

## Dairy industry information

Starting points, links and information for teachers that are putting agribusiness assignments in a dairy farming context.

### Economic

A challenge for many farming businesses is family succession planning, when the farm is passed from one generation to the next. Poor planning, or when the planning process has broken down puts the farm business at risk and succession planning is not always easy as it can cause tension and stress amongst family members. Good planning ensures long-term (multi-generational) viability of the farm business. There are a variety of strategies that a family can use to tailor to their particular situation which students could analyse. If the students want to talk to someone, ANZ and Rabobank help with succession planning.

- ANZ rural
  - <https://www.anz.co.nz/rural/>
- Rabobank agribusiness
  - <https://www.rabobank.co.nz/agribusiness/>

Increasingly volatile milk prices are creating issues for farming businesses. Sharemilkers are especially being hit hard, and exiting the industry (due to high debt levels). Students could analyse methods to make sharemilking more viable (e.g. variable price contracts) and alternatives to sharemilking altogether (e.g. manager/equity manager).

Students could also analyse ways to make a farm business more resilient and less vulnerable to changes in milk price. This could be done a number of ways including diversifying a business' revenue stream, e.g. dairy businesses purchasing beef enterprises, or putting their marginal land into forestry or mānuka (the latter can also have environmental benefits for erosion control).

- Farm financial information
  - <https://www.dairynz.co.nz/farm/financial/>
- Diversification – E.g. organic, raising beef stock, investments into other industries

Farmers are constantly using economics to make farm management decisions. They can't afford to do everything at once so often use financial information to make decisions. The cost of making farm changes is balanced against the benefit and effect of that change. Is it better to spent tens of thousands of dollars on a bridge to cross a stream twice a year or to upgrade an effluent system that's used 365 days of the year?

- DairyNZ economic survey
  - <https://www.dairynz.co.nz/publications/dairy-industry/dairynz-economic-survey-2014-15/>
- New Zealand dairy industry and the world
  - <http://www.godairy.co.nz/the-big-picture>
- Contribution of dairy to the local and national economy
  - <http://www.rbnz.govt.nz/research-and-publications/speeches/2014/speech2014-05-07>

- <http://3ddairy.co.nz/>

## Environmental

If you were to discuss the environment with any dairy farmer, many of them would say the same thing – they want to leave the land in a better state than they found it. They believe they are stewards of the land and are there to protect it. Over the last few years farmers have come a long way to put these words into actions. Through regional councils and milk supply companies, there has been a large push to get farm effluent systems up to standard and farmers now understand the best way to use effluent and nutrients on their farm.

- <https://www.dairynz.co.nz/environment/>

The Sustainable Dairying: Water accord has put a focus on waterway management, nutrient management, effluent management and water use. Through this, farmers have fenced off over 96% of waterways, bridged 99% of stock crossings and many other advances have been made by farmers, dairy companies, DairyNZ and other parties. The water accord has set dairy farmers up for upcoming regulation and is also a way to show the public the work that is going on by the dairy industry.

- Sustainable dairying: water accord
  - <https://www.dairynz.co.nz/environment/in-your-region/sustainable-dairying-water-accord/>

Farm environment plans are becoming common on farms. These allow farmers to work through all aspects of their farm and identify areas where they can improve their practices.

Farmers are also taking it a step further and getting involved with their community and further to promote messages of good environmental stewardship. Many farmers are involved in catchment care groups, get local schools involved with environmental work and each region has dairy environment leaders which lead sustainable change in their communities. Balance farm environment awards are also a way to recognise standout environmental farmers in each region.

- Dairy environment leaders
  - <https://www.dairynz.co.nz/about-us/event-presentations/dairy-environment-leaders-programme/>
- Balance farm environment awards
  - <http://www.nzfeatrust.org.nz/>

## Political and Legal

Farmers are getting involved in government at a local and national level. They have a vested interest in the regulations and policies that will affect them and as a result there are a large number of farmer groups who are involved in this space. It is also an opportunity for farmers to show leadership in their communities.

