

Supplying Canadian Demand: Economic Sustainability and Supply Management

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■ Take Home Messages

- Economic sustainability is not just about costs and profit; it is also about the rules of the marketplace.
- Dairy supply management is a set of rules and organizations that shape the market for dairy in Canada for sustainability.
- The mandate of the Canadian Dairy Commission sets the objectives of the system to provide fair returns to efficient producers and ensure stable supply to consumers.
- The cost of production survey, milk component pricing method, and responsiveness to crisis are all key elements of the sustainability of supply management.

■ Introduction

I was invited to the Western Canadian Dairy Seminar as part of the panel on sustainability in Canadian dairy. While my fellow panelists from Ducks Unlimited Canada and Dairy Farmers of Canada will focus on environmental and social elements of sustainability in dairy, my task is focus on economic sustainability.

When we think about the idea of economic sustainability in dairy, we often talk about farm accounting, farm management, and farmer livelihood. From that point of view, an economically sustainable dairy farm is one that is profitable over time. But economic sustainability is not solely about the financial health of individual dairy farms; the financial health of a farm depends not only on the choices made by farmer owners managing their operations, but also on the rules that set up the marketplace.

In this paper I will look at Canada's supply management system as a set of economic rules that support economic sustainability in the broader Canadian dairy market. These rules are key to creating a marketplace that prioritizes stable supply of local milk to the country and ensures that efficient dairy farmers in Canada can make a living. By remunerating farmers fairly and ensuring the market demand is always served, the supply management system sets out the parameters for an economically sustainable dairy marketplace.

First, we turn to a brief discussion of international research on sustainability in dairy. Then we look more closely at the idea of economic sustainability and why institutions and rules matter. Finally, I will introduce the key economic rules of supply management and the organization that enact these rules. The paper will close with a brief review of some of the key challenges for economic sustainability of dairy in Canada.

■ What does Sustainability Mean for Dairy?

Arvidsson Segerkvist et al. (2020) conducted a literature review on overall sustainability in dairy farming. The authors see sustainability as having three interconnected elements: environmental, social, and economic. All three elements need to be considered together to get a full picture of sustainability. The authors note that there are surprisingly few studies regarding dairy that cover the three dimensions of

sustainability simultaneously; they found 35 studies in their final review and only 11 of those studies dealt with all three elements of sustainability.

Of note, only two of the studies reviewed by the authors dealt with dairy in Canada! The studies focused on countries in Europe, North America, and Oceania but very little on Canada. In this context, this panel at the Western Canadian Dairy Seminar is well placed to pick up on discussion and perhaps inspire more engagement on this important subject.

As you can see in Figure 1 extracted from the article, most of the study of sustainability in dairy is focused on the social element. However, the social, economic, and environmental factors all tend to be closely linked. For example, farmers decisions and labour are described as social but clearly have economic implications for profit and optimization of farm operations. Likewise, said decisions have an impact on environmental factors such as energy use and soil health.

