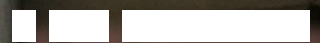




# Milgadara Case Study

ECONOMIC REPORT | 2021

PREPARED BY



**RSM**



## Executive Summary

Milgadara is a 1182 hectare grazing property located east of Young, New South Wales. While Milgadara primarily specialises in the production of sheep, cattle production, cropping, and composting are also conducted on the property. The Daly Family have managed that property since the 1960s and it is currently managed by Rhonda and Bill.

Rhonda and Bill were motivated to implement regenerative regimes on Milgadara due to concerns raised regarding the overall health of the property and disillusion with 'chemical' farming.

Rhonda and Bill's primary goals on Milgadara are to improve the productivity and sustainability of the property. This is achieved by utilising multiple practices which include biological farming, comprehensive soil tests, the redevelopment of the grazing management system, creating their own compost operation, planting tree blocks in crop and pasture paddocks and implementing pasture cropping.

The redevelopment of Milgadara's grazing system means that Rhonda and Bill are able to improve and increase the health of the soil on Milgadara, while increasing the carrying capacity of livestock. This implementation has increase income productivity per hectare beyond that of the Average Farm.

Rhonda and Bill have also focused on transitioning to biological farming. This includes improving the condition of Milgadara's soil by focusing on the soil structure, biology, and balance of minerals. Rhonda and Bill have also introduced multi-species crops and composts as soil ammendments, as well as implemented tree planting to increase biodiversity on Milgadara.

As a result, Rhonda and Bill have been successful in restoring soil health, while increasing the productivity and carry capacity in their enterprises.

To illustrate the success of these methods in achieving the primary goals identified above, we have compared the financial information provided by Rhonda and Bill to relevant industry benchmarks – the 'Average Farm'. The benchmark used throughout the report is sourced from MLA Farm Survey Data.

The introduction of these regenerative practices have resulted in profit and gross margins for Milgadara consistently exceeding those of the Average Farm. Milgadara is consistently more profitable in terms of sheep sales, cattle sales, and wool sales.

Our analysis has measured numerous positive insights about the method employed at Milgadara. We have found that:

- The introduction of regenerative practices has increased production levels significantly, leading to an increase in income, exceeding that of the Average Farm.
- Expenses on seeds and soil ammendments are higher than the average farm.
- Despite experiencing droughts and dry seasonal conditions, Milgadara achieves on average 409% higher revenue when compared to the Average Farm.
- Milgadara's significantly higher revenue is indicative of the higher quality produce Rhonda and Bill are producing.
- The significantly higher revenue more than offsets the additional expenses.
- The combination of regenerative practices has decreased the impact of seasonality on the property and is overall more economically sustainable compared to the Average Farm.

While Rhonda and Bill invest significantly more in Milgadara, the higher profit shows that the regenerative practices have improved both production and revenue and has allowed Milgadara to be highly successful and sustainable compared to the Average Farm.



## Introduction

Milgadara is located 20 kilometres east of Young, in the New South Wales south-western slopes bioregion. The farm is a 1182 hectare property that specialises in prime lamb production, cattle production, cropping, and composting. Milgadara has been owned and operated by the Daly's since the 1960s and is currently managed by Rhonda and Bill Daly.

Rhonda and Bill initially began to question the direction of conventional farming during the mid-1990s. This prompted them to begin educating themselves and searching for alternative land management regimes to suit their enterprise and land.

After completing various educational courses, seminars, and extensive research, Rhonda and Bill implemented regenerative practices on Milgadara to improve the productivity and sustainability of the property.

Rhonda and Bill began the transition to biological farming. They initiated comprehensive soil tests, redeveloped their grazing management system, created their own compost operation, planted tree blocks in crop and pasture paddocks and implemented pasture cropping. Rhonda and Bill's approach was to phase these practices in over a number of years (2001 – current).

The regenerative practices that Rhonda & Bill have implemented have combined to improve soil health, carbon sequestration, water infiltration and ground cover. These outcomes (along with the redeveloped grazing system) have resulted in greater weight gain and healthier livestock.

The redeveloped grazing system has allowed Rhonda and Bill to strike a balance between proven livestock management systems and systems focused on soil improvement. This allows Rhonda and Bill to improve soil health and microbial activity while maintaining successful and profitable livestock management.

In 2020, Rhonda and Bill began and registered a soil carbon sequestration project. Upon successful storage of carbon in their soils under the soil carbon project, Rhonda and Bill will be able to generate Australian Carbon Credit Units (ACCUs) over the lifetime of the project – typically 25 years. One ACCU is awarded for each tonne of carbon equivalent stored in the soil. ACCUs can be sold in a marketplace (currently valued at \$16 - \$17 per ACCU as of March 2021) to provide supplemental income for Rhonda and Bill.

## Report Data Sources:

Industry Benchmarks – MLA Farm Survey Data (<http://apps.agriculture.gov.au/mla/>)

Financial Data – Rhonda and Bill Daly

Seasonal Conditions and Rainfall Data – Australian Government Bureau of Meteorology

Industry Insights – Published Industry Reports by:

- Meat and Livestock Australia
- Australian Bureau of Agricultural and Resource Economics 2019

## Report Methodology

This economic report illustrates the positive effects that regenerative practices have had on the profitability, productivity, and natural capital of Milgadara. To do this, we have compared current financial and production figures to historical figures and relevant industry benchmarks.

For the sake of privacy, the data throughout this economic report has been 'de-identified' and we have used indexes to illustrate relative performance. That is, the data has been reported so that it does not represent the owner's actual financial position, rather it highlights the proportional difference between farm businesses and the industry benchmark. To do this, the benchmark figure is set to 100 at the start of the study period. Where two datasets are compared, we index both sets of data to the benchmark data. All data in this analysis is presented on the basis of the financial year.



