

Sustainability and On-Farm Realities: Our Journey

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Take Home Messages

- ▶ Canadian consumers are placing increased importance on sustainable food production and the dairy industry meeting Canada's net zero by 2050 target.
- ▶ Canadian dairy farmers are leaders in sustainability and have one of the lowest carbon footprints in the world.
- ▶ Increased on-farm efficiencies can lead to greater sustainability.
- ▶ Sustainability must make economic sense to dairy farmers.
- ▶ Dairy Farmers of Canada's net zero strategy aims to mitigate the impacts of climate change, ensure a thriving dairy industry, respond to consumer expectations, and align with outside targets.

Sustainability is Important to Canadian Consumers

In 2021, Dairy Farmers of Canada (DFC) worked with a consultant to conduct an online representative survey of 1,051 Canadians who were 18 years of age or older. The research gauged the opinions among participants on dairy farming, impressions of farming practices, and importance of meeting environmental targets. One of the key findings demonstrated that roughly eight in 10 Canadians feel it is necessary or somewhat necessary for Canada's dairy farms to achieve Canada's net zero 2050 target. This is up from 71% the year prior. The output from these assessments was a priority matrix, shown in Figure 1, which identified the priority environmental variables of highest importance to both consumers and the industry.

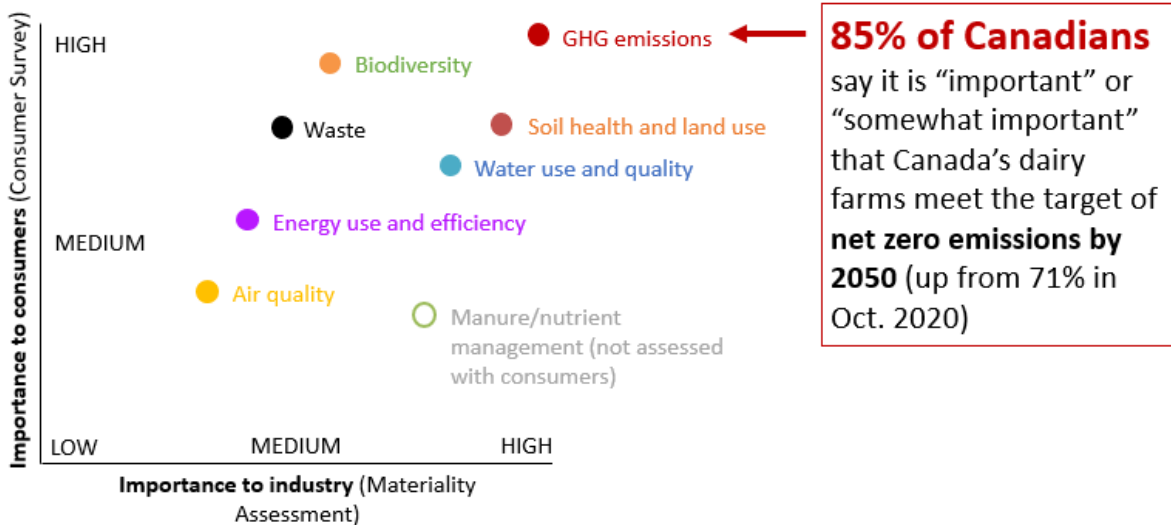


Figure 1. Priority Matrix of environmental issues developed by DFC, based on the September 2021 Consumer Survey and 2021 Materiality Assessment (Viresco Solutions. 2022. Dairy Farmers of Canada Environmental Sustainability Strategy Draft).

Environmental sustainability ranks higher with our consumer base than ever before, and as the market changes, with millennials and Generation Z becoming heads of their households, this trend will continue. It is evident it is happening across all sectors, with many businesses also announcing their sustainability strategies. DFC understands it is important to show everyone on the dairy value chain, from our partners to our consumers, that Canada’s dairy farmers share their concern for the environment. When decisions are being made at the grocery store, DFC wants consumers to continue reaching for dairy products made with 100% Canadian milk because consumers’ values are DFC’s values, too.

▪ **Setting a Net Zero by 2050 Target**

On February 2, 2022, DFC unveiled a goal to reach net-zero greenhouse gas (GHG) emissions from farm-level dairy production by the year 2050. This commitment is aligned with the Government of Canada’s goal of net-zero GHG emissions by 2050.

Our net zero strategy is a continuation of the ongoing efforts by the dairy industry related to environmental stewardship, as Canadian dairy farmers are already leaders in sustainability with a carbon footprint per litre of milk produced among the lowest in the world. This tangible and ambitious objective demonstrates that our farmers are sensitive to environmental concerns and want to continue to lead the way.