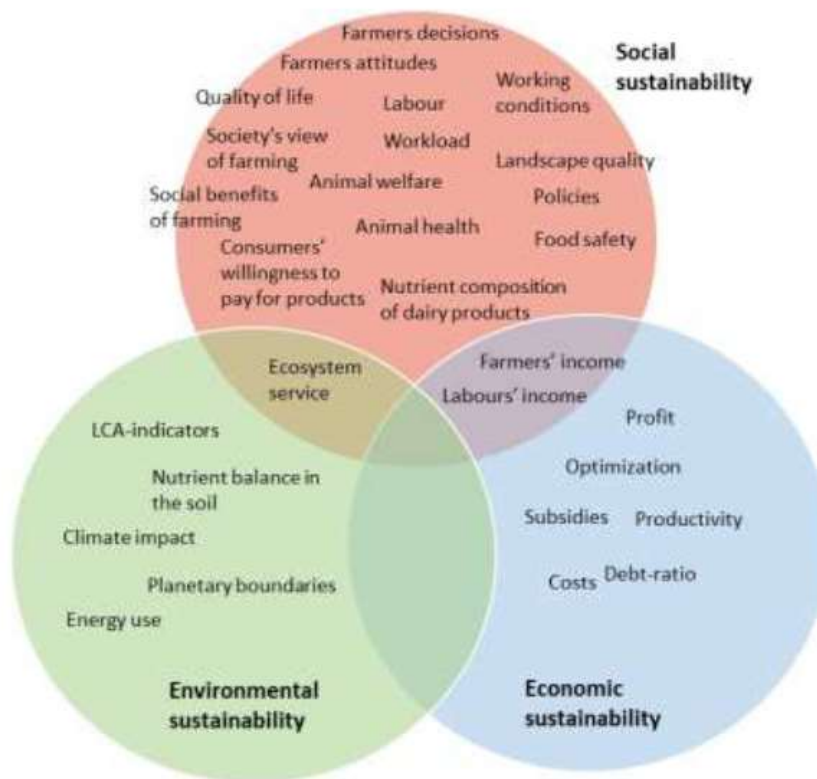


Figure 1. Categorized keywords based on data extracted from papers covering, or mentioning, different aspects of sustainability in dairy farming (Arvidsson Segerkvist et al., 2020).

This paper will focus on economic sustainability and the different ways we can understand the concept. More specifically, in the next section we will introduce a broad understanding of economic sustainability that recognizes the importance of the institutions that design how a given market operates. Even though the focus is on economic rules, the concept applies equally to related questions of environmental and social sustainability.

▪ **What does Economic Sustainability Mean for Dairy?**

While there is some literature on farm profitability and sustainability, there is next to no discussion of the economic institutions that underpin the dairy economy. Economic institutions are another way of saying the laws, rules, and regulations that shape the dairy market in any given country (North 1990). In this paper I refer to institutions and rules interchangeably.

Arvidsson Segerkvist et al.'s (2020) review shows that economic sustainability in dairy is least well defined. The literature focuses narrowly on producer labour and farm profitability. For example, an economically sustainable dairy farm is one where farm income is sufficient to make a profit over time, accounting for debt levels.

Of course, a farm's ability to cover its costs and provide a living are key economic factors in ensuring sustainability over time. However, this view of economic sustainability is narrow. Not only are farms important but the full supply chain is key to ensuring healthy economic relationships between farmers, processors, retail, food service, and end consumers.

To put it differently, economically healthy farms not only have to manage on-farm costs, but they also depend on predictable and stable markets for their product. As Borawski et al. (2020) put it in the context of the European Union, "the need to stabilize, sustain and develop a competitive market is essential." But the way that countries set up the rules that govern a competitive market is not always the same. Each major dairy producing country has quite different laws and regulations for milk payment and farmer income stabilization, and for governing relationships between different links in the supply chains.

While the dairy regulatory structure is different in each country, the market logistics are always similar for dairy. There is a maxim that's often tossed around that 'you can't just turn cows on and off like taps.' Indeed, in many countries, short term fluctuations in supply and demand can cause wide swings in revenues received by dairy farmers.

Arvidsson Segerkvist et al. (2020) do not specifically advocate a supply-chain perspective of economic sustainability. However, they do specifically note that none of the existing literature they encountered on economic sustainability in dairy farming include formal analysis of institutions or rules that govern the marketplace for dairy. This shortcoming is significant. Economic institutions give rise to the marketplace dynamic in which a dairy farm must operate.

In Canada, the supply management system makes the context of economic sustainability unique precisely because the economic institutions are different than most dairy producing countries. In the next section, we will look at the economics and some of the organizations that help Canada's dairy market to operate.

▪ **Supply Management and Economic Sustainability**

Supply management was introduced in 1966 to help stabilize dairy markets. As Statistics Canada once expressed,

"...supply management regulates domestic production and imports to ensure that the supply of that commodity matches demand, and that the prices paid to farmers are steady over time, cover their production costs, and leave them with a pre-determined, predictable income. In return, processors and consumers are guaranteed a consistent supply of a top-quality commodity at a stable price" (Scullion 2006).

To achieve this stability in the Canadian market, there are three main economic pillars to supply management. These three pillars form the key parameters of the market in Canada:

1. **Managed Supply**
 - Canadian milk production is based on a measure of total requirements of butterfat (BF) in Canada minus markets dedicated to dairy imports under trade agreement (in BF equivalent). Requirements are calculated monthly, and producers operate on a system of seasonal production credits to stabilize supply with demand. The Canadian Dairy Commission provides stakeholders with forecasts to assist in planning for anticipated future demand.

2. Managed Prices

- ▶ Provincial Milk Marketing Boards (PMMB) manage annual price changes through an established formula that accounts for the Cost of Production (COP) and the Consumer Price Index (CPI) measuring overall inflation in the economy.

3. Controlled Imports

- ▶ Canada maintains tariffs on most imported dairy products to reserve for the market for domestic actors.
- ▶ Global Affairs Canada manages the Government of Canada's trade commitments regarding dairy product imports.

