


Department of Primary Industries

NSW PRIMARY INDUSTRIES

PERFORMANCE, DATA & INSIGHTS 2018

www.dpi.nsw.gov.au/PDI

Performance, Data and Insights 2018

Published by the NSW Department of Primary Industries

First published November 2018

Second, revised edition published December 2018

More information

NSW Department of Primary Industries

www.dpi.nsw.gov.au

economics.analysis@dpi.nsw.gov.au

15116 -12/2018

978-1-76058-283-8

CONTENTS

FOREWORDS

MINISTER FOR PRIMARY INDUSTRIES

The NSW Government's $1 billion commitment through the 2018-19 budget will ensure this state's farmers and our primary industries are supported to deliver world-class products at home, across the country and around the globe.

This investment will deliver essential programs to increase on-farm productivity, support farmers in drought, ensure the state's strong biosecurity status, battle pests and weeds, ensure sustainable fish stocks for recreational and commercial fishers and continue to deliver innovation through a portfolio of research and development projects across the state.

While some areas of primary industries are experiencing buoyant market conditions, there is no doubt the current seasonal conditions are serious and challenging for many producers. As Minister for Primary Industries, I am committed to continue building strong foundations to support our primary producers to meet these challenges head on.

We look forward to better seasons ahead for all our primary producers to build resilience and increase productivity, benefiting all NSW communities.

The Hon. Niall Blair, MLC

DIRECTOR GENERAL NSW DPI

This year saw NSW DPI continue its strong reputation in research and development aimed at boosting the value of NSW Primary Industries. In June 2018, our commitment was rewarded when the NSW Government announced $50 million for world class food and fibre infrastructure across rural and regional NSW.

NSW DPI will invest in state-of-the-art research facilities to increase primary industry productivity across cropping, livestock, pastures and aquaculture and continue to build DPI's reputation as a world leading primary industries research provider.

The cyclical nature of primary industries was endured by many this past year. Unfortunately, the challenges are set to continue with the official forecast from the Bureau of Meteorology pointing to a higher chance of warm, dry conditions. As forecast last year, cropping output halved while livestock industries experienced mixed fortunes. The lag effect of the drought however, will likely result in lower output in the coming year.

NSW DPI will continue to work across a variety of industries and countries to promote our sector and identify opportunities for expansion. This work not only promotes our regional produce, but better informs our producers.

Scott Hansen

EXECUTIVE SUMMARY

In 2017-18, NSW Primary Industries performance was determined by several key factors including prices received, productive output, the macroeconomic environment, and seasonal conditions. The season was characterised by a lack of rainfall, with winter being the ninth driest on record. Despite average rainfall during spring, below average rainfall from January through to June led to limited livestock feed, failed winter crops in key regions and decreased stored soil moisture levels heading into the warmer months.

In this context, while 2017-18 presented challenges, NSW primary industries reached an estimated output of $17.5 billion.

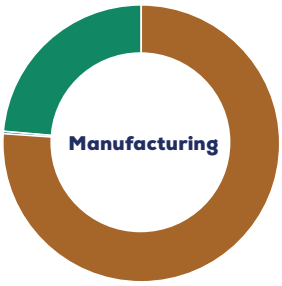
Beef, sheep, wool and cotton all performed well, accounting for 33% of the state's Output, with a combined value of $5.9 billion. The wool industry went from strength to strength as a result of record breaking prices and strong export demand. Cotton benefited from increased production, yield and steady prices, culminating in a 22% increase in Output. Beef and sheep production rose as farmers looked to destock. NSW crop production including wheat, pulses, barley and oilseeds were all impacted by seasonal conditions. Our $640 million fisheries and forestry sectors continued to grow and play a vital part in the state's economy.

Recreational fishing, including charter fishing, and hunting and game management activities have been included in the measure of the total annual output of NSW's primary industries for the first time this year, with a combined estimated value of $3.8 billion. This is in recognition of the economic and social benefits to the NSW economy, particularly in regional areas. For reference the term Output is retained when discussing farm gate industry value in the document.

NSW primary industry exports earned $5.4 billion, with large increases in beef, sheep, and wool exports driven by higher volumes and prices.

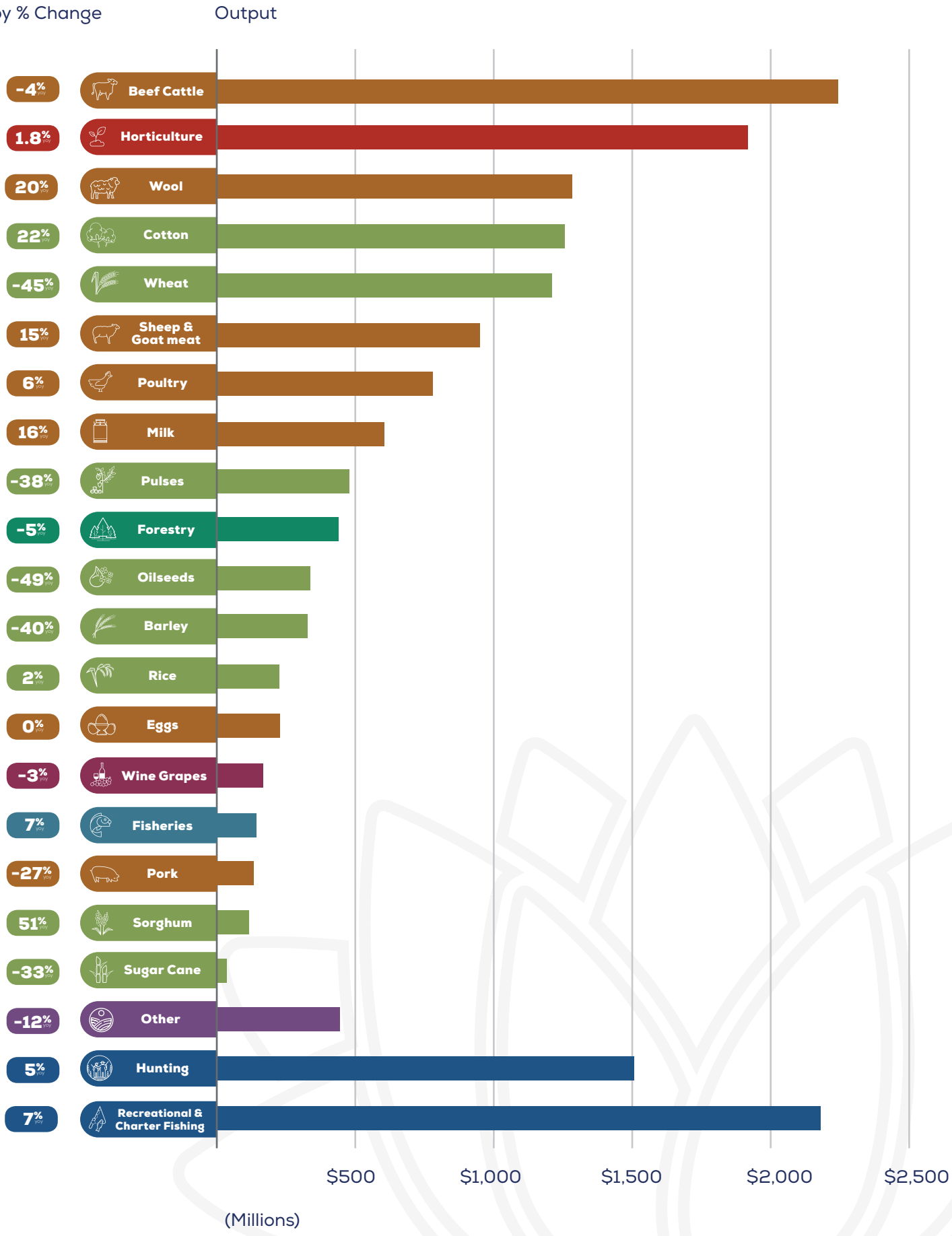
Given the diversity of production across the state, this publication profiles key drivers across a number of important primary industry sectors. Analyses of major factors, attribution stories and Output performance for each industry follow, while key industry statistics and drivers are contained in the appendices.

JOBS AND BUSINESSES DATA



	Directly Employed	Manufacturing	Direct Businesses	Manufacturing Businesses
Agriculture	63,310	60,778	46,757	3,332
Fisheries	1,406	665	1,254	27
Forestry	551	23,980	1,159	2,291
Support Services	7,917	-	4,204	-
TOTAL	73,183	85,423	53,374	5,650

TOTAL ESTIMATED PRIMARY INDUSTRIES OUTPUT 2017-18



KEY EXPORT MARKETS

NSW Primary Industry Exports

NSW primary industry exports earned $5.4 billion, with large increases in beef, sheep, and wool exports driven by higher volumes and prices. Exports were 15.1% lower than the previous year, however this result is distorted by new state level data restrictions on cotton exports. Factoring in the discrepancy would result in total primary exports of approximately $6.1 billion, a decline of just 3.9% year-on-year[c].

China, Japan and the United States (U.S.) were the largest destination of primary industry exports from NSW. Exports to China increased 17% to $1.76 billion; exports to Japan increased 7% to $559 million; and exports to the U.S. increased 16% to $546 million. Eight of the ten largest markets by value were in located in Asia, emphasising the importance of these markets.

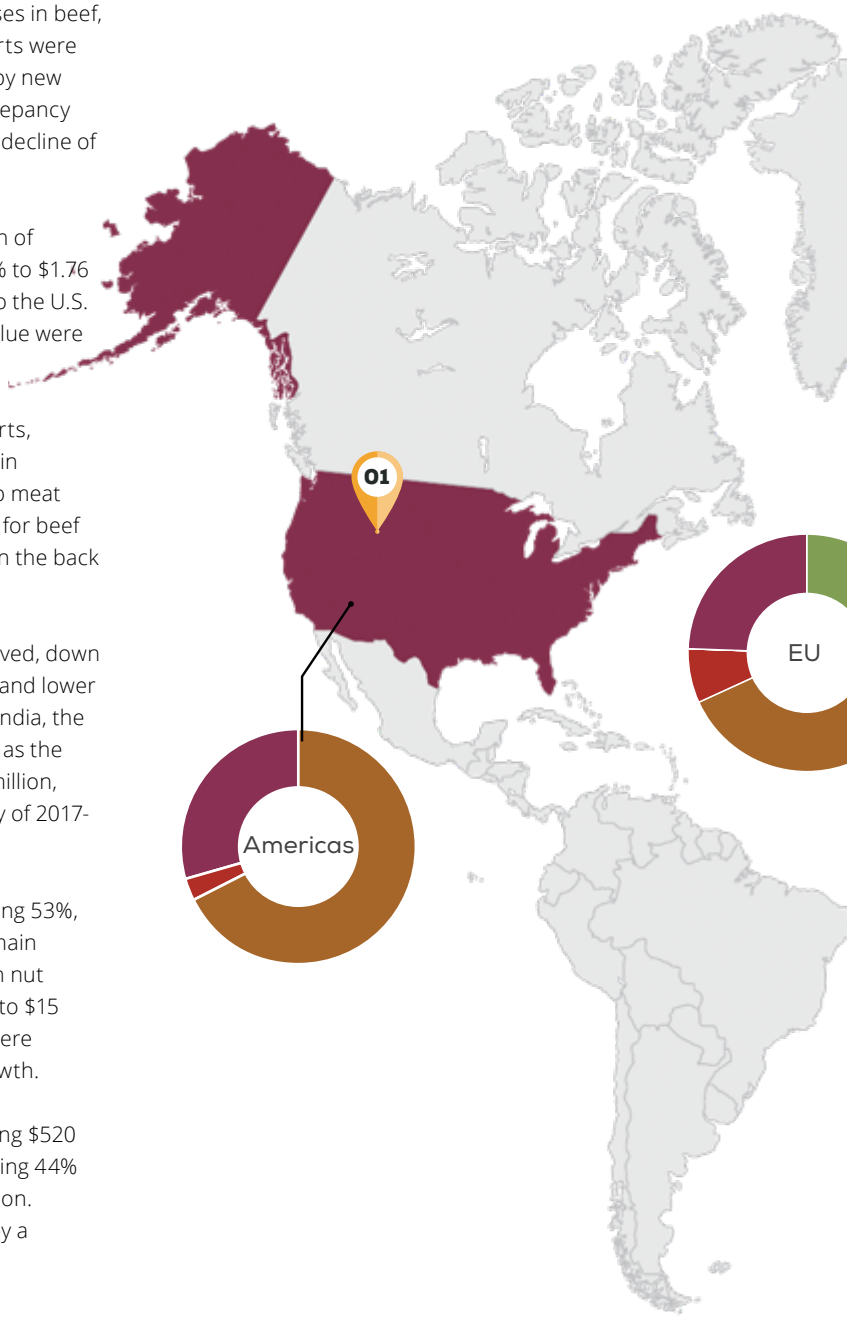
Livestock meat and other products contributed $3.17 billion in exports, accounting for approximately 59% of total primary industry exports in NSW. The highest value export industries were beef, wool and sheep meat respectively. China, Japan and the U.S. were the largest destinations for beef and sheep meat exports, with China increasing by a dramatic 88% on the back of particularly strong demand for these commodities.

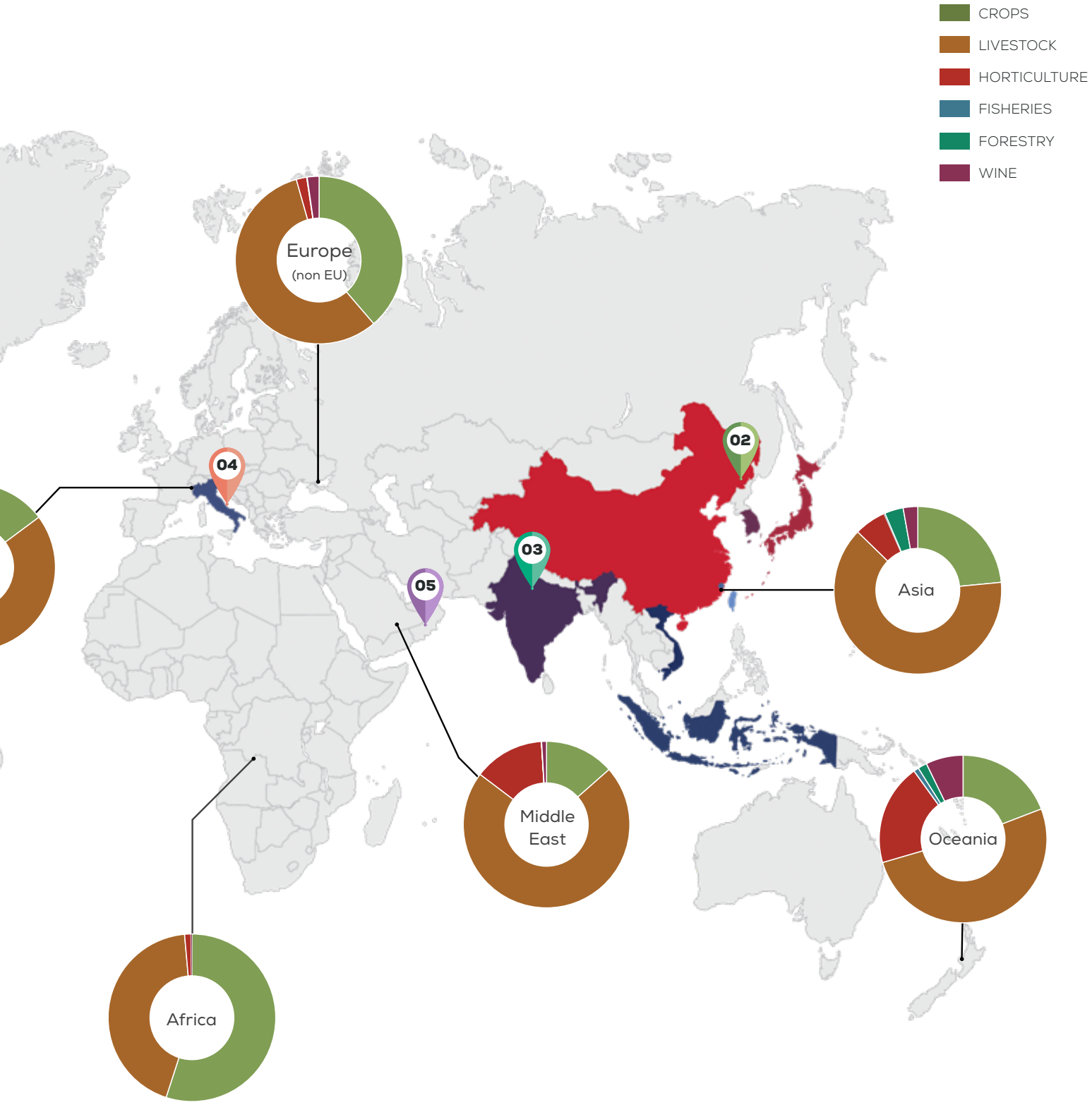
Broadacre crops were reported at $1.13 billion having more than halved, down 58% on the previous year owing to data restrictions[j], dry conditions and lower production. Wheat exports declined with exports to Indonesia and India, the two largest destinations last year, falling 66% and 100% respectively as the latter sourced wheat domestically. Oilseed exports fell 83% to $37 million, consisting mostly of cotton seed exports to China, while the majority of 2017-18 canola was sold to the domestic crush market.

Horticulture exports grew by 12% to $365 million with nuts comprising 53%, fruit 22% and vegetables 7% of the export value. Exports to NSW's main export destination China increased by 50% totalling $65 million, with nut exports increasing by 44% to $39 million and citrus exports by 46% to $15 million. Citrus exports worth $45 million and up 29% year-on-year were promising with Vietnam, UAE and China in particular driving this growth.

Wine exports remained steady with a marginal increase of 2% totalling $520 million. The U.S. continues its status as NSW's main market, comprising 44% of the export value, although exports were down by 8% to $227 million. The United Kingdom was the second largest market and increased by a noteworthy 68% to reach $86 million.

Forestry exports grew for a fourth consecutive year, up 6% year-on-year. Much of the growth is attributable to China which accounts for 87% of forestry exports, valued at $127 million.





01

US accounts for 62% of NSW sheep and goat meat exports

02

China's wool market share reached 83% or $715m, the highest level in 8 years

03

India remains a key market for NSW chickpea exports, valued at $188m

04

Italy is the largest EU market, and key durum wheat export market at 94% market share

05

UAE is NSW largest middle Eastern export market particularly for sheep meat, chickpeas and beef

CROPPING OVERVIEW

WHEAT

COTTON

PULSES

BARLEY

OILSEEDS

RICE

SUGAR CANE

SORGHUM

The estimated combined Output of NSW broadacre cropping industries was $4,714 million, down 27% year-on-year.

Cotton was the main contributor to Output by value, taking over from wheat which suffered from production issues related to unfavourable growing conditions. This significant drop in wheat production resulted in wheat being the main influencer to the reduction in Output year-on-year.

Rainfall across most of NSW during winter 2017 ranked between just 20–40% of the average for the season. Limited rainfall saw winter crop prospects decline, particularly in central and western areas of the state, with some growers in these regions grazing out struggling cereal crops. Late spring saw the welcome return to average rainfall across most of the state, which benefited some late sown and late maturing winter crops but delayed harvest in some areas.

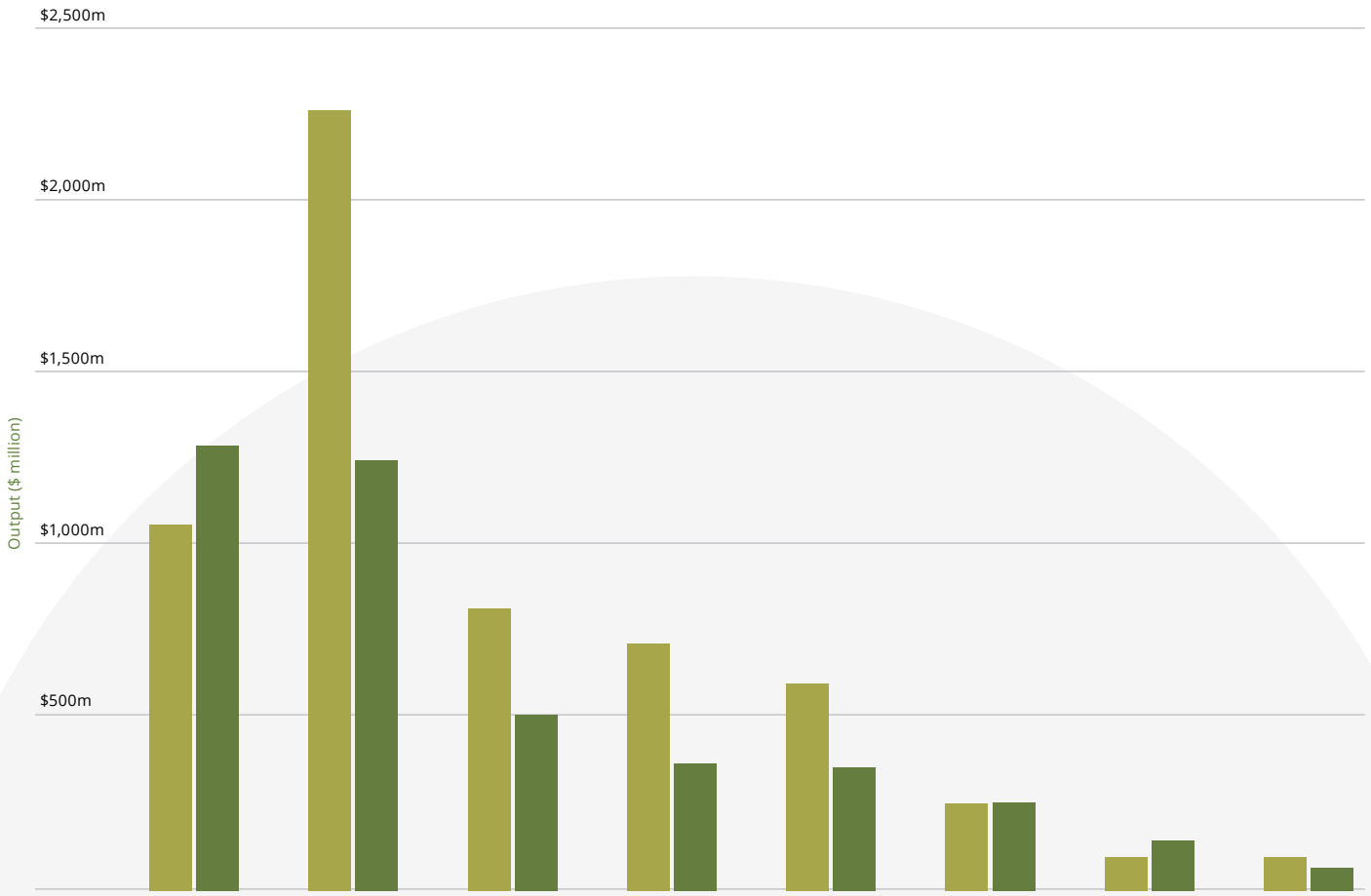
The dry winter conditions and frequent late spring frosts ultimately had a detrimental effect on winter crop yields. Oil contents were lower than normal in canola, however protein levels in wheat were higher.

The summer dryland cropping season commenced reasonably positively as late spring rains boosted planting prospects, but with limited subsoil moisture reserves and a lack of follow-up rain, yields failed to meet their full potential. Planting of irrigated cotton was well advanced by the beginning of the season with the dry winter and early spring rainfall assisting ground preparation and warmer soil temperatures allowing timely sowing.

The dry conditions persisted throughout the 2017–18 summer and while some good falls of rain were recorded, it was highly variable, patchy, and largely ineffective. Conditions had further deteriorated by autumn, with the vast majority of the NSW agricultural production zone experiencing mild to severe drought.

As of 30 June 2018, approximately 99% of the state was covered by one of the three drought categories: 40% of the state was drought affected, 44% in drought and 15% in intense drought.

Cropping Estimated Output 2017-18



	Cotton	Wheat	Pulses	Oilseeds	Barley	Rice	Sorghum	Sugar Cane
2016-17	1059	2260	818	715	601	252	97	97
2017-18e	1288	1245	510	367	358	256	146	65
YEAR ON YEAR CHANGE (%)	22 % yoy	-45% yoy	-38% yoy	-49 % yoy	-40% yoy	2% yoy	51% yoy	-33% yoy

PLAN TO PROTECT NSW FROM PEST PLANTS AND ANIMALS

NSW DPI's Invasive Species Plan 2017-2021 will reduce the impacts of pest animals and weeds on the environment (land, sea and waterways), agriculture, infrastructure and human health. By guiding investment and resources for invasive species prevention and management programs, the plan will help prevent new pest incursions, reduce existing pest threats, and will account for the potential of invasive species to establish and spread with future changes to the climate.

WHEAT

45% yoy
Output
$1,245m
est

Continued record global production and increased carryout stocks

Vietnam the largest export market valued at $112 million with 23% export market share

YIELD & TOTAL PRODUCTION BOTH BELOW AVERAGE

After the previous year's record breaking crop, 2017–18 was a difficult season from sowing through to harvest. Rainfall in winter and spring was below (to very below) average and combined with detrimental frosts, adversely affected crop development in most regions. As a result, yield and total production were both below average. Export prices were significantly lower due to another year of record global production[1].

PRODUCTION

The area planted was down 5% year-on-year and down 12% on the 10-year moving average.

Yields were lower by more than half, down 52% compared with last year's record levels, to an estimated 1.45 tonnes per hectare. This was the lowest average yield since 2009–10[2].

