Powell River Farm Sector
Opportunities and Challenges
2018

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Community in Brief

Located within the traditional territories of the Tla'amin people, the Powell River Regional District covers a landmass (mainland and islands) of more than 5000 km.^{2} Remotely situated 120 km northwest of Vancouver along BC's Malaspina Strait, the community is accessible only by air or ferry. Despite its geographic isolation, the region was home to roughly 21,000 people in 2017, most of them living within the municipality:

- Tla'amin Nation 1,077
- Regional District 6,741
- City of Powell River 13,165

Tla'amin Nation

The government seat of the modern Tla'amin Nation is located north of the municipality of Powell River, along Highway 101. The Tla'amin people have inhabited the Powell River region continuously for thousands of years, and they are the descendants of a rich heritage with a history that included numerous permanent settlements, traditional food collection sites and areas of great cultural significance. Tla'amin's economic, social, political and spiritual traditions were based on their unique relationship with the land of their ancestors.

Colonialism and its impacts disrupted the Tla'amin people's access to their traditional foods for more than 200 years. Having regained the right to self-government, and with it control of 8,322 hectares of land within its traditional territories, Tla'amin Nation is exploring the use of environmental, economic, political and social systems to protect, conserve, and restore traditional food sources for present and future generations. Tla'amin intends that sustainable management of their land resource will generate wealth for their Nation - and, over time, dramatically improve the quality of life for every member of the Tla'amin community. The nation has a young population that is growing rapidly. Over 60% of the Tla'min people are under the age of 40.

Farm Sector

Farms have existed in the Powell River area for more than 100 years. The 53 Powell River farms in this study are spread out over 3 main areas within the regional district, with the municipality of Powell River located at the centre: 25 farms in the north (Electoral Areas 'A' & 'B'); 22 farms in the south (EA 'C'); 7 farms on Texada Island. These local farms enjoy one of the mildest climates in all of Canada, with an average yearly temperature of 10℃ and average annual precipitation of more than 950 mm.

Introduction

This report attempts to avoid revisiting information provided in two previous local studies of food and farming in the PRRD,[1] and instead examines local farming and traditional food activities[2] in detail, while expanding upon the economic and social context in which local farmers currently operate. 53 local farmers have been identified, together with the goods and services they produce. A Powell River farm product suppliers' list has been created for the first time. Food system market structure, locally and globally, is reviewed. The economic reality of BC's small and family farms is explored, together with the effects of federal and provincial promotion of food as an export commodity. New local sector data includes:

- Tla'amin First Nation's Access to Traditional Foods
- A 14 month scan of available vacant land in the PRRD
- Analysis of local farmland utilization
- Survey of local grocery stores – willingness to sell local farm products
- Survey of local restaurants – willingness to offer local farm products on menu
- Fall Fair and Farmers' Market customer and farmer vendor surveys
- Ownership of local/regional chain grocery stores

New information on food system structure and BC agricultural sector includes:

- BC Horticulture Labour Market Challenges
- List of drivers/motivators of farmers' land use decisions
- Farmer Demographics, with a focus on the rise of Female and Young Farmers
- Non-monetary values of farming
- Gross and net incomes of small and family farms
- Impacts of government definitions of "farms"
- Globalization of Canadian Food
- The growth of BC food exports
- Modern Cold Chain (refrigerated transport and storage sector)

Opportunities clearly exist in the local agricultural sector, but coordinated action, clear goals and better communication and planning are required from all stakeholders. Key findings of this study are provided on the following pages. Detailed stakeholder recommendations are provided at the end of this document.

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[1] *Powell River Community Food System Assessment* (2016) and *Economic Development Plan for Agriculture* (2009)

[2] Tla'amin Nation's hunting, fishing, gathering and stewardship of traditional food sources within its territories.

Key Findings

Access to Traditional Foods

- Colonialism disrupted the Tla'amin people's access to their traditional foods and collection sites for more than 200 years.
- With the restoration of self-government, the Nation is acting within multiple environmental, economic, political and social systems to protect, conserve, and restore traditional food sources for present and future generations.
- The nutritive value of traditional foods is superior to most foods in mainstream systems, and its regular consumption is a protective factor in the health of Indigenous people.
- There is archaeological evidence that the Tla'amin people engaged in agriculture post-contact, frequently incorporating the planting and managing of orchards into important food gathering sites, and raising cattle on Harwood Island.
- First Nations across Canada have voiced growing concern over the increasing use of their traditional plant and ecosystem knowledge without compensation.

Defined Farm Operators and Farm Products

- 53 local farmers have been identified, together with contact information, farm location, and preliminary lists of the goods and services each farm produces.
- A local farm product suppliers' list has been created for the first time.
- This data is contained in stand alone documents submitted with this report.

Farmland Access

- A property or operation being deemed a farm according to federal and provincial criteria does not confirm agriculture is the primary land use
- The ALR is a provincial zoning designation that impedes non-agriculture land use in specific areas. It does not act directly to protect farmers or farming.
- No agricultural land leases available through Ministry of Forest – agriculture is not a designated use for crown land in our TFL
- Land is available but it is costly, and there is strong competition from wealthy residential buyers.
- In the current real estate market, existing active farmland will be increasingly under threat as local farmers retire and sell their properties.
- Succession planning, a local farmland trust with long term lease structures and retiring/aspiring farmer matchmaker platforms could be used to reduce this threat.

Farmland Use

- The total land base defined as active farmland in PRRD in 2016 was 1,563 hectares (6 miles^2 or 16 kilometers^2)
- 54% of this farmland (848 ha) was not in production[3]
- 30% (556 ha) of this farmland was used as livestock pasture
- 4% (64 ha) was used in field based food production (vegetables, fruit, berries, nuts)
- Only 3 of the 53 local farms included in this study are engaged in greenhouse production, despite that fact that it is less land intensive (typically yielding 15 to 20 times more produce than an open field of the same area)

Food production

- Powell River's share of total BC farmland is 0.1%. Despite this tiny share, PRRD's total production exceeded its land base share by significant amounts:
    - 2 times farmland share in fruit and nut production (0.2%)[4]
    - 3 times farmland share in vegetable production (0.3%)
    - 4 times farmland share in goat and rabbit production (0.4%)
    - 6 times farmland share in sheep and lamb production (0.6%)
- There is healthy diversity in the farm goods that are produced in PRRD, but distinct product groups could be seen, with the most commonly produced farm goods as follows:
    - Vegetables/greens (27 of 53 identified PRRD farms)
    - Eggs (22)
    - Poultry (15)
    - Berries (13)
    - Sheep (12)
    - Beef (9)
    - Pork (9)

Value of Production/ Net Farm income

- Market and agriculture sector profiles report Farm Cash Receipts (FCR).
- FCR represent earnings before expenses, and distort our sense of the real value of farm production (Stats Can estimates minimum $0.85 in expenses for every $1.00 in sales on BC farms)

[3] This is land used for farm buildings, roads, pens or idle land.

[4] A chart showing in-season times for BC field grown fruits and vegetables was developed as part of this research and is appended to this report as a stand alone document.

- As is the case with most BC and Canadian non-industrial farms, net earnings from Powell River farms are low
- 41% of BC farms gross less than $10,000 per year
- Low farm earnings are supplemented with off farm income (51% of BC farmers work off farm)
- Powell River's small and family run farms are not engaging in agriculture solely for economic benefit.

Regional, Provincial and National Markets for Farm Products

- Federal and provincial agricultural policy is focused on expanding exports of Canadian and BC food products.
- Cold Chain (refrigerated transport and storage system) is also becoming global in scope, technology and capital intensive, highly regulated, altering traditional role within the food system
- Food is increasingly regarded as a commodity rather than a basic human right.
- As food markets go global, they require that farmers meet universal production standards. Certification costs, quotas and license restrictions can prevent local farmers from selling into markets outside of the PRRD.
- PRRD produced/slaughtered (Class D license) meat can only be sold in the PRRD
- PRRD produce (fruits and vegetables) must be GAP certified to enter the cold chain – each type of fruit or vegetable crop produced must be individually certified

Local Markets for Farm Products

- All farms are selling direct to consumers (farm gate sales)
- Local restaurants and grocery stores are using/selling local farm goods and would like to use/sell more
- Lack of farmer understanding of restaurant and store needs is main obstacle
- Other barriers include managers not having time to search for reliable local suppliers and need for fixed price point

Farmers' Market

- Local Farmers' Market needs to re-establish its focus on farmers
- 72% of Fall Fair vendors selling goods/services with no link to local farming[5]
- 62% of FM vendors selling goods/services with no link to local farming[6]
- Farmers at Fall Fair 2017 reported daily sales ranging from $200 - $799

[5] Fall Fair 2017. This is the only public harvest celebration in the PRRD.

[6] On the day surveyed (September 23, 2017)

- Farmers at Farmers' Market[7] reported daily sales from $200 to $599
- All farmers surveyed reported struggling with booth fee based on % of sales, rather than flat rate.
- Males were dramatically under represented in consumer population at both events
- 58% of Fall Fair attendees gave farm produce as a reason for attending, while only 32% purchased it.
- 82% of Farmers' Market attendees gave farm produce as a reason for attending, while only 63% purchased it.
- Fall Fair 2017 was attended by only 7% of local population
- Farmers' Market, on the day surveyed, was attended by less than 1% of locals
- Market fee structure, vendors and promotion need to be re-evaluated

Need for Local Training Opportunities

- Traditional routes to farming knowledge (growing up on a farm, learning from family members) are largely gone.
- New farmers face a steep learning curve when it comes to starting and managing a farming operation.
- Would-be farmers need training programs that will help them get into the kind of agriculture they're looking for: small, diversified, sustainable farms.
- Credentialed training also strengthens the position of farmers who are seeking financial support for their farm operations – lenders and investors are more likely to look favourably on the aspirations of a farmer with relevant certified skills.
- Horticulture Technician Foundation Training Program was developed by BC horticulture experts and is certified by BC's Industry Training Authority. The program prepares and certifies participants for field and greenhouse based crop production.
- All of BC's field and greenhouse based operations are currently struggling with a shortage of skilled workers.

Local Food Safety

- Safety of local farm meats is protected under Class D license. This protection needs to be more clearly communicated to restaurants and retailers.
- Local farmers who are selling produce outside of PRRD are GAP certified
- There are currently no food safety guidelines for the handling of locally farmed and sold produce or traditional foods (meat, fish, plants).
- The need for local industry standard cold storage facilities identified by Tla'amin and several local farmers.

[7] On the day surveyed (September 23, 2017)

- To date, there has never been a food safety incident related to foods products that have been sourced or produced within the PRRD.
- However, just one instance of a negative human health impact from local food could present a huge threat to the ongoing viability of local markets
- Local stakeholders need to examine this issue, and, if needed, work together to create a Strategic Plan for Local Food Safety.

Market and Sector Development Opportunities

Multiple market and sector development opportunities were identified in the course of this study:

- Local Retail and Restaurant Sales
- Enhanced direct-to-consumer selling practices (CSA, food sheds, other distribution strategies to centralize selling)
- Agro-tourism
- Traditional food Ecotourism
- Value Chain Economy
- Use of Agroforestry practices to improve available farmland use (silvo-pasture, intercropping, etc.)
- Agro-Tourism economy
- Value Chain economy
- Greenhouse Production
- Non-Timber Forest Products
- Community food and agriculture waste composting

Funding Sources for Sector Initiatives

- Funding opportunities specifically for the non industrial / small farm sector currently do not exist at either the provincial or national level
- Creativity and resourcefulness are needed to match specific target outcomes for local farm sector initiatives to available funding
- Potential funding matches have been identified for:
    - Consultation and planning
    - Agricultural Sector Capacity Building
    - Access to Traditional Foods / Food Security
    - Agro-tourism / Food Based Ecotourism
    - Local Food Festivals
    - Human Resource Development

Guide to Supporting Documents

Several supporting data sets were created in the course of this study. Although too extensive to include in the main body of this report, they provide significant additional information and are appended to the report as stand alone documents, as follows:

BC IN SEASON CHART.pdf

Identifies fruits and vegetables that are currently grown in BC, along with their average harvest times in this province. Multiple secondary buyers (restaurants, retailers) identified improvement in production planning as a factor that could increase their ability to purchase from local farmers. The BC In Season Chart was created during the current study in order to integrate information on BC field production capacity from multiple platforms and formats. Individual fruit and vegetable farmers, or a supplier stakeholder group, could easily adapt this chart for use in production planning and coordination. It also helps consumers and secondary buyers to recognize realistic supply windows for specific field grown fruits and vegetables.

FARM LIST.pdf

Identifies individual local farms and farm operators[8], with production overviews and contact details and for most of these farms. These individual Powell River farms were identified through searches of websites, blogs, address listings, Powell River Farmers' Agricultural Institute Membership list, Farmers' Market Vendors lists, online and posted promotional materials, local journal and news features on Powell River, as well as by querying already identified local farmers about other farms in the PRRD. This list is provisional and emergent rather than definitive – it includes only local farms that have online or local market visibility. Hopefully more farmers will come forward if they see they are not on this list.

GREENHOUSE HORTICULTURE.pdf

Explores greenhouse production components – buildings, systems, substrates – as well as recent innovations in technology and practice.

[8] 53 farms and 1 Indigenous business based on value-added products derived from wild plants.

INDIGENOUS PLANTS.pdf

Identifies 26 plants that are indigenous to the traditional lands of the Tla'amin Nation that could be candidates for cultivation through agroforestry. The plants identified and discussed in this document are linguistically and culturally significant to the Tla'amin people. For this reason, the information compiled in this document is regarded as the Intellectual Property of the Tla'amin people, and not intended for public view without explicit consent of the representatives of Tla'amin Nation.

OVERVIEW HORT TRAINING.pdf

Provides a brief overview of the Horticulture Foundation Training Program identified in the Education and Training section of this report. It provides a snapshot of technical and essential workplace skills and training timelines involved.

OUTLINE HORT TRAINING.pdf

This document provides a detailed description of training content, outcomes, facility and instructor requirements for the Horticulture Foundation Training Program that is identified in the Education and Training section of this report.

PRODUCT SUPPLIER LIST.pdf

Identifies local farm products and services with multiple suppliers: eggs, vegetables, berries, Class D License, etc.). It can also act as a guide to available products and services and where to get them – something a number of primary and secondary consumers have requested. The product supplier data collected clearly highlights a potential for producer stakeholder groups: groups of farmers who may wish to work together to coordinate production and sales of specific farm products within the PRRD.

1 Tla'amin Nation Access to Traditional Foods

Colonialism and its impacts disrupted the Tla'amin people's access to their traditional foods for more than 200 years. Having regained the right to self-government, the Nation is acting within multiple environmental, economic, political and social systems to protect, conserve, and restore traditional food sources for present and future generations.

Prior to European contact, the marine environment of the Northwest Coast was rich with a diversity and abundance of species. Oral histories, ethnographic accounts and the archaeological record confirm that marine areas were a hugely important source of food for the indigenous communities of the Northwest Coast, and that these communities possessed ecological and technological knowledge that allowed them to effectively harvest and manage these resources for thousands of years.

However, from the time of their first contact in 1792 until they re-gained the right of self-government in April 2016, the Tla'amin people were subjected to more than 200 years of horrific injustice, in which their cultural practices and language were forcibly suppressed, their families and society shattered, their homes and communities destroyed, their human rights violated and their traditional lands exploited for the benefit of others while they endured extreme deprivation, and the abuse and intergenerational traumas perpetrated through residential schools.

