SHARED VALUE PROJECT

CASE STUDY – BLANTYRE FARMS

By Phil Preston and Jeremy Hutchings

RE-PURPOSING FOOD WASTE TO BOOST FARM AND MANUFACTURER PROFITABILITY

Blantyre Farms is a mixed farming and livestock business situated near Young in New South Wales, incorporating broad-acre cropping of wheat, barley and canola, with beef, wool and lamb production, and a large and intensive in-door piggery. It employs 40 staff, produces 40,000 pigs each year and has an annual turnover of approximately $14 million. Almost all of their 2,000-3,000 tonnes of annual grain production is used for pig feed. Edwina Beveridge and her husband, Michael, took over the business from her parents in 2007 and have advanced it significantly.

This case study outlines the reductions in food waste and methane emissions that have accompanied commercial benefits for Blantyre Farms, as well as significant landfill cost reductions for their food company partners.

Social Issue
Food waste & methane emission reduction

Business Opportunity

Create a sustainable and more competitive pork farming operation through input cost management

Social Value Creation

- Environmental footprint 95% lower than average pork producers
- 65000t CO2 removed from atmosphere
- 8000t food waste pa diverted from landfill

Business Value Creation

- $880,000 pa savings of finished feed
- $1.8m savings for food company partners from reduced landfill costs
- Protection from grain price fluctuation
- $600,000 pa energy related initiatives
- 2017 Woolworths sustainable supplier of the year
- 2018 Green Globe Award for resource efficiency (NSW DPIE)
- 2019 Bioenergy Technology Innovation Award

The Opportunity

With a downturn in pork prices in 2017 of 40% caused by market oversupply and improved production methods, many pig farmers have struggled to remain viable. In this environment, the management of input costs is critical to short and longer term competitiveness. For most pig producers their four largest costs are feed, labour, animal health products and electricity.

Several years ago, Blantyre Farms identified two avenues for reducing input costs. Firstly, they could ramp up their use of food waste as pig feed. They require approximately 11,000 (dry) tonnes of pig feed per annum, this includes grain, protein meals, amino acids, vitamins and minerals. Secondly, they saw an opportunity to capture the methane from pig manure and use that biogas to generate electricity on site. Plus, reducing methane emissions would potentially provide them with carbon credits to sell.

"Our environmental footprint is now 95% lower than the average pork producer and it's helped us dramatically increase our profitability in an industry consistently challenged by declining terms of trade" - Edwina Beveridge, Blantyre Farms

The Strategy

By successfully building and maintaining relationships with a wide range of food companies, Blantyre Farms has found that it can significantly reduce the amount of feed required, largely through utilising food waste - food that is past its shelf-life or use-by-date but still suitable for pig feed. On average, they receive several semi-trailers load of food waste every day, including dairy products, fruit juice, bread, pasta and more occasional items like confectionary. Some suppliers are situated close to them and others send food waste from as far as Sydney.

The only real alternative for most of this food waste is landfill at a cost of $300 per tonne or more to the manufacturer versus a much lower (on average) estimated cost of $75 per tonne in redirecting it to Blantyre Farms. The nutritional value of the food waste determines whether the manufacturer is required to pay costs of freight and handling or whether Blantyre Farms can absorb these costs. Blantyre Farms deals with handling different products, fluctuating volumes in waste food supplies and ensures as much packaging as possible is recycled. Utilising food waste has meant they only use about 2,500 tonnes of grain per annum, down from about 7,500 tonnes. Replacing grain with food waste provides a major cost saving that is further amplified by drought impacts on grain prices.

In 2011, the farm commenced a project to convert pig manure into a source of renewable electricity by capturing the biogas using a methane digestion system. It took a year to build and the system supplies 100% of their electricity needs with excess amounts sold into the grid to generate extra revenue. The combustion process of the generator effectively destroys the methane, which has a global warming potential of around 25 times that of carbon dioxide. The environmental benefit generates carbon credits that can be sold in the market. Not only is Blantyre producing energy and reducing emissions, the solid effluent, after harvesting biogas from manure, is spread on their paddocks as a complete carbon based fertiliser. This reduces the purchase of synthetic fertiliser, and is used to grow grain which is fed back to the pigs.

