Australian Government
Department of Agriculture, Fisheries and Forestry

ABARES

Weekly Australian Climate, Water and Agricultural Update

No. 11/2023

23 March 2023

Summary of key issues

- For the week ending 22 March 2023, surface troughs and thunderstorm activity brought rainfall to the north and east of the country. Weekly rainfall totals of between 15 and 100 millimetres were recorded across most of the coastal northern tropics. Similar rainfall totals were recorded in western Tasmania, central Northern Territory and across scattered pockets of the eastern mainland.
- In cropping regions, rainfall totals of between 15 to 50 millimetres were recorded across parts of northern Queensland, southern New South Wales, and eastern Victoria. Little to no rainfall was recorded across the remaining cropping regions over the past 7 days. Dry conditions across most summer cropping regions would have allowed for uninterrupted access to fields for crop maintenance activities and for the harvesting of early sown crops. In regions with below average soil moisture levels, little to no rainfall is likely to have negatively affected the growth and yield potential of late sown summer crops (see Section 1.1).
- The 2022-23 La Niña event has ended. The ENSO is now in its neutral phase with both oceanic and atmospheric indicators having returned to neutral levels. The Madden–Julian Oscillation (MJO) is currently very strong over the Atlantic Ocean. This is resulting in drier than normal conditions over tropical Australia (see Section 1.2).
- The outlook for April 2023 indicates there is a 75% chance of rainfall totals between 10 and 100 millimetres for tropical northern Australia, eastern and south-eastern coastal areas, parts of Western Australia, as well as much of Tasmania. Rainfall totals in excess of 100 millimetres are expected in western Tasmania and in parts of north-eastern Queensland. For the remainder of Australia, rainfall totals are not expected to exceed 10 millimetres (see Section 1.3).
- The outlook for April to June 2023 suggests there is a 75% chance of rainfall totals between 25 and 100 millimetres across central and eastern New South Wales, northern and eastern Queensland, southern parts of South Australia and Western Australia, northern parts of the Northern Territory and much of Victoria and Tasmania. Rainfall totals in excess of 200 millimetres are forecast for parts of northeast New South Wales and Queensland, as well as much of western Tasmania.
- Over the 8-days to 30 March 2023, widespread rainfall is expected across western, south-eastern and in the tropical north of Australia. Troughs will trigger showers and storms over Western Australia, New South Wales, Victoria and Tasmania. Onshore winds will drive showers into southeast Queensland and northeast New South Wales. Humid and unstable winds will generate showers over northern tropics. A high-pressure system is expected to bring mainly dry conditions for much of central Australia (see Section 1.4).
- Due to unavailability of new water information from the Bureau of Meteorology, the water storage levels in the Murray-Darling Basin (MDB) have not been updated this week.
- Allocation prices in the Victorian Murray below the Barmah Choke decreased from $15 on 15 March 2023 to $14 on 22 March 2023.

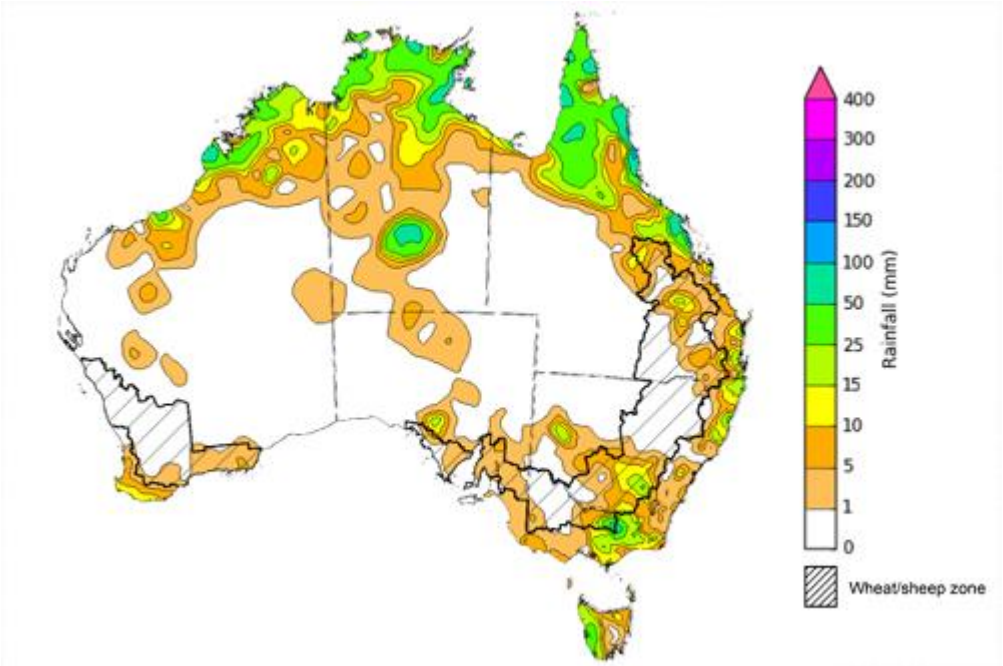
1. Climate

1.1. Rainfall this week

For the week ending 22 March 2023, surface troughs and thunderstorm activity brought rainfall to the north and east of the country. Weekly rainfall totals of between 15 and 100 millimetres were recorded across most of the coastal northern tropics. Similar rainfall totals were recorded in western Tasmania, central Northern Territory and across scattered pockets of the eastern mainland.

In cropping regions, rainfall totals of between 15 to 50 millimetres were recorded across parts of northern Queensland, southern New South Wales, and eastern Victoria. Little to no rainfall was recorded across the remaining cropping regions over the past 7 days. Dry conditions across most summer cropping regions would have allowed for uninterrupted access to fields for crop maintenance activities and for the harvesting of early sown crops. However, in regions with below average soil moisture levels, little to no rainfall is likely to have negatively affected the growth and yield potential of late sown summer crops.

Rainfall for the week ending 22 March 2023



 Issued: 22/03/2023

Note: 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/

1.2. Climate Drivers

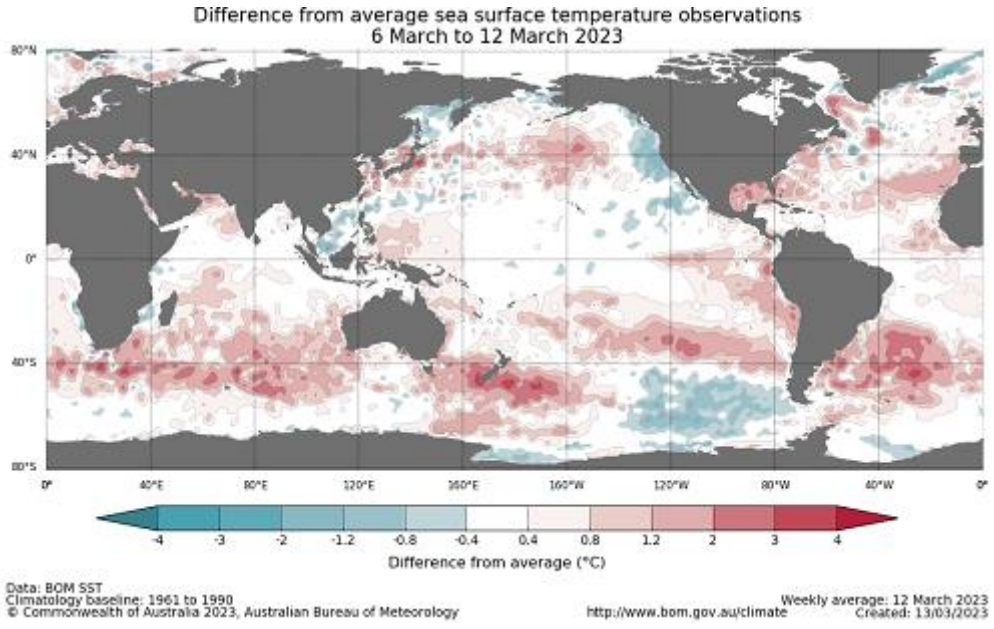
Throughout autumn the climate drivers with the largest potential impact on Australia's climate patterns are the El Niño–Southern Oscillation (ENSO) and the Madden-Julian Oscillation (MJO). These climate drivers are likely to influence the growth and development of later planted summer crops in northern growing regions, pasture growth across both northern and southern Australia and planting opportunities for winter crops.

The 2022-23 La Niña event has ended. The ENSO is now in its neutral phase with both oceanic and atmospheric indicators having returned to neutral levels. Oceanic indicators are measured in terms of the sea surface temperature (SST) anomalies. The weekly difference from average SST between 6 to 12 March in the equatorial Pacific is in the neutral range (-0.4°C to +0.4°C).

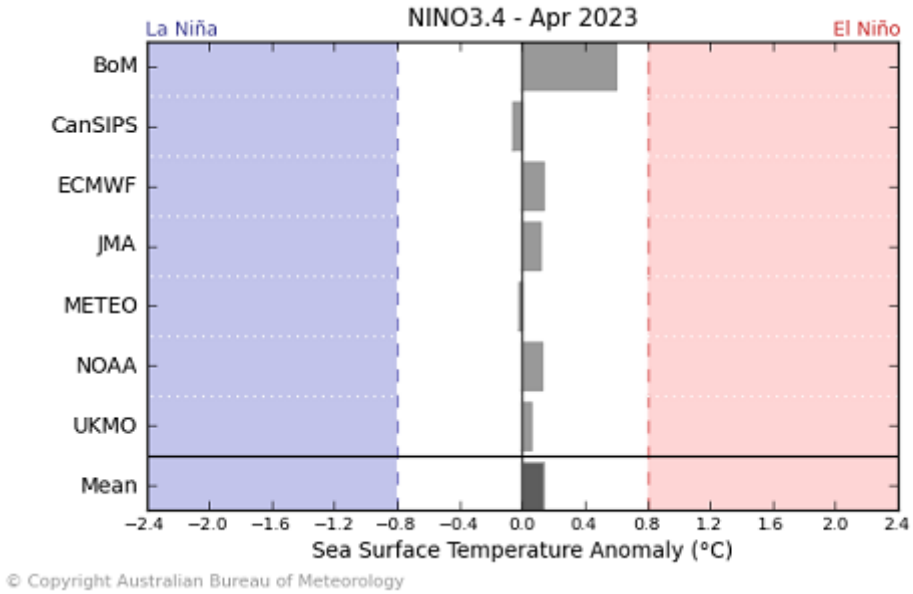
Despite both oceanic and atmospheric indicators having returned to neutral levels the Bureau of Meteorology has moved its ENSO Forecast to El Niño WATCH. This indicates that there is around a 50% chance that an El Niño may develop later in 2023. El Niño WATCH is not a guarantee that El Niño will occur, but it is an indication that some of the typical precursors are currently observed. A significant amount of warmer than average water exists in the western and central tropical Pacific sub-surface, and warmer than average SSTs have emerged in parts of the eastern tropical Pacific in recent weeks.

The Southern Annular Mode (SAM) is currently positive but is expected to return to neutral during the coming week where it is anticipated to remain neutral for the coming month. Neutral SAM has little influence on the rainfall and temperature outlook for Australia.

