Summary of key issues

- During the week ending 1 March 2017, rainfall was mostly recorded across north-west Western Australia, the top half of the Northern Territory, northern and eastern Queensland and eastern New South Wales. Little or no rainfall was recorded in large areas of central and southern Australia.

- For the week ending 28 February 2017, maximum temperatures were generally around average for most of Australia with slightly above average temperatures in parts of eastern and northern Australia. Minimum temperatures were between 2°C and 4°C below average across much of central and southern Australia.

- During January 2017 well above average rainfall was recorded over most of Western Australia, southern areas of South Australia and the northern part of the Northern Territory. In contrast much of New South Wales, southern Queensland, north-east South Australia and eastern Tasmania recorded well below average rainfall.

- Relative upper layer soil moisture for February 2017 was generally well above average across Western Australia, and average to above average across the Northern Territory and South Australia.

- The forecast for the next eight days indicates that rainfall in excess of 15 millimetres is expected across most of northern Western Australia, much of the Northern Territory, northern and eastern Queensland and coastal New South Wales.

- While neutral El Niño-Southern Oscillation (ENSO) conditions persist across the tropical Pacific Ocean, the likelihood of El Niño forming in 2017 has risen.

- Water storage levels in the Murray–Darling Basin (MDB) decreased by 332 gigalitres (GL) during the week ending 2 March 2017 to 72 per cent of total capacity.


- Cattle prices are up 4 per cent year on year despite hot and dry conditions putting downward pressure on restocker demand for young cattle.
Outlook 2017 - *Innovation in agriculture - capturing the opportunities*
Registrations are now open for Australia’s premier information and networking forum for agriculture sector stakeholders.
1. Climate

1.1. Rainfall this week

For the week ending 1 March 2017, rainfall was mostly recorded across north-west Western Australia, the top half of the Northern Territory, northern and eastern Queensland and eastern New South Wales. Little or no rainfall was recorded in large areas of central and southern Australia. The highest recorded weekly total was 237 millimetres at Innisfail near Cairns 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.

1.2. Temperature anomalies this week

For the week ending 28 February 2017, maximum temperatures were generally around average for most of Australia with slightly above average temperatures in parts of eastern and northern Australia (see map below).

For the week ending 28 February 2017, minimum temperatures were between 2°C and 4°C below average across much of central and southern Australia. Minimum temperatures were generally average in most other parts of Australia (see map below).

**Maximum temperature anomalies for the week ending 28 February 2017**

![Map showing maximum temperature anomalies for the week ending 28 February 2017](https://www.bom.gov.au/jsp/awap/temp/index.jsp)

**Minimum temperature anomalies for the week ending 28 March 2017**

![Map showing minimum temperature anomalies for the week ending 28 March 2017](https://www.bom.gov.au/jsp/awap/temp/index.jsp)

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](http://www.bom.gov.au/jsp/awap/temp/index.jsp).
1.3. Monthly rainfall

During January 2017 well above average rainfall was recorded over most of Western Australia, southern areas of South Australia and the northern part of the Northern Territory. For much of New South Wales, southern Queensland, north-east South Australia and eastern Tasmania recorded rainfall was well below average. Rainfall was average throughout south-east New South Wales, most of Victoria, and southern Northern Territory.

Rainfall in cropping regions for February 2017 was extremely high in Western Australia, and average or above average in South Australia and Victoria. Rainfall in Queensland and New South Wales was variable ranging from severely deficient to average.

