



# Weekly Australian Climate, Water and Agricultural Update

No. 6/2023

16 February 2023

## Summary of key issues

- For the week ending 15 February 2023, monsoonal troughs remained active and together with the active Madden-Julian Oscillation (MJO) pulse resulted in widespread rainfall and localised thunderstorms, mainly in tropical northern Australia.
- Little to no rainfall across summer cropping regions in southern Queensland would have allowed for improving access to fields for crop maintenance activities and for the harvesting of early sown crops to continue. Meanwhile, rainfall across New South Wales cropping regions likely benefited the germination of late sown summer crops in northern growing regions and benefited soil moisture profiles in the lead up to the sowing on winter forage crops (see Section 1.1).
- Global crop production conditions have been generally favourable for the major grain and oilseed producing countries despite dry conditions across parts of Argentina, Brazil, and the United States, affecting the production potential of wheat, corn and soybeans (see Section 1.2).
- Below average rainfall during January is likely to result in lower-than-expected winter wheat production across parts of Argentina and Brazil. Average to above average rainfall across the United States, Australia, and parts of Europe is likely to improve production prospects in these key production regions. This is providing, on balance, a decline in global production conditions to those seen back in November 2022, that were used to formulate ABARES forecasts of global grain supplies and the impact on world prices in its December 2022 edition of *Agricultural Commodities* (see Section 1.2).
- The global climate outlook indicates that average to below average rainfall is slightly more likely between March and May 2023 for most of the world's major grain- and oilseed-producing regions. Partly due to the influence of ENSO neutral, above average rainfall is expected for western Argentina and much of Brazil, parts of western Europe, and northwest and eastern United States (see Section 1.2).
- Over the 8-days to 16 February 2023, rainfall is expected to be restricted to northern Australia under the influence of monsoonal troughs. Little to no rainfall for summer cropping regions in northern New South Wales and Queensland is expected to improve access to fields for crop maintenance activities, benefit crop growth and allow for the uninterrupted harvest of early sown crops (see Section 1.3).
- Water storage levels in the Murray-Darling Basin (MDB) decreased between 8 February 2023 and 15 February 2023 by 171 gegalitres (GL). Current volume of water held in storage is 23 289 GL which represents 92 percent of total capacity. This is 3 percent or 729 GL more than at the same time last year.
- Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$18 per ML on 9 February 2023 to \$15 per ML on 16 February 2023. Prices are lower in the Murrumbidgee and regions above the Barmah choke due to the binding of the Murrumbidgee export limit and Barmah choke trade constraint.

# 1. Climate

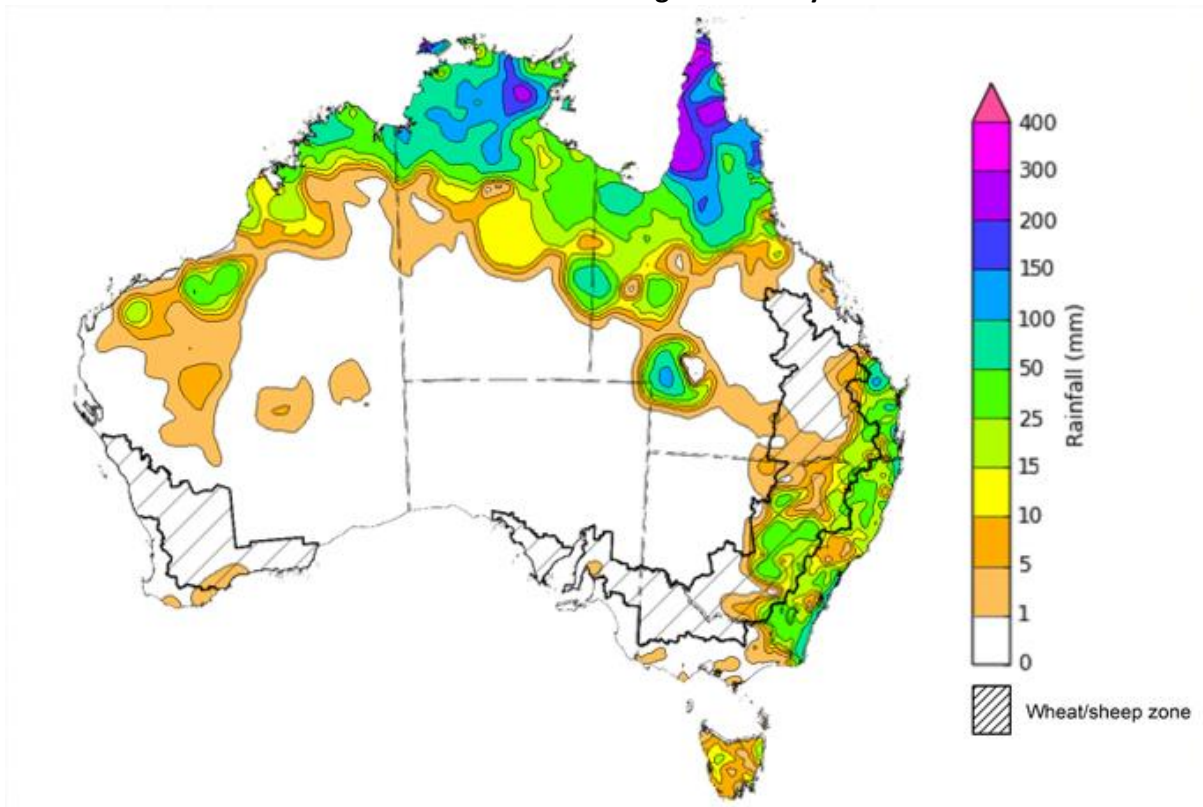
## 1.1. Rainfall this week

For the week ending 15 February 2023, a strong pulse of the Madden-Julian Oscillation (MJO) was in the Maritime Continent and resulted in widespread rainfall and localised thunderstorm activities across northern Australia.

Weekly rainfall totals of between 15 and 100 millimetres were recorded over large areas of northern Australia, with some pockets across northern Queensland and eastern Arnhem of the Northern Territory recording more than 200 millimetres. Meanwhile, a low-pressure trough brought rainfall totals of between 15 and 50 millimetres to large areas of southeast Queensland and eastern New South Wales. In contrast, little or no rainfall was recorded across the remainder of Australia.

Little to no rainfall was recorded across most of the cropping regions except central New South Wales where the rainfall between 15 and 25 millimetres was recorded. Little to no rainfall across summer cropping regions in southern Queensland would have allowed for improving access to fields for crop maintenance activities and for the harvesting of early sown crops to continue. Meanwhile, rainfall across New South Wales cropping regions likely benefited the germination of late sown summer crops in northern growing regions and benefited soil moisture profiles in the lead up to the sowing on winter forage crops.

**Rainfall for the week ending 15 February 2023**



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Issued: 15/02/2023

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. Global production conditions and climate outlook

Crop production is affected by long-term trends in average rainfall and temperature, interannual climate variability, shocks during specific growth stages, and extreme weather events. Some crops are more tolerant than others to certain types of stresses, and at each growth stage, different types of stresses affect each crop species in different ways.

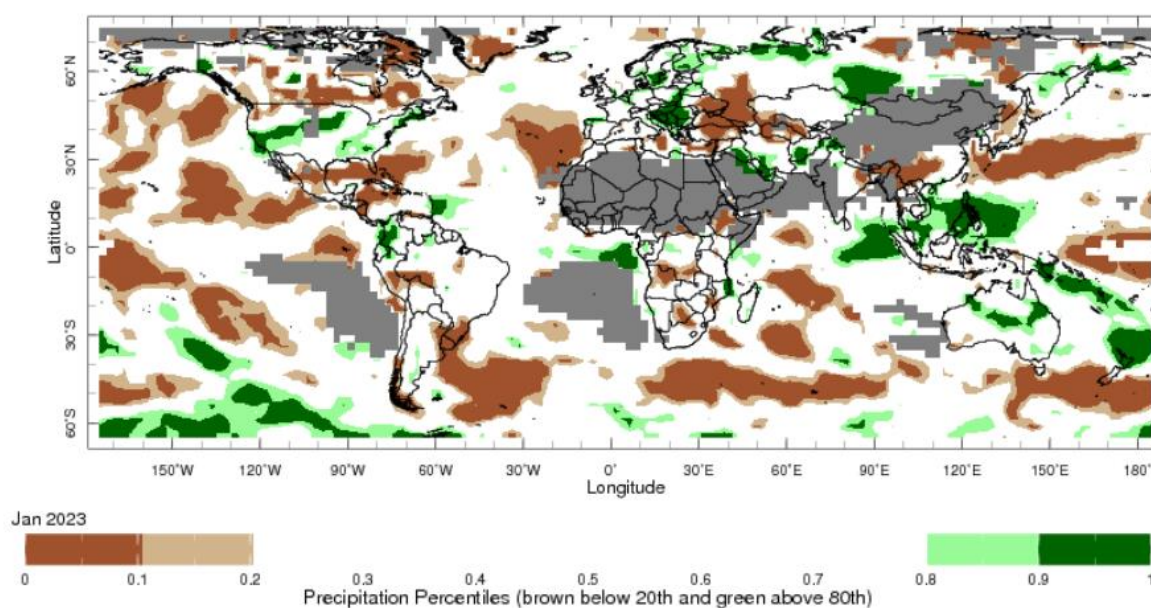
The precipitation anomalies and outlooks presented here give an indication of the current and future state of production conditions for the major grain and oilseed producing countries which are responsible for over 80% of global production. This is an important input to assessing the global grain supply outlook.

### January precipitation percentiles and current production conditions

As of the end of January 2023, rainfall was mixed for the world's major grain-producing and oilseed-producing regions.

The precipitation was below average across much of Canada, Mexico, eastern Ukraine, Türkiye, Bulgaria, the southwest of the Russian Federation, southern China, parts of southern Brazil, eastern Argentina, and eastern India. Precipitation was above average for large areas of the United States, UK, eastern Europe, northern India, and much of Southeast Asia. Precipitation was close to average across the remainder of the major grain-producing and oilseed-producing regions.

### Global precipitation percentiles, January 2023



Note: The world precipitation percentiles indicate a ranking of precipitation for January, with the driest (0<sup>th</sup> percentile) being 0 on the scale and the wettest (100<sup>th</sup> percentile) being 1 on the scale. Percentiles are based on precipitation estimates from the NOAA Climate Prediction Center's [Climate Anomaly Monitoring System Outgoing Precipitation Index](#) dataset. Precipitation estimates for January 2023 are compared with rainfall recorded for that period during the 1981 to 2010 base period.

Source: International Research Institute for Climate and Society

As of 28 January 2023, the global production conditions were generally favourable for the production of rice and wheat. However, a lack of precipitation has affected the production potential of corn and soybeans in some key grain exporting and importing countries.