With self-government, Tla'amin Nation regained 8,322 hectares of land within its traditional territories. While these Treaty Settlement Lands represent only a small fraction of the lands the Tla'amin people originally occupied, Tla'amin's leaders believe that sustainable management of this land resource will enable them to generate wealth for their Nation - and, over time, dramatically improve the quality of life for every member of the Tla'amin community.

Going forward, the Tla'amin government seeks to establish a self-sufficient community that is guided by traditional cultural values. On a practical level, this involves plans to improve community infrastructure, enhance and increase services, fund housing and education, develop businesses and create needed jobs. The vision is lofty, and the road will not be easy.

More than two centuries of colonial oppression have left their imprint. The Tla'amin people have been marginalized from the mainstream economic resources of the region, with resulting high unemployment, lower levels of school completion and increased health risks. There is currently very little general commerce in the Tla'amin community. Tla'amin residents must leave their community to access mainstream health, education, retail grocery, recreational and social resources. Public transit was not available to the

Tla'amin community until 2002, and even now the bus service is extremely limited (twice a day, four days a week). These circumstances and the intergenerational trauma of the residential schools support the persistence of conditions of poverty for many individuals and families within the community.

Perhaps most challenging is the damage that colonial practices have inflicted on the traditional food sources of the Tla'amin people.

It can be difficult to envision the cultural landscape and the natural resources that would originally have been available to the Tla'amin people throughout their traditional territories. In the decades since European contact, non-Indigenous settlement, industrial activity, logging, overfishing, and the introduction of non-local marine species have heavily impacted the entire area.

Tla'amin Traditional Herring Drying Racks, Klehkwahnnohm

However, multiple areas of great cultural and historical significance to the Tla'amin people have been identified and verified through a blend of oral histories, ethno-historic records and archaeological excavations. Numerous sites within the traditional territories of the Tla'amin Nation have been identified as culturally important sites for food collection.

One example of such a site is Klehkwahnnohm - Scuttle Bay. Archaeological surveys and excavations at Klehkwahnnohm in 2008 and 2009 have confirmed Tla'amin oral history, which provides extensive detailed descriptions food gathering at Klehkwahnnohm. The Elders of the community know that the bay has long been an important place for the Tla'amin people to collect cockles, clams, huckleberries, blackberries, Saskatoon berries, wild crabapples and roots.

However, the key significance of the site is its proven importance as a location in which the Tla'amin people gathered and processed herring for thousands of years. The 2008-2009 archaeological excavations at the site revealed:

- Herring roe collection sites
- Herring smokehouse
- Herring drying racks
- Herring traps - intertidal traps would have caught herring as they make their way near shore to spawn.

1.1 Pacific Herring Under Threat

The relatively calm Georgia Straight is the most important herring spawning ground in BC. Pacific herring and herring roe have been a dietary staple for Tla'amin Nation for all of their recorded history. Herring, like many of the food sources vital to the Tla'amin people, have also been proven to be essential to the larger marine eco-system.

In the coastal Vancouver Island area, adult herring comprise more 50% of the food supply for Chinook and Coho Salmon. In fact, herring is so important to the survival of numerous fish, mammals and birds in the Pacific Northwest, that scientists regard it as a "keystone species" within the marine food web – a species which holds the key to the survival of the entire marine system in which it exists.

From the late 1940s to the late 1960s, Pacific herring were the focus of the largest commercial fishery in BC. The annual volume of Pacific herring taken from BC waters reached 200,000 tonnes per year in the early 1960s.[9] When BC herring populations collapsed in 1967, the DFO closed the fishery.

1.1.1 Area 15

The fishery was reopened in 1980. Half of the DFO's entire 1983 quota for Pacific herring in the Strait of Georgia came from the waters around Powell River – DFO designated "Area 15." 59 seining vessels were registered for herring in the area in 1984.[10] This one commercial herring roe opening depleted the stock so severely that it has remained closed for 30 years.

[9] The tonnage of herring taken from BC marine systems during this period eclipsed that of all salmon species combined.

[10] The photo of herring seiners in waters in front of Powell River is from the Powell River Historical museum

In December 2013, with evidence of modest and still uncertain herring population recovery, the federal Fisheries Minister Gail Shea ignored the advice of her own DFO staff scientists – and the objections of coastal First Nations – to give the commercial roe fishery an opening with a 10% catch rate. According to DFO staff, the conservative catch rate (half of what is normally allowed in an opening) was proposed by the herring industry, which had been growing frustrated with the department's ongoing closure of roe fisheries.[11]

First Nation objections to these commercial fishery openings included:

- Insufficient herring population recovery to support commercial harvest
- Flawed and/or uncertain population model forecasts
- An outdated management framework
- A failure to consult, negotiate, and accommodate aboriginal rights and title
- Evidence of depletion of herring predators (coho and chinook)

Tla'amin Nation continues to oppose the possibility of a commercial herring roe fishery being opened in Area 15, the heart of the Nation's traditional fishing territory.

1.2 Tla'amin Historical Agricultural Practices

Beginning in the 19th century, the Tla'amin people planted orchards at multiple locations within their traditional territories, usually at sites already established as food gathering areas and permanent settlements. There is also archaeological evidence that they raised cattle on Harwood Island, where the surrounding ocean functioned as a fenceless barrier.

1.3 Traditional Foods and Aboriginal Health

Indigenous peoples are among the most food insecure groups in Canada. In BC 41% of Aboriginal households on reserves are food insecure,[12] versus 33% of the same households nationally, and 9% of all Canadian households.[13]

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[11] *Without Better Science, BC's Herring Crisis Could Resurface*, The Tyee, 12 April 2014 https://thetyee.ca/News/2014/04/12/Potential-BC-Herring-Crisis/

[12] L. Chan, O. Receveur, D. Sharp, H. Schwartz, A. Ing, and C. Tikhonov, *First Nations Food, Nutrition and Environment Study (FNFNES): Results from British Columbia (2008/2009)*, University of Northern British Columbia, Prince George, Canada, 2011.

[13] Health Canada, *Canadian Community Health Survey, Cycle 2.2, Nutrition* (2004). Income-Related Household Food Security in Canada, Minister of Health, Office of Nutrition Policy and Promotion, Health Products and Food Branch, Health Canada, Ottawa, Canada, 2006.

Both on and off reserves, Aboriginal food insecurity is correlated with many diet-related health concerns:

- The rate of diabetes among Aboriginals in BC is 40% higher than among the rest of the population, and its incidence continues to rise.[14]
- The prevalence of heart disease in BC Aboriginals is 25% higher than the general population.[3]
- In 2008/2009, 54% of BC's Aboriginal people identified themselves as either overweight (31.8%) or obese (22.6%). [3]

1.3.1 Traditional versus Mainstream Foods

Two food sources—traditional and mainstream—play a role in the food security of Indigenous people. Aboriginal people have relied on foods from their traditional sources since time immemorial, but now also frequently access market foods through conventional mainstream food systems.

Traditional food systems include all of the food species that are available to a particular culture from local natural resources and the accepted patterns for their use within that culture, including the sociocultural meanings of these foods and their means of acquisition, processing, and use within a specific culture.

Research strongly suggests that traditional foods are more nutritious than diets consisting of mainstream market foods. The 2008 – 2009 First Nations Food, Nutrition, and Environment Study examined BC Aboriginal traditional foods and found that dietary quality (i.e., nutrient and energy intake) was improved on days when Aboriginal peoples consumed traditional foods, and that there was no environmental contamination present in traditional foods in the communities (including Tla'amin) that took part in the study.[15]

Multiple Canadian studies have found that traditional foods contain higher amounts of nutrients and less fat, sodium, and carbohydrates (especially sucrose) than retail grocery store foods.[16, 17, 18, 19, 20, 21, 22]

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[14] Province of British Columbia, Provincial Health Officer Aboriginal 2009 Report, 2009 http://www.hls.gov.bc.ca/pho/pdf/abohlth11-var7.pdf.

[15] On the topic of contamination avoidance, the 2008 report did advise that intake of seaweed be limited to ½ cup per day, of moose kidney and liver to ½ cup per month, and that Indigenous hunters use steel shot rather than lead shot to avoid lead contamination of wild game.

[16] S. M. Downs, A. Arnold, D. Marshall, L. J. McCargar, K. D. Raine, and N. D. Willows, "Associations among the food environment, diet quality and weight status in Cree children in Québec," Public Health Nutrition, vol. 12, no. 9, pp. 1504–1511, 2009.

Due to the health benefits of traditional foods, researchers have warned of the dietary and health risks associated with "nutrition transition" within Aboriginal communities — the gradual westernization of Aboriginal diets to include more and more processed and mainstream market foods and drinks, and fewer traditional foods.

1.3.2 Tla'amin Actions to secure access to Traditional Foods

Despite the impact of mainstream food systems, the Tla'amin people continue to consume traditional foods, and endeavour to pass down traditional knowledge of land and food systems to younger generations, increasing food security, nutrition and self-sufficiency within their Nation.

SALMON HATCHERY

Tla'amin operates a salmon hatchery within the community, in partnership with DFO. Due to this partnership, access to salmon must be managed at a community level to ensure it is demonstrably within government quotas. In the past five years both flooding and drought have temporarily put the salmon stock at risk, decreasing the salmon available to the community, and causing genuine hardship to many. Hatchery workers are responsible for handling and processing the salmon through an onsite smokehouse, and distributing it to community members.

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[17] G. M. Egeland, P. Berti, R. Soueida, L. T. Arbour, O. Receveur, and H. V. Kuhnlein, "Age differences in vitamin A intake among Canadian Inuit," Canadian Journal of Public Health, vol. 95, no. 6, pp. 465–469, 2004.

[18] N. Simoneau and O. Receveur, "Attributes of vitamin A- and calcium-rich food items consumed in K'asho Got'ine, Northwest Territories, Canada," Journal of Nutrition Education and Behavior, vol. 32, no. 2, pp. 84–93, 2000.

[19] O. Receveur, M. Boulay, and H. V. Kuhnlein, "Decreasing traditional food use affects diet quality for adult Dene/Metis in 16 communities of the Canadian Northwest Territories," Journal of Nutrition, vol. 127, no. 11, pp. 2179–2186, 1997.

[20] H. V. Kuhnlein, R. Soueida, and O. Receveur, "Dietary nutrient profiles of Canadian Baffin Island Inuit differ by food source, season, and age," Journal of the American Dietetic Association, vol. 96, no. 2, pp. 155–162, 1996.

[21] E. E. Wein, "Foods and nutrients in reported diets versus perceived ideal diets of Yukon Indian people," Journal of Nutrition Education and Behavior, vol. 28, no. 4, pp. 202–208, 1996.

[22] E. E. Wein, J. H. Sabry, and F. T. Evers, "Nutrient intakes of native Canadians near Wood Buffalo National Park," Nutrition Research, vol. 11, no. 1, pp. 5–13, 1991.

COMMUNITY FREEZER PROGRAM

Tla'amin has an active community freezer program that operates out of the hatchery freezer. Hunters donate extra food to a community freezer to ensure all community members have access to traditional foods.

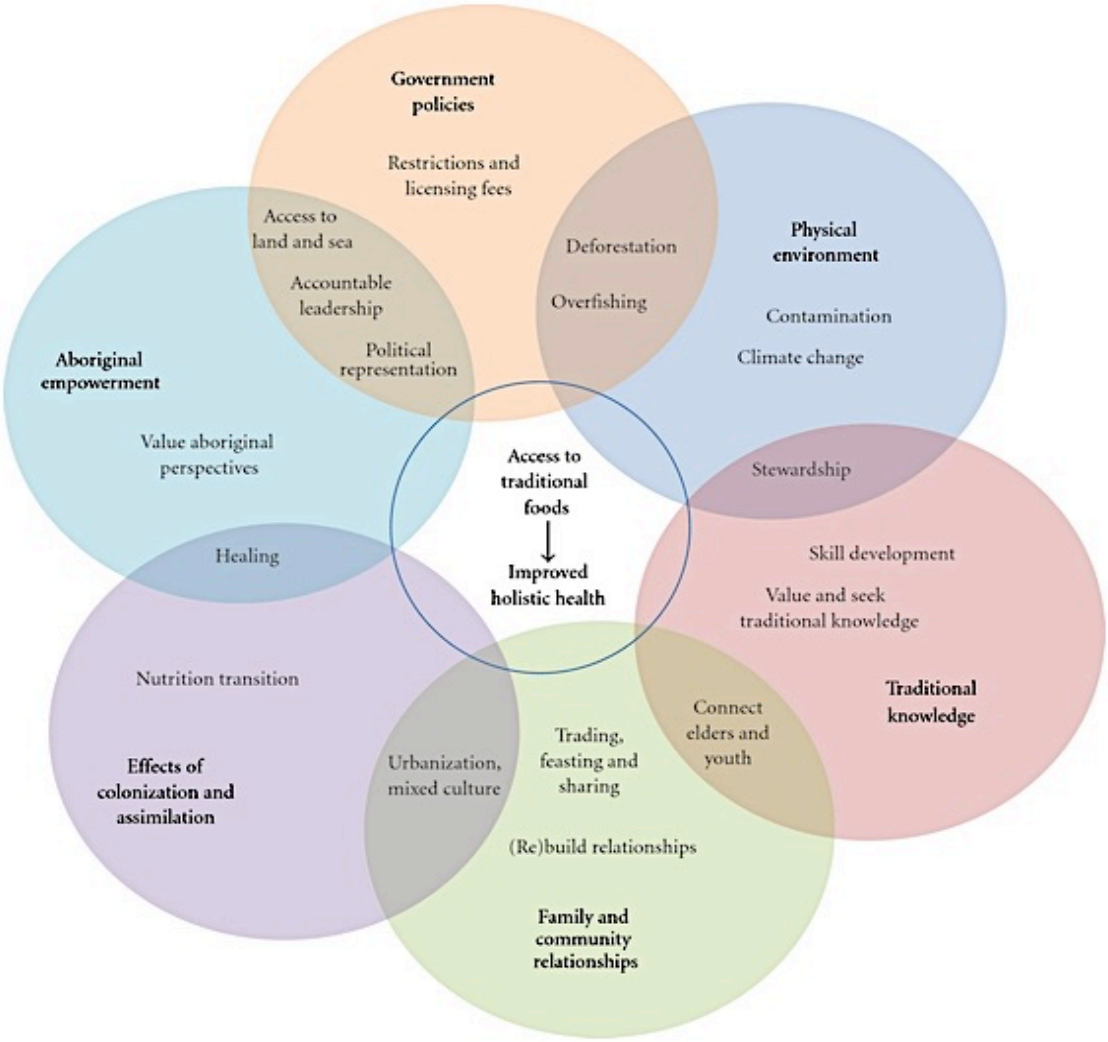
- The hatchery supplies salmon
- Traditional foods are kept for use during feasts and celebration
- These foods are routinely distributed to elders
- They are also distributed to individual community members when there is a concern about access to basic food, or an individual has health issues related to diet (diabetes, heart disease)

ADMINSTRATIVE ACTION

Tla'amin is also taking administrative action to protect and enlarge the Nation's food security:

- Updating the findings of the 2008 FNFNES report with an in depth study of food consumption and nutrition profiles within Tla'amin community, and gathering data on community food sourcing through fishing, hunting and gathering
- Creating an inventory of the elk and deer on Treaty Settlement Lands
- Evaluating a range of potential partners in initiatives that may have potential to protect and strengthen Tla'amin's access to traditional foods (fallow deer farm, kelp farming, aquaculture, berry production, etc.)
- Working with DFO to advocate for sustainable management of traditional herring and salmon stocks[23]
- Determining the best use of its Treaty Settlement Lands as one instrument of food security enhancement
- Examining Tla'amin's historical post-contact agricultural practices
- Examining the issues of risk management and food safety - the need to establish standards and certified training for the individuals who handle and process traditional game meats and fish to ensure that the community has access to these traditional foods
- Reviewing the need for high quality cold storage capacity for traditional game meats and fish

[23] Tla'amin Nation has authority over Treaty Settlement Lands only to the high tide mark on foreshore holdings, making it necessary for the Nation to take an advocacy role with DFO



ELEMENTS OF INDIGENOUS FOOD SOVEREIGNTY

2 Definitions of Farms and Farming

Farms and agricultural activity are viewed from distinct perspectives, depending upon the agency involved. The BC Property Tax definition of a farm is radically different from that of Census Canada. Being deemed a farm according to one or even both sets of criteria does not confirm agriculture is the primary land use.