## Benchmarking

In order to illustrate the success of the Milgadara enterprise, we have compared Milgadara's financials and productivity data to relevant industry benchmarks. In particular, we refer to the 'Average Farm' as the main indicator for our analysis.

For this Economic Report, the Average Farm is a Mixed Sheep Farm located in a Wheat-Sheep climate (as defined by the Department of Agriculture and Water Resources). The benchmark data for the Average Farm has been obtained from ABARES Farm Survey Data. We have chosen the Mixed Sheep Farm as the benchmark for our analysis as Milgadara generates revenue from a number of sources – Sheep and cattle sales, wool sales and crop sales. Sheep related income (livestock and wool sales) has contributed 64% of the total revenue for the period considered in this analysis (2010 – 2019); other farming enterprises generating revenue are beef cattle and cropping – hence the Mixed Sheep benchmark.



The ABARES Farm Survey Data is based on surveys conducted with a representative sample of farms across Australia. Data is primarily collected through face-to-face interviews with farm owners/managers and detailed financial and physical information is obtained for the farm operations of the previous financial year. Survey data for individual farms is appropriately weighted to ensure data reliability for the entire population.

For more information on the farm survey data methodologies, please see: <https://www.agriculture.gov.au/abares/research-topics/surveys/farm-definitions-methods>

The latest ABARES Farm Survey Data available for our benchmark analysis is the data from the financial year ended 30 June 2019.





## Operational Analysis Production and Income

### Production Mix

Milgadara’s production mix consists predominantly of livestock trading from sheep sales and cattle sales. In addition to the trading of sheep and cattle, Rhonda and Bill have also been able to derive income from other sources such as crop sales, which comprises of a variety of seeds, wheat, and grains, and wool proceeds.

The implementation of regenerative farming practices of Milgadara has led to significantly increased production levels compared to those of the Average Farm. With increased production, the income generated on Milgadara is substantially higher when compared to the Average Farm.

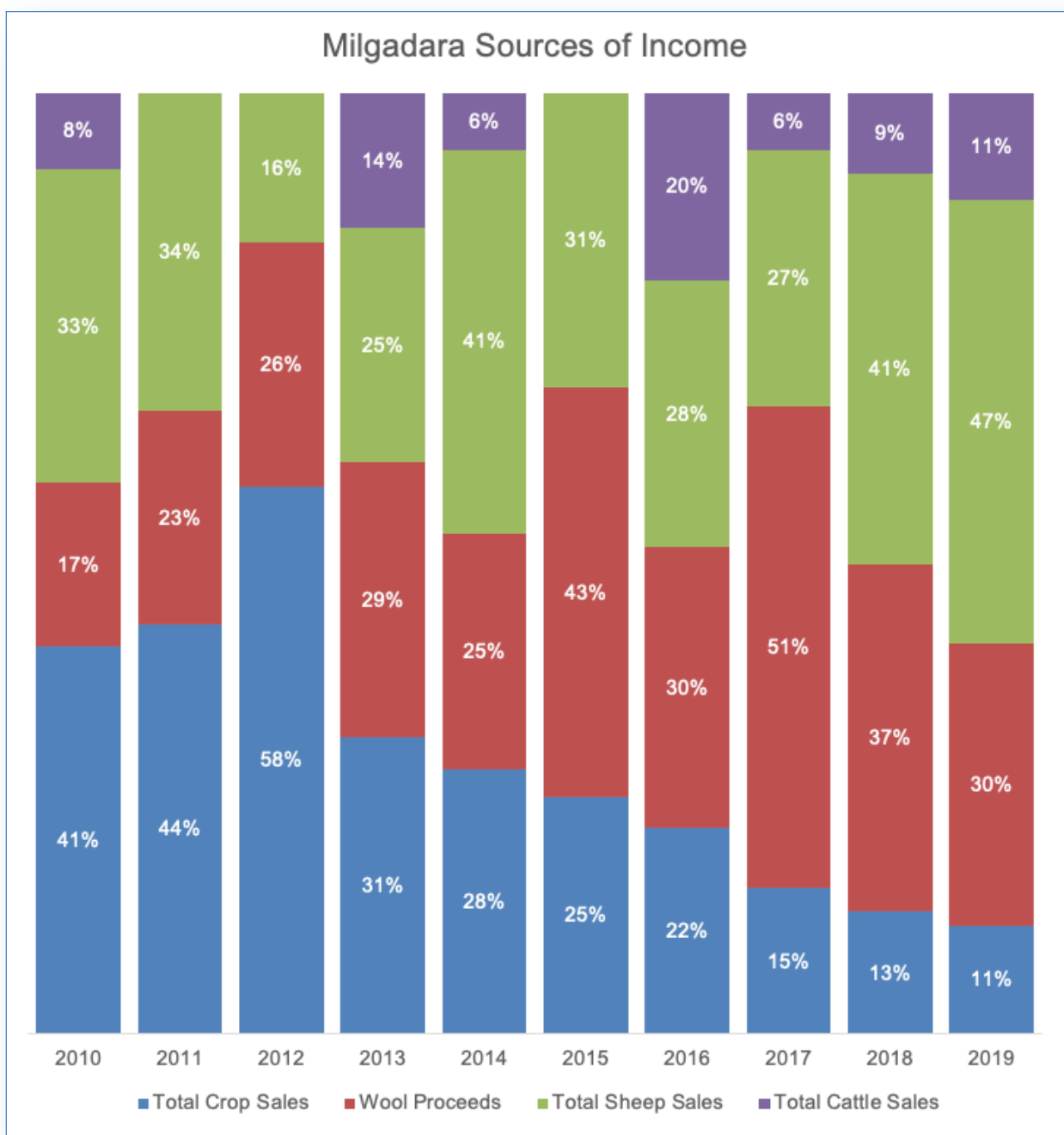


Figure 1: Milgadara Sources of Income - Majority Income Earned from Sheep Sales



Across the 10-year period, sheep sales account for an average of 32% of Milgadara's revenue. The total sheep enterprise of Milgadara, which comprises of both wool and sheep sales, accounts for an average of 58% of the total revenue.