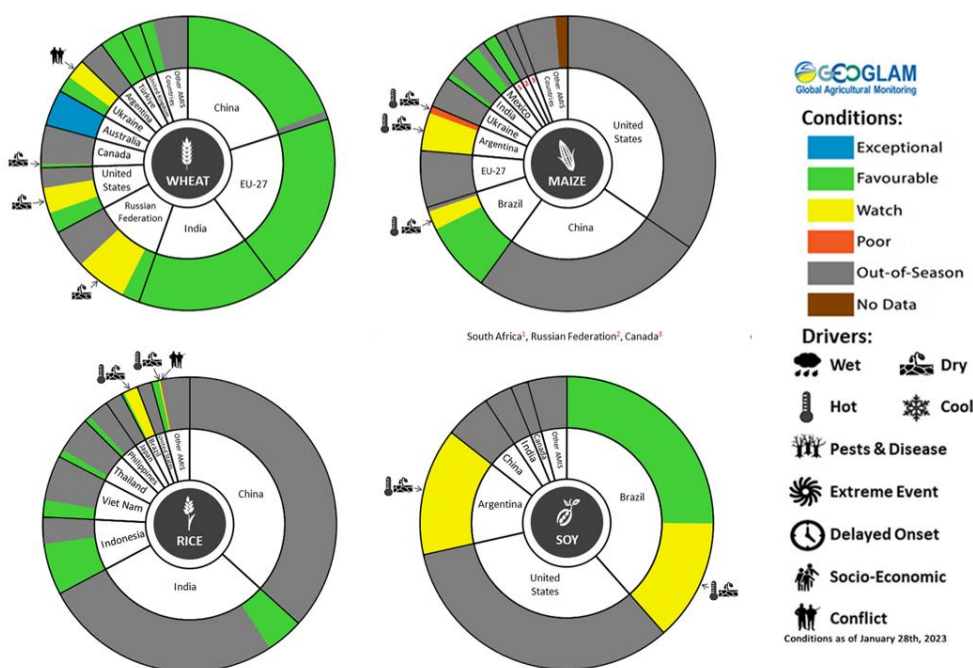
The production conditions for wheat have been generally favourable. Climatic conditions have been favourable for wheat development in Canada, China, the European Union, Türkiye, and the United Kingdom. Production is mixed in the United States, Ukraine and the Russian Federation due to dryness in some areas. Conditions were favourable for winter wheat sowing in India.

Corn production conditions have deteriorated in Argentina for their early planted crop due to the prolonged drought and high temperatures throughout December and January affecting yield potential. The late planted crop will require rainfall over the next few weeks to avoid further yield loss. In Brazil, conditions were generally favourable for spring-planted crop development except for in Rio Grande do Sul region due to a lack of rain and high temperatures in the south. The sowing of summer-planted corn is commencing under favourable conditions in Brazil. In India, conditions have been favourable for Rabi crop sowing.

Production conditions have been favourable for transplanting of Rabi rice in India. Harvesting conditions have been favourable for dry-season rice harvesting and sowing of wet-season rice in Indonesia. In the Philippines, Thailand and Vietnam conditions have been favourable for the harvest of wet-season and sowing of dry-season rice. In Brazil, production conditions and yield potentials have declined due to lack of rain and high temperatures and low irrigated water availability.

Production conditions for soybeans have been less than favourable in Argentina. The early-planted crop reached flowering during prolonged drought and hot conditions, which caused flowers and pods to drop, reducing yields. Sowing of the late-planted crop is wrapping up but requires further rainfall and lower temperatures to boost yield productions. In Brazil, most crops are in the reproductive stages of development, with harvest just beginning in some places under favourable conditions in the northern and central regions. However, in the southern region reduced yields are expected due to prolonged dryness and high temperatures.

### Crop conditions, AMIS countries, 28 January 2023



AMIS Agricultural Market Information System.  
Source: AMIS

The global climate outlook for March 2023 to May 2023 indicates that mixed rainfall conditions are expected for the world’s major grain-producing and oilseed-producing regions. Outlooks and potential production impacts for the major grain and oilseed producing countries are presented in the table.

### Rainfall outlook and potential impact on the future state of production conditions between March 2023 to May 2023

Region	March-May rainfall outlook	Potential impact on production
<b>Argentina</b>	Average rainfall is more likely across much of Argentina between March and May 2023. With below average rainfall more likely in the northeast.	Average to above average rainfall is likely to support the development of sorghum, rice, millet, soybeans, corn, sunflower, cotton and nuts, and the planting of wheat in May 2023.
<b>Black Sea Region</b>	Below average rainfall is forecast for parts of Kazakhstan, Ukraine and the Russian Federation, except for central Russia where it is forecast for above normal.	Below average rainfall in parts of Kazakhstan and Ukraine may adversely affect winter wheat and canola development, as well as cotton, corn and sunflower planting from March 2023. Average or above normal rainfall across the Russian Federation is likely to support similar crops in the south and the planting and development of spring wheat planting in the north from April 2023.
<b>Brazil</b>	Above average rainfall is more likely across northern and central Brazil while below average rainfall is more likely across parts of southern Brazil.	Above average rainfall across northern and central Brazil is likely to support the development of cotton and corn, and the harvesting of soybeans. Below average rainfall in the south may adversely affect the development and harvesting of rice, sorghum, millet, sunflower, soybeans, cotton, nuts and corn, and the planting of wheat in May 2023.
<b>Canada</b>	Average rainfall is more likely across much of Canada between March and May 2023	Above rainfall is likely to support winter wheat development in Canada from March 2023 and the planting of spring wheat, canola, corn, soybeans and sunflower from May 2023.
<b>China</b>	Average rainfall is more likely across much of China while below average rainfall is more likely across parts of southern China.	Average rainfall across much China is likely to support the development of winter wheat and canola and the planting and development of early rice, single rice, cotton, spring wheat, corn, sorghum, soybeans, sunflower and nuts. Below average rainfall across southern China may affect the development of these crops from March 2023.
<b>Europe</b>	Average to above average rainfall is more likely for much of Europe between March and May 2023.	Average to above average rainfall across Europe is likely to support winter wheat and canola development and the planting and development of corn, cotton, spring wheat, soybeans, sunflower and sorghum between March and May 2023.
<b>South Asia (India)</b>	Average rainfall is more likely across much of India, while below average rainfall is more likely for parts of eastern India.	Average rainfall is likely to support the development of wheat and canola in India, while below average rainfall in the east may adversely affect the development of these crops.
<b>Southeast Asia (SEA)</b>	Above average rainfall in southeast Myanmar, Vietnam, Cambodia and Philippines. Average rainfall in Thailand and below average rainfall in the rest of SEA.	Average or better rainfall across most of Southeast Asia is likely to benefit corn and rice planting, development and harvesting. Below average rainfall may adversely impact rice, corn and soybean production.
<b>The United States of America (US)</b>	Above average rainfall is more likely for parts of eastern US while below average rainfall is more likely for parts of southern US.	Average or better rainfall in eastern US is likely to support winter wheat as it comes out of dormancy, as well as the planting and development of spring wheat, canola, corn, cotton, rice, soybeans and nuts. Below average rainfall in the southern US may adversely impact the development of winter wheat and the planting and development of corn, cotton, nuts, rice and soybeans.

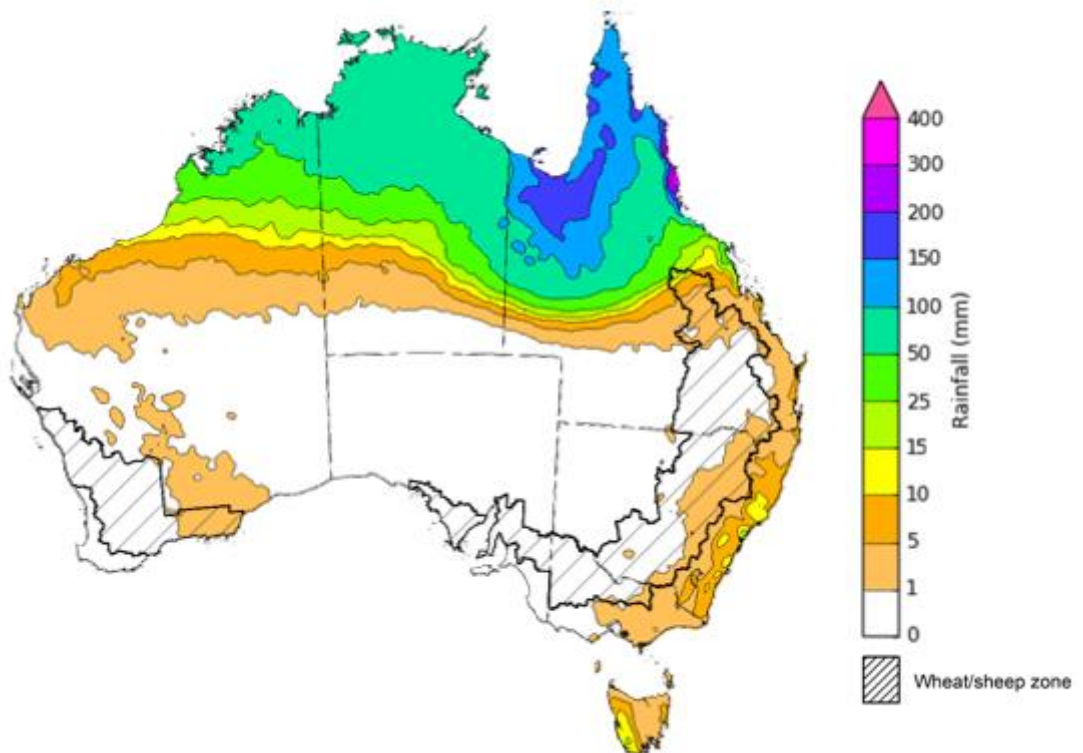
### 1.3. Rainfall forecast for the next eight days

Over the 8-days to 16 February 2023, the monsoon trough is expected to bring increased rainfall across northern Australia. Low-pressure systems and troughs are expected to bring scattered rainfall to the eastern coast of Australia.

Monsoonal conditions, which recently developed across the south-eastern Indian Ocean, are expected to remain across northern Australia over the coming week. The presence of the monsoon trough will favour widespread thunderstorm activities with higher-than-average rainfall expected. A tropical low is being monitored in the Gulf of Carpentaria and is currently not expected to intensify into a Tropical Cyclone. It will, however, bring strong winds and heavy rainfall along the south-west coastal regions of the Gulf of Carpentaria during the week. Rainfall in this region is forecast to exceed 150 mm.

Little to no rainfall is expected for most cropping regions in the next eight days. Little to no rainfall for summer cropping regions in northern New South Wales and Queensland is expected to improve access to fields for the crop maintenance activities, benefit crop growth and allow for the uninterrupted harvest of early sown crops.