2.1 Acreage Math

Below is a set of quick conversions that is meant to assist the general reader in visualizing the scope of the land that is being discussed throughout this report.

1 acre = 43,560 feet^2 or 4,047 metres^2
1 hectare = 2.47 acres
1 hectare = 10,000 metres^2
1 hectare = 107,639 feet^2
1 square kilometer = 100 hectares
1 square mile = 259 hectares

2.2 BC Assessment Criteria For "Farm Class Status"

BC assesses a property as a farm based on a mathematical relationship between land parcel size and gross revenues from farming activities. The threshold for qualifying for preferential taxation rates[24] is set deliberately low, in order to make agriculture an attractive and viable land use for the owner.

LAND PARCEL SIZE	ANNUAL REVENUE THRESHOLD (MUST BE MET ONCE EVERY 2 YEARS)
Less than or equal to 0.8 hectares (ha)	Gross farm revenues equal or exceed $10,000
0.8 to 4 ha	Gross farm revenues equal or exceed $2,500
4 ha or more	Gross farm revenues equal or exceed $2,500 + 5% assessed value of the land parcel

[24] 'Farm Class Status' provides a 50% reduction in the school tax portion of the property tax assessment as well as potential income tax savings through farm loss write offs.

This gross agricultural income threshold is low: a property between 0.8 and 4.0 ha could meet it, for example, by selling, annually:

- Approximately 0.07 ha of Christmas trees
- The eggs from approximately 70 chickens
- Alfalfa from about 1.2 ha
- A few head of livestock (depending on quality and species)
- One horse
- A combination of farm products

It is also possible to attain farm status if the land is leased to another operator who meets the threshold, as long as the land makes a "reasonable contribution" to the overall farm operation (BC Assessment 2005).

Being viewed as a farm – achieving 'farm class status' with BC Assessment - provides tax breaks to the landowner (a 50% reduction in the school tax) as well as a range of potential deductions on income tax. Rural landowners with larger acreages can potentially pursue "lifestyle dividends" rather than a genuine livelihood on the land. Such individuals may report to Census Canada as 'agricultural operations.' This can inflate farm statistics and, in a small community, seriously distort our sense of the local agrarian economy.

2.3 Census Canada Definition of Agricultural Operations

The terms *agricultural operator* and *agricultural operation* used by Census Canada are broader in scope than *farmer* and *farm*. Census Canada defines an agricultural operation as a farm, ranch or other operation that grows or produces any of the agricultural products listed below *with the intent to sell these products*:

CROPS

- Hay and field crops (hay, grains, field peas, beans, potatoes, coriander, spices)
- Vegetables
- Fruits, berries or nuts
- Seed
- Sod, nursery products and Christmas trees

POULTRY

- Laying hens and pullets
- Layer and broiler breeders
- Broilers, roasters and Cornish
- Turkeys
- Other poultry (geese, ducks, roosters, ostriches, emus, pheasants, etc.)
- Commercial poultry hatcheries

LIVESTOCK

- Cattle and calves
- Pigs
- Sheep and lambs
- Other livestock (horses, goats, llamas, alpacas, rabbits, bison, elk, deer, wild boars, mink, fox, donkeys, mules, chinchillas, etc.)

ANIMAL PRODUCTS

- Milk or cream
- Eggs
- Wool
- Fur
- Meat

OTHER AGRICULTURAL PRODUCTS OR ACTIVITIES

- Greenhouse products
- Mushrooms
- Maple products
- Owning bees (for honey or pollination)
- Harvesting wild rice
- Sprouting alfalfa or beans
- Growing legal cannabis
- Growing mushrooms on logs in a controlled environment
- Operating a winery, if it includes growing any grapes or fruit
- Operating a garden centre, if any products are grown onsite
- Hay processing / dehydration plants if processors grow hay on land they own or lease
- Horse operations that do not sell agricultural products but offer boarding, riding or training services.

Census Canada does not consider it necessary that an agricultural operation has actually sold its products, only that they were being produced with the intent of being sold, with the result that Census data on farms includes agricultural operations with minimal or no farm revenues.

INDIGENOUS ACTIVITIES[25]

In some northern regions, the following activities qualify as an agricultural operation:

- Herding wild animals (such as caribou and muskox)
- Breeding sled dogs
- Horse outfitting and rigging
- Harvesting indigenous plants and berries

[25] Census Canada recognizes these activities as agricultural activities only in the Yukon, Nunavut and the Northwest Territories.

EXCLUDED ACTIVITIES

Census Canada excludes enterprises that grow, harvest or raise only

- Peat moss
- Top soil
- Gravel
- Fish (wild or aquaculture)
- Silvi-culture products
- Wild cones, wild Christmas trees, logs, firewood, pulpwood, evergreen boughs, etc.
- Wild berries, wild plants, wild mushrooms, etc.
- All wild animals
- Racing pigeons
- Worms
- Laboratory animal production
- Pets (dogs, cats, pot-bellied pigs, guinea pigs, finches, budgies, etc.), including kennels

2.4 Local Farms in this Study

Although the 2016 census data for Powell River's farming sector[26] enumerated 80 farms operating in the PRRD, our environmental scan could identify only 53 specific farms within PRRD [27] that are actively engaged in selling[28] their produce, livestock or farm sourced value-added products either in Powell River or in regional or provincial markets. Details of these 53 farms and 1 wild harvest business have been compiled in the FARM LIST.pdf document attached to this report.

[26] Agriculture in Brief Powell River Regional District 2016 https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/census/census-2016/aginbrief_2016_powell_river.pdf

[27] Lasqueti Island Farms were not included in this study, as they were deemed too remote and distinct to benefit from strategies developed to serve the agricultural economy in Areas A, B, C and D of the Regional District.

[28] We searched for websites, blogs, online address listings, connections to PRFI, connections to local Farmers' Markets, online and posted promotional materials, identification in local journal / news features, as well as querying identified local farmers about other farms in the RD.

3 Powell River Farm Products

There is considerable diversity in the farm goods that are produced in Powell River, however distinct producer groups have been identified, with vegetables/greens, eggs, poultry, berries, sheep, beef and pork producers being the largest groups within our local farm sample.

The following table identifies the goods that are most commonly produced on identified PRRD farms, broken out by location within the regional district.[29] The farm products listed do not include specialty goods or value-added products.

53 **LOCAL FARMS**

24	PRRD north (Areas A & B)	46%
22	PRRD south (Area C)	41%
7	PRRD Texada (Area D)	13%

27 **VEGETABLE/GREENS** producers (51% of all local farms)

15	PRRD north	(62% of farmers in Areas A & B)
8	PRRD south	(36% of farmers in Area C)
4	PRRD Texada	(57% of farmers in Area D)

22 **EGG**[6] producers (41% of all local farms)

11	PRRD north	(44%)
7	PRRD south	(32%)
4	PRRD Texada	(57%)

15 **POULTRY**[30] producers (28% of all local farms)

8	PRRD north	(32%)
4	PRRD south	(18%)
3	PRRD Texada	(43%)

13 **BERRY** producers (24% of all local farms)

4	PRRD north	(16%)
7	PRRD south	(32%)
2	PRRD Texada	(29%)

[29] This data is derived from un-collated information available in the public realm about the activities and enterprises of individual local farms.

[30] In 2016 there were more than 3,700 chickens, turkeys and other fowl on PRRD farms,

12 **SHEEP/GOAT** [31] producers (23% of all local farms)

4	PRRD north	(16%)
6	PRRD south	(27%)
2	PRRD Texada	(28%)

9 **BEEF** [7] producers (17% of all local farms)

5	PRRD north	(20%)
2	PRRD south	(9%)
2	PRRD Texada	(28%)

9 **PORK** [7] producers (17% of all local farms)

6	PRRD north	(24%)
1	PRRD south	(4%)
2	PRRD Texada	(28%)

7 **FRUIT** producers (13% of all local farms)

4	PRRD north	(16%)
2	PRRD south	(9%)
1	PRRD Texada	(14%)

4 **RABBIT** [7] producers (7% of all local farms)

1	PRRD north	(4%)
2	PRRD south	(9%)
1	PRRD Texada	(14%)

3 **HONEY** producers (6% of all local farms)

2	PRRD north	(8%)
1	PRRD south	(4%)
0	PRRD Texada	(0%)

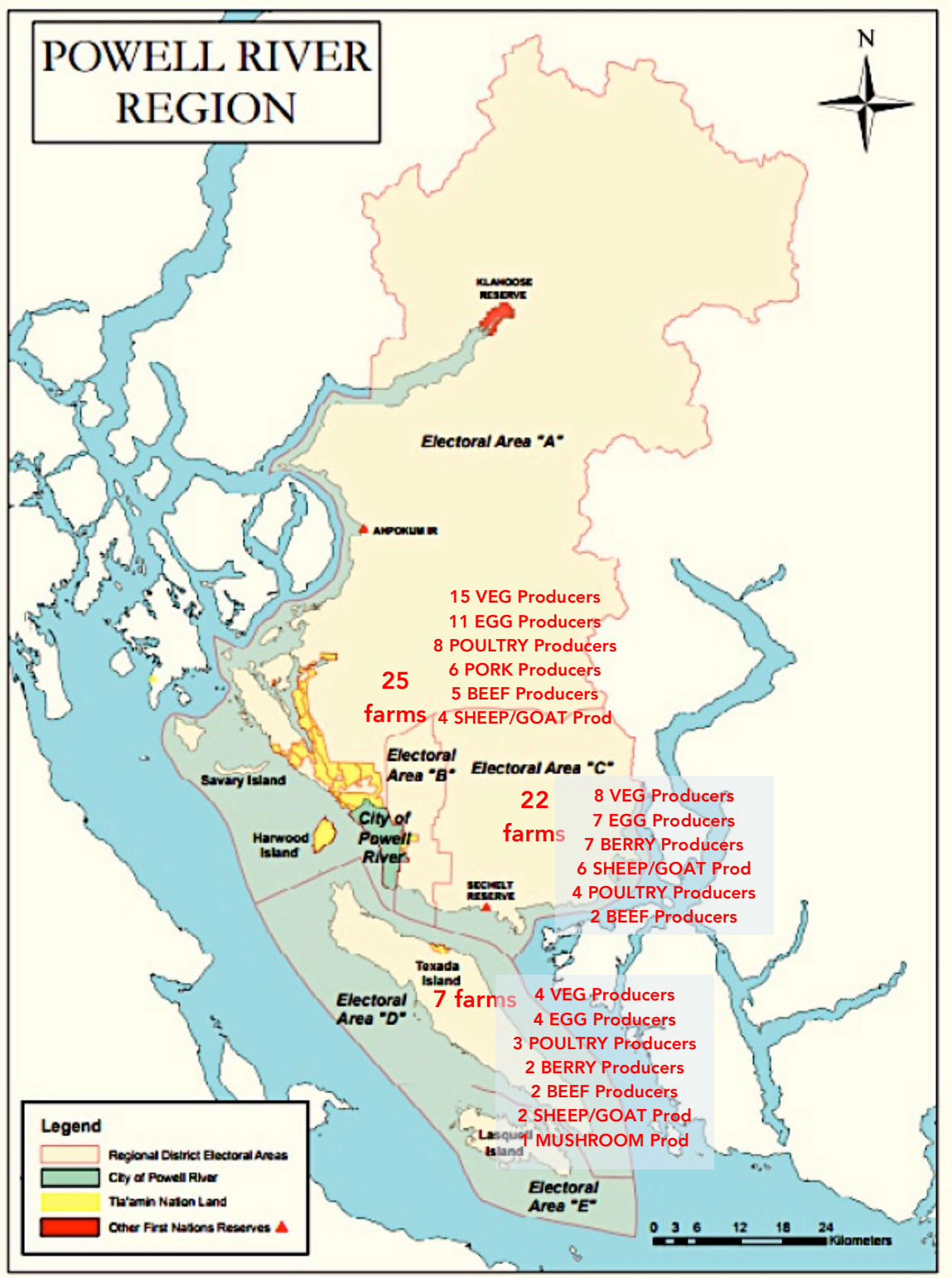
1 **MUSHROOM** producer (2%)

0	PRRD north	(0%)
0	PRRD south	(0%)
1	PRRD Texada	(14%)

[31] In 2016 there were 335 sheep & lambs, 62 goats, 230 cattle & calves, 112 pigs and 20 rabbits on PRRD farms.

FARM PRODUCTS WITH THE MOST PRODUCERS BY ELECTORAL AREA

Areas A + B = PRRD North (25 Farms);
Area C = PRRD South (22 Farms);
Area D = Texada (7 Farms)



3.2 Local Farm Product and Market Specialization[32]

PR Farms specializing in a single product		
Apples	1	
Beef	1	
Blueberries	3	
Eggs & Poultry	1	
Honey	1	
Maple Syrup	1	
Mushrooms	1	
Rabbits	1	
Sheep	2	
Trees	1	
TOTAL	13	
PR Farms specializing in a single market		
Vegetables[33]	5	
Berries	1	
Seeds	1	
TOTAL	7	
PR Farms producing for 2 markets		
Berries & Honey	1	
Berries & Fruit	1	
Vegetables & Berries	2	
Vegetables & Eggs	3	
Vegetables & Meat*	1	*Pork & Beef
Vegetables & Sheep**	1	**Non-meat sheep/goat products
Vegetables & Fish	1	
TOTAL	10	
PR Farms producing for 3 markets		
Meat/ Eggs/Poultry	4	
Meat/Eggs/Vegetables	1	
Vegetables/Berries/Fruit	1	
TOTAL	6	
Farms producing for 4 + markets	17	
Total Farms	53	

[32] Based on Farm Operator's published information on goods available from his/her farm.

[33] Salad greens are included in vegetable category throughout this page

4 Value of Powell River Farm Production

Sales are used as the measure of a farm's size rather than its acreage. Market and sector profiles report sales as Farm Cash Receipts (FCR). However FCR represent earnings before expenses, and distort our sense of the real value of farm production. As is the case with most BC and Canadian non-industrial farms, net earnings from Powell River farms are very low, and are often supplemented with off farm income. Powell River's small and family run farms are not engaging in agriculture solely for economic benefit.

4.1 Farm Cash Receipts (FCR) and BC Net Farm Incomes

Farm Cash Receipts (FCR) represent the gross income a farm receives from the sale of agricultural commodities and through government subsidies. Census Canada uses FCR to portray, on a national and provincial basis, the agriculture sector's contribution to gross domestic product.

FCR are calculated on a cash-in-hand basis: dollars earned (or subsidies secured) are included only when payment is received, rather than when revenue is earned. Census statistics on the dollar value of primary agricultural production in BC and Powell River Farm are always stated in Farm Cash Receipts – how much money a farm or sector generates before expenses, not how much it retains as net earnings.

