

# Newsletter

from Rural Funds Management Ltd








*Front cover: Irrigated cotton crop, Lynora Downs, July 2018. In the distance are bales of raw cotton, stacked in groups of 12, awaiting pick up. Traditionally yellow wrapping is used to bale the cotton, however in this instance the cotton industry used pink plastic to support breast cancer nurses in rural communities. 50 cents from every pink plastic wrap sold was donated to the McGrath Foundation.*

*Inside cover: Maturing almonds, Moorah orchard, Hillston, NSW, December 2016.*





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An article by David Bryant, RFM Managing Director

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# THE RADIATOR EFFECT

## David Bryant, RFM Managing Director

*The Mauna Loa Observatory is situated 3,353 metres above sea level and has been measuring carbon dioxide concentrations in the atmosphere since 1958. Hawaii, 2013. Photo courtesy of Associated Press.*

### **Understanding the real driver of climate change.**

#### **How the earth is warmed**

Our earth is warmed by energy coming from the sun in the form of shortwave radiation visible to us as light and infrared radiation that is not visible because it has a long wavelength. Each day, about one-third of this energy is reflected back into space, as light bounces off our atmosphere and reflective surfaces such as snow and ice, while the remaining two-thirds is absorbed into the planet's oceans and terrestrial surfaces.

Each day and night, this absorbed energy is released back into our atmosphere and space beyond, as infrared non-visible radiation. A good example of this invisible energy release is the heat you feel coming off a west-facing brick wall at the end of a hot summer's day. Another example is an old-fashioned two-bar radiator: the red glow of the element is radiation in the visible light spectrum, while the heat you feel on your hand, is non-visible infrared radiation.

Fortunately for us, our earth's atmosphere contains water vapour and gases that absorb this infrared radiation which is again radiated both up and down, both day and night. This 'back radiation' actually supplies twice as much energy as direct sunlight and without it our planet would be 33 °C cooler. That is: our planet would have an average temperature of -18°C, rather than 15°C.

Water vapour and condensed water in the form of clouds are the strongest absorbers and radiators of this infrared energy. You may have noticed that cloudy nights are noticeably warmer than clear nights. This temperature difference that you are feeling is not the insulation of a 'blanket' of cloud, but the powerful infrared radiation emanating from water particles.

The process described here is called the greenhouse effect, but it isn't how a greenhouse works. Greenhouses work by trapping heat energy from sunlight inside a glass box that prevents air convection from blowing the heat away. In contrast, the process of keeping our planet warm, is one of capturing radiation inside molecules that constantly radiate energy back to earth. So perhaps the process would be better thought of as the radiator effect

and the gases, thought of as radiator gases, rather than greenhouse gases.

While nitrogen and oxygen make up 99% of our atmosphere, they do not behave as radiators because their simple symmetrical structure does not allow them to absorb radiation in the first place. The three main gases that behave as radiators: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), make up only 0.04% of our atmosphere. However, due to their asymmetrical structure, these gases are capable of absorbing and then re-radiating energy in the same way as clouds at night time.

The measurement of radiative power of two of the gases first occurred in 1859, when Irishman, John Tyndall, first measured the radiative values for CO<sub>2</sub> and N<sub>2</sub>O. Since that time, the relatively simple laboratory procedures necessary to measure the radiation from gases and particles have been replicated so many times that it is not rational to doubt either the process of radiation, or the amount of radiative power that each molecule of gas will generate.

#### **Why the earth is warming**

The Industrial Revolution began in 1781 with the patent of James Watt's steam engine, which was capable of generating enough power to replace 10 horses that were used to drive a pump for dewatering tin mines. Watt defined the imperial measurement of power, horsepower, and with today's metric measurement, 'watts', named after him. This then began the wholesale or industrial-scale process of converting fossil fuels such as coal, oil and gas, into power.

The measurement of the concentration of CO<sub>2</sub> gas in our atmosphere was instituted by Charles Keeling in 1958, when he commenced measurements at Hawaii's Mauna Loa Observatory. When plotted on a graph, the sixty years of data obtained from this site form a curve of relentlessly increasing CO<sub>2</sub> concentration known as the Keeling Curve. Following Keeling's initiative, there is now a global network of monitoring stations able to measure and confirm the concentration of radiator gases in our atmosphere is inexorably rising.



It has been calculated that between the industrial revolution and 2011, mankind emitted about 2,000 billion tonnes of CO<sub>2</sub> (2,000 Giga tonnes (Gt)) to the atmosphere. About 60% of this has been stored in natural sinks such as the forests and oceans, with the balance remaining in the atmosphere. This process cannot however continue forever, since there are limits to the breadth and density of vegetation, while absorption by the oceans has both environmental and physical limits.

Since the onset of the Industrial Revolution, the CO<sub>2</sub> emissions have caused CO<sub>2</sub> concentrations in our atmosphere to increase from 280 parts per million (ppm) to 408 ppm by November 2018. Increases in the concentration of the two other radiator gases, CH<sub>4</sub> and N<sub>2</sub>O have also been measured.

Because we know the increase in atmospheric concentration of these gases, it is a relatively simple mathematical task to calculate their total mass (or weight) and multiply it by the known radiation factor for each particular gas. The product of this calculation then tells us accurately how much additional radiation the earth is receiving as a consequence of the known increased radiation-generating capacity of these gases in our atmosphere. For this reason, it is not rational to doubt that a known quantity of gas is radiating a known quantity of additional energy as a consequence of mankind's industrial revolution.

The result of this mathematical calculation is that the earth is now receiving an additional two watts of energy across every square metre of our planet. The following discussion will give you some sense of the immense power that this additional energy is projecting back at our planet.

In 2017, mankind generated 25.6 trillion kilowatt hours of electricity. To do this, we had to run power generators with a capacity of three trillion watts (or 3 terawatts (TW)). By comparison, the radiator gases that we have installed in our atmosphere since the Industrial Revolution, have a capacity 350 times greater. If the numbers here are too large to grasp, all you have to understand is that the radiator gases we have installed in our atmosphere are 350 times more powerful than the capacity of the power generators we used to produce all of mankind's

electricity in a year! And while our power plants probably have a useful life of about 50 years, the radiator gases are there radiating heat for thousands of years. This is a phenomenal amount of additional energy that is being trapped on a relatively small planet.