Rainfall percentiles for February 2017

Note: Spatial rainfall percentile analyses are based on historical monthly rainfall data provided by the Bureau of Meteorology. These rainfall percentile maps show how rainfall recorded during that given time period compared with the rainfall recorded for that same period during the entire historical record (1900 to present). Rainfall percentiles are a way of providing an indication of the spread of data in a data set. To calculate percentiles, the entire rainfall record at a certain point is divided into one hundred equal parts. The 5th percentile for February 2017 means that only five per cent of all Februarys in the historical record have recorded a rainfall total that is at or below the rainfall recorded during February 2017. Dark blue areas on the maps are those areas that were wetter than the same time of year during the entire historical record, and dark red areas are drier. For further information, go to http://www.bom.gov.au/jsp/awap/
Rainfall in summer 2016–2017 (1 December 2016 to 30 February 2017) was above average to extremely high for much of western and central Australia. In contrast, large areas of eastern Queensland, New South Wales and Victoria recorded well below average to extremely low rainfall. Across the western parts of these states rainfall was generally average.

Rainfall in cropping regions for summer 2016–2017 was extremely high across Western Australia and South Australia, average in Victoria and southern New South Wales, and severely deficient to well below average in northern New South Wales and Queensland.

Rainfall percentiles for summer 2016–2017 (1 December 2016 to 28 February 2017)

Source: Bureau of Meteorology

Note: Spatial rainfall percentile analyses are based on historical monthly rainfall data provided by the Bureau of Meteorology. These rainfall percentile maps show how rainfall recorded during that given time period compared with the rainfall recorded for that same period during the entire historical record (1900 to present). Rainfall percentiles are a way of providing an indication of the spread of data in a data set. To calculate percentiles, the entire rainfall record at a certain point is divided into one hundred equal parts. The 5th percentile for summer 2016–2017 means that only five per cent of all summers in the historical record have recorded a rainfall total that is at or below the rainfall recorded during summer 2016–2017. Dark blue areas on the maps are those areas that were wetter than the same time of year during the entire historical record, and dark red areas are drier. For further information, go to http://www.bom.gov.au/jsp/awap/
1.4. 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 February 2017. These maps show how modelled soil conditions during February 2017 compare with February 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 February 2017 was generally well above average across Western Australia, and average to above average across the Northern Territory and South Australia. Through much of eastern Australia the relative upper layer soil moisture was generally well below average with extremely low areas in southern Queensland and New South Wales. This pattern of relative upper layer soil moisture reflected rainfall received during February 2017.

Modelled upper layer soil moisture for February 2017

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)
Relative lower layer soil moisture for February 2017 was well above average to extremely high across the western two thirds of Australia, Victoria and Tasmania. Lower layer soil moisture for February 2017 was well below average to extremely low across south-eastern Queensland, and scattered areas of eastern New South Wales. The remainder of the country was generally average. This pattern of relative lower layer soil moisture reflects the rainfall totals received over summer 2016-17.

Modelled lower layer soil moisture for February 2017

Source: Bureau of Meteorology (Australian Water Resources Assessment Landscape model)
1.5. Rainfall forecast for the next 8 days

The forecast for the next eight days indicates that rainfall in excess of 15 millimetres is expected in north-east Western Australia, much of the Northern Territory, northern and eastern Queensland and coastal New South Wales. There is likely to be little to no rainfall in large areas of western, central and southern Australia during this period (see map below).

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 2 to 9 March 2017

1.6. El Niño–Southern Oscillation Update

While neutral El Niño-Southern Oscillation (ENSO) conditions persist across the tropical Pacific Ocean, recent changes in both the tropical Pacific Ocean and atmosphere, and climate model outlooks surveyed by the Bureau of Meteorology (BoM), suggest the likelihood of El Niño forming in 2017 has risen. As a result, the BoM has upgraded its ENSO Outlook status to El Niño WATCH, meaning the likelihood of El Niño forming in 2017 is approximately 50 per cent.

Seven of eight international models surveyed by the BoM indicate steady warming in the central tropical Pacific Ocean over the next six months. Six models suggest El Niño thresholds may be reached by July 2017. However, some caution must be taken with climate model forecasts that span the autumn months, as they have lower model accuracy when compared with other times of the year.