In 2015, BC farms incurred an average of $0.85 in expenses for every $1.00 of cash received.[34] This means that BC *net* farm income is roughly 15% of the Farm Cash Receipt numbers that pervade federal and government data on farming.

4.1.1 Farm Earnings in BC in 2016

In 2016, 26,430 BC farmers[35] operated 17,528 farms, utilized 2.6 million hectares (almost 10,000 square miles) and produced over 200 agriculture products to generate $3 billion in Farm Cash Receipts for the province's primary agriculture sector. With these numbers, BC farmers look like they're earning, on average, more than $110,000 each. Farm income looks even better: an average of more than $170,000 per farm. However, if the cost of producing those goods is subtracted from FCR, the money shrinks dramatically, to $450 million in net income for all BC farmers. Now farmers have

[34] Data is from Stats Canada's May 2017 Report, *Small farms and direct marketing play a large role in British Columbia*, available online @ http://www.statcan.gc.ca/pub/95-640-x/2016001/article/14809-eng.pdf

[35] 0.57% of BC residents were farm operators in 2016

an average net income of $17,000 a year, and farm profits are averaging out at about $25,600.

Farm Cash Receipts (FCR) for the Powell River Regional District (for all 80 farms identified by Census Canada) totalled $1,962,532 in 2016.[36] If we subtract the cost of producing farm goods from FCR for farms in the PRRD, we're left with $394,380 to split in net income over the 80 farms identified for this area: an average of about $3,670 in net income per local farm.

This phenomenon of extremely low net farm income is not confined to the PRRD. In actual fact, total net income from BC farming has often been a negative number. In 2015 it was minus $13 million. In 2016, it was projected to be minus $71 million.[37]

4.1.2 BC Small Farms and Family Farms

Census Canada defines "small farms" as agricultural operations with less than $10,000 in gross income.[38] In 2016, small farms made up more than 41% of BC's agricultural operations. The percentage of BC farms with this low gross income was more than double the national average,[39] and included 7,292 farms. Using the expense ratio defined by Stats Canada ($0.85 in costs for every $1.00 of gross income), we can calculate that these 7,292 BC farms had – at most – a net income of $1,500 in 2016.

BC's un-incorporated, family farms are the income tier directly above small farms. These family farms have annual Farm Cash Receipts of $10,000 or more, but they do not fair much better than BC's small farms. Net farm income[40] for BC families operating unincorporated farms was just $4,586 in 2009 and $7,994 in 2013,[41] the lowest in the country.[42] The bulk of income for these farm families was earned off farm ($84,687 in 2009 and $102, 237 in 2013).

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[36] See PRRD Agriculture In Brief Bulletin from Census Canada:https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/census/census-2016/aginbrief_2016_powell_river.pdf

[37] A look at income numbers by sector tells tale, Feb 25 2016, The Western Producer, https://www.producer.com/2016/02/a-look-at-income-numbers-by-sector-tells-tale/

[38] To be assessed as farms in BC, these "small farms"(with income of less than $10,000) must all be sitting on land parcels that are 0.8ha or larger.

[39] 41.6% of BC farms were small farms, while 17.7% of operations were small farms nationally.

[40] The official term is "average net operating income per farm family"

[41] Stats Can, *Total and average off-farm income by source and total and average net operating income of farm families, unincorporated sector*, Geography = British Columbia http://www5.statcan.gc.ca/cansim/a47

[42] The average net operating income for Canadian farms was $74,000 in 2012.

Other 2016 Census data reflects this economic reality:

- 51% of BC farmers report working off farm.[43]
- Less than 25% of BC farmers work more than 40 hours per week on their farms

4.1.3 Non-Monetary Values Associated with Farming

The output from farmland is almost universally characterized by the cash value of marketable goods, but other legitimate types of value are associated with agriculture:

- Ethical – local autonomy over food production; individual self sufficiency
- Health – access to fresh food
- Cultural – protection of the agricultural or food heritage, traditions or knowledge of a group or community; development of culinary arts
- Environmental – air quality, flood control, soil management, reducing carbon footprint
- Aesthetic – open space, pastoral landscape, design of rural/urban interface
- Experiential - interaction with land, integration into natural cycles
- Social – appreciation of the quality of a simple life, opportunity to share / enjoy harvest with others

Farmers may accept low or negative current returns from farming if they value benefits from farming other than the net income the farm currently generates.

- US Department of Agriculture Economic Research Service, 2013

Farmers themselves express diverse motivations for what they do, and what made them choose life on a farm:

- Desire for work that is meaningful
- Personal autonomy and independence
- Addressing local food issues and supporting food systems that limit environmental impact (e.g. no long haul transport)
- Contributing to societal change and value/ethical shift around food
- Being proactive in finding solutions to global issues at the local level
- Promoting personal and community health by sustainably producing fresh food
- Supporting a meaningful family lifestyle and creating a lasting legacy
- Passing agrarian knowledge to the next generation (training, hands-on work experience, job skills)
- Providing ethical employment opportunities in the local community
- Taking advantage of the economic opportunities emerging in agriculture

[43] The highest rate of off-farm work in Canada, versus 44.4% of farmers nationally.

5 Local Agricultural Land Use

5.1 Powell River Farmland Use Profile 2016

In 2016, gross income generated from local farming activity averaged out at $1,255 per hectare per year[45] - $100 more per hectare than the provincial average, but well below agricultural powerhouses like Abbotsford, where FCR were more than $20,000/hectare. Although the PRRD's share of BC's actively farmed land is tiny (0.1% of all provincial farmland), its share of total BC 2016 production for certain products clearly exceeds its small land base portion:

- 2 times farmland share in fruit and nut production (0.2%)[46]
- 3 times farmland share in vegetable production (0.3%)
- 4 times farmland share in goat and rabbit production (0.4%)
- 6 times farmland share in sheep and lamb production (0.6%)

5.1.1 PRRD Active Farmland by Use

TOTAL ACTIVE FARMLAND in PRRD, 2016
1,563 hectares = 6 square miles / 16 square kilometers

ACTIVE FARMLAND in PRRD, 2016, NOT IN FIELD BASED PRODUCTION[47]
848 hectares = 3.3 square miles / 8.4 square kilometers

ACTIVE FARMLAND in PRRD, 2016, USED FOR PASTURE[48]
556 hectares = 2.1 square miles / 5.5 square kilometers

ACTIVE FARMLAND in PRRD, 2016, USED FOR FOOD CROPS[49]
64 hectares = 0.25 square miles / 0.69 square kilometers

[44] Land use data is for all 80 Powell River farms identified by Census Canada (See PRRD Agriculture In Brief Bulletin from Census Canada:https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/census/census-2016/aginbrief_2016_powell_river.pdf

[45] Farm Cash Receipts for PRRD ($1,962,532) divided by total farmed area (1,563 ha)

[46] A chart showing in-season times for BC field grown fruits and vegetables was developed as part of this research and is appended to this report as a stand alone document

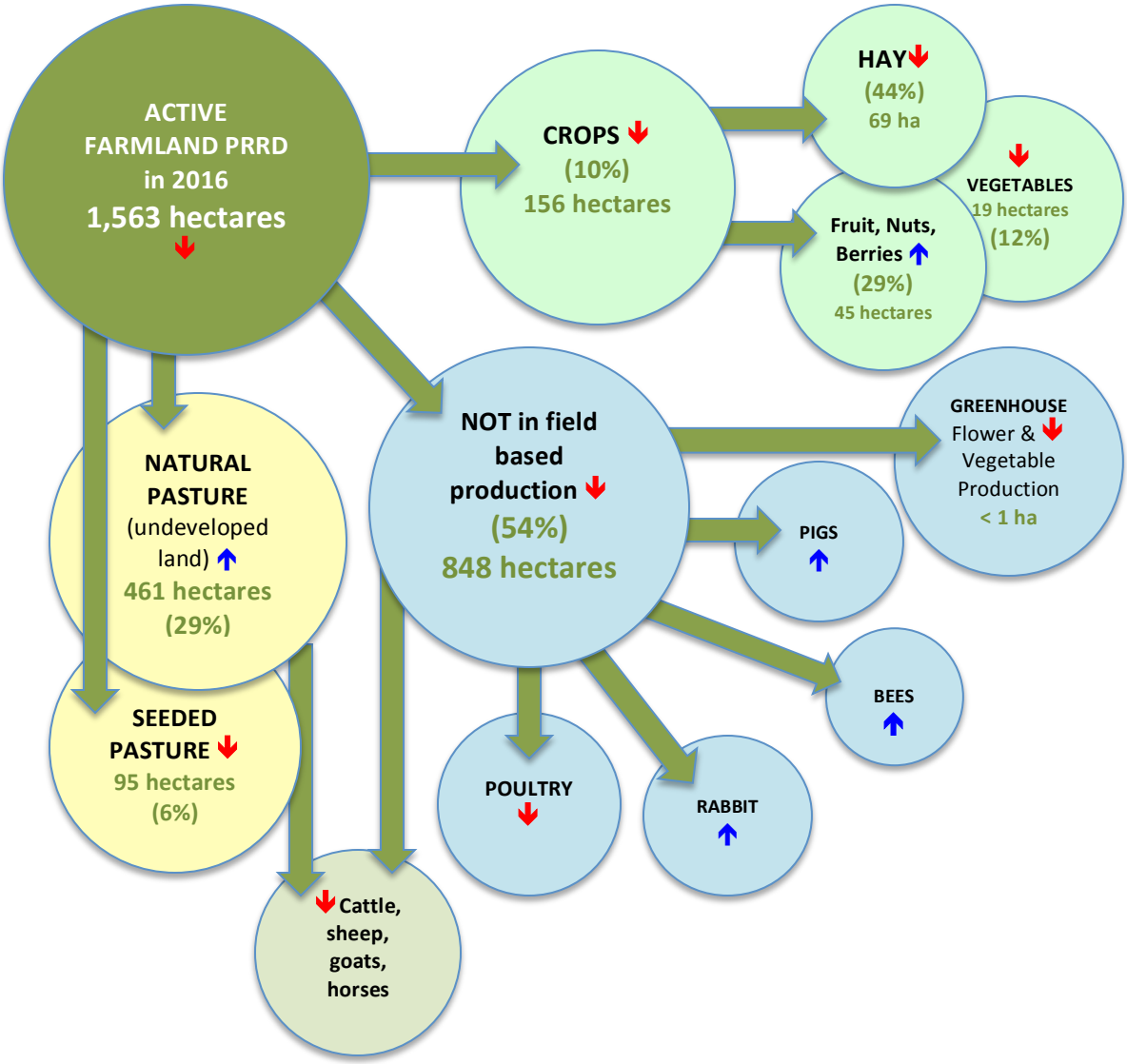
[47] Neither crops nor pasture: includes all farm buildings, structures and idle land.

[48] Includes wild (natural) and developed land used as livestock pasture

[49] Includes vegetables, fruits, nuts and berries

5.1.2. PRRD farmland use linked to local farm products (2016)

- Green arrows show the direction of increasing detail.
- Percentages describe portion of the category immediately before. For example: crops accounted for 10% of local use of active farmland, and fruit, berries & nuts comprised 29% of crops.
- Red arrows indicate that 2016 land use or production has fallen from 2011. For example: there was less active farmland in the PRRD in 2016 than in 2011, and use of farmland to grow crops decreased over the same period.
- Blue arrows indicate an increase in land use or production category 2011-2016



5.2 Drivers of Farmland Use Decisions

Each farmer makes his or her own decisions about what to grow, what animals to keep, the level and type of inputs required, and the methods to be used. However, multiple factors drive farmer decisions about farmland use in a local area.

5.2.1 Personal / Individual Factors

FARMER KNOWLEDGE, EXPECTATIONS AND FEARS

KNOWLEDGE

- Horticulture and land management skills
- Animal husbandry and livestock management skills
- Business planning, management, marketing and sales skills
- The capacity to recognize and incorporate technologies that improve the overall efficiency of farm operations
- Understanding of demands/needs of local and regional markets and consumers

EXPECTATIONS

- Crop production choices may be driven by a farmer's desire to create secure food sources for his/her own household, making personal food preferences a strong factor in choices about crop or livestock production.
- Lifestyle expectations such as desire for organic foods, work/life balance, as well as the need to meet off farm employment commitments
- The farmer's level of community engagement and commitment to issues such as local food security and hunger relief

FEARS

- Adverse weather conditions can mean that a harvest is delayed or that crops are ruined
- Multiple studies have show that human adaptive behaviours within agricultural systems are influenced by the most limiting factor – people often make farming choices based on their fears around water availability and temperature and climate instability

5.2.2 Economic Factors

CAPITAL

- Access to money to invest in farmland and in required farm inputs
- In order for their farms to be viable, farmers often have to supplement their farming activities with income from off farm employment
- A farmer's debt load can a profound effect on his/her ability to implement practices that support specific crop or livestock choices

COST AND AVAILABILITY OF LAND

Land values are determined by demand and supply. Factors that shift the demand for and supply of agricultural land include:

- Competition for agricultural land
- Changes in agricultural productivity
- Competing uses for land
- Land speculation
- Use of land as a stable financial investment / hedge against inflation

COST AND AVAILABILITY OF LABOUR

Every farm requires that someone is available to do the work required:

- Make management decisions about land and farm resource use
- Plan and manage purchase/storage/maintenance of farm inputs (machinery, fences, seeds, animal stock, animal feed, fertilizer, greenhouse, yards, etc.)
- Cultivate, harvest and process (clean, package) field / greenhouse crops for sale
- Service livestock (feed, clean stalls, manage movement, grazing, transport)
- Collect livestock products (eggs, milk)
- Slaughter livestock (Class D or Class E Slaughter License)
- Market and sell farm products
- Manage finances of the farm

MARKETS

This includes both suppliers of farm inputs (machinery, fences, seeds, animal stock, animal feed, fertilizer, greenhouses, etc.) and markets for products.