### Where is the extra heat going?

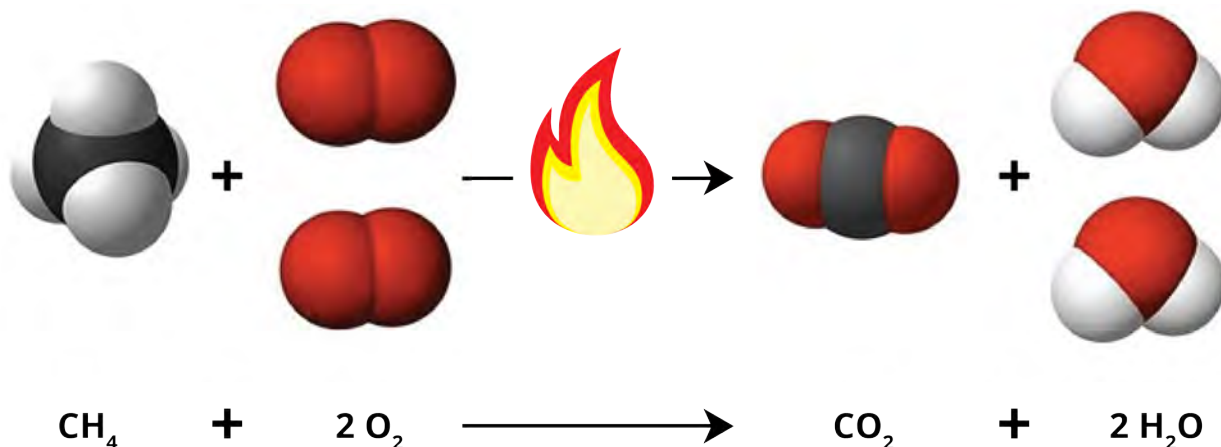
So far, we have established through some basic measurements, that we have a very large amount of additional radiator gases in the atmosphere and the amount of energy they are producing. Then with some relatively simple mathematics, we have calculated that the earth is receiving a known amount of additional energy. The next step is to prove where the additional heat from this extra energy is going.

Much of the energy is being absorbed by the oceans, a massive body of water that covers 71% of our planet at an average depth of 3,800 metres. Fortunately, water has a high capacity to absorb heat, meaning that it takes only 3.2 metres of our oceans to absorb the same amount of heat as our entire atmosphere. Nevertheless, as the atmosphere absorbed its share of additional energy, there has been a measured increase in global atmospheric temperature at ground level of one degree Celsius (1°C).

While there is an increase in atmospheric heat, most of the energy is being buried in our oceans, waiting to rise again via the oceans' great currents, that will return it to the atmosphere in future years, as the planet finds a new hotter equilibrium. While ever CO<sub>2</sub> emissions continue to accumulate in our atmosphere, the earth's oceans will experience a compounding combination of CO<sub>2</sub> and energy absorption, that will buffer us during this accumulation phase and render dividends of increased CO<sub>2</sub> and heat emissions back into the atmosphere for centuries to come, as the oceans seek to spread the load.

Once again, these observations are not theory or conjecture. They are based on long-held scientific knowledge about how energy is absorbed and distributed both within a substance, such as water, and between other substances such as air. Roman baths, and people thinking in them, were pondering these observations at least 2,000 years ago.

Figure 1: The combustion reaction



*Methane and oxygen combine to produce heat, water and CO<sub>2</sub>. This process is however inefficient, with 2.75 tonnes of CO<sub>2</sub> produced for every tonne of methane used.*

## Managing waste streams

If you have ever struggled to light a fire, you may appreciate the following explanation. The process of burning wood, to generate heat, is a thermo-chemical reaction, which to start with, involves getting the wood warm enough, so that it gives off methane ( $\text{CH}_4$ ). **Figure 1** shows how this gas then combines with oxygen, to produce three things: heat, water and  $\text{CO}_2$ . If you couldn't get the fire going, it is because you did not generate enough methane to make the thermo-chemical reaction self-sustaining.

This is the same process used for burning coal in our power stations, petrol in our cars and natural gas in our home heating. **Figure 1** also shows how inefficient this process is, with 2.75 tonnes of  $\text{CO}_2$  produced for every tonne of methane used. This is the reason why we produce so much  $\text{CO}_2$  each year.

Every year we Australians generate just over half a tonne of council waste per person. Fortunately, this waste stream is very well managed, with rubbish taken to tips and hazardous waste disposed of in ways designed to prevent the poisoning of our groundwater or the environment generally.

If you are in the habit of cycling or driving on quiet country roads, more than occasionally you will stumble upon sites such as in **Figure 2**: a pile of rubbish illegally dumped by

the side of a road. This pile of rubbish, probably weighing about half a tonne, generates a sense of outrage on a number of fronts. What sense does the perpetrator have of a civil society? What sort of person would do this, knowing that the community must bear the cost of the clean-up and disposal?

In 2017, we Australians generated around 22 tonnes of  $\text{CO}_2$  equivalent emissions per person<sup>1</sup> – around 40 times greater than our council waste. The symmetrical molecular structure of  $\text{CO}_2$  and the other radiator gases, enables visible light to pass through, rendering them non-visible to the human eye. For this reason, it is not possible to take a photo of this massive uncontrolled waste stream and generate the same sense of outrage evoked by the picture of dumped garbage. But invisibility is not a rational reason for leaving this waste stream unmanaged. Managing this waste stream is also how mankind can prevent further planetary warming.

## Conclusion

This article has explained the process by which radiation keeps our planet from freezing and how increased concentrations of radiator gases are now causing our planet to get hotter. By properly explaining this process, it is hoped that the readers understanding of climate change is enhanced.

**Figure 2: Rubbish dumped illegally on a country roadside near Canberra**



1.  $\text{CO}_2$  equivalent includes all radiator gases standardised to the radiative capacity of  $\text{CO}_2$ .



# AGRICULTURE'S RADIATOR GAS

About 14% of Australia's radiator gas emissions come from our agricultural sector and 70% of this is due to methane emissions from ruminant livestock, primarily beef cattle, dairy cows and sheep. Therefore, 10% of Australia's radiator gas emissions are coming from these three industries.

Methane gas is emitted primarily through the mouths of these ruminant animals as cellulosic plant matter is fermented and broken down in the foregut, known as the rumen. On average, beef cattle each produce around 2 tonnes of CO<sub>2</sub> equivalent radiator gas each year, while dairy cows produce around 3 tonnes and sheep produce about 0.25 tonnes per head. Globally, there are about 1.5 billion beef and dairy cattle and about 1.75 billion goats and sheep.