The redevelopment of Milgadara's grazing system has allowed for Rhonda and Bill to better manage their livestock while focusing on soil improvement. In 2010, Rhonda and Bill created a rotational grazing management system that considers soil improvement. This has been combined with a reduced number of livestock across the property and improved the genetic stock of the cattle.

This redevelopment has allowed Rhonda and Bill to improve and increase the health of the soil on Milgadara, while increasing the carrying capacity of livestock, and shorten the turnoff time of saleable animals.

In later years Rhonda and Bill also commenced an intensive program of rotating the cattle between paddocks to match the available feed of the paddocks. In order to maintain the rotation of cattle, Rhonda and Bill have to closely monitor available feed and cattle conditions. During the grazing rotation, the paddocks that are not currently being grazed are rested, improving the soil health and pasture quality.

With a better managed system that not only focuses on the nutrition and health of the livestock but also the health of the soil, Rhonda and Bill have been able to consistently outperform the Average Farm in terms of sheep and cattle profitability.

Figure 1 also illustrates the multiple additional income sources that contribute to the overall revenue of Milgadara. From 2010 to 2013, total crop sales contribute significantly to Milgadara's income. In 2017, wool proceeds contributed to 51% of Milgadara's income. During 2017, Milgadara experienced drought conditions. Despite this, Rhonda and Bill were able to continue carrying the same number of sheep and cattle. Further, Rhonda and Bill were still able to turn off prime lambs and cattle and produce premium wool. Unlike other farms, when the drought broke Rhonda and Bill did not have to pay record prices to re-stock.



## Total Revenue Per Ha

Figure 2 compares Milgadara’s revenue to that of the Average Farm on a per hectare basis.

Figure 2 includes the average price of lambs (c / kg cwt) over the 10-year period. Lamb prices remain relatively stable across the years, with marginal movements seen in 2013 and 2019. Overall, the revenue of the Average Farm is more closely correlated with the price of lamb.

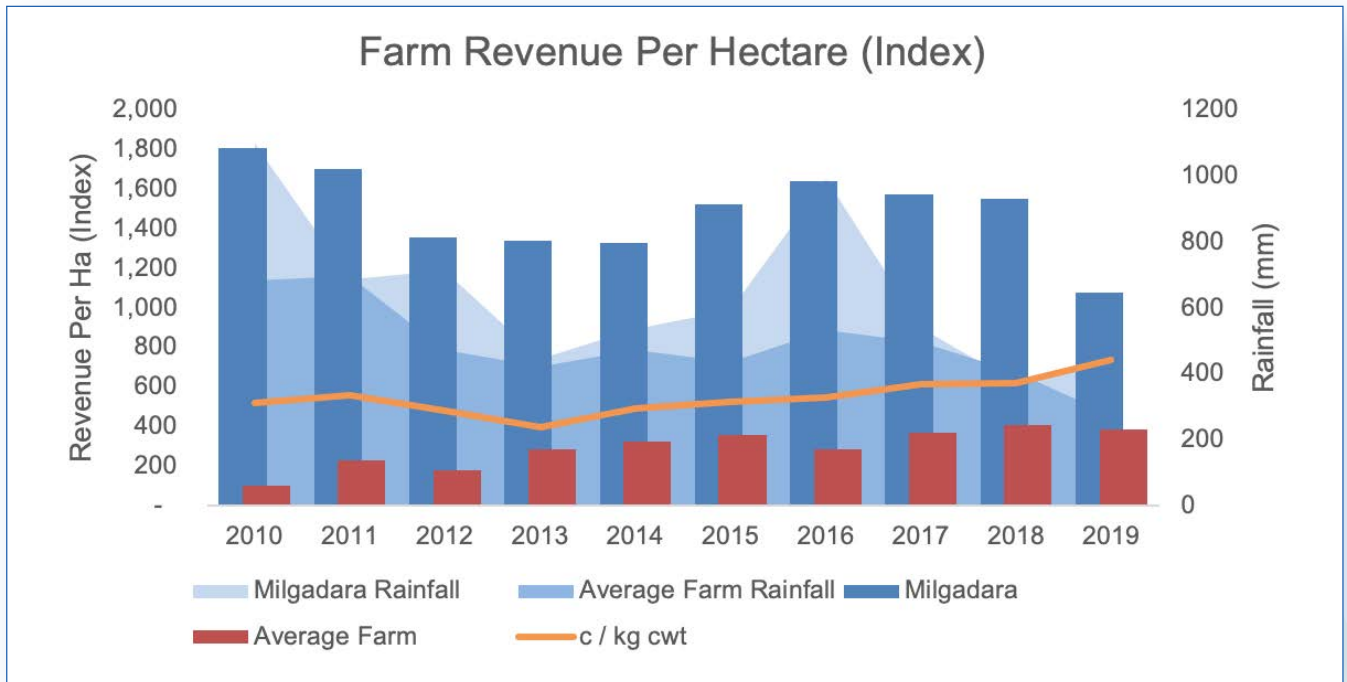


Figure 2: Revenue Per Hectare (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

Milgadara significantly outperforms the Average Farm in terms of revenue across all the years analysed.

