

The Connection of the Consumer to the Sustainability of Dairy. **Jeremy Hill, Pasture Summit, 2018**

After dispelling some of the myths and looking at the facts, dairying in New Zealand is world-leading in many aspects of sustainability not just as a source of dairy nutrition but as a source of nutrition overall.

So why is dairy struggling to connect with consumers and society especially in New Zealand?

In the main, people simply don't know the facts. In most developed countries consumers have almost endless choices of foods to select from and are also often confused or overwhelmed by inconsistent formal and informal dietary advice or information about the sustainability of food chains. They often lack context and are influenced by simplistic and often inaccurate messages or myths in media and social media.

Recognising the role of dairy in the future sustainability of the world the United Nations Food and Agricultural Organisation together with the International Dairy Federation co-signed the Dairy Declaration of Rotterdam In November 2016. The Dairy Declaration recognises:

- “The **critical contribution** the dairy sector makes to Sustainable Development
- The **essential role** of dairy products for balanced, nutritious and healthy diets;
- The **major contribution** of that dairy makes to countries' economies, income and employment, and livelihood support for smallholders and pastoralists
- The **key function** of the dairy sector in the management of terrestrial ecosystems and the need to address environmental degradation and climate change, and to support biodiversity”

The Dairy Declaration is supported by a factsheet produced by the FAO and monograph on the global impact of dairy. While more data is needed at local, national and global scales to determine the combined socioeconomic and ecological impact of food chains, it is almost certain that dairy will be an important component in sustainable food systems given its broad impact and magnitude of benefits.

Dairy is without doubt one of the most important agricultural and food sectors. Dairy is the number 1 agricultural commodity by value, and through 240 million jobs, including 150 million farms and smallholdings, directly supports the livelihoods of up to 1 billion people.

Dairy is key to enriching the nutritional credentials of diets the world over. Most national dietary guidelines recommend 1-3 servings of dairy a day which approximates to 500 ml of milk/person/day. Dairy protein is substantially higher in nutritional quality than plant-based proteins. Dairy can be the lowest cost source of dietary calcium, riboflavin and vitamin B12 and is significantly more hydrating than water and many other beverages.

Even as annual global milk production has exceeded 800 billion litres, global consumption of dairy is approximately 500 billion litres less than it should be based on national dietary

guidelines. Increasing dairy consumption to match dietary guidelines could save billions of dollars in national health budgets and help reduce the incidence of many non-communicable diseases including type 2 diabetes, hypertension, cardiovascular disease, osteoporosis, rickets, and stunting.

Dairy is responsible for 2.7% (4.0% including meat from dairy animals) of total anthropogenic greenhouse gas emissions (GHG) or on average 2.4 kg CO₂ equivalent per kg of milk produced, but as a consequence of significant differences in dairy farming practices GHG emissions vary between from less than 1.0 to well over over 8 kg CO₂ equivalent per kg of milk produced.

Milk production also uses 1 billion ha or 7% of the Earth's land, of which 85% is grassland (pastures and rangeland). Dairy cows consume 2.5 billion tons of dry matter or approximately 40% of the global livestock feed intake. Seventy-seven percent of this feed is human inedible pasture or straws.

Growing access to dairy to meet nutritional guidelines and enrich diets will need to be done through a balanced approach involving local dairy development programmes and international cross-border trade of dairy products. In this respect dairy farming in New Zealand is one of the most efficient in the world. This includes efficiency in the amount of greenhouse gases produced per litre of milk. This is often overlooked when discussing the contribution of dairy to New Zealand GHG inventory, where due to a range of New Zealand specific factors dairy contributes up to 25% of New Zealand emissions. However, New Zealand in total produces less than 0.2% of global emissions and with a population of less than five million produces enough dairy to meet the total requirements of over 100 million people or a very credible on average 10% of the total needs of the estimated one billion individuals who consume New Zealand origin dairy products every year.

While the dairy sector is not perfect and there is scope for significant improvements in the efficiency and effectiveness of all dairy chains, calls to limit dairy consumption on environmental or nutritional grounds do not look valid given the balance of current knowledge.

Given the enormous socioeconomic impact of dairy and the significant natural capital used to produce it, further work to assess the holistic impact of dairying is an important priority if we are to create sustainable food systems that will feed over nine billion people by 2050. More knowledge is needed to enable the combined (Livelihood impacts) + (Nutritional impacts) + (Ecological impacts) of the dairy sector to be established in local and global contexts and within different sustainable food systems, noting that there will not be a single 'one-size-fits-all' system that will work across all geographies. A range of New Zealand organisations are also collaborating to develop a model that will frame discussions relating to the sustainability of food systems and help profile the credentials of New Zealand's pasture based dairying.

Supporting Publications

Assessing the overall impact of the dairy sector. J Hill (2017). Achieving sustainable production of milk. Volume 2. Chapter 43. Ed N van Belzen.
<http://dx.doi.org/10.19103/AS.2016.0005.43> Burleigh Dodds Science Publishing Ltd.

Managing Climate Change and Producing Quality Nutrition. J Hill & C Mortland (2017). Climate Change The New Economy. 60-65.

Dairying – climate villain or hero? J Hill (2017). The New Zealand Land & Food Annual. No free lunch. Can New Zealand feed the world sustainably? 239-252. Ed B Burlingame & C Massey. Massey University Press.

The need for a glocal context on emissions. J Hill (2017). Pure Advantage.
pureadvantage.org/news/2017/07/18/need-glocal-context-emissions

www.dairydeclaration.org