**Total forecast rainfall for the period 9 February to 16 February 2023**



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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.

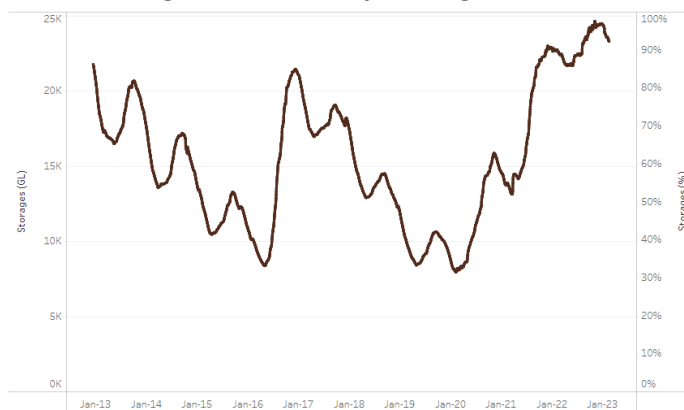
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## 2. Water

### 2.1. Water markets – current week

Water storage levels in the Murray-Darling Basin (MDB) decreased between 8 February 2023 and 15 February 2023 by 171 gigalitres (GL). Current volume of water held in storage is 23 289 GL which represents 92 percent of total capacity. This is 3 percent or 729 GL more than at the same time last year.

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

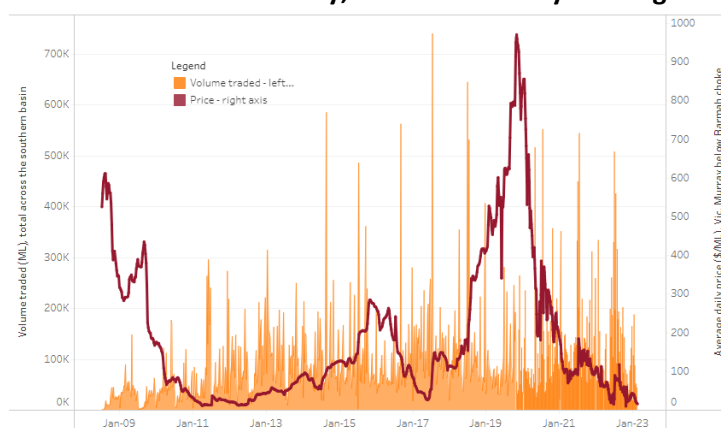


Water storage data is sourced from the Bureau of Meteorology.

Allocation prices in the Victorian Murray below the Barmah Choke decreased from \$18 per ML on 9 February 2023 to \$15 per ML on 16 February 2023. Prices are lower in the Murrumbidgee and regions above the Barmah choke due to the binding of the Murrumbidgee export limit and Barmah choke trade constraint.

Region	\$/ML
NSW Murray Above	5
NSW Murrumbidgee	10
VIC Goulburn-Broken	15
VIC Murray Below	15

**Surface water trade activity, Southern Murray–Darling Basin**



The trades shown reflect estimated market activity and do not encompass all register trades. The price is shown for the VIC Murray below the Barmah choke. Historical prices (before 1 July 2019) are ABARES estimates after removing outliers from BOM water register data. Prices after 1 July 2019 and prior to the 30 October 2019 reflect recorded transaction prices as sourced from Ruralco. Prices after the 30 October 2019 are sourced from Waterflow. Data for volume traded is sourced from the BOM water register. Data shown is current on 16 February 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 [http://www.agriculture.gov.au/abares/products/weekly\\_update/weekly-update-160223](http://www.agriculture.gov.au/abares/products/weekly_update/weekly-update-160223)



