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Strategic Plan for the Northern Dairy Processing Project

Final Report

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Strategic Plan for the Northern Ontario Dairy Processing Sector

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East Nipissing/Parry Sound Dairy Producer Committee

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Temiskaming Dairy Producer Committee

Cochrane Dairy Producer Committee

Rainy River Dairy Producer Committee

Algoma Dairy Producer Committee

Manitoulin West—Sudbury Dairy Producer Committee

Thunder Bay Dairy Producer Committee

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Northern Ontario Farm Innovation Alliance

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Executive Summary

In 2016, Northern Ontario Farm Innovation Alliance (NOFIA) launched an initiative to develop a strategic plan towards expanding dairy processing capabilities in Northern Ontario. The bovine dairy industry is known to account for about one-third of all farm cash receipts. Since 2006, total number of dairy production units in the region decreased by 26%, and while the total provincial production increased by about 11%, the total volume of milk produced in the region decreased by close to 7%. At the same time, larger dairy processors acquired smaller ones and consolidated processing assets. Apparent decreases in the total volume converted to value-added products in the region have resulted in increasing volumes of raw milk being transported across the province from the Northwest to Northeast and from the Northeast to Southern Ontario or out of province (MB and QC) for processing. The trend toward plant consolidations may result in the larger processors (i.e., Saputo, Parmalat, Agropur, and Gay Lea) investing in Southern Ontario or in neighbouring provinces.

Considering the current dairy processing landscape, NOFIA identified the need for a Strategic Plan to evaluate opportunities that exist, and to outline the path to success and sustainment in Northern Dairy. Specifically, the Strategic Plan is expected to identify capacity building and new market investment opportunities, with the purpose of ensuring job preservation and creation in Northern Ontario, at the same time identifying sustainability and market growth potential for the dairy sector (not limited to bovine). From January to September 2017, ODScore® worked with a NOFIA steering committee from Dairy Farmers of Ontario (DFO), Ministry of Northern Development and Mines, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), FedNor, and the Ontario Federation of Agriculture (OFA) to determine the most effective ways to support the growth and sustainment of dairy in Ontario's North.

Having completed the research and analysis, recommended strategies have been prepared in the following three main areas, with the items under them ordered into the areas that are of highest priority and likely to provide the greatest yield in the short- and mid-term.

1. Support for existing and new processors
    1. Leverage and customize expertise and resources
    2. Provide support for exploitation of funding options
    3. Coordinate search for potential areas of collaboration
    4. Explore feasibility of co-operative dairy processing space
    5. Support clarifications for artisanal processors
    6. Support research into collective action re: whey waste and waste water
    7. Support research into market for alternative milk types
2. Development of market access
    1. Support research into creation of a Northern Dairy brand or "bundle"
    2. Create a pilot project, including a paid position to market and promote the Northern bundle to test markets
    3. Encourage introduction of new products
    4. Explore Indigenous communities as possible markets
3. Coordinate Distribution
    1. Sponsor an asset mapping of food processors for the Highway 11 corridor to complement existing initiatives

Acknowledgements

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Blue Unicorn Innovation
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Northern Policy Institute
Greenbelt Fund
Ontario Federation of Agriculture
Dairy Farmers of Ontario
Thunder Bay Food Strategy Group
Cloverbelt Local Food Co-op
Collège Boréal
La Cité College
Ontario Student Nutrition Services
University of Guelph, School of Environmental Design and Rural Improvement
The Corporation of the Municipality of Sioux Lookout
Nishnawbe Aski Nation Food Strategy
Eko Nomos
Sobeys
Loblaw Companies
Whalefeather
Riversedge Developments
Ontario Dairy Goat Co-operative
FoodShare
Food Secure Canada
FreshSpoke
Ontario's Sunset Country Travel Association

How to Read This Report

This research report is split into 3 sections:

Recommended Strategies

We have written this report with the recommended strategies coming first. These are areas where we feel there are significant opportunities to make a positive impact on developing sustainable dairy businesses in the North, which will lead to increased capacity and jobs. Our recommendations create a menu of options for future initiatives.

SWOT Analysis and Research

A significant amount of research has gone into understanding the current situation and future possibilities for the production and processing of dairy in Ontario's North. In the research section of this report we have summarized:

- Processing assets and capacity in the North
- General Considerations for dairy production in Northern Ontario
- Demographics and consumer research
- Information from Additional Experts on:
    - Retail distribution
    - Working with Indigenous Communities
    - Food Tourism
- Other Northern products and Northern markets

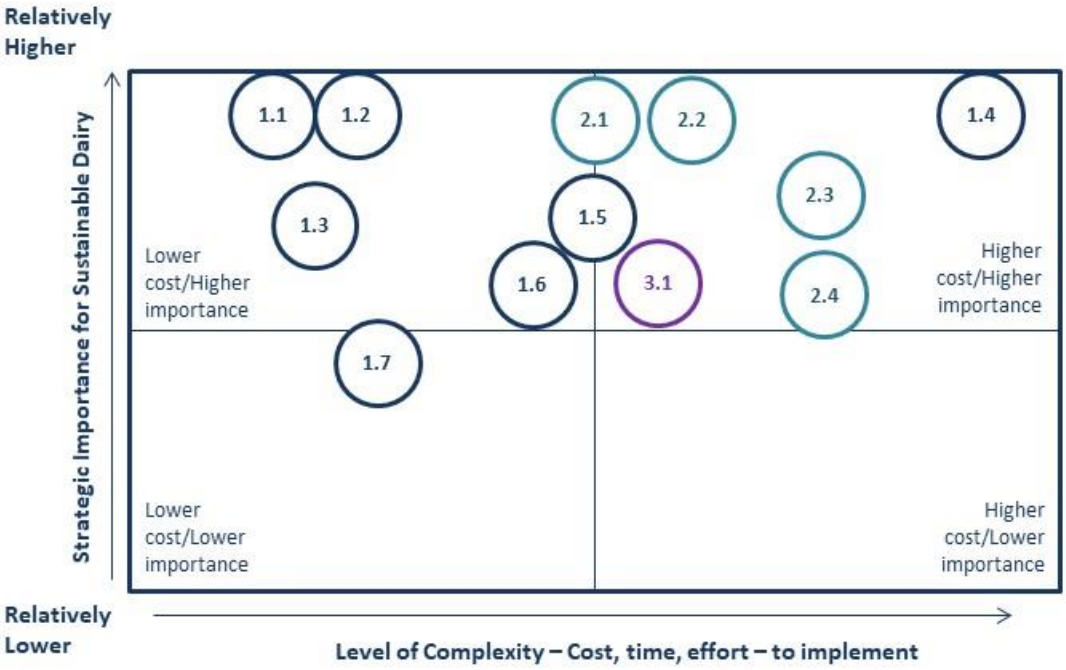
Full copies of the reports that were commissioned as part of this study and strategic planning process are available from NOFIA. These are:

1. Outlook for Dairy Processing in Northern Ontario by Dr. Sermet Yalcinkaya of Apt Solvers
2. NOFIA Market Opportunity Analysis and Research Report by Nourish Food Marketing
3. NOFIA Innovation Insights by Dana McCauley of Blue Unicorn Innovation

The Northern Dairy Ecosystem

The research that has gone into this report includes many hours of meetings with a variety of individuals, groups, and institutions. These have been organized into groups based on the role they play in the Northern dairy ecosystem, and a short description of the role of each group or initiative is provided. Contact information for individuals in these groups is available from NOFIA.

Recommended Strategies



1. Support for existing processors and new processors

1.1 Leverage and customize existing expertise and resources for entrepreneurs
1.2 Provide support to ensure dairy processors and would-be dairy processors can exploit all available funding and support options
1.3 Coordinate gatherings to find all potential areas of collaboration
1.4 Explore the feasibility of a co-operative dairy processing space in Northern Ontario
1.5 Support clarification of definitions and milk delivery for artisanal processors
1.6 Support research toward collective action to deal with whey waste and waste water
1.7 Support research into the market potential for production and processing of alternative milk types in Northern Ontario

2. Create new market access for Northern Dairy products

2.1 Support further research to create a Northern Dairy brand and Northern Dairy "bundle"
2.2 Create a pilot project, including a paid position to market and promote the Northern bundle to test markets
2.3 Encourage the introduction of innovative new products
2.4 Explore Indigenous communities as possible markets

3. Coordinate Distribution

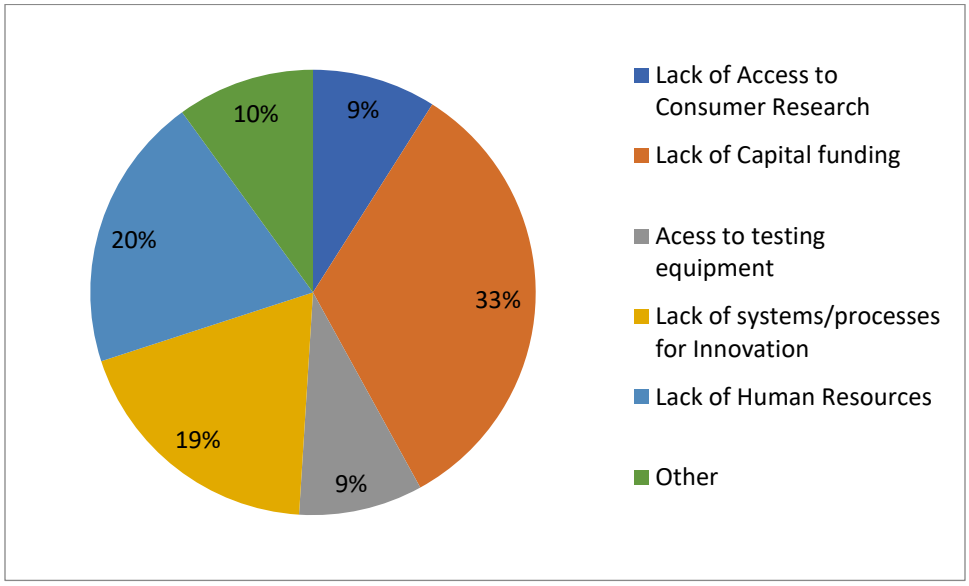
3.1 Sponsor an asset mapping of food processors for the Highway 11 corridor to complement existing initiatives

1. Support for existing processors and new processors

In the pages that follow, the summary of research into current dairy processors' businesses indicates a universal truth: all want to grow. Naturally, growth means different things to different people, but the overall theme holds. One of the most important items to attend to thus is to ensure those who have a foothold in the market keep and develop it. Due to the nature of dairy processing - also covered exhaustively in the report - the health of existing processors is crucial for the development of new ones.

All food companies are challenged with introducing innovation. Food trends and innovation expert Dana McCauley who was one of the experts who provided research for this Strategic Plan quotes the NSF

International Survey of Canadian Food Companies 2017 findings that show areas that impede food companies from innovating.



NSF International - Survey of Canadian Food Companies, 2017

Recommended strategies for supporting Northern dairy processors and producers are presented with these areas in mind.

A note about Dairy Producers: further on in this Plan we explore the numbers and amounts of milk being processed in the North. While we are not suggesting specific action items for attracting new dairy farmers to the North at this time, we believe that encouraging and supporting those who are willing and well located to consider on-farm processing, and showing producers in general that dairy in the North can thrive by stimulating market demand will help to keep the existing group stable and in time may attract more. It is notable that the numbers of goat dairies are increasing at this time.

1.1 Leverage and customize existing expertise and resources for entrepreneurs

It is recommended that NOFIA work with the Regional Innovation Centres across Ontario to provide meaningful access to funding and business advisement for existing and new dairy processors. Few of the dairy processors surveyed have engaged with the existing supportive infrastructure for entrepreneurs. Regional Innovations Centres (RICs) are resource centres set up across the province to support entrepreneurs with high-potential ideas or who have businesses that are ready to scale. RICs get their funding largely from the Ontario Centres for Excellence (OCE), and while there is an on-going review of the RICs and their funding through 2017 and into 2018, these centres will continue to offer a variety of programming and access to funding opportunities. Entrepreneurs can sign up with one or multiple RICs across the province; all of the RICs offer similar basic business education, but beyond that, offerings can differ as does the approach to mentorship and the specialization of the experts provided.

It is our opinion that it will be important to invest time and resources to get mentors and administrators educated on the unique needs of dairy in the Northern RICs. The focus of the Northern RICs have been general entrepreneurship with some focus on agriculture. Specific themes have also been mining and

manufacturing. There are mentors that are specifically pointed at providing advisement on agri-food, at Innovation Guelph (which is one of the Regional Innovation Centres), and a private not-for-profit incubator called Bioenterprise, also located in Guelph. Food Starter, formerly the Toronto Food Incubator, also has food production-specific mentors, although there is no dairy processing space or specific dairy experience there at this time; similarly, the Ontario Agri-Food Venture Centre (OAFVC) in Cobourg retains mentors with expertise in food businesses as well as production facilities, but do not have specific dairy facilities. We have identified one mentor with significant dairy experience who provides advisement in private practice.

Building a group of experienced business mentors who have expertise in effectively mentoring new and existing businesses and also deep expertise in dairy remains limited, however the expertise and experience that exists can be transferred to the Northern RICs through structured collaboration.

Beyond the RICs, we noted in the course of the project that many of the entrepreneurs were hungry to have access to expertise, particularly around processing strategies and efficiencies, approaches to the market, validation for new ideas, and also issues related to staffing and human resources - for example, employment branding/attracting and keeping key talent - which is a pervasive organizational issue in the North, beyond dairy processing.

Providing access to experts - either sponsored visits to individual businesses or through collaborative teleconferences or interactive webinars - would be highly valued by Northern processors. Most processors would be willing to pay a reasonable fee for these opportunities.

People considering becoming dairy processors, particularly on-farm processors, are also looking for help and support as they plan and consider their approach to starting up. Agri-food Management Institute (AMI) offers a “Value Added Farm Products” one-day course in partnership with Georgian College. At today it is a generic program that would offer some value to dairy processors, but it is generally felt by those who have considered taking it that it would be more beneficial to have to have this introductory program tailored to the needs of on-farm dairy start-ups. It is possible Dairy Farmers of Ontario would partner to have this program offered in a central location. Dairy Farmers of Ontario is also constructing an introductory program for those who want to get into the dairy processing business. From time to time, Innovation Guelph offers a program for those wishing to start a food business. It is recommended that NOFIA keep a list of interested parties and ensure they have access to these sessions; if a critical mass of people are interested in becoming new processors (six or more), it would be feasible to run any of these programs in the North.

1.2 Provide support to ensure dairy processors and would-be dairy processors can exploit all available funding and support options

In part, becoming involved with the Regional Innovation Centres enables dairy entrepreneurs to stay abreast of funding opportunities that are made available through the RICs or that are promoted to and through the RICs. Funding of various sources - grants for innovative projects, low-interest loans and tax credits - are available to entrepreneurs across Canada. There are often programs with the theme of assisting groups that our group of entrepreneurs falls into - Northern businesses and women-led businesses specifically. The Government of Canada provides a service called “Concierge.” Concierge is a Government of Canada program that offers free, customized advice to small- and medium-sized enterprises (SMEs), connecting them to funding and support programs that will help them grow their

business through innovation. Innovation Advisors with extensive technical and entrepreneurial backgrounds are located in communities across the country. While the Concierge service will highlight existing funding programs to an entrepreneur and make an introduction to people within specific funding programs, they do not provide assistance with applications the way a RIC mentor might.

There are also programs through the Canadian Dairy Commission - namely the Dairy Innovation Program (DIP) - that provides access to lower cost raw milk for innovative new products, and the Matching Investment Fund (MIF) program that provides matching funds for processors who are doing new product testing.

Business funding opportunities are an ever-changing landscape, and the process for applying for funding is time consuming with no guarantee of success. As such, few of the existing dairy processors have been able to prioritize spending time on trying to get access to funds from government programs. NOFIA might consider hosting or sponsoring a resource that works with existing and would-be dairy processors to apply for and manage the reporting requirements of funding.

Beyond those named above, existing funding possibilities for entrepreneurs include:

- FedNor
- Northern Ontario Heritage Fund Corporation (NOHFC)
- Dairy Farmers of Ontario Dairy Business and Product Development Program
- Greenbelt Fund
- Agriculture and Agri-Food Canada Dairy Farm Investment Program
- Indian Agriculture Program of Ontario (IAPO) Business, Farm and Agri-business Financing
- Waubetek Business Development Corporation
- Rural Agri-Innovation Network (RAIN)
- Innovation Initiatives Ontario North (IION)
- Paro Centre for Women's Enterprise
- North Claybelt Community Futures Development Corporation (CFDC)
- Rural Economic Development Program (RED)
- Natural Sciences and Engineering Research Council of Canada (NSERC)

1.3 Coordinate gatherings to find all potential areas of collaboration

The great majority of existing dairy processors are willing to collaborate with other dairy processors. NOFIA could play a vital role in facilitating this collaboration, and there are several potential benefits to this. As above, collaborative educational opportunities for processors on key topics is one opportunity. Some processors also suggested that they would be willing to help train and educate others on crafts like cheese-making in other facilities. It is possible that processors can work together to determine an overall strategy for attracting and retaining key staff, that could then be tailored to each operation.

Northern Dairy Processors could also band together to increase their brand presence, perhaps most directly by gaining access to the Foodland Ontario logo. Individual organizations are not eligible to use the logo, but groups and co-operatives can. Considering the fact that in many cases, the reason people do not buy local food is that it is not obviously marked or promoted. Consumers aren't always clear what is local. Foodland Ontario does boast a highly recognizable label.

One thing that is extremely clear from the consumer research commissioned for this report is that Northerners want local Northern food including dairy, and are willing to pay a premium for it. NOFIA could mount a program to work with retailers across the North to sponsor and support promotion of local dairy products in retail locations across Northern Ontario. For the purposes of this report, a list of Northern food retailers has been amassed. This list is largely based on internet research and requires validation, but it presents a place to begin planning a retail effort.

