2)

4 December 2018

- US$/t
- Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- 2016, 2017, 2018

![Chart 3: Cheddar cheese price](image3)

4 December 2018

- US$/t
- Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- 2016, 2017, 2018

![Chart 4: Anhydrous milk fat price](image4)

4 December 2018

- US$/t
- Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
- 2016, 2017, 2018
3.3. Selected domestic crop indicator prices

Grain sorghum indicator price
Sydney, NSW
Week ended 5 December 2018

Feed barley indicator price
Sydney, NSW
Week ended 5 December 2018

Feed wheat indicator price
General Purpose, Sydney, NSW
Week ended 21 November 2018

Milling wheat indicator price
ASW1, track quote, Port Adelaide, SA
Week ended 4 December 2018
3.4. **Selected domestic livestock indicator prices**

- **Eastern Young Cattle Indicator**
  - Week ended 22 November 2018

- **Eastern States Trade Lamb Indicator**
  - Week ended 29 November 2018

- **Mutton indicator price in Victoria**
  - (18–24 kg fat score 2–3)
  - Week ended 30 November 2018

- **Pig indicator price Eastern Seaboard**
  - (60.1–75 kg)
  - Week ended 23 November 2018
3.5. Selected fruit and vegetable prices – week ended 6 December 2018

- Weekly wholesale prices for blueberry, pineapple (smoothleaf), watermelon (seedless) & banana (cavendish)
- Weekly wholesale prices for kiwifruit (hayward), strawberry, apple (royal gala) & avocado (hass)
- Weekly wholesale prices for onion (brown), cauliflower, potato (white, brushed) & tomato (field gourmet)
- Weekly wholesale prices for broccoli, lettuce (iceberg), pumpkin (grey bulk) & bean (round stringless)
4. Data attribution

Climate
Bureau of Meteorology

Water
New South Wales
Queensland
- Sunwater: www.sunwater.com.au
- Seqwater: http://seqwater.com.au
South Australia
- South Australian Department of Environment, Water and Natural Resources: www.environment.sa.gov.au
Victoria
- Goulburn–Murray Water: www.g-mwater.com.au

Commodities
Fruit and vegetables
- Datafresh: www.freshstate.com.au
Pigs
- Australian Pork Limited: www.australianpork.com.au
Canola
- Weekly Times: hardcopy
Dairy
World wheat, canola
- International Grains Council
World coarse grains
- United States Department of Agriculture
World cotton
- Cotlook: www.cotlook.com/
World sugar
- New York Stock Exchange - Intercontinental Exchange
Wool
Milling wheat
- ProFarmer
Domestic wheat, barley, sorghum
- The Land: hardcopy or online at www.theland.farmonline.com.au/markets
Domestic canola
- The Weekly Times: hardcopy
Cattle, beef, mutton, lamb, goat and live export