SUPPLIER MARKETS

- Access to suppliers
- Reliability of supply
- Stability of price and quality of farm inputs
- Cost of transport to farm
- Cost/requirements of input storage (animal feed)
- Cost/requirements of input maintenance (machinery, fences, buildings)
- Individual/collective farmer strategies and practices to reduce farm input costs

CONSUMER MARKETS

- Access to consumers and market competition (price/supply) for specific product
- Knowledge of / responsiveness to consumer needs and market demands
- Cost of engaging with markets (on farm handling and processing, transport, supply chain qualification, sales and marketing costs)
- Cost of production and marketing versus price obtained for goods
- Individual/collective farmer strategies and practices to improve market position

5.2.3. Political and Policy Factors

A central tension within the agricultural sector arises from a fundamental disconnect between policy and people. Local governments, along with the National Farmers Union, increasingly promote food sovereignty, championing the right of communities to have control over local food production. However, Canadian and BC agriculture policies are largely focused on expanding export markets for our fresh and processed food, viewing food as a commodity that can drive economic growth and expand investment at home. Federal enthusiasm for participation in global food markets is unambiguously illustrated in the 2017 Agriculture Canada poster, below:

5.2.4. Technological Factors

Farmer awareness of and access to relevant technologies can affect crop and livestock choice:

- Handling, cold storage and transport technology (reduce loss, increase market access)
- Use of communication technology such as cellphones, laptops, tablets, internet [webpage, blog, research] can improve business planning and management, as well as marketing and sales
- Green technologies (solar, wind turbine, "off grid" power technologies, use of biofuels to power machinery and farm buildings) can reduce cost of farming operations
- Machines, irrigation systems and greenhouse technology (temperature, moisture, nutrient delivery controls) can increase crop yield

5.2.5. Educational Factors

Training supports development of farmer expertise and enhances the availability of skilled workers. Horticulture and livestock management certifications can also improve access to financing by providing lenders with proof of the farmer's commitment and skill. Improvements in skills, labour and financing achieved through training enlarge farmer choices about land use. Training includes both credentialing/certification and upgrading courses:

- Horticulture
- Animal husbandry / livestock management
- Product handling, storage, processing (Food Safe, Slaughter Safe, Good Agricultural Practices)
- Business planning and management
- Marketing and sales skills

5.2.6. Information Access Factors

Farmers need up-to-date, reliable sources of information to support all aspects of their work, and especially their choice of crops and livestock. The types of information needed include, but are not limited to:

- Regional soil maps and assessments
- Market and consumer information
- Innovations in farm technologies
- Educational opportunities
- Strategies to improve market position
- Strategies to decrease cost of inputs

5.2.7 Environmental Factors

CLIMATE

- Hours of sunshine/daylight
- Average temperature (yearly and seasonal)
- Amount of rainfall (yearly and seasonal)
- Weather pattern changes (history of drought or flooding, changes in length or severity of seasons)
- Length of growing season required for particular crops

LANDSCAPE

- Flat, sheltered areas are usually desired for field crops
- In hilly areas the soil is thinner and less fertile due to erosion
- Sloping ground is traditionally used for sheep or cattle pasture
- Temperature decreases by 6.5°C for every 1000 metres gained in height
- South-facing slopes receive more sunlight
- Capacity of the landscape to be adapted or improved
- Impact (environmental, financial) of improvements and adaptations to landscape

SOIL QUALITY

- Thick, well-irrigated soil will support almost any crop
- Poor soil means larger inputs of fertilisers and/or lower yields
- Good drainage reduces the dangers of waterlogging and flooding

5.3 Need for Further Research

Aside from measuring productivity per hectare, a mechanism or process for evaluating Powell River farmers' overall utilization of the land they currently farm – and their key motivations for crop and livestock choices - does not currently exist. The data in this section could be used to create a farmer survey to determine the specific motivations in local crop choice and land use.

6 Access to Land

The ALR is a provincial zoning designation that impedes non-agriculture land use in specific areas. It does not act directly to protect farmers or farming. Land is available but it is costly, and there is strong competition from wealthy residential buyers. In this real estate market, existing active farmland will be increasingly under threat as local farmers retire and sell their properties. Succession planning, a local farmland trust and retiring/aspiring farmer matchmaker platforms could be used to reduce this threat.

6.1 Role of the ALC and Function of the ALR

The stated mission of the Agricultural Land Commission (ALC) is to protect agricultural land throughout British Columbia. The instrument used to achieve this mission is the Agricultural Land Reserve (ALR).The ALR gives a global zoning designation (agricultural use) to specific land areas within BC. Local governments cannot re-zone this land for other purposes without approval from the regional chair of the ALC. As community development pressures increase at the local level, ALR-zoned land can be – and has been – rezoned for other uses.

Neither the Commission nor the Reserve are structured in a way that acts directly on behalf of farmers and farm production in BC. The ALC and the ALR do not have the capacity to:

- Permanently protect land for agricultural use
- Keep designated farmland in production
- Ensure affordable access to farmland
- Promote succession of land to new farmers
- Protect ecosystem integrity or cultural and heritage values
- Identify the best farmland within a regional district[50]

6.2 Private Land and Farm Property Markets

6.2.1 Private Vacant Land for sale in PRRD

This study looked at all vacant and undeveloped land in the PRRD real estate market over a 14-month period, and categorized land offerings by size, overall cost, and cost per acre. No information is available on the suitability of individual land parcels for farming, other than the state of the land as sold.

[50] The critical need for local soil mapping was identified in the 2009 report on the Powell River Farm Economy. To date (2018) soil mapping of the area has not been undertaken.

VACANT LAND FOR SALE IN PRRD IN JUNE 2016

Acres	Location	Condition	Price	Cost/Acre
19.6	Rd	Wooded	$399,900	$20,403
8.82	Rd	Wooded	$249,900	$28,333
5	Cranberry	Wooded	$225,000	$45,000
5	Cranberry	Wooded	$225,000	$45,000
5	Cranberry	Wooded	$225,000	$45,000
5	Cranberry	Wooded	$225,000	$45,000
2.85	RD	Partially cleared	$169,900	$59,614
2.37	Westview	Cleared	$95,000	$40,084
2.35	Westview	Cleared	$499,900	$212,723
1.04	Cranberry	Wooded	$54,900	$52,788
5.703	AVERAGES		$236,950	$59,395

VACANT LAND FOR SALE IN PRRD AUGUST 24 2017

Acres	Location	Condition	Price	Cost/Acre	MLS #
78.7	Lund	4 houses + lake	$998,000	$12,681	12521
32	RD -north	Wooded	$1,725,000	$53,906	12599
25	Paradise valley	Uncleared, house	$750,000	$30,000	12573
20	RD -north	Wooded	$299,000	$14,950	12604
13.5	Lund	Partially cleared, bldgs, moorage	$2,500,000	$185,185	12735
9.5	Okeover	Partially cleared	$69,000	$7,263	13208
6	RD -south	Partially cleared	$749,000	$124,833	13256
5	Lund	Unknown	$399,000	$79,800	12899
4.87	Black point	Partially cleared	$275,000	$56,468	13255
4	RD	House & bldgs	$925,000	$231,250	12918
0.75	Lund	Partially cleared	$107,000	$14,267	13190
18.12	AVERAGE		$799,636	$73,691	

VACANT LAND FOR SALE IN PRRD JANUARY 30, 2018

Acres	Location	Condition	Price	Cost/Acre	MLS #
78.7	Lund	4 houses, lake, 10 acres cleared	$879,900	$11,180	12521
42	Hwy 101 south	Wooded with house, 6-8 acres cleared	$1,200,000	$28,571	13239
31.44	Emmonds Rd	Wooded, waterfront with house & bldgs	$1,725,000	$54,866	13445
20	Emmonds Rd	Wooded	$299,000	$14,950	13446
10.6	Texada	Uncleared	$195,000	$18,396	12716
10	Texada	Sloping, uncleared	$195,000	$19,500	12718
5	Lund	Wooded	$349,000	$69,800	12899
4.87	Black point	Partially cleared	$275,000	$58,510	13255
24.7	AVERAGE		$639,738	$34,472	

This data shows considerable fluctuations in the price of land parcels overall as well as in cost per acre. Without knowledge of the suitability of the land in question for farming operations, we can nonetheless see that in the past 14 months, at least a dozen parcels of affordable ($299,000 or less) vacant land have been for sale in the regional district.

6.2.2 Farms for Sale near PRRD

In January 2018 the study looked for farms for sale in PRRD, Sechelt and Vancouver Island, and categorized farm offerings by size, overall cost, and cost per acre. This was done in order to obtain a sense of current prices for developed farms in the region.

Size (acres)	Location	Status	Price	Cost/acre	MLS #
56.9	Courtenay North	Fully developed farm enterprise	$1,600,000	$28,119	434654
110	Union Bay	Aquaculture and land-based farming; fish processing facility	$6,000,000	$54,545	429459
42	Squamish Valley	Fully developed farm enterprise	$3,680,000	$14,950	18995768
40	Cowichan	Fully developed farm enterprise	$1,880,000	$47,000	434256
17.42	Duncan	Fully developed farm enterprise	$1,400,000	$80,367	433719
22.77	Coombs	Fully developed farm enterprise	$2,200,000	$69,800	12899
8.25	Comox Valley	Fully developed farm enterprise	$1,895,000	$229,696	432046
37.8	AVERAGE		$2,665,000	$74,925	

Based on the data above, in January 2018 developed farms in the coastal region were selling, on average, at three times the price and more than double the cost/acre of unfarmed or minimally farmed and undeveloped vacant land for sale in the PRRD.

6.3 Municipal and Regional District Land

The soil capacity of vacant and undeveloped land currently owned by both the Powell River municipality and the Powell River Regional district is unknown. Soil mapping would clarify the potential of these lands to be used for agricultural purposes, and help to guide decisions on their future use.

6.4 Crown Land Leases

In theory, BC farmers can apply for Crown land leases for the cultivation and production of crops and the grazing of livestock. In reality, there is currently no possibility that local farmers access or make use of Crown land for agriculture in the PRRD.

6.4.1 Grazing Leases

Grazing leases are a 20-year tenure issued under the BC *Land Act*. Currently, applications for new grazing leases are not being accepted. Grazing leases cannot be bought or sold or otherwise transferred. Only the current lessee may renew an existing grazing lease upon its expiry.

6.4.2 Intensive / Small Agriculture Leases

Intensive agriculture, also called small agriculture, is defined as the use of Crown land for the commercial production of animals, fruits and/or vegetables including poultry farms, dairy farms, market gardens, greenhouses, nurseries, piggeries and feed lots.

Intensive agriculture leases provide access to up to 15 hectares of Crown land for commercial farm production. This land use encourages and supports the sustainable development of commercial farms in British Columbia. An additional benefit of these leases is the retention of Crown land for agricultural use.

The possibility of obtaining an agricultural lease in the PRRD was investigated as part of this study. No part of the Crown land holdings (including forests) within the district has been designated for agricultural use, so applications for local agricultural leases are not accepted.

Intensive soil mapping of the PRRD may help to make a case for the addition of agriculture as a designated use on Crown land in the district.

6.5 Existing Powell River Farmland Under Threat

As prices for existing farms in the region indicate, farmers who are aging out of the sector generally want a high buyout price after a lifetime of hard work. According to the 2016 census, not a single Powell River farm operator has a written succession plan for transferring ownership and control of his/her farm to another person, despite the fact that the majority of local farmers are over age 55 and nearing retirement.

While farming communities are aging, structural, economic and practical challenges are preventing new and young farmers from getting into the sector. Runaway farmland values are putting farmland out of reach of the next generation of farmers. New entrants struggle to access the farmland they need to get their farm dreams off the ground.

The failure to pass Powell River's limited farmland to a new generation of farmers will dramatically impact our local community. Without policies, training and support to transition new farmers onto the land, agricultural land and knowledge will be lost and the chance for local food security—our ability to produce and control our own food supply—will go with them.

A CAUTIONARY TALE

Since 2015 the combination of low tax burdens on farmland and retiring farmers has been responsible for a meteoric rise in the construction of huge mansions, hobby farms and rampant land speculation on what was previously working farmland at the fringe of BC urban centres. An 8 hectare Richmond farm property sold for more than 100 times its assessed value in October 2017.[51] Wealthy landowners seeking rural settings near cities and realtors seeking big mark ups on land flips can thwart the intended purpose of preferential taxation and low land value assessment for agricultural land, dramatically distorting agricultural land prices in their vicinity, and undermining the stability of legitimate farmers who lease their land for production.[52] This particular phenomenon is relatively unknown in the PRRD. Unfortunately, like the local residential housing market, local farms may soon – and rapidly – begin to experience fallout from real estate trends that originate in the Lower Mainland.

6.6 Farmland Trusts

Many BC communities are concerned about farmland preservation, farm viability, and local food sovereignty. Farmland trusts – non-profit organizations that protect and preserve farmland - can play a role in addressing these concerns by:

- Owning and managing farmland
- Holding covenants
- Making land them available to farmers for food production
- Leading stewardship of local farmland
- Providing information and support for farmland protection and farming

Local governments (regional districts and municipalities) have the means and authority to encourage farming in their respective jurisdictions, and can facilitate and support creation of community-initiated farmland trusts. To secure farmland for current and future generations, they can set aside money for farmland preservation, and partner public funds with private donations to raise money for land acquisitions.

Farmland preservation within land trusts is strictly voluntary, involving the sale or donation of property or a perpetual conservation covenant by a willing landowner. Farmland preservation relies on a legally binding contract to 'preserve' land for farming

[51] CBC Online, Nov 28, 2017, http://www.cbc.ca/news/canada/british-columbia/richmond-farm-sales-alr-rural-land-sales-hot-1.4422668

[52] See an investigation of BC farmland speculation by the Globe and Mail: https://www.theglobeandmail.com/news/investigations/farmland-and-real-estate-in-british-columbia/article32923810/

uses. The contract (covenant or title) is attached to the land at sale, so that the land restrictions apply to all future landowners in perpetuity.

6.7 Online Farmer/Land Matchmaker Platforms

Retiring farmers without successors feel they have few options but to put their farms on the market and sell to the highest bidder. Whether the land is lost forever to aggregate, industrial or urban development, or simply consolidated into larger operations, Powell River's farm community– and the consumers who rely on them – face an unprecedented structural and demographic shift. Although retiring farmers may prefer to sell to a new generation, who will love and steward their farms as they have, they don't know how to go about it.

In this scenario, farmer/land matchmaker platforms constitute a strategic disruption to current systems of farmland market exchange, and have the potential to become a new means of creating alternative farm transfer options for local farmland owners and genuine opportunities for new farmers to get on the land.

Online farmer/land matchmaker platforms such as FarmLink.net allow farm-seekers to access detailed information on properties available for sale, lease or succession agreements, while permitting retiring farmers and farmland owners to learn about the aspirations and values of the farmers who are seeking land.

This type of platform is essentially a cross between an online dating/social media site and a realtor's webpage. In addition to supporting posts and blogs, Farmlink allows aspiring and retiring farmers to connect directly using a confidential message system. Although this kind of online relationship building is new to many established farmers, the FarmLink model offers a potential means of managing farm successions on a more personal and immediate level than farmland trusts.

6.8 Powell River Community Futures: Business Succession Planning

Community Futures Powell River (CFPR) is a not-for-profit organization that provides a range of support services to people wanting to start, expand or sell a business in the PRRD. CFPR recognizes the importance of succession planning, and the need for services and resources for business owners wanting to retire from their businesses. For these reason, PRCF has partnered with other business development organizations to create the Venture Connect website. Venture Connect (www.ventureconnect.ca) links potential business buyers to small BC business owners who are in the process of exiting their business by providing leadership, options and support. It provides a platform and a model that could be used to create a similar website that is specific to farm succession planning.

7 Land Leasing / Farm Financing

7.1 Guides to Farmland and Agricultural Leases

The most comprehensive guide to BC farmland leases was created by the Land Conservancy of BC in 2012 for use by landowners, farmers, communities and other land trusts. The Conservancy supports and encourages farmland access agreements that give farmers tenure similar to owning land, and include terms for environmentally supportive farm management practices. The *Guide to Farmland Access Agreements*[53] focuses on two general categories of agreements: long-term (10 years+) and short, trial period agreements, and provides related information on taxation, financing, and accounting for equity.

In 2014 the BC government issued a similar document, *Guide for Agriculture Lease Agreements* in British Columbia, which examines not just land leases but also leasing of agricultural buildings, machinery, equipment and livestock – short and long term.

7.2 Purchasing Farmland

A common error that first time farm buyers make is securing a residential mortgage on rural property. This simple mistake can cost thousands of dollars in interest payments. Agricultural mortgage lenders often offer lower interest rates, flexible payment plans, periodic payment choice, and the option of transferring a mortgage to another person (generally another family member). These are the major differences between mortgages for agricultural land and consumer mortgages.

LAND TITLE LOANS (EQUITY LINES)

- Lenders provide the borrower with one or more lines of credit
- The borrower puts up the land as collateral against the loan.
- This arrangement is similar to a home equity loan, only it is based on land only.
- Land only real estate is generally regarded as weaker collateral than real estate with buildings (residential, commercial or industrial) in place.