Methane is a much more powerful radiator gas than CO<sub>2</sub> but it only resides in the atmosphere for around 10 years, versus thousands of years for CO<sub>2</sub>. For this reason, a quick reduction in the methane emissions from livestock would be very effective in reducing the level of radiation emanating from our increasingly crowded atmosphere. This is because a cessation in methane emissions would see the complete removal of anthropogenic methane from the atmosphere within the 10-year residence time of the gas. Moreover, because it is such a potent gas, the reduction in radiation would be material.

For this reason, there have been strident calls for people to move to a vegetarian diet and inflated claims regarding the amount of emissions reductions that can be achieved. Forsaking meat alone would not have much impact because dairy cows produce 50% more methane than beef cattle, while other products, such as wool, leather and eggs, are dependent on livestock industries.

A recent study by Virginia Tech, a US university, modelled the impact of the entire US switching to a plant food diet. The study found that because more crops would need to be grown using synthetic fertiliser, and due to the loss of natural manures from livestock, the actual reduction in gas emissions would be only 2.6%. This ignores the economic phenomenon known as rebound, where people save money eating plant foods, but spend this saving on other things that themselves generate emissions – such as a return economy flight on an airline, that may not serve beef, but emits 5.4 tonnes of CO<sub>2</sub> per passenger, to make a round trip to Europe.

Research is being undertaken by Australia's livestock industries and the CSIRO, to look for ways to reduce methane emissions from ruminants. Examination of the digestive process of kangaroos, confirms they have rumen-like digestive systems, but emit virtually no methane, because their stomach microbes perform a different type of fermentation. Trials by the CSIRO of seaweed-based feed additives have reduced methane emissions in sheep by 80%.

Timely and successful reduction in methane emissions from livestock will make an important contribution to containing the global temperature increase. For this reason, those working or wishing to prevent further global warming would provide more assistance by campaigning for increased investment in research and development, rather than ruminating on misleading rhetoric.

RFM is engaging with scientists with expertise in the emissions and offsets that can occur in the agriculture sector, with the aim of understanding how the assets and enterprises managed by RFM can reduce or abate emissions of radiator gases.





*Cattle being held in holding yards as part of the 2018 muster, Mutton Hole, northern Queensland, June 2018.*





# RURAL FUNDS GROUP UPDATE

*Emerging cotton crop, Lynora Downs, central Queensland, October 2018*

***Rural Funds Group (ASX: RFF) is an agricultural real estate investment trust (REIT) that leases properties to agricultural operators. Its strategy is to generate a stable income and capital growth by owning, and where appropriate, improving productivity of farms.***

## **In this section:**

- **Strategies to manage drought conditions**
- **JBS Australia transaction and \$149.5 million entitlement offer update**
- **Recent acquisitions and lessees update**
- **FY18 financial results**

## **Strategies to manage drought conditions**

David Bryant's article raises several interesting questions about the long-term relationship between agriculture and the environment. In the more immediate term, many parts of regional Australia continue to experience dry conditions. RFM has highlighted in investor communications throughout the year that while RFF is not directly exposed to farm operating risks, strategies have been implemented to manage climatic variability.

The core strategy to manage climatic variability was articulated in RFM's Climate Diversification paper, which was released in June 2016. This paper outlines the need to invest in assets located in varying rainfall zones across Australia, reducing the likelihood of multiple lessees experiencing extreme conditions simultaneously.

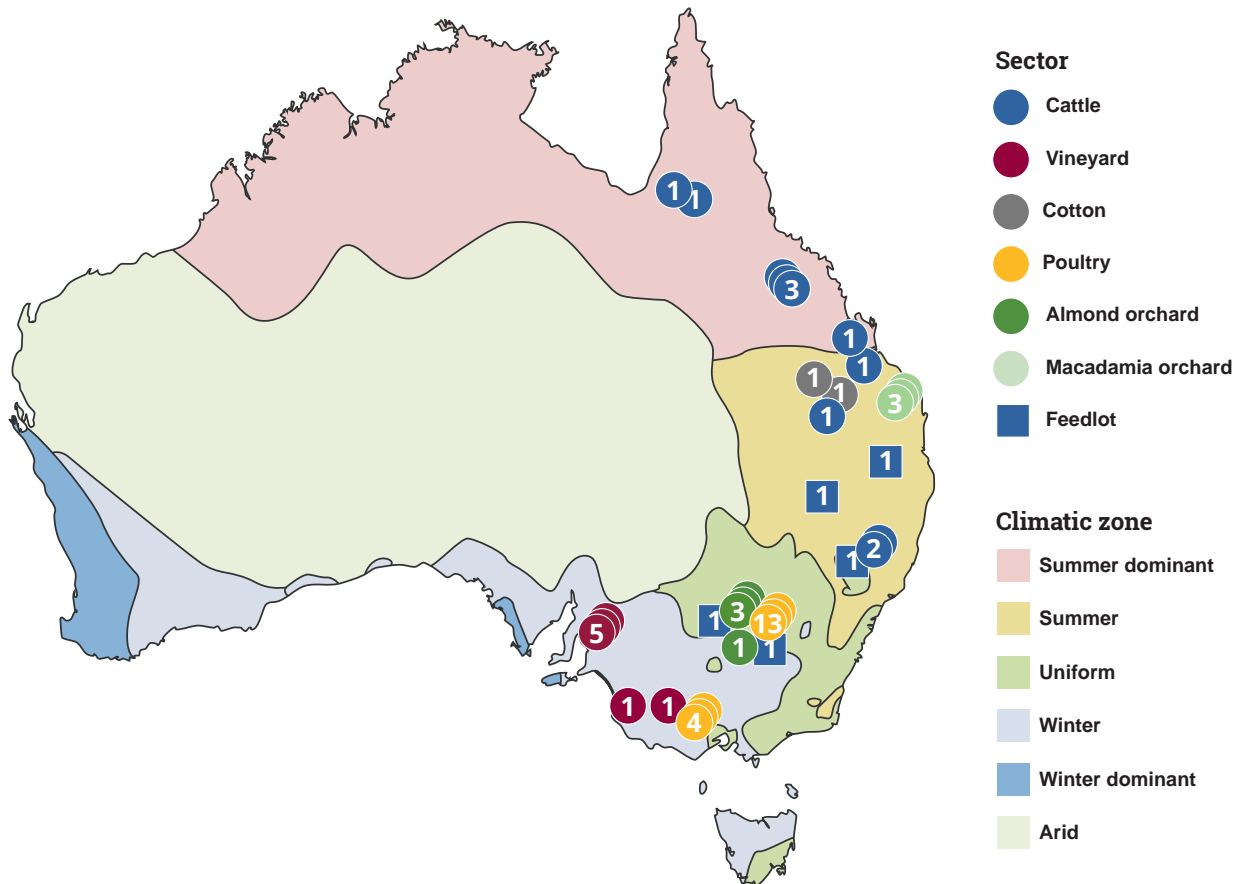
In line with this strategy, RFF has acquired 15 properties outside of the southern climatic zone since listing in 2014. At the time of listing all revenue was derived from properties located within the southern climatic zone (see **Figure 3**). Many of the recently acquired properties are located in higher rainfall zones in Queensland and receive an annual average rainfall of 750 mm per annum or higher. As outlined in the full year results, a number of properties in Queensland have this year received rainfall at, or close to, their long-term average.