Difference from average sea surface temperature observations 6 to 12 March 2023



International climate model outlooks for the NINO 3.4 region in April 2023

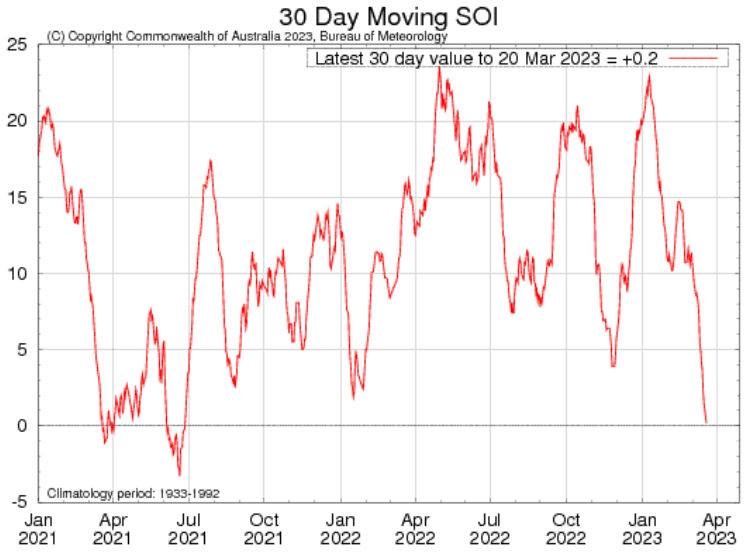


 Issued: 14/3/2023

All but one international climate model surveyed by the Australian Bureau of Meteorology suggest sea-surface temperatures in the tropical Pacific will remain neutral through the southern hemisphere autumn, with one model exceeding El Niño thresholds in May. For the period ending 12 March 2023, the 30-day Southern Oscillation Index (SOI) value was +5.0, while the latest update as of March 20, it is +0.2. The SOI values between +7 and −7 generally indicates ENSO neutral conditions.

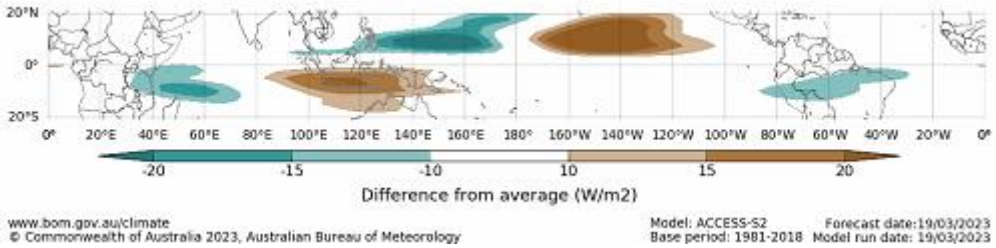
It is important to note that while most models suggest there is an increased chance of El Niño developing in mid-to-late 2023, the model accuracy when forecasting through autumn is low, and therefore ENSO outlooks that extend past autumn should be viewed with caution.

30-day Southern Oscillation Index (SOI) values ending 20 March 2023



The Madden–Julian Oscillation (MJO) is currently very strong over the Atlantic Ocean. This is resulting in drier conditions over tropical Australia owing to the suppressed convection over the Maritime continent. The MJO is likely to weaken and become indiscernible at the end of March. In this scenario, the MJO would exert minimal influence on weather patterns across northern Australia.

Madden–Julian Oscillation (MJO) daily index



Note: This map displays the forecast outgoing longwave radiation (OLR) difference from expected cloudiness to identify convective rain clouds and the position of the Madden–Julian Oscillation (MJO). The blue shading indicates higher than normal, active or enhanced tropical weather and the brown shading indicates lower than normal clouds or suppressed conditions.

1.3. National Climate Outlook

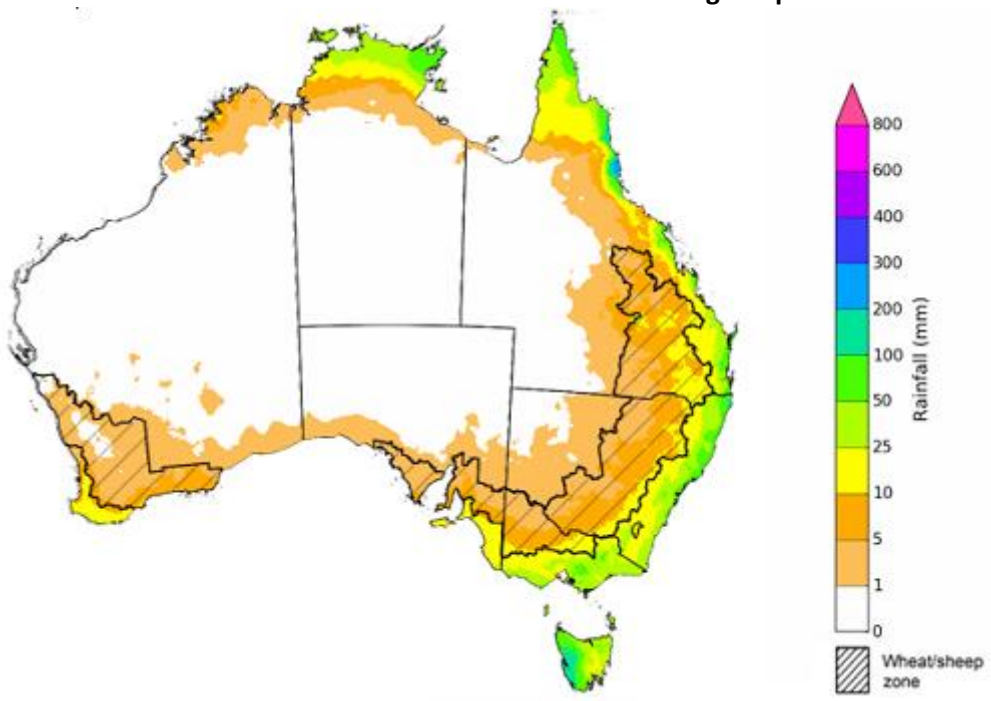
These climate outlooks are generated by ACCESS–S (Australian Community Climate Earth-System Simulator–Seasonal). ACCESS–S is the Bureau of Meteorology's dynamic (physics-based) weather and climate model used for monthly, seasonal, and longer-lead climate outlooks. For further information, go to http://www.bom.gov.au/climate/ahead/about/.

The Bureau of Meteorology's latest rainfall outlook for April 2023 indicates drier than average conditions are expected across much of Australia.

The ACCESS-S climate model suggests that there is a 75% chance of rainfall totals between 10 and 100 millimetres for tropical northern Australia, eastern and south-eastern coastal areas, parts of Western Australia, as well as much of Tasmania. Rainfall totals in excess of 100 millimetres are expected in western Tasmania and in parts of north-eastern Queensland. For the remainder of Australia, rainfall totals are not expected to exceed 10 millimetres.

Across most cropping regions there is a 75% chance of rainfall totals less than 10 millimetres. In eastern Victoria and New South Wales, and in south-eastern Queensland, rainfall totals are expected to reach up to 25 millimetres.

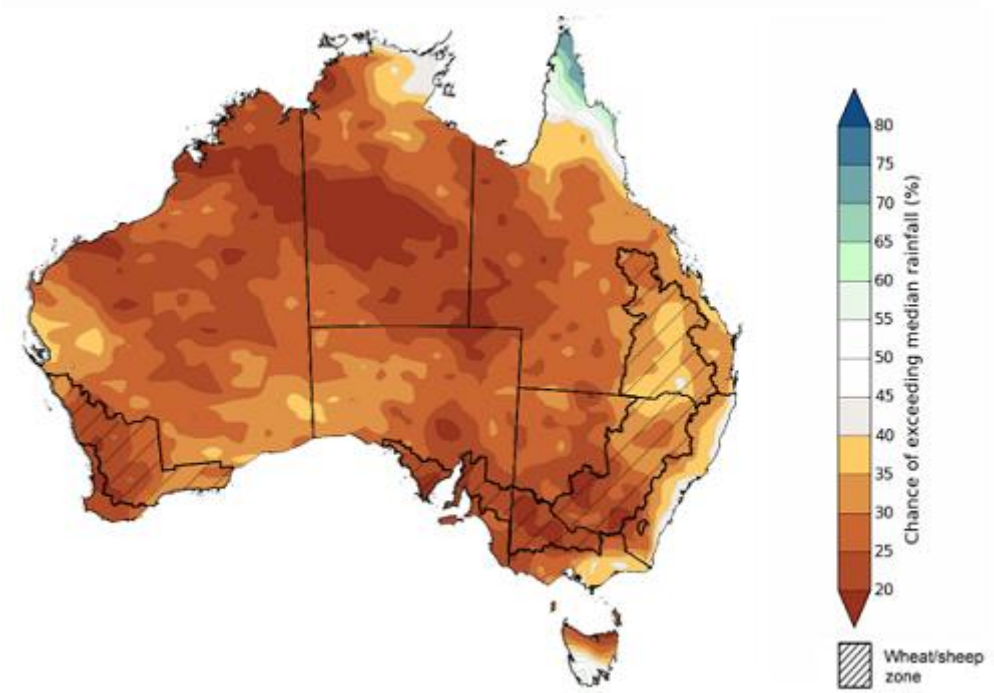
Rainfall totals that have a 75% chance of occurring in April 2023



Issued:23/03/2023

The rainfall outlook for April to June 2023 suggests that below median rainfall is likely to very likely (60% to greater than 80% chance) for most of Australia the next three months. However, for tropical northern Queensland and Northern Territory, parts of coastal New South Wales and southern Tasmania there is close to equal chances of above or below median rainfall.

Chance of exceeding the median rainfall April to June 2023



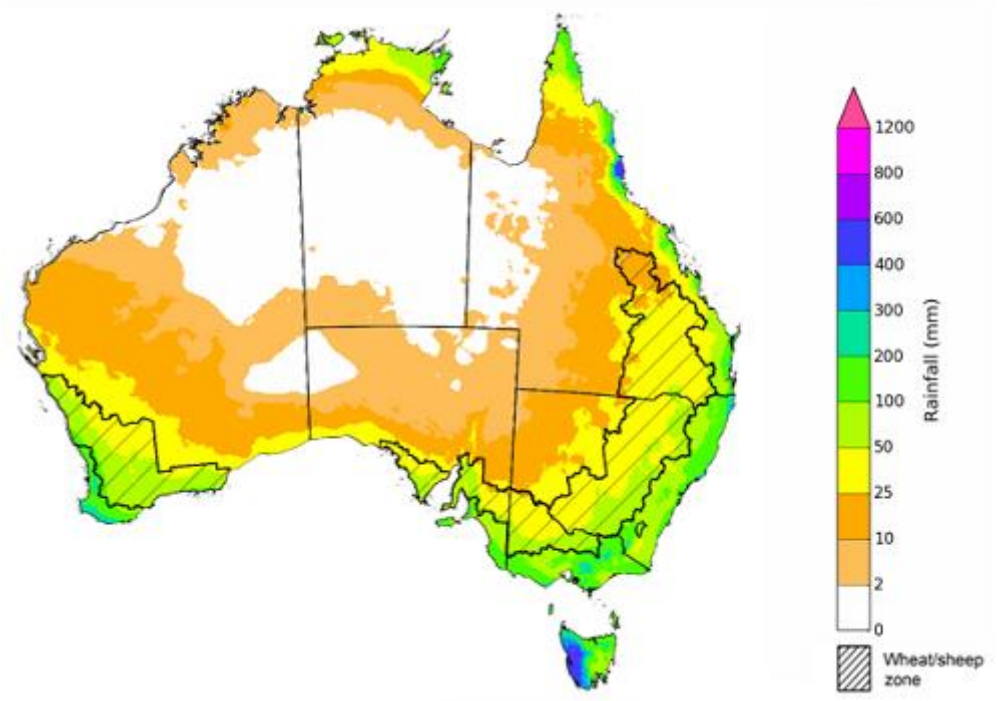
Issued: 23/03/2023

The outlook for April to June 2023 suggests there is a 75% chance of rainfall totals between 25 and 200 millimetres across central and eastern New South Wales, northern and eastern Queensland, southern parts of South Australia and Western Australia, northern parts of the Northern Territory and much of Victoria and Tasmania. Rainfall totals in excess of 200 millimetres are forecast for parts of northeast New South Wales and Queensland, as well as much of western Tasmania.