District	Grocery Stores	Specialty Market Stores	Box Stores	Farmers Markets	Farm Stores	Distribution Centres and Co-ops	Food Banks	Totals
Rainy River	9	0	1	1	1	0	6	18
Kenora	20	2	22*	2	1	0	9	56
Thunder Bay	20	3	4	8	5	1	22	63
Cochrane	13	1	5	1	0	0	9	29
Timiskaming	12	1	1	1	0	0	5	20
Algoma	17	1	1	4	5	3	5	36
Sudbury	34	2	3	1	2	2	22	66
Manitoulin	8	2	0	6	0	0	2	18
Nipissing	24	1	2	1	8	5	17	58
Muskoka-Parry Sound	33	1	3	10	4	3	6	60
Totals	190	14	42	35	26	14	103	424

* the 22 box stores in Kenora also include the Northern stores

Initial targets of a collective marketing effort would be Grocery Stores (particularly smaller chains), Specialty Market Stores, Farmer's Markets, and Farm Stores.

In the recommended strategies 2.0 in this report, we explore in depth the possibility of enhancing uptake of Northern Dairy in the North and also in Southern Ontario markets, particularly the GTA. There is also the possibility to mount collective marketing efforts with products and processors as they are today.

Finally, some dairy processors have space they are willing to use for co-packing products. While space needs and facilities are in a state of flux, there may be benefit in having an on-going list of available space and its suitability for various processing projects. This would enable new processors or processors who are trying something to test formulations and market uptake before investing in new equipment. If co-packing seems like a viable option, it would be very useful to provide templates and standards for the co-packing arrangements to ensure fairness and the likelihood of a win-win situation.

1.4 Explore the feasibility of a co-operative dairy processing space in Northern Ontario

As existing larger processors have scaled back or stopped investing in processing facilities in Ontario's North, citing reasons largely to do with cost, particularly electricity, the potential to have new processors obtain processing space has become increasingly limited. Dr. Sermet Yalcinkaya, food processing and dairy expert, advocates for NOFIA to explore the feasibility of a co-operative focused on building and maintaining dairy processing space. This space would be for new processors to try new

products and for existing processors to try innovations. While there are food processing spaces available for new products and entrepreneurs in Ontario at Food Starter and the Ontario Agri-Food Venture Centre, none of the available space has been made appropriate for dairy; in effect, there is no dairy specific small-scale production space, with the exception of two small production areas at the University of Guelph, which at today are still under construction. These production spaces will certainly provide assistance to processors who travel to Guelph but are not constructed with a receiving bay and are for small volumes only. Ideally, new processors would have the opportunity to rent production space while they fill initial orders and are able to get to proof of concept. Given the lack of such space in the province it is possible that this kind of a co-operative venture would appeal to those beyond the North who would benefit from co-packing space to try new products.

Pooling resources could enable processors to economize by sharing services, approaching distribution and transportation collectively.

1.5 Support clarification of definitions and milk delivery for artisanal processors

Processors involved in artisanal cheese-making report that the frequency and volume of milk delivery and the application of rules to their processing operations puts them at a disadvantage. It is very difficult for them to meet the regulations that apply to much larger plants. One suggestion is to explore different manufacturing categories such as:

- Industrial cheese-making - mechanized and automated-type manufacturing processes
- Artisanal cheese-making - manual-type manufacturing processes using mostly traditional techniques
- On-farm cheese-making - manual-type manufacturing processing using mostly traditional techniques and made on the same land that the farm is on - usually smaller in quantity than artisanal

Northern processors also ponder, in general, if it is possible to re-look at distribution patterns across the North so that their milk supply comes from local producers. Some people interviewed cite the need to re-look at re-instituting a Northern pool of milk producers. Needless to say, this would be a major undertaking and it would be important to ensure the benefits outweighed any risks.

Most processors would like to receive smaller volumes of single-sourced milk more often each week to help increase their production capabilities. They would like to encourage DFO and OMAFRA to work together and create a feasibility study to explore using smaller vehicles that contain 2,000 to 2,500 litres of raw milk and deliver using shuttles. The use of totes would involve too much movement of the milk for artisanal products.

1.6 Support research toward collective action to deal with whey waste and waste water

While dealing with whey waste and water waste are not as pressing as other issues around securing markets, distribution, and staffing, all processors in the North have questions around how to handle their whey waste; much of the waste is being transported to local farms as animal feed or dumped into fields. A waste whey disposal system can be purchased by a newly created co-operative of processors for sharing with an initial investment of $250,000 (estimated cost for the membrane processing system only) with a capacity of 10,000 litres per day. Adding capacity would involve purchasing extra valves,

vessels, and membranes, and this cost to expand is incremental, not linear. The waste whey disposal system generates potable water that can be used for either ingredient water or washing the plant.

Other countries have created products with their waste whey such as New Zealand (protein powder), United States (Wisconsin ice melter), and Greece (milk protein facial cleanser). Research is underway in multiple countries on how to create edible packaging out of casein and whey dairy waste to create a clear filmlike material.

Based on discussions with La Cité College, Ottawa, researching possibilities for dealing with whey waste could be a project undertaken in partnership with a team of academics and students there.

1.7 Support research into the market potential for production and processing of alternative milk types in Northern Ontario

There is an increase of production in goat dairy in the North - more goat farms are being established in the North, while the number of bovine dairy farms have seen an overall decrease. There remain some areas where bovine dairy farmers are seeking to grow their operations, but other areas where few are left.

As has happened with bovine dairy, we see a consolidation trend in goat farming - fewer, larger farms producing larger quantities of milk. Two Northern Ontario dairy plants are processing goat dairy at this time, with a third considering starting soon. The demand for goat dairy continues to increase as an alternative to bovine milk products, blended with cow's milk, and to a greater degree than bovine dairy in the making of skin care products and soaps. Across Canada there has a growth of 18% in goat milk annually for the past 3 years, and currently 50 million litres is produced with processing capacity for over 100 million litres annually. While there have been oversupply issues in the past, currently all milk is being used. There are currently 9 goat shipping producers in Northern Ontario and 10 more interested, with 4 starting up with a year.

One of the challenges that exists is the lack of research available on goat dairy compared to bovine dairy. While production is growing naturally at this point, more research is needed to determine the prospective market size, how increased goat milk production in the North can be supported and amplified to increase interest in dairy in general, and to create new sustainable businesses and jobs in the North.

One Northern processor is currently processing sheep milk. There are over 50 farmers milking sheep in Ontario, producing 1.5 million litres of milk per year. While this is not a staggering result, food trend experts tell us that sheep's milk is becoming an increasingly desirable ingredient.

This strategy has been identified as "lower cost/lower importance" on the strategy grid – not to indicate that alternative milk is not important, but simply because right now, it is growing without an intentional focus and will in all likelihood continue to do so for a time without intervention. It is also the case that producers and processors working with alternative milks can benefit from all of the other strategies listed, just as bovine producers and processors can.

2. Create new market access for Northern Dairy products

2.1 Support further research to create a Northern Dairy brand and Northern Dairy "bundle"

The most powerful trend for dairy processors in Ontario's North to take hold of is the local food trend. Research shows that people will reach for food they perceive to be fresh and local before they reach for organic, GMO-free or other specialty categories. It is in Northern processors' favour that Northerners perceive local to be within Northern Ontario, and those from Southern Ontario perceive local to be "from Ontario."

As part of this planning process a primary and secondary consumer research study was commissioned to get an initial look at interest in dairy produced in Northern Ontario. Households were called in Near North Ontario cities (Sudbury/North Bay/Muskoka) as well as in the Southern Ontario (Greater Toronto Area), and both populations showed interest in Northern dairy products and also a willingness to pay more for local dairy. The Near North makes up the area east of Sudbury and east to Mattawa and includes Parry Sound and Huntsville, and gets its name from the close proximity to large population areas south of this area.

As above, Northern dairy processors could gainfully band together to create a Northern dairy brand, riding the local trend, for the North and with an adapted version for the GTA. It was also suggested in speaking with innovation and product development specialists at large retailers that while it would be difficult to get a "bundle" of Northern dairy products listed in the big chains, there would likely be good uptake on a bundle of Northern dairy or Northern food including dairy at specialty food stores and markets in the GTA. To ensure feasibility, it is suggested that further research be commissioned to get specific on:

- The products consumers both in the North and the GTA want to see or see more of from the North
- What the actual price sensitivity is - evidence gathered to date suggests that people will pay up to 10% more

2.2 Create a pilot project, including a paid position to market and promote the Northern bundle to test markets

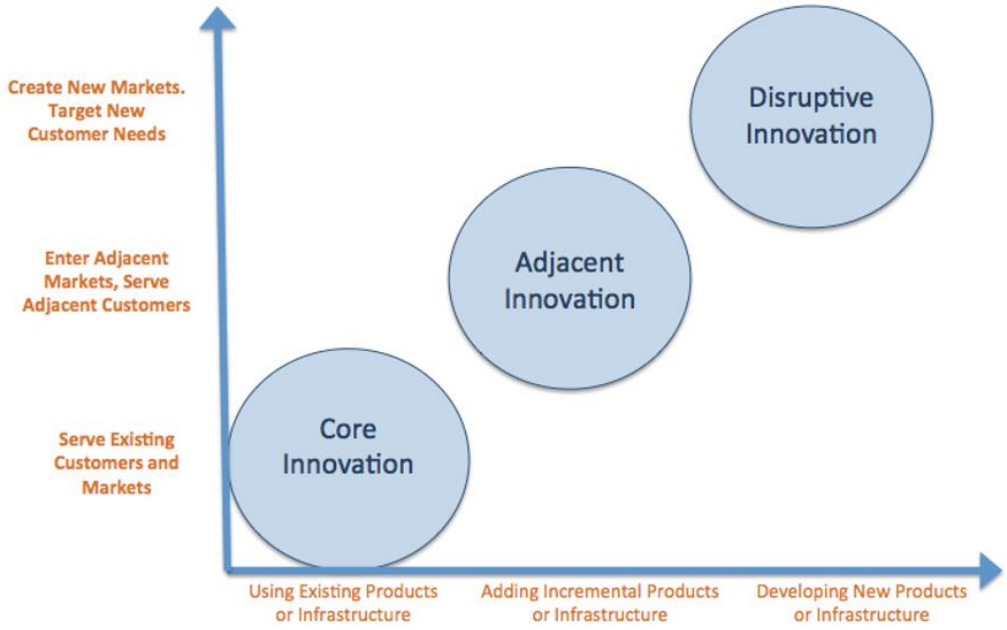
As a corollary to creating a Northern bundle of products, featuring dairy, it is suggested that NOFIA pilot a promotion and marketing project to explore opening up additional markets or expanding existing for Northern dairy. While ultimately a Northern bundle could and should include local food beyond dairy, beginning with an invitation to the 9 dairy processors to showcase food made locally would be a manageable pilot. The conditions of participation would need to include the participants creating appropriate marketing collateral to specifications set and communicated by NOFIA.

The pilot would include a staff position for an "ambassador" who was a marketing and promotions specialist, who would create connections with potential buyers, not currently served. The initial focus would be the North and opportunities could include avenues such as mining companies, institutional food buyers, specialty retailers not currently offering dairy or who could offer more, and craft breweries to sell cheese snacks along with their beer.

2.3 Encourage the introduction of innovative new products

For the purposes of this study, food trend expert Dana McCauley was retained to look at and suggest trends that might be helpful in driving innovation and innovative thinking in Northern dairy. Her findings are included in the appendices of this report and include such ideas as using whey waste as an ice remover. More practically, Northern dairy processors need to think about what innovation can be undertaken given existing infrastructure and the wants and desires of the clients they currently serve, or have a good chance of serving. Brand new ideas, while exciting, are prohibitively expensive to bring to market. Thus, while we would not discourage processors who want to "think out of the box," given the challenges of shelf life, fine cheeses would seem to be the best investments, or yogurt, for those who already have reliable distribution of fresh products. Processors are encouraged to diversify their product ranges, targeting first existing customers and then moving to new customers and products that have similarities to their current customer and product base.

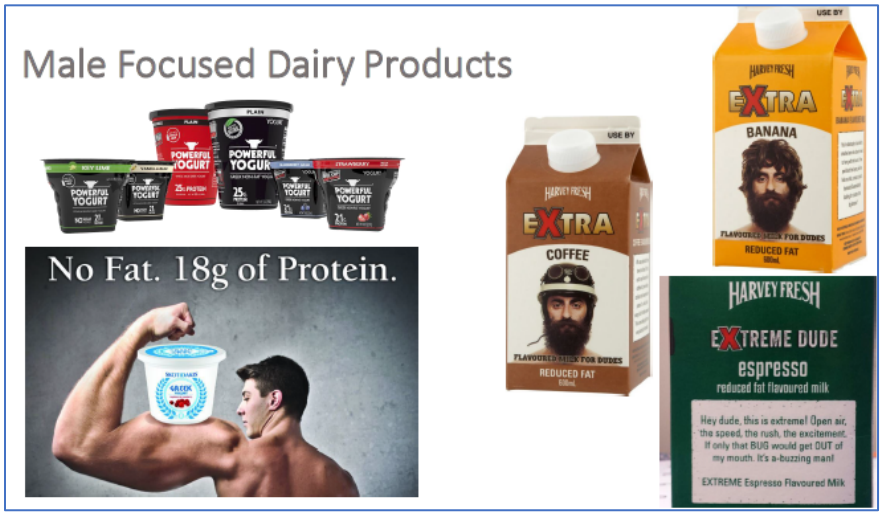
The diagram below shows different types of innovation as described by innovation expert Angelique Mohring at GainX. As you move up the graph, costs and complexity increase. What we are encouraging is an initial focus on Core Innovation, with focus on Adjacent Innovation coming into play when additional market research has been completed.



Given the current government interest in investing in innovation via Canadian colleges and universities, NOFIA might choose to commission or otherwise incentivize and promote research into innovative new Northern dairy foods with colleges and universities in Ontario. A forum could be created bringing together culinary and food sciences students with dairy and food innovation experts and interested high potential Northern producers to come up with items to try. An example of a group with interest would include George Brown's new culinary research and innovation lab, opened in September 2017. A news release states: "We are celebrating the launch of new facilities that will help expand George Brown's

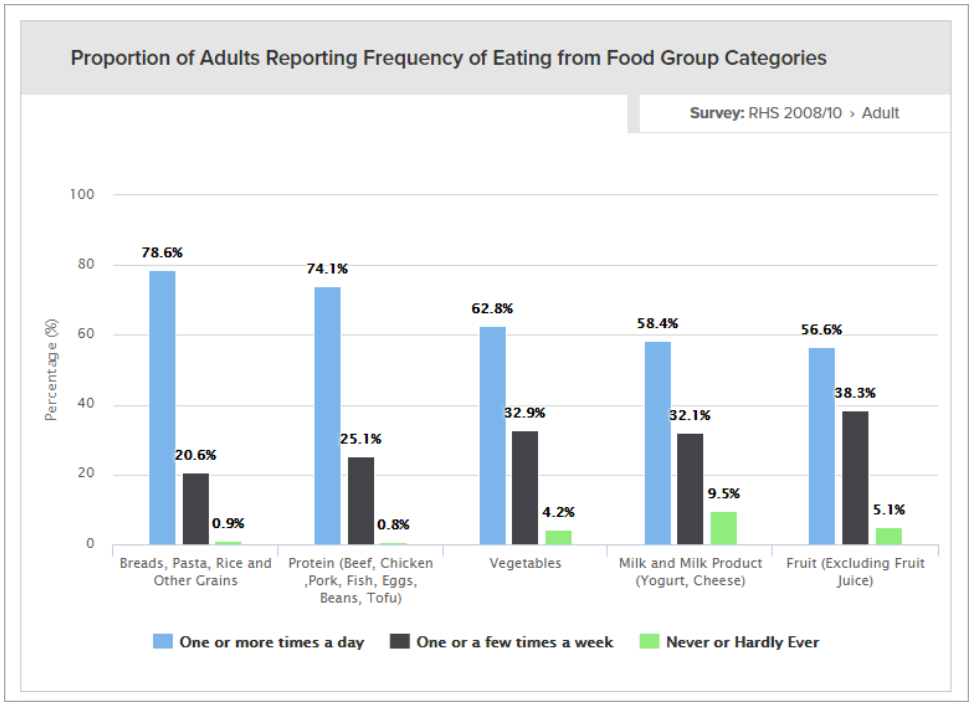
applied-research capacity and infrastructure while enabling the development of safe, innovative and affordable new food-and-beverage products," said Anne Sado, president, George Brown College.

According to Dana McCauley of Blue Unicorn Innovations, some of the trends that could be relevant in the Northern market are indicated below. Additional ideas are available in the Blue Unicorn *Thought Starters* report available from NOFIA.



2.4 Explore Indigenous communities as possible markets

Indigenous communities represent one of the few populations forecasted to increase in the North in the coming years. We know that for many Indigenous and Inuit people lactose intolerance is an issue, and while dairy is not reported to be a main ingredient in the Indigenous diet, consumption is happening. The following table shows Indigenous food consumption rates as described by the First Nations Information Governance Centre's Regional Health Survey and Community Survey Update.



Through the course of this project, several contacts were made with Indigenous groups and organizations that support their economic and community development. These organizations and food distribution groups within Indigenous communities could partner with NOFIA to do a deeper study of

the possibilities for dairy in Indigenous communities. It is, of course, the case that each community is unique with their own dietary traditions and preferences, but many communities are undertaking work to get access to a variety of healthy food in their diets.

Providing more dairy into Indigenous communities would require a series of partnerships to be struck, and a real win-win solution to be found, where processors can supply communities sustainably, and the communities can afford to use and benefit from the food. Some communities we heard from in the course of writing this Strategic plan felt they had been over-surveyed; some felt they'd been virtually ignored. A respectful and well thought out approach is necessary.