In addition to the climatic diversification strategy, RFF owns a large portfolio of 118,080 ML of water entitlements of which 49,416 ML is groundwater and high security entitlements, which are characterised as having a very high level of reliability. The varying types of water entitlements held within the portfolio mean that lessees are able to economically access a combination of water entitlements that provide sufficient reliability to meet their individual irrigation requirements, whilst reducing their reliance on the temporary spot market. This is particularly the case for lessees of assets with permanently planted crops, such as almonds and grapevines.

Finally, RFM aims to lease its assets to quality lessees with the financial capability to operate through seasonal and commodity cycles. Many lessees are domestic and internationally listed entities, their subsidiaries, or are large private operators. Included on page 13 of this newsletter is an overview of the key lessees.



Figure 3: RFF assets and climatic zones<sup>2</sup>



### JBS Australia transaction and \$149.5 million entitlement offer update

In July 2018, RFF contracted to acquire five cattle feedlots from JBS Australia Pty Ltd (JBS). The transaction includes the purchase from JBS of five feedlots for \$52.7 million (m) and the provision of a \$75.0m limited guarantee that will enable JBS to replace an existing arrangement for the supply of cattle for its grain-fed business. In conjunction with the JBS transaction, RFF undertook a \$149.5m entitlement offer to fund both the transaction and a previously announced cattle property acquisition (Comanche).

The feedlots that will be acquired represent the largest portfolio of feedlots in Australia, as measured by capacity. They are located in Queensland and New South Wales (see **Figure 4**) and have a combined capacity of 150,000 Standard Cattle Units (SCU).<sup>3</sup> The facilities also include Australia's only two integrated feedlot and processing facilities: Beef City and Riverina Beef. These integrated facilities can reduce freight costs and market price risk, as well as improving weight gain performance.

The transaction received Foreign Investment Review Board approval, and three of the feedlots, Mungindi, Caroon and Prime City, settled in late October. Combined, these three feedlots represent 51% of the value of the total feedlot transaction. The two remaining feedlots, Beef City and Riverina Beef, remain subject to subdivision approvals related to the on-site processing facilities, and are expected to settle during the first quarter of 2019.

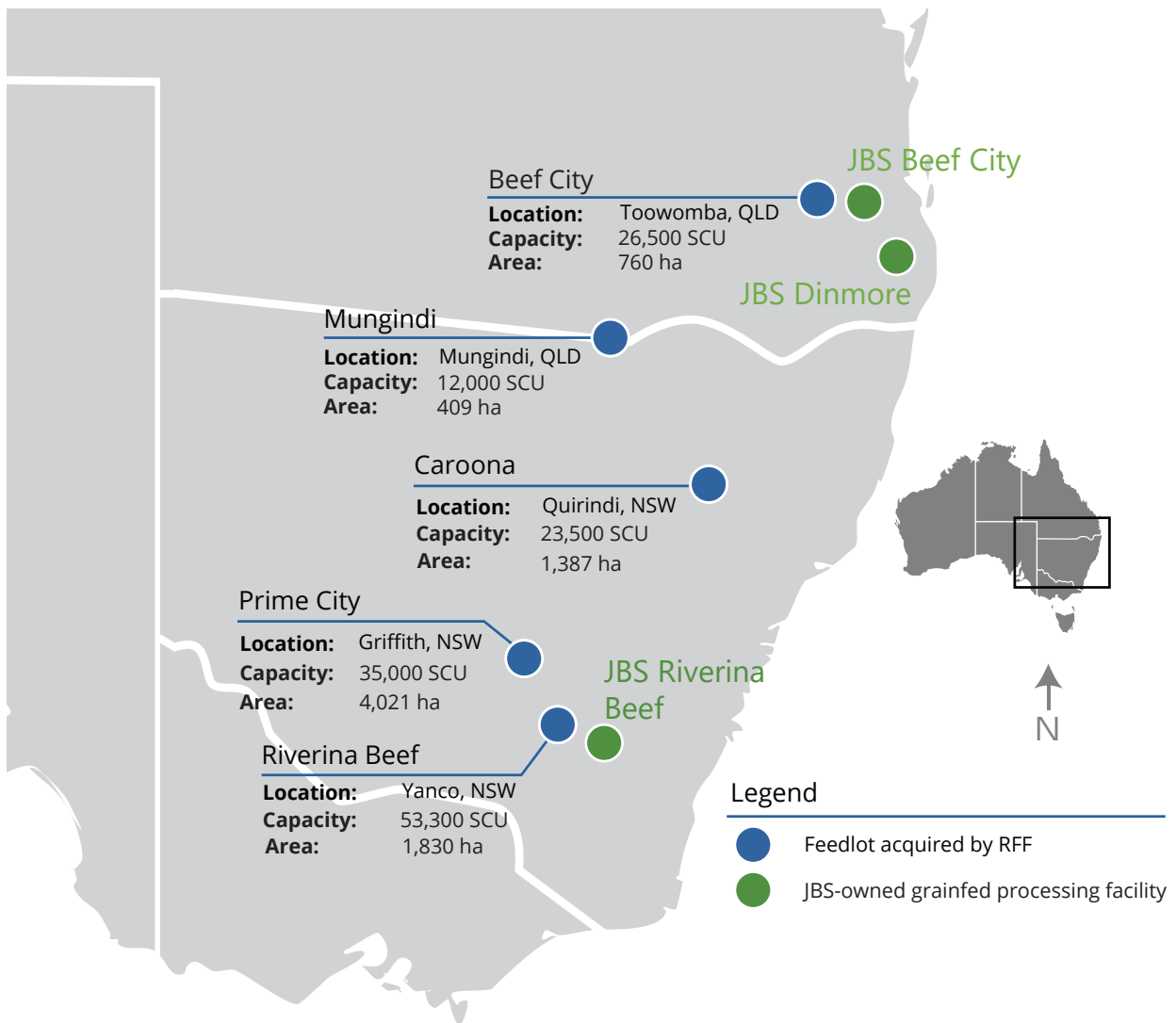
The \$75.0m guarantee component of the transaction with JBS received unitholder approval on 10 August 2018, with 99.8% of votes cast being in favour. The monthly lease-like income paid for the guarantee commenced later that month. It is important to note that the guarantee has no direct operating risk for RFF. Counterpart performance is guaranteed by the JBS Australia parent company Baybrick Pty Ltd, a \$2.3b entity,<sup>4</sup> and secured through the feedlots.