The higher revenue as seen in Figure 2 suggests that Rhonda and Bill receive a considerably higher price than the Average Farm. This is a result of higher quality stock grown on Milgadara and / or the livestock being presented to market in optimum conditions as a result of effective management under the redeveloped grazing system. Ultimately, greater carcass yields and higher quality wool enables Rhonda and Bill to gain a premium.



## Sheep Sales Per Ha

Figure 3 illustrates the number of sheep sold per hectare on Milgadara to that of the Average Farm. Sheep sales are the primary source of income for Milgadara. Overall, Milgadara sells more sheep per hectare than the Average Farm.

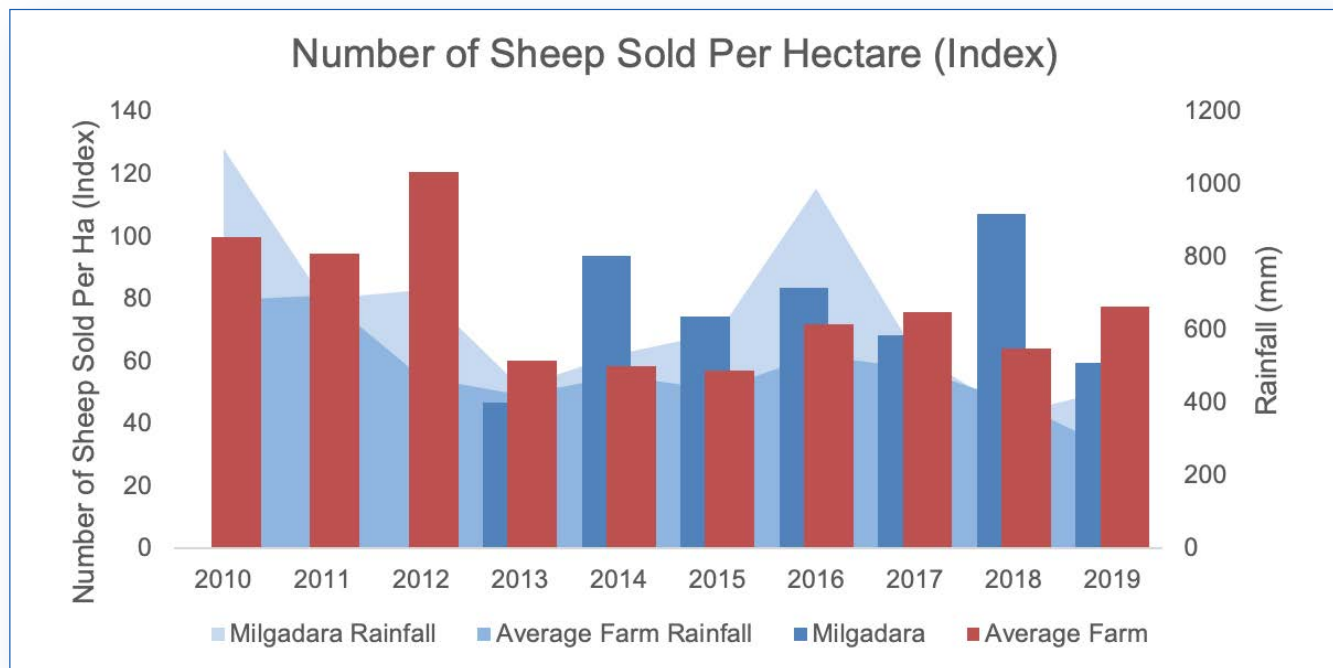


Figure 3: Number of Sheep Sold Per Hectare (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

### Data Insights:

- From 2011 to 2013 Milgadara experiences dry seasonal conditions and drought.
- The lower number of sheep sold by Milgadara in 2013 is due to that fact that Rhonda and Bill chose to not sell their older ewes in order for them to breed prime lambs.
- In 2018, Australian sheep producers experienced conditions that were drier than average, seeing pasturing conditions deteriorate in most sheep producing regions.
- Despite these conditions, again as mentioned previously, Rhonda and Bill were able to continue carrying the same number of sheep and were still able to turn off prime lambs successfully.
- In 2019, the number of sheep sold on Milgadara decreases.





## Profit from Sales

Figures 4, 5 and 6 depict the profits from the sales of sheep, cattle, and wool, respectively, in comparison to that of the Average Farm. Across the three enterprises, Milgadara's profit exceeds the profit of the Average Farm in all the years analysed.