- <http://www.fedfarm.org.nz/>
- Living Water Project:

- <https://www.livingwater.net.nz/#home>
- <https://www.dairynz.co.nz/about-us/advocacy-and-policy/>

Dairy industry contributes to the NZ economy and GDP. It has also helped to put NZ on the international stage so is a valuable industry.

- Link to agriculture, horticulture and forestry statistics:  
[http://www.stats.govt.nz/browse\\_for\\_stats/industry\\_sectors/agriculture-horticulture-forestry.aspx](http://www.stats.govt.nz/browse_for_stats/industry_sectors/agriculture-horticulture-forestry.aspx)

The government supports the dairy industry and a large amount of work and research is assisted by government funding. There are a number of government funded projects

- Transforming the Dairy Value Chain Primary Growth Partnership (PGP) programme
  - <http://www.mpi.govt.nz/funding-and-programmes/primary-growth-partnership/primary-growth-partnership-programmes/transforming-the-dairy-value-chain/>
- The Whai Hua — New Dairy Products and Value Chains PGP programme
  - <http://www.mpi.govt.nz/funding-and-programmes/primary-growth-partnership/primary-growth-partnership-programmes/whai-hua-new-dairy-products-and-value-chains/>
- Ministry of Business, Innovation & Employment Food & Beverage Information Project, Dairy:
  - <http://www.mbie.govt.nz/info-services/sectors-industries/food-beverage/information-project/dairy/?searchterm=dairy%2A>

There are more and more policies being created which governs a number of farming practices. Farmers are expected to keep up with these regulations and ensure they are farming within the rules. There are regulations on animal welfare, environment, health and safety, employment, milk quality and more, making it a big job for farmers to keep on top of it all.

- For an overview, Motu.nz has some excellent explanatory papers on greenhouse gas issues. For example, see sections 1,2,3,5,6 of 'Cows, Sheep and Science: A Scientific Perspective on Biological Emissions from Agriculture'
  - [http://motu-www.motu.org.nz/wpapers/16\\_17.pdf](http://motu-www.motu.org.nz/wpapers/16_17.pdf)
- New Zealand Agricultural Greenhouse Gas Research Centre
  - <http://www.nzagrc.org.nz/>
- Environment Aoteroa 2015 Report:
  - <http://www.mfe.govt.nz/publications/environmental-reporting/environment-aotearoa-2015>
- National Policy Statement for Freshwater:
  - <http://www.mfe.govt.nz/fresh-water/freshwater-management-nps>
- Regional council environmental regulation
  - <https://www.dairynz.co.nz/environment/in-your-region/>
- Health and safety regulation
  - <http://www.worksafe.govt.nz/worksafe>
- Employment laws

- Animal welfare regulations
  - <https://www.dairynz.co.nz/animal/welfare/>
  - <https://www.mpi.govt.nz/protection-and-response/animal-welfare/codes-of-welfare/>

## Cultural

Farmers often work with local tangata whenua to protect sites and manage the land. Different cultures place different values on the land and often the way the land is managed takes these views into account.

## Social

Public perception and the 'social licence to farm' is becoming more and more of an issue for farmers. Social media means that both good and bad news stories spread fast and anybody can take a photo or video and post it on the internet.

The dairy industry supports and maintains rural communities which is a key part of New Zealand. It is the lifeline of many rural town throughout the country and provides jobs and an economy in those regions.

Dairy farming is a valuable source of employment. A large number of entry-level farm jobs require no qualifications and employees just need to have the right attitude and be willing to work. There are many on the job training opportunities as well which means that many are coming into the industry with no training and are upskilling themselves throughout their career.

- Employment and people management information
  - <https://www.dairynz.co.nz/people/employee/>
  - <https://www.dairynz.co.nz/about-us/dairy-industry-strategy/sustainable-dairying-workplace-action-plan/>

Many farmers get involved with their local community, are involved with local schools and promote school visits etc.