The transaction also introduced another quality lessee to RFF. **Figure 5** provides an overview of both JBS Australia and its international parent company JBS S.A.

2. Shaded areas denote climatic zones differentiated by rainfall seasonality. Source: Bureau of Meteorology. Climatic diversification reduces lessee concentration in any one climatic zone and introduces new commodities and counterparts.  
 3. A Standard Cattle Unit (SCU) is defined as an animal of 600 kg liveweight, at the time of exit from the feedlot.  
 4. As per FY17 consolidated accounts.



**Figure 4: JBS feedlots and processing facilities**



**Figure 5: Overview of JBS SA and JBS Australia**

JBS S.A.	JBS Australia
<ul style="list-style-type: none"> <li>Established in Brazil in 1953, listed on the Sao Paulo Stock Exchange with a market capitalisation of approximately \$9 billion.</li> <li>World’s largest beef producer, leather processor, chicken producer and second largest pork and lamb producer.</li> <li>More than 400 production facilities and 235,000 employees.</li> <li>FY17 revenues approximately R\$163.2b (AUD\$58.1b).</li> </ul>	<ul style="list-style-type: none"> <li>Australia’s largest beef lot feeder with 150,000 SCU capacity.</li> <li>Australia’s largest meat processor with cattle processing capacity of approximately 8,800 head per day and small stock capacity of 15,700 head per day.</li> <li>Approximately 12,000 employees.</li> <li>A subsidiary of Baybrick Pty Ltd, which also owns Primo small goods and had a FY17 revenue of \$5.8b.<sup>5</sup></li> </ul>

5. For the 12 months ended 31 December 2017. Baybrick Pty Ltd is a wholly owned subsidiary of JBS S.A.








## Recent acquisitions and lessee update

In addition to the JBS transaction, the July Entitlement Offer also funded the Comanche acquisition and created balance sheet capacity to pursue further acquisitions. RFM has outlined a focus on expanding the portfolio in natural resource predominant sectors which offer opportunities for productivity improvements.

Since July, RFF has contracted to acquire three properties in the cattle sector and one in the cotton sector. **Figure 6** provides key asset and lease details of the recently acquired assets.

All properties offer productivity improvement opportunities, as well as increasing the fund's sector and climatic diversification.

**Figure 6: Key asset and lease details of the recently acquired assets**

Property	Purchase price and settlement	Description	Development program
 <b>Cerberus</b>	\$10.0m plus \$0.6m stamp duty.  Settled September 2018.	8,280 ha property, suitable for breeding and backgrounding.  Located 140 km north west of Rockhampton in central Queensland.	Aims to improve infrastructure and increase carrying capacity through development of additional cultivation area and Leucaena plantings.
 <b>Dyamberin</b>	\$13.4m plus \$0.7m stamp duty.  Settled October 2018.	1,728 ha property, suitable for breeding and backgrounding.  Located in the New England region of north east NSW.	Aims to increase carrying capacity through development of additional improved pasture area.
 <b>Comanche</b>	\$15.7m plus \$0.9m stamp duty.  Settled July 2018.	7,600 ha property, suitable for breeding and backgrounding.  Located 86 km west of Rockhampton in central Queensland.	Aims to improve infrastructure and increase carrying capacity through development of additional cultivation area and Leucaena plantings.
 <b>Woodburn</b>	\$7.1m plus transaction costs.  Expected to settle January 2019.	1,062 ha cattle breeding and backgrounding property.  Located in the New England region of north east NSW.	Aims to increase carrying capacity through development of additional improved pasture area.
 <b>Mayneland</b>	\$18.0m plus \$1.0m stamp duty.  Settled September 2018.	531 ha of irrigated area, 1,757 ha of dryland area and 14,180 ML of water entitlements. A significant portion of which are underutilised.  Located in Rolleston, central Queensland.	A stage one development of an additional 579 ha of irrigated area and a 2,500 (ML) water storage is expected.

Since July 2016, the number of properties has increased from 31 to 48, including in two new agricultural sectors. As a result of these acquisitions, a number of new lessees and counterparts now form part of the portfolio. The majority of lessees and counterparts are domestic and internationally listed entities, their subsidiaries, or are large private operators. Such lessees can have

better access to capital, which can reduce counterpart risk. **Figure 7** provides an overview of RFF's top 80% of lessees/counterparts weighted by FY19f revenue. **Figure 8** provides an overview of RFF's newest lessee Stone Axe Pastoral Company.

**Figure 7: Top 80% lessees/counterparts weighted by FY19f revenue**

 <p><b>Olam Orchards Australia</b></p>		<p>Largest almond grower in Australia, producing approximately 45% of the national crop. Wholly owned subsidiary of SGX-listed Olam International Ltd (SGX: O32), one of the world's largest agribusinesses with 204 processing facilities globally and a market capitalisation of AUD\$6.7b.</p>	<p>23.5%</p>
 <p><b>RFM Poultry &amp; Baiada</b></p>		<p>RFM Poultry has growing contracts with Baiada, one of the two largest integrated poultry breeding, growing and processors in Australia. Retail brands include Steggles and Lilydale.</p>	<p>15.9%</p>
 <p><b>Select Harvest</b></p>		<p>One of Australia's largest almond growers and the country's leading manufacturer, processor and marketer of nut products to Australian and international markets. ASX-listed (ASX: SHV) with a market capitalisation of \$0.5b.</p>	<p>13.8%</p>
 <p><b>JBS Australia</b></p>		<p>Australia's largest cattle lot feeder and processor with five feedlots and 10 processing facilities. A subsidiary of the Brazilian-listed JBS S.A. (BZ: JBSS3) that has a market capitalisation of AUD\$9.1b. JBS S.A. employs 235,000 people globally and is the world's largest beef and poultry producer and second largest pork and lamb producer.</p>	<p>8.9%</p>
 <p><b>Cattle JV</b></p>		<p>A farm and fund manager with over 20 years' experience operating assets in multiple agricultural sectors including cattle, almonds, poultry, cotton, vineyards and macadamias.</p>	<p>6.3%</p>
 <p><b>Treasury Wine Estate</b></p>		<p>World's largest listed pure-play wine company. Winemaking facilities in Australia, New Zealand and the United States. Key brands include Penfolds and Wolf Blass. ASX-listed (ASX: TWE) with a market capitalisation of \$12.8b.</p>	<p>5.6%</p>
 <p><b>DA and JF Camm</b></p>		<p>Part of the Camm Agricultural Group, an integrated cattle business operating nine properties including a 9,000 SCU feedlot in southern Queensland.</p>	<p>4.8%</p>



Figure 8: New lessee – Stone Axe Pastoral Company



Two cattle properties in the New England region of New South Wales, Dyamberin and Woodburn,<sup>6</sup> are leased to Stone Axe Pastoral Company (Stone Axe). Stone Axe is a cattle breeding enterprise which operates properties in the New England region of New South Wales, as well as in the Kojonup region of Western Australia.

