Summary of key issues

- During the week ending 8 February 2017, rainfall was recorded in all states and territories, although large areas of southern Queensland, north-west New South Wales, northern South Australia and inland Western Australia recorded little or no rainfall for the week.

- Maximum and minimum temperatures were between 2°C and 8°C above average across much of New South Wales, southern Queensland and north-east South Australia for the week ending 7 February 2017.

- Upper layer soil moisture for January 2017 was generally well above average across the western two thirds of Australia, while it was generally average across eastern Australia.

- The forecast for the next eight days indicates that rainfall is expected across northern Australia, Western Australia and Tasmania, with totals forecast to exceed 100 millimetres in tropical northern Australia.

- According to the Bureau of Meteorology, there is a low to moderate chance that two cyclones could form in Queensland waters later this week. The two lows are developing along an active monsoon trough spanning northern Australia.

- Water storage levels in the Murray–Darling Basin (MDB) decreased by 230 gigalitres (GL) during the week ending 9 February 2017 to 17,272 GL, and are at 76 per cent of total capacity.

- The feed wheat indicator price (General purpose, Sydney) fell 2 per cent to $199 a tonne, the grain sorghum indicator price (Sydney) fell 6 per cent to $234 a tonne, and the domestic canola indicator price (Portland) fell 2 per cent to $524 a tonne amid a bumper harvest of winter crops.

- The feed barley indicator price (Sydney) rose 2 per cent to $178 a tonne following Saudi Arabia’s purchase of 1.5 million tonnes of feed barley from various origins including Australia.

- The anhydrous milk fat (AMF) indicator price rose by 4 per cent to US$5,765 a tonne at the global dairy trade (GDT) auction on 7 February 2017, reaching its highest price level on the GDT since April 2011.

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1. Climate

1.1. Rainfall this week

For the week ending 8 February 2017, rainfall was recorded in all states and territories, although large areas of southern Queensland, north-west New South Wales, northern South Australia and inland Western Australia recorded little or no rainfall for the week.

The monsoon trough has again become well established over northern Australia bringing rainfall totals up to 400 millimetres across tropical northern Australia and coastal northern Queensland (see map below). Rainfall totals above 15 millimetres were recorded in eastern New South Wales, most of Victoria, southern South Australia, scattered areas of southern Western Australia, western Tasmania and central Northern Territory. The highest recorded weekly total was 562 millimetres near Daintree in northern Queensland.

The rainfall analyses and associated maps utilise data contained in the Bureau of Meteorology climate database, the Australian Data Archive for Meteorology (ADAM). The analyses are initially produced automatically from real-time data with limited quality control. They are intended to provide a general overview of rainfall across Australia as quickly as possible after the observations are received.

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

Rainfall for the week ending 8 February 2017
1.2. Temperature anomalies this week

For the week ending 7 February 2017, maximum and minimum temperatures were between 2°C and 8°C above average across much of New South Wales, southern Queensland and north-east South Australia. Maximum temperatures were up to 10°C above average in parts of northern New South Wales and the Queensland border region. Maximum and minimum temperatures were average or slightly below average across the rest of the country (see maps below).

Maximum temperature anomalies for the week ending 7 February 2017

Minimum temperature anomalies for the week ending 7 February 2017

Note: Spatial temperature analyses are based on historical weekly temperature data provided by the Bureau of Meteorology. These temperature anomaly maps show the departure of the maximum and minimum temperatures from their long-term averages. Temperature anomalies are calculated using high-resolution gridded datasets from 1911 onwards. For further information go to http://www.bom.gov.au/jsp/awap/temp/index.jsp.
1.3. Recent soil moisture percentiles

The maps below show the levels of modelled upper layer (0 to 10 centimetres) soil moisture and lower layer (10 centimetres to 1 metre) soil moisture during January 2017. These maps show how modelled soil conditions during January 2017 compare with January conditions modelled over the 105 year reference period (1911 to 2015). Dark blue areas on the maps are those areas that were much wetter than the same time of year during the reference period, and dark red areas were much drier than during the reference period. These data are from the Australian Water Resources Assessment Landscape model (AWRA-L version 5.0), which was developed through the Water Information Research and Development Alliance (WIRADA) initiative. WIRADA is a collaborative project between the BoM and the CSIRO.

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 (10 centimetres) is therefore the most appropriate indicator of the availability of water, particularly for germinating plants. 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.