Viresco Solutions, a firm of Canada’s leading consultants in low carbon and sustainable agriculture, was contracted to assess pathways to address these areas. Dairy farmers from across Canada participated in focus groups to provide input on the variety of suggested pathways. Based on this input, extensive research, and consultation with experts, Viresco Solutions modelled a net zero by 2050 scenario with various best management practices (BMP, Figure 2). DFC’s Board of Directors voted to approve an objective to be net zero by 2050.

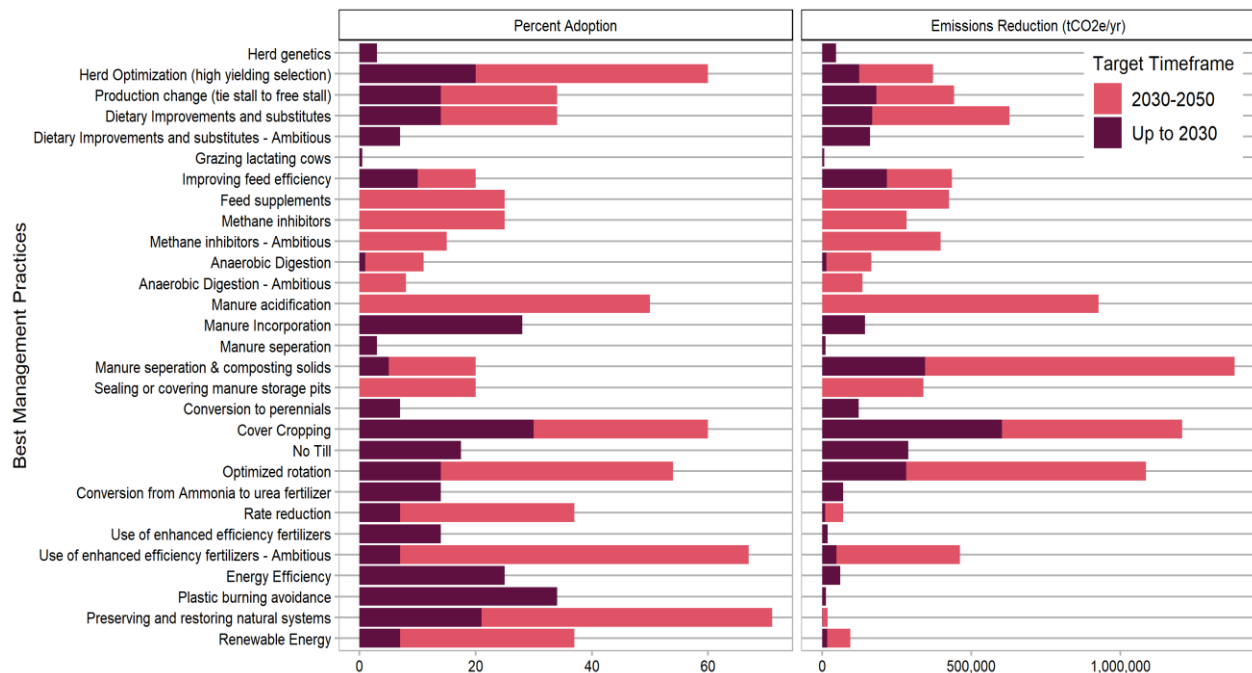


Figure 2. Increased Adoption and associated emissions reductions from different BMP for the Net Zero Targets (Viresco Solutions. 2022. Dairy Farmers of Canada Environmental Sustainability Strategy Draft).

▪ **DFC’s Net Zero Strategy and the Best Management Practices Guide**

DFC released its *Net Zero by 2050 Best Management Practices Guide to Mitigate Emissions on Dairy Farms* in March 2023 (Figure 3). The guide helps Canadian dairy farmers contribute to reaching net-zero GHG emissions by 2050. Working toward this target confirms that the dairy sector is part of our country’s solutions to tackle climate change and ensures that consumers can continue enjoying dairy products made with 100% Canadian milk for years to come.

DFC’s *Best Practices Guide* has been developed in consultation with experts to help farmers identify and implement BMP on their farm, including an overview of 30 on-farm practices supported by current research that outline opportunities for reducing emissions, increasing carbon sequestration, and improving overall environmental sustainability. In general, increased on-farm efficiencies contribute to overall sustainability.

The BMP are organized according to the four categories in DFC’s Life Cycle Assessment: Livestock Management, Feed Management, Manure Management, and Energy, Infrastructure and Transportation, along with a fifth category for Land Management, which includes practices aimed at carbon sequestration and biodiversity enhancement. Each BMP highlights the benefits associated with each practice, tips for implementation, and resources for additional information.