Doing good with Dairy

One idea that arose from a long-time player in Northern Dairy was to put together an initiative to get dairy into the schools in the Far North where food security and access to nutritious food is an issue. In brainstorming on this idea with our team of experts, it was suggested that dairy processors could provide cheese, it could be flown up by mining companies and introduced into schools with some dairy education. Additional ideas were to start a small co-op or not-for-profit to manage the coordination and transportation, and to ask DFO to consider a small discount on those volumes of milk.

3. Coordinate Distribution

Due smaller populations, long distances between communities, and challenging winter weather, distribution of finished dairy goods, and in fact food distribution in general, is challenging in Northern Ontario. The good news is there are several groups working to resolve issues both locally and provincially.

A more exhaustive description of each initiative is offered in the pages that follow. In summary, some groups and initiatives we located that pointed at food distribution in the North include:

Group Name	Distribution Initiative
Greenbelt Northern Food Distribution Workshop	• Greenbelt Fund is hosting a workshop in October 2017 • The workshop will identify gaps, opportunities, and new partnerships in Northern food distribution
Thunder Bay Food Strategy Group	• Members representing farmers, institutions, government, food security organizations to implement the priorities of the Thunder Bay Food Charter to cook up a healthy, sustainable, and equitable food system
Cloverbelt Local Food Co-op	• The Cloverbelt Local Food Co-op (CLFC) is a non-profit co-operative with over 1,250 farmers, consumers, and community

	organizations working together to increase year-round access to healthy and locally produced goods based in Dryden • Created a regional food map and distribution to encourage diverse local food production to strengthen food security
Mill Market Northern Pantry	• A pilot project collection of Northern Ontario made dairy products and non-dairy products highlighted within a new special section of the Mill Market Farmers Market in Sault Ste. Marie
Sioux Lookout Regional Distribution Centre	• A new Regional Distribution Centre is currently under development to serve as a central distribution point for fresh foods to be transported to the 31 Far North Indigenous communities
FoodShare	• FoodShare is working on creating a resilient, just, and sustainable food system, and continue to seek ways to work at every step of the food system • Based in Toronto and actively working to provide food distribution to Northern Ontario • The Food Justice and Indigenous program goes into communities and involves them with support, training, and startup costs, and assists with an advisory circle
FreshSpoke	• A local food marketplace based in Barrie that is reinventing the supply chain that uses a shared delivery system to assist with producer self-delivery and buyer pickup • Testing is underway for a Northern Ontario food distribution app

What is needed, and what NOFIA can provide, is overall coordination of all of these efforts so they come to fruition, with an appropriate focus on dairy and the special needs for transporting and distributing it. This includes ensuring dairy products are properly refrigerated and are not transported with other foods like onions or garlic and the potential to transfer smells.

3.1 Sponsor an asset mapping of food processors for the Highway 11 corridor to complement existing initiatives

Taking into consideration the lessons learned regarding existing mapping efforts, it is recommended that NOFIA undertake an asset mapping exercise to capture all of the food production, processing and distribution happening along the Highway 11 corridor, spanning the districts of Timiskaming, Cochrane and Nipissing. This would furnish the marketing and promotions pilot with a catalog of potential food to put in the Northern bundle, and would also contribute to food distribution initiatives as well as

initiatives relative to reducing greenhouse gas emissions – though looking for the most efficient and collaborative transportation possible. This initiative would also contribute to on-going efforts to promote food security in more remote communities.

SWOT Analysis

A traditional analysis of "Strengths, Weaknesses, Opportunities, and Threats" has been completed on sustainable dairy in Ontario's North. Opportunity areas from the recommended strategies are included within the SWOT analysis. Those Opportunities not included in the recommended strategies should be kept for future reference but may not have immediate benefit across the industry at this time.

Strengths

- Processor willingness to collaborate and cooperate on a variety of things including co-packing and marketing
- Successful, sustainable processors of various sizes already in place
- Increasing interest and initiatives for creating food distribution systems, including dairy
- Increase in farms intending to produce goat milk and processors making or planning to make goat milk products
- In many parts of the North suitable land availability is good, where as producers and processors are looking for land in other parts of Ontario
- Small- to mid-size food manufacturers tend to innovate
- Dairy farms in some areas of Northern Ontario growing aggressively
- Alternative local retail appears to be growing – i.e. farmers markets, farm stores

Weaknesses

- It takes major investment to get into the business of processing or producing milk and to add infrastructure
- Attracting and retaining staff is challenging
- Perishable product, hard to inventory
- Extra time and expense to extend dairy shelf-life
- Small artisanal production subject to same rules as large processors
- Artisanal definition unclear
- Cannot always be transported with other food
- Complex regulatory environment for dairy
- Expertise not always available, i.e. for cheese-making
- In some areas of the North, milk production is drying up
- Sensitivity around trade secrets can impede collaboration
- Transportation costs are increasing
- Large dairy processors moving south and west
- Getting technical support for maintaining manufacturing systems is difficult

Opportunities

- Significant interest in local food in the North
- Interest in Northern food in the GTA
- Perception of the North as natural, clean and pristine
- Assess if dairy can fit into Indigenous diet – this is a growing population
- Find ways to amplify dairy in school food programs
- Focus on new packaging technology and design
- Forge new partnerships with Colleges and Universities for innovation and for training
- Is there a market for local dairy food in mining camps?
- Use social media to play a role in stimulating more interest in Northern Dairy

- Write a Northern Dairy Cookbook
- Find ways to collect and use whey waste as a new product
- In some cases, funding for Northern businesses is available
- Culinary tourism or short-term farm stays
- Encourage more on-farm processors who are close to larger centres to start up
- Opportunity to build on work done to promote local food to institutions
    - Some dairy-appropriate manufacturing sites exist and could be converted

Threats

- Overall population in slow decline
- Increasing scrutiny and public concern about environmental impact of farming and food production
- New rules for dealing with waste on the short-term horizon
- Weather can be a problem in winter months, especially for distribution
- Higher costs of utilities in Ontario
- Cost of food in general in the North is higher

Checklist for success

- ❑ Market feasibility - Understanding the consumer and forecasting demand – who will buy the product? Market testing.
- ❑ Marketing channels - how will people find out about the product?
- ❑ Barriers – who is the competition? What might other barriers be to growing a market?
- ❑ Distribution – where will people buy the product? What distribution channels are available?
- ❑ Plant planning
- ❑ Supermarkets, fine food stores Convenience stores, gas stations, coffee shops, cafes, restaurants, schools, distributors, vending machines Institutions (i.e. hospitals, correctional facilities, old age homes)
- ❑ Investment strategy/finance plan
- ❑ Solid legal framework
- ❑ Understanding and ability to comply with regulations
- ❑ Quality management system
- ❑ Plan for managing milk and finished product inventory while market develops
- ❑ Appropriate and motivated team
- ❑ Are there ways to share services?

Research

From January to September 2017, ODScore and partner organizations researched various issues and opportunities that had been brainstormed by the steering committee and then added to by producers, processors, and other industry experts. Specific Research areas covered below include:

- Processing assets and capacity in the North
- General considerations for dairy production in Northern Ontario
- Demographics and market research
- Information from Additional Experts on:
    - Retail distribution
    - Working with Indigenous Communities
    - Food Tourism
- Other Northern products and Northern markets

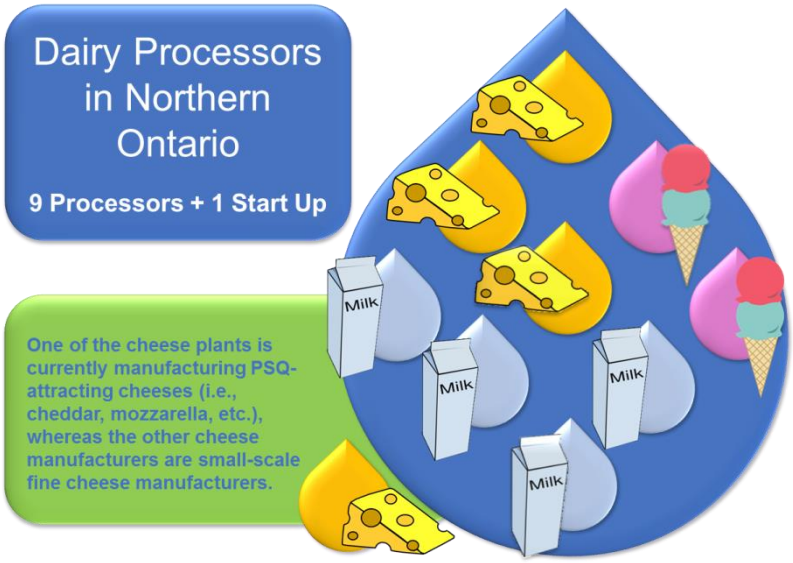
This and additional research served as the basis for both the recommended strategies as well as the SWOT Analysis.

Processor Site Visits and Surveys

Invitations were extended to all Northern dairy bovine processing facilities. Onsite visits to the facilities took place between January 24 and March 22, 2017. All facility visits were conducted by the lead project manager and a PhD food processing engineer.

The facilities visited were:

- Thornloe Cheese in Thornloe
- Farquhar's Dairy in Espanola
- Slate River Dairy in Thunder Bay
- Thunder Oak Cheese Farm in Thunder Bay
- Fromagerie Kapuskoise in Kapuskasing
- Lock City Dairy in Sault Ste. Marie



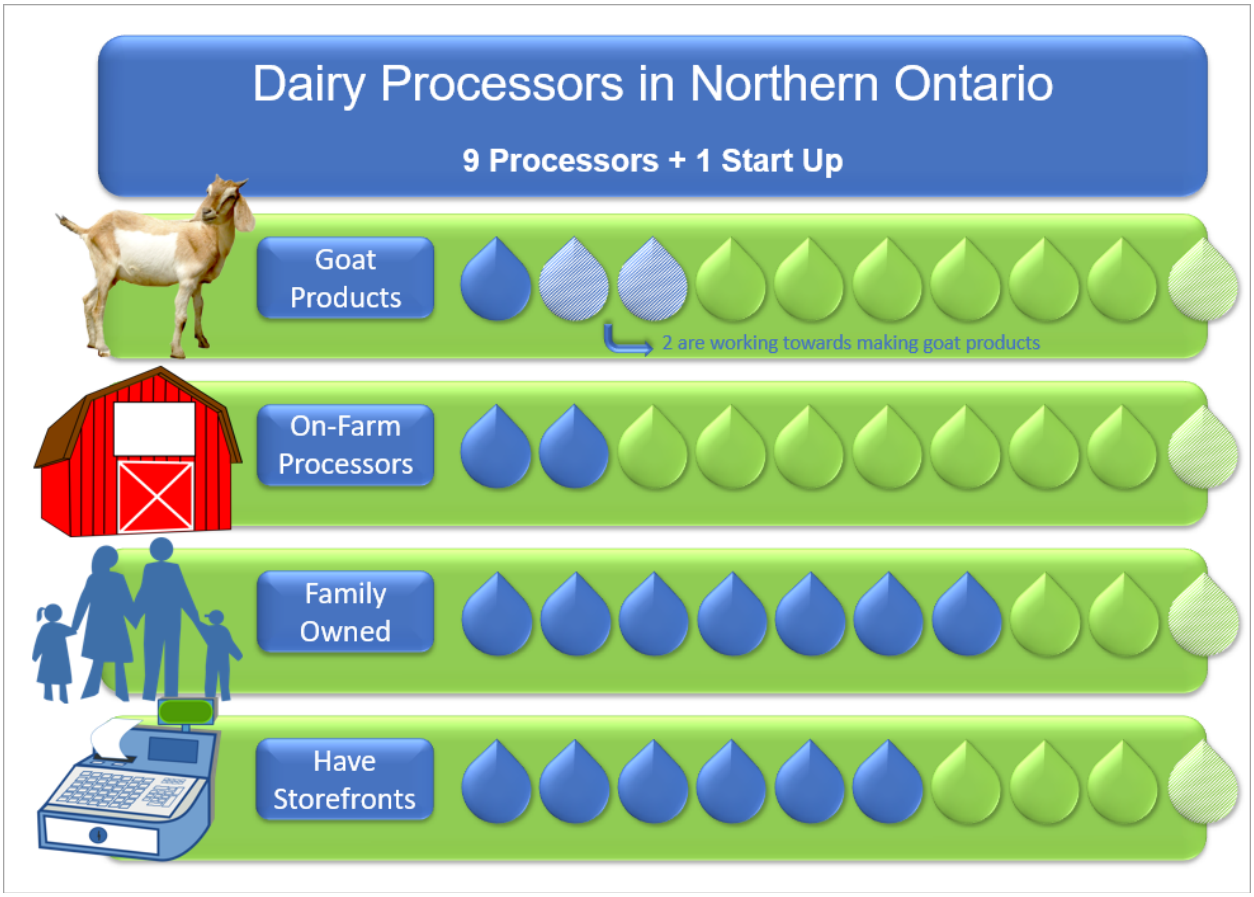
Two processors met via conference call and email exchange. These were Nickel City Cheese in Sudbury and Belly Ice Cream Company in Huntsville. Nickel City Cheese had not opened at the time of the conference call.

The survey and questionnaire responses for both Parmalat Sudbury and Thunder Bay locations were provided by the Director of Government and Industry Affairs based at the Parmalat corporate office in Quebec.

A dairy processing facility questionnaire was provided to all dairy processors. Participants were asked to provide data regarding their operation including the characteristics of their facility, types of products they manufacture, their strategic plan to sustain or grow their operations, and the challenges they typically face. Please see Appendix A for the facility questionnaire.

Please see Appendix B for the complete list of survey questions. Individual processors chose to answer all or some of the questions both for the questionnaire or survey based on whether they felt they were of a competitive nature or not.

Asset Mapping and Scale

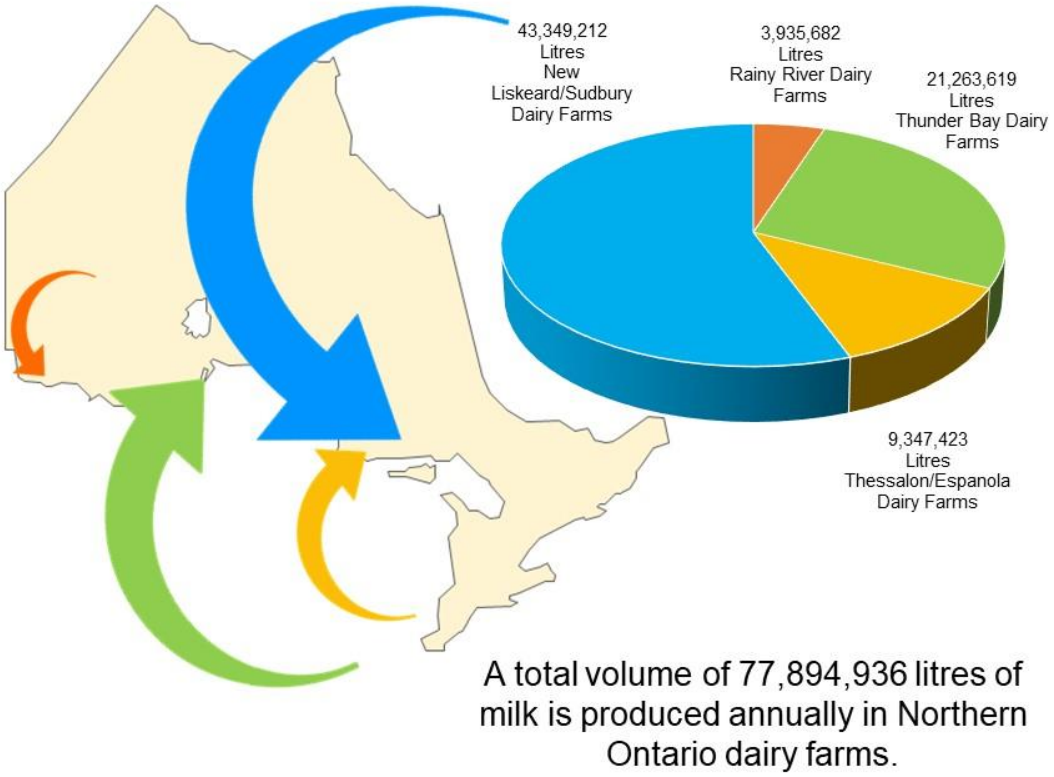


There are three cheese manufacturers, four fluid milk processing facilities, and two ice cream companies currently operational in Northern Ontario. Another cheese manufacturing facility is scheduled to start up later in 2017. Only one of the cheese plants is currently manufacturing PSQ-attracting cheeses (i.e., cheddar, mozzarella, etc.), whereas the other cheese manufacturers are small-scale fine cheese manufacturers. There are two on-farm processors. Of all the processors, seven are family-owned.

Annual Milk Utilization and Capacity

Based on responses to the processor survey, the estimated annual milk utilization for all Northern processors totals 31.1 million litres per year, of which 8.6 million litres of milk is used by on-farm and artisanal processors.

Per figures from the Dairy Farmers of Ontario, there is a total annual volume of milk produced in Northern Ontario of 77.8 million litres.



A number of processors indicated they have additional space and days to handle more processing and are willing to consider co-pack arrangements. Most processors are hesitant to consider increasing their throughput without securing additional contracts. That said, most participants expressed interest in "growth," either through increased capacity, by distributing to a larger area, or by product diversification.

Based on the research completed, it is estimated that the processing capacity of the on-farm and artisanal processors in the North could be scaled up by 2x to 6x by simply adding extra processing shifts/days, provided that the processors can access additional milk volume, and have a market for their products. Processing capacity of the mid-sized fluid milk plant can possibly be doubled by adding production shifts/days.

One on-farm processor expressed interest in potentially diversifying their product range by adding fine cheese, butter, and cultured products. Another processor is in the process of getting ready to manufacture ice cream for a co-pack client. There is one processor currently creating goat cheese, and two processors beginning to work towards creating goat milk products.
The overwhelming majority of the independent dairy processors expressed willingness to cooperate with other processors (both dairy and non-dairy) to increase their ability to penetrate market, to help other prospective processors start up, and to train individuals who want to work in dairy processing.