AGRICULTURAL MORTGAGES

Though there are similarities between agricultural and residential mortgages, agricultural mortgages are specifically designed to cater to the needs of rural landowners. Flexibility with payment options, tenure period, and transferability of debt

[53] See online @ http://i1.wp.com/www.farmfolkcityfolk.ca/wp-content/uploads/2012/01/Farmland-Access-Agreements.jpg

are some of the features that make agricultural mortgages a better option for farming families.

Agricultural mortgages aren't just for purchasing farms. These can be applied to several types of rural property: gardens, nurseries, ranches, and pastures. Mortgages for agricultural land can be used for any type of improvement related to rural land. Even if an individual is not purchasing a farm in the conventional sense, there is potential for a rural property purchase to benefit from the lower rates of an agricultural mortgage.

AGRICULTURAL MORTGAGE RATES

Rates offered by agricultural mortgage lenders vary based on market conditions, market rates, the type of mortgage, the principal amount, and the equity value of the property. The rate categories are similar to residential rates: fixed agricultural rates and variable agricultural rates. Fixed mortgages include a set interest rate. While fixed interest rates can be a bit higher than those of a variable range, the borrower is guaranteed that the interest rate will never change during the mortgage term. A variable agricultural mortgage rate changes based on market conditions. This can be tough on a tight farming budget as it means that monthly mortgage payments could be in constant upheaval.

7.3 Community Futures: A Developmental Lender

Community Futures Powell River is a not-for-profit organization that provides a range of support services to people wanting to start, expand or sell a business in the PRRD. In addition to its extensive educational and consulting services, Community Futures is a developmental lender, working in collaboration with banks and credit unions to help local entrepreneurs get financing to:

- Start or expand a business
- Apply new technology to a business
- Upgrade a business' facilities and/or equipment
- Develop new products and services
- Create new markets
- Enter the global marketplace

Community Futures can assist businesses that:

- Have reached the limit of their credit line due to fast growth / efforts to innovate
- Have a project with a security shortfall
- Have limited collateral with which to secure finance
- Can generate future cash flow and service a term loan, but not in the short term
- Are at a start-up phase but demonstrate realistic market and sales potential
- Can pledge owner assets as security - PRCF can leverage these assets to a greater degree than a financial institution

PRCF offers businesses:

- Longer repayment/amortization periods
- Customized repayment schedules based on business cash flow
- An option to defer payments on capital loans
- No prepayment penalties - up to 100% of the balance without penalty at any time during the term of the loan
- Interest only payments for predetermined periods after loan authorization, followed by repayment terms of 3-5 years
- Extended parameters on asset valuation
- Here are a couple of examples of how Community Futures helped leverage a transaction, filled the gap and made deals possible.

In addition to its loans program, PRCF initiates and partners in community economic development projects. Because PRCF exists to help grow, diversity and strengthen the economy of the PRRD, the agency identifies, validates and fosters local business opportunities that non-local financial institutions may not recognize. PRCF has been serving the community for almost 30 years, and has a solid track record of offering genuine support to Powell River businesses.

7.4 Federal Agricultural Loan Programs

Access to capital to acquire and operate farms has been identified as a key barrier to local farmers. However, the two federal agricultural loan programs described below appear to offer financing options to both existing and aspiring farmers.

7.4.1 Canadian Agricultural Loans Act (CALA)

CALA is a federal government guaranteed loan program designed to provide farmers and farmer co-operatives with financing. The asset being financed is generally used as security for the loan, with up to 90% of the farmer's cost being covewred, to a maximum of $500,000 per farmer or $3,000,000 per cooperative. Eligible applicants include:

- Existing full- or part-time farmers
- Beginning/start-up farmers
- Farmers taking over the family farm
- Agricultural co-operatives with a majority (50% plus 1) farmer membership

CALA loans address a wide variety of financing needs:

- Purchase farm real estate, livestock (breeding herd), and farm equipment (including repairs)
- Construct farm buildings
- Purchase crop storage condominiums
- Supplement your farm's energy use with power from renewable sources

Both chartered banks and credit unions can process requests for a loan under the CALA program. Each lender will go through its own loan application process to determine whether an applicant qualifies for a loan under the CALA program.

7.4.2 Farm Credit Canada Young Farmer Loan

Farm Credit Canada is a federal Crown corporation specializing in loans to primary agricultural producers.

The FCC's Young Farmer loan is available to qualified producers under 40 who wish to purchase agricultural assets up to $1,000,000 in value. There is no loan processing fee. Money is loaned at closed variable rates at prime plus 0.5%, with special fixed rates available.

8 Greenhouse Production

Only 3 of the 53 local farms included in this study are engaged in greenhouse production, despite that fact that it is less land intensive (typically yielding 15 to 20 times more produce than an open field of the same area), and provides a year round source of fresh produce.[54]

Greenhouse horticulture is the sector of BC agriculture that has undergone the most changes in recent years. Modern horticulture activities have focused on research and investment in technology, crop yield increases and resource use efficiency – creating a dynamic, intensive system for food production that encompasses:

- Consumer, retailer and supply chain expectations
- An increasing specialization and professionalization of grower/producers
- Growing systems and harvesting practices founded on technological innovation
- Changes in post harvest management practices

Increasing growers' technical knowledge and skills and establishing accessible growing systems helps to promote protected cultivation within greenhouses as a viable practice alongside traditional open field cultivation. Greenhouse production – especially hydroponic production – allows for precise control of inputs and growing conditions in an environment that is far more predictable than in open fields.

A greenhouse grower's ability to regulate factors such as water and nutrient supply also supports the production of produce of uniform standard at harvest. Hydroponically grown greenhouse vegetable crops are low in chemical residues, contamination and toxins – and require softer post harvest washing treatments due to:

- Absence of soil and weeds
- Use of sterile substrates (solid, soil-less growing media)
- Little or no direct contact between edible parts of plants and potential sources of contamination
- Reduced use of over-head irrigation systems in BC horticulture

BC's greenhouse sector engages in three distinct types of production: vegetables and floriculture and nursery products. BC's vegetable greenhouse growers employ about 3,800 people and gross close to $300 million annually. Greenhouse vegetable operations are in production for 10–12 months of the year, depending on the crop grown.

[54] Basic greenhouse structures and systems are discussed in detail in the GREENHOUSE HORTICULTURE.pdf document created for and attached to this report.

9 Farmer Demographics

One of the fastest growing segments of the farm operator population - nationally, provincially and locally - is among those aged 55 years and older. This trend directly parallels the ageing of the general population. However, there are signs of a coming shift in the demographics of those who farm – and in the social and cultural dynamics of farming itself – as more women and young people engage in agriculture.

Although the number of BC farms fell by more than 11% between 2011 and 2016,[55] the number of female and young[56] BC farmers grew during the same period.

9.1 Young Farmers

2016 was the first census year since 1991 in which there was real growth in the number of young farmers. Young farmers now comprise 6.9% of BC farmers (compared to just 5.4% in 2011).

Young farmers are often first-generation, starting from scratch rather than taking over a family farm. They are hard-working (the 2010 Census of Agriculture reported that 25% of BC farm operators under age 35 worked off farm for more than 40 hours /week).

They are passionate about the land and enthusiastic about creating a new agricultural model based on sustainability and respect for the land and animals. They come from urban settings, often leaving jobs in large organizations with the desire to connect to the natural world. Some have a farming background but many have no roots in the country.

Many are college-educated and enter farming with the aim of practicing organic diversified farming and direct marketing their products. Many have moved away from traditional agricultural models requiring capital-intensive inputs for land and equipment.

The young farmer is operationally lean—leasing land, using ingenuity and resourcefulness to lower costs, connecting through social media, and marketing directly to consumers. These young farmers are looking for new ways to work together: co-operative farming, small distribution networks, shared farm equipment and food storage areas, and establishing joint commercial kitchens for the preparation of value-added products.

[55] This drop in the number of BC farms was almost double the decline in farms nationally (-5.9%).
[56] Under age 35

9.2 Women Farmers

The proportion of BC farmers who are female outpaces the national average by 8%.[57]

Women have long played a lead role in agriculture in the developing world, but have traditionally tended to work behind the scenes on North American and European farms.

This is changing.

- In the UK the number of women farmers grew by 300% from 2001 to 2014.[58]
- The number of US farms operated by women tripled between 1978 and 2007.[59]
- BC has the highest proportion (37.5%) of female farmers in Canada, and is at the forefront of a socio-economic phenomenon that Census Canada describes as "altering the face of what we think of when we picture North American farmers."
- 10 (19%) of the 53 Powell River farms identified in this study are operated solely by women
- 29 (67%) of the remaining 43 local farms have a woman listed as co-owner or co-operator
- 39 (46%) of the 84 local farm operators identified in this study are female

To date, there has been no formal or comprehensive study of the rise of women farmers in BC. However, a 2006 study of Canadian Farm Women funded by Status of Women Canada,[60] and a 2013 US Department of Agriculture study of female operated farms[61] can offer some global insights into the behaviours and impact of women in the primary agricultural sector:

- Ways in which woman-run farms might differ from male run operations[62]
- Attributes and values women farmers bring to the primary agriculture sector

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[57] In 2016, 37.5% of BC farm operators were women. Nationally, women accounted for less than 29% of farmers. Data is from Stats Canada's May 2017 Report, Small farms and direct marketing play a large role in British Columbia, available online @ http://www.statcan.gc.ca/pub/95-640-x/2016001/article/14809-eng.pdf

[58] *Why women are taking centre field in farming*, July 2017 in the online journal, The Conversation, http://theconversation.com/why-women-are-taking-centre-field-in-farming-73932

[59] *Characteristics of Women Farm Operators and Their Farms*, 2013, US Department of Agriculture Economic Research Service, https://www.ers.usda.gov/publications/pub-details/?pubid=43750

[60] *Farm Women and Canadian Agricultural Policy*, Roppel, Desmarais, Martz, April 2006

[61] Ibid

[62] Data is for the US, in the period from 1978-2007 unless otherwise indicated.

9.2.1 Data on Female Farm Operations

SIZE OF FARM OPERATIONS

The US study found that growth in female operated farms was largely within the small farm category (89%), and that growth was especially dramatic in fledgling farms with no sales income in their first year: these grew by 1200%. Even in 2007, 75% of female operated US farms were small farms. [63]

However, rapid growth in a very small group (5%) of female operated US farms also occurred at the high end of farm income (FCR of $100,000+).

- Women-operated farms with FCR of $500,000 to $999,999 grew by 277%
- Those with sales of $1 million or more grew by 714%, from less than 300 in 1982 to nearly 2,000 in 2007.

SPECIALIZATION

In 2007:

- 45% of US female operated small farms specialized in grazing livestock (beef, horses, sheep and goats)
- 46% of the million-dollar farms operated by US women in specialized in poultry and eggs, while 21% of these high earning farms focused on specialty crops

9.2.2 Data on Women Farmers

In 2016, the age spread of Canadian women farmers was as follows:

- 26% Under 35 years of age
- 31% 35 to 54 years
- 28% 55 and older

On average, women farmers appear to be better educated than their male counterparts. 61% of American female farm operators have education beyond high school, compared with only 47% of US male operators. The 2006 Status of Women report also found that Canadian female farmers were generally better educated than male farmers. The 2006 Status of Women study also noted that:

- Canadian female producers want to grow healthy, wholesome food for themselves and their customers.
- A number of women develop viable specialized businesses within the larger farm operation, such as herb or tea production.

[63] "Small farm" is a sales class not a size class: it is a farm with annual sales of less than $10,000

- Women explicitly link their personal experiences as farmers to national and global economic and policy influences.

It is important to understand clearly the range and depth of forces that motivate women's connections with their farms and communities. In spite of the overwhelming pressures of poor finances and a seemingly hostile federal policy environment… and the anger and despair these realities can provoke, women retain incredibly strong attachments to their histories, their communities and their land.

- Status of Women Canada
2006 Report on Canadian Farm Women and Agricultural Policy

Canadian Farm women in this study identified major values that encompass the realities of farming as they experience it:

- Support and enhance the quality of life in rural communities
- Ensure that both food and the environment are safe and healthy
- Advocate for an equitable federal domestic food policy
- Educate consumers and communities about the contributions that farms and farmers make to society
- Strengthen the voices of farm families
- Promote gender-inclusive, farm-family-friendly sustainable agricultural policies that support social and cultural values as well as economic needs

10 Labour Market Data

WorkSafeBC data shows 2,199 companies involved in the BC agricultural horticulture sector. Indoor and protected crops represent 521 employers with 6,900 employees. Outdoor crops represent 1,678 employers with 5,540 employees. 12,540 individuals are employed in the sector overall.

Job openings in the sector to 2025 will total 6,450:

- 3,110 of these job openings will be for horticultural production managers
- There will be 1,200 job openings for farm workers
- 9% of the new job openings in nursery and greenhouse workers will be filled by new workers

10.1 Worker Shortages

Human resources, particularly worker shortages, are a common issue within the BC horticultural sector. The BC Agriculture Council reports frequent and persistent challenges in recruiting skilled and unskilled workers for the horticulture sector. To date, horticultural producers have not coordinated their efforts to address labour and skills shortages. The large number of small producers, and the multiplicity of crop specific associations have made a systematic assessment of the size and nature of the labour market imbalance difficult. The lack of available workers at all skill levels is limiting the growth and profitability of the horticultural sector.

BC horticultural producers are also at risk due to an increasing demand for on-farm managers, farm supervisors, and specialists, as farm owners retire or step back from the day-to-day operations of the farm.

Traditional farm succession patterns no longer apply: anecdotal evidence includes countless reports of farm owners' children expressing no interest in farm work, including farm management. While the adult children may maintain ownership of the farm, they require managers, supervisors and farm specialists to actively run the farm operation. It is therefore critical that the knowledge of the original farm's owner is effectively transferred to the managers or new owners through timely and organized transition processes. The selling of a farm business (particularly to someone entering the industry) is a long-term process, requiring several years of transition.

A 2017 study[64] of the horticultural sector's human resource needs was based on input from BC's largest horticultural producer organizations:

[64] *BC Agricultural Horticulture Sector Labour Market Partnerships Project*, 2017 https://www.workbc.ca/getmedia/672c4e2a-c85f-4db6-b029-

- BC Agriculture Council
- BC Fruit Growers Association
- United Flower Growers Cooperative
- BC Blueberry Council
- BC Greenhouse Growers Association
- BC Landscape & Nursery Association
- BC Potato & Vegetable Growers Association
- Raspberry Industry Development Council
- BC Strawberry Growers Association
- BC Cranberry Growers Association

When asked to identify key challenges relating to their labour needs, producer organizations indicated the following:

- Want Canadian and BC workers (91%)
- Unskilled labour shortage (88%)
- Skilled labour shortage (60%)
- Lack of qualified applicants (58%)

10.2 Human Resource Challenges by Crop /Product

NURSERY PRODUCTION

There is an emerging labour shortage in the middle to upper production management levels throughout the nursery industry.

POTATO PRODUCTION

Farms cannot find the equipment operators and Integrated Pest Management (IPM) specialists. Losing a lot of the family farms. Smaller farms are selling to neighbours – they would not sell if they had a manager.

TREE FRUIT PRODUCTION

Large farms are consolidating – need skilled foreman and human resource specialists. Within the packing side, there is a big need with automation and equipment maintenance. Half of small to medium sized tree fruit farms are succeeding, half are being are sold off.

FLORICULTURE

The biggest challenge is still with lack of unskilled labour. On the medium skilled level, horticulture training has potential to provide workers for middle and upper management positions. Finding supervisory level people is always a challenge.

