



The Australian dairy industry carbon footprint: Life Cycle Assessment Q&A

About the project

What is a carbon life cycle assessment (LCA)?

Dairy Australia has worked closely with the industry to undertake a carbon life cycle assessment (LCA) to scientifically measure the carbon footprint of producing dairy foods. This study measured the greenhouse gas (GHG) emissions emitted from the production of nine dairy foods to identify the industry's overall carbon footprint. The study was carried out by PE International, a leading international sustainability and LCA consultancy.

Why was this project undertaken?

Australian and international studies have determined that the agriculture sector contributes between 10-12 per cent of total GHG emissions. Australia's dairy industry is committed to producing high-quality dairy products in an environmentally and economically sustainable way. This initiative is another example of the industry's commitment to reducing GHG emissions and is an important component of the industry's overall sustainability efforts.

The project provides valuable insights into the industry's carbon footprint to help Australian dairy farmers and processors across the supply chain work together to reduce GHG emissions. It also establishes a benchmark to measure the effectiveness of efforts to reduce GHG emissions.

This project also helps the industry to meet growing concerns amongst consumers, customers, retailers and governments about the environmental impact of food production. For example, some countries have legislated food carbon labelling requirements, underlining the value of quantifying the carbon footprint of Australian dairy products to meet the expectations of international markets.

What was analysed?

Data measuring the energy used to produce and process milk was collected from 140 farms and 15 manufacturing sites across Australia. The study also examined the energy used to deal with waste and by-products, as well as the energy used to transport milk from farm to factory and factory to port/wholesaler. The study did not account for carbon sequestration associated with planting trees or soil carbon storage, which is consistent with international LCA standards.

The nine products included in the study were:

- 2 l full-cream milk
- 600 ml chocolate milk
- 200 g fruit yogurt
- 250 g retail butter
- 25 kg bulk butter
- 25 kg milk powder
- 25 kg whey protein concentrate
- 1 kg retail cheddar cheese
- 20 kg bulk cheddar cheese

Who was involved?

Dairy Australia led the study, with the support of the Australian Dairy Products Federation, Australian Dairy Farmers Limited, farmers and major processing companies including Bega Cheese/Tatura Milk, Fonterra, Murray Goulburn, Lion, Norco, Parmalat and Warrnambool Cheese and Butter.

The results

What is the carbon footprint of the average Australian dairy farm?

The average Australian milk production carbon footprint at the farmgate in 2009/10 was 1.11 kilograms of carbon dioxide equivalent per kilogram of fat and protein-corrected milk (1.11 kgCO₂eq/kg FPCM).

What is the carbon footprint for the nine dairy products?

As of November 2012, the carbon footprint figures for the individual products are still being determined from the data.

How does Australia's dairy carbon footprint compare to other countries which have conducted similar studies?

The carbon footprint of Australian dairying is one of the lowest internationally. Importantly, Australia has an average carbon footprint compared to countries with advanced dairying industries. The inherent flexibility of Australian dairying's farming systems to adapt to climatic conditions helps it to contain GHG emissions.

Benefits of the carbon LCA to Australian dairy producers

What are the benefits to dairy producers?

This study is a critical investment in the future of the Australian dairy industry. The insights and information the carbon LCA provides will help improve the industry's operations and reputation in the following ways:

- Meet growing community expectations of transparent environmental management.
- Help targeted efforts to reduce its carbon footprint over time.
- Improve productivity and lower operating costs through better resource management.
- Establish a benchmark to measure the effectiveness of efforts to reduce GHG emissions.
- Safeguard the reputation of Australian products sold globally.
- Guide future improvements to industry research, development and extension initiatives aimed at reducing GHG emissions.

What are the benefits to farmers specifically?

Farmers who participated in the study will receive a customised report summarising results from their farm in comparison to the Australian average. Farmers who did not participate in the study will be able to access a generic version of the farm results.

The carbon LCA identifies the specific farm inputs that are associated with high GHG emissions, providing farmers with an opportunity to manage these inputs in a way that could lower costs through reducing GHG emissions.

What other support is available to dairy producers?

Dairy Australia invests in a number of key programs and initiatives aimed at helping farmers and processors with GHG emission reduction strategies. These include:

- Smarter Energy Use on Australian Dairy Farms

This project provides farmers with information and technical support to improve farm energy efficiency including funding for 900 energy audits. Funds are provided by the Department of Climate Change and Energy Efficiency and the Department of Agriculture, Fisheries and Forestry.
- Research into strategies to reduce GHG emissions and increase productivity
- More information on practices to reduce GHG emissions, including the on-farm calculator, can be found in the Greenhouse Gas Emissions module of DairySAT at www.dairyingfortomorrow.com.au.
- Future Ready Dairy Systems offers practical and profitable practices for dairy farmers to deal with increased climate variability and carbon emissions policy. Visit <http://frds.dairyaustralia.com.au>.

Further information about the project

Why is this project being completed now?

Australian dairy producers are constantly looking for ways to improve their environmental and economic performance through the continuous improvement of on- and off-farm management practices. This project is one of many initiatives currently being undertaken to demonstrate industry commitment to environmental sustainability and to improve management practices.

Have other dairy-producing countries undertaken similar projects?

Other major dairy-producing countries have undertaken this type of analysis including Sweden, United States, Canada, New Zealand, Denmark, Ireland and the United Kingdom, including a separate study for Scotland. Australia has an average carbon footprint compared to countries with advanced dairying industries.

Why was the farmer levy used for this project?

It was cost-effective to have one independent agency oversee the LCA and Dairy Australia was best-placed to undertake that role. Dairy Australia leveraged levy funds to secure matching federal government funding for the project which will benefit all farmers and milk processing companies in equal measure.

Does the analysis account for carbon sequestration?

This study accounts for most of the inputs and outputs associated with producing milk. However, the study did not include any carbon sequestration associated with planting trees or soil carbon storage, which is consistent with international LCA standards. All international LCA studies completed by other dairy-producing countries followed this approach and did not include any carbon sequestration. Sequestration is not accounted for due to a lack of an agreed scientific and methodology to measure stored carbon.

Does this study have any implication for the carbon tax?

The federal government has exempted all agriculture from the carbon tax scheme. Therefore, this study will have no implication for farmers.

Processors already operate within the Australian Government's National Greenhouse Emissions Reporting Scheme (NGERS). This study has no bearing on the NGERS.

Need more information?

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