Figure 3. Best Management Practices Guide preview ([https://dairyfarmersofcanada.ca/sites/default/files/2023-07/DFC BMP%20Guide 2023-07-05.pdf](https://dairyfarmersofcanada.ca/sites/default/files/2023-07/DFC_BMP%20Guide_2023-07-05.pdf)).

The sustainability strategy may be supported by, but is separate from proAction®, DFC’s national quality assurance program, which is mandatory on all dairy farms. To achieve the sustainability objectives, farmers can voluntarily choose how to adopt sustainability practices based on the uniqueness of their farm. Together, we will collectively move the dial on sustainability at the national level.

Many of the practices identified in the BMP Guide that reduce emissions have co-benefits that contribute

to the health of local ecosystems, increase the use of renewable energy, and recycle more plastics. These are all important components of environmental sustainability and help increase farms' resilience to the effects of climate change. Our strategy addresses five priority areas, identified in Figure 4.



Figure 4. Identified priority areas in DFC's sustainability strategy (https://dairyfarmersofcanada.ca/sites/default/files/2023-03/DFC_Net-Zero%20Strategy_FINAL_WEB.pdf).

As part of our overall strategy, DFC also published *Dairy Farming Forward to 2050* in March 2023, which outlines the strategic approaches to help guide the pathway toward achieving net zero (Figure 5). DFC is committed to supporting farmers to advance sustainability and efficiency of their operations by developing strategic partnerships with leading environmental organizations; increasing research, innovation, and knowledge and technology transfer; ensuring farmers are supported by beneficial regulatory environments and markets; leveraging economic opportunities; and communicating on farmers' sustainability journeys. DFC will soon be completing our 2021 life cycle assessment, which includes a new biodiversity assessment and is supplemented by a coordinating carbon sequestration study. These initiatives will inform our strategy and collaboration with diverse stakeholders to support dairy farmers' continuous sustainability efforts.

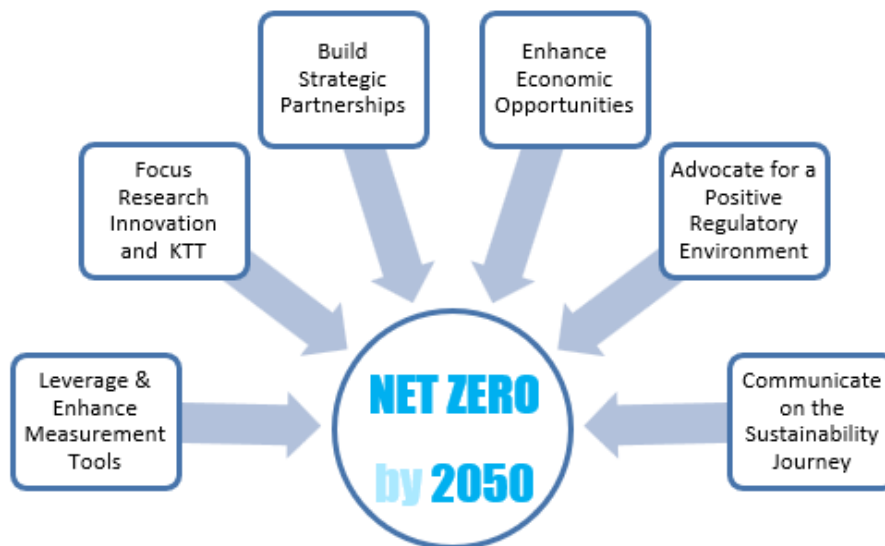


Figure 5. DFC's strategic approaches to support farmers, as well as streamline efforts across industry. (https://dairyfarmersofcanada.ca/sites/default/files/2023-03/DFC_Net-Zero%20Strategy_FINAL_WEB.pdf).

▪ Ongoing Initiatives

DFC continues to advance our sustainability strategy and find new ways to support farmers to adopt BMP. We understand that every dairy farm is unique, and that means different strategies will work for different operations, which will require a variety of tools to contribute to our sector's ongoing success.

DFC is working with GHG reduction specialists, federal and provincial governments, dairy stakeholders, and most importantly, farmers, on strategies that can be applied at the farm level to reduce and sequester emissions as we strive for continuous improvement (Figure 6).



Figure 6. DFC's partnerships to help drive BMP uptake. Organizations like Cleanfarms, Tree Canada, Ducks Unlimited Canada, and Alus can make it easier to recycle plastic, protect waterways, and promote biodiversity (<https://dairyfarmersofcanada.ca/en/sustainability/our-partners-sustainability>).