NSW Area Planted and Production

Source: ABARES, (2018a)

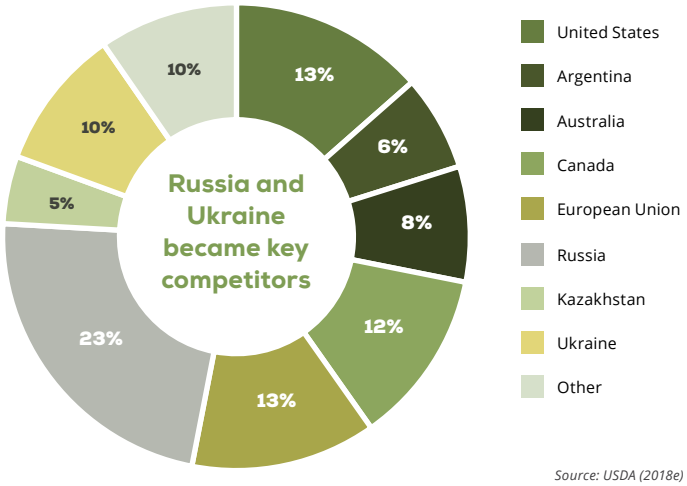
EXPORTS

Exports declined in value by 59% year-on-year as a result of significantly lower domestic production[54].

Vietnam took the largest market share at 23%, while India disappeared as a customer after having taken the largest share last year because of prolonged drought conditions on the sub-continent[54]. Asia comprised 74% of our export market with Southeast Asia being 53%, up 12 percentage points year-on-year.

The Black Sea (Russia and Ukraine) became a major competitor in our key export market region of Southeast Asia. Increased production, significantly lower prices and all time low bulk freight rates enabled them to compete. Russian exports reached 41.4 million tonnes in 2017–18, making them the highest wheat exporter of any country in 20 years[6, 21, 99].

2017-18 Global Export Market Share %



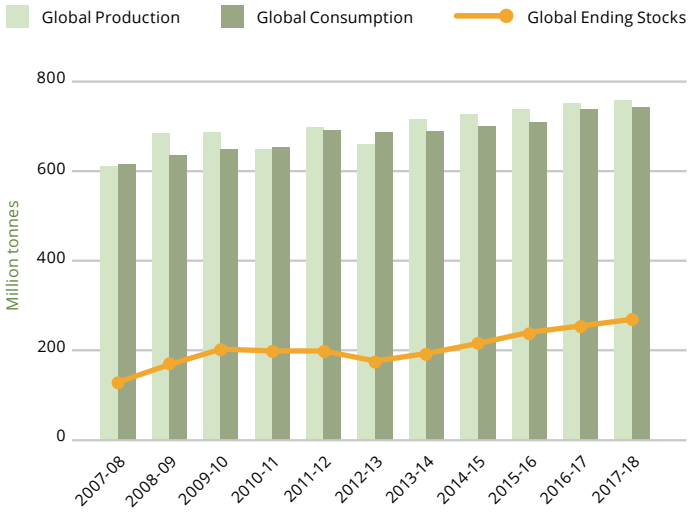
Source: USDA (2018e)

MACROECONOMIC CONDITIONS AND PRICE

Global production reached a record 758 million tonnes, up 0.8% year-on-year. Consumption increased slightly (0.6%) to 739 million tonnes. Closing stocks were up 6.7% to 274 million tonnes, equivalent to 36% of global production[96, 85].

The US Hard Red Winter wheat futures price increased by 16% to $229 per tonne. On an Australian domestic basis, there was a more pronounced increase of 20% to $279 per tonne. Domestic prices firmed despite record high global stocks, which is attributed to decreased new-season production and continuing dry conditions[2, 84, 93].

Global Supply and Demand



Source: USDA (2018a)

DBA BINDAROI DURUM WHEAT SHINES IN 2017

A NSW DPI wheat variety released for commercial production in 2017, DBA Bindaroi, has delivered superior yields, high quality and very low incidences of disease despite tough seasonal conditions last year. DBA Bindaroi has performed very well in trials, yielding 5% better than Caparoi in a multi-year analysis.

COTTON

▲22% yoy
Output
$1,288m
est

Production
▲22%

Yields
▲45%

AVERAGE DOMESTIC PRICES UP THIS SEASON

Domestic cotton production benefited from improved growing conditions while a continued rise in cotton consumption pushed up average domestic prices this season. Global cotton prices and production also increased, with growing textile industries, consumption forecasts and improved access to China's import markets all playing a part.

PRODUCTION

Production was up 22% year-on-year despite a 16% decrease in area planted. A 45% increase in yield driven by irrigated cotton yield offset the loss in area planted, with average yields of 9.95 bales per hectare[1].

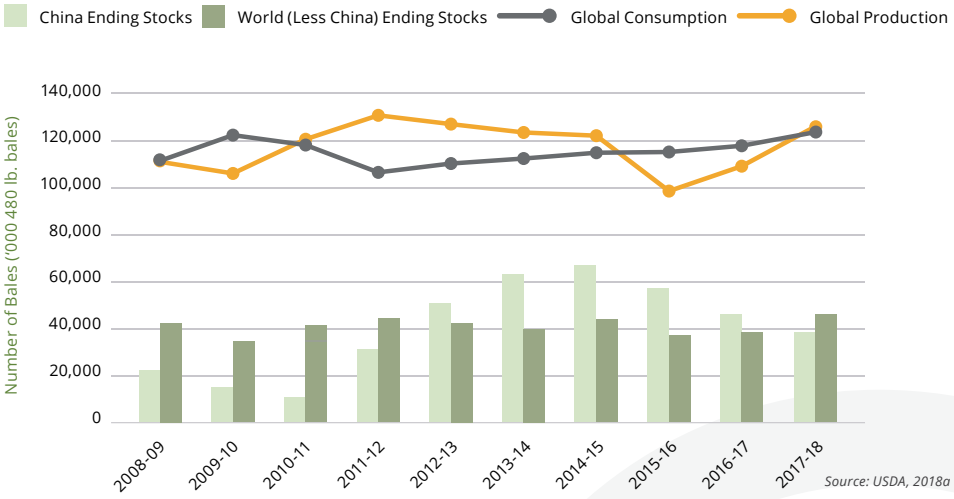
The increase in yield reflected a return to normal production levels as the absence of extreme weather conditions during this year's harvest meant yield returned to within 1% of the five-year moving average[1].

PRICES

Global consumption fell to parity with production for the first time since 2014–15 and total global closing stocks remained stable year-on-year[96]. Domestic prices remained steady year-on-year at a historically high $582/bale, with strong demands from traditional export markets[2].

The global Cotlook A index rose 6% with the increase driven by strong global demand for cotton and projections that global consumption will continue to grow faster than production for the near future[2, 73].

Global Supply and Demand

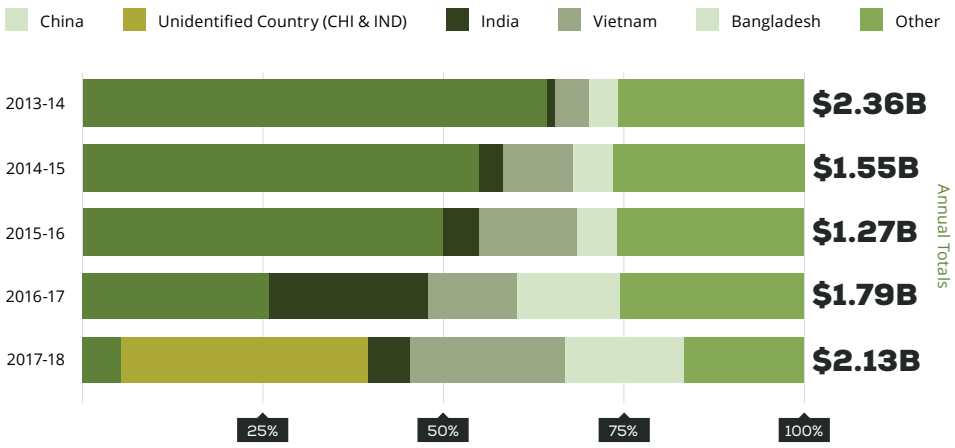


Source: USDA, 2018a

EXPORTS

NSW export data for 2017–18 is not available because of confidentiality restrictions[17, u]. From a national perspective however, China remains one of Australia's biggest markets (the majority of the export market share for 'unidentified country' in the chart below is assumed to be attributable to China). Over much of 2011 to 2014, China was procuring cotton to hold in reserve. With this reserve being liquidated and its domestic crop production down, China has been more active in the market[79].

Australian Export Market Share



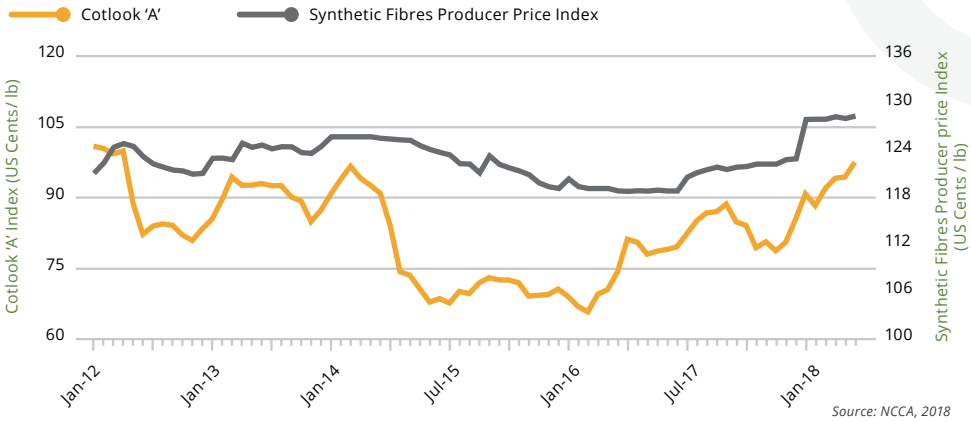
Source: GTA, 2018

Bangladesh is close on the heels of China in terms of volume, and India has recently become a consistent purchaser. The Vietnamese market has increased consistently over the past five years, due largely to the increase of Chinese-owned mills operating in Vietnam. As the cost of production increases in China, mill owners will look for more cost-effective production and in Vietnam, cotton can be spun at a cheaper rate than China[79].

MACROECONOMIC CONDITIONS

Synthetic fibres (polyester in particular) still dominate the textile market in terms of worldwide usage but rising crude oil prices and environmental concerns support cotton production and prices[2]. Cotton also benefits from increased middle class populations able to afford more expensive natural fibres[2].

Cotton Vs Synthetic Fibres Index



Source: NCCA, 2018

Trade tensions between the US and China have caused uncertainty, with China imposing 25% tariffs on many US agricultural products, including cotton, from July 2018. With stockpiles down, China has also increased cotton import quotas for 2018 to allow more overseas purchases[87, 88].

DPI RESEARCH PROTECTING AUSTRALIAN COTTON FROM VERTICILLIUM WILT

NSW DPI is helping cotton growers to manage risk associated with Verticillium wilt disease by developing a tool to determine the level of the fungal pathogen. Quantifying the inoculum levels in the soil allows cotton growers to make informed planting decisions to minimise the risk of yield losses associated with Verticillium wilt. When the right environmental conditions occur, the disease can reduce yields by 30-40%.

Online at www.dpi.nsw.gov.au/PDI

PULSES

38 % yoy
Output
$510m
est

Exports to Bandladesh
46%
in value

Production
41 %

TARIFF ON CHICKPEAS

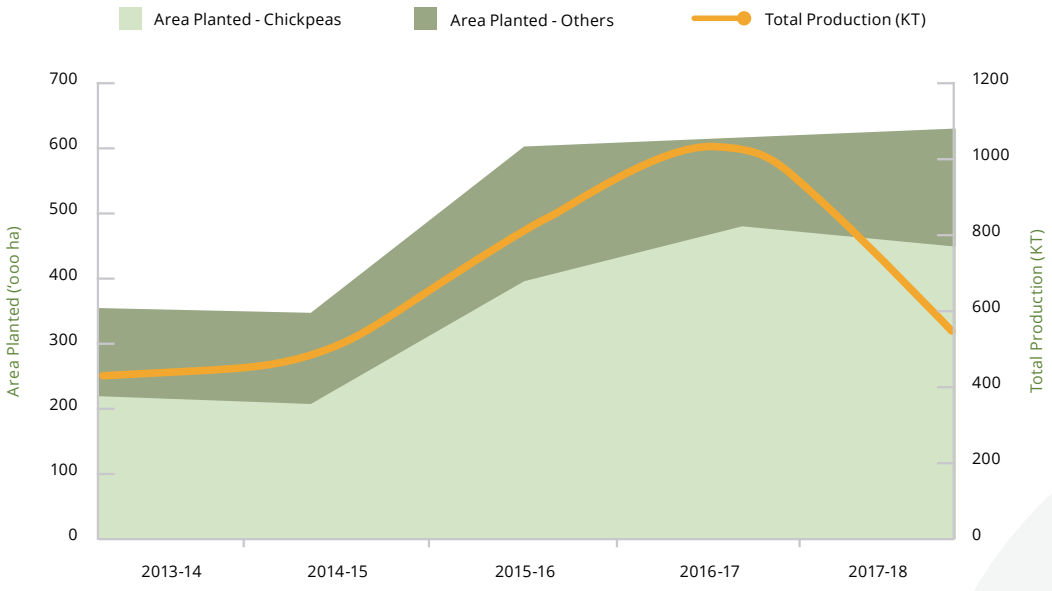
The record chickpea demand and prices experienced last season largely faded following the introduction of a tariff on chickpeas (along with other crops) by the Indian government. Lacklustre demand from India, the largest importer and consumer of Australian chickpeas and lentils in 2016, resulted in a market void that could not be fully replaced.

PRODUCTION

Despite a slight increase in area planted (3%), production decreased significantly, down 41% year-on-year. Unfavourable seasonal conditions normalised the production value to long-term average levels[1].

The production of pulses is cyclic in nature, with global demand determining the area planted. With production levels in India recovering due to improving growing conditions, it may take a few years for the appearance of another major export opportunity for pulses[17].

Area Planted vs Total Production



Source: ABARES, 2018a

The production of pulses is cyclic in nature, with global demand determining the area planted.

PRICES

Prices remained high well into the first half of the season as demand from India continued, however, fell significantly in January with the announcement of a 30% tariff on crop imports to India. Overall, chickpea prices were down 9% year-on-year while field peas and lupins were also down 9% and 5% respectively[2].

MACROECONOMIC CONDITIONS

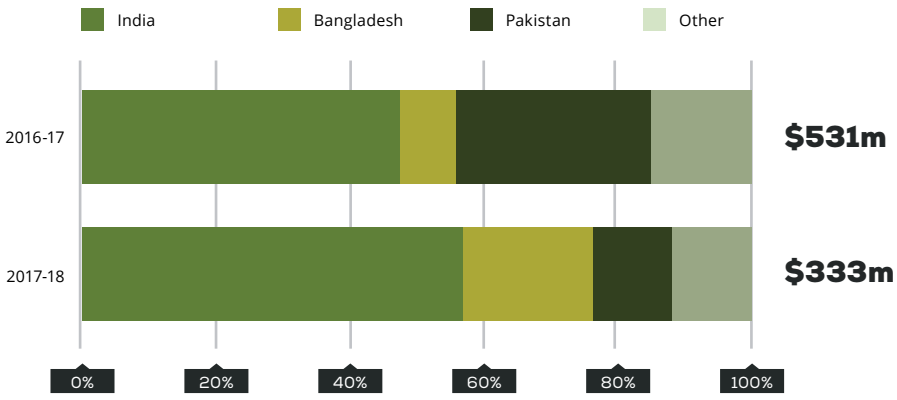
A favourable monsoon season in India led to its domestic pulse production increasing 27% over the five-year moving average[61]. Significant production increases were also experienced in Canada, with production levels driven by an explosion in chickpea consumption in the US, its major export market[57].

EXPORTS

The total value of exports decreased by 37% year-on-year primarily because of a sharp drop in the price of chickpeas since the beginning of 2018[2, 54]. The volume of exports to India and Pakistan fell by 25% and 75% year-on-year respectively, while those to Bangladesh rose by 46%.

The value of pulse exports declined across the board with broad beans exports declining 82% year-on-year and lentils by 5% year-on-year, both faring better than other pulses due to increased demand from Southeast Asia[54].

Pulse Export Markets



Source: GTA, 2018

NEW HIGH-YIELD LUPINS AT HENTY

NSW DPI has collaborated with research partners to develop two new high-yielding lupin varieties. The varieties, PBA Bateman and Seednet Murringo, were the result of effective plant breeding and exhibit beneficial traits, including enhanced disease resistance and improved yield potential. They fill an important niche in the market and will appeal to growers who are expanding the use of legumes in southern farming systems.

BARLEY

40% yoy
Output
$358m
est

Production
58% yoy

Prices
43% yoy
to $281/tonne

BARLEY PRICES SKYROCKET

Barley markets experienced a reversal of fortune off the back of record production and depressed prices in 2016–17. Yields deteriorated and production declined as a result of unfavourable weather conditions, but escalating domestic and global livestock feed demand saw barley prices skyrocket, rivalling premium wheat prices by early 2018.

PRODUCTION

Output is down 40.4% year-on-year, mainly attributable to the dramatic fall in production. The memory of the low prices experienced in 2016–17 saw many farmers seek out other cereal crop options, which resulted in a decline in the area planted to barley. This, combined with a sharp reduction in average yield, intensified the fall in production, down 58% to 1.19 million tonnes[1].

MACROECONOMIC CONDITIONS

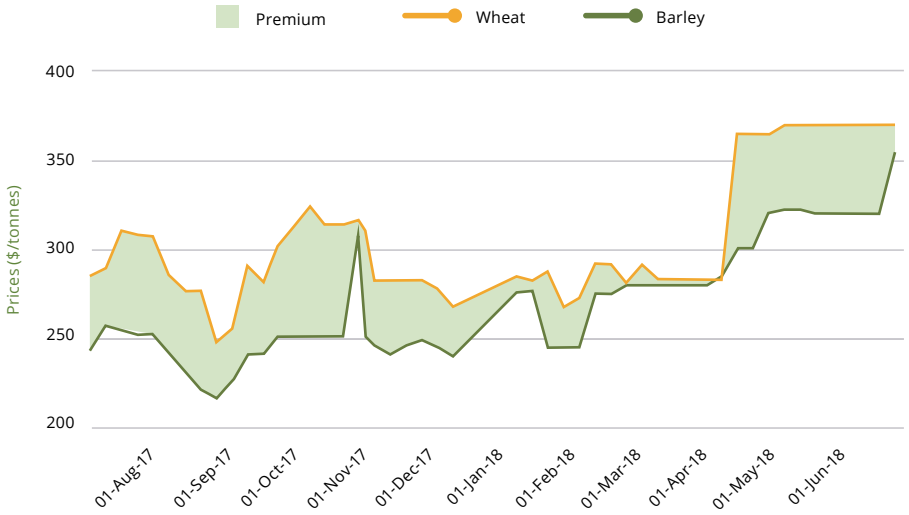
The global balance sheet for barley was tight, with global consumption believed to exceed production by 3.2 million tonnes[4]. Global stocks were at their lowest level in 30 years, estimated to have fallen to 19 million tonnes[96]. Global production fell by 2% and consumption by 1%. Globally, lower production, higher prices and competition from other feed grain substitutes were the main reasons for the fall in consumption[4].

PRICE

The decrease in area planted combined with the strength of domestic livestock markets resulted in the average feed indicator price rising 43 % year-on-year[4]. The dry conditions amplified feed demand and created a domestic deficit situation where lot feeders and grain traders competed for declining stocks. Prices skyrocketed accordingly. Such was demand that feed barley (F1) was trading close to Australian Prime White (APW) wheat levels by the end of the summer.

Prices trended upwards throughout the year, escalating in April as the prospects of an autumn rain break faded, and continued to rise despite global prices weakening towards the final quarter of the year[81].

APW Wheat Price Premium Compared to F1 Barley



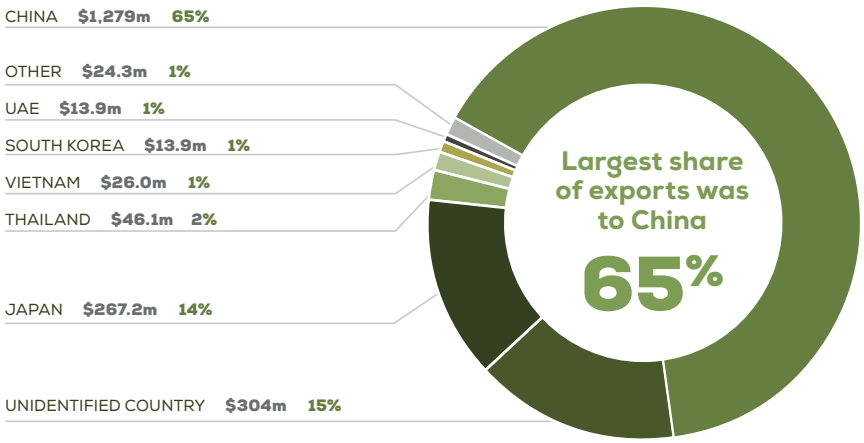
Source: DPI (2018f)

Hunger from export destinations supported the domestic price, with competition strong between export and domestic markets[80]. Domestic end users were forced to purchase barley from further afield, maintaining upward pressure on prices and resulting in strong premiums compared with imports[40].

EXPORTS

National exports were down 6% as a result of lower domestic production. China continued to take the bulk of Australian barley (65%) and was the most valuable export market despite the exported quantity falling by 19% year-on-year[54]. Exports are reported here at a national level as state-level data and some destination data is restricted[17,J].

Australian Barley Exports



Source: GTA, 2018

EMERGENCY PLANT PEST REPORTING

NSW DPI Plant Biosecurity staff responded to 60 suspected Emergency Plant Pests (EPP's), including 33 insects and 27 diseases. Of these, 56 were new pests, three had new hosts and one was a range extension for a current pest. The "Top 5" EPPs were brown marmorated stink bug, vegetative disorder, impatiens necrotic spot virus, endive necrotic mosaic virus and nectria canker. They threaten cotton, horticulture, maize, nursery and soybean industries.

OILSEEDS

49% yoy
Output
$367m
est

Canola yields
at 8 year low

Exports
83% yoy

DRY SEASONAL CONDITIONS AND SEVERE FROSTS

The industry experienced an unfavourable year due to dry seasonal conditions and severe frosts, which resulted in the smallest canola harvest since 2010. Although prices remained relatively high, area planted was constrained by crop rotations and higher expected returns from cereals. Cottonseed was the main high point with above average production and yield.

PRODUCTION

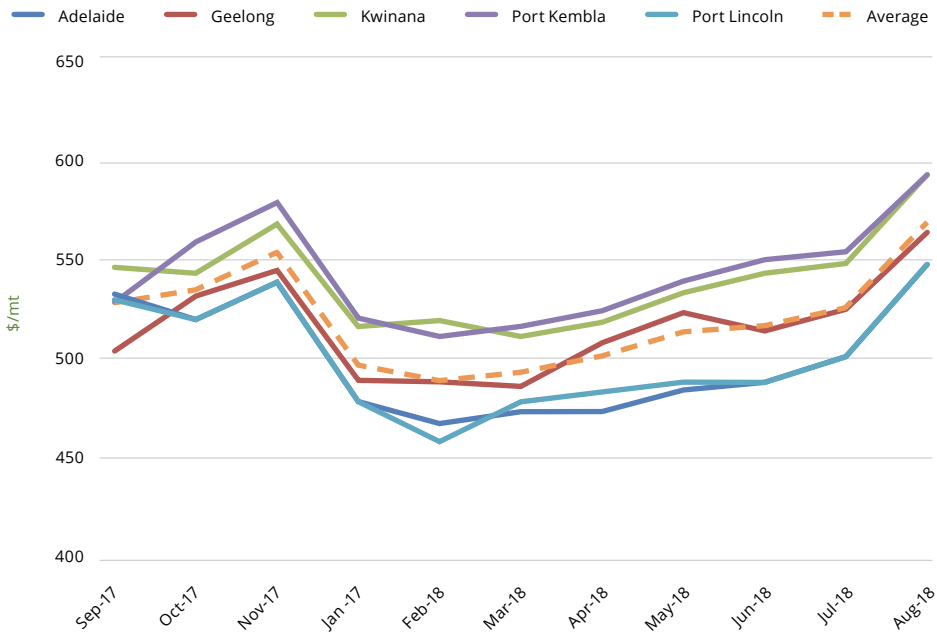
The total area planted to oilseeds decreased by 15% year-on-year with the area planted to canola declining 17% year-on-year. Although last year's high prices were anticipated to encourage a greater area planted to oilseeds, this did not eventuate as higher expected returns for cereals influenced farmers' planting choices[1]. Despite this, soybean plantings more than doubled and there was a 25% year-on-year increase in the area planted to sunflowers[1].

Total oilseed production was down by 20% year-on-year. Canola production dropped by half with yields down 40% year-on-year and down 32% compared to the five-year moving average. This was partially offset by cottonseed production (a byproduct of cotton production), which rose by 22% as a result of higher cotton lint production and yields[1].

PRICE

Domestic canola prices tracked close to the five-year average with prices falling slightly by 3% year-on-year[1]. Deteriorating seasonal conditions towards the end of the growing season resulted in a slight upswing in the NSW price, relative to most of the other Australian ports.