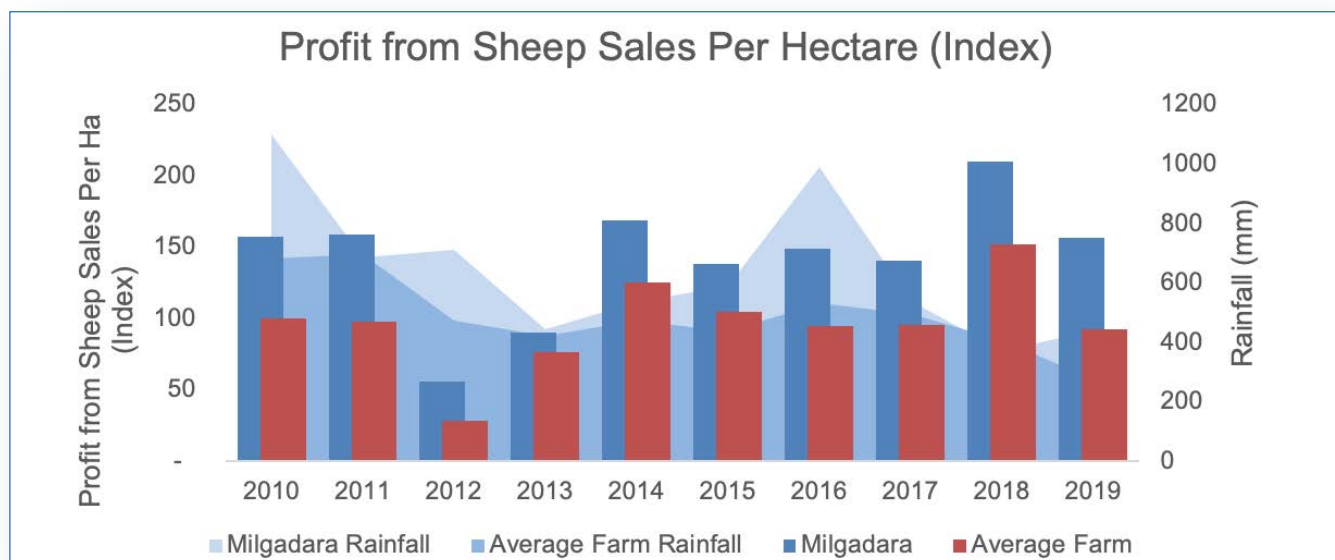


Figure 4: Profit from Sheep Sale Per Hectare (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

Data Insights:

- In 2018, Milgadara experiences a significantly higher profit from sheep sales per hectare compared to the rest of the years analysed. This is due to the timing of the sale of prime lambs, which occurred at the end of 2018 rather than in 2019.

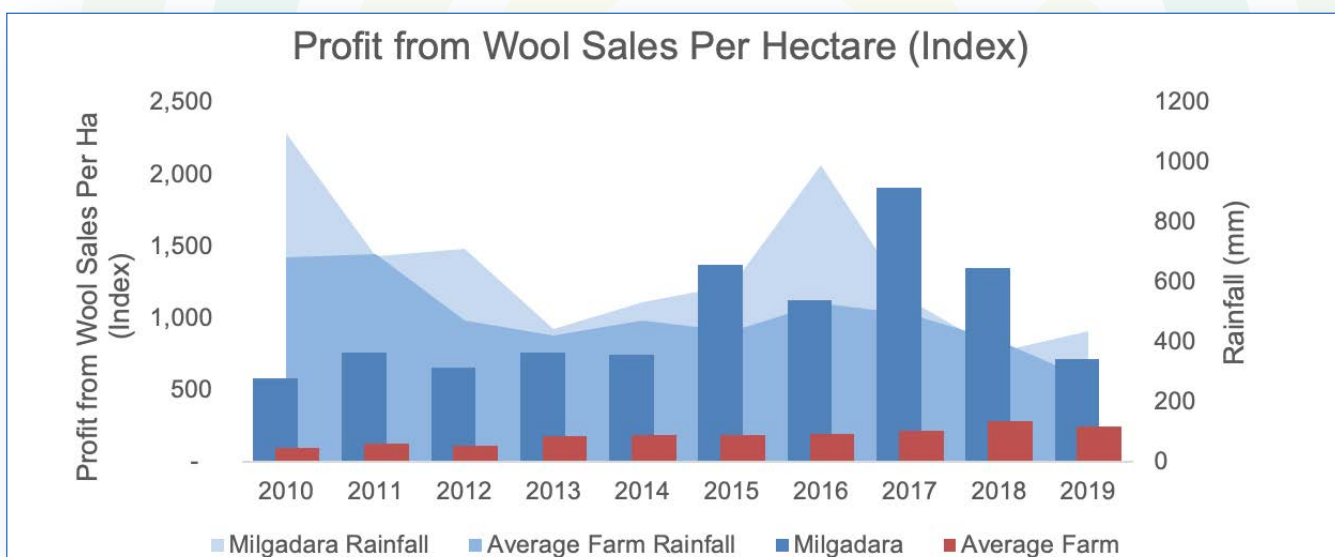


Figure 5: Profit from Wool Sales Per Hectare (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

Data Insights:

- In 2015, 2017, and 2018 Milgadara experiences peaks in profit from wool sales per hectare. During these years in particular, the price of wool also peaks.

It is also notable that Rhonda and Bill shear when the wool reaches 70 millimetres, which means that they shear roughly twice every eighteen months



## Expenses

### Fertiliser Expense

Figure 7 illustrates Milgadara's expenditure on soil amendments compared to that of the Average Farm. In addition to conventional fertilisers, extensive compost applications are made to support soil health and productivity. The relevant benchmarking category for these expenses is 'Fertiliser', hence the use of the term here. Across the ten-year period analysed, Rhonda and Bill invest significantly in soil amendments on Milgadara. In comparison, the Average Farm spends much less on fertility amendments.

As part of implementing regenerative practices, Rhonda and Bill have focused on better managing the health and status of their soil. Initially, Rhonda and Bill invested in chemical fertiliser in order to establish the crops and improve pasture. They then continued to amend production soils through the use of humus compost.

Additionally, Rhonda and Bill commenced soil tests in order to gain a better understanding of the physical, chemical, and biological components of their soils to help them better manage the soil condition. They have continued their involvement in this to help them evaluate the performance of the fertilisers and nutrients.