The company has operated since 2014, and is majority owned by ROC Partners, a private equity firm formed in 2014. Other investors in Stone Axe include First State Super and the NSW Government.

Stone Axe focuses exclusively on breeding full-blood Wagyu cattle. Wagyu is a breed of cattle originating in Japan, which produces premium beef known for its high degree of marbling and tenderness.

### FY18 financial results

RFM provided pro forma FY18 financial results in October 2018 to incorporate recent property acquisitions. Highlights of the pro forma financial results as compared to the previous corresponding period (FY17 financial results) included a 1.6% increase to adjusted funds from operations (AFFO) per unit, a 4% increase to distributions to 10.03 cents per unit, and a 42.4% increase in the adjusted total assets of the fund to \$836.7m. FY19 forecast distributions per unit increase of 4% to 10.4 cents was reaffirmed. **Figure 9** provides a summary of RFF's pro forma 30 June 2018 key financial metrics. **Figure 10** details upcoming key dates.

Figure 9: Pro forma 30 June 2018 key financial metrics<sup>7</sup>

Financial metric	Pro forma 30 June 2018
Pro forma adjusted total assets <sup>8</sup>	\$836.7m
Pro forma adjusted Net Asset Value (NAV) <sup>8</sup>	\$572.9m
Pro forma adjusted NAV per unit <sup>8</sup>	\$1.72
Market capitalisation (\$2.25 per unit)	\$749.6m
Pro forma number of properties	47
Pro forma sectors	6
Pro forma Weighted Average Lease Expiry (WALE)	11.9 yrs
Pro forma gearing <sup>9</sup>	28.9%
AFFO per unit (FY19 forecast)	13.2 cents
Distributions per unit (FY19 forecast)	10.4 cents
Forecast distribution yield (paid quarterly) <sup>10</sup>	4.6%

Figure 10: Upcoming key dates

Quarterly distribution payment date	31 January 2019
Half year financial results announced	February 2019
Quarterly distribution payment date	30 April 2019

6. Woodburn settlement expected January 2019.
7. Pro forma 30 June 2018 adjustment for \$149.5m equity raising announced 13 July 2018 for JBS and Comanche, and subsequently announced acquisitions of Cerberus, Mayneland and Dyamberin. Pro forma numbers presented for adjusted total assets, adjusted NAV, adjusted NAV per unit, number of properties, sectors, WALE and gearing.
8. Assets adjusted for the independent valuation of water entitlements which are recognised at the lower of cost or fair value on balance sheet.
9. Gearing calculated as external borrowings/adjusted total assets.
10. Calculated using 23 November 2018 closing price of \$2.25.



*Poultry sheds, Griffith, New South Wales, December 2016.*





# RFM POULTRY UPDATE

Broiler chickens, Griffith, New South Wales, 2016

**RFM Poultry (RFP) is an experienced large-scale chicken broiler farm operator, with the responsible entity, RFM, having managed the assets since 2003. The Fund, which listed on the National Stock Exchange in March 2014, undertakes chicken growing activities for major Australian poultry processors.**

## FY18 financial results

On 5 September, RFM delivered RFP FY18 financial results. The results included a profit of \$0.62m after tax, distributions totalling 14.23 cents per unit (inclusive of franking credits), representing an income yield of 12.2% based on 29 June 2018 closing price of \$1.17 per unit.

**Figure 11** provides a summary of 30 June 2018 key financial metrics. **Figure 12** details upcoming key dates.

Figure 12: Upcoming key dates

Quarterly distribution payment date	31 January 2019
Half year financial results announced	February 2019
Quarterly distribution payment date	30 April 2019

## Operational update

Solar panels installed on the Lethbridge farms have been operational for approximately 12 months and are performing to management's expectations. For the period of 1 January–31 August 2018, the solar panels generated 319,954 kWh across the four farms. The energy generated provided a cost saving compared to current electricity prices.

Figure 11: Key financial metrics as of 30 June 2018

Financial metric	30 June 2018
Total assets	\$9,283,464
Net Asset Value (NAV)	\$7,726,209
NAV per unit	\$1.12

# THE TYPICAL DAY OF AN RFM POULTRY CONTRACT GROWER

RFP engages contract growers to undertake the growing operations on the farms. One of the contract growers is Jonathan Stone, who has been contracted to RFM in both an operational advisory and contract growing capacity since 2008. He is currently the contract grower on Farm 68, one of RFP's newer and larger farms located at Griffith, NSW. He has been in this role since 2012 and has nearly 21 years' experience in the Australian poultry industry.

Jonathan, his wife Margo, and a team of four farm workers start each day at 6.30am. They first undertake a physical inspection of all the sheds. They undertake an assessment of the shed conditions including inspecting the feed and watering systems for any issues. Unhealthy birds are also identified and treated, with any mortalities being removed from the sheds.

The chickens in each shed are weighed once a week, using a sample selection of birds. These weights allow Jonathan to calibrate feed and water requirements for the birds and to know when batches have reached processor specifications. The team usually completes the physical inspection and weighing by 8.30am.

Following the morning tasks, Jonathan completes any shed maintenance and assesses the overall shed conditions to ensure animal welfare standards are being met. These include reviewing lighting and

ventilation specifications as well as ensuring the shed floor 'litter' is suitably dry and friable.

In the afternoon, Jonathan completes any required maintenance and management outside of the sheds. This can include rodent and weed control around the sheds, as well as any general farm maintenance.

Over the course of the day, Jonathan and his team observe and record the chickens in each shed a minimum of three times a day, and more often when the chickens have just arrived on the farm. This allows Jonathan to maintain an ongoing understanding of the growing conditions for the upwards of 500,000 chickens on the farm at any one time.