Across cropping regions, there is a 75% chance of receiving between 25 and 100 millimetres except for northern Queensland where rainfall is forecast for below 25 millimetres.

These rainfall totals are well below average for this three-month period across most of Australia. Relatively dry conditions during February and early March have seen soil moisture levels decline across large areas of Australia. This lack of rainfall and decline in soil moisture levels has led to reductions in yield potentials for later sown summer crops. Given these recent declines in soil moisture levels and the increased likelihood of below average rainfall over the next three months, crop producers will require adequate and timely rainfall to maintain current summer crop yield potentials to support the sowing and establishment of winter crops. For livestock producers experiencing below average rainfall, particularly across southern Australia, this will likely result in below average pasture production. However, ample supplies of conserved fodder will likely enable most producers to maintain current production levels and stocking rates.

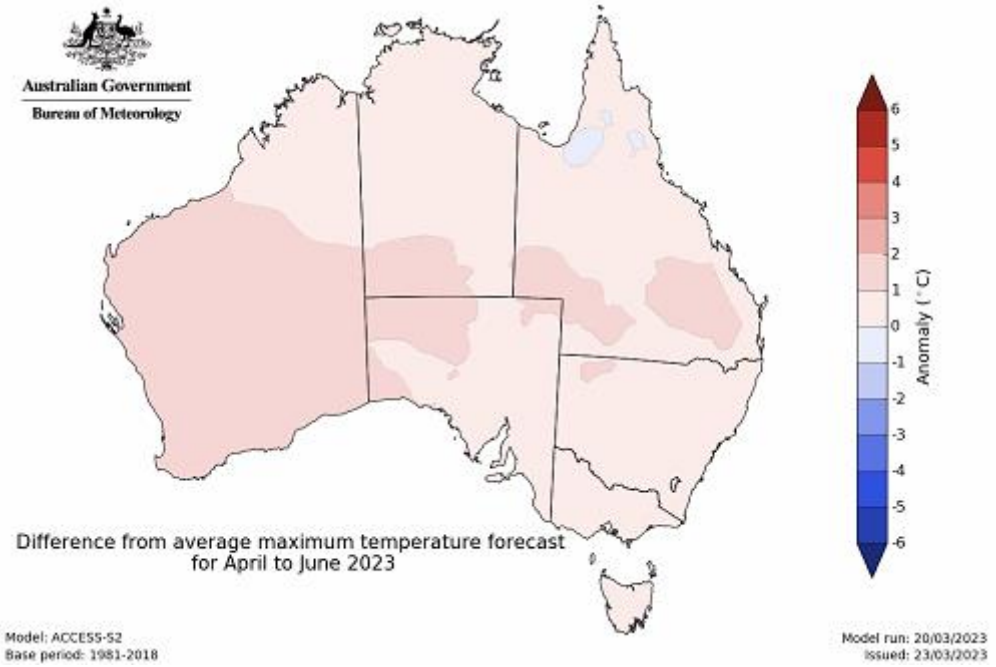
Rainfall totals that have a 75% chance of occurring April to June 2023



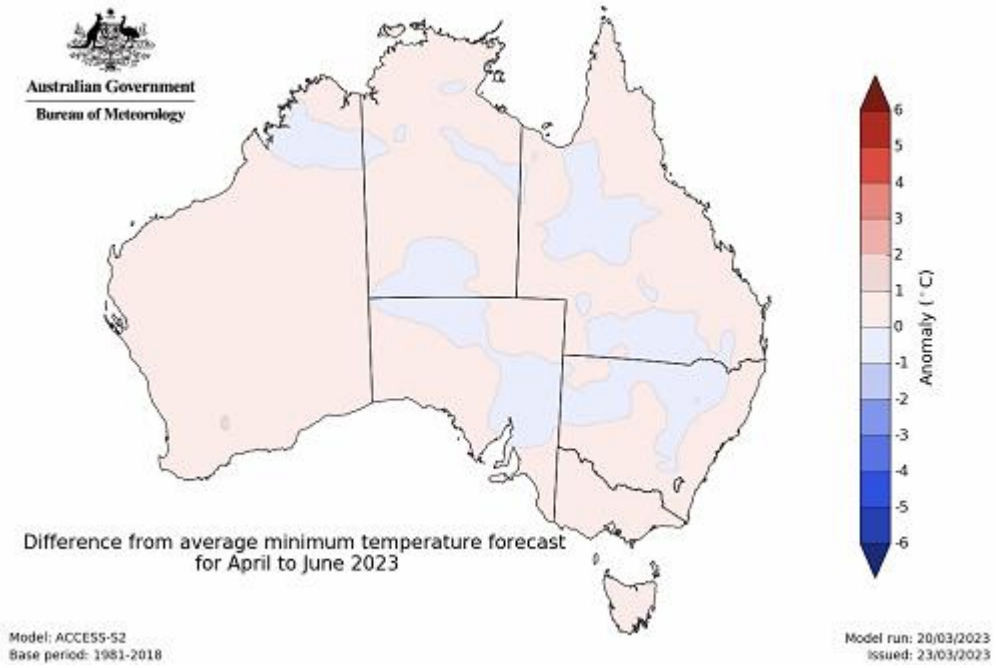
Issued: 23/03/2023

The temperature outlook for April to June 2023 indicates that maximum temperatures across most of Australia are likely to be close to the 1990-2012 average (the difference between -1°C to +1°C) while slightly warmer (up to +2°C) across much of Western Australia and in parts of Northern Territory, South Australia, Queensland and New South Wales. The minimum temperatures across most of Australia are expected to be close to the 1990-2012 average (the difference in the range of -1°C to +1°C).

Predicted maximum temperature anomaly for April to June 2023



Predicted minimum temperature anomaly for April to June 2023



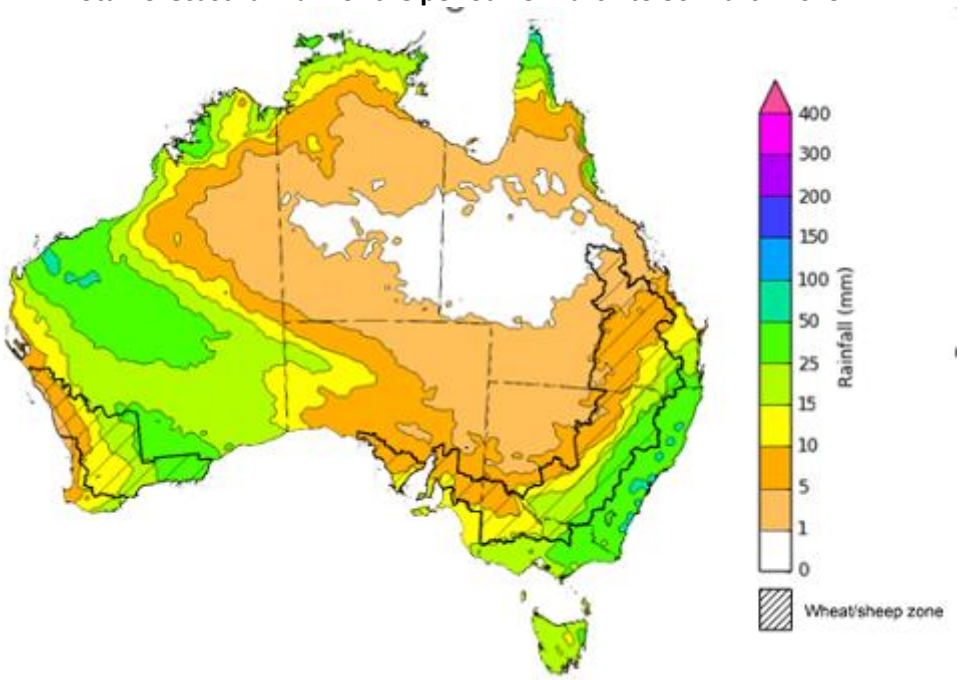
1.4. Rainfall forecast for the next eight days

Over the 8-days to 30 March 2023, widespread rainfall is expected across western, south-eastern and in the tropical north of Australia. Troughs will trigger showers and storms over Western Australia, New South Wales, Victoria and Tasmania. Onshore winds will drive showers into southeast Queensland and northeast New South Wales. Humid and unstable winds will generate showers over northern tropics. A high-pressure system is expected to bring mainly dry conditions for much of central Australia.

Across Australian cropping regions, rainfall totals of between 15 and 50 millimetres are expected for southeast Queensland eastern New South Wales, southern Victoria, and much of Western Australia. Little to no rainfall is expected for the remaining cropping regions in the next eight days.

If realised, the rainfall in the cropping regions is likely to result in some harvest delays for summer crops. The forecast rainfall over much of the Western Australian wheatbelt, as well as in the northern and eastern Australia is likely to build soil moisture levels in the led up to the winter cropping season and also benefit pasture growth rates and availability.

Total forecast rainfall for the period 23 March to 30 March 2023



 Issued 23/03/2023

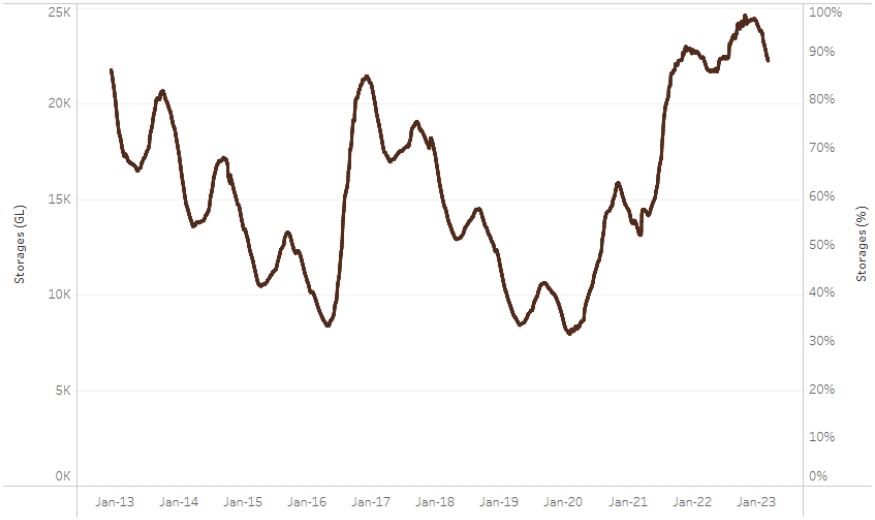
Note: This rainfall forecast is produced from computer models. As the model outputs are not altered by weather forecasters, it is important to check local forecasts and warnings issued by the Bureau of Meteorology.

2. Water

2.1. Water markets – current week

Due to unavailability of new water information from the Bureau of Meteorology, the water storage levels in the Murray-Darling Basin (MDB) have not been updated this week.