Northern Ontario Distribution

Six of the processors have storefronts and sell their products to local customers. Most of the processors contribute products to local farmers markets. Some of the processors use their own trucks for distribution and some may partner with each other for distribution. Examples of distributor companies of dairy products in the North are Manitoulin Transport, Farquhar Massey Wholesale Ltd, Creewest GP Inc., Perimeter Airlines, Wilson Truck Lines, and Gordon Food Service.

What do dairy processors enjoy about dairy processing in the North?

- The processors love living and working in Northern Ontario and want to stay there
- The population of the North is supportive of local industries
- The best part is hearing people ask for certain products and hearing that they love your products because they are wholesome, pure, and local
- Many expressed the desire to remain family-owned as they can innovate faster and do not have to follow corporate timelines

Northern processors' short- and long-term goals

- Work more with other local producers of food and/or dairy for either co-packing, co-distribution, or creation of value-added products. The majority of the independent dairy processors expressed willingness to cooperate with other processors to increase their ability to penetrate the market, to help other prospective processors start-up, and to train individuals who want to work in dairy processing
- "Growth," either through increased capacity, by distributing to a larger area, or by product diversification
- Decrease their transportation and distribution costs
- Bring (or bring back) their dairy products to local chain grocery stores
- Continue to perfect their old recipes and create new ones
- Expand their product lines to goat and sheep cheese
- One on-farm processor expressed interest in diversifying their product range by adding fine cheese, butter, and cultured products, and another processor is in the process of getting ready to manufacture ice cream for a co-pack client
- Determine either a reuse for their whey waste or a safe disposal method

What are Northern processors' biggest issues?

- **Distribution:** The processors all have issues with consistent transportation and distribution across Northern Ontario and also into Southern Ontario
- **Regulations:** Government regulations are big issues for small-scale processors. This includes the fact that training of government facility plant inspectors is not uniform and different inspectors say different things.
- **Artisanal Definition:** Representatives of artisanal and on-farm processors agree that they are treated as a large processor with regards to requirements and regulations for food safety. There is not enough evidence-based research around artisanal products and a definition for artisanal products has not been established in Ontario. Northern processors feel that specific plant regulations need to be created for processors that create artisanal products compared to larger scale processors that do not

- **Cost:** It costs twice as much to build a cheese factory in Ontario than in Québec; Electricity costs are comparatively expensive, or hydro is unavailable and they must rely on propane. The recent increases with the cap-and-trade carbon tax have impacted processors.
- **Support:** There is a general feeling that there are not enough programs and rebates available for small-sized processors so they can compete with medium- to large-sized processors - they all expressed the need to bring costs down. The processors would like to receive more assistance looking for and applying for funding for expansion and new products, as well as getting products to the market: Northern processors believe that with access to shelf space in major grocery stores, their products would compete with any produced elsewhere. Processors suggested a basic economic plan that is government-approved for transformation facilities so they can go faster from dreaming to constructing, then into production. They all agreed they want continued support from NOFIA.
- **Labour:** Access to skilled and trained labour is very challenging
- **Waste Disposal:** How to dispose of waste whey product
- **Market Research:** Access to relevant market research studies for the North is expensive as few studies exist making it difficult to forecast volume.
- **Market Access:** Access to open markets for small- to mid-sized processors is costly due to distribution challenges as well as listing fees
- **Technical Support:** Getting technical support for maintaining manufacturing systems is very difficult and expensive
- **Waste:** Many artisanal and small-scale dairy processors in Northern Ontario are worried about when strict waste water management rules will begin next year as most of the processors have been relying on municipal or well water for supply, and they have been discharging to lagoons or onto available land
- **Milk Supply:** Most processors would like to receive smaller volumes of single-sourced milk more often each week to help increase their production capabilities. They would encourage DFO and OMAFRA to work together and create a feasibility study to explore using smaller vehicles that contain 2,000 to 2,500 litres of raw milk and deliver using shuttles (using totes would involve too much movement of the milk for artisanal products). Several processors feel that milk produced in the North should remain in the North
- **Collaboration:** Processors want to create a network where current and new processors can reach out to each other for guidance around issues and new ventures

Small is Beautiful

Although we have targeted plants that can process anywhere from 2,000 liters to 20,000 liters per day, it is encouraging to note that we visited an on-farm fluid milk processing facility that processes no more than 200 liters per day using a vat pasteurizer, and packages the product in manually filled glass bottles. The facility is provincially licensed, and complies with all relevant provincial regulations. Without a separator or homogenizer, the processor markets the products as full fat with a cream top through on-farm store. We anticipate that the processor will soon start manufacturing chocolate milk using the same format. As this unique example suggests, it is always possible to arrive at a sustainable manufacturing model by making sure that the business plan, marketing plan, and feasibility study are all completed with as much diligence as possible.

Dairy Processing in the North – a General Overview

Even with advances in milk production and processing that have occurred in the last 50 years, raw milk is a perishable product and it is an expensive product to ship long distances. Since the economic factors that influence the feasibility of small-scale milk processing have changed dramatically over the past several decades, the research conducted examines the opportunities and points out the key components in developing a successful (profitable) milk processing operation in Northern Ontario.
The acquisition of smaller processing facilities by national players will continue to reduce processing capacity available for smaller operators and on-farm processors that want to start their operation through co-packing. As consolidated operations target to achieve economies of scale, they will continue to be less willing to accommodate smaller co-pack clients or short-run private label products. As the number of smaller processing plants decrease, smaller private label customers find it increasingly difficult to find production capacity that they can utilize. In addition, larger dairy processors would prefer to discourage competition and eliminate their competition by establishing lower prices.

Although fluid milk might appear to be the easiest product to manufacture, it is also the product with a short shelf-life and very low margin. To be competitive in the marketplace, a processor should be able to differentiate their products through brand recognition. In addition, it may be essential to develop other products that have longer shelf lives and higher margins to ensure a sustainable operation.
We believe that the highest opportunity for success for a small-scale dairy processing facility would be in specialty fine cheese products that require lengthy aging, special flavor, or attractive packaging. Milk allocation policies that are in effect in Ontario require commodity cheese manufacturers to have plant supply quota (PSQ), and there is considerably low profit margin associated with commodity cheeses such as cheddar or mozzarella. Therefore, it would not be feasible for a small-scale dairy processor to enter this segment.

Small-scale milk processing in Northern Ontario could create several viable marketing opportunities, but barriers to enter these specialty markets may be significant. It is critical to establish marketing channels prior to the start-up, as it can be very difficult to attempt to manage inventory of milk and finished product in a very slow developing market.

It will be imperative for a small-scale dairy processor to develop a brand identity and taste profile for their products. Only then, the start-up can reach the pool of consumers that prefer the “uniqueness” of the products that are different than that of the commodity products.

The primary objective in processing milk is to extend its shelf life. This can be achieved by heat treatment to ensure that all pathogenic organisms are killed and most spoilage factors are eliminated. Alternatively, milk can be converted to a range of value-added products that can be stored for extended periods of time under or without refrigeration. When deciding on the range of products to manufacture, financial and technological aspects as well as the availability of distribution channels must be considered.

Within the context of small-scale dairy processing in Northern Ontario, certain products might be more challenging to manufacture. For example, fluid milk and cream products with extended shelf life (shelf life of 30 to 90 days) require specialized processing and packaging systems that are prohibitively expensive to own and operate for processors that will process less than 150,000 litres of milk per day. Adding a UHT processor and an ESL packaging system may cost around $1.5 to $2 million, and they require additional floor space not only for manufacturing but also for additional cold storage

capabilities. Although the same UHT processor can be used to manufacture long life products (shelf life of more than 6 months), addition of aseptic storage and packaging capabilities would easily raise the capital cost of equipment to $2.5 to $3 million.

Manufacturing flavoured dairy products, such as chocolate milk or eggnog, requires additional systems to incorporate powdered ingredients like cocoa, milk powders, flavours, etc.
While manufacturing stirred yogurt in a continuous manner may be accomplished by adding several specialized processing tanks and a cooling press, manufacturing set yogurt requires the addition of incubators and blast coolers which can be scaled to accommodate the target throughput.
Converting milk to a variety of cheeses requires specialized equipment. In a smaller or artisanal scale, milk can be pasteurized and converted to curd in the same vat. Certain types of cheeses may require additional equipment. For example, a cooker-stretcher would be essential to manufacture cheeses like bocconcini or fresh mozzarella. Making ricotta cheese requires jacketed kettles that can be used to heat the mixture of milk and whey to near boiling temperatures. Making processed cheese requires pressurized cookers that operate at high temperatures.

Although cost of specialized equipment is a factor in selection of products for manufacturing, it is just as critical to ensure the necessary know-how to manufacture the products is readily accessible.
Finally, the quality management system that must be employed should also be considered. While testing and documentation requirements for conventional fluid milk may be relatively simple and comparatively inexpensive, with the increasing complexity of the product the complexity of the quality management systems also increases. Some tests can be carried out in house, and for others the use of an external laboratory might be more practical and cost effective.

Equipment Requirements and Costs

For this study, vendors specializing in new and used dairy processing equipment were asked to provide as much information as possible on equipment requirements and costs associated with complete dairy processing plants that can process up to 2,000 lpd, 10,000 lpd, and 20,000 lpd. Due to the nature of the project, unknown timelines, as well as unknown product mix, almost all vendors found it difficult to provide requested information. However, they provided some budgetary costs for consideration. Where applicable, vendors were also asked to include reconditioned equipment to minimize overall cost.
It is important to note that there are several items that are essential regardless of the size of a dairy processing facility. For example, both provincial and federal regulations require that any facility that must pasteurize milk needs to have a legal pasteurizer controls package, which ranges from $6,500 to $10,000 per thermal processor.

Based on the data gathered, the cost of a dairy processing facility that falls within the capacity ranges stated above would range from $125,000 to $600,000. Another $45,000 to $225,000 would be required for piping, pumps, valves, labour (utilities, mechanical, and electrical), and equipment installation.

Building Costs

We have established approximate plant size requirements from a variety of sources including industry best practices, past projects, and recommendations from other experts. All dairy processing facilities must meet the municipal, provincial, and federal requirements, as well as food grade standards. Depending on the complexity of the installation, and not including the cost of land, building costs including specialized HVAC are estimated at $110 to $135 per square foot.

We estimated that a typical small-scale dairy that will process 2,000 lpd to 20,000 lpd will require 2,500 to 5,000 square feet of floor space. This translates to a building cost of $275,000 to $657,000. If a receiving bay is required, another $150,000 may be required to build a suitable receiving bay to house a typical milk tanker truck.

Environmental Impact - Water, Wastewater, and Dairy Effluents

Dairy processing plants use significant amount of water for processing, cleaning and sanitation, as cooling water, to generate steam, and for ancillary uses such as employee facilities, landscaping, gardens, etc. A Canadian study commissioned by the National Dairy Council reported that Canadian dairy plants utilize about 1 to 5 litres of water per litre of milk they process, depending on the type of product mix. Of this, typically 50%-70% is discharged as waste water. Typical waste water streams from dairy plants are high in BOD and COD (on average 3,000 mg/l and 5,000 mg/l, respectively), and they contain suspended solids, fat, nitrogen, phosphorus, and chemical residues from cleaning agents. In addition, waste water from dairy processing facilities may contain microorganisms that may or may not be pathogenic. Most municipalities apply surcharges for BOD discharges more than 200-300 mg/l, and they may also apply additional fines for total volume of waste water discharged from a processing facility.

Since 2006, Ontario municipalities are allowed to administer their own waste water management policies, even though the majority of the rural municipalities still appear to rely on Ontario Clean Water Administration to manage their services. We anticipate that as the number of dairy manufacturing facilities and the volume of milk processed in the region increase, municipalities may choose to take a closer look at their waste water management systems. There are cases where municipalities asked dairy processing plants to build pre-treatment plants, or assess considerable surcharges to mitigate the impact of dairy effluents on the municipal waste water treatment facilities. Therefore, it is critical to address waste water treatment needs of any new facilities during the planning phase to minimize any unexpected financial burden due to waste treatment surcharges and fines.

During our asset mapping study, we identified that dairy processors in the region are discharging their waste water to lagoons; whey is being shipped to farms as animal feed or applied to land, etc. This practice poses a risk for the dairy processing industry in the region. As the “local food movement” and “food traceability” continues to gain more ground, there is a heightened sensitivity among consumers for environmental issues that affect the local food supply. If a dairy processing plant is found to be polluting the environment, consumers may choose to hold responsible not only the individual dairy processor, but the dairy processors as a group. Thus, any business plan to start a new dairy processing facility must consider how the effluents can be reduced and discharged.

Energy

For processing 1,000 litres of milk, an average Canadian dairy processing facility uses about 220 kWh of electricity to manufacture pasteurized fluid milk in bottles, and about 120 kWh of electricity if the same product is to be packaged in cartons. Cheese manufacturers consume about 200 kWh to convert 1,000 litres of milk to cheese, and an additional 360 kWh to process the whey they generate while producing that cheese. Manufacturing skim milk powder or butter from 1,000 litres of milk may require over 675 kWh of electricity.

One of the challenges dairy processing facilities are facing in the region, and probably will continue to face, is the cost of energy. Therefore, it is recommended that any new facility must be designed to take full advantage of energy saving technologies and high-efficiency equipment.

Economics of Dairy Processing

Without additional information on potential marketing strategies and knowing exact product types to be manufactured, only a broad analysis of the economics of dairy processing for a small-scale facility is presented. Using general information on start-up, variable and operating costs, two selected scenarios are compared for their feasibility.

Establishing financial outlooks for dairy processing facilities is typically very difficult since there is a significant difference in the costs and profitability between individual firms within the dairy industry. This range is typically attributed to the economies of scale associated with the milk processing and packaging, and a processor's ability to penetrate the market. The dairy industry includes extremely large, low-cost processors that operate on smaller profit margins, but rely on the total volume to reduce the cost of manufacturing per unit, thus achieving a competitive advantage. Smaller, high-cost processors, on the other hand, rely on developing niche markets through packaging (i.e., glass bottles for fluid milk, waxed paper wrapping for artisanal cheese or butter), taste or some other form of product differentiation. Both large and smaller dairy manufactures equally benefit from increasing the number of products that they manufacture, since a diversified product portfolio allows the processor to penetrate the market more easily.

Regardless of the scale of their operation and the volume of raw milk they use, all Canadian dairy processors pay for raw milk based on the composition of the milk (% butterfat, % protein and % other solids) and product-specific milk class. For example, a fluid plant may pay $1.00 per litre of milk whereas a cheese plant may pay $0.85 per litre for the same milk.

Fluid Milk

Costs associated with processing a litre of milk and converting to a range of products include the cost of raw milk, labor, supplies and ingredients, packaging, utilities, and plant overhead (building and equipment costs). Cost of labour per litre of milk processed typically goes up with decreasing plant size. For example, a fluid milk processing plant might be able to reduce the labour component by about 30% as the daily processing volume increased from 5,000 litres per day to about 20,000 litres per day.

Based on typical cost factors applicable to dairy processing, we estimate the operating cost for small-scale fluid milk plants to range from $1.55 to $2.30 per litre in plastic and glass bottles, respectively.

Cost Factor (per litre)	5,000 lpd	20,000 lpd
Raw Milk	$1.00	$1.00
Labour	$0.06	$0.04
Ingredients	$0.01	$0.01
Supplies and Packaging	$0.27	$0.14
Utilities	$0.02	$0.01
Plant Overhead	$0.07	$0.04
Depreciation	$0.03	$0.03
Distribution	$0.09	$0.04
Total	$1.55	$1.31

Specialty Cheese

Using a generic conversion rate of 10 litres of milk to 1 kg of cheese, we estimate the cost of manufacturing for a small-scale cheese plant to be about $1.15-$1.50 per litre of milk processed. It must be noted that labour, overhead, and utility costs might be considerably higher for a more complex specialty product.

Cost Factor	1000 lpd	5000 lpd
Raw Milk	$0.85	$0.85
Labour	$0.13	$0.05
Culture and Enzyme	$0.04	$0.02
Supplies and Packaging	$0.20	$0.07
Utilities	$0.05	$0.03
Plant Overhead	$0.07	$0.03
Depreciation	$0.05	$0.04
Distribution	$0.09	$0.09
Total	$1.48	$1.16

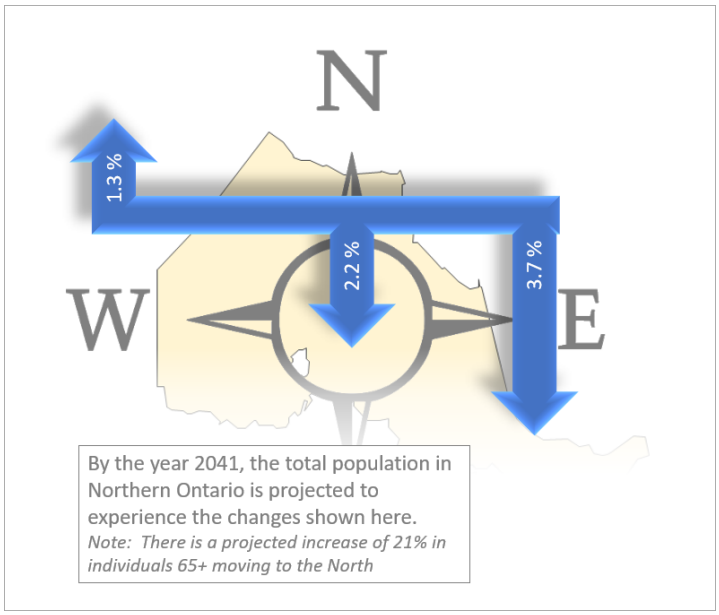
Demographics and Market Analysis

The current total population of the districts in Ontario's North, based on 2015 numbers is just under 1.6 million. A breakdown of population statistics is found below. All demographics have been sourced from the Ontario Ministry of Finance Projections, found here: Ontario Ministry of Finance Projections http://www.fin.gov.on.ca/en/economy/demographics/projections/index.html#c7, with additional information from the Northern Policy Institute.