El Niño is often but not always associated with below average winter–spring rainfall over eastern Australia and warmer than average winter–spring maximum temperatures over the southern half of Australia.
2. Water

2.1. Water availability

Water storage levels in the Murray–Darling Basin (MDB) decreased by 332 gigalitres (GL) during the week ending 2 March 2017 to 16,204 GL, and are at 72 per cent of total capacity. This water storage level is 38 percentage points or 8,564 GL more than at the same time last year.

Information on irrigation water available in the Murray–Darling Basin from 1 January 2001 to 2 March 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 storages

Changes in regional water storage for February 2017 and the previous 12 months are summarised in the table and graph below (current at 2 March 2017).

<table>
<thead>
<tr>
<th>Region</th>
<th>Total capacity (GL)</th>
<th>Current volume (GL)</th>
<th>Current volume (%)</th>
<th>Monthly change (GL)</th>
<th>Monthly change (%)</th>
<th>Annual change (GL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murray-Darling Basin (MDB)</td>
<td>22,598</td>
<td>16,204</td>
<td>72</td>
<td>-1,297</td>
<td>-6</td>
<td>8,564</td>
</tr>
<tr>
<td>Murray-Darling Basin Authority (MDBA)</td>
<td>9,352</td>
<td>6,477</td>
<td>67</td>
<td>-585</td>
<td>-6</td>
<td>3,643</td>
</tr>
<tr>
<td>Queensland MDB</td>
<td>186</td>
<td>80</td>
<td>43</td>
<td>-20</td>
<td>-11</td>
<td>-49</td>
</tr>
<tr>
<td>Central Queensland</td>
<td>3,150</td>
<td>2,762</td>
<td>88</td>
<td>4</td>
<td>0</td>
<td>264</td>
</tr>
<tr>
<td>South-east Queensland</td>
<td>3,507</td>
<td>1,955</td>
<td>56</td>
<td>-152</td>
<td>-4</td>
<td>-483</td>
</tr>
<tr>
<td>New South Wales MDB</td>
<td>13,924</td>
<td>9,653</td>
<td>69</td>
<td>-1,083</td>
<td>-8</td>
<td>5,736</td>
</tr>
<tr>
<td>Coastal New South Wales</td>
<td>1,074</td>
<td>936</td>
<td>87</td>
<td>-21</td>
<td>-2</td>
<td>-3</td>
</tr>
<tr>
<td>Victoria MDB</td>
<td>8,488</td>
<td>6,471</td>
<td>76</td>
<td>-195</td>
<td>-2</td>
<td>2,877</td>
</tr>
</tbody>
</table>

Water storages in the Murray–Darling Basin by state (NSW, Victoria and Queensland)
3. Commodities

3.1. Market focus

Cattle
The Eastern Young Cattle Indicator, averaged 1 per cent lower at 628c/kg for the week ending 24 February. Relatively hot and dry conditions across major cattle producing regions in northern Australia continue to place downward pressure on restocker demand for young cattle. Despite this, the indicator price remains 4 per cent higher year on year.

Live cattle
The Live Cattle Indicator averaged 375c/kg for the week ending 18 February, unchanged from the previous week. On 25 February the Indonesian Government advised the Australian Government of revised regulations for the import of live cattle into Indonesia. The revisions include an increase in weight limits, while import permits and Recommendation letters will now be valid for 12 months.


Cotton
The world cotton indicator price (the Cotlook ‘A’ index) averaged US84.8 cents a pound in the week ending 1 March 2017. This represents a 31 per cent increase on the same week in 2016 and reflects tighter world cotton supply in the first 7 months of 2016–17 (August to July) than in the same period in 2015–16.