Water storages in the Murray-Darling Basin, 2013–2023

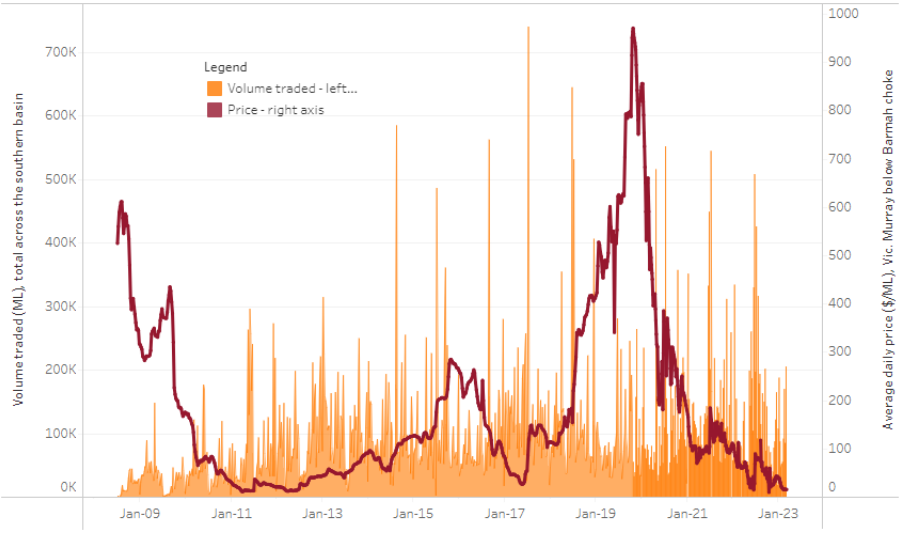


Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke decreased from $15 on 15 March 2023 to $14 on 22 March 2023.

Region	$/ML
NSW Murray Above	10
NSW Murrumbidgee	9
VIC Goulburn-Broken	14
VIC Murray Below	14

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. Only the price data shown is current on 23 March 2023.

To access the full, interactive, weekly water dashboard, which contains the latest and historical water storage, water market and water allocation information, please visit https://www.agriculture.gov.au/abares/products/weekly_update/weekly-update-23323

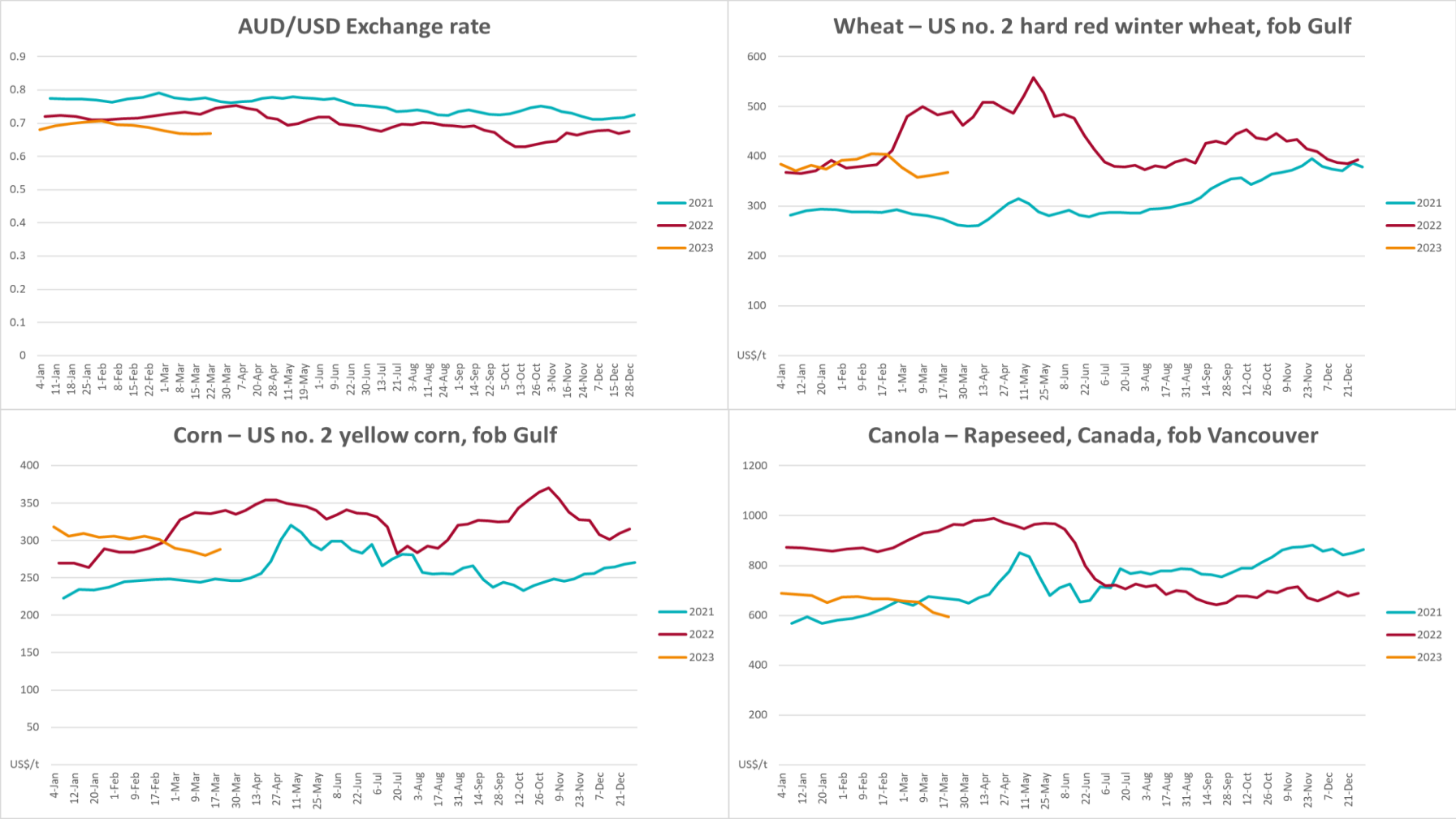
3. Commodities

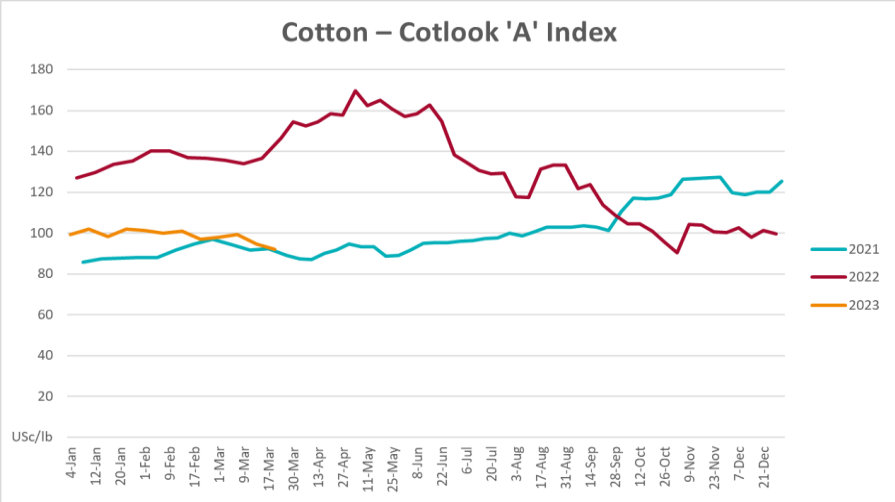
Indicator	Week ended	Unit	Latest Price	Previous Week	Weekly change	Price 12 months ago	Annual change
Selected world indicator prices							
AUD/USD Exchange rate	22-Mar	A$/US$	0.67	0.67	0%	0.75	-11%
Wheat – US no. 2 hard red winter wheat, fob Gulf	22-Mar	US$/t	367	362	2%	462	-20%
Corn – US no. 2 yellow corn, fob Gulf	22-Mar	US$/t	288	280	3%	335	-14%
Canola – Rapeseed, Canada, fob Vancouver	22-Mar	US$/t	593	612	-3%	963	-38%
Cotton – Cotlook 'A' Index	22-Mar	USc/lb	92	95	-3%	155	-40%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	22-Mar	USc/lb	20.3	20.7	-2%	19	6%
Wool – Eastern Market Indicator	08-Mar	Ac/kg clean	1,317	1,358	-3%	1,392	-5%
Wool – Western Market Indicator	08-Mar	Ac/kg clean	1,445	1,501	-4%	1,401	3%
Selected Australian grain export prices							
Milling Wheat – APW, Port Adelaide, SA	22-Mar	A$/t	477	486	-2%	569	-16%
Feed Wheat – ASW, Port Adelaide, SA	22-Mar	A$/t	452	455	-1%	533	-15%
Feed Barley – Port Adelaide, SA	22-Mar	A$/t	409	407	1%	455	-10%
Canola – Kwinana, WA	22-Mar	A$/t	946	980	-3%	1,185	-20%
Grain Sorghum – Brisbane, QLD	22-Mar	A$/t	521	514	1%	375	39%
Selected domestic livestock indicator prices							
Beef – Eastern Young Cattle Indicator	22-Mar	Ac/kg cwt	677	691	-2%	1,123	-40%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	22-Mar	Ac/kg cwt	300	302	-1%	576	-48%
Lamb – Eastern States Trade Lamb Indicator	22-Mar	Ac/kg cwt	664	676	-2%	820	-19%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	08-Mar	Ac/kg cwt	357	367	-3%	357	0%
Goats – Eastern States (12.1–16 kg)	01-Mar	Ac/kg cwt	325	325	0%	813	-60%

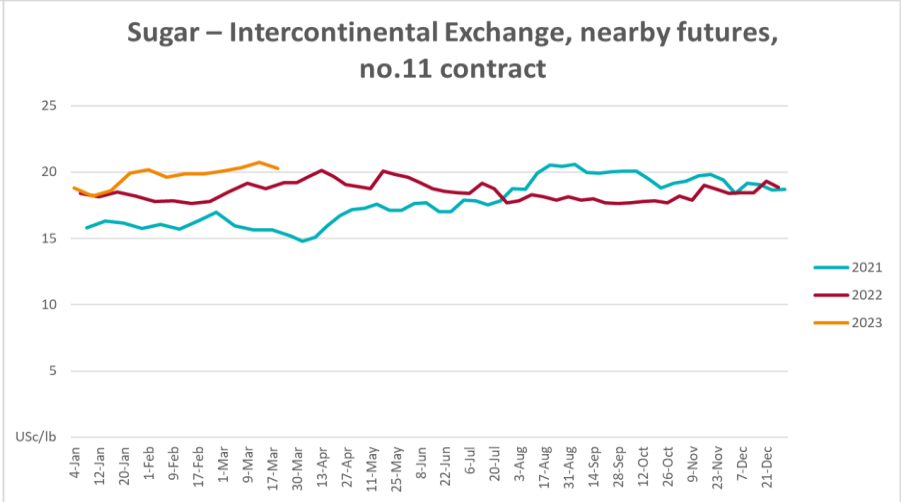
Live cattle – Light steers ex Darwin to Indonesia	17-Aug	Ac/kg lwt	420	480	-13%	320	31%
Live sheep – Live wethers (Muchea WA saleyard) to Middle East	14-Sep	$/head	93	113	-18%	114	-18%
Global Dairy Trade (GDT) weighted average prices [a]							
Dairy – Whole milk powder	22-Mar	US$/t	3,228	3,277	-1%	4,364	-26%
Dairy – Skim milk powder	22-Mar	US$/t	2,648	2,739	-3%	3,302	-20%
Dairy – Cheddar cheese	22-Mar	US$/t	4,052	4,509	-10%	4,280	-5%
Dairy – Anhydrous milk fat	22-Mar	US$/t	5,150	5,340	-4%	5,929	-13%

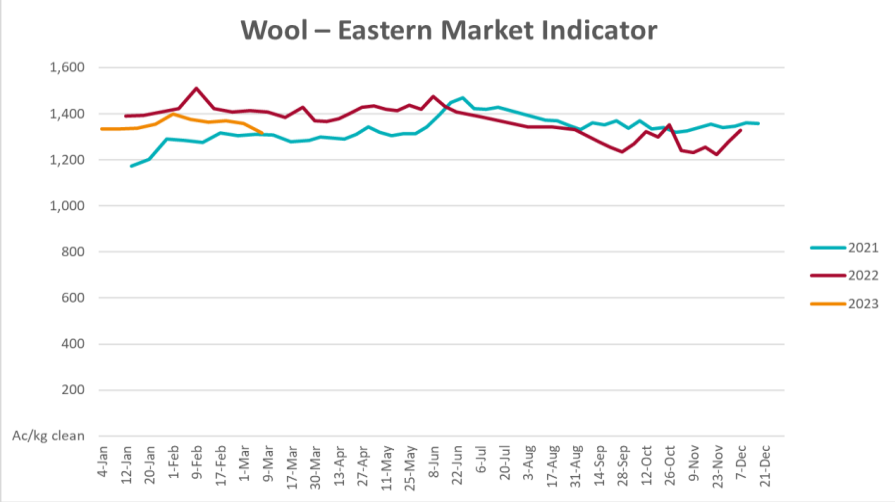
a Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