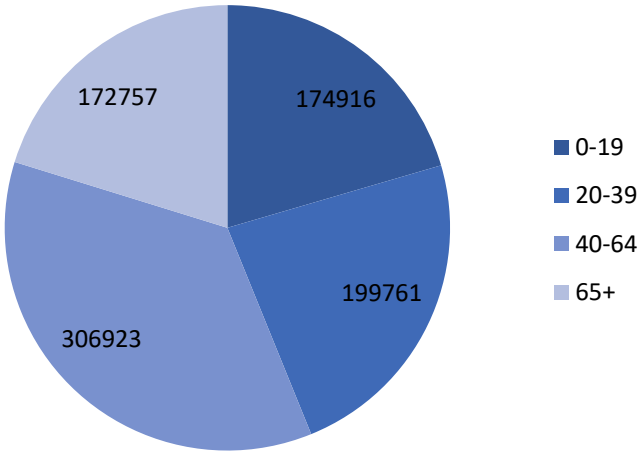
District	2011	2012	2013	2014	2015	2016	2024 Projected
Sudbury	160274	165075	165234	164820	165500	164689	17621
Rainy River	20877	20547	20352	20196	19951	19720	17820
Kenora	69639	69894	70092	70179	69568	69031	64417
Thunder Bay	150016	149925	149693	149207	148210	147345	139334
Cochrane	83276	82835	82583	82006	81057	80182	72630
Timiskaming	33929	33738	33526	33237	32921	32630	29932
Algoma	119344	118549	117885	116986	116115	115337	107894
Manitoulin	13336	13443	13487	13442	13383	13352	12903
Nipissing	87551	87505	87494	87521	87275	87110	85046
Muskoka	61095	61523	61970	62357	62418	62524	62738
Parry Sound	43154	43146	42961	42783	42657	42554	40921
All Above Combined	703850	702472	701176	698683	694037	689973	651256
Change from prev. year		-1378	-1296	-2493	-4646	-4064	
Overall Province of Ontario	13135063	13409558	13551004	13677687	13792052	13921910	14945373
Change from prev. year Province		274495	141446	126683	114365	129858	

In terms of overall demographics, the total population in Northern Ontario is projected to decrease by 2.2% by the year 2041. We expect to see a 3.7% decrease in the Northeast and a 1.3% increase in the Northwest.

It is possible that climate change and housing prices will stimulate more interest in living in the North, but that trend has not yet made a real difference in population statistics at present.

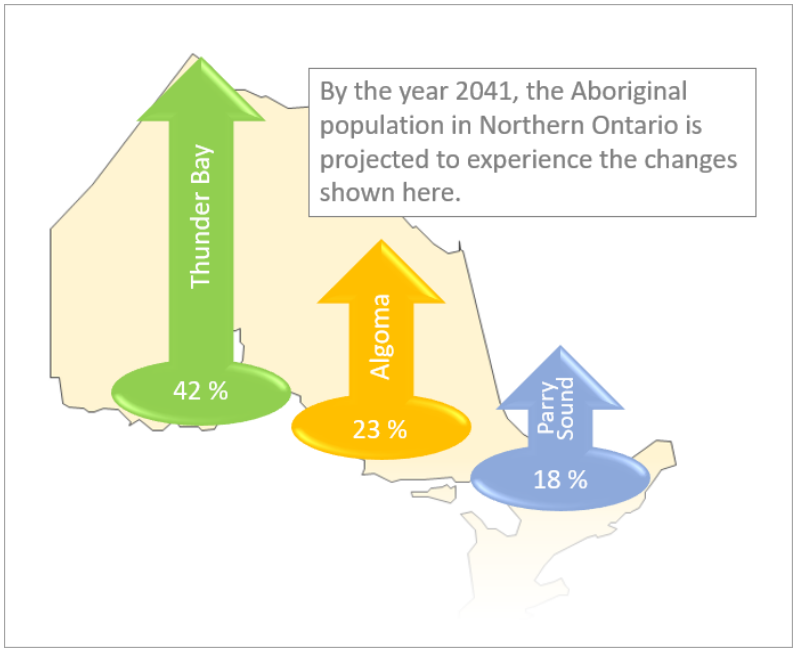


As the Northern population continues to age, there is a projected increase of 21% in individuals aged 65 and older moving to the North. The impact of the aging population may mean an emphasis on lower lactose products. The non-Indigeneous Northern population in 2016 looked like this when sorted by age range:



The relatively lower number of people in the 20-39 age range is a contributing factor to the pressure on the dairy workforce.

The Aboriginal population in Canada is younger than the non-Aboriginal population. This is due to higher fertility rates and shorter life expectancy. However, in Northern Ontario the Indigenous population is projected to increase for both working age and seniors. For example, in Rainy River this growth rate is estimated to be about 38% by the year 2041. In Sudbury District this growth rate is expected to be 28%. This is an underserved population that could potentially benefit from more local dairy products in their communities. There are an estimated 45,000 Indigenous individuals both on and off reserve in Northern Ontario. Lactose is a problem for an estimated 60% of people who are Inuit or Indigenous.



Standard of Living

The individual median income for Northern Ontario in 2010, which is the most recent year available, ranged from a low of $23,662 in Manitoulin District to a high of $32,938 in Greater Sudbury, compared with $30,526 for all of Ontario. Individual median income grew faster in every Northern Ontario district relative to the province-wide rate between 2005 and 2010. The total income before tax minus income from government sources (share of market income) is lower in Northern Ontario than all of Canada as a whole.

The increase in median income for select cities in Northern Ontario compared to all of Ontario from 2011 to 2015:

Median Total Income	2011	2015	Percentage Change
Elliot Lake	23,640	25,790	9.1% increase
North Bay	30,980	33,880	9.4% increase
Thunder Bay	33,240	36,940	11.2% increase
Greater Sudbury	34,570	38,560	11.5% increase
Sault Ste Marie	30,280	33,910	12.0% increase
Timmins	32,830	36,860	12.3% increase
Temiskaming Shores	28,310	31,880	12.6% increase
Kenora	33,980	38,800	14.2% increase
Ontario	30,290	33,840	11.7% increase

Source: Statistics Canada http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=1110008&p2=33

The cost of food in the North is higher, and this will factor into the ultimate pricing that will be palatable for Northern consumers. The Temiskaming Speaker reported on January 18, 2017 that the cost of food in the region had risen by 15% since 2011, with the monthly bill for a family of 4 reaching $873 per month. This is compared to $847 in Toronto, reported by Food Secure Canada's Paying for Nutrition report from September 2016. Far North communities pay a great deal more; in June 2015, Attawapiskat

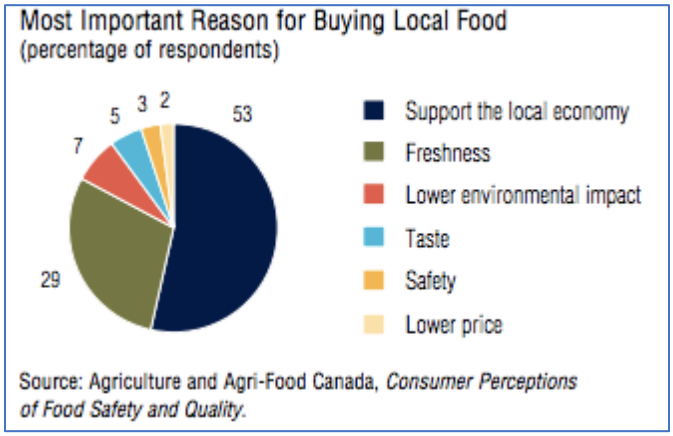
families were paying $1,909 per month, the cost in Fort Albany was $1,831.76, and the same food basket cost $1,639.42 in Moose Factory.

Market Research

For the purposes of this strategic plan report, primary and secondary research was commissioned through Nourish Foods. Findings show that people want local food and are willing to pay more for local food.

1. People want Local food

- More than they currently have available.
- "Local" is rated as more important than fair trade, free-range, or organic.
- The definition of local depends upon where you live:
    - For people in the North, it's "within 100 miles of where I live."
    - In the GTA, it's "Ontario."
- According to Restaurants Canada's 2015 chef survey, local food rates second as a trend, behind only craft and micro-brewed beer.



Why do people want local food? The main reasons cited through all of these studies are to support the local economy, because they believe local food is fresher and consumers increasingly like to know where their food comes from.

2. Many studies show that people will pay more for local food.

Consider these studies on Canadian Consumers:

75% of people would pay more for local food - BDC – Ipsos Reid, 2015

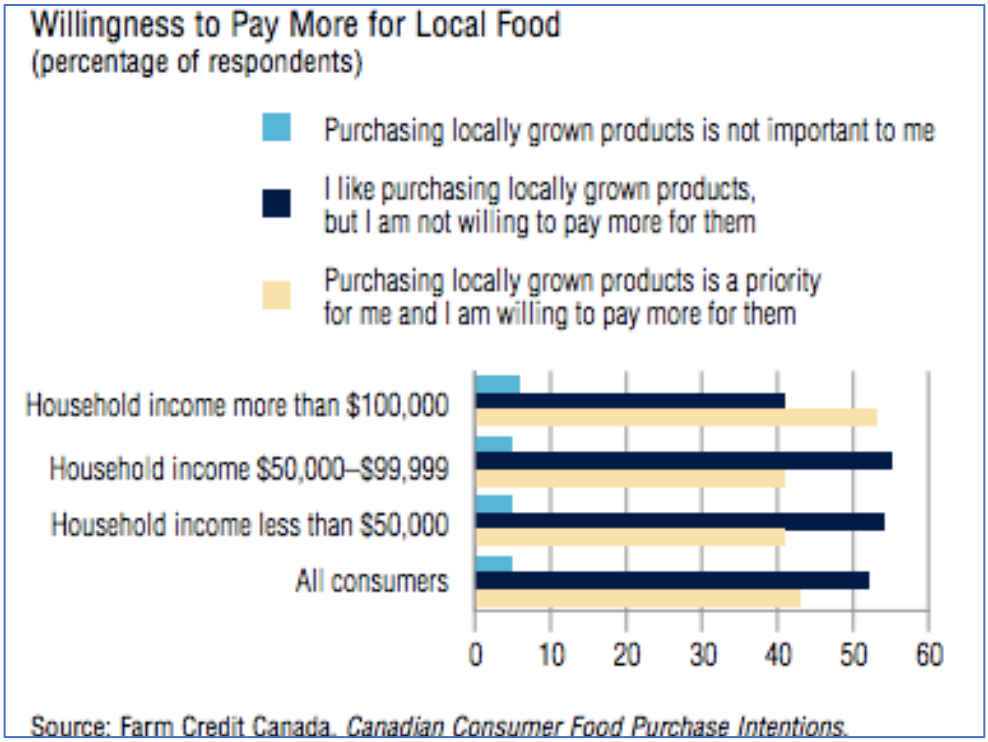
61% of Canadians say purchasing local food is important to them and almost 50% are willing to pay a 15-30% premium - Loyalty One, 2015

43% of all Canadians say they would pay more for local - NRG Research Study, 2013

42% of Canadians were willing to pay a premium - Farm Credit Canada, 2011

8/10 people likely to purchase fresh local food - Foodland Ontario, 2015

Not surprisingly, the more people make, the more willing they are to pay a premium for local food.



Willingness to pay also increases with the age of the consumer – it seems the older we get, the more we want to have fresh, local food. A small caution about these results is that people who use a lot of milk are less likely to show willingness to pay a premium (International Research Review 2000-2014).

3. Primary Market Research

Primary market research conducted in the Near North (defined as a 705-area code, in and north of Muskoka) and the GTA shows that people are interested in Northern food

- There is a strong desire for Northern products in the North - slightly higher than in Toronto or Canada with 84% of shoppers in the Near North interested in purchasing local food, versus 66% in the GTA.
- There is also a strong interest in Northern products in the GTA.

LoyaltyOne's 2015 survey, referenced above, also indicates that the reason people don't buy local is more about clarity and availability than a buying preference.

- The food was not promoted (39%).
- It was not clear what is actually local (36%).
- Local food was not found in the large retail chains (60%).

These findings lead us to the recommendation for a strategy that not only makes connections with retailers but also engages them in promoting and making local dairy visible. The Kentucky Milk Commission studied this local food phenomenon in 2010 and how it affected dairy. Their report indicates that to substantiate the appeal of local and keep consumers coming back, other desirable attributes are needed - for example, good for the local economy, freshness, or uniqueness. It's key that Northern processors are encouraged to develop unique flavour profiles and determine ways to make their packaging and products appealing along these lines.

Supplying the Mines

Riversedge Developments is exploring opportunities with mining supply and services for non-dairy food distribution and may look into dairy in the future. Currently there are few local dairy products being distributed to mining camps. Work is underway to start to provide local produce. With some additional effort this could include local dairy.

Retail Distribution

Meetings were held with senior managers who have worked in product development, marketing, and distribution at large retailers including Sobeys, Loblaw's and Northwest Company. The information that follows is a summary of these conversations.

Targeting of larger grocery stores for Northern dairy processors' products may be a longer-term initiative, because of the way large retailers currently buy. A suggestion for the shorter term is to look at

exporting to gourmet restaurants and smaller grocery and specialty food stores in Southern Ontario instead.

The idea of creating a "Northern Bundle" – a package of food that would regularly be delivered – was tabled. It is thought that this would educate stores and restaurants with a story around Northern dairy products; of course, it would be important to have a solution from both the retail and distribution side. The products can be a combination of both dairy and non-dairy products and presented as a boutique bundle.

This could work as follows: a core of Northern processors and producers would form a group, and ensure the group is able to meet the standards for shipping correctly from a food safety perspective. Drop-off locations would be located for products throughout the North, and a partner distributor would be enlisted to make the Northern loop to pick up products at the specified drop-off locations. This distributor would present their vendor number to a category manager at smaller grocery stores – for example, the 18 Foodland stores in Northern Ontario. The manager may waive listing and program fees for small projects such as the Northern Bundle. Strong sales and marketing support would be needed, and a dedicated sales person working with distributor is important (in some cases, this could be the same person). Some stores in Southern Ontario to target include Farm Boy, Fortinos, Longo's, Goodness Me, Organic Garage (they don't just sell organic), and larger farmers markets.
It was emphasized that the new brand may have to be introduced into the Far North differently than in Southern Ontario. The Far North may not want the products "bundled" but instead have a single product packed in bright flashy packaging and advertised all over social media and the local First Nations media networks. The Northern bundle product(s) can be wrapped in birch bark with a pine cone and targeted to the Near North and Southern Ontario. Both marketing techniques would contain the story around how the product was created and where it came from, such as the name of the producer/processor with possibly a photo, why the name of the product was chosen, and why they choose to live and work in the area they do.
Other ideas these experts asked NOFIA and Northern dairy processors to consider were:

Branding through Foodland Ontario**:** Foodland Ontario cannot promote one particular brand, commodity or region over another in Ontario. However, if a region has a brand to identify groups of food products from their part of the province, then they are welcome to co-brand with the Foodland logo. The products must fall with the consumer- and industry-approved definitions of Ontario food products.
Canada Cheese Awards: The Canadian Cheese Awards are held annually at the St. Lawrence Market in Toronto and the next competition will be held in June 2018. The Northern dairy processors could appear together as a collective for all to see what products can be created in Northern Ontario. This collective is an excellent place to showcase the collective group to the trade, to the public, and for judging. Registration begins in March 2018.
Culinary Tourism Alliance Feast On program: Any processor providing or ready to provide products to local restaurants should look into the Culinary Tourism Alliance "Feast On" program. This program is designed to showcase and celebrate restaurants featuring local Ontario foods on their menus. The Culinary Tourism Alliance is a not-for-profit devoted to connecting taste-makers.

Working with Indigenous Communities

Our conversations with Indigenous leaders served to remind us that Indigenous communities in Ontario's North are themselves diverse, with different food preferences and customs from community

to community. NOFIA is encouraged to continue these conversations and, as one leader said to us, "Be patient. We are all at different places." It would be advantageous to learn more about some of the initiatives that Indigenous communities already have underway, such as the work being done in Nishnawbe Aski Nation.

The Nishnawbe Aski Nation (NAN) is a political territorial organization representing 49 First Nations communities within Northern Ontario, with the total population estimated at 45,000 individuals, on and off reserve. NAN encompasses James Bay Treaty No. 9 and Ontario's portion of Treaty No. 5. It has a total land mass covering two-thirds of the province of Ontario, spanning 210,000 square miles. NAN works to improve the quality of life for the entire territory and advocates on behalf of the communities it represents. NAN is currently working to reclaim their right to food self-determination. They are doing this by promoting nutrition and supporting the exchange of knowledge and best practice between communities. NAN continues to pursue resources to support community food self-determination, and is in the process of developing a NAN Food Collaborative to assist the NAN Food Advisory Council in implementing its food strategy.
NAN has been working since 2009 to address their communities' access to affordable and nutritious food, and has developed a Food Strategy network based on six key pillars that support Community Food Self-Determination:

1. Traditional Practices
2. Imported Foods
3. Local Production
4. Nutrition Practice
5. Planning, Policy, and Advocacy
6. Research and Knowledge Transfer

The Kiitigaan Aski Food Distribution Pre-Feasibility study was performed to support the network for the Food Strategy of the Nishnawbe Aski Nation. Field researchers travelled to communities throughout NAN and completed 13 community food assessments. An assessment of the diversity of community food sources, food systems perceptions, and requirements for food self-determination was completed. Key individuals from the Ontario food industry were engaged to seek information and input, and to show the opportunities that exist for NAN communities to improve their food systems and self-determine their own sources of food. Three guiding principles were developed to provide a strong foundation for future work toward food self-determination. The principles were intended to reflect the importance of community knowledge and aspirations, especially where food access is vulnerable. The guiding principles are:

1. The priorities and agendas for food security interventions should be locally constructed
2. The intimate link between food and culture should be recognized in policy at all levels
3. Food knowledge, infrastructure and networks should be created and maintained through sustained support in place

The study outlines various recommendations for both the NAN communities and regional organizations. These recommendations include a focus on developing and sharing the knowledge and capacity needed to implement models for local food production. NAN sees a role for themselves in continuing to conduct innovative research into models and practices for supporting local food production. They also support increased community access to supplies and transportation needed to gather traditional land-based foods. It was noted in the report that food storage and logistics infrastructure is a major issue for fly-in communities. Dairy products will spoil because of a delay with

airlines, or will freeze on a truck. Airlines often lack a cooling or warming system to adjust the temperature of their cargo, and there is often a lack of cooling or warming system at some point in each community's food value chain, which increases the chance of spoilage. NAN hosted its 9th Annual Food Symposium from August 22 to 24 in Atikokan, where the emphasis was on sharing of traditional food knowledge and skill building; most presenters were from the First Nations communities.