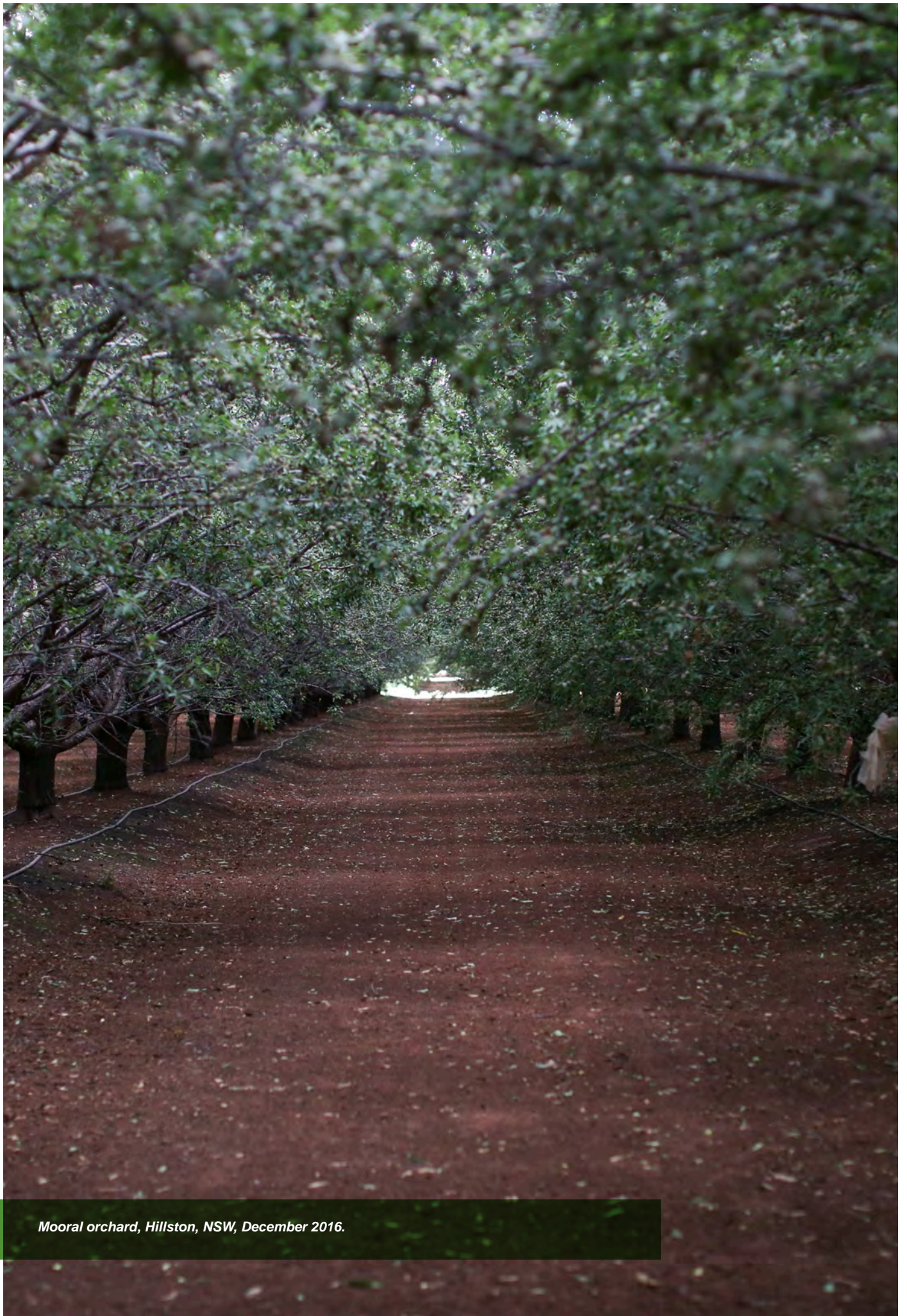
By the end of the day, Jonathan has walked approximately 13km through the chicken sheds. But his day doesn't end at 5pm, as a contract grower is 'on duty' 24 hours a day, seven days a week. Multiple alarm systems can alert Jonathan to any issues such as rapid changes to shed heating and ventilation to ensure they can be promptly addressed.

This rigorous approach to farm management helps to provide a growing environment that best balances growing operations and the animal welfare needs of the chickens.



*Adriaan Shields, RFM National Manager - Poultry (left) discussing farm operations with Jonathan Stone (right)*





*Mooral orchard, Hillston, NSW, December 2016.*





## RFM ALMOND FUND UPDATE

*Almond flowers in bloom, Moorral almond orchard, Hillston, NSW, September 2018.*

**Rural Funds Management Ltd (RFM) manages three Almond Funds, with a total of 551 ha of almond trees, on behalf of over 450 investors.**

### 2019 crop update

The 2019 crop is progressing well, with a good nut set indicating a successful pollination. With next year's crop being an 'on' year from a biennial bearing perspective, management is currently forecasting higher yields than from the previous year's crop.

The orchards experienced dry weather up to early October, followed by three rain events associated with storms thereafter. These events have both helped to settle the dust in the orchard, and temporarily reduce the reliance on the irrigation system for the orchard's water needs.

The orchards experienced two frost events in August and September. While there was some minor frost damage, this is not expected to have a major impact on yields (see below for more details).

### Frost fans

Frost events can have a material impact on almond crop yields, particularly those that coincide with nuts emerging from the flower. To help manage the impact of such frost events on the orchard, RFM installed 14 frost fans between 2014 and 2016. These fans turn on automatically when the temperature falls to one degree Celsius. They work by drawing air from 15 to 20 metres above the orchard down onto the almond trees (see **Figure 13**). This air can be four to five degrees warmer than that on the ground, and by mixing with the cooler air at the orchard surface, acts to mitigate the impacts of the frost.

An additional five frost fans were installed this year following analysis by RFM to identify further at-risk areas of the orchard. During the 2018 growing season, the frost fans were activated in August and September in response to frost events and materially reduced crop loss.

**Figure 13: Frost fan installed on Moorral orchard**







*Macadamias nut-in-shell, Swan Ridge, Bundaberg, Queensland, 2016.*





# 2007 MACGROVE PROJECT UPDATE

*Developing macadamia nuts, Swan Ridge orchard, Bundaberg, Queensland, October 2017*

**Rural Funds Management Ltd (RFM) manages the 2007 Macgrove Project, with 235 ha of macadamia trees, on behalf of 137 investors.**

## 2018 harvest update

The 2018 harvest was completed in August with a total yield of 812 tonnes nut-in-shell (NIS) at 10% moisture. This saw a final yield of 3.46 tonne/ha NIS, an increase from 2.54 tonne/ha in 2017. Growers received a combined distribution and GST refund of \$1,738 per macgrove. This result was 61% higher than FY17 and reflects the ongoing high macadamia prices and higher harvest yields as the trees continue to mature.