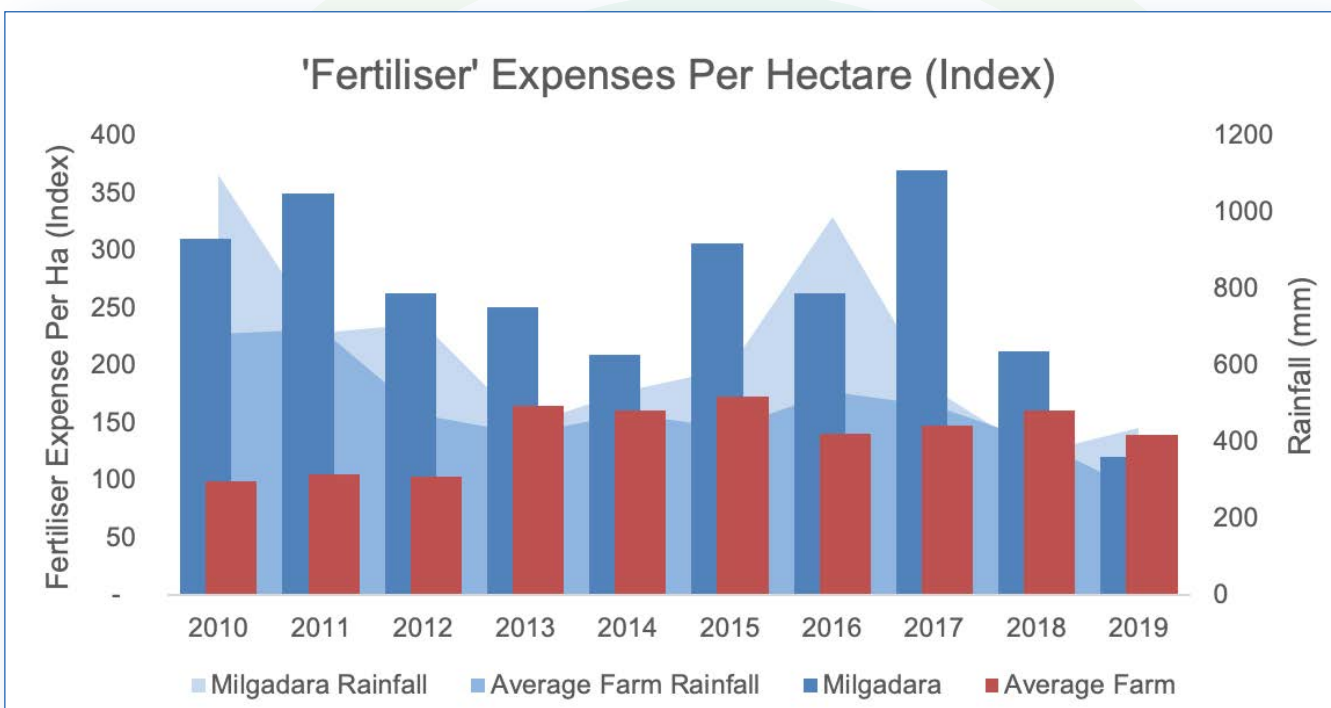


Figure 7: Fertiliser Expense Per Hectare (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

#### Data Insights:

- In 2014 and 2015, there was an increase in fodder expenses for Colodan. During 2014, Queensland fertilisers were used on Milgadara to maintain both crops & pastures.
- As a result of Rhonda and Bill's pasture cropping practices, fertiliser expenses tend to be higher than the Average Farm.



## Seed Expense

Figure 8 illustrates Milgadara’s seed expenses per hectare compared to that of the Average Farm. Rhonda and Bill invest significantly in seed, substantially exceeding the Average Mixed Sheep Farm due to the cropping activities undertaken.

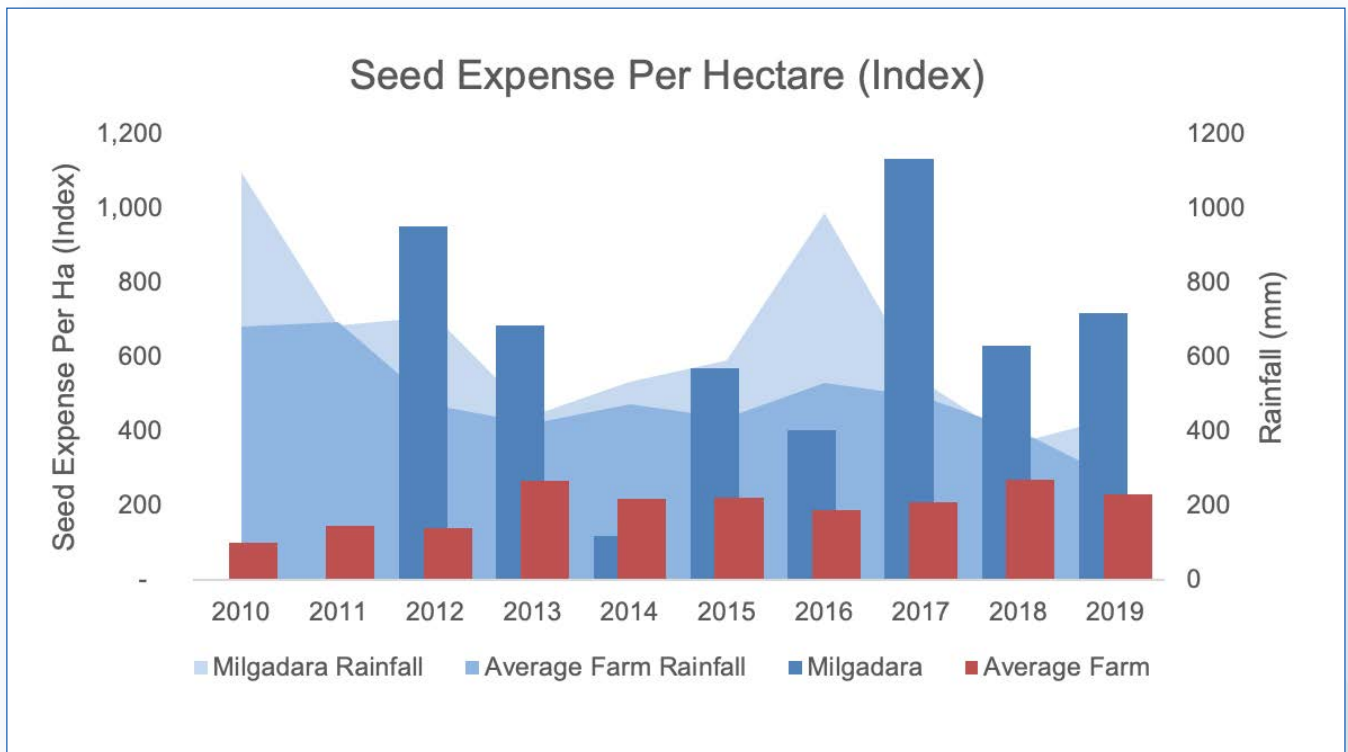


Figure 8: Seed Expense Per Hectare (Index. To maintain privacy, the data in this graph has been indexed to the Average Farm.