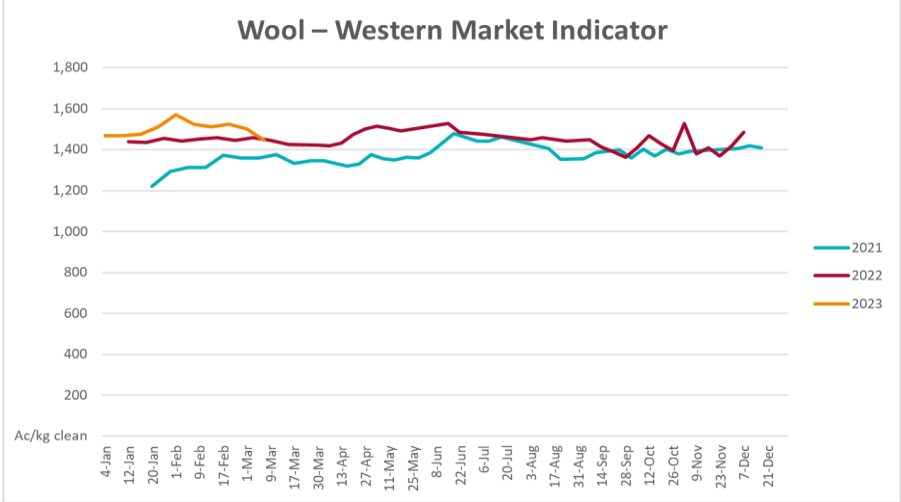
3.1. Selected world indicator prices




Cotton – Cotlook 'A' Index
180
160
140
120
100
80
60
40
20
USc/lb
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023


Sugar – Intercontinental Exchange, nearby futures, no.11 contract
25
20
15
10
5
USc/lb
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023


Wool – Eastern Market Indicator
1,600
1,400
1,200
1,000
800
600
400
200
Ac/kg clean
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023


Wool – Western Market Indicator
1,800
1,600
1,400
1,200
1,000
800
600
400
200
Ac/kg clean
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
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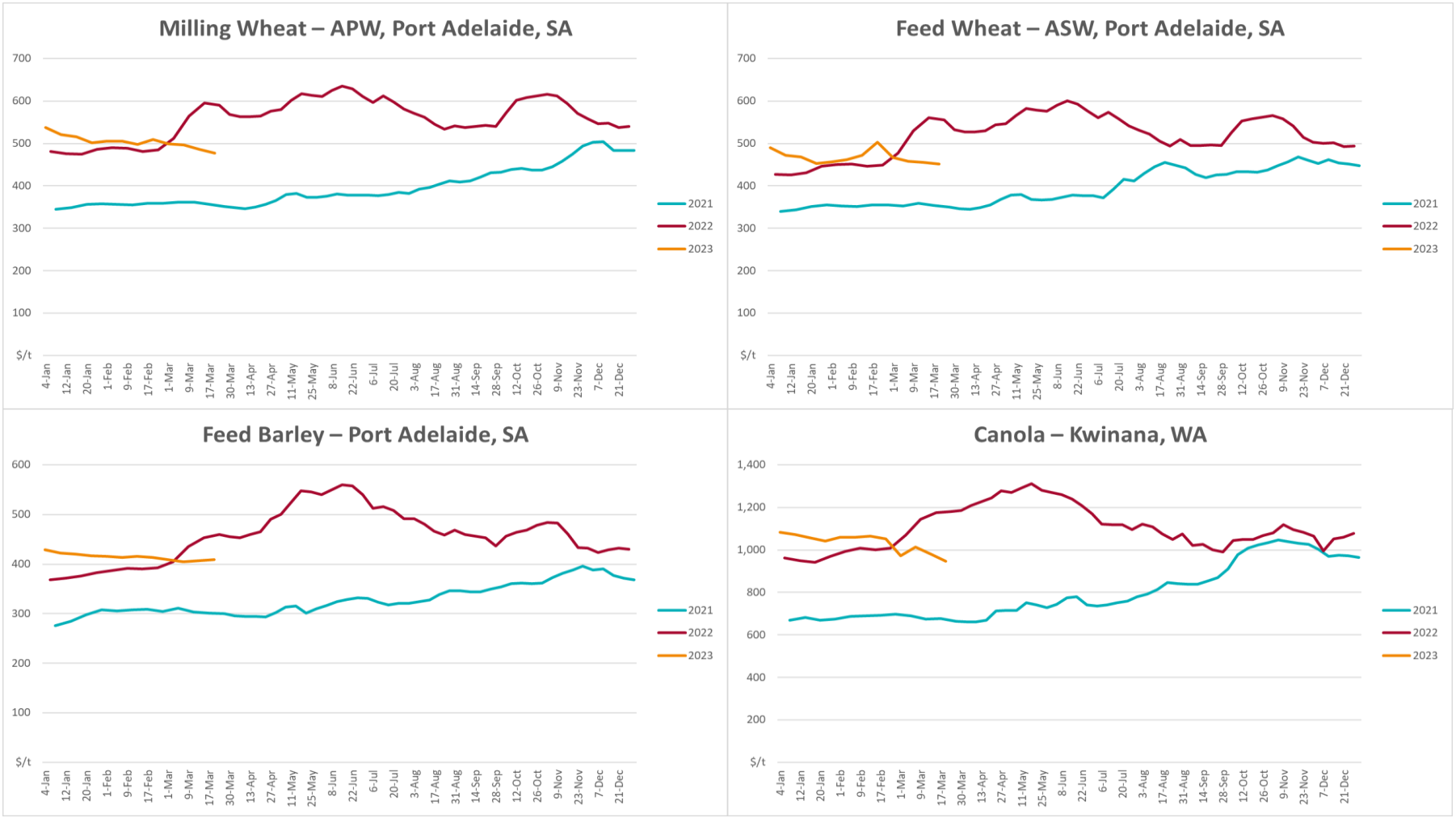
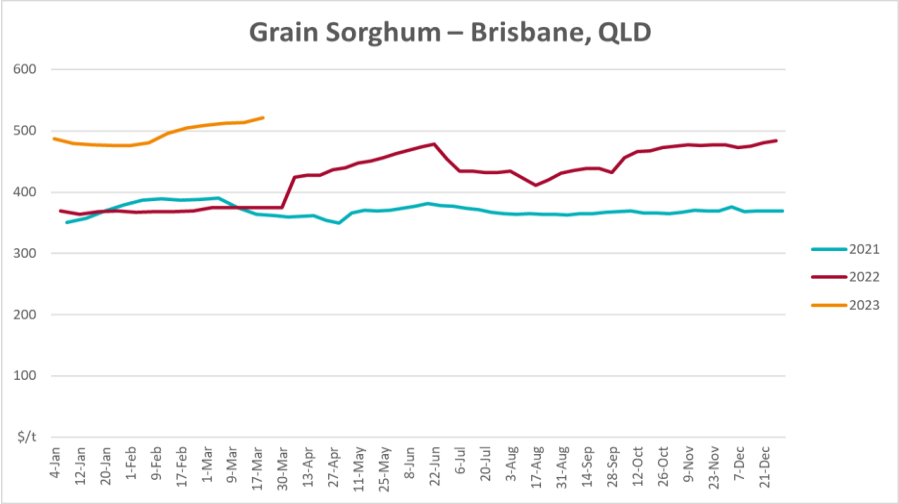
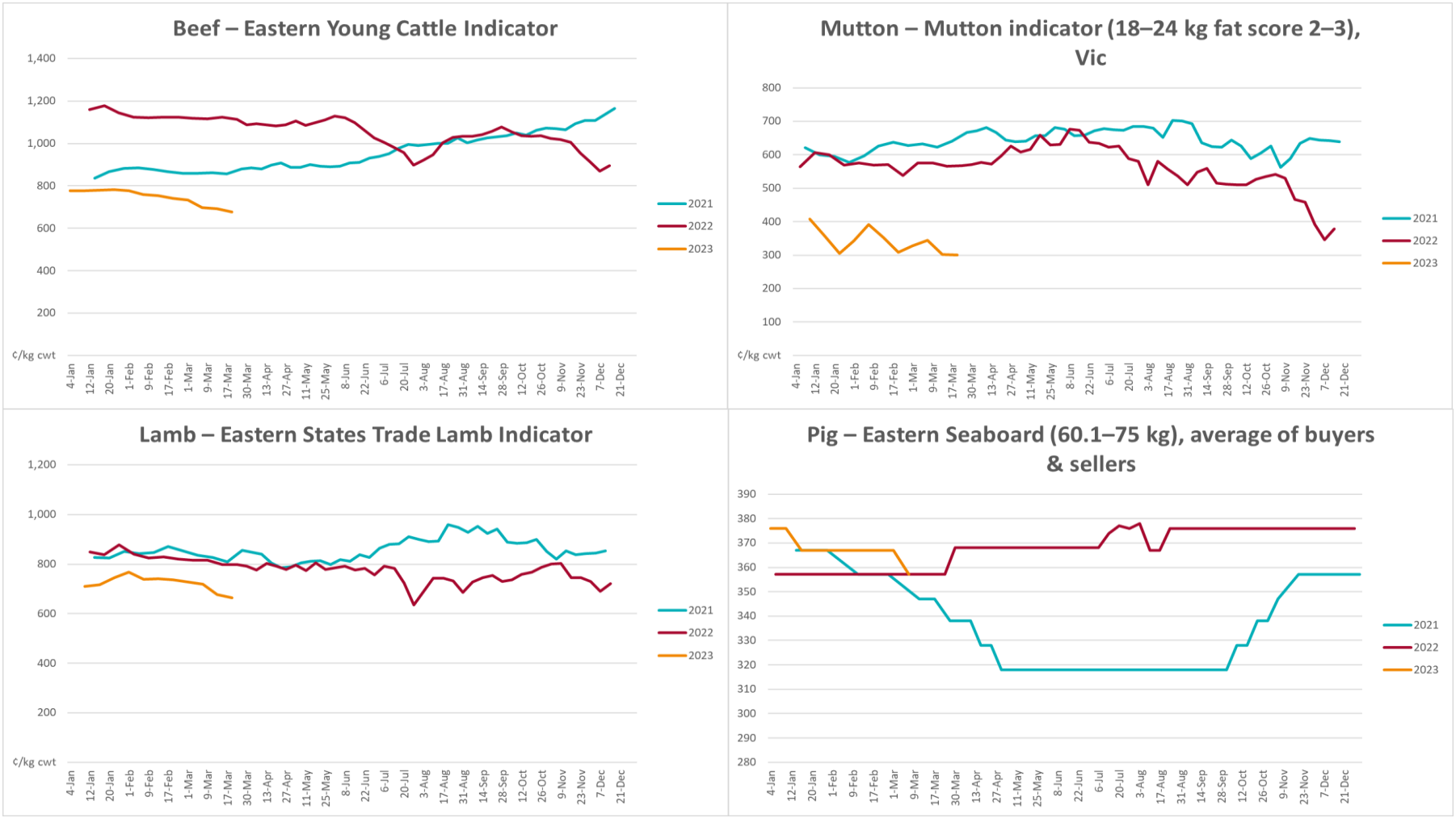
23-Nov
7-Dec
21-Dec
2021
2022
2023