Data from China Customs shows the country imported around 484,300 tonnes of raw cotton in the first 6 months of 2016–17 (August to July) season, 20 per cent higher than the volume imported in the same period in 2015–16. China imported 1.0 million tonnes of raw cotton in 2015–16, the second largest volume in the world, behind Bangladesh with 1.4 million tonnes.
### Selected World Indicator Prices

<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>Australian Dollar - AUD/USD Exchange Rate</strong></td>
<td>01-Mar</td>
<td>US$/A$</td>
<td>0.77</td>
<td>0.77</td>
<td>0%</td>
<td>0.72</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Wheat - US no. 2 hard red winter wheat, fob Gulf</strong></td>
<td>28-Feb</td>
<td>US$/t</td>
<td>212</td>
<td>213</td>
<td>&lt;1%</td>
<td>200</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Coarse Grains - US no. 2 yellow corn, fob Gulf</strong></td>
<td>01-Mar</td>
<td>US$/t</td>
<td>162</td>
<td>164</td>
<td>-1%</td>
<td>156</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Canola - Rapeseed, Europe, fob Hamburg</strong></td>
<td>14-Feb</td>
<td>US$/t</td>
<td>451</td>
<td>453</td>
<td>&lt;1%</td>
<td>400</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Cotton - Cotlook 'A' Index</strong></td>
<td>01-Mar</td>
<td>USc/lb</td>
<td>84.8</td>
<td>84.7</td>
<td>&lt;1%</td>
<td>65.0</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Sugar - Intercontinental Exchange, nearby futures, no.11 contract</strong></td>
<td>01-Mar</td>
<td>USc/lb</td>
<td>19.6</td>
<td>20.5</td>
<td>-4%</td>
<td>14.4</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Wool - Eastern Market Indicator</strong></td>
<td>23-Feb</td>
<td>Ac/kg clean</td>
<td>1,449</td>
<td>1,440</td>
<td>0%</td>
<td>1,268</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Wool - Western Market Indicator</strong></td>
<td>24-Feb</td>
<td>Ac/kg clean</td>
<td>1,482</td>
<td>1,468</td>
<td>&lt;1%</td>
<td>1,355</td>
<td>9%</td>
</tr>
</tbody>
</table>

### Selected domestic crop indicator prices

<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>Milling wheat - ASW1, track quote, Port Adelaide, SA</strong></td>
<td>22-Feb</td>
<td>A$/t</td>
<td>181</td>
<td>183</td>
<td>2%</td>
<td>246</td>
<td>-26%</td>
</tr>
<tr>
<td><strong>Feed Wheat - General purpose, Sydney, NSW</strong></td>
<td>01-Mar</td>
<td>A$/t</td>
<td>206</td>
<td>207</td>
<td>&lt;1%</td>
<td>268</td>
<td>-23%</td>
</tr>
<tr>
<td><strong>Feed Barley - Sydney, NSW</strong></td>
<td>01-Mar</td>
<td>A$/t</td>
<td>185</td>
<td>185</td>
<td>0%</td>
<td>231</td>
<td>-20%</td>
</tr>
<tr>
<td><strong>Canola - Portland, Vic.</strong></td>
<td>27-Feb</td>
<td>A$/t</td>
<td>524</td>
<td>524</td>
<td>0%</td>
<td>508</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Grain Sorghum - Sydney, NSW</strong></td>
<td>01-Mar</td>
<td>A$/t</td>
<td>239</td>
<td>239</td>
<td>0%</td>
<td>Na</td>
<td>Na</td>
</tr>
</tbody>
</table>