Other Ontario organizations are working to assist Indigenous communities with economic and community development. Two that are interested in partnering on food-related issues include:

Shared Value Solutions: Shared Value Solutions is a human environment consulting firm located in Guelph. They work with Indigenous communities to help meet regulatory process needs and shape long-term community planning objectives. The relationships between Indigenous nations, industry, and government in Canada should be focused on prosperity on all levels. Some of the services Shared Value Solutions provide involve jurisdiction and sovereignty, land code, IBAs and negotiation, economic development, environmental monitoring, technical reviews, and environmental assessments.

Whalefeather Company: This organization, located in Midland, partners with Aboriginal Canadians and Native Americans to create sustainable jobs and profitable businesses. They secure funding to create new businesses based on a strong business case and community engagement. Their work involves growing healthy food and lining up distribution of food to Aboriginal communities and local markets. Their first greenhouse is targeting for September 2018. They are engaged with large grocery stores and distribution routes. New businesses with Indigenous groups or individuals are based on a special business case, and the individual or group secures their own start-up funds or obtains assistance from Whalefeather via investors, co-filing on grants, or any other options available. Milestones and financial controls are put in place and, once met, the Indigenous business or community earns out a controlling portion of equity while Whalefeather stays engaged in a minority position. Whalefeather can be the gateway for NOFIA into the Indigenous culture and communities. A new business joint venture can be created, and the business can be all types of food, not just dairy. Whalefeather compiles the research and identifies communities that would benefit and could potentially partner with the joint venture. They would work together to train and employ Aboriginals from a centralized location (for example, providing training and apprenticeship in a new dairy production site), and can expand after a first location shows profitability. If NOFIA chooses not to create a new company, they can still be subject matter experts for dairy and/or other agriculture needs in the North, and assist with feasibility studies.

Food Tourism

Although tourism is a big economic factor in the North, in speaking with experts in Food Tourism, we realized that the North does not present a typical opportunity to create a “food map” and encourage people to go on tours. Generally speaking, people like to jump in their cars on a weekend day and hit 3 or 4 spots within a leisurely 3- to 4-hour drive. This is not possible in most areas of the North. An alternative idea proposed by one of the Northern processors was to explore the possibly of farm stays or “apprentice young cheese maker” programs for the public. For processors, particularly on-farm processors with the appropriate set-up, people can be hosted for short stays and take part in the processing. Food tourists could then take home the products they made.

Other Northern Dairy Markets and Northern Products

It is interesting to note efforts that have been made in other Northern climes to work together to enhance the cause of dairy. Of particular note are the efforts going on the Netherlands. The Netherlands

have become famous dairy producers with the high-productive Holstein Friesian cow as their flagship. This has been a result of agricultural "blanket" recommendations applied to all farms based on extension services, farmer education, research, and agri-business supported by government. The local knowledge and farmer-driven initiative have gained importance in the Netherlands. This report recommends that countries develop their own strategy starting with their own resources and local circumstances rather than copying the system in the Netherlands.

A growing number of Dutch famers are employing direct ways to reach their customers, and "local for local" is the new trend. They are using the following methods:

1. Farm shops and/or farm-shop websites
2. Direct delivery from farmers' co-operatives
3. Direct delivery from individual farmers
4. "Pergola" constructions - individual farmers develop their own client groups who can also be partial owners of the farm
5. Co-operatives of regional special products
6. Farmers markets

Another Dutch initiative is Holland Dairy House**.** This is a collaboration among 11 Dutch companies that are all active in the international dairy farming business. Their mission is to support the sustainable development of the dairy sector worldwide, using the specific character and qualities of the country. They have specialists available to answer any questions related to dairy farming, from the soil to the cooling tank. They have experience with development of dairy farms from small to large farms, ranging from 1 to 5,000 cows, or more.

Although it has been noted above that undertaking completely new product ideas is expensive and complex, over the long term, building successful new and innovative Northern dairy products can only help build the market for Northern dairy overall. Consider these two examples:

Canadian Chaga: The Canadian Chaga mushroom grows on birch trees in colder climates. This special mushroom is packed with nutrients and has been used as a medicinal herb. Chaga tea is prepared using a hot-water extraction method to obtain optimal benefits from the minerals, vitamins, phenols, antioxidants, and enzymes from the birch trees.
Icelandic Skyr: Skyr is a yogurt-like low-fat dairy product unique to Iceland, with a rich flavour and creamy thick texture. Sykr is billed as "Iceland's secret to healthy living," reputedly provides health benefits, and is marketed as a product that has been around for over 1,100 years with the arrival of the first Nordic settlers.

Moose Milk Cheese

Not for the mass market but certainly value added, The Elk House in Sweden has three milk-producing moose and yields 300 kilograms of cheese per year. The cheese sells for $1,000 US per kg and is one of the most expensive cheese in the world. They have three to four varieties such as a rind style, a blue and feta style. It is available only for purchase in Sweden

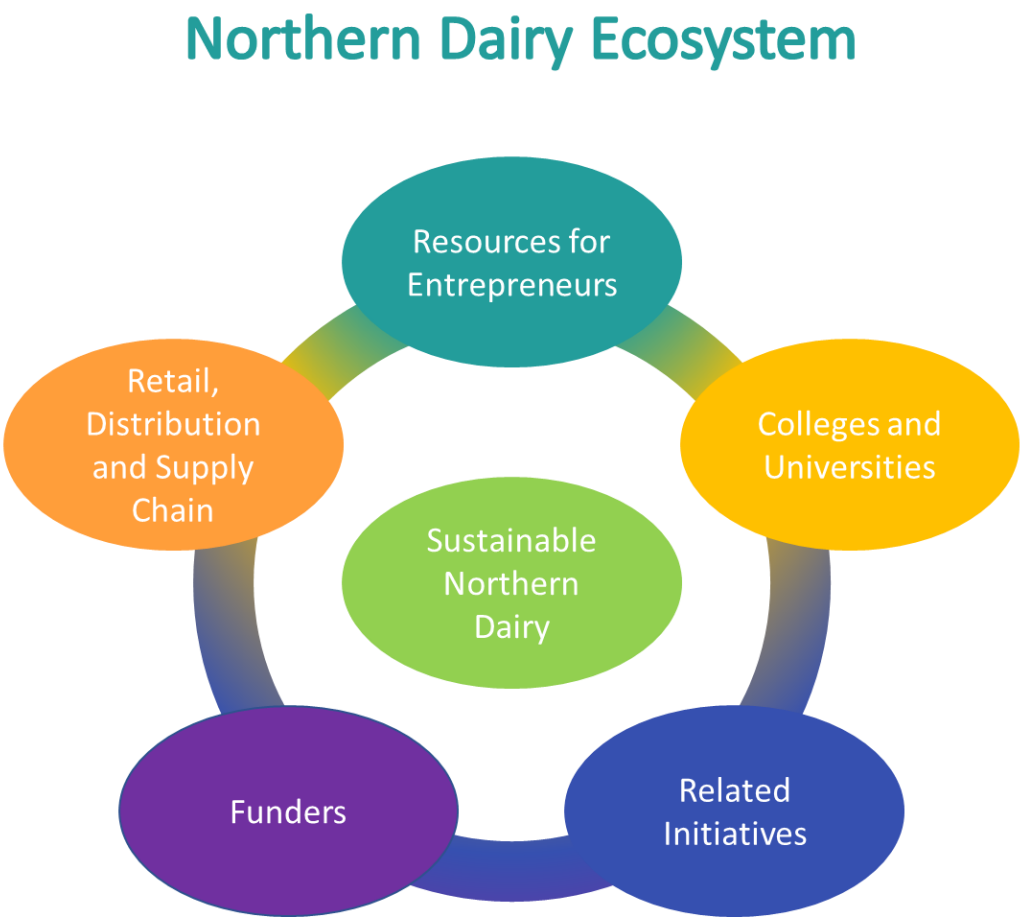
As more support collects around retailing and distribution, it might also be interesting to consider a way to engage many people across the North in the process of looking at innovative new ideas for Northern dairy products. This could be done by using a crowdsourcing strategy similar to that used by Agropur. In 2015, Agropur in Quebec introduced a comprehensive innovation strategy called "Inno Agropur" to spur development of new ideas both internally and externally, to accelerate the creation of new products and procedures. The "Inno Challenge" was launched in October 2016, which is "a crowdsourced initiative open to all creative thinkers in Quebec, Canada and around the world who have innovative ideas around the dairy products of the future. It is a first in agri-food innovation." Selected candidates will work with Agropur's R&D team to develop prototypes which will be showcased at the Inno Expo.

Northern Dairy Ecosystem

The Northern Dairy Ecosystem is divided into the following five areas to support sustainable Northern Dairy:

1. Resources for the Entrepreneurs
2. Colleges and Universities
3. Related Initiatives
4. Funders and Funding
5. Retail, Distribution and Supply Chain

Information and resources are provided in the pages that follow for each of these areas.



1. Resources for Entrepreneurs

Dairy Farmers of Ontario - Business Product and Development Program

A new program sponsored by the Dairy Farmers of Ontario, designed to support new and existing dairy entrepreneurs in starting or scaling up their business. This program will help dairy innovators with on-going support such as market research strategies, product formulation, business planning support, pricing strategies, and equipment purchases. Funding of $10,000 is provided to each participant with matching funds. A boot camp was recently approved by the DFO Board to accommodate those at earlier stages of their dairy business, and will begin in the late fall of 2017.
https://www.milk.org/Corporate/View.aspx?Content=Processors/ProgramsAndProcedures

Northern Centre for Advanced Technology (NORCAT)

An organization located in Sudbury to support and promote local entrepreneurship, innovation, and commercialization, to nurture and retain talent and ultimately provide a foundation to enable sustained economic and social prosperity for the Greater Sudbury Area. They offer Startup 101 which is a free course that offers practical and relevant advice to those interested in starting their own business. NORCAT is a central character in leadership for business development, entrepreneurship, start-up culture, strategic alliances, occupational health and safety training, and technology advancement (including support for Women in Tech being held October 2017 at their Maley Drive location. As noted, they host events, provide work spaces (hot desks in our innovation mill), and are the locally designated member of Canadian Digital Media, and the Ontario Network of Entrepreneurs (ONE). Naturally, they tailor their activities to the needs of various industries (they collaborate extensively with municipalities, utilities, mining, and forestry to name a few). If NORCAT doesn't have the expertise, they bring it onboard.
http://www.norcat.org/

Northwestern Ontario Innovation Centre (NWOIC)

The Northwestern Ontario Innovation Centre in Thunder Bay is an economic development organization helping start-ups and small- and medium-sized companies. If a business has an innovative component in any industry, they may have programs to help the business reach its potential. From its Thunder Bay location, this organization assists entrepreneurs from Manitouwadge to Kenora by providing advisory support, workshops and connections to funding and other resources. As one of the 17 Regional Innovation Centres located throughout the province, their team has the backing of an expansive network of business advisors to ensure a business owner get the answers they need from right within Northwestern Ontario. Services are free of charge, and always confidential.
https://www.nwoinnovation.ca/article/welcome-1.asp

Sault Ste. Marie Innovation Centre (SSMIC)

The Sault Ste. Marie Innovation Centre functions as a catalyst for economic development and drives business growth, facilitates research, and commercializes innovation in globally significant areas of science and technology. This is accomplished through partnerships, expert advice, community development, business incubation, youth outreach, and sector development activities. They have an Accelerator Hub in downtown Sault Ste. Marie dedicated to collaboration and innovation. A key division of SSMIC is the Rural Agri Innovation Network (RAIN), which was established for the delivery of projects and services that benefit agricultural businesses located in Algoma District.

The Rural Agri-Innovation Network (RAIN) is coordinating a multi-year funding program for farm and food businesses in Northern Ontario called the Sustainable New Agri-Food Products & Productivity Program (SNAPP). This will be in partnership with FedNor, Northeast Community Network, Eat Local Sudbury, and Cloverbelt Local Food Co-operative. SSMIC also offers many funding programs such as Broadband for E-Business and Marketing (BEAM), Professional Services Program (PSP), and the Innovation Accelerator Program (IAP).

http://www.ssmic.com/

Innovation Initiatives Ontario North (IION)
This Regional Innovation Centre in North Bay is a network of strategic regional and provincial partners that deliver programs and services to help entrepreneurs and established businesses grow and succeed. Their mission is to be the regional champion for the adoption and acceleration of innovation and technology by increasing the volume and velocity of economic growth.
http://iion.ca/

Indian Agriculture Program of Ontario (IAPO) Business, Farm and Agri-business Financing
This corporation provides funding to registered status Indigenous businesses for both on and off reserve. The board of directors consists primarily of First Nations individuals with agricultural backgrounds.
http://www.indianag.on.ca

Waubetek Business Development Corporation
This corporation provides business financing and economic development services to First Nations and Indigenous entrepreneurs, and hosts workshops on various topics.
http://www.waubetek.com/

Paro Centre for Women's Enterprise
The Paro Centre is located in Thunder Bay and has an Enterprise Centre hub to help women entrepreneurs. Their start-up programs include Making a Difference and Breaking Barriers-Building Bridges. PARO has partnered with other community partners to create the Social Enterprise Northern Ontario (SENO) for the social entrepreneur.
http://paro.ca/2013/paro-services/getting-started/

North Claybelt Community Futures Development Corporation (CFDC)
This Economic Development Initiative, supported by FedNor, is beneficial to private-sector businesses throughout Northern Ontario, from Parry Sound all the way to Kenora. Entrepreneurs Francophones PLUS has two programs: Vision+ and Youth Internship. This project allows Francophone private-sector entrepreneurs to benefit.
https://www.northclaybelt.com/entrepreneurs-francophones-plus-1

2. Colleges and Universities

Collège Boréal

Collège Boréal is expanding their agricultural presence with post-secondary contract training as well as with its Research Facility. They currently offer training programs in English such as Culinary Arts, Starting a Farm in Northern Ontario, and Heavy Equipment. Offerings in French include Techniques Agricoles and Gestion Culinaire. The college is currently working with the Dairy Farmers of Ontario to access funding for a research project. They have a large staff working on course development.

They will eventually create expansion for a food processing plant but no date is set yet. Nothing is planned for dairy yet but this has been identified as a need. The college is currently working on an incubator project. To start, it will allow small food processing opportunities with the Collège's existing kitchen and facilities. However, the plan is to work with community partners to access funding to potentially build a full processing plant. Collège Boréal is working with a FedNor committee to help create food strategy policies. The Collège is also working with Indigenous groups to train and educate with culinary skills needed to create traditional foods, with heavy equipment programs to clear land, and with construction programs to build greenhouses.

Businesses have the chance to work with the Collège's Research department in order to explore research opportunities. The proprietary information stays with the entrepreneur.

The Collège acknowledges the need to help grow this industry. It hosts many Agri-food related events such as "Discover Sudbury's Flavour at Sudbury's Culinary Tourism Forum." It has also met and toured many businesses in order to help them meet their needs, such as: Fromagerie Kapuskoise, UQAT Research Center, Thornloe Cheese, Brownlee Equipment, Grant Farms, Food Starter Toronto, and Ontario Agri-Food Venture Centre.

La Cité College

La Cité College's Office of Research and Innovation works with biotech, agri-food, construction, and environmental projects with 30 Technology Access Centres to develop expertise and support for subject matter experts. La Cité College's campuses are located in Ottawa, and a new partner campus was just created in Alfred. The current focus of La Cité's Office of Research and Innovation is to help determine marketing aspects (including market research and analysis for new products), to build an accelerator which is designed to support a client, and research capabilities for milk analysis. They have a formulation team and benchmark testing available at the Ottawa location. They host a rural water management research facility that is working to address the issues around dairy waste water.