One of the main overarching challenges we face is ensuring the adoption of BMP make economic sense for farmers. Some of our initiatives targeting economic opportunities include an assessment of existing and missing financial incentives to support dairy farmers in adoption of specific BMP with low adoption rates, little return on investment and high GHG mitigation potential. The final report is complete and will inform DFC's advocacy efforts to help increase relevant financial incentives for Canadian dairy farmers.

We are also developing a handout for farmers that outlines opportunities, challenges and considerations related to carbon offsets and insets. We understand financial incentives must go beyond initial implementation costs and account for potential impact on yield, maintenance costs and more to make sure farmers are recognized for doing their part.

To ensure progress is measured, DFC will be updating the net-zero modelling with new data from the 2021 life cycle assessment once available. Additionally, we are developing an on-farm GHG calculator to support farmers with their sustainability efforts and continuous improvement plans. A benchmarking project is also underway, which will benchmark proAction to other sustainability programs and create a framework for reporting against future programs.

We continue to develop strategic partnerships to support dairy farmers with adoption of BMP. Through our partnership with Farm Credit Canada, dairy farmers who are Farm Credit Canada customers and meet sustainability requirements can access an incentive payment of up to \$2,000 through the Sustainability Incentive Program. DFC also supported Lactanet and Semex who were recognized in October 2023 during the International Dairy Federation World Dairy Summit for developing Canada's Methane Efficiency genetic evaluation. This is the world's first official genetic evaluation that helps dairy farmers genetically select animals that will contribute to reduced methane emissions from dairy cattle, without impacting production levels.

Knowledge translation and transfer are also critical parts of our strategy and support the research continuum for sector growth. Ensuring sufficient and effective on-farm knowledge transfer to encourage farmers to implement BMP that make sense for their operations and demonstrate the research behind the on-farm impacts is at the core of how we implement our sustainability initiatives. DFC has a two-pronged approach to knowledge translation and transfer: 1) communicating the results of individual research projects and 2) communicating the overall results from a broader body of research to support science-based BMP adoption.

DFC has a National Dairy Research Strategy and one of the three areas of focus is dairy farm sustainability. DFC reports on dairy sustainability research investments, implements effective means of translating and transferring results to support dairy farmers' efforts to continuously improve their practices, and communicates findings on the role of dairy products in a healthy and sustainable Canadian diet.

■ Where We are Headed

While excellent progress has been made and continues to be made by dairy farmers, many challenges exist that escalate the financial pressures dairy farmers face and limit their ability to tackle evolving economic, social, and environmental demands.

These challenges include but are not limited to high inflation, rising costs of inputs and production, market access concessions, cost, shortage of labour, evolving consumer expectations, growing anti-livestock rhetoric, supply chain disruptions, and price of land — all while dairy farmers are often on the frontlines of extreme weather event impacts as a result of climate change.

One of the lessons we've learned while developing our net zero strategy is that we need to support dairy farmers through a comprehensive approach that addresses farms' socio-economic realities. We continue to advocate for the economic, environmental, and social components of sustainability throughout government consultations, strategic partnerships, and most recently at COP28. DFC sent its inaugural delegation to COP, where Korb Whale, a dairy farmer from Alma, Ontario, was a panelist at the Canadian Federation of Agriculture's event on industry-led agriculture sustainability initiatives. Korb spoke about the role of dairy farmers' in helping mitigate the impacts of climate change, sustainability policies supporting a thriving dairy sector, responding to consumer demands while advocating dairy's place in nutrient dense and climate smart diets, and the importance of DFC's net zero strategy aligning with outside targets while streamlining efforts across the industry (Figure 7).



Figure 7. Four key aims of DFC's net zero strategy.

DFC understands intersectional support is needed to allow dairy farmers to continue to fulfil their role as sustainability leaders while also ensuring on-farm profitability, maintaining an innovative and resilient agriculture industry, and contributing to the Government of Canada's efforts to meet their Paris Agreement commitments including achieving our shared net-zero emissions by 2050 target.

▪ Resources

Dairy Farmers of Canada. 2023. *Net Zero by 2050 Best Management Practices Guide to Mitigate Emissions on Dairy Farms*. https://dairyfarmersofcanada.ca/sites/default/files/2023-07/DFC_BMP%20Guide_2023-07-05.pdf

Dairy Farmers of Canada. 2023. *Dairy Farming Forward to 2050*. https://dairyfarmersofcanada.ca/sites/default/files/2023-03/DFC_Net-Zero%20Strategy_FINAL_WEB.pdf

Dairy Farmers of Canada. <https://dairyfarmersofcanada.ca/en/sustainability/our-partners-sustainability>

Viresco Solutions. 2022. *Dairy Farmers of Canada Environmental Sustainability Strategy Draft*.



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