'The two strategies have produced significant and positive results at the economic and environmental level.'

Results - Value Creation for Business and Society

Social outcomes:

- Environmental footprint 95% lower than average pork producers
- 65000t CO2 removed from atmosphere
- Replacement of synthetic fertiliser with carbon based fertiliser
- 8000t food waste pa diverted from landfill

Business outcomes:

- $880,000 pa savings of finished feed
- $1.8m savings for food company partners from reduced landfill costs
- Protection from grain price fluctuation

The two strategies have produced significant and positive results at the economic and environmental level. As a source of protein, pork has an environmental footprint that is two-thirds lower than beef and through its food and energy initiatives, Blantyre Farms has a footprint that is 95% lower than the average pork producer.

Without the waste food they would typically be sourcing an extra 7,500 tonnes of grain to feed their pigs. The average saving for Blantyre Farms is calculated at $80 per tonne of finished feed - translating into a total saving of $880,000 per annum - which is a significant improvement in profitability. Their food company partners are benefiting to the tune of approximately $1.8 million from reduced landfill costs.

While a handful of their competitors are adopting methane digestion systems, this innovative food waste approach has generally not been replicated across their region nor industry. An added benefit of re-purposing waste food is the inherent protection from fluctuating grain prices. It should also be noted that an internally commissioned analysis of the freighting process has found that there is no significant change in emissions as a result of transportation.

The process of using manure for biogas production has saved the business about $29,000 a month in power and gas bills and brought in $5,700 per month from excess power sold back into the grid. Along with the sale of carbon credits, their energy related initiatives are adding nearly $600,000 per annum to their bottom line. The payback period for the capital expenditure of $1 million on the biogas plant was two years and it has removed 65,000 tonnes of carbon dioxide equivalent from the atmosphere.

Overall, 8,000 tonnes of waste food is diverted from landfill each year and used for pork production, the by-products are used for electricity generation that reduces greenhouse gas emissions and the farm has dramatically increased its profitability and industry competitiveness.

In recognition of their efforts, Blantyre Farms' accolades include being named Woolworths sustainable supplier of the year in 2017 and receiving the Green Globe Award for resource efficiency from the NSW Department for Planning, Industry and Environment in 2018. In terms of competitive advantage, their sustainability initiatives have seen the depth of their relationships with major clients evolve into value-adding partnerships. For example, Woolworths regard them as progressive and innovative farmers and their model is one that consumers would be really interested in.[1]

Lessons Learned, Challenges and Outlook

From Blantyre Farms' perspective, there are multiple challenges associated with sourcing and utilising food waste. Optimising delivery volumes and composition requires ongoing management. Food is packaged with consumers in mind rather than re-use, so there can be onerous de-packaging tasks (eg. bread in plastic bags with ties).

It's often easy for Blantyre Farms to track down companies with food waste, but in many cases it can be hard for their cold calls to get past reception or to connect with the right person in the operations team. Turnover of staff in key roles and loss of corporate memory at food processing companies also hampers this process.

The biogas initiative has taken perseverance due to development and maintenance challenges. Australian Pork Limited helped Blantyre Farms devise a solution by providing a consultant who was able to support them on the technical side. Cutting through bureaucracy to get electricity connections and carbon credit sales in place have also been hurdles to overcome.

CONTACT INFORMATION

EDWINA BEVERIDGE
EDWINA@BLANTYREFARMS.COM.AU
0419 734 782

JEREMY HUTCHINGS
JEREMY@THEACADEMY.NET.AU
0438 328 552

PHIL PRESTON
PHIL@PHILPRESTON.COM.AU
0408 259 633

[1]https://www.theaustralian.com.au/weekend-australian-magazine/piggery-in-the-middle-the-battle-for-meateaters-hearts-and-minds/news-story/8165b116585aa84d382e8d0218048391