Lakehead University

The Centre for Sustainable Food Systems Research and Engagement at Lakehead University in Thunder Bay works to bring together international, national, and local researchers, community practitioners, Indigenous groups, and the private sector to find ways for Northern and Indigenous communities to support a stronger local food system by enhancing local food marketing, production, and distribution. They use community-based research and community service learning project to accomplish this work. https://www.lakeheadu.ca/research-and-innovation/about/lakehead-university-strategic-research-priorities/cultures-societies-and-social-justice

University of Guelph

The School of Environmental Design and Rural Development at the University of Guelph is working on research on the expansion of agriculture in Northern Ontario. Their project is entitled "Enhancing Local

Food in Northern Ontario: Building Opportunities for the Production and Distribution of Local Food in Northern Ontario" and is available online at www.enhancinglocalfood.com. The project aims to identify and analyze issues of local food access, particularly how access impacts food sovereignty and security for Northern Ontario communities.
http://www.enhancinglocalfood.com/

Universities and colleges for potential collaboration that are located *outside of Northern Ontario*:

Georgian College

The Food and Nutrition Management program at Georgian College in Barrie teaches students how to manage a food services department while adhering to professional standards, quality management programs, nutritional and healthy living principles, and marketing and promotional activities.
http://www.georgiancollege.ca/academics/full-time-programs/food-and-nutrition-management-fdnm/

George Brown College

George Brown College in Toronto helps students develop technical skills needed to launch a career in the food business. The have facilities such as The Chefs' House that simulate the real-world work environment. The Food Innovation and Research Studio (FIRSt) is a research facility located at George Brown College that helps get new food products into the market.
https://www.georgebrown.ca/industry/hca/food_innovation_studio/

Niagara College

Niagara College in Welland has a co-op program for Culinary Innovation and Food Technology that partners students with industry to develop and improve products and operations and increase profitability. Niagara College is partnered with Food Starter to offer unique mentoring expertise to food entrepreneurs in the form of Food Business Feasibility workshops. An entrepreneurship hub called "ncTakeOff" is led jointly by the College's Business Hospitality and Environment, and Media Trades and Technology divisions.
http://www.canadianfoodandwineinstitute.ca/programs/culinary-innovation-food-technology/

3. Related Initiatives

Growth Plan for Northern Ontario

The Growth Plan for Northern Ontario is a strategic framework that is guiding decision-making and investment planning in Northern Ontario until 2036. Agriculture, aquaculture, and food processing sector was identified as one of 11 existing and emerging priority economic sectors in this Growth Plan. The complete list of sectors with the Growth Plan are:

1. Advanced manufacturing
2. Agriculture, aquaculture and food processing
3. Arts, culture and creative industries
4. Digital economy
5. Forestry and value-added forestry-related industries
6. Health sciences
7. Minerals sector and mining supply and services
8. Renewable energy and services
9. Tourism
10. Transportation, aviation and aerospace
11. Water technologies and services

The Northern Ontario Heritage Fund Corporation (NOHFC) focuses on the growth of the existing and emerging sectors identified in the Growth Plan.
Opportunities with be examined within each of these sectors for:

a) strengthen networks and collaboration among businesses, industry, the education and research sectors
b) economic development organizations, and Northern communities
c) attract investment
d) grow and retain existing competitive businesses, including export development activities and
e) diversification into value-added business opportunities
f) respond to labour market needs and opportunities through education, training, and entrepreneurship supports
g) support research tailored to the Northern Ontario context to inform business development and infrastructure planning
h) improve the clarity and efficiency of the provincial regulatory and legislative framework
i) integrate sector considerations in labour market and infrastructure planning

OMAFRA is leading the Northern Ontario Agriculture, Aquaculture and Food Processing Sector Strategic plan creation, which is one of the eleven existing and emerging priority economic sectors named in the Growth Plan for Ontario. Consultations ended in the fall of 2016. This plan is currently at the stage of creating strategic directions and establishing government commitments and developing these into actions. OMAFRA is currently developing the strategy for release in the fall of 2017. This structure is similar to the MTO Multimodal Transportation Strategy.
http://www.omafra.gov.on.ca/english/policy/northernagrifoodpaper.htm#2
https://www.mndm.gov.on.ca/en/northern-development/growth-plan-northern-ontario/policies-11-priority-sectors

Northern Ontario Multimodal Transportation Strategy

The Ministry of Transportation Ontario (MTO) and the Ministry of Northern Development and Mines (MNDM) are in the process of developing a Northern Ontario Multimodal Transportation Strategy (NOMTS), a key initiative to support the implementation of transportation directions in the Growth Plan for Northern Ontario. This strategy will be designed to guide transportation policy, program and investment opportunities to create a modern and sustainable transportation system in Northern Ontario.

A draft strategy has been released and sets out a vision and five goals to improve and transform the transportation system in Northern Ontario over the next 25 years. MTO and MNDM considered all public comments and feedback on the draft strategy until September 15, 2017. The final strategy will be released at the end of 2017 and will include a detailed action plan.
https://nomts.ca/
https://nomts.ca/resources/

Greenbelt Northern Food Distribution Workshop

Greenbelt Fund has compiled a host of partners to help address the challenge of accessing affordable and nutritious Ontario-grown food in Northern Ontario. A Northern Food Distribution Advisory Committee was created and the committee members met regularly to create the framework for a day-long hosted workshop. The workshop will identify gaps, opportunities, and new partnerships in Northern food distribution, with the goal of increasing collaboration and distribution efficiency among buyers of food. The workshop date was October 5, 2017 in Thunder Bay, and the Northern Ontario Farm Innovation Alliance was invited to participate.

National Food Policy

In 2013, the average cost to feed a family of a healthy diet for one week in Attawapiskat was $427 versus $198 in Toronto. Northern communities are facing higher rates of severe food insecurity and interventions are targeting towards increasing local food production. There has been a notable rise in the number of community-based solutions such as food co-operatives and Indigenous traditional foods groups.

By order of the Prime Minister, a Food Policy for Canada is underway to set a long-term vision for the health, environmental, social, and economic goals related to food, while identifying actions we can take in the short term. As part of the discovery and research phase of the project, we attended Food Secure Canada Northern Food Network Policy conference calls. Some of the recommendations that came from these calls were an overhaul of the Nutrition North Canada program to improve access and affordability of food while strengthening Northern regional food systems, including public support for programs enhancing access to traditional and community-grown foods. Another recommendation was to acknowledge that not all remote communities are the same and have the same needs, and designate Indigenous hunting, fishing, and gathering reserves within Federal Parks and Crown Land. The next recommendation was to increase the support for the growth and development of Northern food provisioning, including agricultural production, harvesting, and hunting, and commit to an inclusive and evolving process for policy development where different groups are able to be meaningfully engaged and include mechanisms for both processes and outcome evaluation. Specifically, a Food Policy for Canada should address governance, increasing access to affordable food, healthy and safe foods, and growing more high-quality food. Food Secure Canada is currently seeking organizational endorsements and then will submit to AAFC's consultation process.

The Northern Food Network is a working group for those involved or interested in Northern food security to share and learn about best practices in the North for all of Canada. This group is co-hosted by the Arctic Institute of Community-Based Research and Food Secure Canada. They co-facilitate bi-monthly webinars that foster discussions around four core themes around food security given the opportunities that currently exist around developing Canada's National Food Policy. These themes are environment, health, agriculture, and food security.
https://foodsecurecanada.org/sites/foodsecurecanada.org/files/files/draft_northern_priorities_for_national_food_policy1.pdf
http://www.aicbr.ca/northern-food-network

Nishnawbe Aski Nation

The Nishnawbe Aski Nation (NAN) is a political territorial organization representing 49 First Nations communities within Northern Ontario with the total population estimated at 45,000 individuals, on and off reserve. NAN encompasses James Bay Treaty No. 9 and Ontario's portion of Treaty No. 5. It has a total land mass covering two-thirds of the province of Ontario, spanning 210,000 square miles. NAN works to improve the quality of life for the entire territory and advocates on behalf of the communities it represents. NAN is currently working to reclaim its right to food self-determination, doing this by promoting nutrition and supporting the exchange of knowledge and best practice between communities. NAN continues to pursue resources to support community food self-determination, and is in the process of developing a NAN Food Collaborative to assist the NAN Food Advisory Council in implementing its food strategy.

NAN has been working since 2009 to address its communities' access to affordable and nutritious food, and has developed a Food Strategy network based on six key pillars that support Community Food Self-Determination:

1. Traditional Practices
2. Imported Foods
3. Local Production
4. Nutrition Practice
5. Planning, Policy and Advocacy
6. Research and Knowledge Transfer

The Kiitigaan Aski Food Distribution Pre-Feasibility study was performed to support the network for the Food Strategy of the Nishnawbe Aski Nation. Field researchers travelled to communities throughout NAN and completed 13 community food assessments. An assessment of the diversity of community food sources, food systems perceptions, and requirements for food self-determination was completed. Key individuals from the Ontario food industry were engaged to seek information and input, and to show the opportunities that exist for NAN communities to improve their food systems and self-determine their own sources of food. Three guiding principles were developed to provide a strong foundation for future work toward food self-determination. The principles were intended to reflect the importance of community knowledge and aspirations, especially where food access is vulnerable. The guiding principles are:

1. The priorities and agendas for food security interventions should be locally constructed
2. The intimate link between food and culture should be recognized in policy at all levels
3. Food knowledge, infrastructure, and networks should be created and maintained through sustained support in place

The study outlines various recommendations for both the NAN communities and regional organizations. These recommendations include a focus on developing and sharing the knowledge and capacity needed to implement models for local food production. NAN sees a role for themselves in continuing to conduct innovative research into models and practices for supporting local food production. They also support increased community access to supplies and transportation needed to gather traditional land-based foods. It was noted in the report that food storage and logistics infrastructure is a major issue for fly-in communities. Dairy products will spoil because of a delay with airlines, or will freeze on a truck. Airlines often lack a cooling or warming system to adjust the temperature of their cargo, and there is often a lack of cooling or warming system at some point in each community's food value chain, which increases the chance of spoilage. NAN hosted its 9th Annual Food Symposium August 22-24 in Atikokan where the emphasis was on sharing of traditional food knowledge and skill building; most presenters were from the First Nations communities.

http://www.nan.on.ca/article/about-us-3.asp
http://www.nan.on.ca/upload/documents/comms-09-21-2015-nan-food-day.pdf
http://kiitigaanaskihub.ca/2017/06/back-to-our-roots-2017-nan-food-symposium/

Ontario Student Nutrition Services

There are opportunities available to expand the amount of types of dairy products provided to students in both Indigenous and non-Indigenous schools. The Ontario Student Nutrition Service program (OSNS) was created by Crown Dairy distributors in Guelph. OSNS provides snacks and/or meals at no charge to Ontario school children. They are primarily morning meal-focused and inclusive where all children are invited to participate, which avoids stigmatization to those in need. Their funding is provided by the Ministry of Children and Youth Services, by national donors, and by school-level fundraising. Community partners can be added to the fundraising and these partners can allocate based on the needs of the school. Their pricing is set on what works for all locations and the minimum order is $500 to $1,000. They currently have five distributors across hubs in Sault Ste. Marie, Mississauga, Ottawa, Guelph, and Toronto. They work with a variety of points of contacts such as food and logistics coordinators, community partners, and distributors to form solid partnerships, and they fully understand how the supply chain costs impacts users.
The children benefit by increased academic achievement and improved social interactions. They currently run programs as far north as Marathon and will be in Timmins in the fall of 2017, and they are very interested in expanding the program to more schools in Northern Ontario. They are currently working with the Dairy Farmers of Ontario to bring more milk to schools using a subsidy. They are also interested in exploring more ways to bring innovative dairy products to school children. They currently have a “Cheese Wiggle” product that is exclusive to Ontario Student Nutrition Services and would like to introduce more products like these into schools. They indicated that the key to introducing new dairy products to children involve lots of sampling and the use of smaller packages. They work with the Six Nations Traditional Food Group and provide their dairy to Indigenous schools. The traditional food group is currently serving lyed corn and three sisters soup (corn, beans, and squash). Increasing dairy consumption is not a high priority for the traditional food group at this time.
http://www.feedingkids.ca/

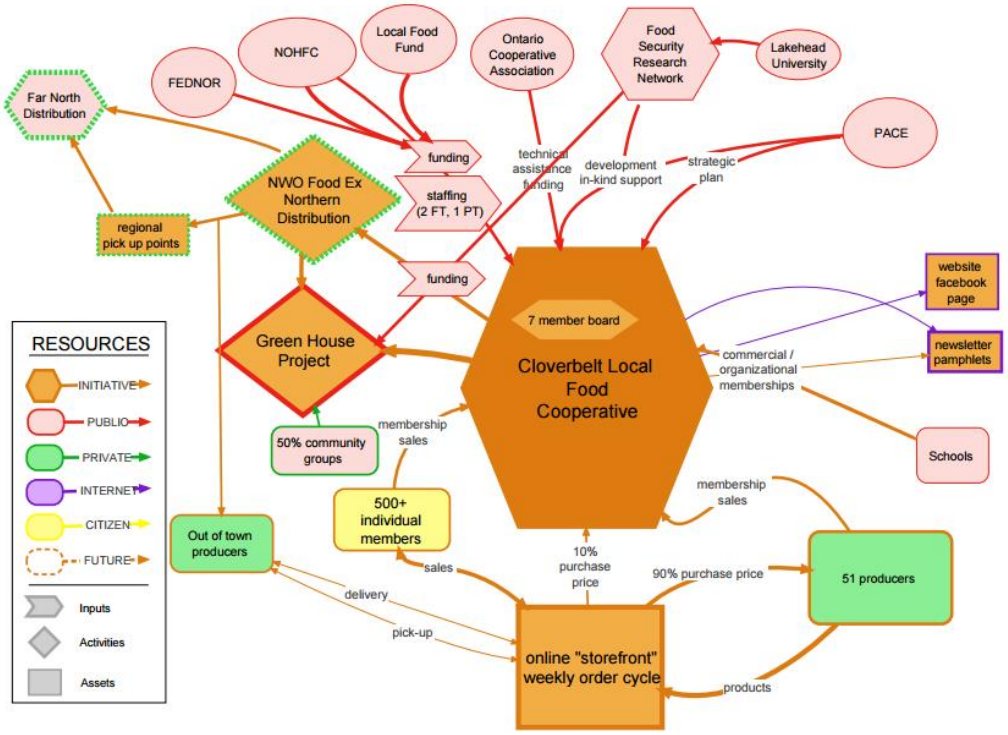
Thunder Bay Food Strategy Group

The Thunder Bay and Area Food Strategy is a robust group that brings local food players to the table to take a coordinated approach to achieving food security through the implementation of pertinent

research, planning, policy, and program development. With over 30 members representing farmers, institutions, government, food security organizations and more, they are conveners and activators who implement the priorities of the Thunder Bay Food Charter to create a healthy, sustainable, and equitable food system. The Thunder Bay and Area Food Strategy builds on years of community-led efforts to create a sustainable food system for Thunder Bay and Area. The Thunder Bay and Area Food Strategy is built upon seven pillars of a sustainable food system. By strengthening these pillars, the Thunder Bay and Area Food Strategy is committed to contributing to the economic, ecological, and social well-being and health of Thunder Bay and Area. The Thunder Bay and Area Food Strategy is directed by the Food Strategy Council and the Executive Committee.
http://tbfoodstrategy.com/

Cloverbelt Local Food Co-op

The Cloverbelt Local Food Co-op (CLFC) is a non-profit co-operative with over 1,250 farmers, consumers, and community organizations working together to increase year-round access to healthy and locally produced goods. They are based in Dryden and have regional food hubs in Kenora, Sioux Lookout, Ignace, and Upsala. They provide an online service that provides members with the ability to purchase local products directly from the producers. The consumer places their order and the producer drops off the order to the main hub in Dryden. Their goal is to become the central hub for production and distribution of local goods in Northern Ontario. CLFC has a project underway with coordinators placed throughout the region to grow and establish food distribution points and strengthen community partnerships. They have created a regional food map and distribution to encourage diverse local food production to strengthen food security. This map is categorized by producers, produce type by food categories, and system type - producer, processor, and distributor.



http://cloverbeltlocalfoodcoop.com/

http://clfc.maps.arcgis.com/home/index.html

FoodShare

FoodShare is working on creating a resilient, just, and sustainable food system, and continue to seek ways to work at every step of the food system and refine impacts and reach. They are based in Toronto and are actively working to provide food distribution to Northern Ontario. The Food Justice and Indigenous program goes into communities and involves them with support, training, and startup costs, and assists with an advisory circle. In 2016, they supported 812 student nutrition programs and reached out to 272,776 people via food.
http://foodshare.net/

FreshSpoke

FreshSpoke is a local food marketplace based in Barrie that is reinventing the supply chain. They do the heavy lifting by streamlining marketing and logistics so the business owner can concentrate on producing good food. They use a shared delivery system to assist with producer self-delivery and buyer pickup. The FreshSpoke app is available for iOS and Android for Southern Ontario, and testing is underway for a Northern Ontario food distribution app.

https://freshspoke.com/seller

Sioux Lookout Regional Distribution Centre

A new Regional Distribution Centre is currently under development to serve as a central distribution point for fresh foods to be transported to the 31 Far North communities. The communities of Sioux Lookout, Lac Seul First Nation, and Kitchenuhmaykoosib Inninuwug (KI) are working to create partnerships to support joint community economic development planning between First Nations and Municipalities. This pilot program is called the First Nations-Municipality Community Economic Development Initiative (CEDI) and is one of six in Canada. A community engagement process will be used to engage each community and address the unique needs and circumstances to create a social enterprise that will achieve community ownership. CEDI is funded by Aboriginal Affairs and Northern Development Canada (AANDC).
http://www.farnorthrdc.ca/

Mill Market Northern Pantry:

The Northern Pantry is a collection of Northern Ontario-made dairy products highlighted within a new special section of the Mill Market Farmers Market in Sault Ste. Marie, run by Riversedge Developments. This is a pilot project and all services are subject to change. If successful, there is a possibility it may expand to other Mill Market locations in the North. Mill Market in Sault Ste. Marie uses a definition of local that preference is first given to Algoma, then the Northern Ontario region, and then the rest of Ontario. If a product is not available first locally then products outside Algoma are allowed to be sold and there should be no duplication of products available in the pantry through current distributors. Application for SNAPP funding was submitted and NOFIA has provided a letter of support. Services that will be available include refrigerator shelf space and table space on both Wednesdays and Saturdays, promotion in Mill Market's social media, and space for signage, power, refrigeration, staffing, re-stocking, expiration dates, and preparing samples. Mill Market may consider purchasing products from the processors directly and resell at the pantry, and also having processors provide their own products based on sales and trial periods. The transportation of products to market is to be determined based on

the difficulties around current food distribution in Northern Ontario. It would be ideal to have a couple of small reliable transportation services to keep it simple.

Mining

Riversedge Developments is exploring opportunities with mining supply and services for non-dairy food distribution, and may look into dairy in the future. Currently there are very few local dairy products being distributed to mining camps, and work is underway to start to provide local produce.