The effect of dairy supply management is to ensure that the vast majority of cow's milk is produced locally on Canadian dairy farms, that dairy products are processed in Canada, and that Canadian consumers have a stable domestic supply of dairy product. At the federal level one of the key institutions is the Canadian Dairy Commission Act.

Canadian Dairy Commission

The CDC's mandate is two-fold and directly related to creating an economically sustainable Canadian dairy sector. The CDC's mandate is:

- ▶ Fair Compensation
 - Provide efficient producers of milk and cream with the opportunity to obtain a fair return for their labour and investment.
- ▶ Efficient Supply
 - Provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality.

Together, fair compensation for producers and efficient supply to consumers represent key parameters to ensure a sustainable market for dairy products in Canada. By ensuring that efficient producers are compensated for their out-of-pocket costs as well for their labour and investment, farmer livelihoods are prioritized. By ensuring a continuous supply of high-quality dairy products (and the milk needed for them), consumer demand is also prioritized.

While the mandate is expansive, it is important to note that the regulated portion of the market is the price of milk components sold from PMMB to individual processing companies. The relationship between processing companies and their clients is not subject to the regulations specific to supply management.

The CDC operates as part of the federal component of the supply management administration alongside PMMB and governments who make up the provincial components.

The following websites provide more information on the CDC:

- ▶ [Mission, Mandate and Values | Canadian Dairy Commission \(cdc-ccl.ca\)](https://www.cdc-ccl.ca/mission-mandate-values)
- ▶ [The Canadian Dairy Commission: A 40-Year Retrospective](https://www.cdc-ccl.ca/the-canadian-dairy-commission-a-40-year-retrospective)
- ▶ [2022/2023 Annual Report \(cdc-ccl.ca\)](https://www.cdc-ccl.ca/2022-2023-annual-report)

Cost of Production

The CDC's COP survey measures the national weighted average cost of producing a hectolitre of milk on the farm in Canada. The 2023 sample, which will be processed this spring, covers 231 farms of various

sizes across the country. The COP is an important part of the CDC's mandate as it seeks to provide a reference point for the cost of producing milk on Canadian farms, including cash costs, labour costs, and capital costs.

As mentioned at the beginning of the paper, an economically sustainable farm is not only one that can cover its accounting costs but must also provide a livelihood for farmers. To this point, the COP survey includes producer and family labour hours, as well as the opportunity cost of a farm's investment costs. In other words, the COP assumes that a farmer should get paid and not just cover cash outlays. The measurement of the COP in Canada therefore has economic sustainability in mind for dairy producers in the country.

Further information on the mechanics of the CDC's COP study and the latest results can be found here:

- ▶ [Process for the Annual Cost of Production Survey and Pricing Milk at the Farm Level | Canadian Dairy Commission \(cdc-ccl.ca\)](#)
- ▶ [Cost of production survey | Canadian Dairy Commission \(cdc-ccl.ca\)](#)

Milk Component Pricing

The COP, however, is not the only input in determining the price of milk components. Rather, annual changes to the price of milk components paid by dairy processors to dairy producers under supply management are established through a transparent and predictable formula:

50% annual change in indexed COP vs. 50% annual change in CPI

Having a predictable formula assists actors all along the supply chain in planning their business operations for the coming year. Given that most prices in Canada are in effect for an entire year, this also lends itself to stabilizing the revenues received by producers.

While the formula is a rule intended to create stability, sometimes there are extenuating factors that require a temporary deviation from the formula. When such events pop up, there are additional mechanisms with known parameters to respond to sudden market changes and temporarily adjust prices accordingly. For example, in 2022 the on-farm cost of animal feed, fuel, and fertilizer suddenly spiked during the period of wide inflation. In this case, industry stakeholders invoked the exceptional circumstances mechanism to request a mid-year price review. The result was a pricing advance that helped to smooth price increases out over the year rather than facing one larger increase.

For more information on

- ▶ Milk classification:
 - [Harmonized milk classification system | Canadian Dairy Commission \(cdc-ccl.ca\)](#)
- ▶ Milk class pricing
 - [How is the price of milk set in Canada? | Canadian Dairy Commission \(cdc-ccl.ca\)](#)
 - [Canadian milk class prices \(February 1, 2023\) - agriculture.canada.ca](#)

Canadian Milk Supply Management Committee and Milk Pooling

A key component of the supply management system, one that's not talked about often, is the lasting cooperation between provinces and regions to plan milk production, coordinate activities, and engage with stakeholders. The Canadian Milk Supply Management Committee (CMSMC) and the P10 milk pool are federal-provincial bodies that serve exactly that purpose. Made up of the ten provinces, the CDC on behalf of the federal government, and stakeholder observers, this committee is an entity that enables communication regarding the rules and operations of dairy supply management.