### Data Insights:

- In 2012, Rhonda and Bill commenced the planting of tree in order to increase the biodiversity on Milgadara, as well as providing shelter belts for livestock.



## Business Performance and Sustainability Analysis

### Gross Margin

#### Sheep Sales Gross Margin

The Australian sheep industry continues to perform strongly with continuous growth in average annual trade lamb price and growth in mutton price. Overall, there has been growth in both production and prices for a sustained period, highlighting the growing strength of demand.

Figure 9 illustrates the sheep sales gross margin per hectare per 100 millilitres of rainfall at Milgadara, compared to that of the Average Farm. Gross margin is a measure of total sales minus the direct costs of sheep production. Gross margin per Ha per 100mm of rainfall is commonly used in the primary production industry to illustrate effective utilisation of land and water capacity. The gross margin per Ha per 100mm of rainfall analysis is particularly useful for this Economic Report as Milgadara's annual rainfall often exceeds the Average Farm – which will have a considerable effect on Milgadara's performance and success.

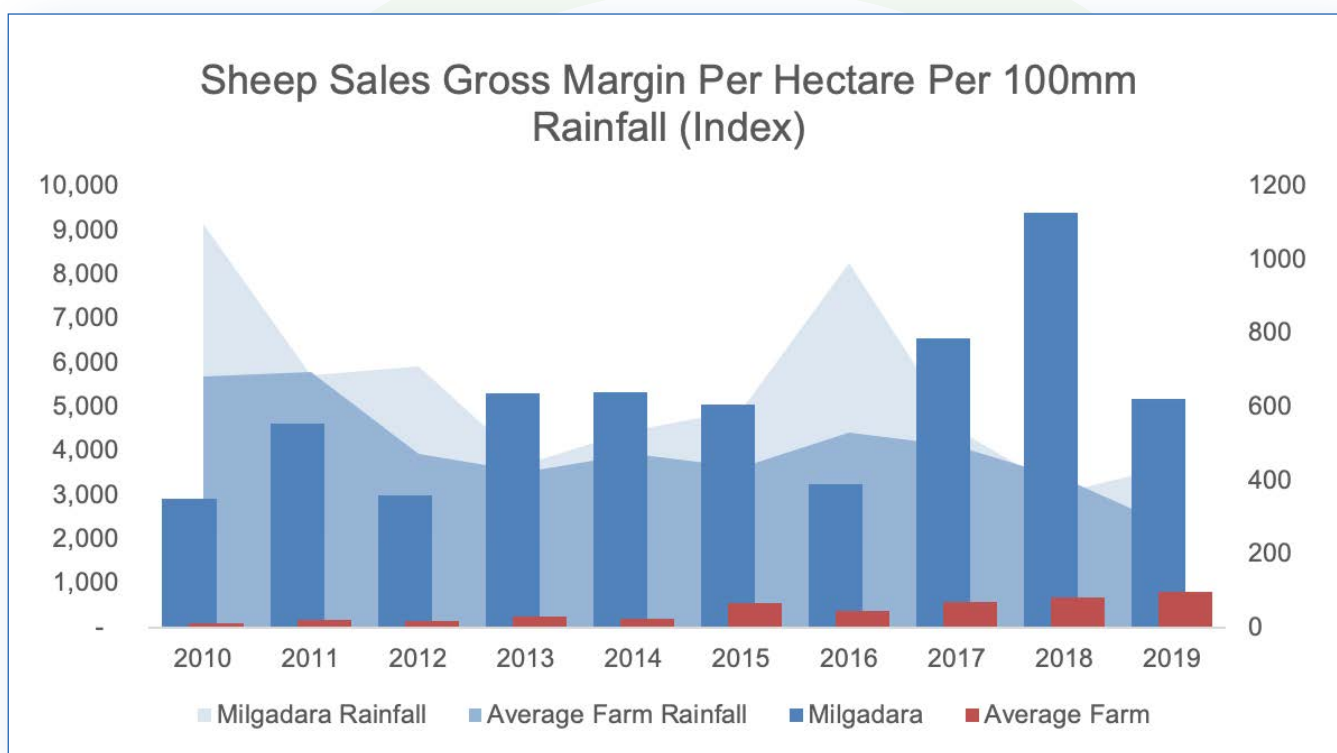


Figure 9: Sheep Sales Gross Margin Per Hectare Per 100mm Rainfall (Index). To maintain privacy, the data in this graph has been indexed to the Average Farm.

#### Data Insights:

- Milgadara's gross margin per hectare per 100 millilitres rainfall significantly outperformed the Average Farm in all years. This is a result of higher production and the associated income, as well as significantly lower expenses.
- There is a significant peak in Milgadara's gross margin per hectare per 100 millilitres rainfall in 2018. This is due to increase in sheep sales during that year.



## Profit Margin Ratio

Table 1 includes the profit margin ratio of Milgadara and the Average Farm. The profit margin ratio is a measure of profits divided by revenue. This ratio shows the amount of profit remaining from revenues earned after all expenses were paid by the business, as a percentage.