5221597bc7b5/Agrifoods_BC_Agricultural_Horticulture_Sector_Engagement_Report_Feb-2017.pdf.aspx

BLUEBERRIES

Farms are seeing a growth in foreign ownership and growing uncertainty regarding sources of supply of workers. The market demand for blueberries is growing resulting in labour competition among producers, and labour shortages at all levels of production, including packing facilities. Some blueberry farms are using the Temporary Foreign Worker Program (TFWP) Skilled Worker Program. Many new owners are coming from Asia, and they are not able to determine where their workforce will come from. It was noted at the 2016 BC Blueberry Council AGM that there were more people from China at the meeting than previously had been the case. New Chinese owners plan to send product back to China. Often, the new owners will get the previous farm owner to be the manager of the farm. The same is seen to be true with packing house businesses.

CRANBERRIES

Cranberry farms have not seen wide spread selling of farms as there is a greater tendency for children to assume management of the farm. However, there is a growing demand for supervisors.

10.3 Worker Retention Challenges

HOURS AND PHYSICAL DEMANDS OF THE JOB

Variability in hours of work, including seasonality and long hours in season, is the key factor contributing to retention challenges for this industry. In fact, the 'greenhouse, nursery and floriculture' industry has one of the most pronounced seasonal patterns within agriculture. At its seasonal peak, the domestic workforce is typically 1.8 times its size at its seasonal low. Physical work is also a larger problem in this industry than in others, with 24% of horticultural farm operators citing it as a challenge, compared to 17% across the entire agriculture sector.

INCREASED COMPETITION FOR WORKERS

- Producer organizations believe increased competition for workers is driven by: Increased market demand for product (75%)
- Expanded product range (67%)
- Expanded BC market (37.5%) and export markets (29%)

11 Education and Training Needs

The Horticulture Technician Training Program prepares participants for entry into the agricultural sector as skilled workers. Investigation of potential for delivering livestock and business management training content is recommended.

The traditional way of gaining farming knowledge—by growing up on a farm, learning it as you grew, and then taking over—is largely gone. New farmers, even those who have some family farming experience, face a steep learning curve when it comes to starting and managing a farming operation. Young would-be farmers need training programs that will help them get into the kind of agriculture they're looking for: small, diversified, sustainable farms. Credentialed training also strengthens the position of farmers who are seeking financial support for their farm operations – lenders are more likely to look favourably on the aspirations of a farmer with relevant certified skills.

School District 47 and Vancouver Island University have a long established and successful practice of partnering to offer dual credit training in a number of BC trades, providing local secondary school and university students with opportunities to enter the workforce with in-demand skills at an accelerated rate. As Industry Training Authority (ITA) accredited training partners, SD47 and VIU are uniquely positioned to be able to offer the Horticultural Technician Foundation training program in the local community.

11.1 Horticultural Technician Foundation Program

This is a 36-week program that provides a 500-hour work-based training credit and is intended to serve as a common core towards years one and two of Production Horticulturist and Landscape Horticulturist, enabling graduates to follow three possible career paths:

1. Entry into industry as skilled worker
2. Academic credits towards second year of 2-year diploma program
3. Entry into level three of Horticulture (Production & Landscape) Apprenticeship Program

The Horticulture Technician Foundation Program was designed for the ITA by subject matter experts from the BC horticultural sector, and includes the use of shop, lab, field, nursery and greenhouse facilities as training environments. The program prepares successful participants for work in both greenhouse and field based production.

TECHNICAL TRAINING CONTENT

- Plant Identification
- Tool, equipment and farm vehicle use, maintenance and safety
- Applied Horticultural Plant Science
- Soil and soil-less growing media
- Soil Management
- Greenhouse and field-based cultivation
- Horticultural Practices
- Plant Health & Pest Management

ESSENTIAL WORKPLACE SKILLS

- Interpersonal Skills
- Teamwork
- Basic Supervision
- Document Use
- Text Reading
- Numeracy Skills
- Critical Thinking Skills
- Communication & Listening Skills
- Problem Solving & Troubleshooting
- Computer Use
- Job Planning & Organization
- Workplace Safety

A detailed overview of this program is provided in the **OVERVIEW HORT TRAINING.pdf** document submitted with this report. A complete program outline with competency detail is provided in the **OUTLINE HORT TRAINING.pdf** document attached to this report.

11.2 Additional Training Content

11.2.1 Business Start Up / Expansion & Small Business Training

Community Futures Powell River is a not-for-profit organization that provides a variety of support services to people wanting to start, expand, franchise or sell a business in the PRRD. The agency's educational and consulting services include:

- Workshops for existing and start up business owners
- Start up / expansion consulting
- Small business skills training

Community Futures Powell River also offers an extensive lending library of business literature that can assist borrowers in broadening their business knowledge, and a Free computer lab that is available for use during regular business hours - Monday to Friday, 8:30am to 4:00pm.

11.2.2 Additional Agricultural Courses

Given the prevalence of livestock production in the PRRD, and the absence of basic business training in the Horticulture Technician Foundation Program, the viability of providing the following training content locally as a Vancouver Island University diploma program should be examined.

HEALTH AND NUTRITION OF FARM ANIMALS

Topics should include: essential nutrients and their metabolism by various farm animals; common feedstuffs on farms; livestock facilities and practices that lead to common livestock diseases; proven approaches to preventing and controlling animal disease.

MANAGEMENT AND PRODUCTION OF BEEF, SHEEP, AND GOATS

Topics should include: The feeding, breeding, and management of beef, sheep, and goats; genetics, sourcing, health and production of these livestock groups; required facilities and equipment; Class D slaughter license requirements.

RUMINANT ANIMAL HEALTH

Topics should include: The principles of disease infection, treatment, and prevention in ruminant livestock; reproduction, obstetrics, respiratory ailments, nutritional and infectious disease, and health management of dairy and beef cattle and other ruminants.

MANAGEMENT AND PRODUCTION OF POULTRY AND SWINE

Topics should include: feeding, breeding, and management for commercial and purebred swine operations; production, marketing, facilities, equipment; swine herd health, and genetics; basics of feeding, breeding, and management of different types of poultry.

FORAGE CROP PRODUCTION

Topics should include: production and use of commonly grown forage crops; forage crop establishment, maintenance, harvest, and storage. Emphasis should be on maximizing the use of locally grown forages to meet the nutritional requirements of local animal stocks.

12 Structure of National & Provincial Markets

Federal and provincial agricultural policy is focused on expanding global markets for Canadian food products. Food is increasingly regarded as a commodity rather than a basic human right. As food markets go global, they require that farmers meet universal production standards. Certification costs, quotas and license restrictions can prevent local farmers from selling into markets outside of the PRRD.

12.1 The Globalization of Canadian Food

It is impossible to discuss external markets for local farm products without clarifying the national and global context in which agricultural goods are currently produced, transported, stored and sold. Canada's "Growing Forward" and "Growing Forward 2" agricultural policies originated in the 1969 Report of the Federal Task Force on Agriculture, *Canadian Agriculture in the Seventies*, which advised the Canadian government that:

> *[It is] desirable to end farming by the individual farmer and to shift to capitalist farming.... In sketching out this kind of model for agriculture, we are of course rejecting the 'Public utility' or socialized concept of agriculture.*[65]

The 1969 Task Force also emphasized the importance of federal policy restructuring, in order to align the Canadian agricultural economy more closely with that of the United States, its primary trading partner. This was Canada's first step toward full participation in universal global markets for food, and the federal government has continued to restructure domestic agriculture in radical ways in support of this goal.

With the implementation of international bilateral trade agreements around the globe, rural landscapes worldwide are undergoing rapid and profound change.

North American, European and Asian countries are redefining agricultural policies and legislation to facilitate rapid and profitable integration into an international market-driven economy built on food. Traditional agricultural and market structures are being dismantled as new agrarian laws aimed at restructuring land tenure, land use and marketing systems are being promulgated, in order to:

- Increase food production for export
- Industrialize the agricultural sector
- Liberalize the flow of goods within the global food economy

[65] *Canadian Agriculture in the Seventies*, Report of the Federal Task Force on Agriculture, Ottawa, December 1969 http://publications.gc.ca/collections/collection_2014/aac-aafc/A21-15-1969-1-eng.pdf

These policies and agreements, at home and abroad, emphasize the creation of a "modern," "market responsive" and "dynamic" agricultural sector. Rather than regarding food as a basic need and human right, they frame agriculture as an industrial system, and food as a commodity offering high return on venture capital.

The production and distribution of food is increasingly in the hands of a small group of transnational agribusiness corporations (or, to use the language of market analysts: the vertical and horizontal integration and concentration of agro-business transnational corporations are creating a new food web, in which a small cluster of organizations control the provision of food products worldwide).

Agriculture has become a bona fide global industry. National agricultural policies are being driven and defined at the international level. Researchers, policy makers, governments, international institutions and the media easily and readily produce phrases such as:

- The globalization of agriculture
- The global food chain
- The restructuring of the global food supply

The control of Canadian food systems by interests outside its borders is rising, and intensifying. Canada has been so successful in attracting and increasing foreign investment in agriculture and food products that at least four major Canadian food processing sectors are now majority owned by transnational firms:

- 79% of Canadian flour milling facilities
- 88% of Canadian malt plants (up from 5% in the 1980s)
- 90% of Canadian pasta plants
- 74% of Canada's beef-packing plants

This global trend to corporate domination of agriculture is a critical aspect of the restructuring of agriculture everywhere. In Canada, agribusiness corporations are getting larger, richer and more powerful. In 2000, a National Farmers' Union (NFU) study of Canada's agriculture and food sectors clearly highlighted corporate concentration along most links of the food chain, with a handful of corporations controlling:

- Inputs (seeds, fertilizers, chemicals, machinery and credit)
- The purchase of raw product from farmers
- Food processing, distribution and retailing

Through the successful pursuit of consolidation, concentration and globalization, transnational corporations have gained enormous influence. This corporate control of agriculture skews market power in domestic economies.

12.1.1 BC Food Exports[66]

The federal and BC governments invested an estimated $427 million in provincial Growing Forward 2 (GF2) initiatives between 2013 and 2018. More than 70% of the B.C. Ministry of Agriculture's entire investment in the sector for that period was funded through GF2 initiatives – as were activities undertaken through BC's Agrifood and Seafood Strategic Growth Plan (ASSGP).[67]

The BC ASSGP actively pursues the building of global markets for BC produced food products, and is the provincial government's roadmap to the BC food sector becoming a $15-billion-a-year export industry by 2020. BC government activities in support of this target include:

- 15 international B.C. government trade offices
- Annual participation in 20+ international agrifood/seafood trade events
- An International Market Development Strategy that focuses on increasing market knowledge, generating investment, and building global sales networks
- Hiring of B.C. Trade and Investment Representatives in Asia to support expansion of sales, and to collect intelligence on Asian market opportunities
- Creation of the *BC AGRIFOOD AND SEAFOOD EXPORT-READY BUSINESS CATALOGUE* in English,[68] French, Mandarin, Japanese and Korean. This online, searchable catalogue identifies producers of ready-to-export BC fruits and vegetables, seafood, meat, packaged food, natural health products and beverages.

These provincial government initiatives to increase BC food exports are clearly working. 2016 was the fourth consecutive year of record growth in BC food product exports:

- 2016 BC export sales of food totalled $3.8 billion - up $300 million from 2015 and more than $1 billion (44%) higher than in 2013
- 712 types of BC foods – over 1 million tonnes - sold to 160 global markets
- $195.5 million (17%) increase in export sales of seafood products[69]
- $104.6 million increase (4%) in BC agrifood exports

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[66] The information in this section was sourced from a BC government press release in April 2017: https://news.gov.bc.ca/releases/2017AGRI0043-001000

[67] A copy of the BC plan can be viewed @ https://businessinsurrey.com/wp-content/uploads/2016/03/2015-BC-Agrifood-Seafood-Strategic-Growth-Plan.pdf

[68] View the English version of the catalogue @ www.gov.bc.ca/agrifoodexports

[69] 2016 export sales versus 2015 export sales

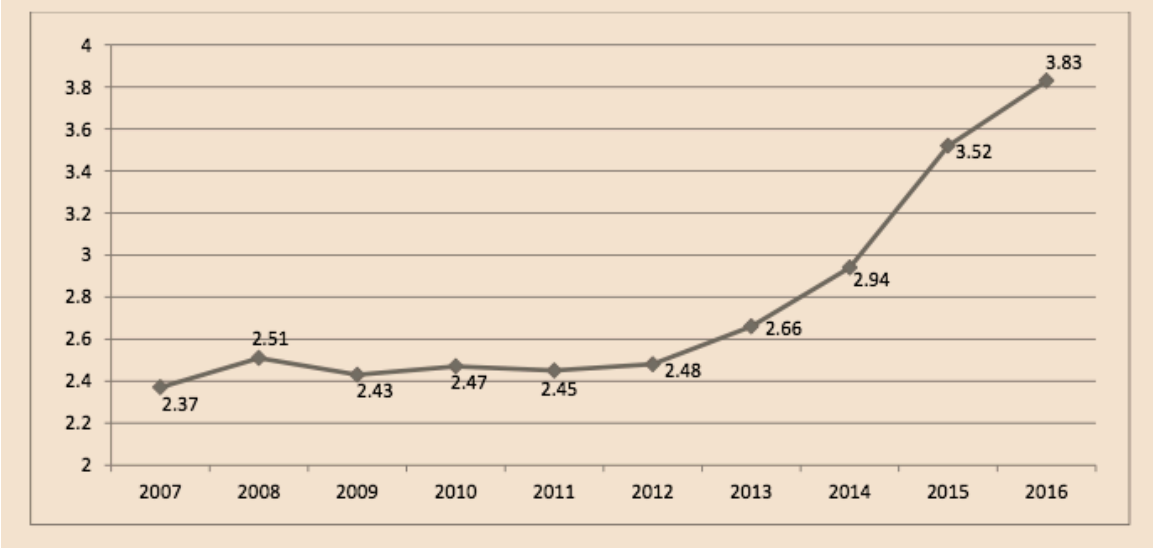
The current top 5 export markets for BC foods are:

- United States ($2.7 billion in sales in 2016)
- China ($407 million)
- Japan ($207 million)
- South Korea ($64 million)
- Hong Kong ($55 million)

Foreign markets showing rapid growth in demand for BC food products between 2015 and 2016 include:

- Brazil (136%, up $6 million to $11 million)
- Ukraine (95%, up $15 million to $31 million)
- Philippines (40%, up $6 million to $20 million)
- Australia (23%, up $6 million to $30 million)

TOTAL GROWTH IN VALUE OF BC FOOD EXPORTS ($ BILLIONS) IN PAST 10 YEARS



The top five 2016 BC agrifood product exports, by sales value, were:

- Food preparations for manufacturing and natural-health products ($307 million)
- Baked goods and cereal products ($293 million)
- Blueberries ($200 million)
- Mushrooms ($156 million)
- Chocolate and cocoa preparations ($119 million)

The top five 2016 seafood products, by sales value, were farm-raised salmon ($545 million), crab ($142 million), hake ($71 million), shrimp and prawns ($47 million), and herring ($45 million).

12.1.2 Powell River's Groceries: Retail Ownership

If we look at the structure and ownership of our local and coastal retail grocery stores, the power of a few corporations within our local food system becomes very clear.

NOTE: In comparison with corporate net earnings reported below, BC's entire primary agricultural sector (all BC fruits and vegetables [field and greenhouse] and all farm livestock products, taken together) currently generates $3 billion in gross earnings (Farm Cash Receipts] annually.