The reason for mentioning this entity is to make clear that carrying out the economic rules of supply management require constant communication between actors along the supply chain. Whether among PMMB, between producers and the processing sector, or among broader stakeholder groups, the CMSMC provides a key forum to ensure smooth operations of the sector.

Some recent examples of successes at the CMSMC and the P10 milk pool are squarely focused on economic sustainability, although we seldom label it as such.

During the COVID-19 crisis in early 2020, a sudden change in the market occurred. People were suddenly cooking at home, meals out almost halted, and severe supply chain and logistical issues appeared due to increased public health protocols. The CMSMC played a valuable role in gathering and sharing market information to help anticipate changes in overall demand for dairy products in Canada. Because of the cooperation and transparent discussion between stakeholders regarding challenges faced, actors along the supply chain were able to adapt their behaviour in a time of uncertainty and the Canadian market was served without interruption.

In November and December 2022, flooding hit the Fraser Valley in British Columbia, severely affecting dairy farms and milk collection operations. Through the CMSMC and regional revenue pooling agreements, dairy producers from across the country were able to work together to provide relief to affected farms, stabilizing their incomes during the emergency. Similar incidents were experienced in other provinces over the last years, with offers of assistance at the ready. Such collective action provides a layer of added security to dairy farmers who are increasingly affected by severe weather.

For more information on the CMSMC and milk pooling agreements:

- [The Canadian Milk Supply Management Committee | Canadian Dairy Commission \(cdc-ccl.ca\)](https://www.cdc-ccl.ca/en/our-work/the-canadian-milk-supply-management-committee)
- [Milk pooling agreements | Canadian Dairy Commission \(cdc-ccl.ca\)](https://www.cdc-ccl.ca/en/our-work/milk-pooling-agreements)

▪ **Challenges for Economic Sustainability**

All of the above are meant to provide a glimpse into on how the rules of supply management operate and how they contribute to an economic sustainability market in Canadian dairy. But of course, like anything, there are always challenges to sustainability's perennialism. Here we stop to take a look at some key issues that challenge sustainability in the structure of the dairy market:

- Structural surplus of skim milk relative to butterfat.
- Stakeholder initiatives addressing processor-retailer economic relationship (i.e., retail code of conduct).
- Generational change in dairy farming. This includes inter and intra provincial variation in farm management structures, farm debt, purchased feed cost volatility, and labour scarcity.
- Volatility in demand, changing consumer preferences, and tight consumer budgets.

Each of these issues have been raised by the CMSMC membership and are the subject of discussion in various industry fora. With continued cooperation between stakeholders in Canada, including continued coordination at the CMSMC, the rules and organizations of supply management will continue to pursue economic sustainability in the sector.

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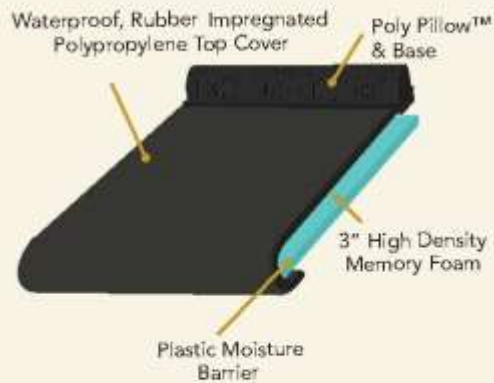
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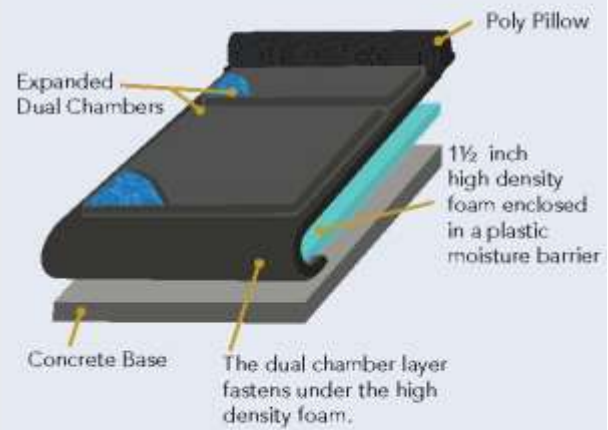
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