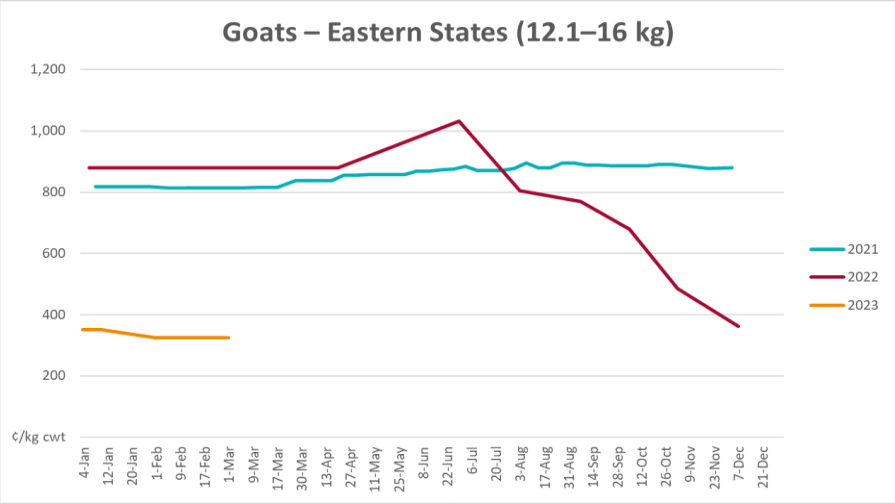
3.2. Selected domestic crop indicator prices

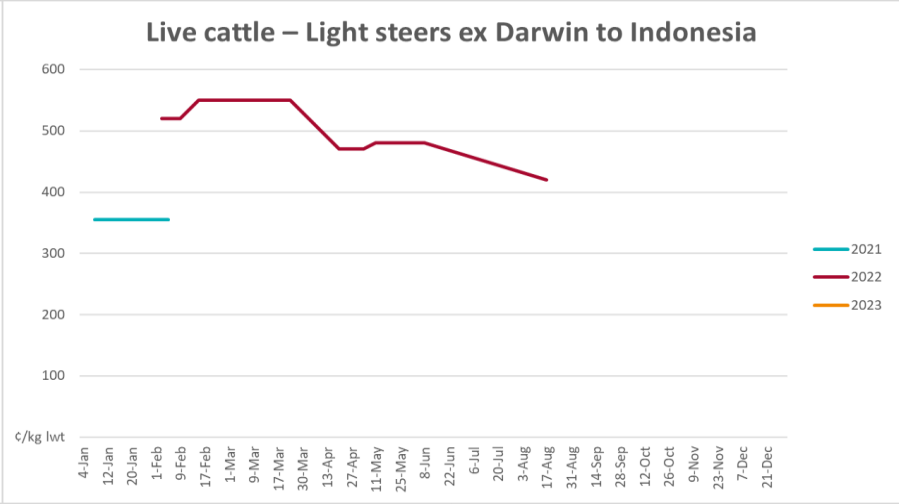


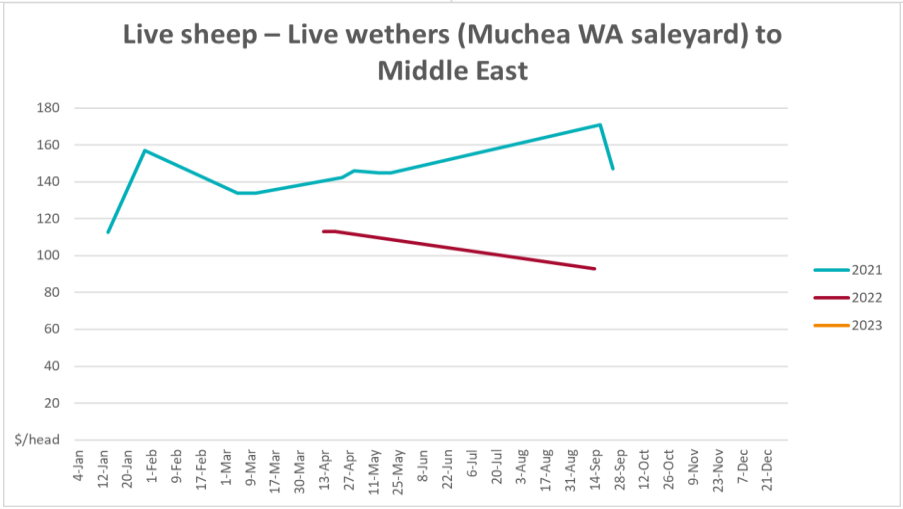

Grain Sorghum – Brisbane, QLD
600
500
400
300
200
100
$/t
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023

3.3. Selected domestic livestock indicator prices

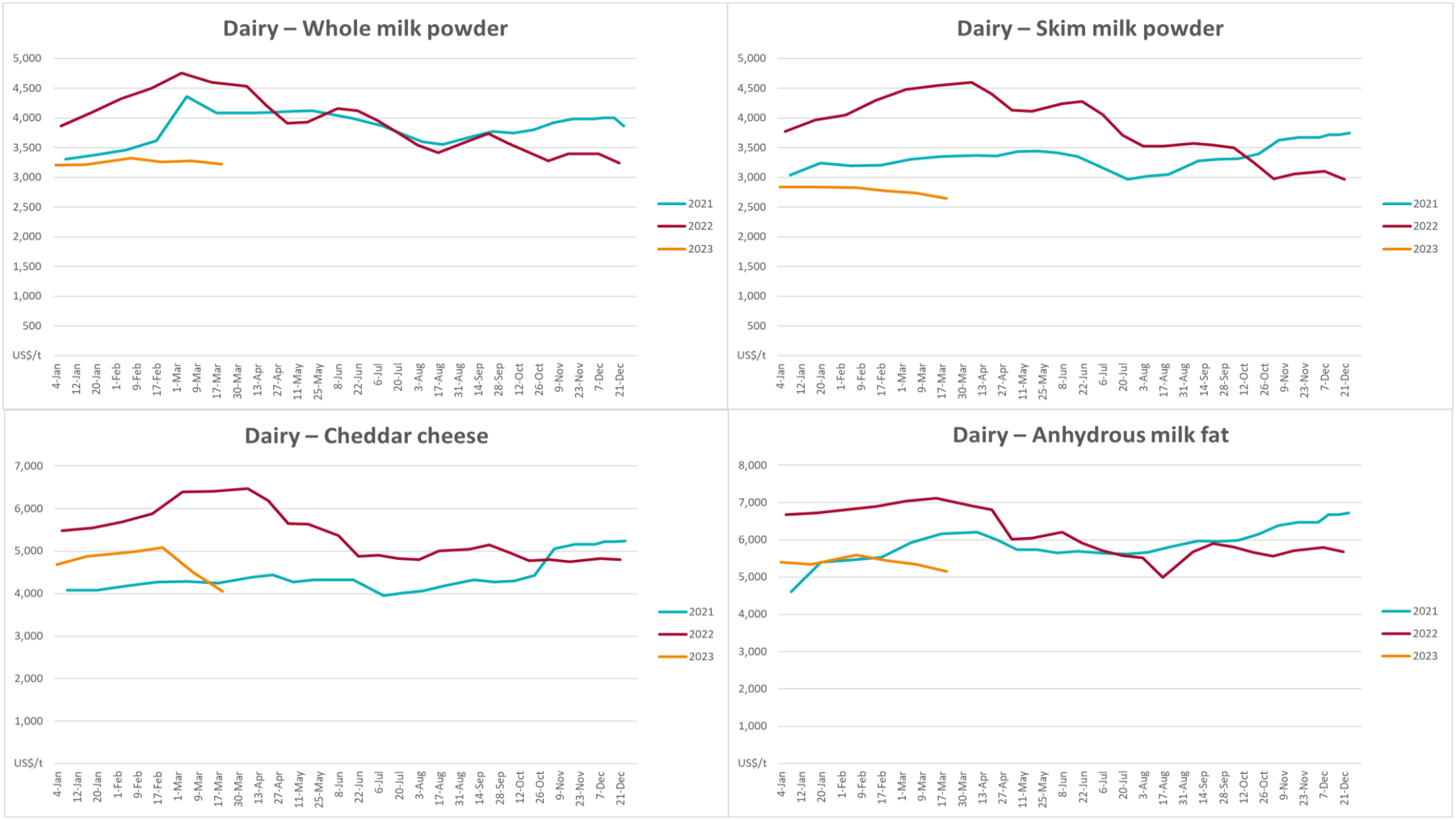



Goats – Eastern States (12.1–16 kg)
1,200
1,000
800
600
400
200
¢/kg cwt
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023

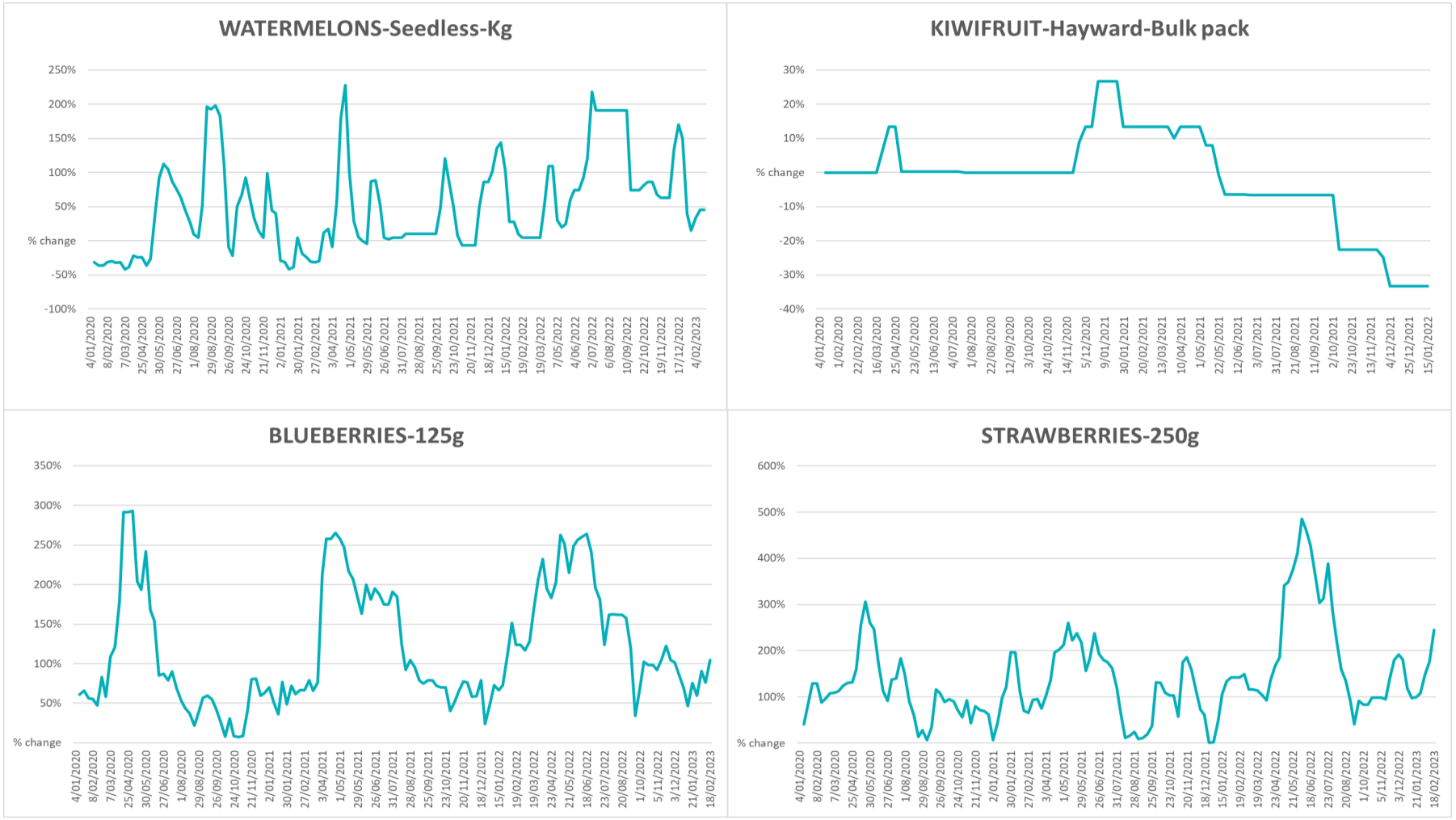

Live cattle – Light steers ex Darwin to Indonesia
600
500
400
300
200
100
¢/kg lwt
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023