- Trees for survival programme.
  - <http://www.tfsnz.org.nz/>

## Ethical

- Animal welfare standards
  - <https://www.dairynz.co.nz/animal/welfare/>
- Sustainable dairying: workplace action plan
  - <https://www.dairynz.co.nz/about-us/dairy-industry-strategy/sustainable-dairying-workplace-action-plan/>
- Sustainable dairying: Water accord
  - <https://www.dairynz.co.nz/environment/in-your-region/sustainable-dairying-water-accord/>

- Animal ethics approval for all research projects involving animals

### Technological

Technology is allowing farming to become more precise and automated and in some instances is changing the way that farms are run. There are constantly new technologies being developed that are saving time and allowing farmers to be more precise and reduce waste. The increased use of the internet on farms has also resulted in a change in the way that farmers get their information and they have a more information than ever right at their fingertips.

A few examples of farm technologies:

- Robotic milking, fenceless farms, drones, heat detection systems etc
  - <https://am.gallagher.com/nz>
  - <http://www.delaval.co.nz/-/Product-Information1/>
- Apps to record, track animals, fertilisers, staff etc
  - Body condition score tracking app
  - Farm dairy effluent calculator app
  - Minda apps
- Computer programmes and the internet allowing faster access to a wider range of resources and information
  - E.g. overseer and other computer models
  - The roster builder for managing staff rosters  
<https://www.dairynz.co.nz/people/rosters/roster-builder/>
- Fieldays innovation tent – constantly new technologies being created and showcased to other farmers

### Scientific

Research going into ways to reduce N leaching or greenhouse gas emissions e.g.

- Forage systems to reduce nitrate leaching <https://www.dairynz.co.nz/news/latest-news/forage-systems-to-reduce-nitrate-leaching/>
- The P21 trials <https://www.dairynz.co.nz/about-us/research/key-projects/pastoral-21/>
- Greenhouse gas work  
[http://www.nzagrc.org.nz/user/file/1302/NZAGRC\\_PGgRC\\_What%20are%20we%20doing\\_e\\_d2.pdf](http://www.nzagrc.org.nz/user/file/1302/NZAGRC_PGgRC_What%20are%20we%20doing_e_d2.pdf)
- GMOs could do some wonderful things for both nitrate leaching and greenhouse gases, but...

When evaluating measures and how effective they will be in a dairy farm system, the following “silver bullet” approach can be used:

- 1) Is it effective?
  - a) How long does it last? If we have to give the cows something every day, that becomes impractical, especially for sheep and beef operations
- 2) Will it decrease profitability?
- 3) Does it have any other effects?
  - a) Positive: e.g. some of the things we’re doing to reduce  $\text{NO}_3^-$  will also reduce  $\text{N}_2\text{O}$ , some improvements in productivity will also reduce  $\text{CH}_4$  emissions, native riparian and wetland planning has biodiversity benefits
  - b) Negative: pollution swapping – e.g. some things that reduce  $\text{NO}_3^-$  and  $\text{N}_2\text{O}$  increases  $\text{CH}_4$
- 4) Is it appropriate for our farm systems? E.g. 1) a) only really works in housed systems like what they have in Europe. GMOs are another example due to our current laws
- 5) Will it work nationally? If it only works on farms in Northland it won’t solve the nation’s problems. This question will depend on the size of the biophysical area in question.

*Adapted from the Parliamentary Commissioner for the Environment (2016)*

There is also research going into animal health, feed, the environment and other aspects of a dairy farm. One of the exciting things about being involved in the dairy industry is that there is constantly new information being discovered.

- DairyNZ science
  - <https://www.dairynz.co.nz/about-us/research/>
- International dairy science
  - <http://www.journalofdairyscience.org/>
- AgResearch
  - <http://www.agresearch.co.nz/>
- Plant and Food research
  - <http://www.plantandfood.co.nz/>

### Gathering information for assignments

- S-maps for soil maps of different regions
  - <https://smap.landcareresearch.co.nz/home>
- Regional Councils can provide information on regional rainfall, river levels and other specific regional information
- NIWA can provide climate information and data
  - <https://www.niwa.co.nz/>