Relative upper layer soil moisture for January 2017 was generally well above average across the western two thirds of Australia, while it was generally average across eastern Australia. There were areas of below average upper layer soil moisture in parts of eastern New South Wales, eastern Victoria, south-east Queensland and western South Australia and far south-west Western Australia. This pattern of relative upper layer soil moisture reflected rainfall received during January 2017.

Modelled upper layer soil moisture for January 2017

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)
Relative lower layer soil moisture for January 2017 was extremely high across northern Australia and through central Australia. Lower layer soil moisture for January 2017 was well below average across south-eastern Queensland, coastal New South Wales, western South Australia and isolated areas of central Western Australia. The remainder of the country was generally average. This pattern of relative lower layer soil moisture reflects the high rainfall totals received over the 2016 spring and the 2016-17 summer-to-date.

Modelled lower layer soil moisture for January 2017

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)
1.4. **Australian plague locust**

The Australian Plague Locust Commission (APLC) produces a monthly Locust Bulletin during the periods of locust activity (spring, summer and autumn). The bulletin gives regional summaries of the locust situation and weather events of potential significance for locust development. It also provides a forecast of likely developments for the next two months for the Australian plague locust (*Chortoicetes terminifera*), spur-throated locust (*Austracris guttulosa*) and the migratory locust (*Locusta migratoria*).

According to the APLC, Australian plague locust populations remained at medium densities in many regions during January. However, reports at the end of the month indicated a large increase in adult numbers in parts of the Far North and Northwest regions of South Australia. Heavy rainfall in northern South Australia and Southwest Queensland in late January has produced favourable habitat for further locust breeding and nymph survival. An autumn generation of nymphs could develop in February and March.

The outlook is for increasing adult numbers, further swarm activity and nymph generation in northern South Australia and Southwest Queensland during February, due to the heavy rainfall at the end of January. There is a moderate risk of some movements to other regions of South Australia or into New South Wales during February and the likelihood of southward migrations will increase during autumn.

Populations are likely to remain at low–medium densities in most other regions during February, although increased adult numbers are possible in Far West New South Wales. Medium density populations could establish in southern South Australia and New South Wales, and possibly northern Victoria during autumn, depending on migrations, but there is a low probability of widespread swarm infestations affecting agricultural regions in several states.

1.5. **Rainfall forecast**

The forecast for the next eight days indicates that rainfall is expected across northern Australia, Western Australia and Tasmania. Across large areas of central and south-east Australia there is little to no rainfall forecast for the next eight days. The highest weekly rainfall totals are forecast for tropical northern Australia, with totals forecast to exceed 100 millimetres in these areas (see map below).

According to the Bureau of Meteorology, there is a low to moderate chance that two cyclones could form in Queensland waters later this week. The two lows are developing along an active monsoon trough spanning northern Australia, which has already brought very heavy rainfall to a number of communities.

This rainfall forecast is produced from computer models. As it contains no input from weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

**Total forecast rainfall (mm) for the period 9 February to 16 February 2017**
2. Water

2.1. Water availability

Water storage levels in the Murray–Darling Basin (MDB) decreased by 230 gigalitres (GL) during the week ending 9 February 2017 to 17,272 GL, and are at 76 per cent of total capacity. This water storage level is 40 percentage points or 9,105 GL more than at the same time last year.

Information on irrigation water available in the Murray–Darling Basin from 1 January 2001 to 9 February 2017 is shown above. The top horizontal (short dash) line indicates the storage level during a similar time last year. The bottom horizontal (long dash) line indicates the amount of ‘dead’ or unusable storage.
2.2. Water allocations

The current water allocations for the 2016–17 water trading season for licence holders in the New South Wales, Victorian and South Australian water systems are summarised in the following table.

- In New South Wales, general security allocations have increased in the Lower Namoi and Gwydir systems.

<table>
<thead>
<tr>
<th>New South Wales</th>
<th>9 February 2017 (%)</th>
<th>19 January 2017 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General security</td>
<td>High security</td>
</tr>
<tr>
<td>NSW Murray Valley *</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Murrumbidgee Valley *</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Lower Darling *</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Macquarie and Cudgegong Valley *</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Hunter Valley</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Lachlan Valley *</td>
<td>124</td>
<td>100</td>
</tr>
<tr>
<td>NSW Lower Namoi *</td>
<td>124.67</td>
<td>100</td>
</tr>
<tr>
<td>NSW Upper Namoi *</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>NSW Gwydir Valley *</td>
<td>72.87</td>
<td>100</td>
</tr>
<tr>
<td>NSW Border Rivers *</td>
<td>100 / 79.5^b</td>
<td>100</td>
</tr>
<tr>
<td>NSW Peel Valley</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Victoria</th>
<th>Low reliability *</th>
<th>High reliability *</th>
<th>Low reliability *</th>
<th>High reliability *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoria Murray Valley</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Victoria Goulburn</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Victoria Campaspe</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Victoria Loddon</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Victoria Bullarook</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Victoria Broken</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>South Australia</th>
<th>High security</th>
<th>High security</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Australia Murray Valley</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