Canola Price by Port



Source: Mecardo (2018b)

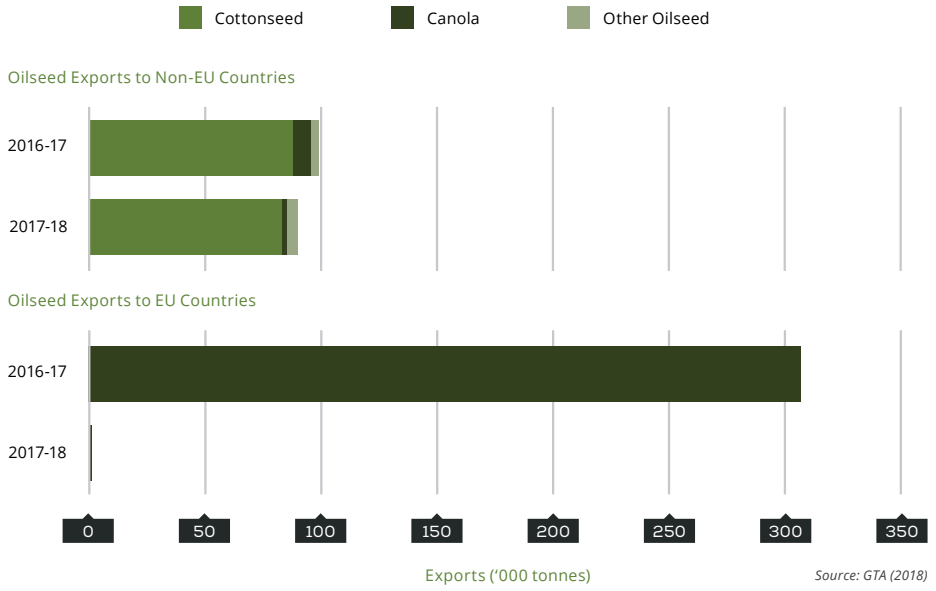
EXPORTS

Total NSW oilseed exports declined by 83% year-on-year[54], despite a reasonable export surplus.

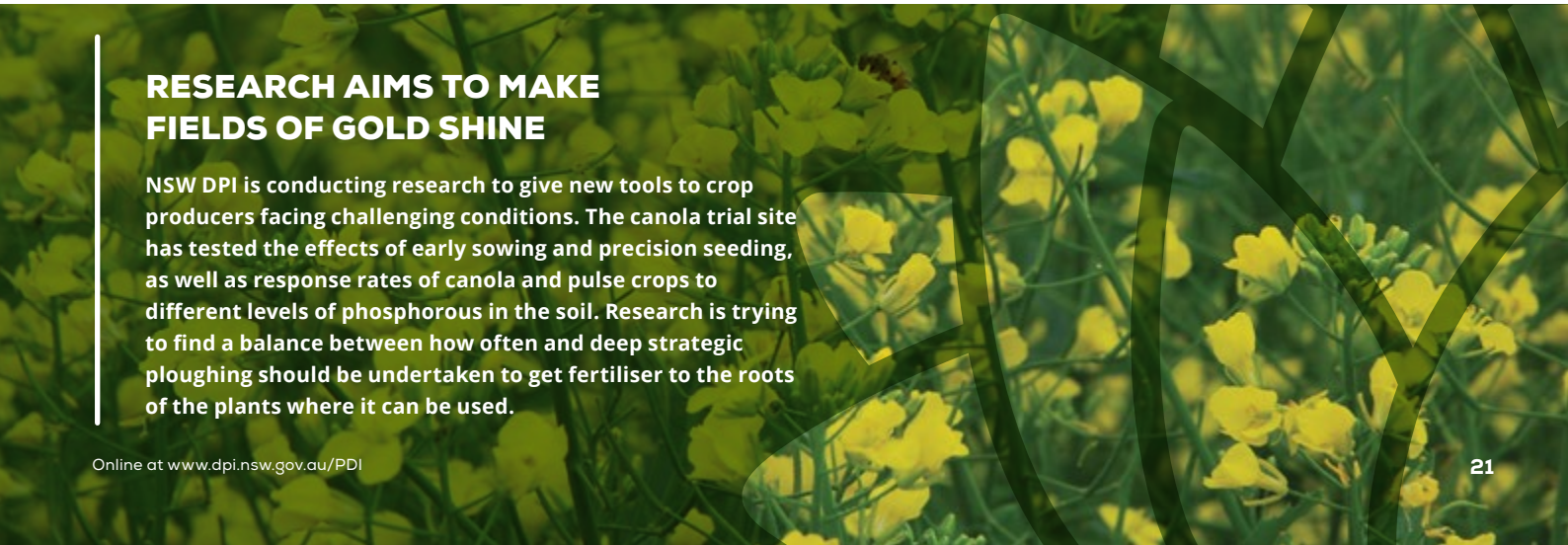
Global canola market dynamics altered in 2017–18 due to changes in European Union (EU) demand for non-GM canola[31]. Traditionally, Australia has had a competitive advantage over other exporters to the EU as it was one of the few countries to grow low-emission canola that could access the EU's environmentally-friendly energy markets[55, 56].

The EU had previously dominated NSW exports in both 2015–16 and 2016–1754. Dry seasonal conditions early in the 2017–18 growing season fuelled production concerns, and resulted in EU port-based crushers sourcing their canola from other Australian states experiencing a much better season[37]. This, accompanied with the reduction in market share, saw NSW canola exports to the EU decline to virtually nil[54].

NSW Oilseed Exports



Source: GTA (2018)



RESEARCH AIMS TO MAKE FIELDS OF GOLD SHINE

NSW DPI is conducting research to give new tools to crop producers facing challenging conditions. The canola trial site has tested the effects of early sowing and precision seeding, as well as response rates of canola and pulse crops to different levels of phosphorous in the soil. Research is trying to find a balance between how often and deep strategic ploughing should be undertaken to get fertiliser to the roots of the plants where it can be used.

RICE

▲ 2% yoy
Output
$256m
est

Production down
22% yoy

Average Yield
10.5
tonnes per hectare

FAVOURABLE CONDITIONS PRODUCE HIGH YIELDS

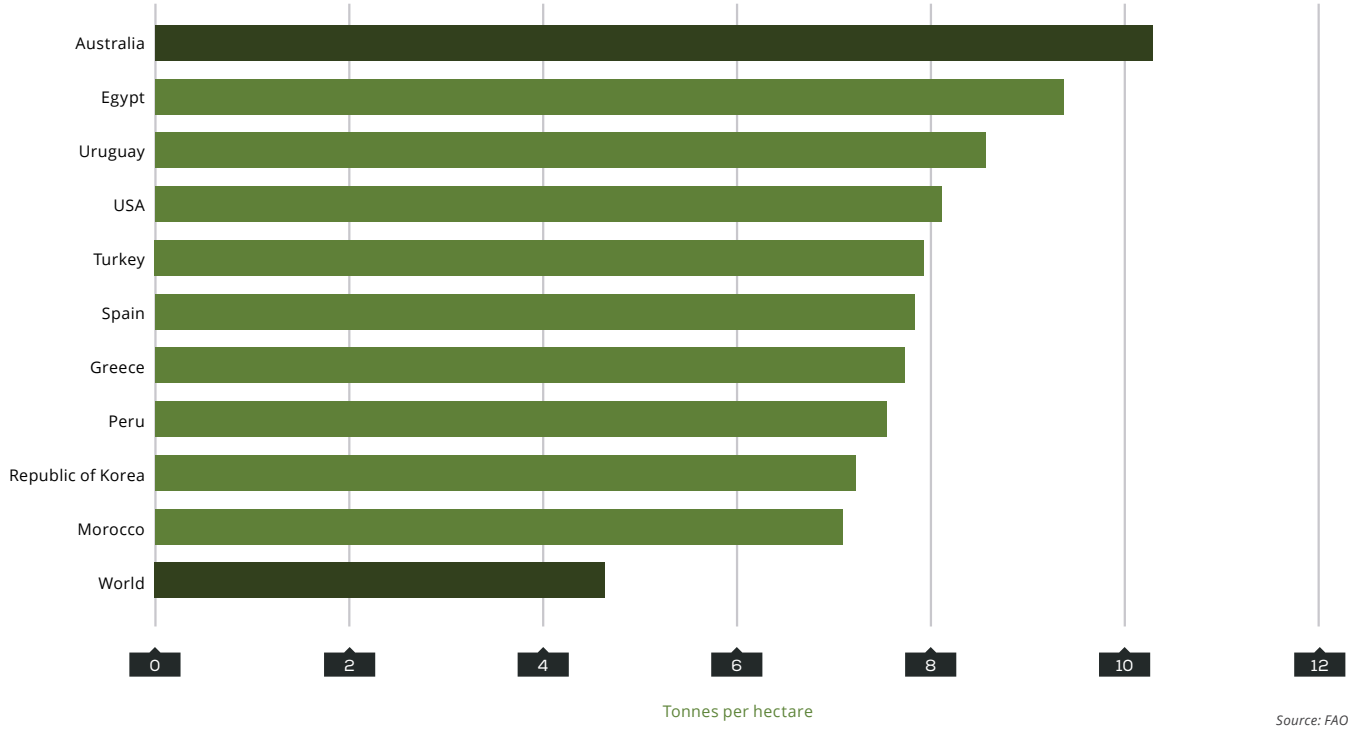
NSW rice production declined by 22% year-on-year. Lower water allocations ahead of the season contributed to reductions in the area planted to rice, however favourable growing conditions led to high yields.

PRODUCTION

Production decreased 22% to 630,000 tonnes despite favourable seasonal conditions after planting. Water allocations were lower for the 2018 season, with general security allocations in the Murrumbidgee Valley estimated at 33% of total availability (Sep to Dec 2017). With water allocations nearly half that of the previous year, the area planted was down 27% year-on-year[1, 42, 43].

With favourable conditions, yields were higher year-on-year, reaching an average of 10.5 tonnes per hectare, and as high as 14.8 tonnes per hectare in the Murrumbidgee Irrigation Area for a Reiziq crop[90]. By comparison, the global average yield was 4.5 tonnes per hectare[97].

Top Global Rice Yields 2016



Source: FAO (2018)

PRICE

Prices paid to growers were up significantly year-on-year as a result of reduced plantings and overall production. Indicative prices for the 2018 harvest ranged from $355 per tonne to $400 per tonne[91]. However, fixed price contracts for the 2018 harvest were offered at $520/tonne (Koshihikari), $450/tonne (Doongara) and $360 per (Reiziq)[111]. The net result is that prices were expected to increase 30% to an average of $407/tonne[2].

Global prices increased in 2018, with the FAO All Rice Price Index 12.2% higher than last year. The Japonica Index, had increased 15.2% over the previous year. Almost all rice grown in Australia is from the Japonica variety.

MACROECONOMIC CONDITIONS

Global production is forecast to increase 1% to 491 million tonnes in 2017–18, while global consumption is expected to rise by the same level. Like production and consumption, global ending stocks of rice are estimated to reach a historic high of 146 million tonnes in 2017–18[96].

CODING THE RICE CRACK

NSW DPI developed an innovative image analysis system allowing accurate identification of grain suitable for sushi and puffed rice products. The automated system detects the potential for rice to crack during cooking. Heavily cracked rice turns mushy during cooking so it's important the industry identifies the potential for rice to crack before grain goes to market. Now in use at SunRice, the technology has sped up the process to deliver high quality grain protecting premiums for growers.

SUGAR CANE

33% yoy
Output
$65m
est

Production
11% yoy

Decline in price due to global market pressures

LOWER PRICES DUE TO RECORD GLOBAL PRODUCTION

Sugar cane output was lower than for the previous two years but remained above the decade average. Prices were also down, due to record production in India and Thailand, resulting in lower returns to canegrowers.

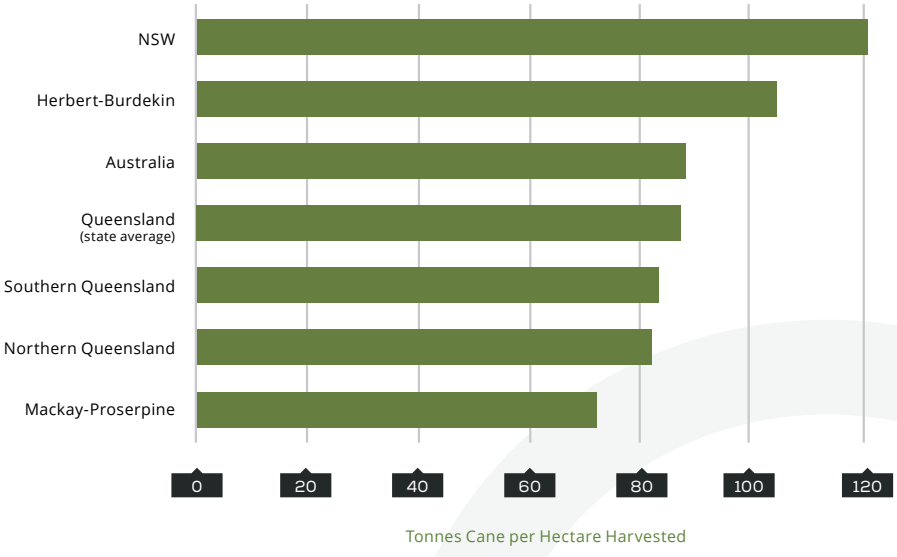
PRODUCTION

Approximately 1.9 million tonnes of cane was crushed in NSW for the season ending in December 2017, around 6% of Australia's sugar cane. Sugar production was 226,316 tonnes IPS[x], down 11% over the previous year. Approximately 15,500 hectares of sugar cane was harvested in NSW with a yield of 121 tonnes of cane per hectare[26, 27].

The NSW season commences in June, cutting across financial years. This means that production for the financial year consists mostly of the 2017 harvest and a small part of the 2018 harvest. The 2017 season had periods of very dry conditions followed by months with very high rainfall into June 2017, particularly in the Yamba region[92].

Growers responded to an expectation for lower prices in the following season by harvesting a higher percentage of one year old cane in 2017–18 [92]. In the 2017 season, 14.8% of one year old cane was harvested, up from 12.7% in the previous year.

Sugar Cane Yield by Growing Region



Source: ASMC (2018)

EXPORTS AND MACROECONOMIC CONDITIONS

NSW exports of sugar cane declined 50% year-on-year to approximately $1.6 million[54]. Philippines and New Zealand were the two largest export destinations, at $542,000 and $349,000.

Global sugar production was reached record levels due to record production in India and Thailand, resulting in a global surplus[114]. By comparison, Australian sugar production was 4.5 million tonnes. For Brazil, the largest producer of sugar, estimated production reduced as producers shifted toward ethanol production rather than sugar[114].

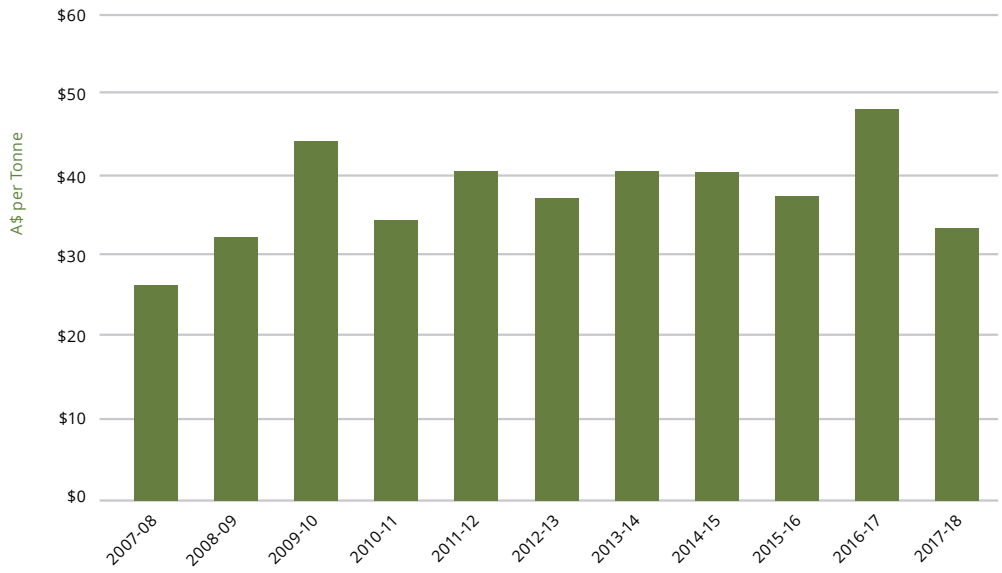
Human consumption of sugar reached a record 174 million tonnes, 3.4 million tonnes higher than the previous year[96]. India, Pakistan, Bangladesh and the United Arab Emirates all recorded increases in consumption from population growth.

PRICE

Prices declined due to a number of pressures on the global market. These included export liberalisation in India, the expiration of quota restraints in the European Union, and an increase in production by most of the major global sugar producers (including record production in India and Thailand), which resulted in a global oversupply. These pressures were offset by the weak Australian dollar[26, 82].

Returns to Australian canegrowers were estimated at $33.50 per tonne, down from $48 per tonne in 2016–17.

Returns to Australian Canegrowers



Source: ABARES (2018b)

MANAGING FERTILISER EFFICIENCY IN SUGAR CANE

NSW DPI, with the Department of Agriculture and Water Resources and Sugar Research Australia, is investigating on-farm nitrogen efficiency by matching nitrogen supply to the crops' nitrogen demand. A ground-breaking soil test that rapidly predicts how much nitrogen will become available over the cropping cycle is being developed and has great potential to reduce fertiliser application and maximise fertiliser nitrogen use efficiency.

SORGHUM

▲51% yoy
Output
$146m
est

Area Planted
▲28% yoy

▲
Tight supplies of feed grain boosted demand

CHINA CONTINUES TO DOMINATE MARKET

2017–18 was a strong year for sorghum producers, with prices surging on the back of a tight supply and demand situation. China continued to dominate the export market, supported by the China-Australia Free Trade Agreement (ChAFTA), which eliminated tariffs on Australian sorghum.

PRODUCTION

Grain sorghum production increased 11% year-on-year to 430,000 tonnes. This increase in production was driven by an increase in area planted, up 28% year-on-year, although well below initial planting intentions[1]. The growing season started positively with good soil moisture balances, however unusually high summer temperatures in January, and a lack of follow-up rain, reduced yield prospects and put a cap on potential production[36].

PRICE

Sorghum prices were volatile but continued to surge on the back of a tight supply and demand situation, increasing 36% year-on-year[49]. The dry season and tight supply of feed grain bolstered demand and drove an extremely strong domestic basis.

Internationally, prices responded to news of the China and US trade dispute, peaking at $384 per tonne (delivered) in May 2018[49]. Once US sorghum was again permitted to flow into China, the market softened.

EXPORTS

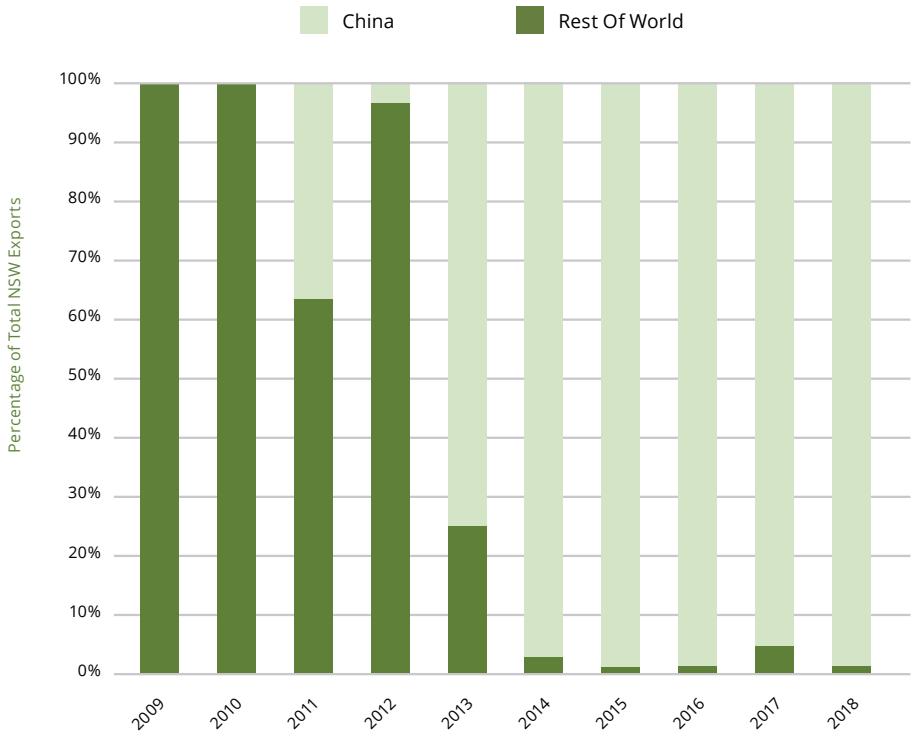
Of the sorghum produced in 2017–18, 29% was exported. The vast majority (98%) headed to China, though there was a decrease of 36% in volume year-on-year to 121,132 tonnes[54]. The ChAFTA, enacted in December 2015, completely eliminated tariffs on Australian sorghum.

Chinese demand for sorghum is insatiable and continually growing and, "even in a good year, Australian sorghum supplies are merely a drop in the ocean of Chinese feed demand"[72].

The total Chinese consumption was estimated at 9.2 million tonnes in 2017-18, with an estimated 6.8 million tonnes used for livestock feed[98].

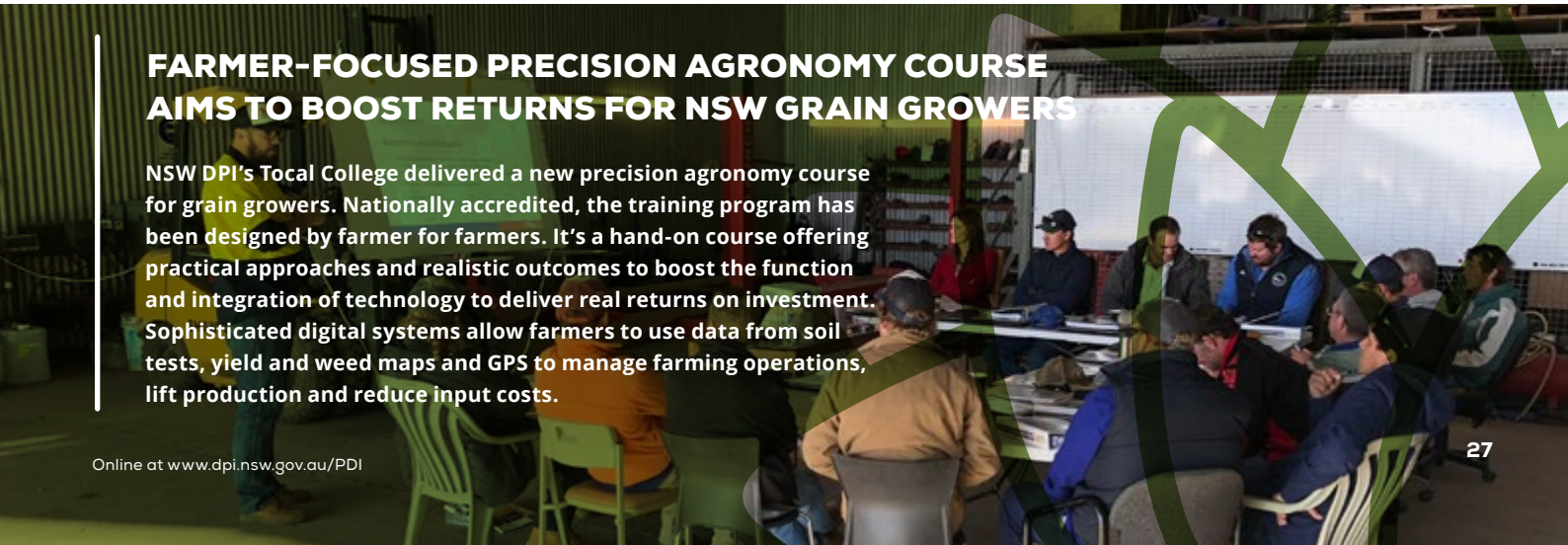
Exports to China are largely driven by demand for Baijiu manufacture, with the balance of production working into Chinese feed rations if and when it prices against corn[36]. Baijiu is a Chinese spirit made from sorghum and other grains and Australian sorghum has particular quality parameters that are desirable for baijiu production. With demand at roughly five billion litres per year, it is the most consumed spirit in the world. In 2017, demand for baijiu increased 77%, reaching its fastest growth rate ever since 2011[63].

NSW Exports to China and Rest of the World



Source: GTA (2018)

In February 2018, China announced temporary anti-dumping and anti-subsidy measures and imposed a 179% tariff on imports of US sorghum, effectively putting a halt on imports from the US. With the US the largest supplier of sorghum to China, this decision was viewed as a potential opportunity for Australia to boost exports[22]. Although the tariff was reversed in mid-May, "wreaked havoc across the global feed grain market".[113]



FARMER-FOCUSED PRECISION AGRONOMY COURSE AIMS TO BOOST RETURNS FOR NSW GRAIN GROWERS

NSW DPI's Tocal College delivered a new precision agronomy course for grain growers. Nationally accredited, the training program has been designed by farmer for farmers. It's a hand-on course offering practical approaches and realistic outcomes to boost the function and integration of technology to deliver real returns on investment. Sophisticated digital systems allow farmers to use data from soil tests, yield and weed maps and GPS to manage farming operations, lift production and reduce input costs.

Online at www.dpi.nsw.gov.au/PDI

LIVESTOCK OVERVIEW

BEEF CATTLE

WOOL

POULTRY

SHEEP & GOAT MEAT

MILK

EGGS

PORK

The estimated combined Output of NSW livestock and livestock products was $6,438 million, up 5% year-on-year.