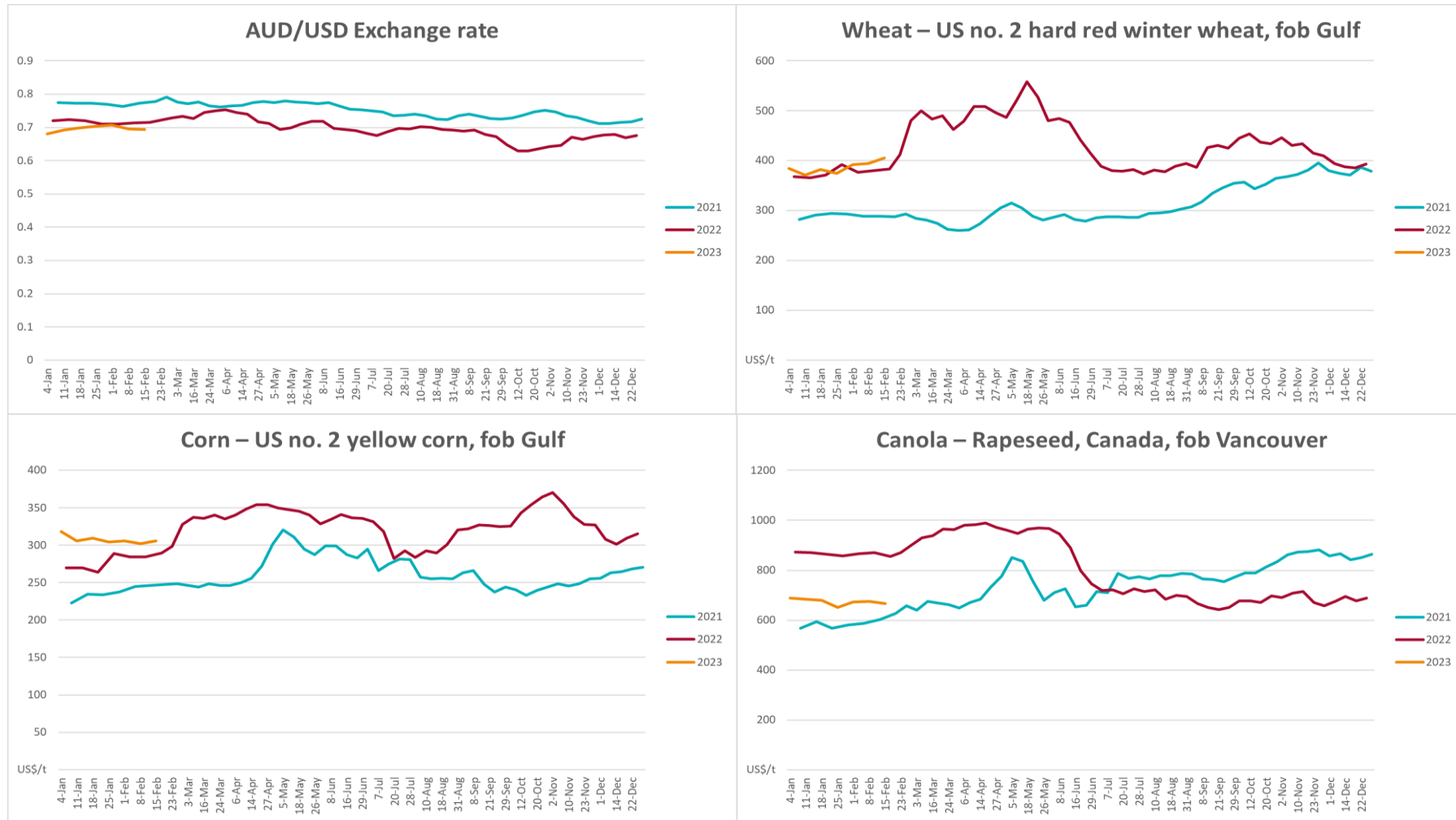
### 3. Commodities

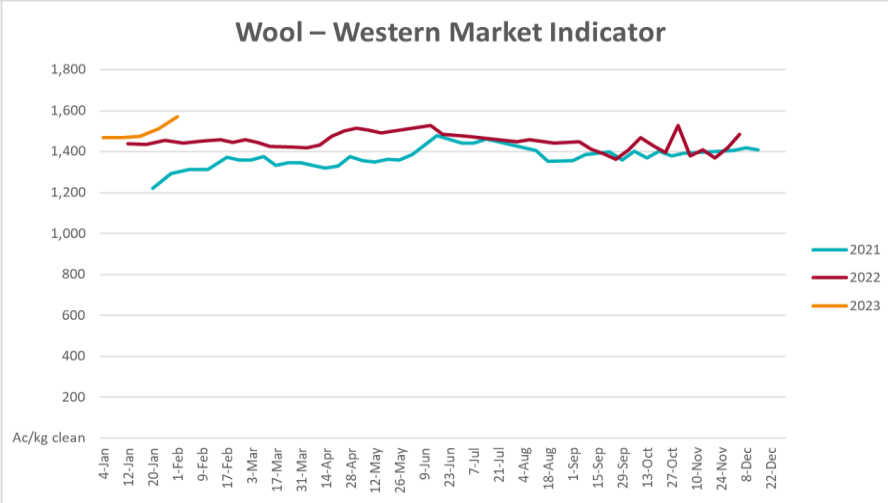
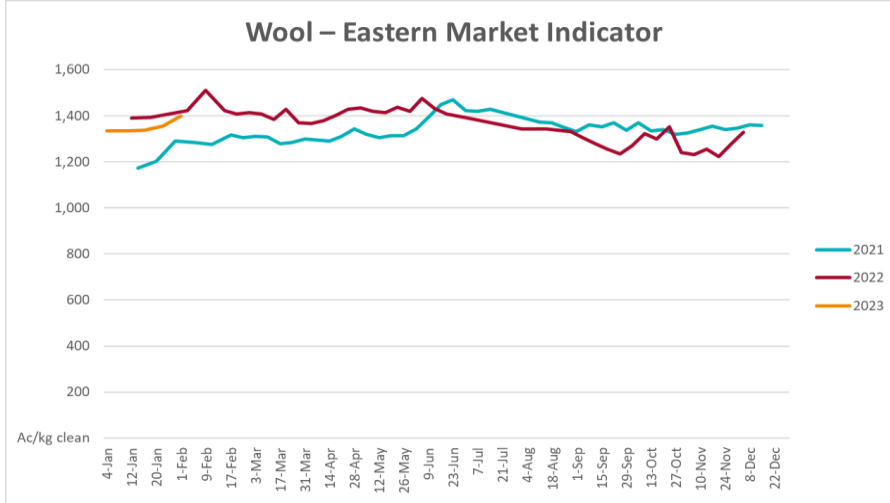
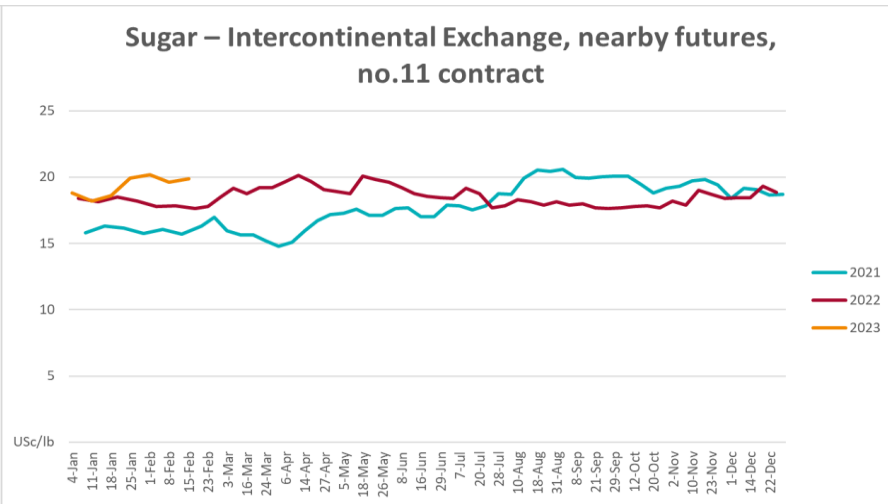
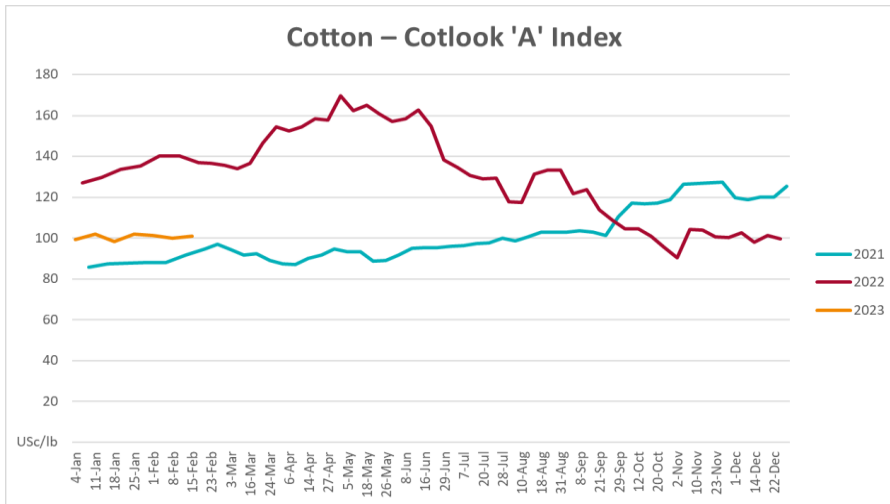
Indicator	Week ended	Unit	Latest price	Previous week	Weekly change	Price 12 months ago	Annual change
<b>Selected world indicator prices</b>							
AUD/USD Exchange rate	15-Feb	A\$/US\$	0.69	0.69	0%	0.72	-4%
Wheat – US no. 2 hard red winter wheat, fob Gulf	15-Feb	US\$/t	405	393	3%	412	-2%
Corn – US no. 2 yellow corn, fob Gulf	15-Feb	US\$/t	306	302	1%	298	3%
Canola – Rapeseed, Canada, fob Vancouver	15-Feb	US\$/t	666	674	-1%	870	-23%
Cotton – Cotlook 'A' Index	15-Feb	USc/lb	101	100	1%	137	-26%
Sugar – Intercontinental Exchange, nearby futures, no.11 contract	15-Feb	USc/lb	19.8	19.6	1%	18	12%
Wool – Eastern Market Indicator	01-Feb	Ac/kg clean	1,400	1,356	3%	1,341	4%
Wool – Western Market Indicator	01-Feb	Ac/kg clean	1,570	1,510	4%	1,401	12%
<b>Selected Australian grain export prices</b>							
Milling Wheat – APW, Port Adelaide, SA	15-Feb	A\$/t	498	505	-1%	484	3%
Feed Wheat – ASW, Port Adelaide, SA	15-Feb	A\$/t	471	461	2%	449	5%
Feed Barley – Port Adelaide, SA	15-Feb	A\$/t	415	413	1%	392	6%
Canola – Kwinana, WA	15-Feb	A\$/t	1,064	1,061	0%	1,008	6%
Grain Sorghum – Brisbane, QLD	15-Feb	A\$/t	496	481	3%	369	35%
<b>Selected domestic livestock indicator prices</b>							
Beef – Eastern Young Cattle Indicator	15-Feb	Ac/kg cwt	753	758	-1%	1,122	-33%
Mutton – Mutton indicator (18–24 kg fat score 2–3), Vic	15-Feb	Ac/kg cwt	353	391	-10%	575	-39%
Lamb – Eastern States Trade Lamb Indicator	15-Feb	Ac/kg cwt	731	763	-4%	837	-13%
Pig – Eastern Seaboard (60.1–75 kg), average of buyers & sellers	25-Jan	Ac/kg cwt	367	367	0%	357	3%
Goats – Eastern States (12.1–16 kg)	01-Feb	Ac/kg cwt	325	350	-7%	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%

Indicator							
<b>Global Dairy Trade (GDT) weighted average prices <sup>a</sup></b>							
Dairy – Whole milk powder	08-Feb	US\$/t	3,329	3,218	3%	3,380	-2%
Dairy – Skim milk powder	08-Feb	US\$/t	2,829	2,842	0%	3,243	-13%
Dairy – Cheddar cheese	08-Feb	US\$/t	4,980	4,871	2%	4,082	22%
Dairy – Anhydrous milk fat	08-Feb	US\$/t	5,586	5,337	5%	5,398	3%

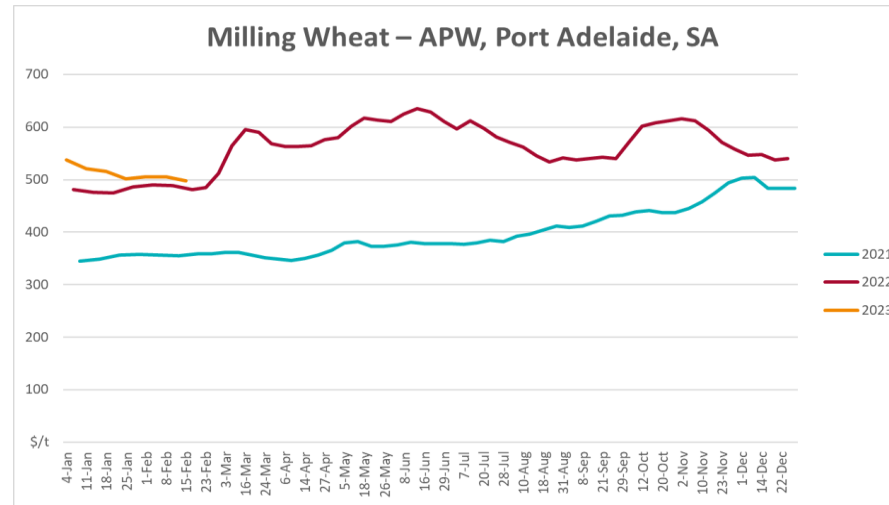
<sup>a</sup> Global Dairy Trade prices are updated twice monthly on the first and third Tuesday of each month.

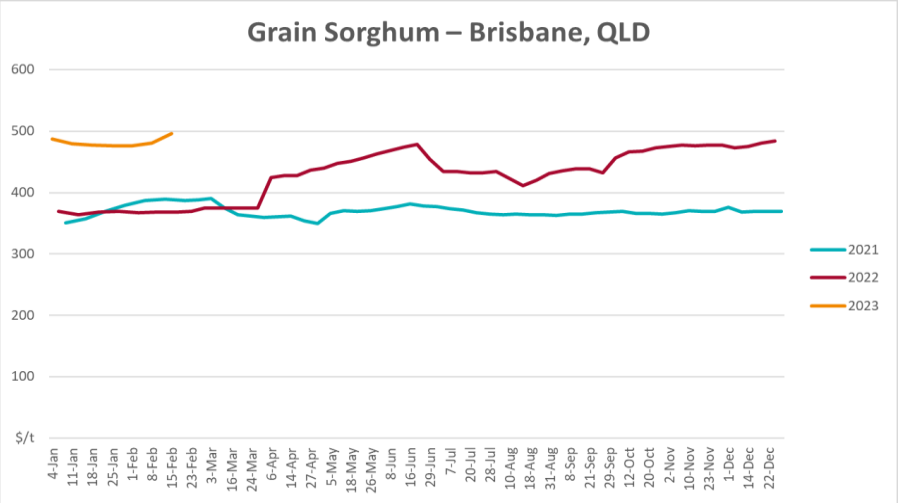
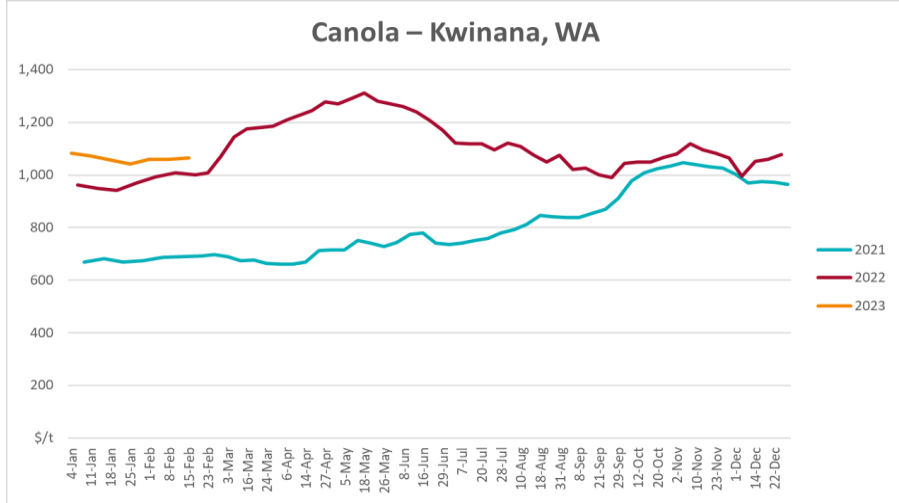
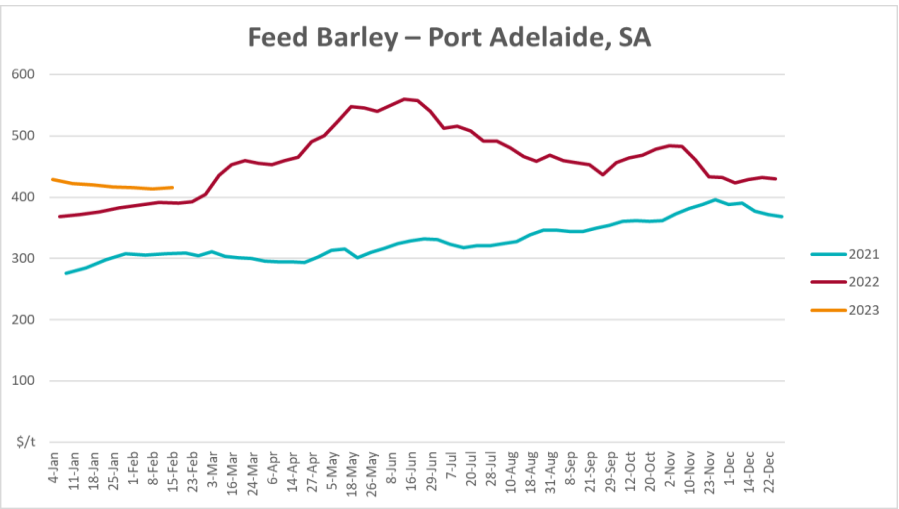
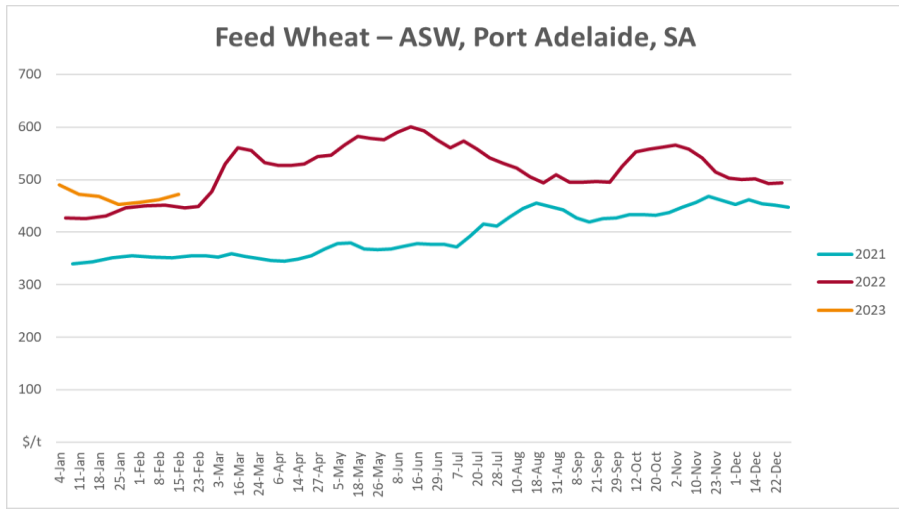
### 3.1. Selected world indicator prices