### Selected domestic livestock indicator prices

<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>Beef - Eastern Young Cattle Indicator</strong></td>
<td>24-Feb</td>
<td>Ac/kg cwt</td>
<td>628</td>
<td>637</td>
<td>-1%</td>
<td>603</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Mutton - Mutton indicator (18-24 kg fat score 2-3), Vic</strong></td>
<td>24-Feb</td>
<td>Ac/kg cwt</td>
<td>445</td>
<td>474</td>
<td>-6%</td>
<td>300</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Lamb - Eastern States Trade Lamb Indicator</strong></td>
<td>23-Feb</td>
<td>Ac/kg cwt</td>
<td>641</td>
<td>664</td>
<td>-3%</td>
<td>531</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Pig - Eastern Seaboard (60.1-75 kg), average of buyers &amp; sellers</strong></td>
<td>17-Feb</td>
<td>Ac/kg cwt</td>
<td>352</td>
<td>365</td>
<td>-4%</td>
<td>389</td>
<td>-10%</td>
</tr>
<tr>
<td><strong>Goat - Eastern States (12.1-16 kg)</strong></td>
<td>20-Feb</td>
<td>Ac/kg cwt</td>
<td>655</td>
<td>640</td>
<td>2%</td>
<td>516</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Live cattle - Light steers ex Darwin to Indonesia</strong></td>
<td>18-Feb</td>
<td>Ac/kg lwt</td>
<td>375</td>
<td>375</td>
<td>0%</td>
<td>375</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Live sheep - Live wether (Muckea WA saleyard) to Middle East</strong></td>
<td>20-Feb</td>
<td>$/head</td>
<td>100</td>
<td>110</td>
<td>-9%</td>
<td>95</td>
<td>5%</td>
</tr>
</tbody>
</table>

### Global Dairy Trade (GDT) weighted average prices

<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>Dairy - Whole milk powder</strong></td>
<td>21-Feb</td>
<td>US$/t</td>
<td>3,189</td>
<td>3,314</td>
<td>-4%</td>
<td>1,890</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Dairy - Skim milk powder</strong></td>
<td>21-Feb</td>
<td>US$/t</td>
<td>2,574</td>
<td>2,608</td>
<td>-1%</td>
<td>1,762</td>
<td>46%</td>
</tr>
<tr>
<td><strong>Dairy - Cheddar cheese</strong></td>
<td>21-Feb</td>
<td>US$/t</td>
<td>3,590</td>
<td>3,798</td>
<td>-5%</td>
<td>2,535</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Dairy - Anhydrous milk fat</strong></td>
<td>21-Feb</td>
<td>US$/t</td>
<td>5,693</td>
<td>5,765</td>
<td>-1%</td>
<td>3,527</td>
<td>61%</td>
</tr>
</tbody>
</table>

*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 28 February 2017

World coarse grains indicator price
US corn No. 2, fob Gulf
Week ended 1 March 2017

World canola indicator price
Europe fob Hamburg
Week ended 14 February 2017

World cotton indicator price
Cotlook ‘A’ index
Week ended 1 March 2017
3.3. Global Dairy Trade (GDT) weighted average prices

- **Whole milk powder price**
  - 21 February 2017

- **Skim milk powder price**
  - 21 February 2017

- **Cheddar cheese price**
  - 21 February 2017

- **Anhydrous milk fat price**
  - 21 February 2017
3.4. Selected domestic crop indicator prices

Grain sorghum indicator price
Sydney, NSW
Week ended 1 March 2017

Feed barley indicator price
Sydney, NSW
Week ended 1 March 2017

Feed wheat indicator price
General Purpose, Sydney, NSW
Week ended 1 March 2017

Milling wheat indicator price
ASW1, track quote, Port Adelaide, SA
Week ended 22 February 2017
3.5. Selected domestic livestock indicator prices

Eastern Young Cattle Indicator
Week ended 24 February 2017

Eastern States Trade Lamb Indicator
Week ended 23 February 2017

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

Pig indicator price Eastern Seaboard
(60.1–75 kg)
Week ended 17 February 2017
Goat indicator price Eastern States
(12.1–16 kg)
Week ended 20 February 2017

Live cattle indicator price
light steers ex Darwin
Week ended 18 February 2017

Live sheep indicator price
wether ex Western Australia
Week ended 20 February 2017
3.6. Movements in selected fruit and vegetable prices – week ended 25 February 2017

Weekly wholesale prices for blueberry, pineapple (smoothleaff), 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: 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