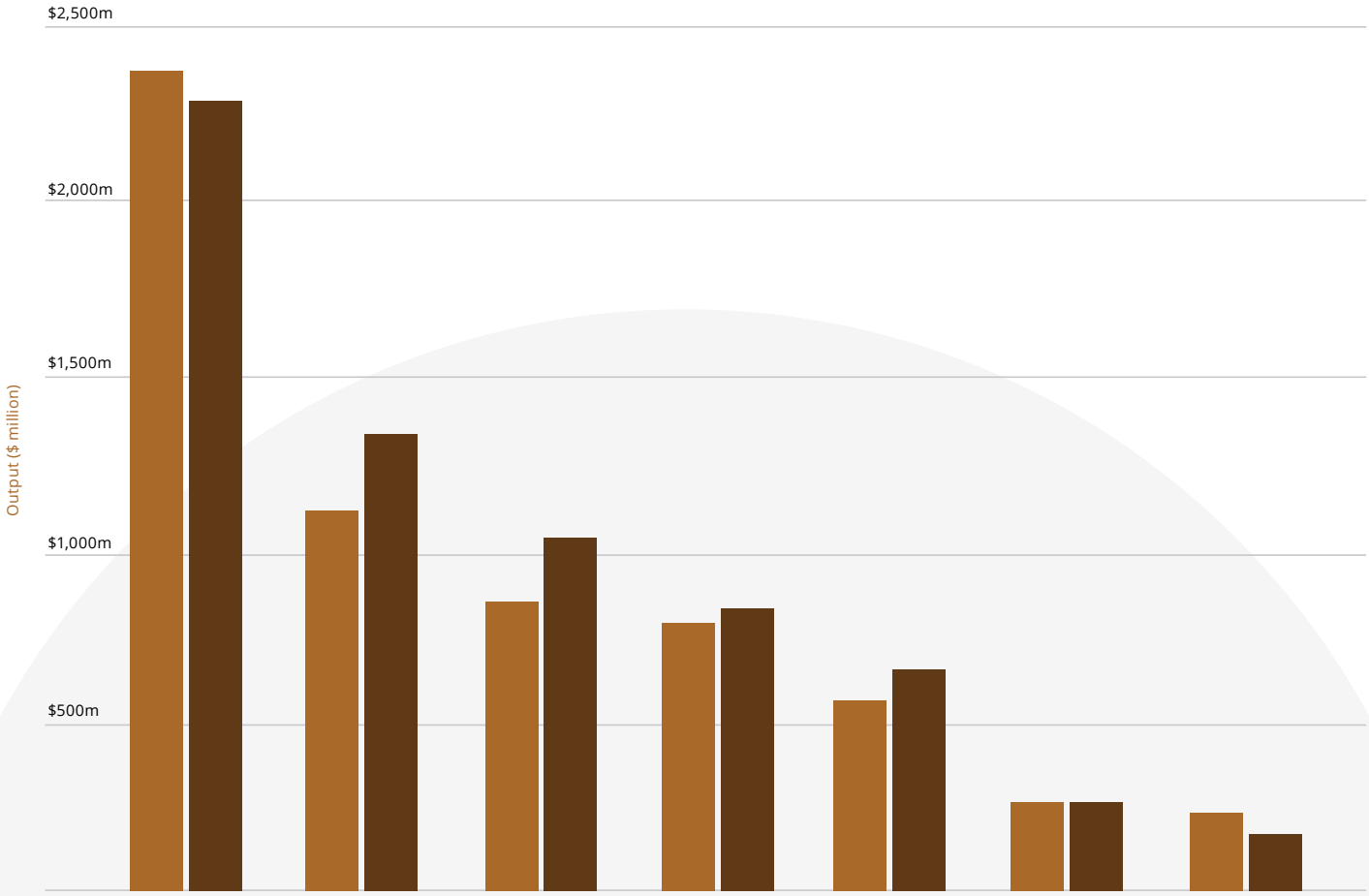
Beef remained the largest contributor to Output by value, with an increase in production being the driving factor. Wool performed well, with a 21.8% year-on-year increase in price more than offsetting a small fall in production. The high price of feed grains, growing concerns over the availability of hay, and dwindling livestock water supplies put pressure on both extensive and intensive livestock systems.

Pasture growth across much of inland NSW during winter 2017 was affected by dry, frosty conditions, with extremely low growth across most of the southern half of inland NSW and the north west. Stock condition remained good, although supplementation was necessary in areas where forage crops were not available.

Some parts of the state reached drought status by early summer. Variable rainfall and poor pasture growth resulted in widespread supplementary feeding of stock where ground cover levels were low. Daytime temperatures were nearly 2°C higher than average across the state. Onground indicators highlight the very poor condition of the pasture base in these areas.

The widespread nature and intensity of the agronomic drought experienced in the final quarter of 2017–18 put livestock feed supplies under considerable strain, and in some areas total grazing pressure is providing additional stress. For livestock farming, a defining feature of the current drought event is the impact on pasture production, with the widespread failure of the 2018 autumn growing season creating significant feed-gaps.

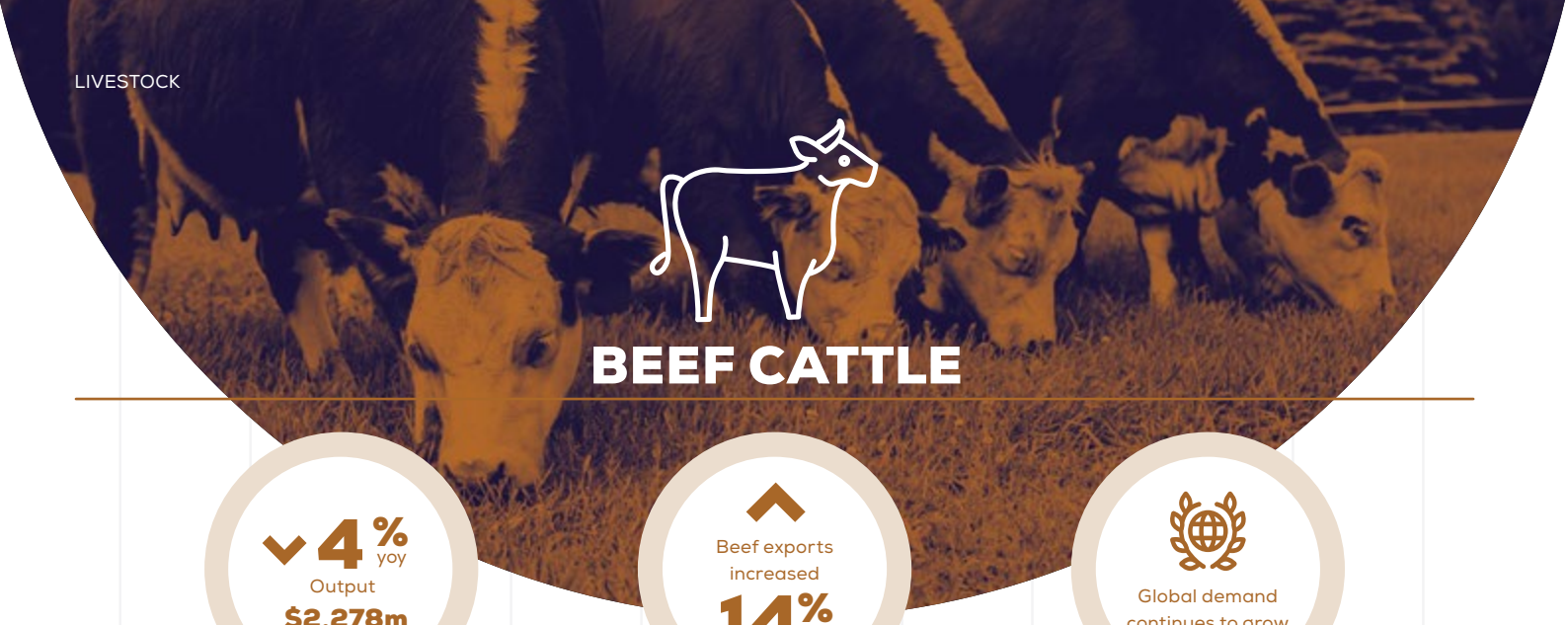
Livestock And Livestock Products Estimated Output 2017-18



	Beef Cattle	Wool	Sheep & Goat Meat	Poultry	Milk	Eggs	Pork
2016-17	2364	1095	845	771	549	256	224
2017-18e	2278	1317	973	814	637	256	163
YEAR ON YEAR CHANGE (%)	-4% yoy	20% yoy	15% yoy	6% yoy	16% yoy	0% yoy	-27% yoy

RURAL SUPPORT WORKERS

NSW DPI's Rural Resilience Program's Rural Support Workers support farming communities by connecting farmers with others in farming communities and to the range of support services available to them. The RRP provides information, tools, and development opportunities that build farmers' skills, knowledge and experience, which will help them to build their own resilience. The support workers deliver workshops and events for farmers and farming communities that build personal well-being, leadership, knowledge and business skills.



BEEF CATTLE

4% yoy
Output
$2,278m
est

Beef exports increased **14%** yoy

Global demand continues to grow

PRODUCTION AND PRICES MORE RESILIENT

After record high beef prices last year, 2017–18 proved more challenging. Very dry conditions across most of the state in the latter half of the year forced producers to make difficult decisions to feed or sell stock. This resulted in increased supply and lower prices despite favourable export conditions. However, relative to previous droughts, both production and price were more resilient.

PRODUCTION

NSW produced 501,270 tonnes carcass weight of beef, up 11% on last year's very low levels. As dry conditions set in, slaughter levels rose 8% year-on-year[71].

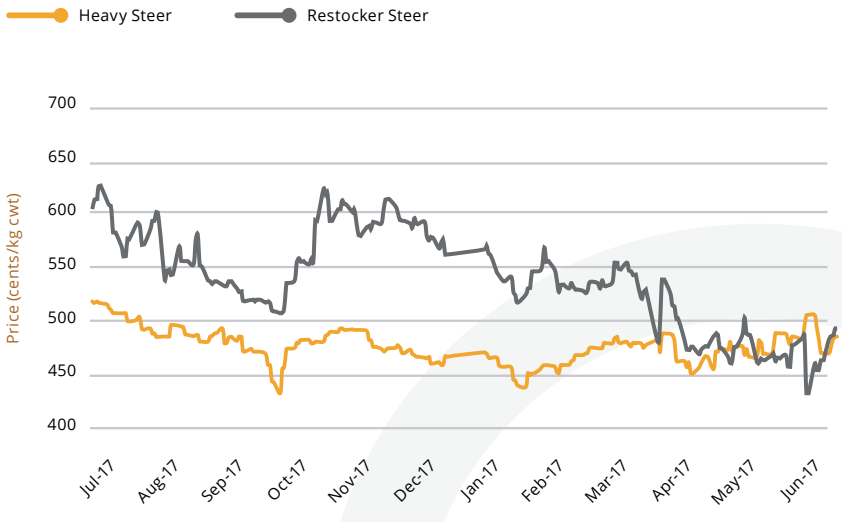
With the very high cost of restocking following the 2013–14 drought fresh in producers' memories, many opted to feed core breeding stock rather than sell. Additionally, national herd rebuilding has been unable to gain significant momentum since the Millennium drought. Consequently, the increase in supply was more constrained than the levels seen in previous droughts. Demand from feedlots at saleyards partly offset weaker demand from re-stockers who, nevertheless, remained relatively active buyers by historical standards.

PRICE

Prices fell, on average by 15% to 21% year-on-year, with the bigger falls registered in restocker categories. The benchmark Eastern Young Cattle Indicator fell 18%, averaging 541 cents per kilogram carcass weight over the year[71]. The bulk of the price falls occurred towards the end of the year, and while down on the record prices achieved in 2016–17, prices remain above long-term trends.

Reflecting strong export demand and tighter supply due to difficulties in finishing stock, heavy steer prices were more stable, especially relative to restocker categories. The NSW heavy steer average price was down 15% versus the restocker steer average price down 21%.

NSW Restocker Steer Price vs Heavy Steer Price

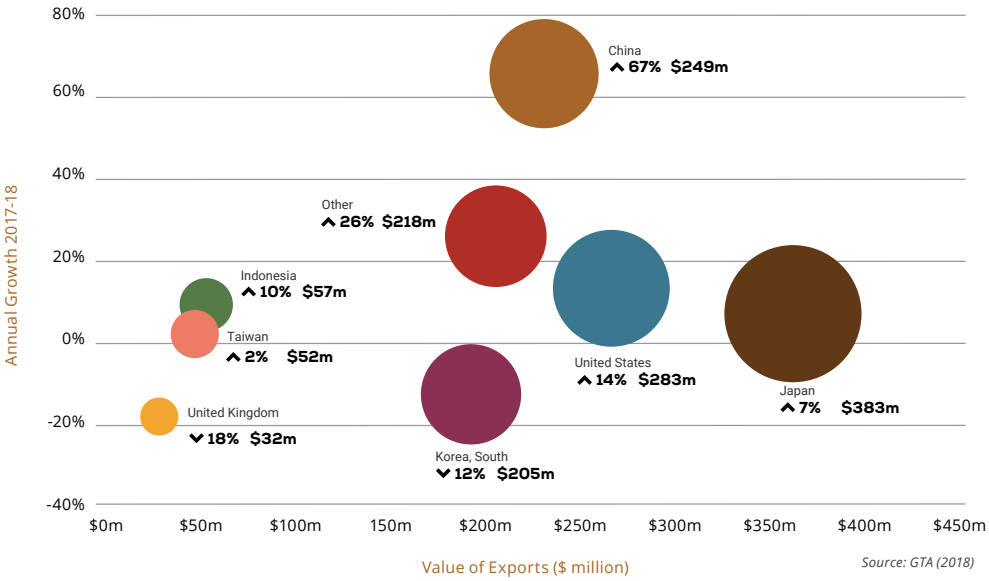


Source: MLA (2018)

EXPORTS

Beef exports increased 14% year-on-year in line with stronger global demand for protein. Beef exports to China surged 67%, becoming NSW's third largest beef export market. All major markets except South Korea recorded year-on-year increases[54].

NSW Major Beef Export Markets 2017-18



Source: GTA (2018)

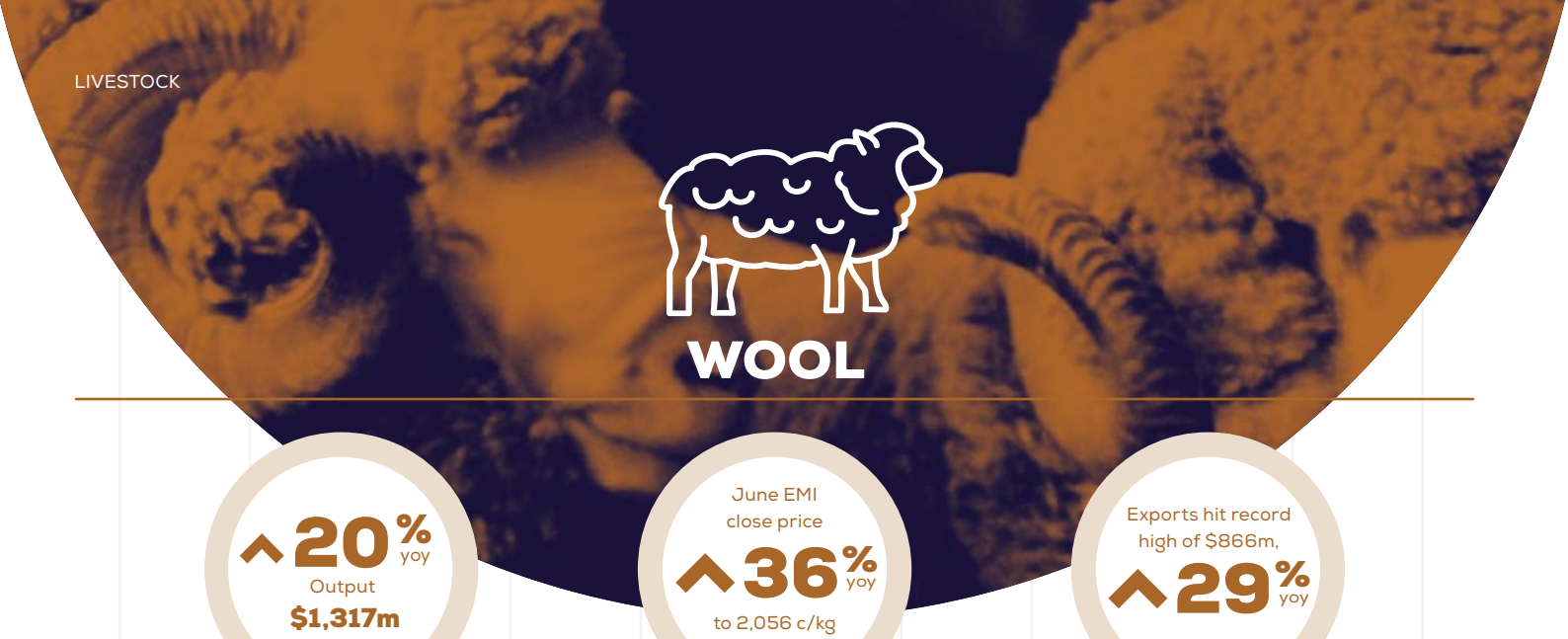
MACROECONOMIC CONDITIONS

Global demand for beef continues to grow, especially from China and other emerging economies. A weaker Australian dollar also improved NSW beef's competitive position in international markets, despite increasing competition from the US and Brazil.

DPI'S AUSTRALIAN WAGYU EXPORT CAPABILITY DEVELOPMENT PROGRAM

NSW DPI led the Australian Wagyu Export Capability Development Program to Shanghai and Taipei for producers. The program aimed to build trade capability and understanding of international markets, to improve business capability and competitiveness. Improved collaboration amongst stakeholders will contribute to a stronger, more closely networked Wagyu industry equipped to develop and grow. As overseas demand for Australian Wagyu continues to increase, the program is likely to see more Australian Wagyu reaching international markets.

Online at www.dpi.nsw.gov.au/PDI



WOOL

20% yoy
Output
$1,317m
est

June EMI close price
36% yoy
to 2,056 c/kg

Exports hit record high of $866m,
29% yoy

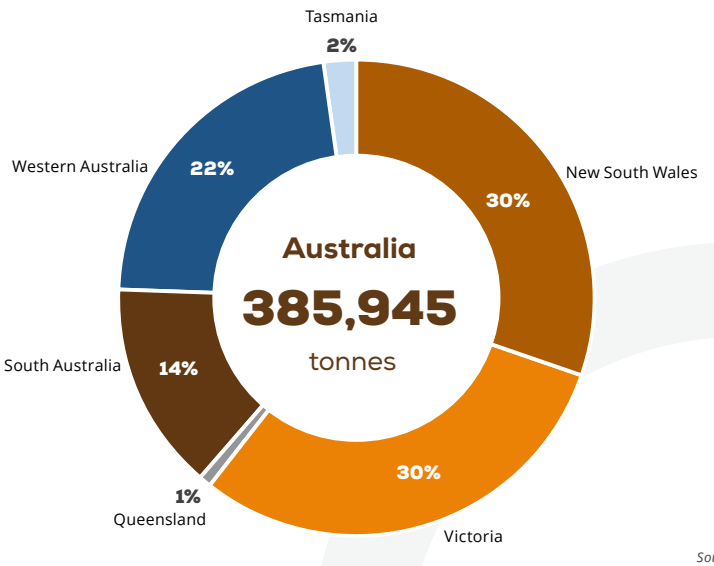
BREAKING RECORDS OVER THE COURSE OF THE YEAR

The industry went from strength to strength, with blistering prices consistently breaking records over the course of the year. As a result the industry was one of the highlights in 2017–18, with an estimated industry value of $1.32 billion growing by 20% in the 12 months ending June 2018, and more than offsetting a slight decline in production.

PRODUCTION

Production was down marginally with wool sales recording a 1.2% drop to 118 thousand tonnes[14], which was impacted by an estimated 3.5% slide in the wool cut per head. Less favourable seasonal conditions across much of the state have resulted in lower fleece weights and increased sheep turnoff despite most growers' intentions to maintain or increase ewe flocks per recent grower surveys[32].

Wool Production by State 2017-18



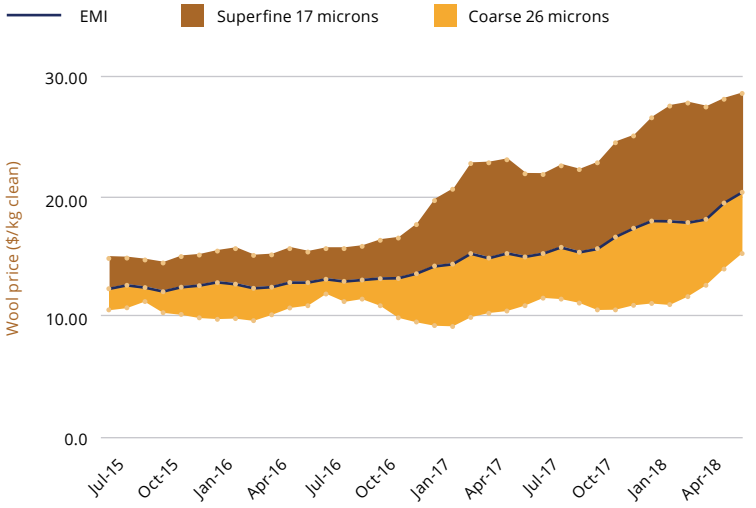
Source: AWI (2018c)

PRICE

Nominal wool prices broke records on a regular basis over the course of 2017–18. The Eastern Market Indicator (EMI) ended the fiscal year at 2,056 cents per kilogram, which was 36% higher than year ago closing levels. The average price over 2017–18 was 1,723 cents per kilogram, 22% higher than the previous year.

While all wool type prices grew strongly, the fine and superfine categories underpinned demand as demonstrated by the growing premiums received for these types. Despite continued price growth in all micron ranges, the fine wool premiums began retracting in the second quarter of 2018 as buyers started to substitute coarser wool types for the more expensive, finer wools[33, 34].

Wool Price Spread Relative to EMI



Source: AWI (2018b)

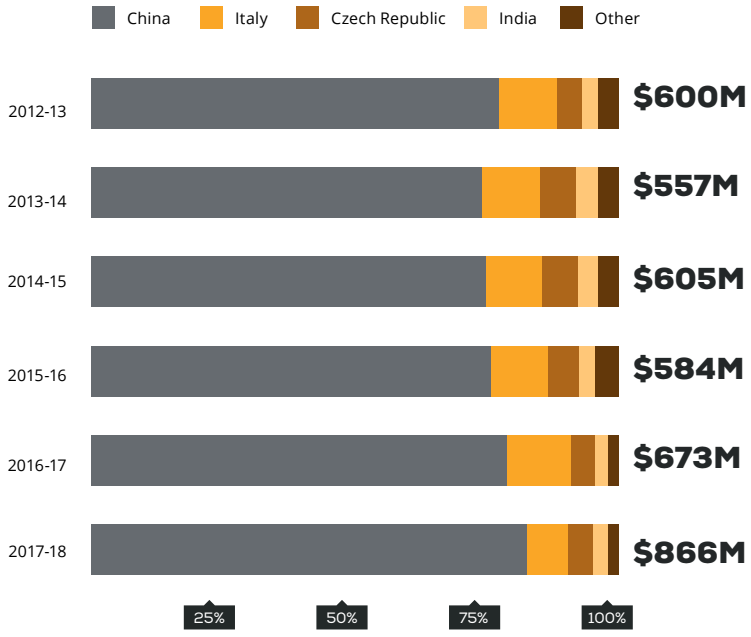
MACROECONOMIC CONDITIONS

Demand flourished, with buyers from China showing strong interest in wool auctions over the past two years. A booming middle class in China and rising household incomes fuelled demand for luxury goods. In fact, Chinese consumers are estimated to account for 75% of the growth in luxury spending, including on Merino wool items[35].

EXPORTS

The export market is predominantly China, which accounted for approximately 83% of the value of wool exports, half of which is estimated to be consumed within China. Exports of wool to China rose by 34% and to all other global markets by 7% year-on-year. While the traditional markets of Italy and the Czech Republic remained significant, demand from these countries remained relatively steady compared to the 5 year averages[54,35].

Value of NSW's Wool Exports



Source: GTA (2018)

LEGUMES IMPROVE FEEDBASE PRODUCTION

NSW DPI, with MLA, has conducted research which revealed superior companion legumes to maintain productivity of tropical pastures and increase feedbase production for livestock. Legumes are a cost effective and sustainable alternative to fertiliser as they offer high nutritive value and can fix nitrogen for use by the tropical pastures. Desmanthus was the superior tropical legume and has the potential to increase total pasture production by 40% compared with a non-persistent legume.

Online at www.dpi.nsw.gov.au/PDI

POULTRY

6% yoy
Output
$814m
est

NSW averages
33% yoy
of national production

Consumption of chicken meat continues to grow

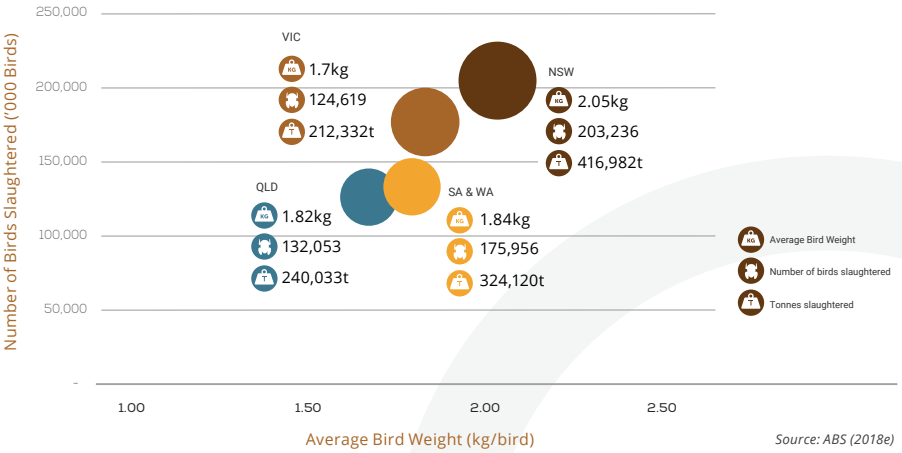
CONSUMER SENTIMENT CONTRIBUTED TO YEAR-ON-YEAR GROWTH

Chicken production continued a steady upward trend to reach an estimated value of $814 million, and 6% year-on-year growth. A range of complex conditions contributed to this trend with consumer sentiment being the underpinning factor. Farm gate prices also increased, however at a steadier and less volatile rate than for the red meat sector.