A farming alliance example located *outside of Northern Ontario*:

Greater Golden Horseshoe Food and Farming Alliance

In 2011 the Greater Golden Horseshoe Food and Farming Alliance created a 10-year action plan to grow the cluster and understand the challenges around this growth. The plan was created because to date there has been "a lack of focus and collective purpose in formulating integrated policies to support and nurture its growth." A food and farming cluster is vital to the economic health of Ontario and Canada. The action plan is called the Golden Horseshoe Food and Farming Action Plan 2021 and it "identifies pathways for a more integrated and coordinated approach to food and farming viability in the area to ensure that the Golden Horseshoe retains, enhances and expands its role as a leading food and farming cluster."
http://www.foodandfarming.ca/food-and-farming-action-plan/

4. Funders and Funding

FedNor

FedNor invests in Northern Ontario in three priority areas: community economic development, business growth and competitiveness, and innovation, with a goal to encourage growth, diversification, job creation, and self-reliant communities. They provide financial support to projects led by businesses, municipalities, and First Nations.
http://fednor.gc.ca/eic/site/fednor-fednor.nsf/eng/fn02348.html

Northern Ontario Heritage Fund Corporation (NOHFC)

The programs that are funded by NOHFC must focus on the growth of the existing and emerging sectors identified in the Growth Plan for Northern Ontario.
http://nohfc.ca/en/programs

Greenbelt Fund

There are three streams available for funding through the Greenbelt Fund: the Broader Public Sector Grant Stream, the Market Access Grant Stream, and the Local Food Literacy Grant Stream. The funding opportunities are provided to local food leaders across all of Ontario and are not limited to the Greenbelt, with the common goal to increase the amount of local food consumed in the province.
http://www.greenbeltfund.ca/applying_for_a_grant

Agriculture and Agri-Food Canada Dairy Farm Investment Program (DIP)

The Dairy Farm Investment Program is designed to support the productivity and the competitiveness of dairy farmers, and help the sector adapt to the anticipated impacts from the Canada-European Union Comprehensive Economic and Trade Agreement (CETA). The program helps Canadian cow's milk producers improve productivity through upgrades to their equipment, and can be either capital or expertise expenses.
http://www.agr.gc.ca/eng/programs-and-services/list-of-programs-and-services/dairy-farm-investment-program/?id=1491935919994

Government of Canada Funding Concierge

Concierge is a single-access point to funding, expertise, facilities, and global opportunities for small- and medium-sized enterprises (SMEs) seeking to grow through innovation. The only service of its kind in Canada, it offers free, one-on-one assistance from expert advisors who provide customized guidance in selecting the most relevant programs and services to help you grow your business.
https://concierge.innovation.gc.ca/en/home

Government of Ontario Jobs and Prosperity Fund: Food and Beverage Growth Fund

This provides funding for food, beverage, and bioproduct projects to help create jobs, strengthen supply chains, enhance innovation and productivity, and increase market access. Grants received could be up to 20% or a combination of loans up to 40% or eligible project costs.
https://www.ontario.ca/page/jobs-and-prosperity-fund-food-and-beverage-growth-fund

Sustainable New Agri-Food Products & Productivity Program (SNAPP)

The Sustainable New Agri-Food Products & Productivity Program from the Rural Agri-Innovation Network (RAIN) supports Northern Ontario agriculture and food producers, businesses, communities, and First Nations to create new products, enhance abilities for season extension, scale up production, or enhance productivity. SNAPP will provide a grant up to $5,000 at 75% cost share to purchase equipment for eligible activities. Collaborations of three or more entities can be eligible for up to $15,000 at 75% cost share.
http://rainalgoma.ca/snapp/

Step Forward Entrepreneurs Program (SFEP)

Innovation Initiatives Ontario North (IION) sponsor a Step Forward Entrepreneurs Program (SFEP) with a goal to enhance innovation and commercialization for small- to medium-sized enterprises with up to $5,000 in assistance for sales and marketing, product development, or business enhancements.
http://iion.ca/funding/

Rural Economic Development Program (RED)

The RED program helps to remove barriers from rural communities for community economic development by helping rural communities and partners to be in a more competitive economic position to diversify and grow the local economies.
http://www.omafra.gov.on.ca/english/rural/ruralfunding/index.html

Natural Sciences and Engineering Research Council of Canada (NSERC)

The Discovery Grants Program supports ongoing programs of research with long-term goals rather than a single short-term project or collection of projects. These grants recognize the creativity and innovation that are at the heart of all research advances. Discovery Grants are considered “grants in aid” of research, as they provide long-term operating funds and can facilitate access to funding from other programs, but are not meant to support the full costs of a research program.
http://www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/DGIGP-PSIGP_eng.asp

Farm Credit Canada (FCC)

FCC helps businesses that support primary producers by providing specialized financial services, products, and resources. They are the fastest growing agribusiness and agri-food lender in Canada.
https://www.fcc-fac.ca/en/we-finance/agribusiness-agri-food.html

Canadian Council of Food Processors (CCFP)

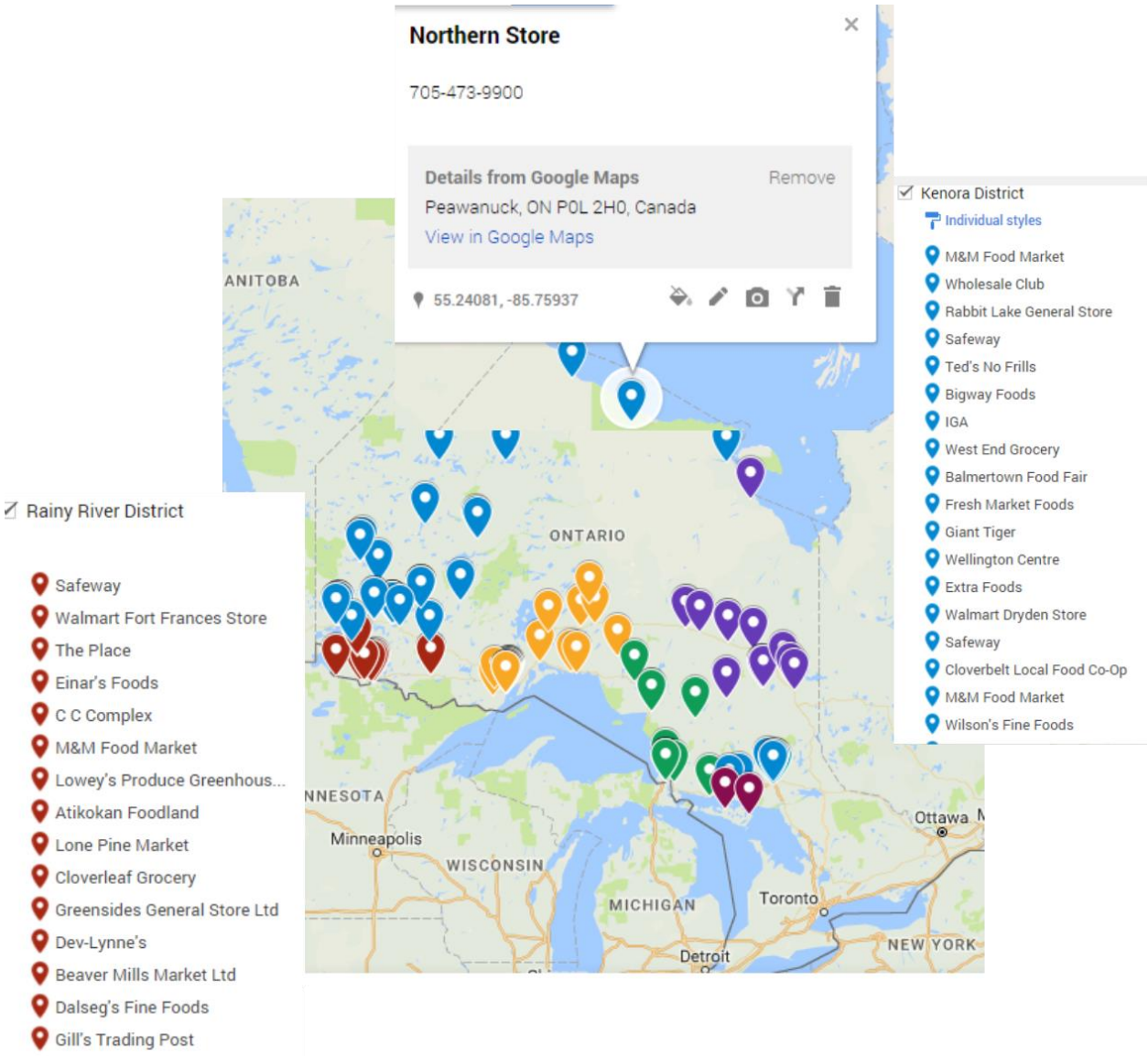
The Canadian Food Innovators offered a program to provide funding for Canada’s food and beverage processing industry over a five-year funding cycle to advance research and innovation.
http://canadianfoodinnovators.ca/article/call-for-proposals-canadian-food-and-beverage-processing-cluster

Growing Forward 3

The Growing Forward funding is a $3-billion federal-provincial-territorial initiative that encourages innovation, competitiveness and market development, adaptability, and industry sustainability in Canada's agri-food and agri-products sector. GF2 funding ends in 2018 and all recipients have been announced. Growing Forward 3 will launch April 1, 2018.

5. Retail, Distribution and Supply Chain

An interactive Google map, a sample of which is shown below, with a comprehensive list of retailers and distribution centers (also available in a table to sort by type and with specific locations), was created for this NOFIA project. It is available through NOFIA.



Company Name	Type	Address	City	Postal Code	Phone Number	District
M&M Food Market	Grocery store	439 Government St	Dryden	P8N 2Z4	807-221-6667	Kenora
Wilson's Fine Foods	Grocery store	Spruce St	Ear Falls	P0V 1T0	807-222-1080	Kenora
Shoprite Fine Foods	Grocery store	411 Main	Ignace	P0T 1T0	807-934-2462	Kenora
Co-op, Vermilion Bay Food Store	Distribution centre, Co-op	Spruce St	Vermillion Bay	P0V 2V0	807-227-2160	Kenora
Northern Store	Box store	General Delivery	Attawapiskat	P0L 1A0	705-997-2130	Kenora
Northern Store	Box store	General Delivery	Bearskin Lake	P0V 1E0	807-363-2597	Kenora
Northern Store	Box store	General Delivery	Cat Lake	P0V 1J0	807-347-2111	Kenora
Daneff's Food Market	Farm store	108 1 Ave N W	Geraldton	P0T 1M0	807-854-1401	Thunder Bay
Zechner's Ltd	Grocery store	155 Railway St	Nipigon	P0T 2J0	807-887-2910	Thunder Bay
Bigway Super A Foods	Grocery store	17 Main street	Kakabeka Falls	P0T 1W0	807-475-4573	Thunder Bay
Melanson's Groceries	Grocery store	255 Main St	Beardmore	P0T 1G0	807-875-2069	Thunder Bay
Longlac Valu-Mart	Grocery store	103 Hamel Ave	Longlac	P0T 2A0	807-876-4622	Thunder Bay
Ennis Grocery Store	Grocery store		Savant Lake	P0V 2S0	807-584-2221	Thunder Bay
Rousselle's valu-mart	Grocery store	3 Huron Walk #1	Manitouwadge	P0T 2C0	807-826-3323	Thunder Bay
Costa Foodateria Ltd	Grocery store	402 Winnipeg St	Schreiber	P0T 2S0	807-824-2311	Thunder Bay
Costa's Food Market Ltd	Grocery store	13 Simcoe Plaza	Terrace Bay	P0T 2W0	807-825-4501	Thunder Bay
J G Grocery	Grocery store		Constance Lake	P0L 1B0	705-463-1111	Cochrane
Skaf's Just Basics	Grocery store	470 Hodder Ave	Thunder Bay	P7A 7X5	807-683-3930	Thunder Bay

Organizations and Associations

1. Canadian Dairy Commission - www.cdc-ccl.gc.ca/CDC/index-eng.php
2. Dairy Processors Association of Canada - www.dpac-atlc.ca/
3. Ontario Dairy Council - www.ontariodairies.ca/default.aspx
4. Dairy Farmers of Ontario - www.milk.org
5. OMAFRA Food Industry Competitiveness Branch - www.omafra.gov.on.ca/english/food/
6. Canadian Dairy Information Centre - www.dairyinfo.gc.ca/index_e.php

Regulatory Environment

1. Canadian Food Inspection Agency - www.cfia-acia.agr.ca/food/dairy-products/eng/1299789088163/1299794504365
2. Ontario Ministry of Agriculture, Food and Rural Development - www.omafra.gov.on.ca/english/food/inspection/dairy/
3. National Dairy Code – Part I - www.dairyinfo.gc.ca/pdf/dairy_code_sept_2015_I_e.pdf
4. National Dairy Code – Part II & III - www.dairyinfo.gc.ca/pdf/National_Dairy_Code_Part_II-III_(2005)_e.pdf
5. Canada Agricultural Products Act, Dairy Products Regulations - laws-lois.justice.gc.ca/eng/regulations/sor-79-840/index.html
6. Dairy Products Marketing Regulations - laws-lois.justice.gc.ca/eng/regulations/SOR-94-466/page-1.html
7. Canadian Food and Drug Regulations - www.hc-sc.gc.ca/fn-an/legislation/acts-lois/act-loi_reg-eng.php
8. Agricultural Products Marketing Act - laws-lois.justice.gc.ca/eng/acts/a-6/index.html
9. Ontario Milk Act - www.ontario.ca/laws/statute/90m12
10. Ontario Milk Allocation Policy - www.milk.org/Corporate/PDF/Processors-MilkAllocationPolicy-0517.pdf
11. Dairy Establishment Inspection Manual - www.inspection.gc.ca/food/dairy-products/manuals-inspection-procedures/dairy-establishment-inspection-manual/eng/1339533901044/1339534012017

Suppliers (Processing Equipment, Testing systems, Supplies)

1. Advanced Process Technologies, Inc. (www.apt-inc.com/)
2. Alfa Laval Inc. (http://www.alfalaval.com/industries/food-dairy-beverage/dairy-processing/)
3. CEM Corporation (testing systems) (www.cem.com)

4. Complete Filtration Resources, Inc. (www.gotocompletefiltration.com)
5. C. van't Riet Dairy Technology USA - www.schuller.us
6. The Cheese Maker - www.thecheesemaker.com
7. Container and Packaging Supply - www.containerandpackaging.com
8. Dairy Connection - www.dairyconnection.com
9. Dairy Heritage/Agri-Service LLC - www.dairyheritage.com
10. DCI, Inc. - www.dciinc.com
11. Ecolab, Inc. - www.ecolab.com
12. Evergreen Packaging - www.evergreenpackaging.com
13. Filler Specialties Inc. - www.filler-specialties.com/industry/dairy/
14. Ivarson Inc. - www.ivarsoninc.com
15. GEA North America - www.gea.com/en/applications/dairy-processing/index.jsp
16. Glengarry Cheesemaking and Dairy Supply Ltd. - www.glengarrycheesemaking.on.ca
17. Grainger - www.grainger.com
18. Membrane Processing Specialists, Inc. - www.mssincorporated.com
19. Pall Corporation - www.pall.com/foodandbev
20. Pentair Sudmo - www.sudmona.com
21. RELCO, LLC - www.relco.net
22. Russell Finex Inc. - www.russellfinex.com
23. Sanitary Design Industries - www.sanitarydesigns.com
24. Separators, Inc. - www.sepinc.com
25. SPX FLOW - www.spxflow.com/en/
26. Stanpac - www.stanpacnet.com
27. Tetra Pak Canada - www.tetrapak.com/ca
28. Tray-Pak Corporation - www.traypak.com
29. Weber Scientific - www.weberscientific.com
30. Winpak Ltd. - www.winpak.com

Used Dairy Equipment Suppliers (Europe)

1. http://www.machineryworld.com (UK)
2. http://www.scherjon.eu (Netherlands)
3. http://www.processplantandmachinery.com (UK)
4. https://useddairyandfoodequipment.com (Germany)
5. http://www.heuvelzuivelmachines.nl (Netherlands)
6. http://www.smalldairyequipment.com (Netherlands)
7. http://www.machinepoint.com (Spain)
8. http://www.agrometal.hu/english/dairy_plants/ (Hungary)
9. https://www.perryprocess.co.uk (UK)
10. http://www.ippe.com (UK, Germany, Austria, USA)

Used Dairy Equipment Suppliers (USA)

1. http://www.schiercompany.com (USA)
2. http://www.eischenenterprisesinc.com (USA)
3. http://www.heritage-equipment.com (USA)
4. http://www.imexchange.com (USA)
5. http://www.sprinkman.com (USA, butter churns)

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Abbreviations

BOC	Biological Oxygen Demand
CDC	Canadian Dairy Commission
CFIA	Canadian Food Inspection Agency
CIP	Clean-in-place
COD	Chemical Oxygen Demand
CODEX	Codex Alimentarius – International Food Standards
COP	Clean-out-of-place
DEIM	Dairy Establishment Inspection Manual
DFC	Dairy Farmers of Canada
DFO	Dairy Farmers of Ontario
FSEP	Food Safety Enhancement Program
HACCP	Hazard Analysis and Critical Control Point
HC	Health Canada
kWh	Kilowatt hour
lpd	liters per day
MPC	Milk Protein Concentrate
MPI	Milk Protein Isolate
MT	Metric Ton
NDPP	Northern Dairy Processing Project
NOFIA	Northern Ontario Farm Innovation Alliance
OMAFRA	Ontario Ministry of Agriculture, Food, and Rural Development
QC	Quality Control
SMP	Skim Milk Powder
SNF	Solids Non-fat
UHT	Ultra-high Temperature
WMP	Whole Milk Powder
WP	Whey Powder
WPC	Whey Protein Concentrate
WPI	Whey Protein Isolate