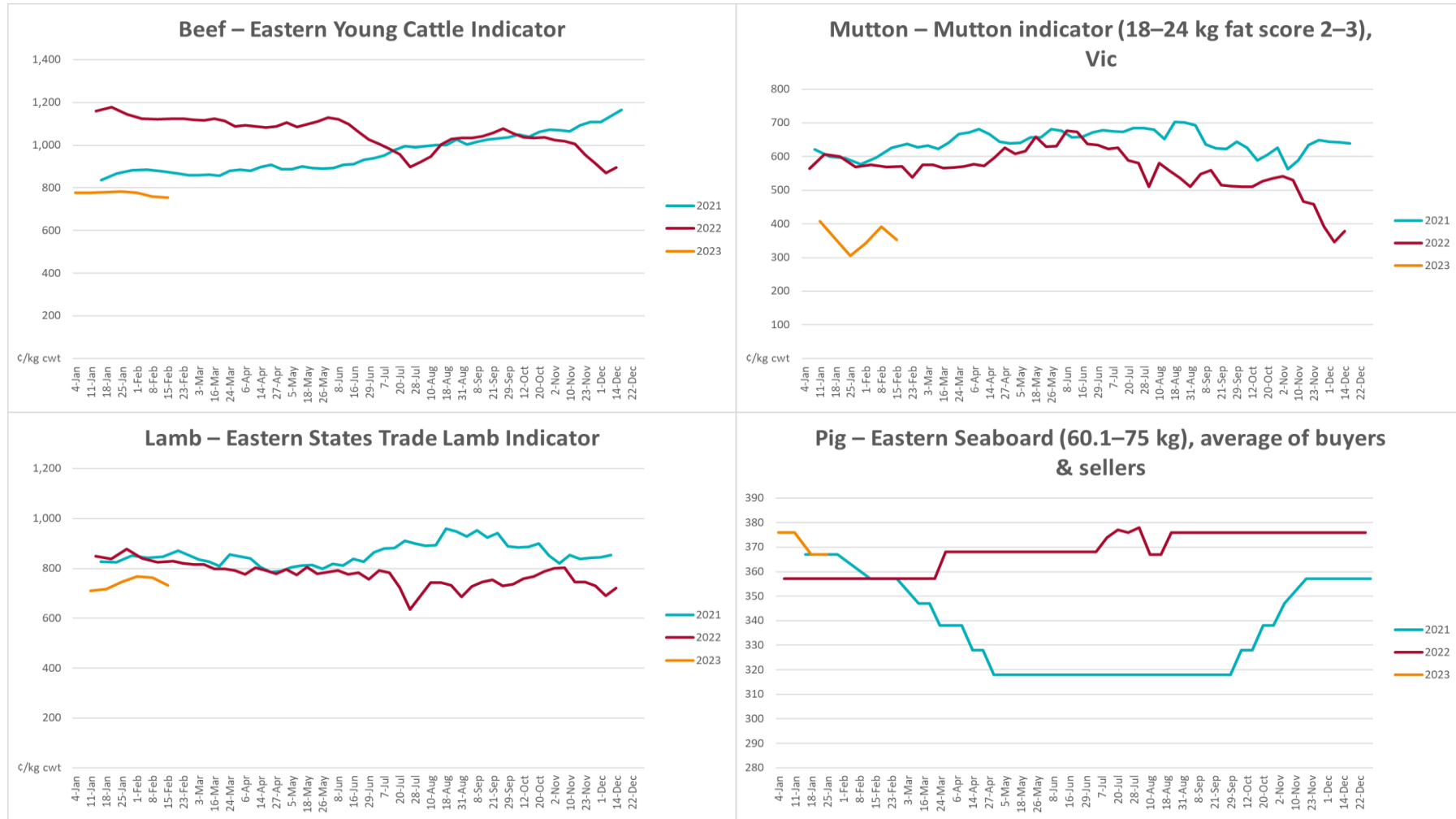


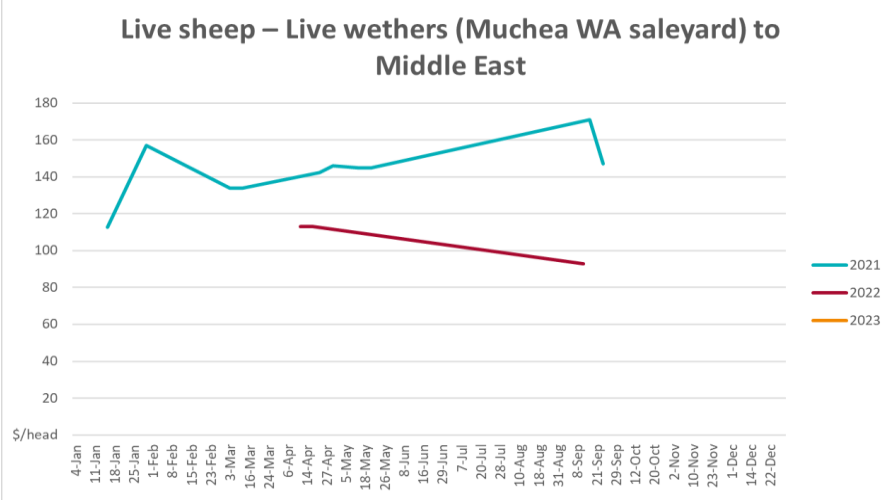
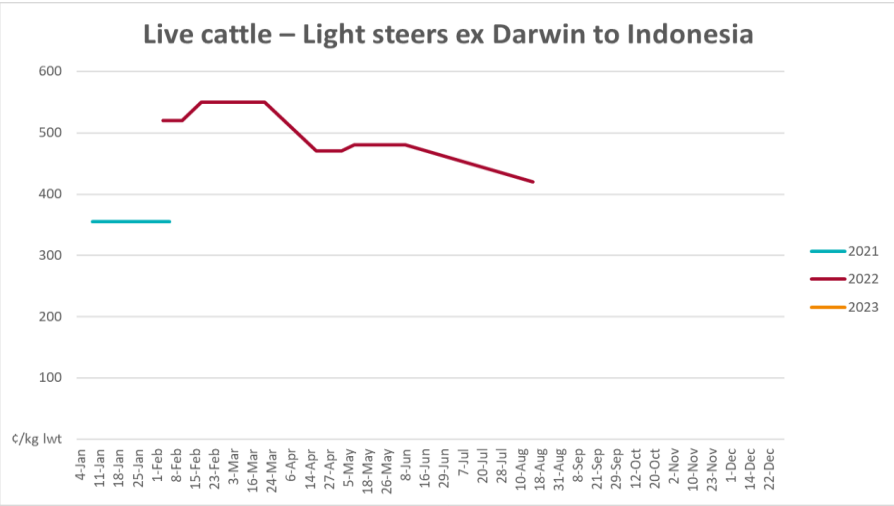
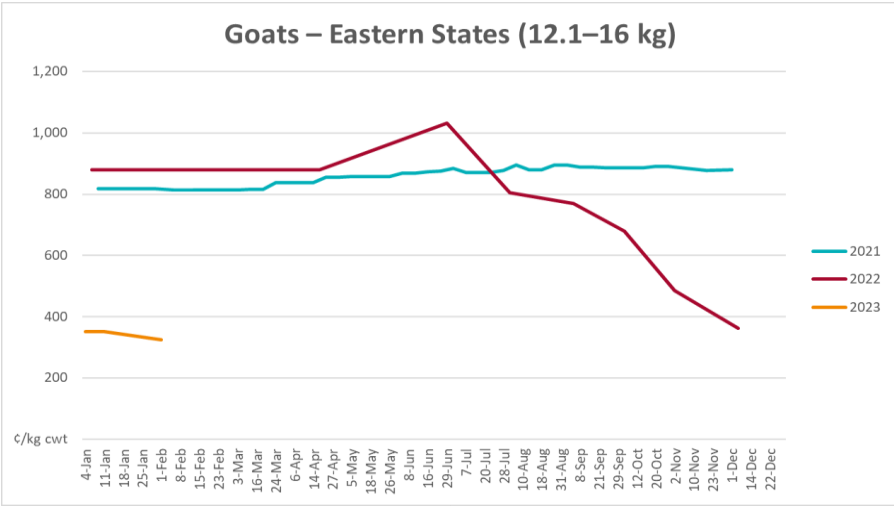
### 3.2. Selected domestic crop indicator prices