PRODUCTION

NSW was the leading poultry producing state, averaging 33% of national production over the past four years. Reaching record highs, production was up 5% year-on-year to 416,982 tonnes, contrasting with an overall national production decline of 3%[14]. The production increase was in response to greater consumer demand in the face of relatively high prices for substitute proteins such as beef and sheep meat.

State Poultry Slaughter Comparison
(Bubble size denotes tonnes slaughtered)



Source: ABS (2018e)

PRICE

The price of poultry is estimated to have increased by 1% year-on-year to $2.17 per kilogram, below the 2.3% consumer price index rise noted in Sydney markets[2, 12]. A contributing factor to the steady price growth was downstream pressure from consumers capping price increases, and translating into slower farm price growth relative to other proteins over recent times[60].

A number of positive factors such as relatively affordable prices compared with beef, sheep and pork, consumer demand for leaner protein sources, and a perceived healthier alternative all contributed to the increased demand for chicken meat[60].

EXPORT

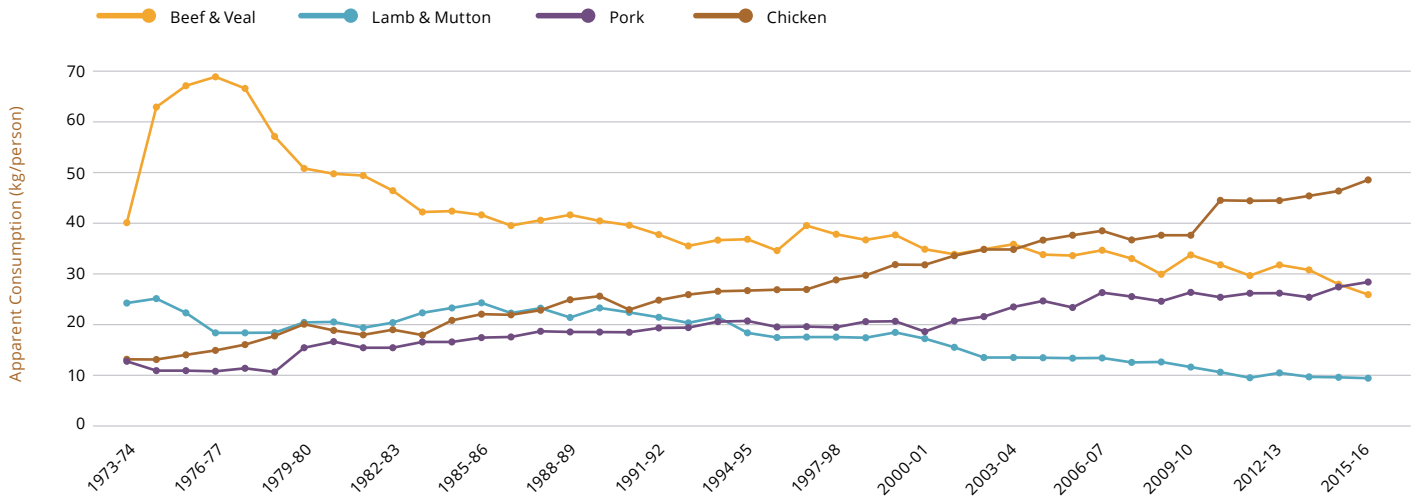
Exports increased 5% year-on-year to $22.9 million. The majority of the growth came from Thailand, Hong Kong and Japan with 306%, 139% and 97% increases respectively, the latter two overtaking the Solomon Islands as the primary export destination. The Solomon Islands, along with the Philippines, Malaysia, Myanmar and a mix of other Pacific Islands took less poultry over the course of the year. Growth in exports peaked from March 2017 through to October 2017, after which exports returned to more typical levels[54].

MACROECONOMIC CONDITIONS

Consumption of chicken meat continued to surge (7% increase year-on-year), with pork the only other significant meat based protein whose consumption increased. This is in contrast to beef and sheep meat, both of which continued to lose ground on a per capita basis[5].

Underpinning this demand was an increase in the health consciousness of consumers who were seeking leaner sources of protein[60]. Poultry producers also faced challenges to their cost of production, with feed grain and fodder prices increasing with the dry domestic seasonal conditions.

Per Capita Australian Meat Consumption



Source: ABARES (2017)

ANIMAL BIOSECURITY AND WELFARE STRATEGIC PLAN

NSW DPI, together with Local Land Services, works to protect the economy, environment and community from the negative impacts of diseases and pests that affect animals. Priority activities are guided by the NSW Animal Biosecurity and Welfare Strategic Plan which focuses on animal disease management and eradication, surveillance for diseases and residues, tracing and identification systems, animal welfare programs and the protection of consumers and the community from residue or contaminant risks.

SHEEP & GOAT MEAT

15% yoy
Output
$973m
est

Lamb and mutton slaughter up
17% yoy

Prices buoyant despite increased offtake

DEMAND REMAINS STRONG WITH A SPIKE IN EXPORT VALUE

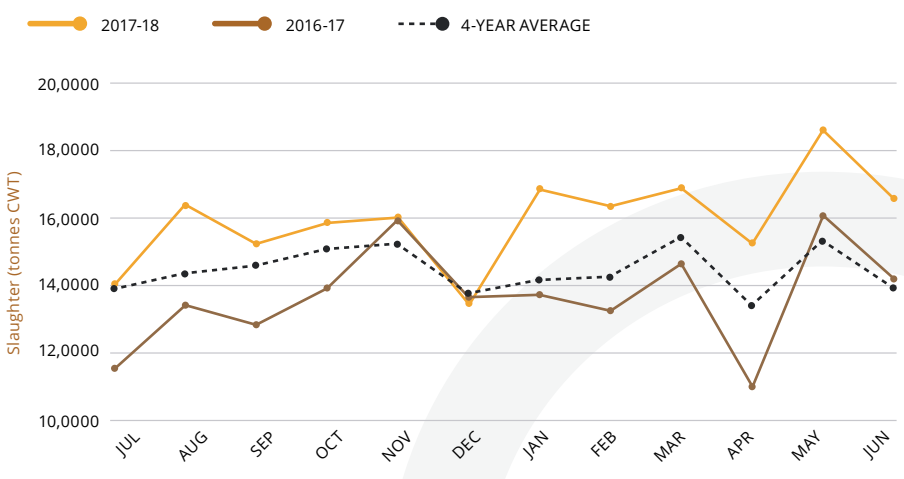
The value of the sheep, lamb and goat industries increased by an estimated 15% to $973 million, with increased supply of mutton and lamb and buoyant prices helping to support the industry. Demand remains strong, particularly for mutton, as demonstrated by a spike in export value. Goat production continued to decline from 2016 peaks as rangeland populations slumped in 2017.

PRODUCTION

Slaughter volumes increased, up 17% year-on-year to 193,033 tonnes of meat. Mutton slaughter increased 44% year-on-year, with dry conditions, buoyant prices and increasing feed costs all contributing to the strong supply. Conversely, lamb slaughter realised a modest production increase in 2017–18[71].

Lamb weights were trending 9% higher than the long-term average, however throughput of light lambs in saleyards began to increase from April 2018. This was a reflection of dry conditions, increased feed costs and less appetite for supplementary feeding[71, 69]. Slaughter of goats in the eastern states declined by 4% year-on-year, in conjunction with a sharp drop in goat populations in 2017[71, 47].

Sheep and Lamb Slaughter



Source: MLA (2018)

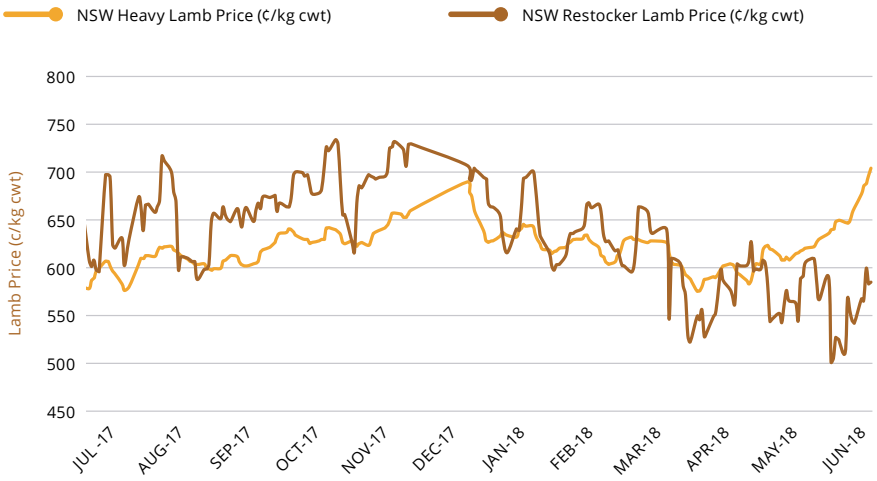
PRICE

The onset of dry conditions during 2017 contributed to a correction in lamb prices over the first four months of 2018, before recovering in May and June. Lower demand for restocker and feeder lambs meant average June prices finished 20% down year-on-year. Similarly, light lambs finished 4% down. Conversely, highly sought after heavy, finished lambs finished 2% up on average, buffered by strong export demand[71].

Despite the dry conditions, mutton prices were reasonably resilient, with a correction in price in January before recovering to finish 4% down year-on-year.

Average fiscal year prices were reslient to increased supply, with all indicators except the restocker/feeder lamb indicator recording stable to slight increases.[71]

NSW Lamb Prices



Source: MLA (2018)

EXPORTS

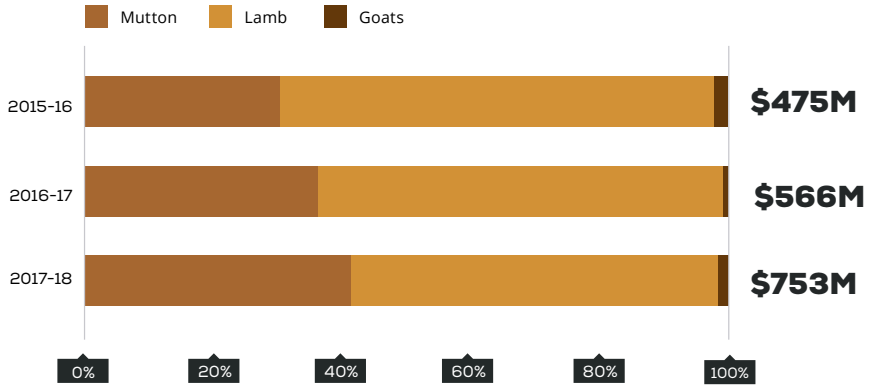
Overall, sheep and goat meat exports grew by 33% to reach a total value of $753 million. The majority of the growth was attributed to mutton, which continued to close the export value gap with lamb[54].

Robust growth in demand resulted in China leapfrogging the US to become the major export market, with exports of sheep and lamb valued at $224 million, up 118% year-on-year[54].

MACROECONOMIC CONDITIONS

Global demand for sheep meat has gradually been on the rise with 2018 total consumption expected to increase by 15% on 2010 levels[76]. The driving force behind this demand is China as well as other emerging economies. The increase in demand has also coincided with a gradual decline in New Zealand exports, from a peak in March 2014[71], which has helped buffer local prices in the presence of increased supply.

NSW Sheep & Goat Meat Exports



Source: OECD (2018)

DPI RESEARCH BOOSTS LAMB PRODUCTION 20%

NSW DPI research has shown graziers can increase pasture growth, stocking rates and lamb production per hectare by 20% or more. The EverGraze program investigated grazing management intensity and interactions with landscape variability to reflect real livestock production systems. While seasonal variability had a greater impact on profitability than grazing management strategies and systems, the right grazing management strategy could help cushion the impact of climate change.

Online at www.dpi.nsw.gov.au/PDI

MILK

16% yoy
Output
$637m
est

Production est. at
1.13 billion litres
1% yoy

Prices buoyed by
export demand

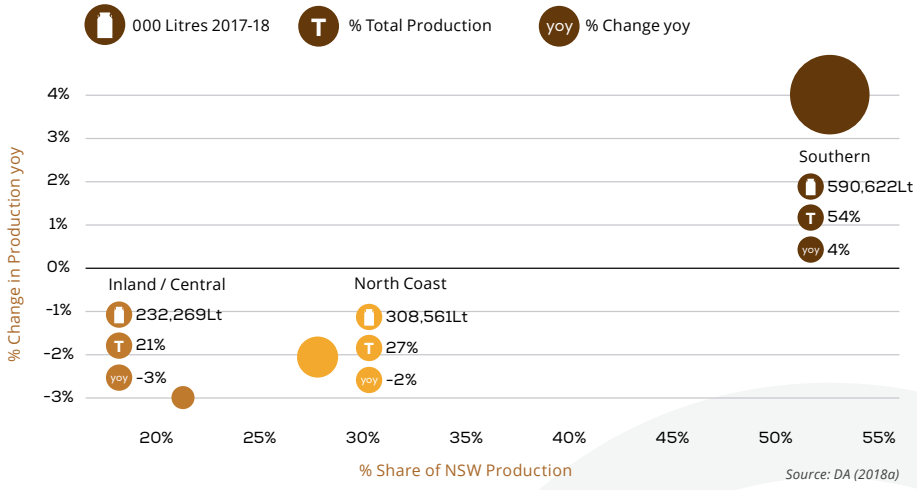
INCREASE IN FARM GATE PRICE & IMPROVED GLOBAL MARKETS

The value of the industry was estimated at $637 million having increased by 16% year-on-year. An increase in the farm gate price and a generally improved global markets outlook was offset by the dry conditions and increased feeding costs for selected areas of the state.

PRODUCTION

Production remained relatively stable with a marginal increase of 1%. The NSW southern region performed particularly well recording a 4% increase in production, compared with declines of 3% and 2% in the central inland and north coast regions respectively[38].

Milk Production by Region (Bubble size denotes production levels)



Source: DA (2018a)

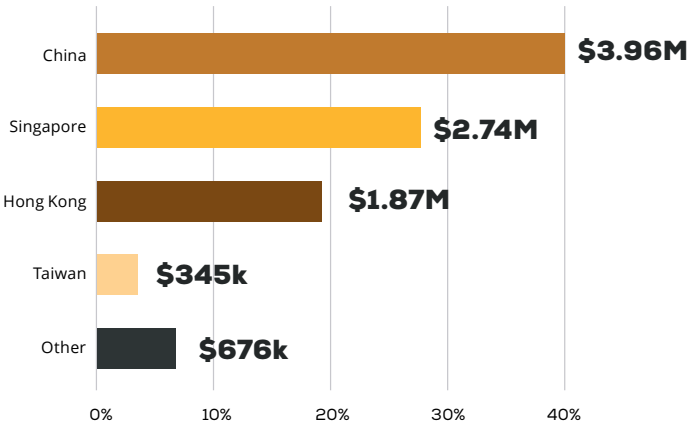
Production levels lagged somewhat behind the national trend, which grew at 3.1% year-on-year, with production in South Australia, Tasmania and Victoria all growing at higher rates[38]. These states followed a similar trend to southern NSW, which experienced relatively good seasonal conditions, and were able to capture export demand. Conversely, northern and central NSW domestic milk producers had drier seasonal conditions, which impacted on production[39].

PRICE

Southern NSW dairy farmers enjoyed solid demand from their export markets while farmers supplying the domestic milk market had a more challenging year with dry conditions impacting on milk prices[41].

The acquisition of Murray Goulburn by Saputo in 2018 was met with a retrospective increase in price for the 2017–18 year to $5.68 per kilogram milk solids to suppliers. Saputo's public intentions to increase the supplier base should also lend support to future farm gate milk price[2]. As a result, overall farm gate milk prices are estimated to increase by 15%, although off a low base[2].

NSW Milk Export Value by Market



Source: GTA (2018)

EXPORTS

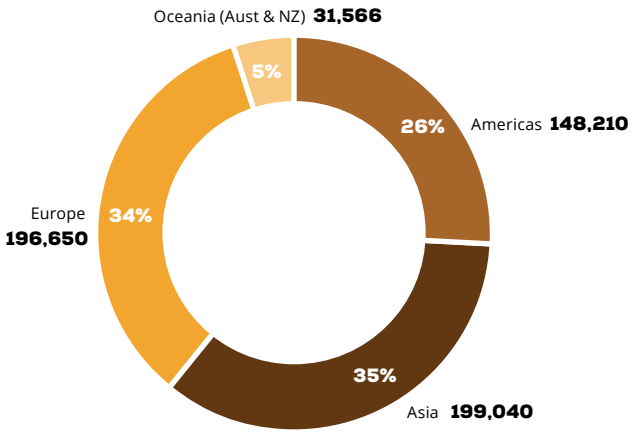
Exports remained steady at $9.6 million due to a changing market dynamic of trading partners. Trade with China and Hong Kong was up 84% and 63% year-on-year respectively, however this was offset by a 74% and 42% decline in trade with Taiwan and Singapore. China overtook Singapore as the largest export market, as higher prices contributed to a higher export value[54].

MACROECONOMIC CONDITIONS

Growth in global milk export supply from the major exporting regions slowed in the second quarter of 2018 to just 0.5% year-on-year, despite it being the peak supply season in the northern hemisphere and there being improved seasonal conditions in New Zealand. New Zealand plans to cull up to 22,000 dairy cows to try and eradicate Mycoplasma bovis disease, while Europe is in the process of liquidating its stock piles of skim milk powder[7, 83].

Domestically, private (generic) label fresh milk regained some lost market share to reach 60% of all sales. These sales dropped after a consumer response drove increased sales of branded milk to support farmer returns. The other notable consumer trend was towards full fat milk varieties over skim and low fat types[41].

Global Milk Production 2016 (kilo tonnes)

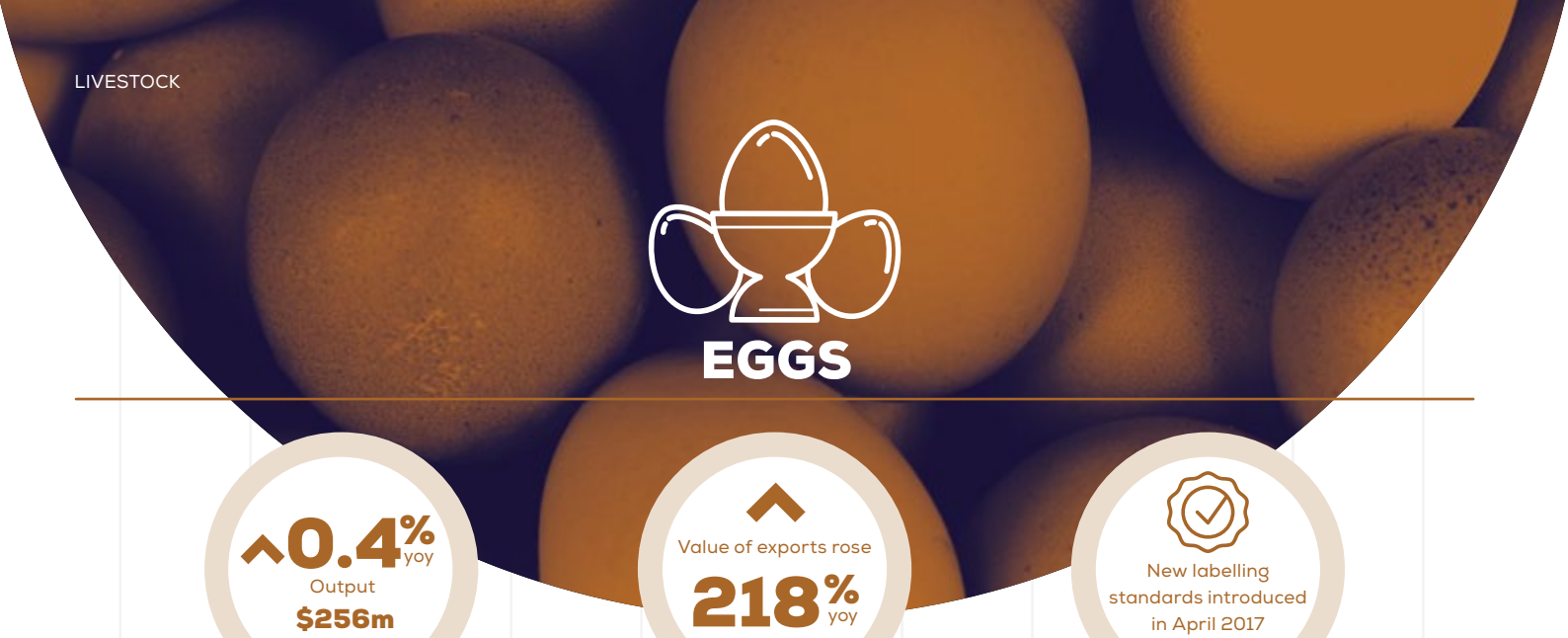


Source: ABARES (2017)

UNDERPASSES ENSURE SAFE CATTLE MOVEMENTS

NSW DPI has funded an initiative to benefit dairy producers who need to regularly move livestock across roads to milking facilities. A total of $3 million in grants has been made available towards building cattle underpasses, ensuring livestock can safely move between paddocks separated by state roads and reducing the risk of road collisions, traffic delays and road surface damage. The NSW Government will offer grants for 50 per cent of the cost of installing an underpass, up to $70,000, with optional grants of up to $10,000 to help cover the cost of installing warning signs and flashing lights.

Online at www.dpi.nsw.gov.au/PDI



EGGS

▲0.4% yoy
Output
$256m
est

▲
Value of exports rose
218% yoy

New labelling standards introduced in April 2017

FREE RANGE EGGS ACCOUNTED FOR OVER HALF OF THE INDUSTRY'S VALUE

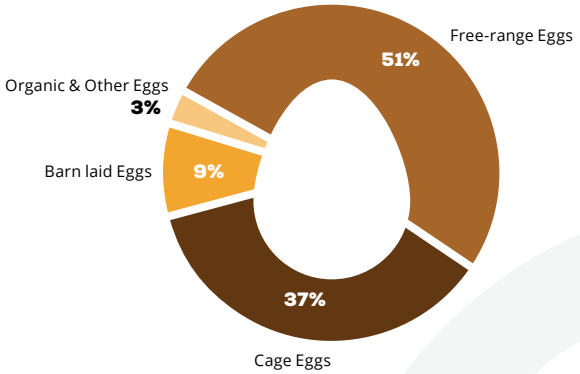
Demand continued to increase, driven by growth in population and as a protein substitute for meat. Free range eggs accounted for more than half of the industry's value, reflecting consumer preferences. The growth in exports was once again boosted by Avian-flu outbreaks in Asia.

PRODUCTION

The NSW egg industry remained relatively stable in 2017–18 with estimated production of 1.24 billion eggs[2]. Demand for eggs is being supported by population growth and the rising consumption of eggs as an alternative source of protein in lieu of meat, which has increased in price at a much faster rate than eggs[59].

The share of industry production attributable to free-range and organically-produced eggs grew in line with changing consumer preferences. While cage eggs accounted for the largest portion of eggs produced by the industry in terms of volume, free-range eggs accounted for more than half of the industry's value[58].

National Egg Production Segmentation by Value



Source: IBIS (2018a).

New standards for free-range egg labelling were introduced in late April 2017 when the national free range egg information standard came into effect. The new information standard was introduced to provide clarity and confidence to producers and consumers when making purchasing decisions.

PRICE

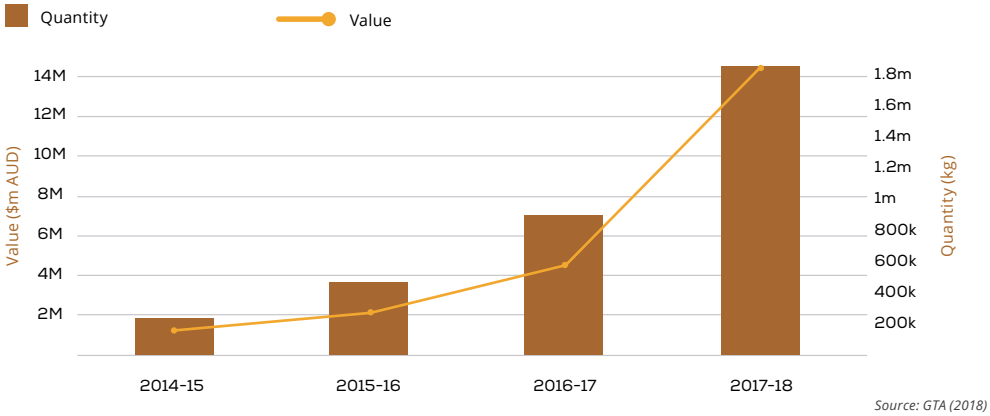
Domestic egg prices rose by 0.7%. This trend was largely because of the growing consumption of high-value industry products, such as free range and organic eggs, which attract higher prices compared with cage and barn-laid eggs, partially offset by a fall in retail prices for free range eggs[59].

EXPORT

Exports accounted for 1.9% of national industry revenue in 2017–18, meaning most eggs produced are consumed locally. Despite this, the value of exports rose 218% year-on-year, with NSW exporting 1.3 million kilograms of eggs to the Philippines and 90,000 kilograms to Sri Lanka[54].