*Carryover water may also be available
a General security A class. b General security B class
3. Commodities

3.1. Market focus

Domestic grain prices
Domestic wheat, sorghum and canola indicator prices declined this week amid a bumper harvest of winter crops. The feed wheat indicator price (General purpose, Sydney) fell 2 per cent to $199 a tonne, the grain sorghum indicator price (Sydney) fell 6 per cent to $234 a tonne, and the domestic canola indicator price (Portland) fell 2 per cent to $524 a tonne. The feed barley indicator price (Sydney) rose 2 per cent to $178 a tonne following Saudi Arabia’s purchase of 1.5 million tonnes of feed barley from various origins including Australia. Harvesting of winter crops is continuing in Victoria. Updated estimates and forecasts of crop production will be released in the ABARES February Crop Report on Tuesday 14 February 2017.

Anhydrous milk fat
The anhydrous milk fat (AMF) indicator price rose by 4 per cent to US$5,765 a tonne at the global dairy trade (GDT) auction on 7 February 2017. This is the highest price level for AMF on the GDT since April 2011. The price has been rising consistently since mid-2016 as a result of slowing global milk production, particularly in New Zealand and the European Union, and growing demand for milk fats in countries such as the United States and China.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Week ended</th>
<th>Unit</th>
<th>Latest price</th>
<th>Price week prior</th>
<th>Weekly change</th>
<th>Price 12 months prior</th>
<th>Year on year change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selected World Indicator Prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Dollar - AUD/USD Exchange Rate</td>
<td>08-Feb</td>
<td>US$/A$</td>
<td>0.77</td>
<td>0.76</td>
<td>1%</td>
<td>0.71</td>
<td>8%</td>
</tr>
<tr>
<td>Wheat - US no. 2 hard red winter wheat, fob Gulf</td>
<td>07-Feb</td>
<td>US$/t</td>
<td>206</td>
<td>205</td>
<td>&lt;1%</td>
<td>207</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Coarse Grains - US no. 2 yellow corn, fob Gulf</td>
<td>08-Feb</td>
<td>US$/t</td>
<td>162</td>
<td>161</td>
<td>&lt;1%</td>
<td>161</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Canola - Rapeseed, Europe, fob Hamburg</td>
<td>07-Feb</td>
<td>US$/t</td>
<td>453</td>
<td>457</td>
<td>&lt;1%</td>
<td>406</td>
<td>12%</td>
</tr>
<tr>
<td>Cotton - Cotlook 'A' Index</td>
<td>08-Feb</td>
<td>USc/lb</td>
<td>85.7</td>
<td>83.6</td>
<td>3%</td>
<td>67.7</td>
<td>27%</td>
</tr>
<tr>
<td>Sugar - Intercontinental Exchange, nearby futures, no.11 contract</td>
<td>08-Feb</td>
<td>USc/lb</td>
<td>20.9</td>
<td>20.5</td>
<td>2%</td>
<td>13.3</td>
<td>57%</td>
</tr>
<tr>
<td>Wool - Eastern Market Indicator</td>
<td>02-Feb</td>
<td>Ac/kg clean</td>
<td>1,422</td>
<td>1,412</td>
<td>&lt;1%</td>
<td>1,265</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Global Dairy Trade (GDT) weighted average prices</strong> 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>07-Feb</td>
<td>US$/t</td>
<td>3,314</td>
<td>3,283</td>
<td>&lt;1%</td>
<td>1,952</td>
<td>70%</td>
</tr>
<tr>
<td>Dairy - Skim milk powder</td>
<td>07-Feb</td>
<td>US$/t</td>
<td>2,608</td>
<td>2,612</td>
<td>&lt;1%</td>
<td>1,792</td>
<td>46%</td>
</tr>
<tr>
<td>Dairy - Cheddar cheese</td>
<td>07-Feb</td>
<td>US$/t</td>
<td>3,798</td>
<td>3,940</td>
<td>-4%</td>
<td>2,807</td>
<td>35%</td>
</tr>
<tr>
<td>Dairy - Anhydrous milk fat</td>
<td>07-Feb</td>
<td>US$/t</td>
<td>5,765</td>
<td>5,528</td>
<td>4%</td>
<td>3,486</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Selected domestic crop indicator prices</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grain Sorghum - Sydney, NSW</td>
<td>08-Feb</td>
<td>A$/t</td>
<td>234</td>
<td>248</td>
<td>-6%</td>
<td>254</td>
<td>-8%</td>
</tr>
<tr>
<td>Feed Wheat - General purpose, Sydney, NSW</td>
<td>08-Feb</td>
<td>A$/t</td>
<td>199</td>
<td>204</td>
<td>-2%</td>
<td>275</td>
<td>-28%</td>
</tr>
<tr>
<td>Feed Barley - Sydney, NSW</td>
<td>08-Feb</td>
<td>A$/t</td>
<td>178</td>
<td>175</td>
<td>2%</td>
<td>241</td>
<td>-26%</td>
</tr>
<tr>
<td>Canola - Portland, Vic</td>
<td>06-Feb</td>
<td>A$/t</td>
<td>524</td>
<td>532</td>
<td>-2%</td>
<td>544</td>
<td>-4%</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 - Young cattle (300-400 kg live weight C3), Qld</td>
<td>04-Feb</td>
<td>Ac/kg cwt</td>
<td>625</td>
<td>575</td>
<td>9%</td>
<td>602</td>
<td>4%</td>
</tr>
<tr>
<td>Mutton - Mutton indicator (18-24 kg fat score 2-3), Vic</td>
<td>03-Feb</td>
<td>Ac/kg cwt</td>
<td>450</td>
<td>403</td>
<td>12%</td>
<td>286</td>
<td>57%</td>
</tr>
<tr>
<td>Lamb - Lamb indicator (18-22 kg fat score 2-4), Vic</td>
<td>03-Feb</td>
<td>Ac/kg cwt</td>
<td>660</td>
<td>600</td>
<td>10%</td>
<td>536</td>
<td>23%</td>
</tr>
<tr>
<td>Pig - Pig indicator (Buyers 60.1-75 kg), NSW</td>
<td>28-Jan</td>
<td>Ac/kg cwt</td>
<td>359</td>
<td>363</td>
<td>-1%</td>
<td>387</td>
<td>-7%</td>
</tr>
</tbody>
</table>