## 2019 crop update

The weather in the Bundaberg region has been hot, with some rain having been received. The crop is progressing well, with good bee activity and flowering through September. Strong nut set has been followed by fast nut-in-shell growth. Nuts appear larger than normal for this time of year.

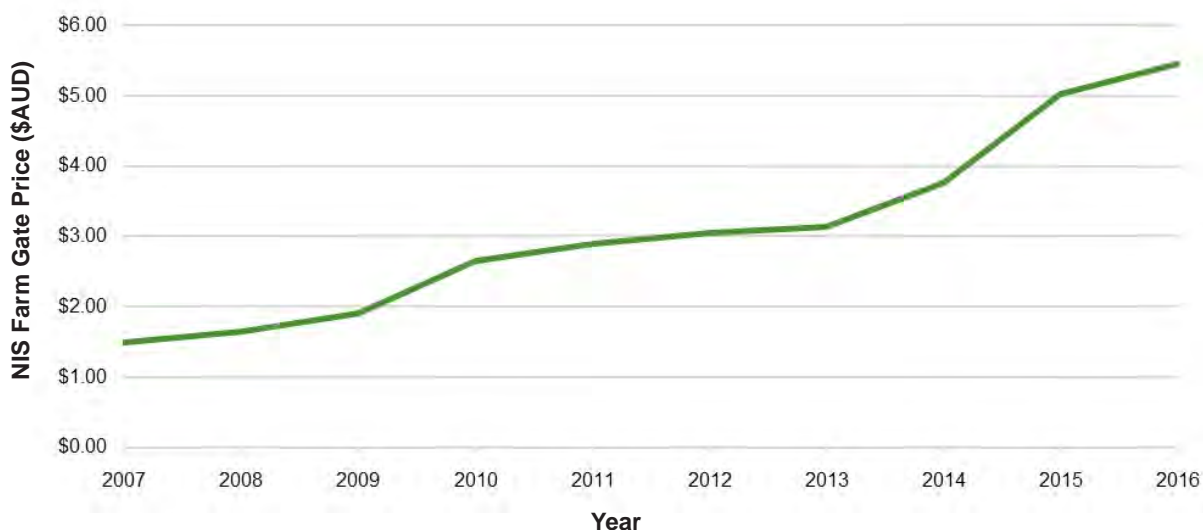
Management has been continuing to refine the integrated pest management (IPM) of the orchard. IPM involves using targeted and varying pest monitoring and management activities to increase effectiveness and efficiency. Early observations are that pest prevalence in the orchard is down on previous years.

## Macadamia price

The macadamia price continues to remain high, with an indicative farm gate price for the 2018 crop of \$5.55. High prices, combined with higher yields as the orchard matures, has contributed to the positive grower returns experienced over recent years. **Figure 14** shows the Australian macadamia price from 2007 to 2016.

World demand for kernel continues to grow and is presently the main driver of NIS farm gate pricing. Demand for NIS from China has lowered this year with the focus in that market shifting to quality more than quantity. Australia appears to have very little carry-over stock from this year's harvest.

**Figure 14: Historical macadamia price 2007-2016 (NIS farm gate @ 33% SKR)<sup>11</sup>**



11. Data is sourced from the Australian Macadamia Society and applies historical average annual exchange rates (\$AUD to \$USD). Provides a guide to price trends only. SKR = Standard Kernel Recovery.





*Geier vineyard, Barossa Valley, VIC, December 2016.*





# ABOUT RURAL FUNDS MANAGEMENT LTD

AFSL: 226701

*RFM Management team, December 2018*

## About Rural Funds Management

Rural Funds Management Limited (RFM) is one of the oldest and most experienced agricultural fund managers in Australia.

Established in 1997, RFM manages approximately \$1.2b of agricultural assets. This includes \$892m of assets in six investment funds for which RFM is the responsible entity. Assets are located across New South Wales, Queensland, South Australia and Victoria.

RFM's largest fund under management, the Rural Funds Group (RFF), is an ASX-listed real estate investment trust. RFF owns an \$837m portfolio of quality, diversified agricultural assets including almond and macadamia orchards, commercial-scale poultry farms, premium vineyards, water entitlements, cattle and cotton assets, all of which are leased to quality tenants.

RFM has a 21-year history and operates from a head office in Canberra, and offices in Sydney, regional New South Wales and Queensland. The company employs more than 95 staff in fund and asset management activities.

## Contact Details

Level 2, 2 King St, Deakin ACT 2600

**T** 1800 026 665  
**W** [www.ruralfunds.com.au](http://www.ruralfunds.com.au)  
**E** [investorservices@ruralfunds.com.au](mailto:investorservices@ruralfunds.com.au)  
**E** [adviserservices@ruralfunds.com.au](mailto:adviserservices@ruralfunds.com.au)  
**F** (02) 6281 5077

## To make an investment

Rural Funds Group (ASX: RFF) is a listed investment. To make an investment in RFF please contact your broker or financial adviser.

RFM Poultry (NSX: RFP) is a listed investment. To make an investment in RFP please contact your broker or financial adviser.

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## Registry

Boardroom Pty Ltd

Grosvenor Place, Level 12, 225 George Street Sydney, NSW, 2000

**T** 1300 737 760  
**E** [enquiries@boardroomlimited.com.au](mailto:enquiries@boardroomlimited.com.au)  
**F** 1300 653 459

## Provide us your email address

We use email to communicate with our investors. Please take the time to contact our Investor Services team and provide your email address so that you don't miss out on any important information.





*Water point, Mutton Hole, northern Queensland, June 2018.*







## Rural Funds Management

Ltd

Locked Bag 150  
Kingston ACT 2604  
ABN 65 077 492 838  
AFSL 226701

### Phone

Head Office +61 2 6203 9700  
Investor Services 1800 026 665  
Adviser Services 1300 880 295

### Fax

1800 625 518

### Email

[investorservices@ruralfunds.com.au](mailto:investorservices@ruralfunds.com.au)  
[adviserservices@ruralfunds.com.au](mailto:adviserservices@ruralfunds.com.au)

### Directors

**Guy Paynter**  
David Bryant  
**Michael Carroll**  
**Julian Widdup**

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