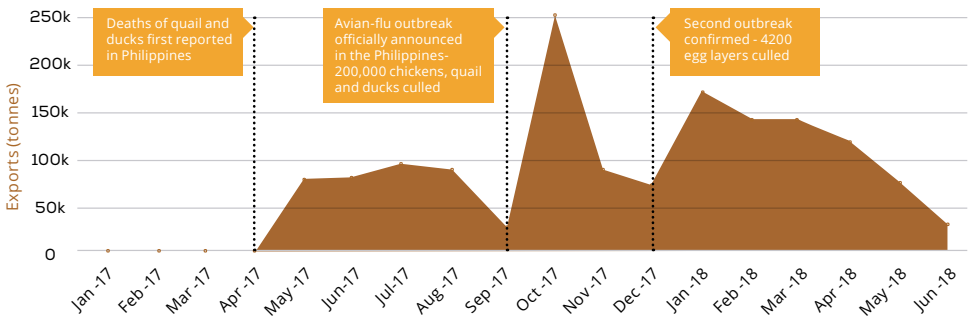
New and reoccurring outbreaks of avian flu strains in Asia, Europe, and the Middle East were reported in 2017–18[77]. The Philippines was hardest hit, with more than 2.5 million bird losses (deaths and animals killed and disposed of) in Asia during March–May 2018 alone[77].

Egg Exports



Source: GTA (2018)

Egg Exports and Avian-flu Outbreaks in the Philippines



Source: GTA (2018); OIE (2018); REUTERS (2018a)

IMPROVING FOOD SAFETY

NSW DPI, the NSW Food Authority, Councils and NSW Health are working to reduce the rates of human salmonellosis. As Australia has higher rates of human salmonellosis than other developed countries, the NSW Food Safety Strategy 2015-2021 sets a reduction target of 30%. Initiatives target raw egg product safety at restaurants, training and education for government officers, targeted investment in research, a national focus on reducing foodborne illness, and strong industry implementation of food standards. These have seen notification rates for Salmonella typhimurium drop by more than 50% since 2014.

PORK

27% yoy
Output
$163m
est

High feed prices put pressure on farm profitability

Exports up
13% yoy

INDUSTRY STRUGGLES WITH OVERSUPPLY OF PIGS

The industry continued to struggle with an oversupply of pigs and high feed costs, despite increasing consumer demand. Exports continued to grow steadily, but remained significantly lower than for other proteins.

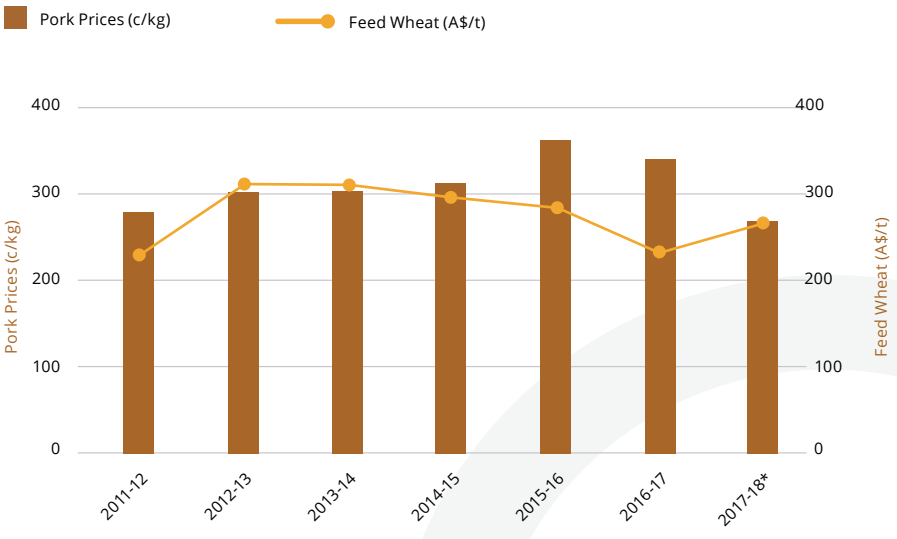
PRODUCTION

Pig meat production increased 2.5% to 66,900 tonnes[14]. Average carcass weights decreased slightly[14]. There was a 3.7% rise in slaughter rates, with 901,100 pigs slaughtered during the financial year.

PRICE

The industry cited numerous challenges, including an oversupply of pigs and high feed prices, which put downward pressure on farm profitability.

Pork and Feed Price

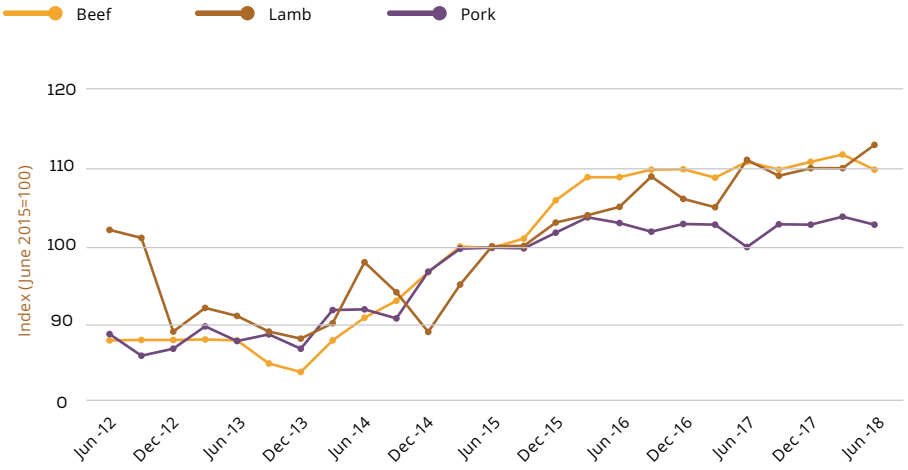


Source: ABARES (2018e)

The shift toward heavier carcasses reflected the lower marginal costs of production and higher margins. The Pork CRC estimated the margin on a 75 kilogram carcass was 26 cents per kilogram, compared with 33.5 cents per kilogram for an 80 kilogram carcass[25].

Consumer preferences toward pork showed a long-term increase. Apparent consumption was 27.3 kilograms per capita in 2015–16, with consumer demand supported by retail pork prices becoming increasingly competitive against beef and lamb12. Retail prices in NSW were only 3% higher than in June 2015, compared with a 10% increase for beef and veal, and a 13% increase for lamb and goat meat.

Consumer Price Index Sydney



Source : ABS (2018c)

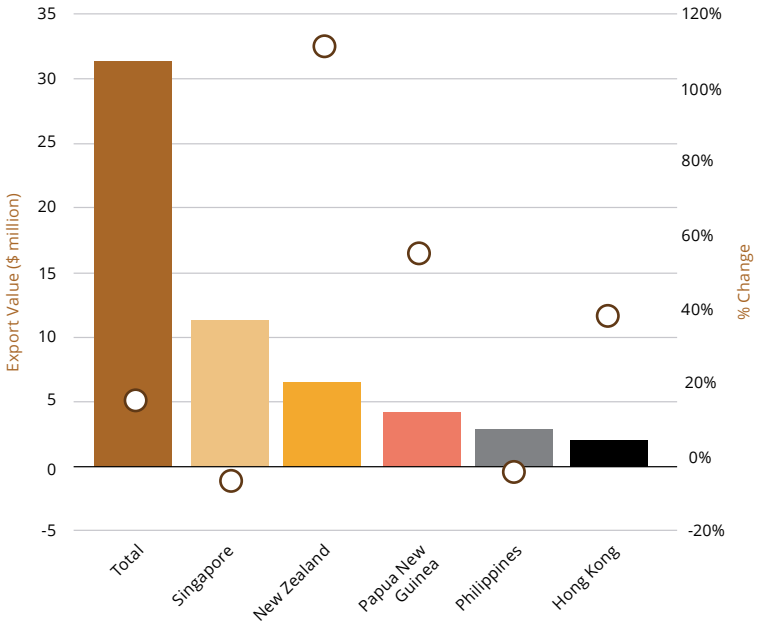
EXPORTS AND IMPORTS

Exports of pork increased to $31.1 million, up 13% year-on-year. Export prices increased 7% on average despite a higher Australian dollar over the year. This was due to changes in the mix of pork products exported. NSW's pork exports primarily went to Singapore ($11.3 million), New Zealand ($6.3 million) and Papua New Guinea ($4.4 million)[54]. In Singapore, NSW pork competes with product from Brazil, Netherlands and Spain[94].

Imports of pork declined to $147 million. Imports from the US, usually the second largest partner country for pork, decreased by 22% to $31.8 million[54]. NSW imports most of its pork products from Denmark ($67.0 million), mostly as middle cuts.

The US, one of the largest global pork producing countries, experienced tariff increases of 25% for pork products into Mexico and China, two of its five largest markets. This may lead to greater competition from US producers in other international markets[94, 67].

Pork Export Value



Source: UN (2018)

INDUSTRY COLLABORATION

DPI NSW collaborates with Australian Pork Limited, Pork Cooperative Research Centre and NSW Farmers Pork Committee to maintain a viable and sustainable pork industry. DPI research officers work with the pig industry on animal biosecurity, disease and control and strategies to reduce the potential development of antimicrobial resistance. DPI Animal Biosecurity, in collaboration with Local Land Services (LLS), manages the risk of significant animal biosecurity threats to protect the economy, community and environment of NSW.

HUNTING & RECREATIONAL FISHING

HUNTING

RECREATIONAL FISHING

The hunting and recreational fishing sector incorporates hunting and game management activities, and recreational fishing, including charter fishing. They are included in the measure of the total annual value of NSW's primary industries this year as they are popular activities that contribute economic and social benefits to the Australian economy, particularly in regional areas.

Some businesses depend on the recreational fishing sector either wholly (the fishing tackle and bait industry and the fishing tour and charter industry) or for a large proportion of their income (the recreational boating industry and the tourism industry)[105].

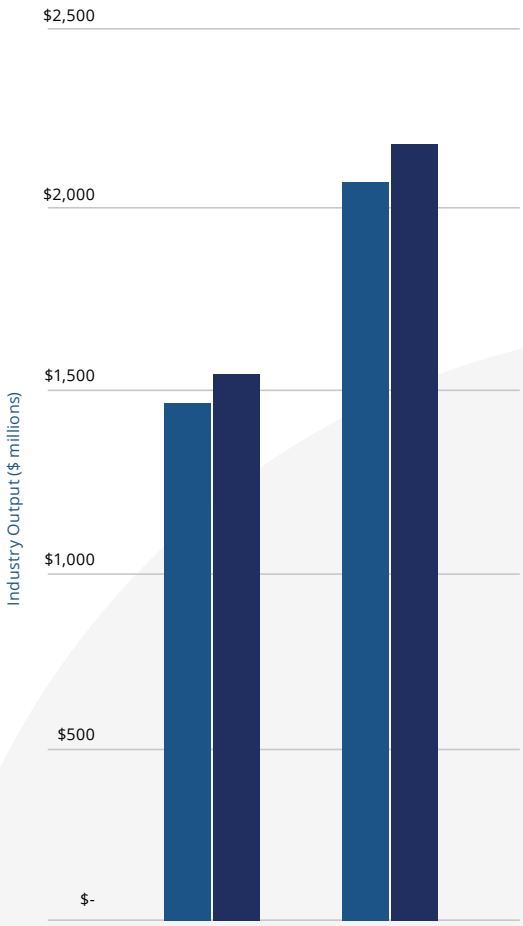
Similarly, hunting and game management activities support businesses directly related to the manufacture and sale of hunting and outdoor products and services (firearms and ammunition, camping and hunting equipment, and safety equipment related businesses), as well as specialist businesses including private game bird farms and hunting tour operators[106].

Both sectors also support fuel, accommodation, and food businesses.

It is difficult to estimate the economic value of these sectors because game harvest and fishing catch are not sold and paid for in markets, unlike the catch or produce of other primary industries. They therefore do not reveal the associated value they gain from hunting game or catching fish[105]. As harvest or catch based (i.e. Gross Value of Production based) approaches do not capture all the community benefit elements of game hunting and recreational fishing, they cannot appropriately estimate the value of this sector.

Expenditure based measures of industry output are considered more appropriate for this sector and more comparable with Gross Value of Production measures. Using these methods, the recreational and charter fishing industry was estimated at $2.219 billion, with $1.541 billion attributed to hunting and game management. The estimated combined industry output of hunting and recreational fishing in 2017–18 was $3.760 billion.

Hunting and Recreational Fishing Industry Output 2017-18 est



	Hunting	Recreational/ Charter Fishing
Industry output 2016-17 est[2]	1466	2082
Industry output 2017-18 est[2]	1541	2129
Year On Year Change (%)	5% yoy	7% yoy

SOUTHERN SYDNEY OFFSHORE ARTIFICIAL REEF

NSW DPI installed Australia's largest artificial reef off the southern Sydney coast to increase recreational fishing opportunities. The complex has a total reef volume of around 2900 m³, is spread over two distinct reef areas and consists of 36 concrete modules, each up to five metres high and weighing over 20 tonnes. The modules were deployed in a patch-like arrangement to provide increased useability for fishers. Designed to last for many decades, the investment is not just for today's recreational fishers but for future generations of keen anglers.

Online at www.dpi.nsw.gov.au/PDI

HUNTING

Expenditure est.
$1,541m

Expenditure by hunters supports many businesses

Helps protect endangered native species

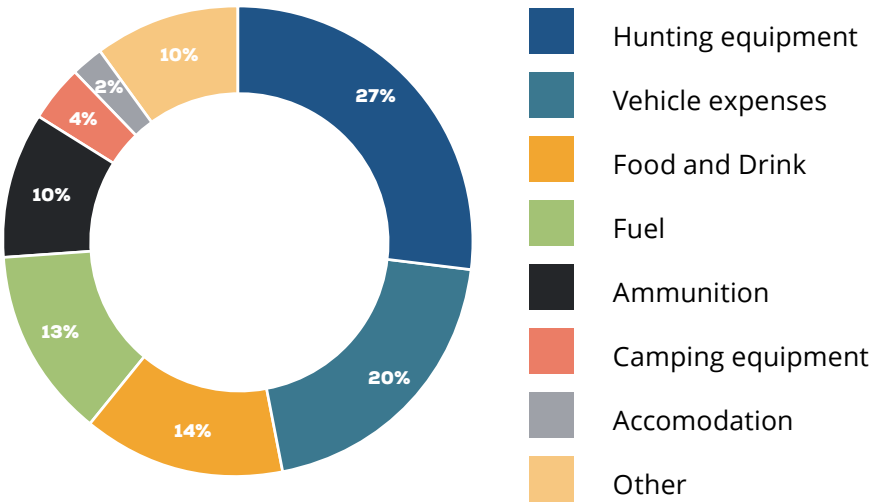
SOCIAL AND ECONOMIC BENEFITS FOR THE STATE OF NSW

Regulated hunting activities generate a range of social and economic benefits for NSW. In 2017–18, hunters spent an estimated $1.54 billion on hunting related activities and products. The total economic contribution to NSW was estimated to be in excess of $1.8 billion[89,z].

EXPENDITURE

Expenditure by hunters supports many businesses, especially in regional NSW, including outdoor and camping products, specialist hunting stores and tourism related businesses (fuel, food and accommodation).

Hunting Expenditure by Category



Source: RMCG (2017)

BENEFITS

By helping public land managers and private landholders control both introduced and native wildlife, hunting helps to protect threatened ecosystems and species and also performs an invaluable service for many primary producers. The main wildlife species targeted in NSW are rabbits, wild deer, foxes, feral goats and feral pigs.

Licensed game bird hunters help control damage to rice crops during the crop establishment stage when they are especially vulnerable to wild ducks. Game birds are native species able to be legally hunted by licensed hunters in NSW under a mitigation program, supervised by NSW DPI, for sustainable agricultural management purposes. A maximum harvest level is determined annually based on the best available scientific information on regional populations of each game duck species.

REGULATING HUNTING

The NSW DPI Game Licensing Unit regulates hunting in NSW with NSW Police. A range of programs are administered to ensure hunting in NSW is conducted safely, ethically and sustainably. The programs include licensing, communications and stakeholder engagement, education and awareness, wildlife management and compliance and enforcement.

SHUT THE GATE ON ILLEGAL HUNTING

NSW DPI's new Get Permission app is revolutionising the way permission is granted to hunters to enter any lands for the purpose of hunting. The app allows hunters to request and store permissions from landholders and store copies of licences. The app also allows landholders to authorise hunters to hunt on their lands, review the permissions they have granted and revoke them at any time. This is a joint initiative of DPI and NSW Police.

RECREATIONAL & CHARTER FISHING

Expenditure est. **$2,219m**

Bream top species caught recreationally, **72%** release rate

Recreational harvest greater than commercial for five key species

SOCIAL AND ECONOMIC BENEFITS

Recreational and charter fishing activities generate a range of social and economic benefits. In 2017–18, fishers spent an estimated $2,219 million on recreational ($2,195 million) and charter ($24 million) activities.

Top Five Species Caught by Recreational Fishers (Estimated catch numbers and release rate)

	Catch	% release
Bream	2,205,656	72.1%
Nippers (Saltwater)	1,415,852	6.8%
Flathead, Dusky	1,058,613	54.5%
Flathead, Sand	962,892	54.2%
Snapper	755,350	75.4%

Source: DPI (2018h)

RECREATIONAL FISHING

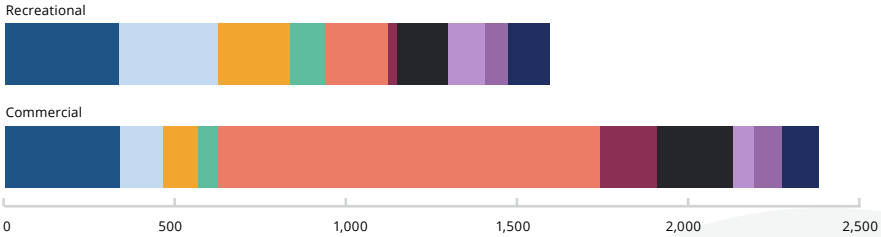
An estimated $2.195 billion was spent on recreational fishing trips in 2017-18, resulting in combined direct and indirect economic output in excess $3.42 billion.[95,z]

Catch, effort and participation rates are evaluated by surveys and are used to inform fisheries management practices. Around 850,000 people fished recreationally in 2013–14, down from around one million in 2000–01. The average number of days fished per fisher was also down to 4.3 from 5.6[108].

The top five species caught by recreational fishers included four fish (bream, dusky and sand flathead and snapper) and one crustacean (saltwater nippers)[108].

Estimating the weight (tonnes) of the recreational catch (caught and kept) showed that, for five of ten key species, a majority of the total harvest weight was attributable to recreational rather than commercial fishing - specifically Dusky Flathead, Sand Flathead, Mulloway, Tailor and Yellowtail Kingfish[108].

Estimated Commercial and Recreational Key Species Harvest (tonnes) Note: recreational harvest weights are indicative only



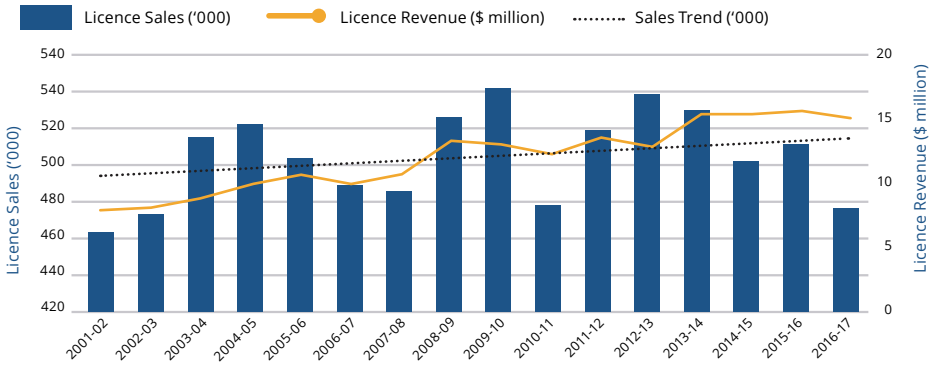
	Recreational	Commercial
Bream	330t	343t
Flathead, Dusky	288t	115t
Flathead, Sand	210t	101t
Mulloway	103t	59t
Salmon, Australian	182t	1112t
Silver Trevally	27t	195t
Snapper	148t	368t
Tailor	107t	169t
Whiting, Sand	69t	148t
Yellowtail Kingfish	120t	229t

Source: DPI (2018j)[ab]

RECREATIONAL FISHING LICENCES

Anglers are required to purchase a recreational fishing licence when fishing in NSW waters. Over the past 16 years, licence sales have been remarkably consistent, averaging around 500,000 per year. Licence revenue is spent by NSW DPI on projects to improve the experience for recreational fishers.[109]

Recreational Fishing Licence Numbers & Revenue

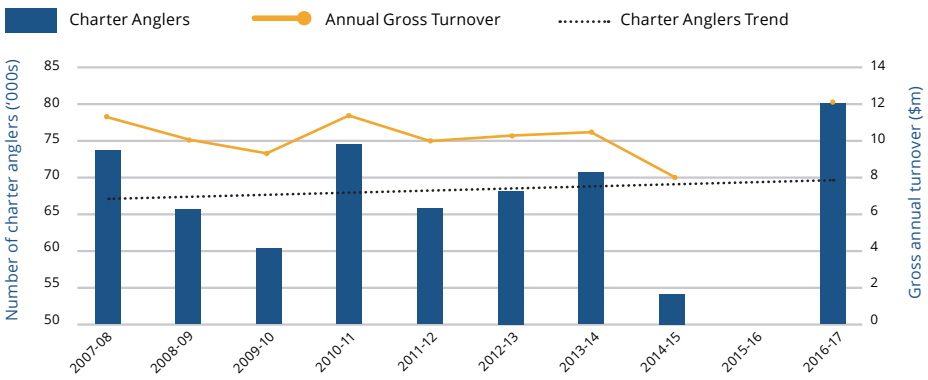


CHARTER FISHING

The charter fishing sector became a restricted access fishery in 2000, with 276 licenses issued. The number of anglers taking charter trips and the associated industry turnover (estimated) has not changed notably since that time[110, ab].

An estimated $24 million was spent on charter fishing fees and non-charter items, such as food and accommodation in 2017-18, with approximately half of the expenditure coming from charter fishing fees alone. This expediture output was found to result in a total direct and indirect economic output in excess of $50 million. [52,z]

Estimated Charter Fishing Industry Turnover and Angler Numbers



Source: DPI (2018j)[ab]

INTEGRATED MONITORING PROGRAM – CHARTER FISHING

NSW DPI's Integrated Monitoring Program (IMP) is collecting high quality information on recreational fisheries, and includes a Charter Fishery monitoring module. The charter module has had more than 40 operators host scientific observers who collected data on fisher demographics, fleet fishing effort, locations fished, interactions with threatened species and fish measurements for the biological sampling program. In 6 months the program has collected information from more than 130 charter fishing trips from 14 ports along the NSW coast.

HORTICULTURE

▲ 2% yoy
Output
$1,798m
est

Asian markets were the major export destination

Nurseries, nuts, table grapes and oranges are key NSW growth industries

3RD LARGEST INDUSTRY VALUE IN TOTAL OUTPUT

The horticulture sector, which is made up of a diverse range of fruit, vegetable, nurseries, cut flowers and turf industries, had a mixed year as a result of seasonal conditions. The nurseries and vegetable industries had a bumper year with Output growth of 101% and 21%, while the combined fruit and nut industries had varied results with Output growth of 19%. The combined horticulture sector contributes approximately 10% of total Output.

PRODUCTION AND VALUE

At the date of publication, detailed industry information is not available, consequently the following production commentary analyses 2016–17 Industry trends.

Nurseries experienced dramatic growth, with undercover hectares increasing by 55%. Output more than doubled to reach $294 million. The health benefits and home décor trend of indoor plants saw demand spike domestically, which contributed to the nurseries industry growth[9, 75].

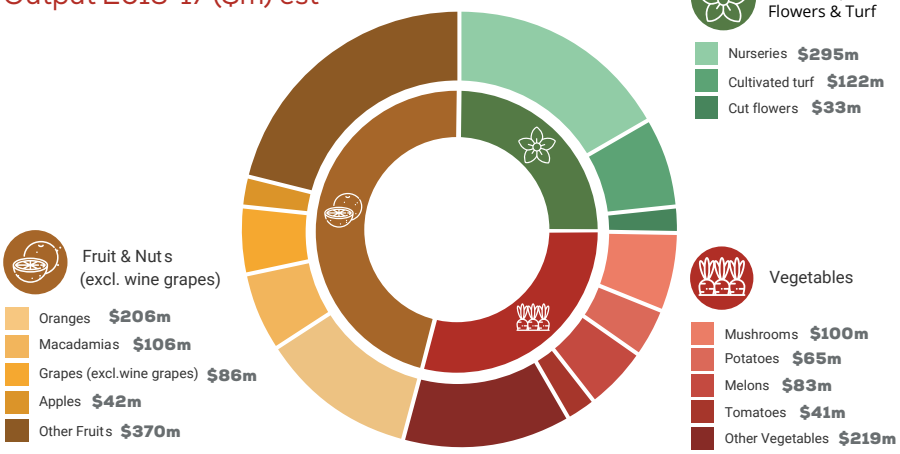
Citrus remained the largest single fruit or vegetable industry, with oranges the main contributor. Citrus faced a tough production season with extreme weather, including hail and heat waves, resulting in orange production declining by 7%. However, increased international demand, particularly from China, pushed values up by 39%.

The nut industry has seen huge growth of 215% since 2013–14. In this timeframe, macadamia production increased 25% and its value more than doubled, with the farm gate value of the industry in Richmond-Tweed region surpassing beef production in the region[64, 68].

Almond production value has grown by over 400% since 2013–14, with the number of trees of bearing age increasing from 165,000 to over 1 million. This prolific growth was on the back of strong domestic and international demand, particularly from Asia[11].

The vegetable industry had a very promising increase in value of 21% year-on-year[11]. The mushroom and melon industries both had significant increases in production of 19% and 45%, which resulted in healthy increases in their Output by 27% and 43% respectively. Smaller vegetable industries such as beans, broccoli and sweet corn had good seasons with significant increases in areas planted, production and values[10].