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

- **World wheat indicator price**
  - US No. 2, hard red winter wheat, fob Gulf
  - Week ended 7 February 2017

- **World coarse grains indicator price**
  - US corn No. 2, fob Gulf
  - Week ended 8 February 2017

- **World canola indicator price**
  - Europe fob Hamburg
  - Week ended 7 February 2017

- **World cotton indicator price**
  - Cotlook ‘A’ index
  - Week ended 8 February 2017
3.3. Global Dairy Trade (GDT) weighted average prices

Whole milk powder price
7 February 2017

Skim milk powder price
7 February 2017

Cheddar cheese price
7 February 2017

Anhydrous milk fat price
7 February 2017
3.4. Selected domestic crop indicator prices

Grain sorghum indicator price
Sydney, NSW
Week ended 8 February 2017

Feed wheat indicator price
General Purpose, Sydney, NSW
Week ended 8 February 2017

Feed barley indicator price
Sydney, NSW
Week ended 8 February 2017

Canola indicator price
Portland, Victoria
Week ended 6 February 2017
3.5. Selected domestic livestock indicator prices

Young cattle indicator price in Qld
(330–400 kg live weight C3)
Week ended 4 February 2017

Lamb indicator price in Victoria
(18–22 kg fat score 2–4)
Week ended 3 February 2017

Mutton indicator price in Victoria
(18–24 kg fat score 2–3)
Week ended 3 February 2017

Pig indicator price in NSW
Buyers 60.1–75 kg,
Week ended 28 January 2017
3.6. Movements in selected fruit and vegetable prices – week ended 4 February 2017

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
- Soil moisture: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)

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: http://www.environment.sa.gov.au

Victoria
- Goulburn–Murray Water: www.g-mwater.com.au

Commodities
Fruit and vegetables
- Datafresh: http://www.freshstate.com.au

Mutton, lambs, wheat, barley and grain sorghum
- The Land: hardcopy or online at http://theland.farmonline.com.au/markets

Cattle, mutton and lambs

Pigs
- Australian Pork Limited: www.australianpork.com.au

Canola
- Weekly Times: hardcopy

Dairy