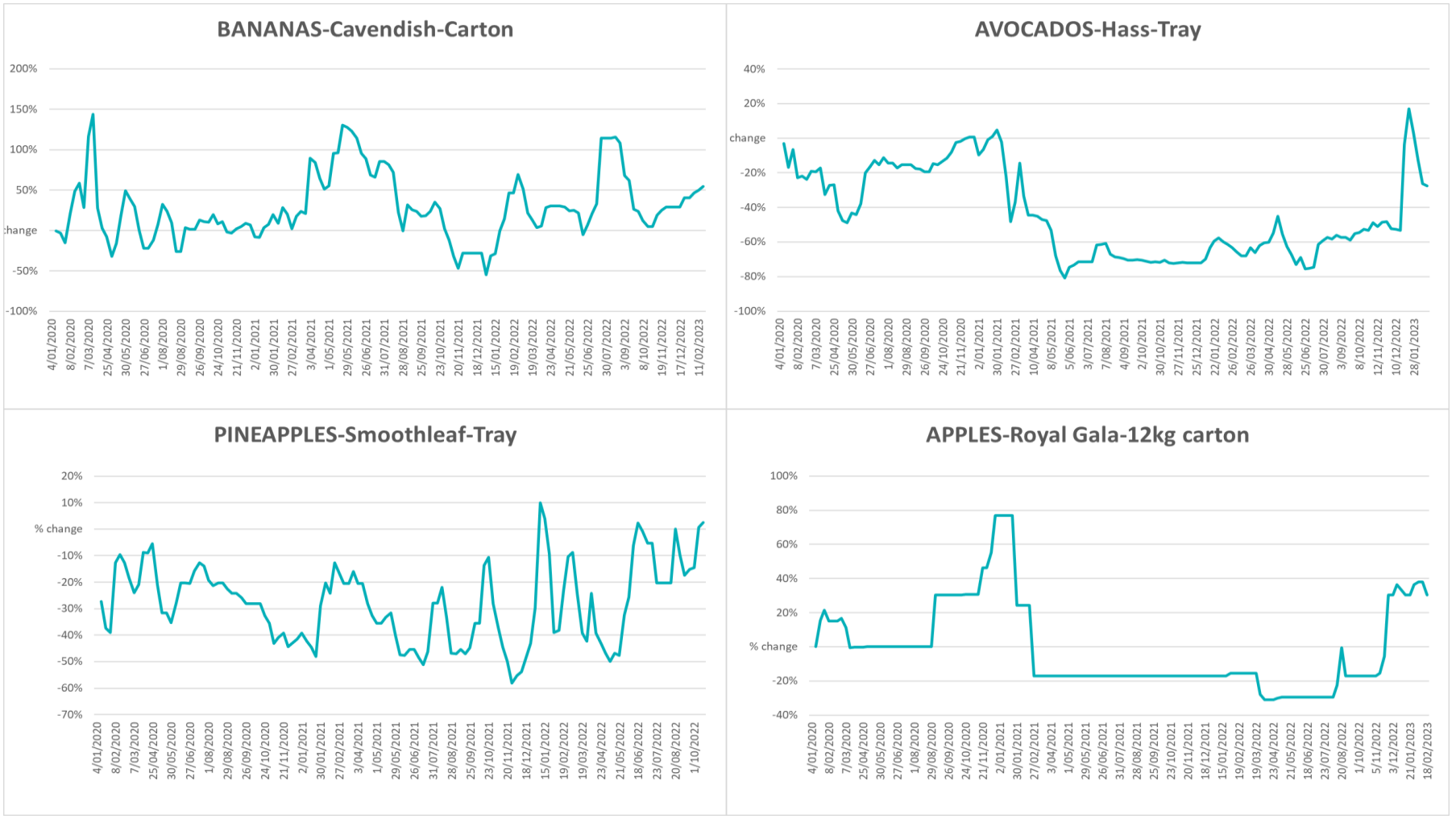

Live sheep – Live wethers (Muchea WA saleyard) to Middle East
180
160
140
120
100
80
60
40
20
$/head
4-Jan
12-Jan
20-Jan
1-Feb
9-Feb
17-Feb
1-Mar
9-Mar
17-Mar
30-Mar
13-Apr
27-Apr
11-May
25-May
8-Jun
22-Jun
6-Jul
20-Jul
3-Aug
17-Aug
31-Aug
14-Sep
28-Sep
12-Oct
26-Oct
9-Nov
23-Nov
7-Dec
21-Dec
2021
2022
2023

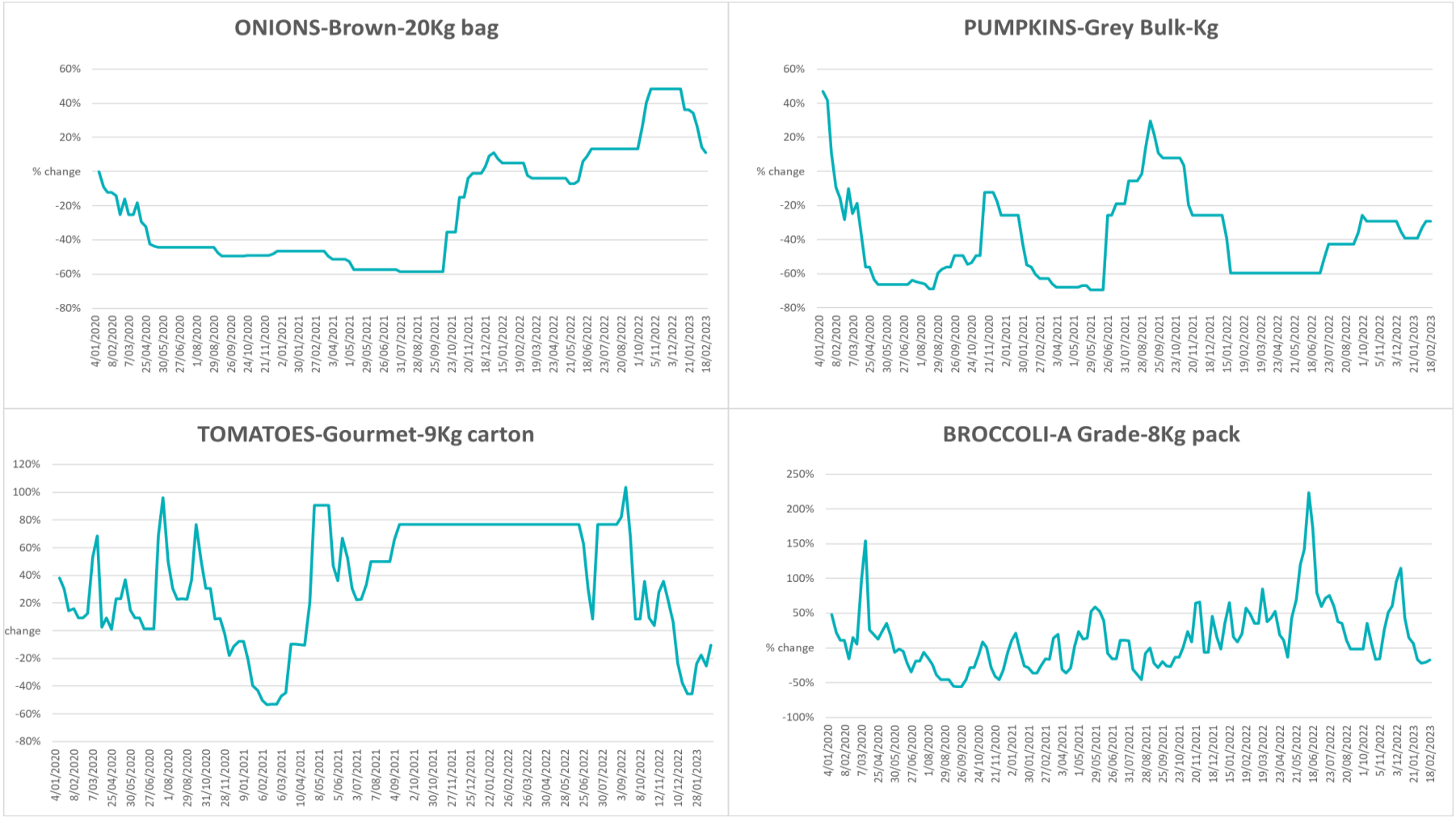
3.4. Global Dairy Trade (GDT) weighted average prices