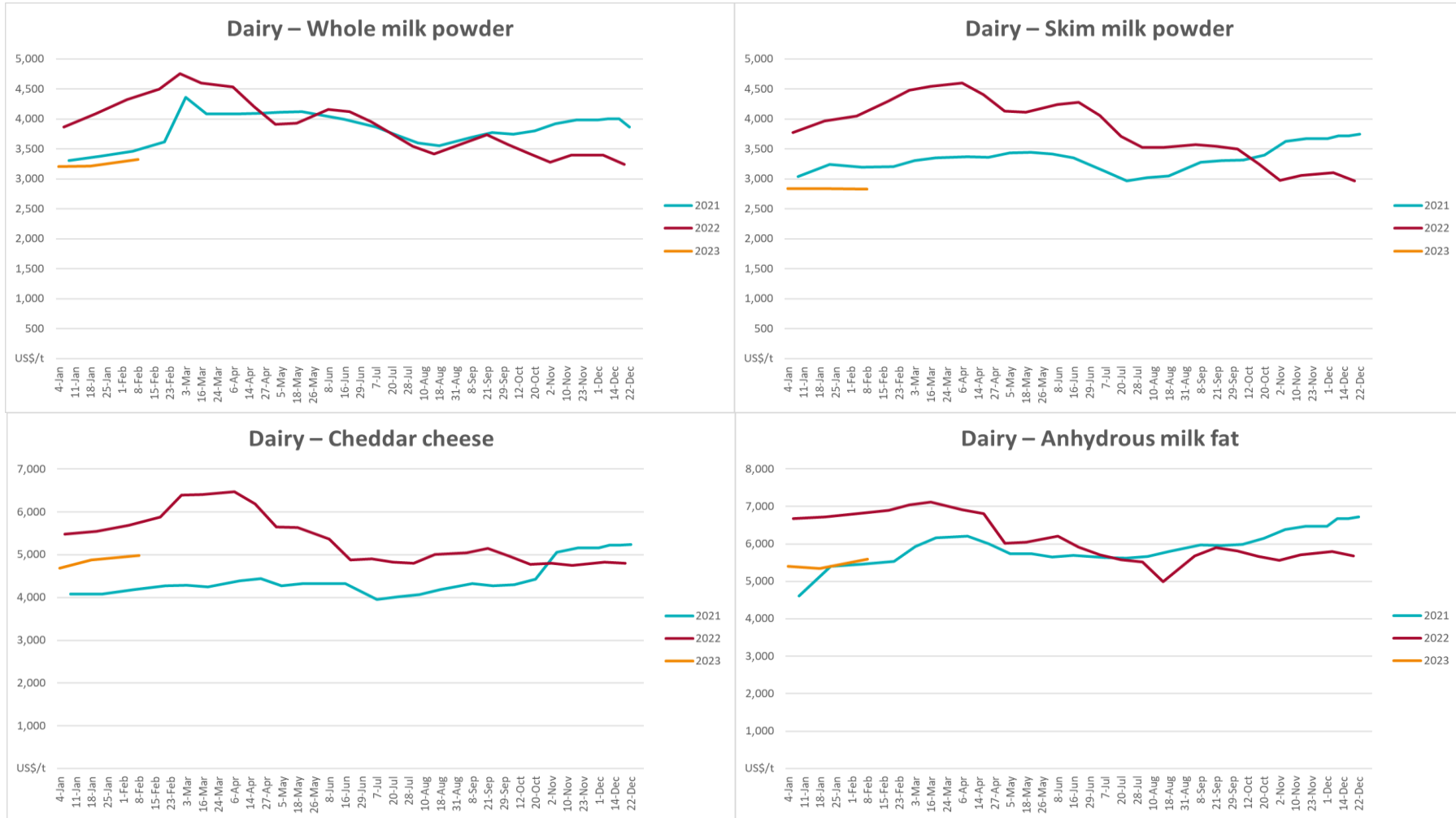
### 3.3. Selected domestic livestock indicator prices



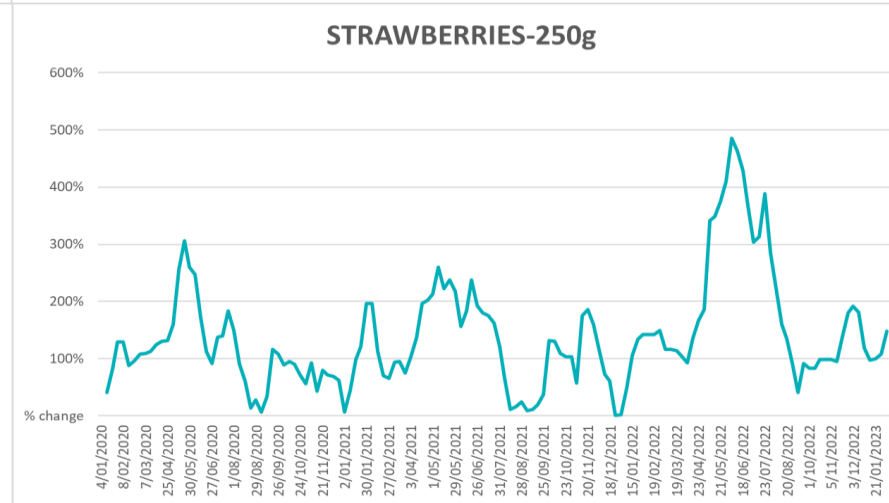
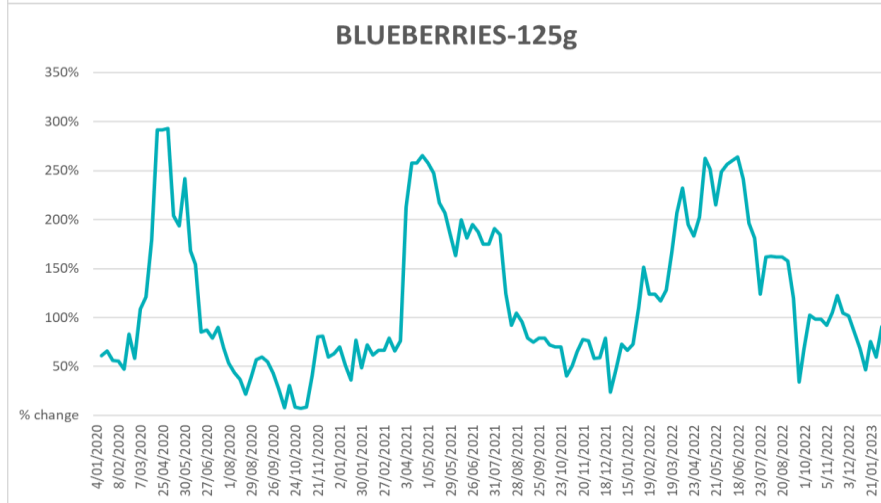
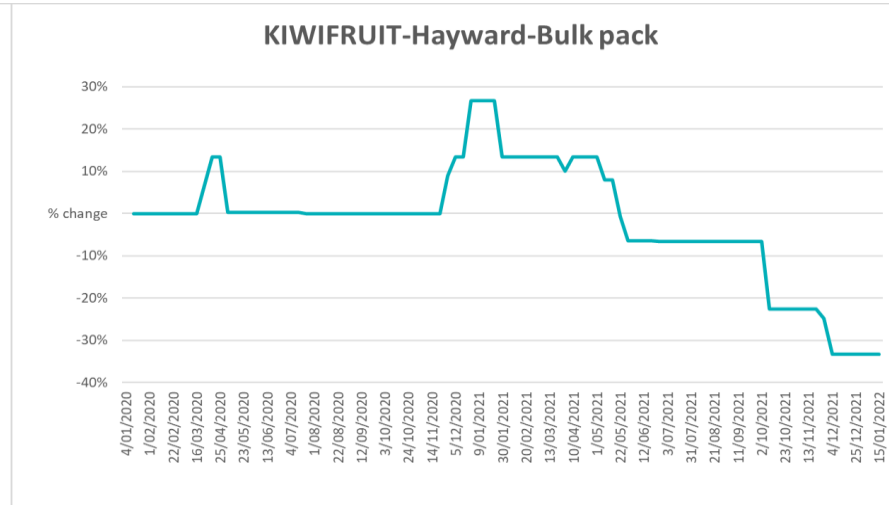
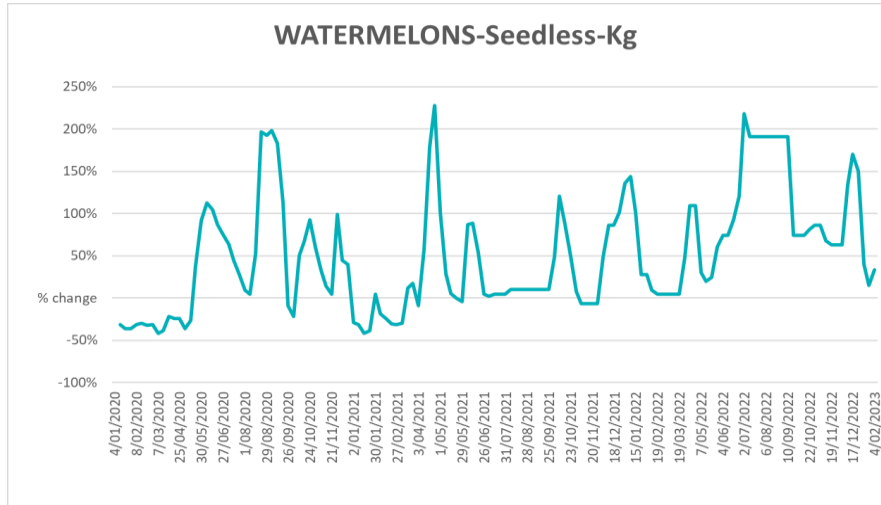