Table 1: Profit Margin Ratio

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Milgadara</b>	30%	22%	7%	7%	25%	36%	25%	21%	36%	11%
<b>Average Farm</b>	-1%	20%	10%	9%	17%	13%	18%	23%	14%	14%
<b>Difference</b>	31%	2%	-3%	-2%	8%	23%	7%	-2%	22%	-3%

### Data Insights:

- Milgadara achieves a significantly higher profit margin ratio compared to the Average Farm in all years. The difference between Milgadara and the Average Farm's results illustrate the enhanced profit producing capability of Milgadara's enterprises.
- Milgadara does not experience negative profitability, indicating that overall, Rhonda and Bill are able to sustain profitability despite variations in seasonal and market conditions.



## Business Profit

Figure 10 illustrates the farm business profit per hectare for Milgadara and the Average Farm. While the business profit for both Milgadara and the Average Farm varies throughout the periods analysed, Milgadara is still able to maintain a profit, in comparison to the Average Farm, which has lower profit per hectare and incurs a loss during the period.

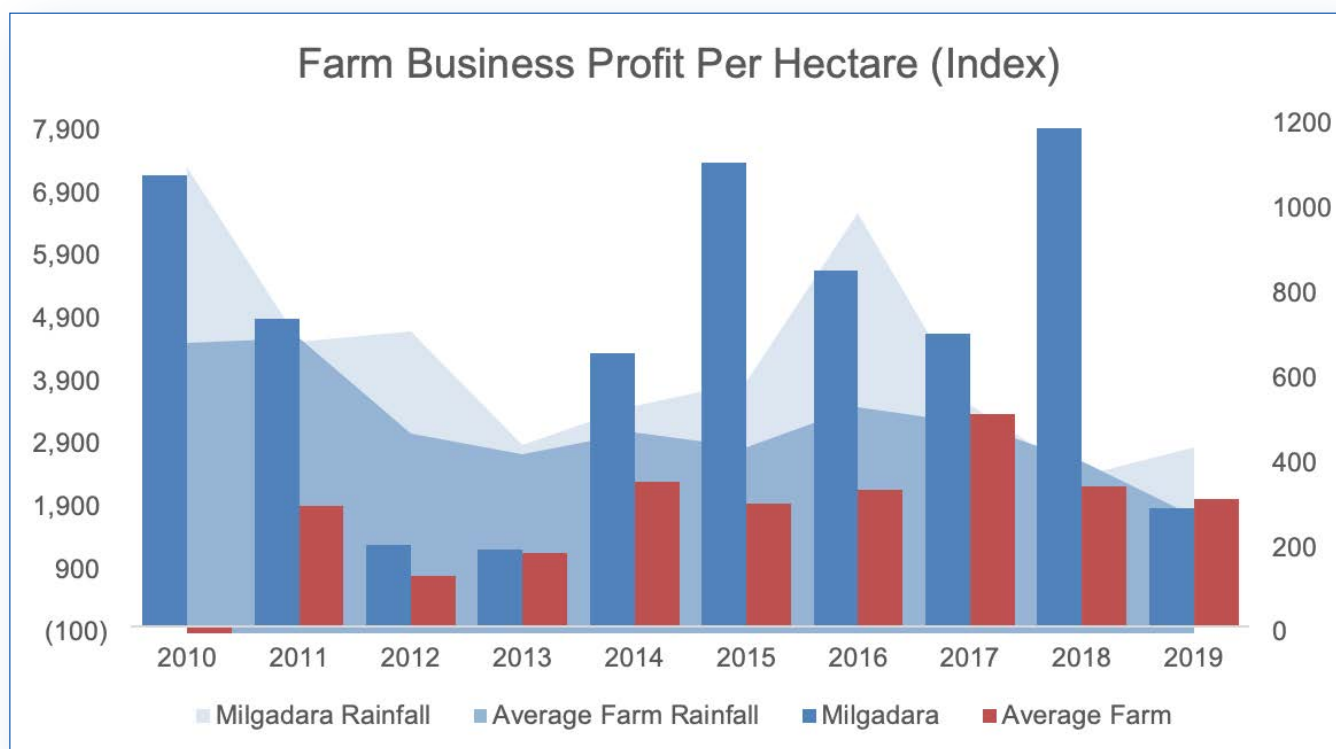


Figure 10: Business Profit Per Hectare (Index) To maintain privacy, the data in this graph has been indexed to the Average Farm.

### Data Insights:

- In 2012 and 2013 both Milgadara and the Average Farm experiences significant declines in farm business due to drought conditions.
- In 2015, Milgadara experiences a significant growth in farm business profit, despite receiving no income from the sale of cattle during this year. Rhonda and Bill's wool proceeds accounted for a large portion of income, having increased by 84% from the prior year.
- 2018 shows Milgadara's peak in farm business profit. During 2018, Milgadara also peaked in profits from sheep sales.



## Conclusion

By focusing on the improvement of productivity and sustainability, in addition to the introduction of multiple regenerative practices, including transitioning to biological farming, developing a rotational grazing system, and implementing pasture cropping, Rhonda and Bill have transformed Milgadara into an enterprise that is able to substantially outperform the Average Farm.

### **The introduction of these practices has resulted in:**

- Improvements in the health of soil, carbon sequestration, water infiltration, and ground cover
- An increase in the level of livestock production, often exceeding the Average Farm regardless of seasonal conditions
- 409% more revenue on average to that of the Average Farm

Overall, Milgadara outperforms the Average Farm in terms of production, revenue, and profitability. While Milgadara does spend significantly more on key expenses compared to the Average Farm, the higher profit shows that the regenerative practices have improved both production and revenue, further indicating the successfulness and overall better management of the farm.