Output 2016-17 ($m) est



Source: ABS (2018a)

EXPORTS

Horticulture exports grew at a rapid pace to reach $365 million, an increase of 36% over the five-year moving average. Asian markets were the major destination for NSW horticulture products, with 74% of all exports by value arriving in these markets[54].

Nuts were the largest horticulture export making up 48% of total exports by value[54], with rising incomes and the increasing awareness of the health benefits of nut consumption driving demand.

Other significant exports included citrus, table grapes, plums, cherries and potatoes, which together made up 20% of all exports by value[54].

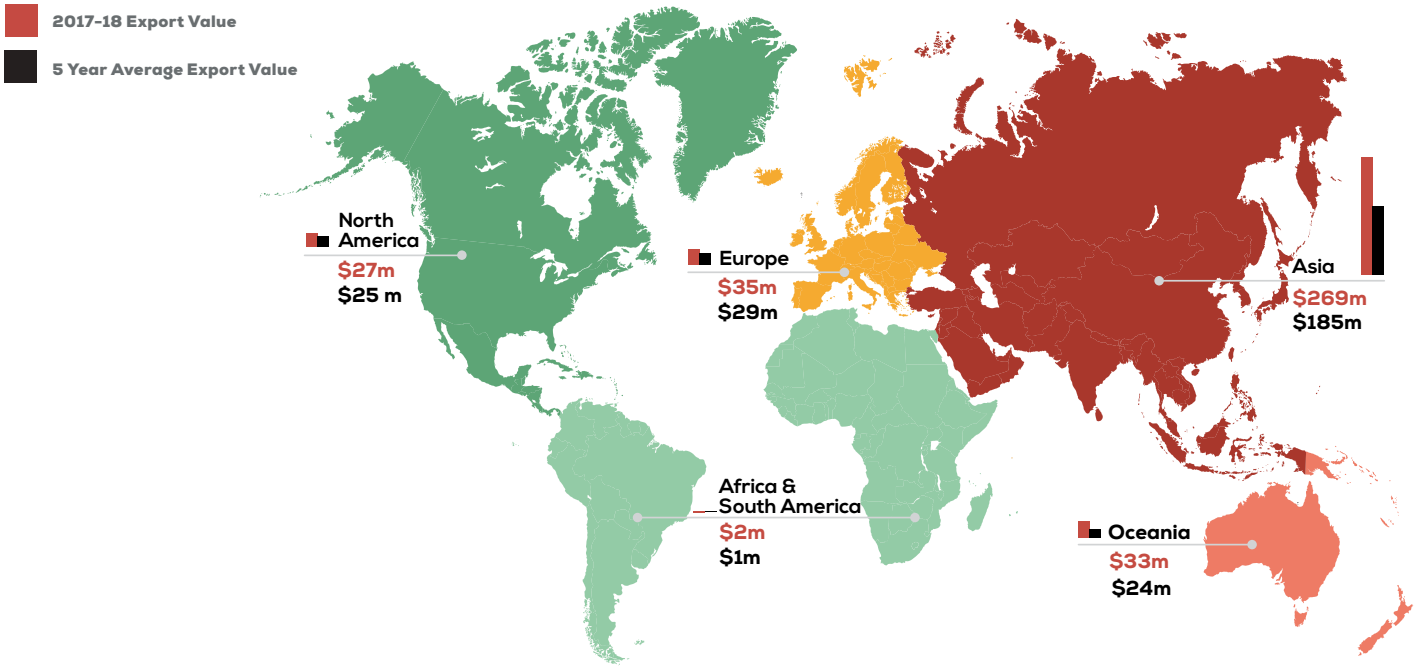
MACROECONOMIC CONDITIONS

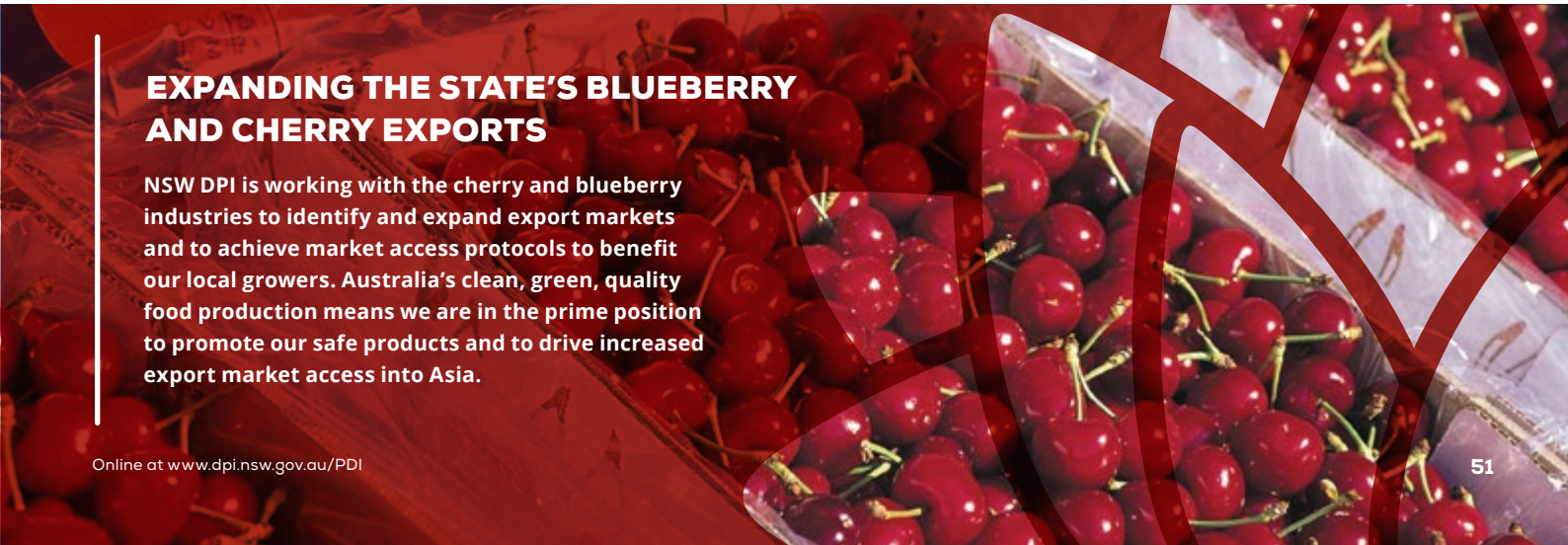
New trade agreements between Australia and China allowed further market access for some fruit including peaches, plums and apricots. These agreements also revised fumigation and cold-treatment protocols for table grapes and recognised Australia's pest free regions for citrus and cherries.

NSW produce is renowned for its food quality, safety and rigid biosecurity standards, which has provided a competitive advantage over other countries, in particular when exporting to Asia. Biosecurity threats and incidents can have a huge impact on the food produce industry's export market, such as the outbreak of canker citrus disease (which causes unsightly fruit) discovered in northern Australia in April 2018[29, 74].

In the medium term, world supply for nuts is expected to finally catch up with demand and prices will start to fall. A future challenge for nut growers will be to maintain international competitiveness particularly when production costs and in particular irrigation water are expected to rise[2].

Horticulture Exports by Region





EXPANDING THE STATE'S BLUEBERRY AND CHERRY EXPORTS

NSW DPI is working with the cherry and blueberry industries to identify and expand export markets and to achieve market access protocols to benefit our local growers. Australia's clean, green, quality food production means we are in the prime position to promote our safe products and to drive increased export market access into Asia.

WINE GRAPES

3% yoy
Output
$181m
est

NSW crush down
9% yoy

NSW
wine exports
grew by
2% yoy

HOT, DRY TEMPERATURES CONTRIBUTED TO QUALITY BERRIES

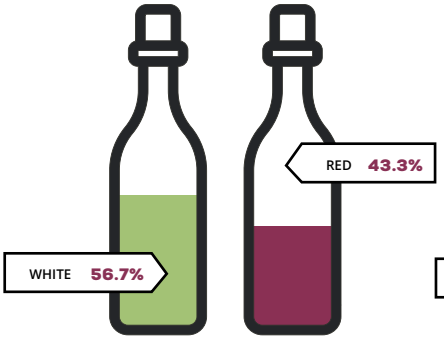
Total crush was down this year as hot, dry temperatures reduced yield, but also contributed to quality berries with good flavour. Wine exports grew marginally, up 2% year-on-year. Strong growth in the Chinese and UK markets was partially offset by falls in the US market driven by changing consumer preferences.

PRODUCTION

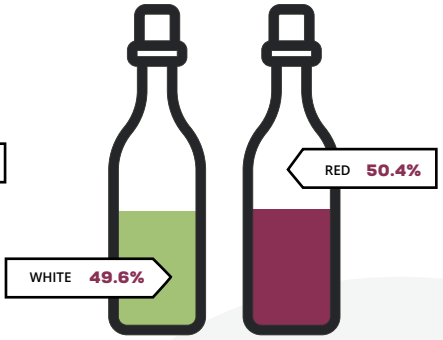
The area planted to wine grapes of bearing age was 30,111 hectares in 2016-17[11].

The total NSW crush was down 9% year-on-year to 317, 754 tonnes off the back of last year's record harvest[101,w]. Yield was down, as grape size and average bunch weights declined due to record summer temperatures and very dry conditions across much of the state. Grape quality was generally good however, with the dry conditions translating into smaller berries with plenty of flavour[30].

Crush by Variety
(% of total quantity)



Crush by Variety
(% of total grape value)



Source: WA (2018a)

Of the total grape crush, 29% was purchased by wineries from independent grape growers with the rest suppling wineries through their own vineyards[101].

The Riverina remained the largest wine production area in NSW and in 2017–18 accounted for more than 89% of the state's total wine grape crush. The region is best known as a producer of bulk wines.

PRICE

The weighted average price paid for wine grapes in NSW was $440 per tonne. The influence of the Riverina region on this weighted average price is incredibly significant. The lower price is consistent with the large share of production coming from the Riverina region, where the average purchase price was $399 per tonne[101].

NSW Wine Grape Prices and Crush Volume

Source: WA (2018a)

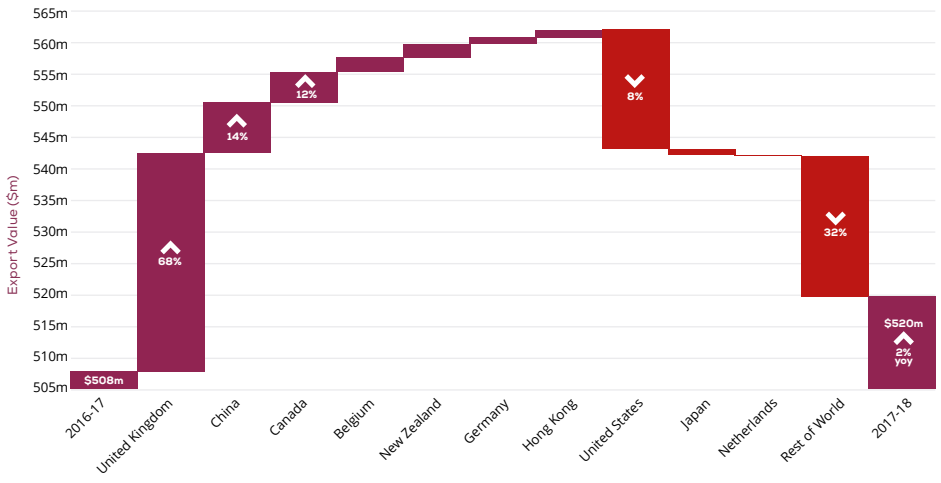
EXPORTS

The total value of NSW wine exports grew by 2% year-on-year to $520 million[54]. Exports to the UK were the main driver of growth, increasing by 68% year-on-year to over $86 million.

Winemakers have also continued to expand their penetration of the Chinese market, which grew in value by 14% year-on-year to $66 million[54]. This growth momentum will be boosted further in the coming year when the China–Australia Free Trade Agreement sees the complete eradication of import tariffs on Australian wines.

Exports to the US decreased in both value (down 8%) and volume (down 2.1%) year-on-year[54]. American consumers are transitioning from commercial wines to more premium wines. The majority of our wine exports to the US have been traditionally priced below $5AUD per bottle retail, but with a growing preference for a more premium product, Australian exports will need to respond to this demand[102].

Export Value Growth by Country



Source: GTA (2018)

HOT TOPIC FOR LOCAL VIGNERONS

NSW DPI, Wine Australia and Riverina Wine Grapes Marketing Board are focussing on vineyard management in heatwaves in a project to better understand vine stress during hot conditions. They are exploring the potential for new technology (sap flow meters and dendrometers), coupled with soil moisture information, canopy temperature and humidity sensors, to monitor vine stress and inform irrigation decisions which could help better manage grapevines in the heat.

Online at www.dpi.nsw.gov.au/PDI

FISHERIES

▲7% yoy
Output
$170m est

▲
Aquaculture production value est
12 % yoy

Value of fisheries imports is
64
times greater than exports

INCREASE IN THE VALUE OF WILD CAUGHT FISHERIES SECTOR

Based on DPI analysis, the value of the fishing industry in 2017-18 is estimated to be $170 million, up 7% year-on-year. In addition to a provisional increase of 12% achieved by the aquaculture sector, the wild caught sector is estimated to have increased by 3%.

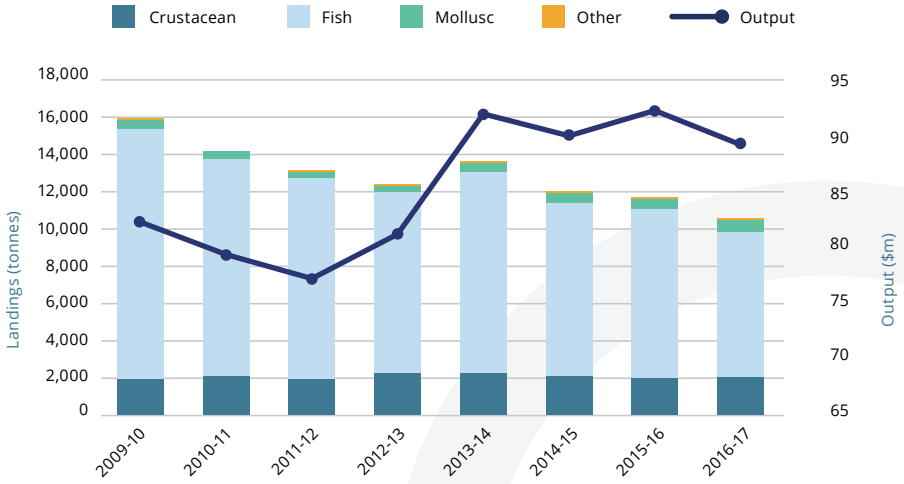
At the date of publication, detailed industry Output figures for the wild caught and aquaculture sectors are not available. The following commentary analyses 2016-17 industry trends.

WILD CAUGHT

The total value of the wild caught sector was $89.3 million in 2016–17, down 2.4% year-on-year, and accounting for 56.1% of the total value of the fishing industry[46].

Fish are the biggest contributor by volume to the wild caught sector, however landings (tonnes) declined by 14% year-on-year, marking the third consecutive year of reductions (2% in 2015–16 and 14% in 2014–15). In contrast, landings for crustaceans and molluscs both increased year-on-year (2% and 12% respectively). There was an overall decline in catch volume of 10% year-on-year[46].

Commercial Wildharvest Landings and Output 2016-2017



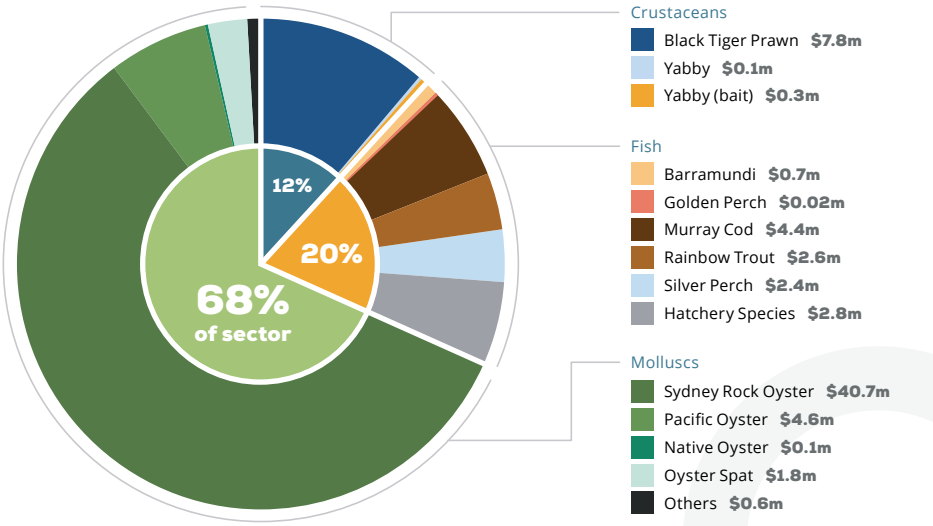
Source: DPI (2018c)

AQUACULTURE

The total value of aquaculture production was $70 million in 2016–17, up 8% year-on-year, accounting for 43.9% of the total value of the fishing industry[45].

Sydney rock oysters made up 58% of the total value of aquaculture production, up 10% year-on-year. Similarly, black tiger prawns accounted for 11% of the total value of aquaculture production, up 31% year-on-year. In both cases, growth was driven by increases in the volume of production and the average price received by farmers[45].

Aquaculture Output 2016-17



Source: DPI (2018b)

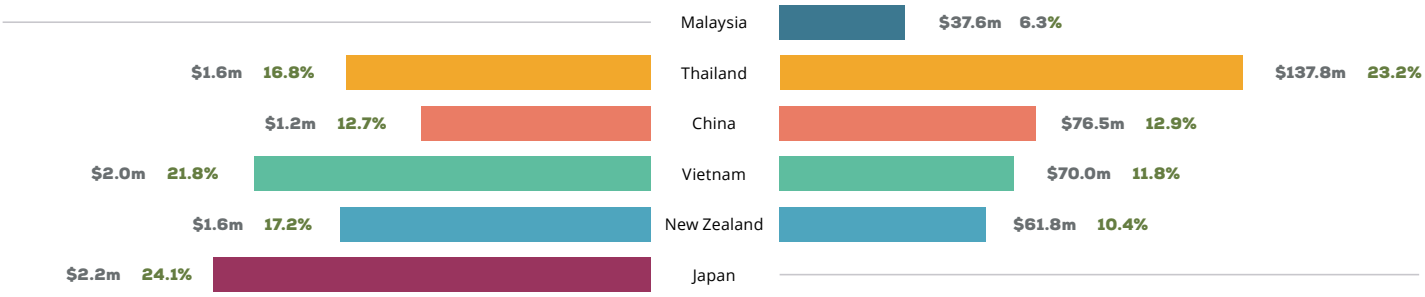
EXPORT AND IMPORTS

As is the case for other developed countries, Australia is a net importer of seafood — domestic demand for seafood products outstrips supply. However, most of Australia's high-value seafood products that could supply the domestic market are exported as higher prices are available in global markets[50]. Seafood imports are generally lower-value products, such as frozen fish fillets, prawns and canned fish[50].

NSW exports of fisheries products for 2017–18 were valued at $9.3 million, compared with imports of $593.9 million. The top five export markets were Japan, Vietnam, New Zealand, Thailand and China. Interestingly, imports were from similar regions, with the top five countries of origin Thailand, China, Vietnam, New Zealand and Malaysia.[54].

Top 5 Destinations for NSW Fisheries Exports 2017-18
(by the value and % of total trade)

Top 5 Origins of NSW Fisheries Imports 2017-18
(by the value and % of total trade)



Source: GTA (2018)

WORLD'S FINEST PEARLS THRIVING IN NSW

NSW DPI has been supporting a fledgling pearl industry in NSW through the provision of juvenile oysters since 1999. Every oyster the operation has used over the last 15 years has been hatchery bred (spawned and raised to 2mm) by DPI. Producing some of the best Akoya cultured pearls in the world, they are now being distributed through independent jewellers throughout the country.

FORESTRY

5% yoy
Output
$470m
est

New home building is a key driver of demand for softwood timber

NSW has the largest softwood plantation area in Australia

RECORD RESIDENTIAL CONSTRUCTIONS WITH HIGH DEMAND FOR SOFTWOOD

Production decreased approximately 6% year-on-year, due to a decrease in the national volume of logs harvested for softwoods. The gross value of logs harvested was estimated to be $470 million.

At the date of publication, detailed industry information for NSW is not available, consequently commentary in this section for production, plantations and prices analyses 2016–17 industry trends.

PRICE

The KPMG Pine Log Price Index for June 2017 showed lower prices for medium and large sawlogs, down 1.3% and 3.2% year-on-year respectively. Pulp log prices were also slightly lower, down 0.5%. Small and intermediate sawlogs had small price gains. Medium sawlogs are the highest value product in the index, and showed lower volumes.

The Indufor Timber Market Survey showed price growth across all manufactured timber products in the year to March 2018. Structural softwood timber had increases between 8.6% for treated pine and 14.9% for MPG10 products. Outdoor softwood timber had increases between 4.9% for treated sleepers and 12.7% for decking[62]. This is partly the result of higher input prices. The wood product manufacturing input price index increased approximately 4.3% in the year to March 2018[19].

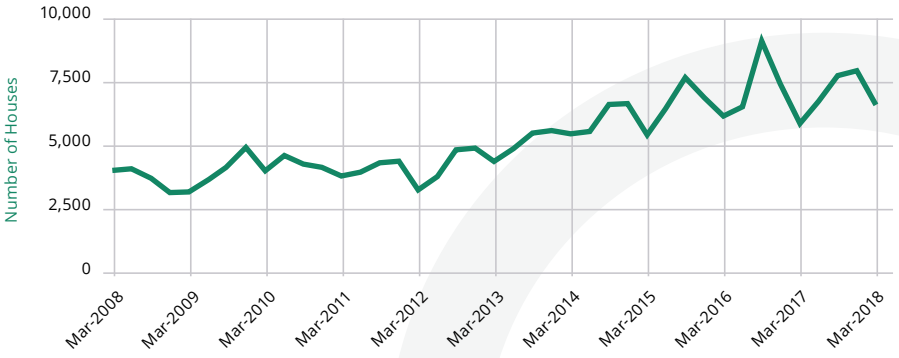
PRODUCTION

The total log harvest was 5,918,000 cubic metres in 2016–17, up 5.9% year-on-year. Production of softwood logs accounted for the majority of the harvest, at 4,967,000 cubic metres, up 6.8%. Log production from hardwood native forests was 886,000 cubic metres, up 1.2%[3].

NSW forestry has shifted away from hardwood towards softwood logs. NSW softwood production is mostly sawlogs (2,800,000 cubic metres), followed by pulp log (2,069,000 cubic metres)[3].

New home building is a key driver of demand for softwood timber. Dwelling house commencements in NSW reached a decade high in 2016–17, with 29,500 houses commenced construction. In the year ending March 2018, dwelling commencements remained high, with approximately 29,400 new houses commenced construction[18].

Dwelling Units Commenced - NSW - Houses



Source: ABS (2018i)

EXPORTS

NSW forestry exports in 2017–18 were $146.9 million, primarily consisting of wood in the rough. Exports increased 6.2% year-on-year. China was the main destination for forestry products, at $127.3 million[54].

Australian forestry exports reached a 20-year high, increasing by 13.5% to approximately $2.1 billion in 2017–18. China and Japan were the largest markets, worth $1.4 billion and $497 million respectively, up 10.7% and 36.3% over the past year[54]. Australia was the largest exporter of woodchips in the world[94]. Japan was a major destination for woodchips. Woodchip exports are the single largest forestry export by value, at $1,328 million in 2017-18, and state details of exports are confidential.

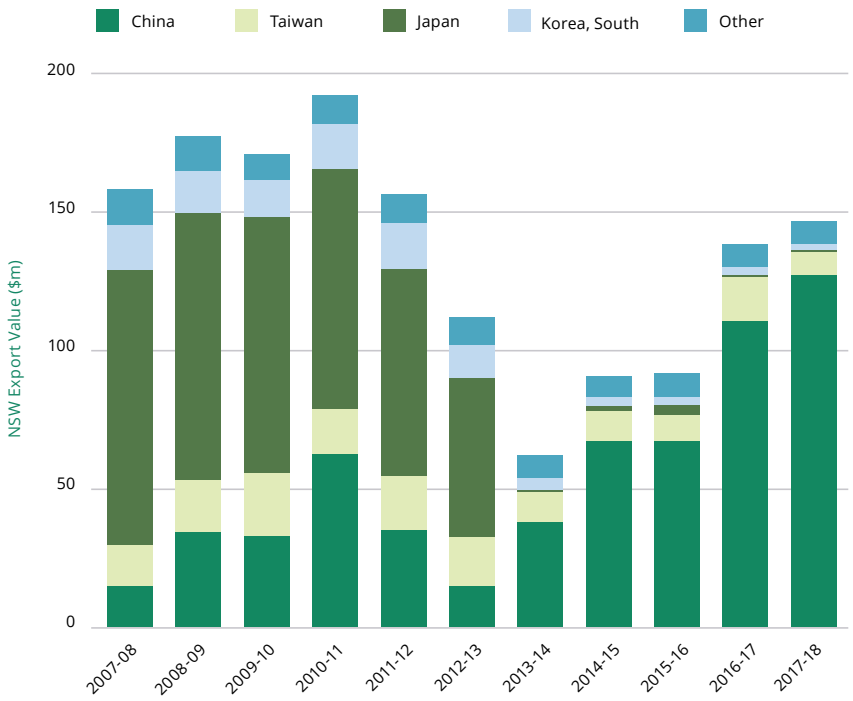
PLANTATION

NSW had 394,200 hectares of commercial plantations in 2016–17. This was the second largest total plantation area in Australia, behind Victoria at 420,900 hectares. NSW has the largest softwood plantation area in Australia[3], at 307,100 hectares.