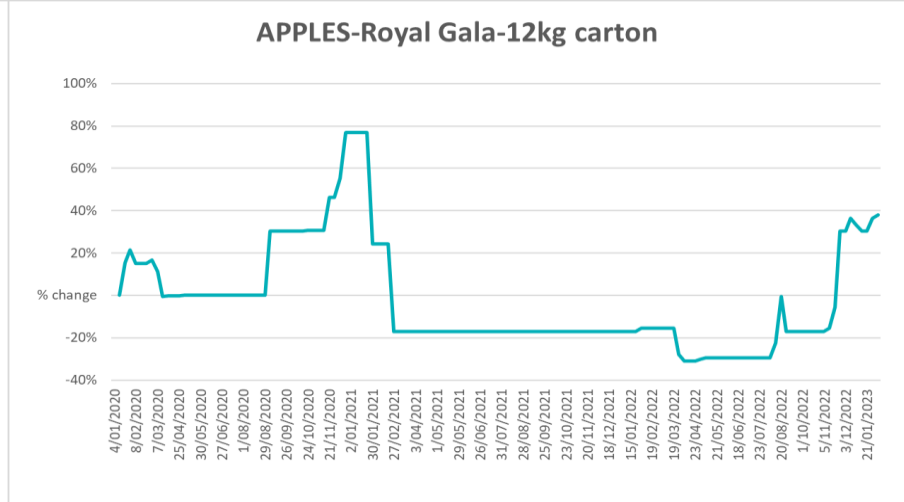
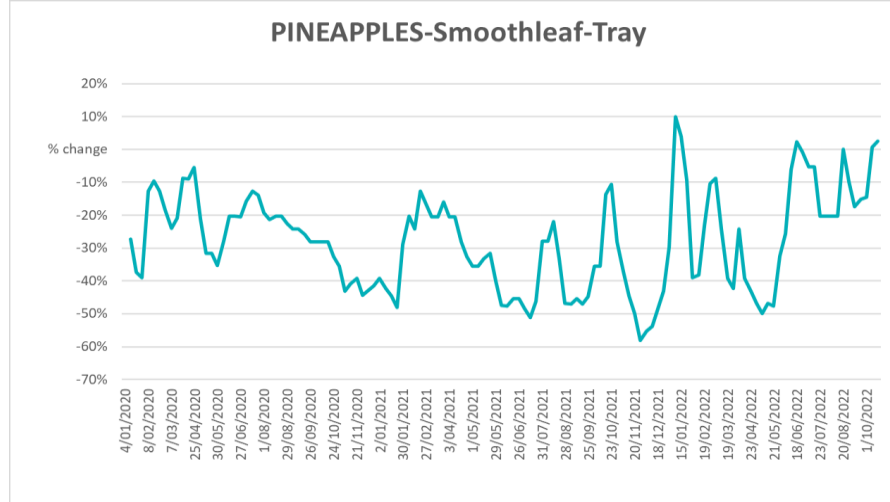
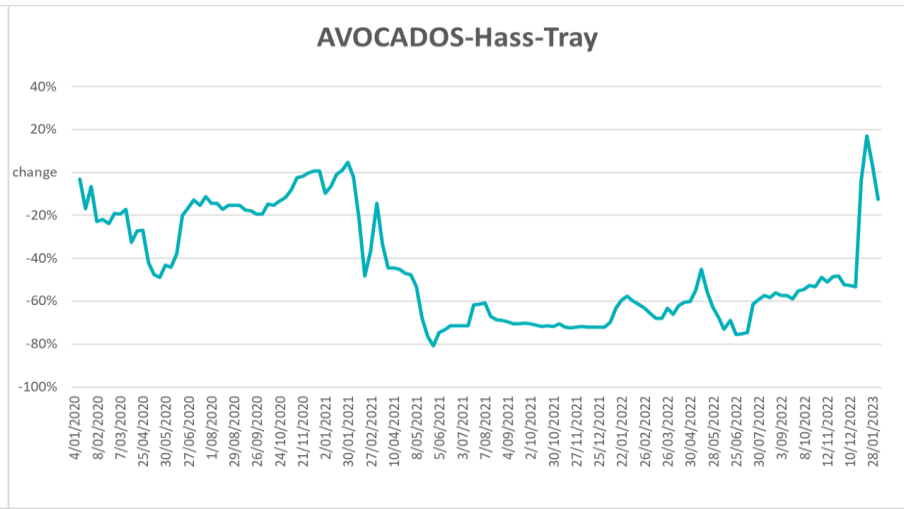
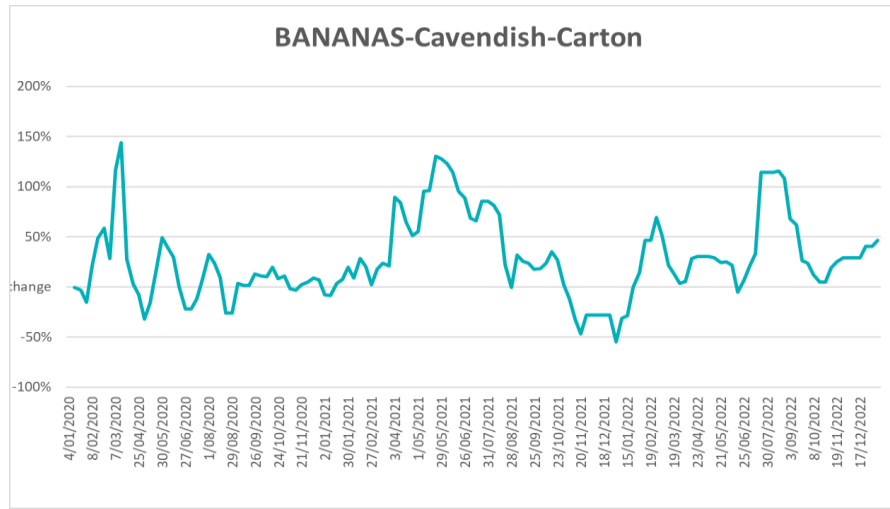


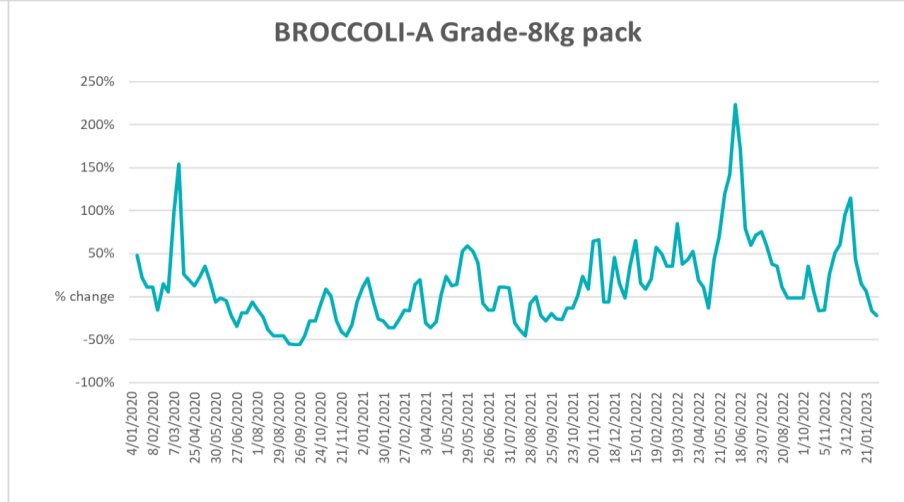
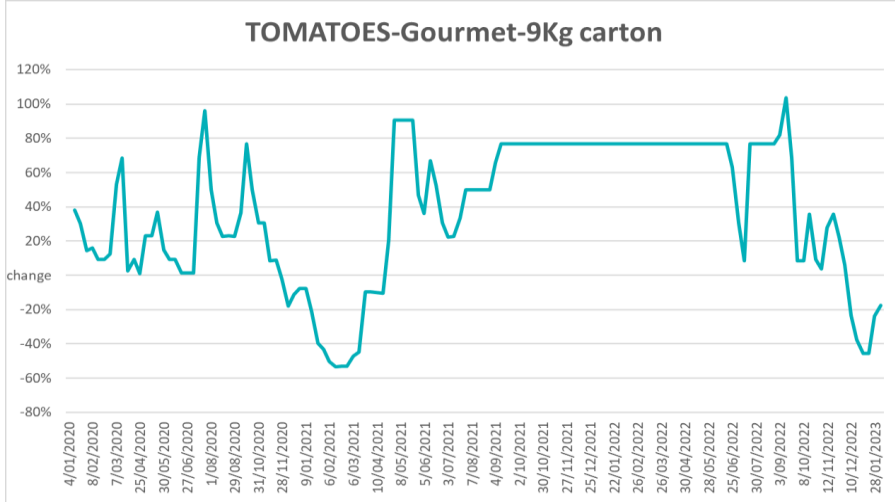
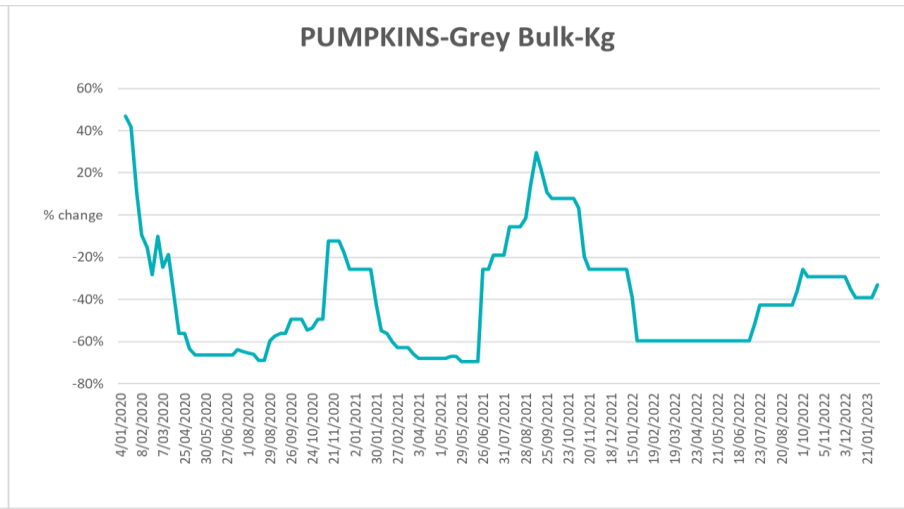
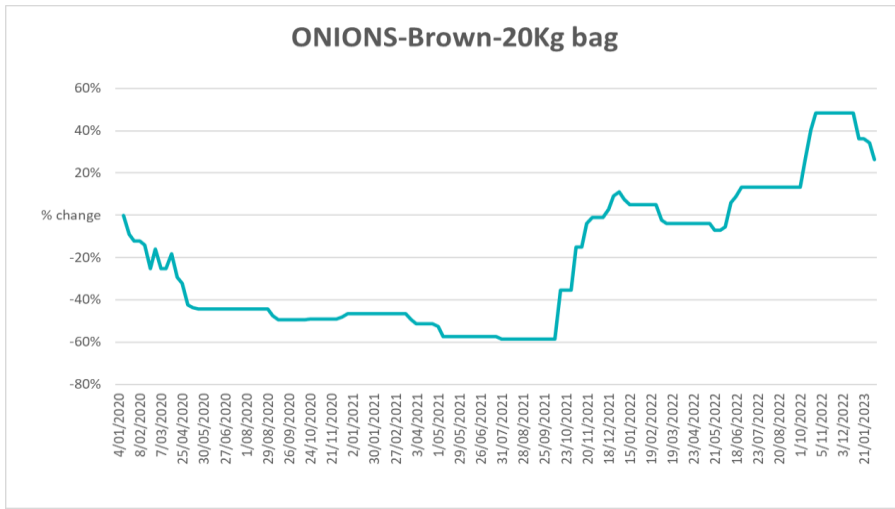
### 3.4. Global Dairy Trade (GDT) weighted average prices