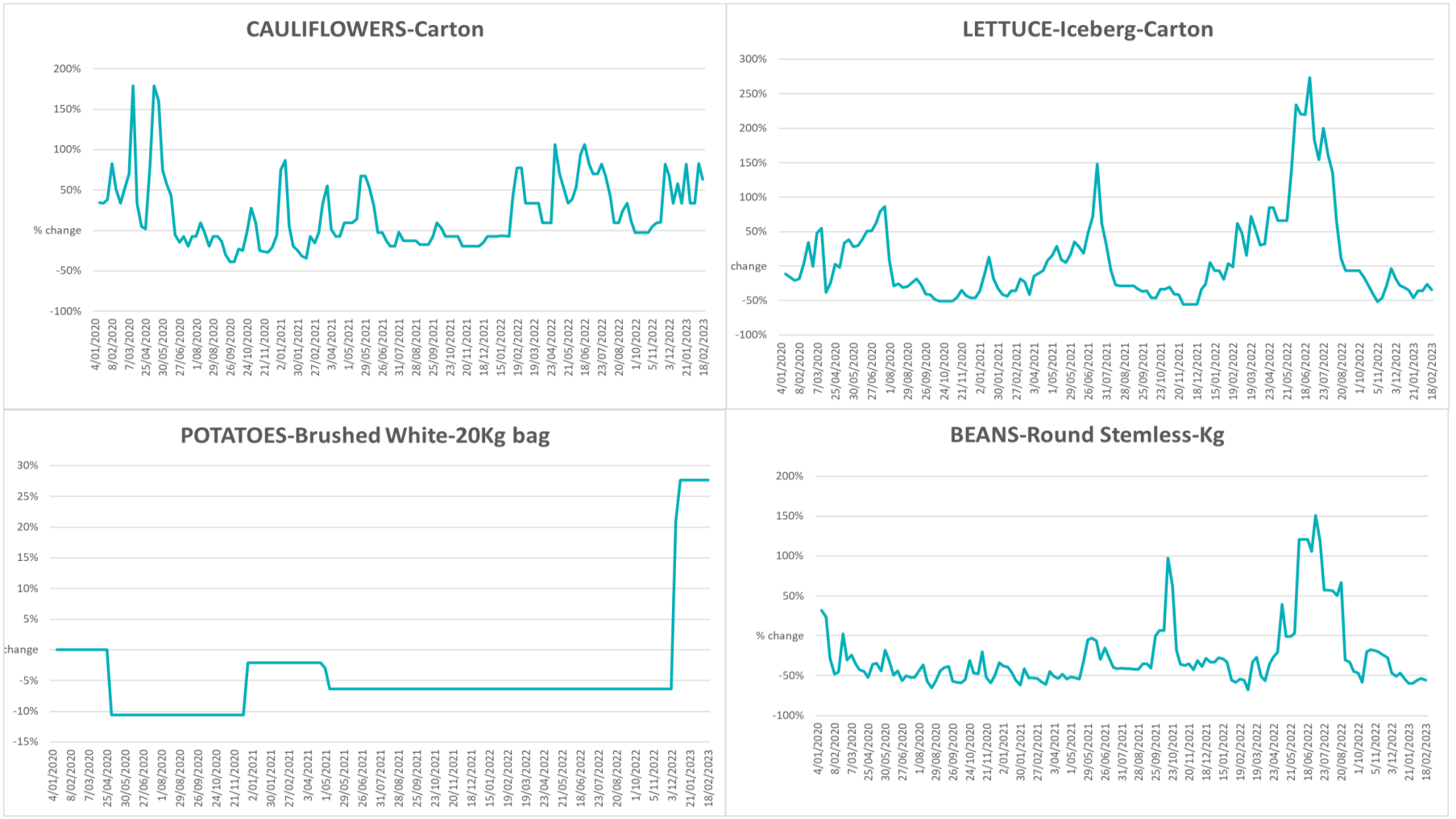


3.5. Selected fruit and vegetable prices

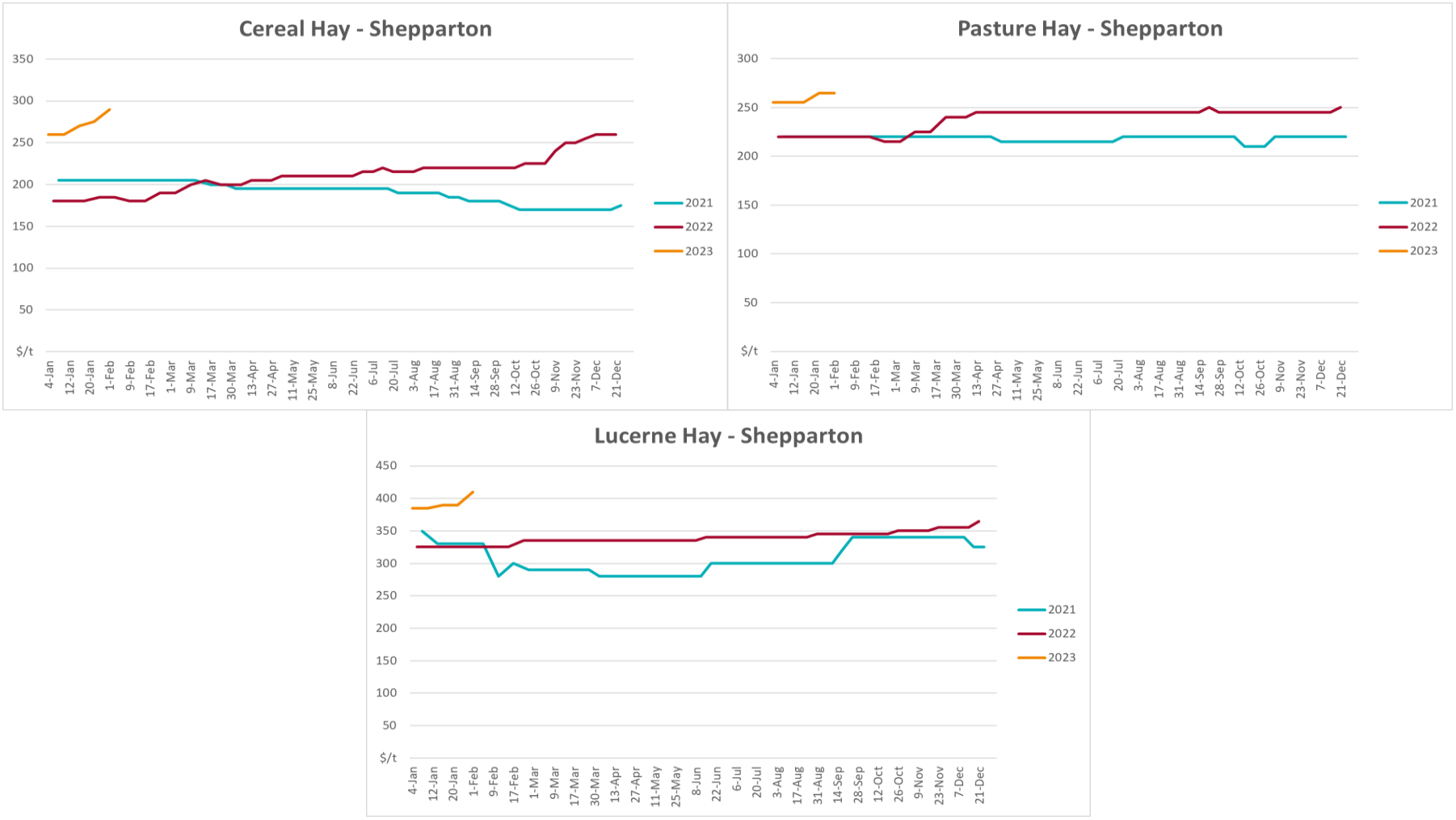



BANANAS-Cavendish-Carton
200%
150%
100%
50%
change
-50%
-100%
4/01/2020
8/02/2020
7/03/2020
25/04/2020
30/05/2020
27/06/2020
1/08/2020
29/08/2020
26/09/2020
24/10/2020
21/11/2020
2/01/2021
30/01/2021
27/02/2021
3/04/2021
1/05/2021
29/05/2021
26/06/2021
31/07/2021
28/08/2021
25/09/2021
23/10/2021
20/11/2021
18/12/2021
15/01/2022
19/02/2022
19/03/2022
23/04/2022
21/05/2022
25/06/2022
30/07/2022
3/09/2022
8/10/2022
19/11/2022
17/12/2022
11/02/2023
AVOCADOS-Hass-Tray
40%
20%
change
-20%
-40%
-60%
-80%
-100%
4/01/2020
8/02/2020
7/03/2020
25/04/2020
30/05/2020
27/06/2020
1/08/2020
29/08/2020
26/09/2020
24/10/2020
21/11/2020
2/01/2021
30/01/2021
27/02/2021
10/04/2021
8/05/2021
5/06/2021
3/07/2021
7/08/2021
4/09/2021
2/10/2021
30/10/2021
27/11/2021
25/12/2021
22/01/2022
26/02/2022
26/03/2022
30/04/2022
28/05/2022
25/06/2022
30/07/2022
3/09/2022
8/10/2022
12/11/2022
10/12/2022
28/01/2023
PINEAPPLES-Smoothleaf-Tray
20%
10%
% change
-10%
-20%
-30%
-40%
-50%
-60%
-70%
4/01/2020
8/02/2020
7/03/2020
25/04/2020
30/05/2020
27/06/2020
1/08/2020
29/08/2020
26/09/2020
24/10/2020
21/11/2020
2/01/2021
30/01/2021
27/02/2021
3/04/2021
1/05/2021
29/05/2021
26/06/2021
31/07/2021
28/08/2021
25/09/2021
23/10/2021
20/11/2021
18/12/2021
15/01/2022
19/02/2022
19/03/2022
23/04/2022
21/05/2022
18/06/2022
23/07/2022
20/08/2022
1/10/2022
APPLES-Royal Gala-12kg carton
100%
80%
60%
40%
20%
% change
-20%
-40%
4/01/2020
8/02/2020
7/03/2020
25/04/2020
30/05/2020
27/06/2020
1/08/2020
29/08/2020
26/09/2020
24/10/2020
21/11/2020
2/01/2021
30/01/2021
27/02/2021
3/04/2021
1/05/2021
29/05/2021
26/06/2021
31/07/2021
28/08/2021
25/09/2021
23/10/2021
20/11/2021
18/12/2021
15/01/2022
19/02/2022
19/03/2022
23/04/2022
21/05/2022
18/06/2022
23/07/2022
20/08/2022
1/10/2022
5/11/2022
3/12/2022
21/01/2023
18/02/2023


ONIONS-Brown-20Kg bag
% change
PUMPKINS-Grey Bulk-Kg
% change
TOMATOES-Gourmet-9Kg carton
change
BROCCOLI-A Grade-8Kg pack
% change


CAULIFLOWERS-Carton
200%
150%
100%
50%
% change
-50%
-100%
4/01/2020
8/02/2020
7/03/2020
25/04/2020
30/05/2020
27/06/2020
1/08/2020
29/08/2020
26/09/2020
24/10/2020
21/11/2020
2/01/2021
30/01/2021
27/02/2021
3/04/2021
1/05/2021
29/05/2021
26/06/2021
31/07/2021
28/08/2021
25/09/2021
23/10/2021
20/11/2021
18/12/2021
15/01/2022
19/02/2022
19/03/2022
23/04/2022
21/05/2022
18/06/2022
23/07/2022
20/08/2022
1/10/2022
5/11/2022
3/12/2022
21/01/2023
18/02/2023
LETTUCE-Iceberg-Carton
300%
250%
200%
150%
100%
50%
change
-50%
-100%
POTATOES-Brushed White-20Kg bag
30%
25%
20%
15%
10%
5%
change
-5%
-10%
-15%
BEANS-Round Stemless-Kg
200%
150%
100%
50%
% change
-50%
-100%

3.6 Selected domestic fodder indicator prices



4. Data attribution

Climate

Bureau of Meteorology

- Weekly rainfall totals: www.bom.gov.au/climate/maps/rainfall/
- Monthly and last 3-month rainfall percentiles: www.bom.gov.au/water/landscape/
- Temperature anomalies: www.bom.gov.au/jsp/awap/temp/index.jsp
- Rainfall forecast: www.bom.gov.au/jsp/watl/rainfall/pme.jsp
- Seasonal outlook: www.bom.gov.au/climate/outlooks/#/overview/summary/
- Climate drivers: http://www.bom.gov.au/climate/enso/
- Soil moisture: www.bom.gov.au/water/landscape/

Other

- Pasture growth: www.longpaddock.qld.gov.au/aussiegrass/
- 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
- Global production: https://ipad.fas.usda.gov/ogamaps/cropmapsandcalendars.aspx
- Autumn break: Pook et al., 2009, https://rmets-onlinelibrary-wiley-com.virtual.anu.edu.au/doi/epdf/10.1002/joc.1833

Water

Prices

- Waterflow: https://www.waterflow.io/
- Ruralco: https://www.ruralcowater.com.au/

Bureau of Meteorology:

- Allocation trade: http://www.bom.gov.au/water/dashboards/#/water-markets/mdb/at
- Storage volumes: http://www.bom.gov.au/water/dashboards/#/water-storages/summary/drainage

Trade constraints:

- Water NSW: https://www.waternsw.com.au/customer-service/ordering-trading-and-pricing/trading/murrumbidgee
- Victorian Water Register: https://www.waterregister.vic.gov.au/TradingRules2019/

Commodities

Fruit and vegetables

- Datafresh: www.freshstate.com.au

Pigs

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

Dairy

- Global Dairy Trade: www.globaldairytrade.info/en/product-results/

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

- Australian Wool Exchange: www.awex.com.au/

Domestic wheat, barley, sorghum, canola and fodder

- Jumbuk Consulting Pty Ltd: http://www.jumbukag.com.au/

Cattle, beef, mutton, lamb, goat and live export

- Meat and Livestock Australia: www.mla.com.au/Prices-and-market

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