EMPLOYMENT AND VALUE ADDED

In 2017–18, employment in forestry and related industries was up by 5,000 year-on-year[15,y]. Industry value added (measured as production less intermediate inputs) was estimated at $2.5 billion, an increase of 4% over the year[ac].

NSW Forestry Export Value



Source: GTA (2018)

ANZSIC Industry

	Value Add est. ($m)[ac]	Change (%)	Employment est.[y]	Change (%)
Forestry & Logging	271	3%	1,990	-3%
Log sawmilling & timber dressing	358	3%	3,589	37%
Other Wood Product Manufacturing	834	6%	16,621	50%
Total Paper & Paper Product	973	0%	3,770	-27%
TOTAL	**2,505.2**	**4%**	**25,969**	**24%**

Source: DPI (2018a); ABS (2018f); ABS (2918k)

INVESTMENT IN FORESTRY

NSW Government will invest a historic $71.8 million in forestry over four years. The funding, available through the NSW Budget 2018, will support innovative, sustainable, thriving forestry, with $24 million toward investment in plantations; $34 million for a concessional loan scheme to drive mill innovation; $9.2 million for world-class mapping and monitoring; and, $4.6 million to support training and accreditation for forestry contractors.

WATER

Southern general security availability down **7%** yoy

Northern general security availability down **59%** yoy

Southern Valleys water entitlements valued at **$7.62 billion**

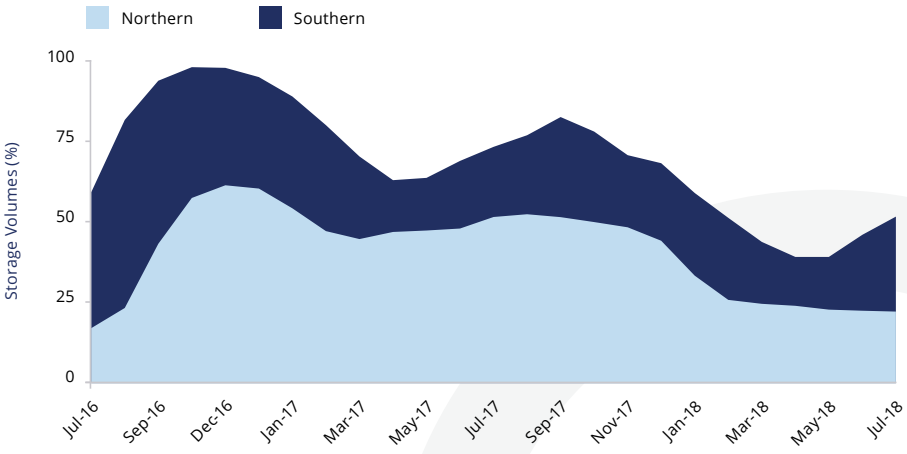
With dam storage levels falling significantly over the year, the availability of general security water also fell, especially in northern regions where storage volumes are down to 38% on average.[103] The dry conditions in the second half of the year saw the value of water entitlements and the total market value of water rights in the southern Murray-Darling Basin increase to record levels.[23,103]

MAJOR NSW STORAGES

The major northern dam storage volumes fell from an average of 46% last season to 38% this season, with a steep fall occurring at the start of 2018. The lack of significant rainfall since the start of the year brought down levels to 22% in June, compared with 48% at the same time last year[103].

The southern dam storage levels fell from an average of 80% last season to 61% this season; at the lowest point in April, the level was 39% compared with the lowest point last season at 59% capacity. After a brief recovery due to the autumn/winter rainfalls last season, a decrease in inflow has occurred since September 2017 and a sharper drop in levels is evident since the start of 2018[103].

Major Water Storage Volumes



Source: WATER (2018)

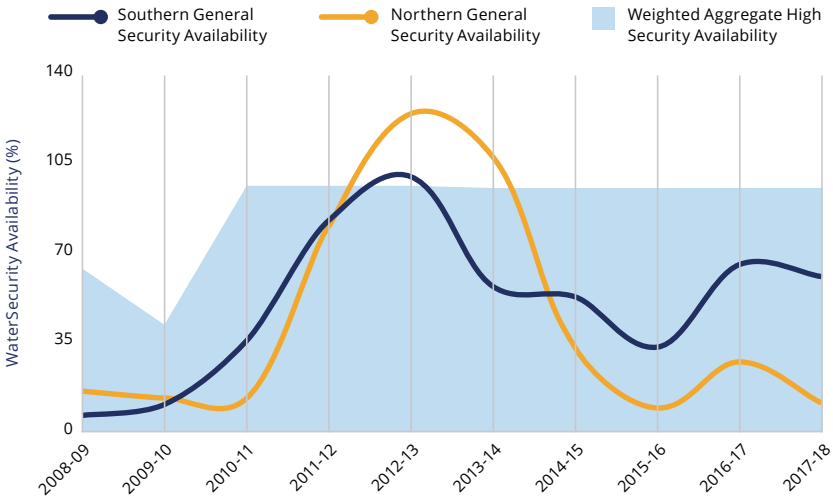
AVAILABILITY

After the end of the Millennium drought (2010-11), the availability for high security licence holders has averaged 96% with the current season also at that level[51].

The dry conditions across NSW resulted in a significant drop in the availability of general security water in the northern regions, with 2017–18 levels the second lowest since 2008–09. The current levels are down 27 percentage points (ppts) on the five-year moving average and down 16 ppts year-on-year[51].

Contrary to the northern regions, southern general security availabilities fared better with levels up 7 ppt on the five-year moving average, although 7 ppts lower than the previous year, with the differences attributable to the higher storage volume levels in the major southern dams and relatively better rainfall than the Northern region in 2017-18[51].

Weighted Average Available Water Determinations



Source: DOI (2018)

NSW SOUTHERN VALLEYS ESTIMATED MARKET VALUE

Total entitlements on issue in the southern Murray Darling Basin were estimated to be:

- High security entitlement 554,755 ML
- General security entitlement 3,568,426 ML

The total value of these entitlements in the Southern Valleys was estimated to be $7.62 billion. The consumptive pool valued was valued at $7.04 billion and the Commonwealth environmental entitlements were valued at $575 million[23].

STATISTICS TABLES

Data supporting individual industry narratives can be downloaded by scanning the QR code below.

A statistics table is available for each industry. These include data on industry output, production, price, export and import values, and trade balance figures, as well as industry specific information.

Consolidated data tables are also available which provide comparisons of output, production, price, exports, imports, trade balance, and jobs and business data across industries.

The data is provided for the last five financial years, with percent change figures.

SCAN THE QR CODE FOR 2018 TABLES

END NOTES

a Output data is based on the ABS new threshold of $40k with the exception of forestry & fisheries which are sourced elsewhere

b Includes other cereals, other broadacre crops, hay & silage

c Data restrictions on state level cotton exports were imposed in 2017-18, which resulted in the large majority of cotton exports being excluded in export figures. Assuming historical state export share of national cotton exports, the estimated value of 2017-18 NSW cotton exports was $886 million which, once factored in, boosts NSW primary industries exports to $6.01 billion and a decline of just 3.9% year-on-year.

d Goat meat not defined explicitly for each year, but assumed from historic data. ABS intermittently indicates this does not include Rangeland ("Feral") Goats.

e DPI estimate only, subject to revision

f Goat production data sourced from a seperate source to Output data. Production data includes rangeland & managed goats

j Sydney & Pacific Rock Oysters only

h Wine is excluded from the total, due to classification wine becomes a processed product post farm gate and therefore excluded

i Includes but not exclusive to other cereals, other broadacre crops, hay & silage, animal products n.e.d

j Due to confidentiality, ABS export data restrictions have been applied and values are under-reported as a result

k Includes Maize, Oats & Triticale. Hay & silage is excluded from this data

l DPI estimate calculated as average total employment over four quarters to May 2018 of labour force employment data by relevant to each industry. Relevant ANZSIC divisions are Agriculture, Forestry and Fishing (division A) and relevant sub divisions of Manufacturing (division C). Data was sourced from ABS (2018f)

m DPI estimate using the same ANZSIC classifications in footnote l. Data is based on June 2017 using source ABS (2017g)

n Negative values denote a net import trade flow

o From 2010-11 onwards, Output is based on the ABS new EVAO threshold of greater than $40k, prior to this values are based on EVAO of greater than $5k

p Some values excluded due to lack of data availability

q 2016-17 data and prior is sourced from ABARES, while 2017-18 is sourced from Dairy Australia. Data may not be directly comparable

r Implied price basis ABARES (2018c) Output & production data

s Subject to revision

t Output is sourced separately to Agriculture Output and EVAO threshold differs

u From August 2017, the Australian Bureau of Statistics has been required to apply state and some destination country data restrictions to a number of commodities to maintain confidentiality. National cotton exports to China and Indonesia are now excluded from reporting (reported as 'unidentified country' instead). Export data for NSW is similarly unavailable (ABS, 2018h).

v Average over 4 quarters Sydney CPI data

w Data is wine grape crush data sourced from WA (2018a), which is separate to production data provided by the ABS

x IPS – International Polarisation Scale taking into account futures, premiums and costs.

y DPI estimate calculated as average total employment over four quarters to May 2018 of labour force employment data by relevance to each industry. Relevant ANZSIC divisions are Agriculture, Forestry and Fishing (division A) and relevant sub-divisions of Manufacturing (division C). Data was sourced from ABS (2017f) and ABS (2018k).

z Hunting, Recreational & Charter fishing output value is an estimate of participant expenditure on these activities adjusted for updated participation numbers and inflation

aa 2015-16 Charter Fishing revenue figures were incomplete, figures are distorted to the downside as a result

ab NSW DPI charter fishing industry data for data for 2015-16 is not reliable due to a transition in reporting and data management systems. Gross turnover figures are estimates only, based on average fee for service and actual reported angler numbers. Number of charter anglers is actual reported data.Expenditure on charter fees was estimated by UOW (2013) using different methodology from that used by NSW DPI.

ac DPI estimate of NSW share of national industry value add. NSW share was determined from a 5 year average of NSW share of either sales and service income or output to 2013-14. Value add is conceptually different to output. Industry manufacturing may use imported inputs. Industry value add represents the value added by an industry to the intermediate inputs used by the industry. It is the measure of the contribution by manufacturing businesses to gross domestic product. As a measure of economic activity it is not equivalent to operating profit before tax. Data was sourced from ABARES (2018c)

SOURCES

1 ABARES (2018a) Australian Bureau of Agricultural and Resource Economic Sciences (2018). Australian Crop Report , September 2018. Last accessed September 2018.

2 ABARES (2018b) Australian Bureau of Agricultural and Resource Economic Sciences (2018). Agricultural Commodities , September 2018. Last accessed September 2018.

3 ABARES (2018c) Australian Bureau of Agricultural and Resource Economic Sciences (2018). Australian Forest and Wood Products Statistics, September & December Quarters 2017. Last accessed August 2018.

4 ABARES (2018d) Australian Bureau of Agricultural and Resource Economics and Sciences (2018). Australian Grains Outlook for 2017-2018 and Industry Productivity. Last accessed August 2018.

5 ABARES (2017) Australian Bureau of Agricultural and Resource Economics and Sciences (2017). Agricultural Commodity Statistics 2017. Last accessed July 2018

6 ABC (2017) Australian Broadcasting Corporation (2017). Russia muscles in on Australia's traditional wheat export markets. Last accessed July 2018.

7 ABC (2018a) Australian Broadcasting Corporation (2018). New Zealand to cull 22,000 dairy cows in effort to eradicate Mycoplasma bovis disease. Last accessed July 2018.

8 ABC (2018b) Australian Broadcasting Corporation (2018). Industry grapples with the good and the bad of a soaring wool price. Last accessed July 2018

9 ABC (2018c) Australian Broadcasting Corporation (2018). Growing trend in indoor plants driven by social media and small spaces. Last accessed July 2018.

10 ABS (2018a) Australian Bureau of Statistics (2018). 7503.0 - Value of Agricultural Commodities Produced 2016-17, July 2018. Last accessed July 2018

11 ABS (2018b) Australian Bureau of Statistics (2018). 7121.0 - Agricultural Commodities Produced 2016-17. Last accessed September 2018.

12 ABS (2018c) Australian Bureau of Statistics (2018). 6401.0 - Consumer Price Index, Australia, Jun 2018. Last accessed September 2018

13 ABS (2018d) Australian Bureau of Statistics (2018). 7218.0 - Livestock and Meat, Australia, Jul 2018. Last accessed August 2018.

14 ABS (2018e) Australian Bureau of Statistics (2018). 7215.0 - Livestock Products, Australia, Jun 2018. Last accessed August 2018.

15 ABS (2018f) Australian Bureau of Statistics (2018). 6291.055.003 - Labour Force, Australia, Detailed, Quarterly, May 2018. Last accessed September 2018.

16 ABS (2018g) Australian Bureau of Statistics (2018). 8165.0 - Counts of Australian Businesses, Including Entries and Exits, Jun 2013 to Jun 2017. Last accessed September 2018.

17 ABS (2018h) Australian Bureau of Statistics (2018). 5372.0.55.001 - International Merchandise Trade: Confidential Commodities List, July 2018. Last accessed September 2018.

18 ABS (2018i) Australian Bureau of Statistics (2018). 8752.0 - Building Activity, Australia, Mar 2018. Last accessed July 2018.

19 ABS (2018j) Australian Bureau of Statistics (2018). 6427.0 - Producer Price Indexes, Australia, Jun 2018. Last accessed July 2018.

20 AF (2018) AgriFutures Australia (2018). New rice variety maximising grower returns. Last accessed July 2018

21 AFR(2018a) Australian Financial Review (2018). Wheat exports slow to a trickle as Indonesia looks to Black Sea. Last accessed September 2018.

22 AFR (2018b) Australian Financial Review (2018). US-China trade war opens the door for Australian exports. Last accessed September 2018.

23 AITHER (2018) Aither (2018). Water Markets Report - 2017-18 Review and 2018-19 Outlook. Last accessed August 2018

24 APL (2018) Australian Pork Limited (2018). Annual Operating Plan Summary 2017/2018. Last accessed July 2018

25 APN (2018) Australian Pork Newspaper (2018). CRC sees grainy outlook, January 2018. Last accessed July 2018

26 AS (2017) Australian Sugarcane (2017). Australian Sugarcane Annual. Last accessed July 2018.

27 ASMC (2018) Australian Sugar Milling Council (2018). Sugar Cane Statistics Last accessed September 2018.

28 ASMC (2017) Australian Sugar Milling Council (2017). 2017 Weekly Crushing Statistics. Last accessed July 2018.

29 AUST (2018) The Australian (2018). Citrus Industry at Risk as Canker Outbreak Spreads. Last accessed July 2018.

30 AUSTWINE (2018) Austwine (2018). 2018 Wine Grape Harvest Update. Last accessed September 2018.

31 AWB (2018) AWB (2018). Canola market outlook. Last accessed September 2018.

32 AWI (2018a) Australian Wool Innovation Limited (2018). Australian Wool Production Forecast Report, April 2018. Last accessed July 2018

33 AWI (2018b) Australian Wool Innovation Limited (2018). Custom Wool Price Report by Micron. Received July 2018

34 AWI (2018c) Australian Wool Innovation Limited (2018). Wool Market Weekly Reports.

35 AWI (2018d) Australian Wool Innovation Limited (2018). Monthly Market Intelligence Report, June 2018. Last accesed September 2018.

36 COFCO (2018a) COFCO (2018). Opportunities for Australian sorghum in China – Presentation to the Australian Grains Industry Conference March 2018. Last accessed August 2018.

37 COFCO (2018b) COFCO (2018). Canola - A year in review. Last accessed September 2018.

38 DA (2018a) Dairy Australia (2018). NSW Milk Production Report. Last accessed August 2018.

39 DA (2018b) Dairy Australia (2018). Farmgate Milk Price. Last accessed September 2018.

40 DA (2018c) Dairy Australia (2018). International and National Grain Report: June 2018. Last accessed September 2018.

41 DA (2018d) Dairy Australia (2018). Dairy Situation and Outlook, February 2018. Last accessed August 2018

42 DPI (2016) Department of Primary Industries (2016). Water allocation statement, Murrumbidgee Valley 4 October 2016. Last accessed July 2018

43 DPI (2017) Department of Primary Industries (2017). Water allocation statement, Murrumbidgee Valley 16 October 2017. Last accessed July 2018

44 DPI (2018a) Department of Primary Industries (2018). DPI estimate only, subject to revision. Last revised September 2018.

45 DPI (2018b) Department of Primary Industries (2018). Aquaculture Production Reports. Last accessed December 2018.

46 DPI (2018c) Department of Primary Industries (2018). Unpublished Internal Wild Caught Landings Estimates. Provided March 2018.

47	DPI (2017b)	Department of Primary Industries (2017). Latest Goat Industry Data. Last accessed July 2018
48	DPI (2018d)	Department of Primary Industries (2018). New water-saving premium rice. Last accessed July 2018
49	DPI (2018f)	Department of Primary Industries (2018). Unpublished Internal Commodity Price Data Sets. Last accessed September 2018.
50	DOA (2015)	Department of Agriculture (2015). Australia's seafood trade. Last accessed July 2018.
51	DOI (2018)	Department of Industry (2018). Water allocation statements. Last accessed July 2018.
52	DOMINION (2014)	Dominion Consulting (2014). An economic survey of the Recreational fishing charter boat industry in NSW, July 2014
53	FAO (2018)	Food and Agriculture Organization of the United Nations (2018). Rice market monitor, Volume XXI Issue No. 1. Last accessed July 2018.
54	GTA (2018)	IHS Global Trade Atlas (GTA) (2018). Unpublished trade data accessed via subscription service.
55	GA (2018a)	Glencore Agriculture (2018). Strong global supply creates challenges for Aussie growers. Last accessed July 2018.
56	GA (2018b)	Glencore Agriculture (2018). Australian low emission canola wins EU approval. Last accessed July 2018.
57	GNC (2018)	Global News Canada (2018). Reality Check: India didn't raise tariffs on chickpeas because they're mad at Trudeau. Last accessed June 2018
58	IBIS (2018a)	IBIS World (2018). Egg Farming in Australia – Industry Report A0172. Accessed via subscription.
59	IBIS (2018b)	IBIS World (2018). Egg production – Business Environment Report, September 2017. Via subscription only.
60	IBIS (2018c)	IBIS World (2018). Poultry Meat Farming in Australia, January 2018. Accessed via subscription
61	IIFL (2018)	Indiainfoline (2018). India to witness record food grain production in 2017-18, advance estimates suggest. Last accessed June 2018
62	IN (2018)	Indufor (2018). Timber Market Survey. Last accessed July 2018.
63	JI (2018)	Jumore Insights (2018). China's Anti-Dumping Deposits on U.S. Cargoes Bolsters Australian Sorghum. Last accessed August 2018.
64	LAND (2018a)	The Land (2018). Macadamia nut now king of the Far North Coast says new ABARE figures. Last accessed August 2018.
65	LAND (2018c)	The Land (2018). Pig producers under pressure from downturn. Last accessed July 2018
66	LAND (2018d)	The Land (2018). Pork producers look to demand for optimism. Last accessed July 2018
67	LAND (2018e)	The Land (2018). US pork producers cop big trade retaliation costs. Last accessed July 2018
68	LG (2018)	Lucas Group (2018).Nuts about fruit: Asian demand to drive Australian horticulture growth. Last accessed August 2018.
69	MECARDO (2018a)	Mecardo (2018). Slaughter weight anomaly may not persist for NSW. Last accessed July 2018.
70	MECARDO (2018b)	Mecardo (2018). Deciles Tables July 2018.
71	MLA (2018)	Meat and Livestock Australia (2018). Market Information Statistics Database Custom Report. Last accessed August 2018
72	NAB (2018)	National Australia Bank Agribusiness (2018). Rural Commodities Wrap – June 2018. Last accessed August 2018.
73	NCCA (2018)	National Cotton Council of America (2018). Monthly prices. Last accessed August 2018

74 NGIA (2018a) Nursery and Garden Industry Australia (2018). Nurseries urged to remain vigilant after citrus canker found in Northern Territory. Last accessed August 2018.

75 NGIA (2018b) Nursery and Garden Industry Australia (2018). Case Study: New campaign to inspire more green life and benefit nurseries. Last accesed August 2018.

76 OECD (2018) Organisation for Economic Co-operation and Development (2018). Meat Consumption Data. Last accessed July 2018

77 OIE (2018) World Organisation for Animal Health (OIE) (2018). OIE Situation Report for Highly Pathogenic Avian Influenza, May 2018. Last accessed September 2018.

78 PULSE (2018) Pulse Australia (2018). Global Pulse State of Play 2018. Last accessed June 2018

79 QCL (2017) Queensland Country Life (2017). Australian cotton - where's it all going? 27 Oct 2017. Last accessed Aug 2018

80 RABO (2018a) Rabobank (2018). Chew it or Brew it – The Barley (R)evolution I: Developments in the Global Barley Market. Last accessed September 2018.

81 RABO (2018b) Rabobank (2018). Beefed Up Grain prices: RaboResearch Food and Agribusiness Australia Podcast – July 2018. Last accessed September 2018.

82 RABO (2018c) Rabobank (2018). Sugar Quarterly, Q2 2018: The Hangover. Last accessed July 2018.

83 RABO (2018d) Rabobank (2018d). Dairy Quarterly, June 2018. Last accessed July 2018

84 RABO (2018e) Rabobank (2017). Australian Wheat Outlook 2017/18: The High-Stocks Game Continues. Last accessed July 2018

85 RBA (2017) Reserve Bank of Australia (2017). Historical Data/Exchange Rates – Monthly – January 2010 to latest complete month of current year. Last accessed June 2018.

86 REUTERS (2018a) Reuters (2018). Philippines reports first avian flu outbreak, to cull 200,000 birds. Last accessed September 2018.

87 REUTERS (2018b) Reuters (2018). ICE cotton futures hit 3-week low amid U.S.-China tariffs dispute. CNBC 18 June 2018. Last accessed August 2018

88 REUTERS (2018c) Reuters (2018). Tariffs on U.S. may help India treble cotton exports to China. 5 April 2018 Last accessed August 2018

89 RMCG (2017) RMCG (2017). Economic impact of recreational hunting in NSW, May 2017. Last accessed September 2018.

90 SUNRICE (2018a) SunRice (2018). Grower update issue 96. Last accessed July 2018

91 SUNRICE (2018b) SunRice (2018). Strong yields drive larger than expected 2018 Riverina rice crop. Last accessed July 2018

92 SSAS (2018) Sunshine Sugar Agricultural Services (2018). 2017 Crop and Productivity Report. Last accessed July 2018.

93 TIMES (2017) Weekly Times (2017). Australian wheat price boost as grain trades at premium to global values. Last accessed July 2018.

94 UN (2018) UN Comtrade Database (2018). Trade statistics. Last accessed July 2018

95 UOW (2013) University of Wollongong (2013). Developing a cost effective state wide expenditure survey method to measure the economic contribution of the recreational fishing sector in NSW, November 2013. Last accessed September 2018.

96 USDA (2018a) United States Department of Agriculture (2018). Production, Supply and Distribution Database. Last accessed July 2018.

97 USDA (2018b) United States Department of Agriculture (2018) Rice Yearbook, World rice supply and utilisation table. Last accessed July 2018

98 USDA (2018c) United States Department of Agriculture (2018). China – Grain and Feed Update. Last accessed August 2018.

99	USDA (2018d)	United States Department of Agriculture (2018). Wheat Outlook April 12 2018. Last accessed July 2018
100	USDA (2018de)	United States Department of Agriculture (2018). World Agricultural Supply and Demand Estimates July 12 2018. Last accessed July 2018
101	WA (2018a)w	Wine Australia (2018). National Vintage Report 2018. Last accessed September 2018.
102	WA (2018b)	Wine Australia (2018). State of the Sector Report: January 2018. Last accessed September 2018.
103	WATER (2018)	Water NSW (2018). NSW dam and river levels. Last accessed July 2018
104	WOOD (2018)	Wood Resources International (2018). Global Timber and Wood Products Market Update. Last accessed September 2018.
105	ABARES (2018e)	Australian Bureau of Agricultural and Resource Economic Sciences (2018). Recreational and Charter Fishing. Last accessed September 2018.
106	DEPI (2014)	The State of Victoria Department of Environment and Primary Industries (2014). Estimating the economic impact of hunting in Victoria in 2013. Last accessed July 2018
107	DPI (2018g)	Department of Primary Industries (2018). Unpublished Internal Game Licencing Unit Compliance Statistics. Provided August 2018.
108	DPI (2018h)	Department of Primary Industries (2018). Survey of Recreational Fishing in NSW and the ACT, 2013/14. Last accessed August 2018.
109	DPI (2018i)	Department of Primary Industries (2018). Unpublished Internal Recreational Fishing Licences and Revenue Data. Provided June 2018.
110	DPI (2018j)	Department of Primary Industries (2018). Unpublished Internal Charter Fishing Sector Data. Provided June 2018.
111	SUNRICE (2017)	SunRice (2017). SunRice AGM: Stronger profit Outlook for FY18. Last accessed September 2018.
112	ABS (2018k)	Australian Bureau of Statistics (2018). 8155.0 - Australian Industry, 2016-17. Last accessed July 2018.
113	REUTERS (2018d)	Reuters (2018). UPDATE 4-China retreats from U.S. sorghum probe amid global market havoc. May 2018. Last accessed October 2018
114	USDA (2018f)	United States Department of Agriculture (2018). Sugar: World Markets and Trade, May 2018. Last accessed October 2018.

Department of Primary Industries

www.dpi.nsw.gov.au/PDI