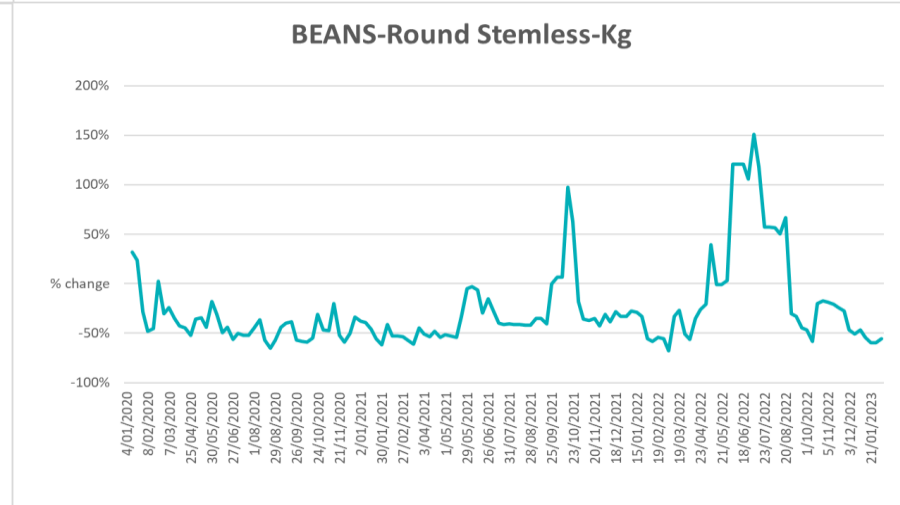
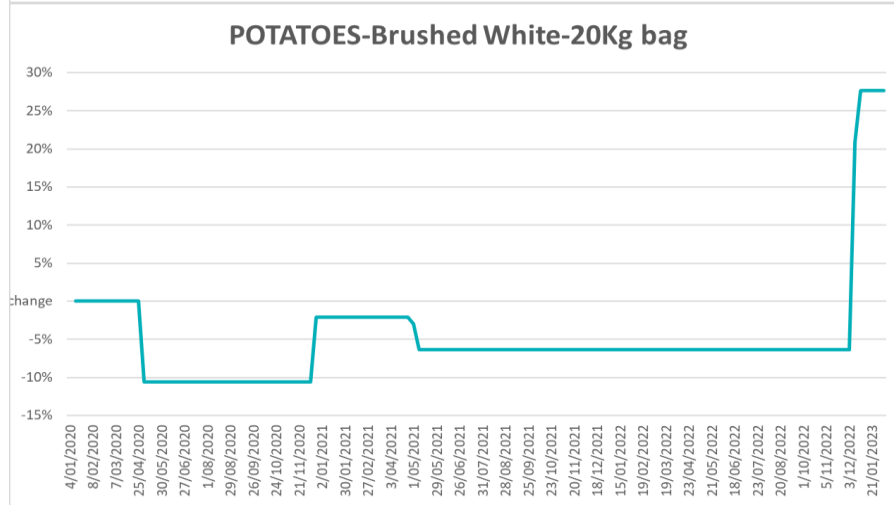
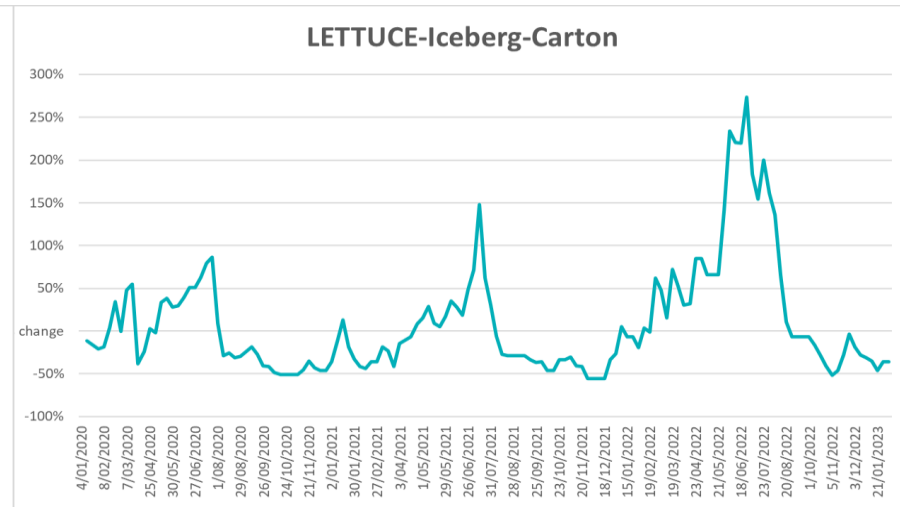
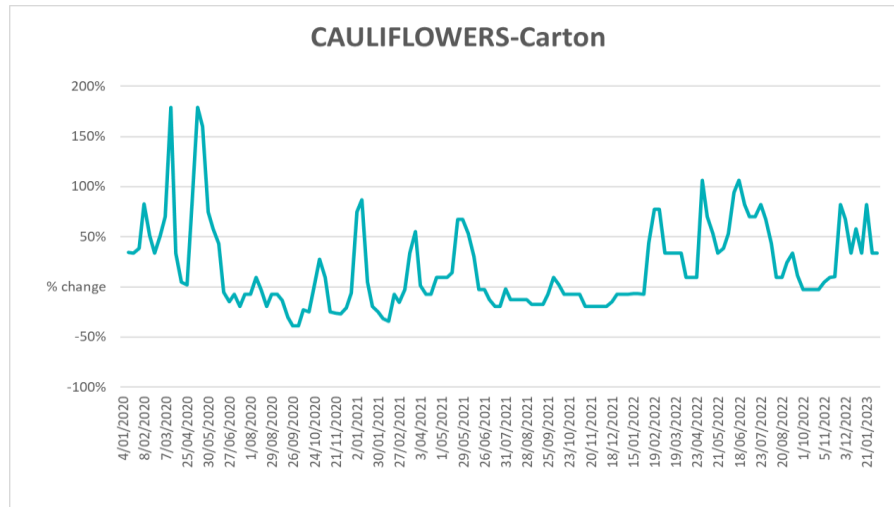


### 3.5. Selected fruit and vegetable prices

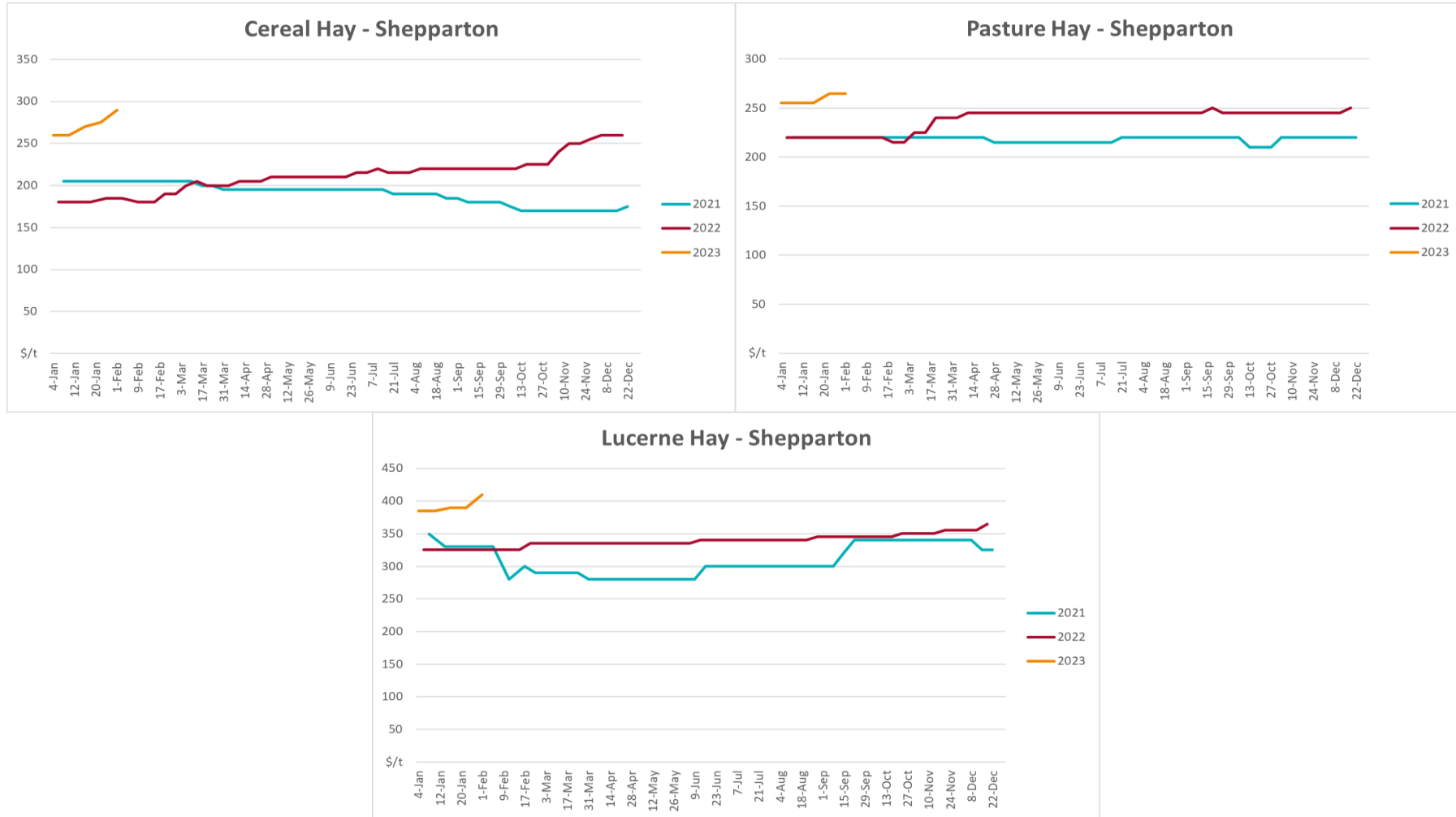








### 3.6. Selected domestic fodder indicator prices



## 4. Data attribution

### Climate

#### Bureau of Meteorology

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

#### Other

- Pasture growth: [www.longpaddock.qld.gov.au/aussiegrass/](http://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://rmetsonline.wiley.com/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.watarnsw.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](http://www.freshstate.com.au)

#### Pigs

- Australian Pork Limited: [www.australianpork.com.au](http://www.australianpork.com.au)

#### Dairy

- Global Dairy Trade: [www.globaldairytrade.info/en/product-results/](http://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/](http://www.cotlook.com/)

#### World sugar

- New York Stock Exchange - Intercontinental Exchange

#### Wool

- Australian Wool Exchange: [www.awex.com.au/](http://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](http://www.mla.com.au/Prices-and-market)

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