SAFEWAY: Empire Co. Ltd.

Empire Company Limited is a Canadian conglomerate engaged in retail food investments. The company has over 40,000 employees, with stores in over 500 locations across Canada. In 2015, Empire's total assets were worth $12 billion and annual sales revenue was $22 billion. Empire is Canada's second largest grocery store operator, with its stores and brands accounting for 26% of all Canadian grocery store sales. Empire has its headquarters in Nova Scotia, and its stores and brands include:

- Safeway
- Thrifty Foods
- Freshco
- Foodland
- Price Chopper
- Sobeys

H.Y. LOUIE GROUP

Founded in 1903 by Hok Yat Louie as a Chinatown grocery store and still owned by the Louie family. In 2016, the Louie Group sold its grocery wholesale division to Overwaitea Food Group of the Jim Pattison Group of Companies. Overwaitea Food Group now supplies IGA stores with the "dry goods" [canned food, cereals and flour], which make up 40% of IGA's retail sales. H.Y. Louie Group operates 28 retail grocery stores throughout BC and owns the following store brands:

- IGA Marketplace
- IGA stores
- London Drugs

LOBLAW COMPANIES LTD.

Loblaw is Canada's largest retail grocery store operator, with its stores and brands accounting for 30% of all Canadian grocery store sales. The company operates 1,000 supermarkets nationally. In 2015, Loblaw had revenues of $46 billion and a net income of $623 million. Its brands include:

Shoppers Drug Mart	Valu-Mart	Super Valu
President's Choice Brand	Joe Fresh	No Frills
Your Independent Grocer	T&T Supermarket	Loblaws
The Real Canadian Superstore	Extra Foods	

SAVE ON FOODS and QUALITY FOODS: Jim Pattison Group

Jim Pattison is the Chairman, President, CEO and sole owner of the Jim Pattison Group. The company has more than 39,000 employees, and annual sales of more than $8 billion.

The company is involved in a range of industries in Canada, the U.S., Mexico, Europe, Asia and Australia, including:[70]

- Agricultural equipment and technology
- Single service food and food product packaging[71]
- Food production[72]
- Food distribution[73]
- Wholesale and retail grocery sales

Various divisions of the Jim Pattison Group of Companies (Overwaitea Food Group, Jim Pattison Food Group, etc.) operate the following store brands:

- Save On Foods (131 stores)
- Quality Foods (13 stores), acquired in 2017
- Overwaitea Foods (20 stores)
- Buckley Valley Wholesale
- Cooper's Foods
- Urban Fare
- Everything Wine
- PriceSmart Foods
- Choices Markets
- Nesters Markets
- Meinhardt Fine Foods

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[70] In addition to the food sector, JPG also has interests in TV, radio, real estate development, advertising and entertainment, automotive dealerships and auto body shops, export terminals (coal),forest products (owns Canfor), and financial services.

[71] Genpac, JPG's single-service food packaging company, supplies packaging (take-out containers, dinnerware, bags, laminate film, trays, cups, bowls, etc.) to supermarkets, restaurant chains, drug and discount stores, and food service distributors in Canada and the US. Monetbello, another JPG company, designs and manufactures aluminum tubes and cans, laminate, foil and plastic tubes for food, drink, pharmaceutical, personal care, cosmetics, and household products.

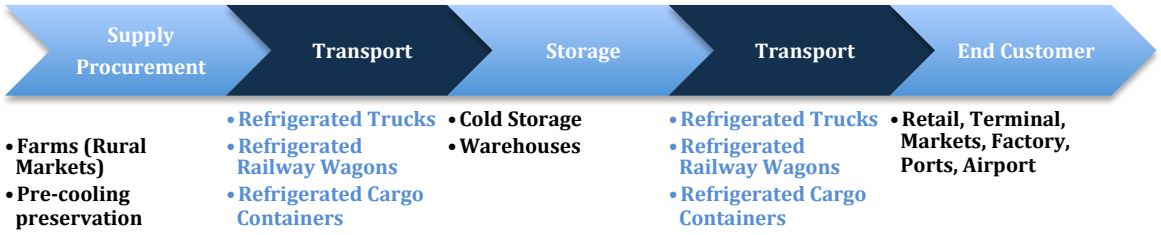
[72] *Sun-Rype* brand, Ocean's seafood brand, Gold seal Seafood, Brother's All Natural brand, Authentica World Cuisine brand

[73] TNG ships more than 280,000 truckloads annually to stores across Canada and the US, and has full service partnerships with more than 45,000 retailers.

12.2 The Cold Chain

In North America, 80-90% of food undergoes refrigerated transport, and 80-100 % undergoes pre-cooling preservation between the farmer and the consumer. The cold chain is designed to provide ideal conditions for perishables from the point of origin to the point of consumption, in order to extend the shelf life of products such as fresh agricultural produce, eggs and meat, as well as perishable pharmaceuticals. However, as cold chains worldwide become aligned with the goal of global market access, they are changing domestic and retail food systems.

Cold Chain Operational Model



COMPLEX REGULATORY ENVIRONMENT

The cold chain regulatory landscape is extremely complex. Globalization and increases in food safety and counterfeit incidents have prompted almost all governments to tighten regulations on supply chains. At minimum:

- The farming and processing methods used in the production of all goods entering the cold chain must now be certified to global standards
- All goods in the cold chain must be traceable to their point of origin

TECHNOLOGY INTENSIVE

The technology component of the cold chain is predicted to be one of the fastest growing segments of the cold chain sector over the next 10 years. Examples of technology that is now standard in the industry:

- DATA LOGGERS
  These devices are packaged with a shipment to provide a temperature record of goods transported. Data loggers may also measure temperature, humidity, shock, vibration, and other required parameters. They may have GPS capability and even the possibility of real-time tracking and reporting. Proprietary software captures and tracks the information from the data loggers.

- PACKAGE-BASED TEMPERATURE CONTROL TECHNOLOGY
  These include "active containers" that can heat and/or cool the product as necessary and containers specifically designed to fit the mode of transport (truck, freight ships, airplanes), etc. These containers usually also include environmental recording devices.

COLD CHAIN TEMPERATURE AND SHELF LIFE STANDARDS

Product	Refrigerated Shelf Life (Days)	Optimum Temperature (Celcius)
Apple	90-240	0
Bell Peppers	21-35	7
Cabbage	14-20	1
Eggs	180	1.1
Fresh Meat (beef, lamb, pork, poultry)	14-65	-2
Lettuce	12-14	0.6
Onions	30-180	1
Oranges	21-90	7
Pears	120-180	-0.6
Potatoes	30-50	10
Strawberries	5-10	0.6
Tomatoes	7-14	12

COLD CHAIN IS INTERACTING WITH FOOD AND FOOD SECTORS IN NEW WAYS

Technology advances in the modern cold chain – and the expectations of modern consumers – are changing the role of distributors within the food chain and blurring the line between the cold chain and the food processing and retail grocery sectors. Examples:

- SUPPORTING POSTPONEMENT OF FOOD PROCESSING
  Products are held in cold chain warehouses, then prepared and packaged for shipment just in time to fulfill specific orders. This includes bringing frozen products up in temperature for processing.

- KEEPING PRODUCT 'WHITE'
  This involves the cold chain managing the process of postponing product labeling. The food product does not enter consumer packaging until the delivery destination— this decreases transport costs by decreasing the weight of product carried. It also increases profit on inventory by floating food product until it can be sold in the most profitable package at the point of sale offering the best price.

- EXTENDING SHELF LIFE
  Modern cold chains offer high-pressure processing of animal proteins. This post-packaging, non-thermal pasteurization method of killing microorganisms, allows companies to use a clean label—one without a long list of preservatives—and extend shelf life.

CAPITAL INTENSIVE

Cold chain distributors require hundreds of millions of dollars each year in operational investment in infrastructure and human resource management, in order to:

- Acquire and maintain cold chain storage and transportation assets
- Incorporate and update the technology that supports these systems
- Manage energy and fuel costs in a resource intensive business
- Function in a complex regulatory environment

The extremely capital-intensive nature of the sector has lead to the North American cold chain – including the BC cold chain – being controlled by a few, massive US companies (Texas based Sysco, for example).

INCREASINGLY GLOBAL

Government policies and practices (such as the Integrated Canada US Supply Chain – "Growing Forward") are helping to drive the North American cold chain shift to global markets. These policies are also driving a shift in the role of the transnational companies that have traditionally owned and operated the storage and transportation assets that define the cold chain sector.

RISE OF THE 3PLS

At present, the management of physical assets in the cold chain (warehouses, containers, transport fleets, monitoring components) is being routinely outsourced from the big companies to smaller operations that the sector refers to as "3PLs" (3rd party logistics service providers).

These 3PL firms allow distributors to outsource some or all of their supply chain activity, including environmental control and monitoring. Some 3PLs are very large companies

with huge investments to provide global supply chain solutions. Some are smaller companies that organize the distributor's supply chain in compliance with applicable regulations. There are also firms that map the distributor's transportation routes and monitor the storage areas within the vehicles that travel these routes.

Outsourcing to 3PLs is driving massive growth in the BC supply chain sector, which is currently regarded as one of the most vibrant and fastest growing sectors in the BC economy. From 2009 to 2016, the number of BC jobs in this sector increased by 20,000, with more than 15,000 new BC jobs forecast in the period from 2017 to 2025.[74]

BROKERS versus DISTRIBUTORS

As they outsource equipment and facility and transport management, the companies that control the cold chain are moving from an asset and service-based industry to a speculative business role in the global economy. In this role, they engage in activities and processes that encompass food markets worldwide. These large distributors now function as global food brokers, acting to obtain food products at the lowest possible price, and selling into wholesale, retail and consumer markets that offer the best possible profit on investment.

However, to be able to buy and sell food across provincial and national boundaries in the modern cold chain's regulatory environment, distributors must be able to offer comprehensive quality assurances to the markets they supply.

12.3 Local Farmer Access to the Cold Chain

All produce and meat products sold outside of the regional district in which they are produced must meet cold chain industry entry standards: through certification, quotas, and slaughterhouse licensing. Local farmers who do not meet cold chain standards cannot pursue markets for their goods beyond the Powell River Regional District.

12.3.1 Local Meats

Controls and standards for domestic food animal meat are established through federal and provincial regulatory systems. All commercial food animal-slaughtering activities in Canada must be either:

- Registered federally or
- Licensed provincially

[74] Fastest Growing Industries: Supply Chain, Vancouver Public Library, 2017 http://pwp.vpl.ca/siic/files/2017/06/Fastest_Growing_Industries_Supply_Chain.pdf

While their market scope differs, the objectives of both the federal and provincial systems are the same:

- Animals are humanely handled and slaughtered
- Carcasses are processed in a clean environment
- Meat is packaged and stored in ways that reduce contamination risks
- Meat is safe for consumers

Slaughterhouse operations that are registered with the Canadian Food Inspection Agency are authorized to slaughter, cut, wrap and sell their products nationally. Most major retailers cut and package their meat products in nationally registered facilities. Currently, no BC slaughterhouse operations are registered federally, meaning that all BC large food animal producers must bear the cost of shipping livestock to Alberta slaughterhouses in order to access national markets.

12.3.2 BC Slaughter Licenses

Meat that is obtained through a BC slaughter license may only be sold within the provincial jurisdiction defined by the slaughter license.

CLASS A & B LICENSES

Establishments with provincial Class A & B slaughter licenses are generally large abattoirs. They are licensed to slaughter, cut, wrap and sell their product direct to consumers and retailers throughout BC. While both A & B licenses provide the license holder with unlimited production ceilings, government oversight is intense: each individual animal is inspected before and after slaughtering. Only meat obtained under a Class A or B license is eligible to enter the BC cold chain.

CLASS D LICENSE

In rural and remote areas such as Powell River, a qualified farm operator can apply for a class D license, which allows annual, on-farm slaughter of animals with a total combined weight between 1,000 and 25,000 lbs (454 to 11,400 kilos). Meat obtained under a Class D license can be sold directly to consumers and to secondary food establishments (restaurants and meat shops) *only within the regional district where the meat was produced*. Class D licensees may slaughter their own, or other peoples' animals. Class D license operators are subject to periodic site assessments and audit of their operational slaughter records. Of the 53 farms identified in this study, 9 (17%) have Class D slaughter licenses.

CLASS E LICENSE

The class E license allows annual on-farm slaughter of animals whose total combined weight is between 1,000 and 10,000 lbs (454 to 4,540 kilos). Meat derived from Class E slaughter licenses can only be sold directly to consumers (no secondary sales permitted) within the regional district in which the meat was produced. Class E Operators are only permitted to slaughter their own animals, and are subject to periodic site assessments and audit of their operational slaughter records.

PERSONAL USE – NO LICENSE

No license is required for the on-farm slaughter of food animals for personal use. There is no limit on the total combined weight of the animals slaughtered and no provincial or federal oversight of this activity. It is illegal to sell or distribute meat from domestic livestock that is obtained without a slaughter license.

12.3.3 Local Eggs

BC eggs are a managed commodity, with defined quotas allocated to specific producers by the BC Egg Marketing Board. Unless a local producer secures a provincial quota for production, he or she is effectively shut out of access to markets supplied by the BC cold chain.

12.3.4 Local Produce

All BC produce (berries, nuts, fruits and vegetables, field and greenhouse grown) must receive CanadaGAP™ certification in order to enter the BC cold chain. GAP is a cold chain and retail industry standard, rather than a provincially or federally legislated requirement.The GAP ("Good Agricultural Practices") certification program defines food safety procedures within fresh produce operations, and is based on international market requirements. The program has been vetted by the Canadian government and is officially recognized by the Global Food Safety Initiative.

The GAP program has two streams, one specific to greenhouse operations, and the second for field based fruit and vegetable operations. GAP certification and audit processes encompass the production, packing, storage and wholesaling of fresh produce. GAP certification of crops indicates that the producer has a system of procedures in place to minimize the risk of contamination through farming processes. On the farm, GAP certifies production on a crop-by-crop basis, generally at a cost of about $1,500 per crop – making it potentially viable for local producers who specialize in one or two crops on a large scale, but potentially putting it beyond the reach of small producers with diverse production.

13 Local Markets

PR farmers have a range of options in the local market. Surveys of local restaurants and grocery stores reveal both opportunities and challenges. A Farmers' Market survey indicates strengths and weaknesses in current focus and practice. Detailed data provided.

Of the 53 local farms included in this study:

- All sell direct to consumers
- 24 farms (44%) sell their produce at one or more local Farmer's Market [75] [76]
- 23 farms (44%) are members of the Farmers' Institute
- 13 farms (24%) currently sell to local restaurants and/or grocery store outlets[77]

13.1 Direct to Consumer

Direct-to-consumer selling is currently the most established and widely used marketing method among local food producers. Direct-to-consumer selling gives producers the best price for their goods on a per unit basis. Farmers have a face-to-face relationship with their customers, with limited third party involvement. However, during periods in which large amounts of product are rapidly becoming ready for harvest, the volume of sales possible through direct-to-consumer sales can result in overall loss of marketing potential.

13.1.1 Farm Stand /Farm Direct Sales

The farmer offers his/her goods for sale at point of production. Locally there is a clear need for a phone app or online platform that would assist local and out of town consumers in finding farm products and local farms quickly and easily. Such an app or platform would provide a live list of produce / meat / farm products available in the PRRD and addresses / directions / maps of local farms offering each product. Growth in farm direct sales is critically linked to incorporating consumer-friendly technologies and information systems that will deliver customers directly to farms that can meet their needs.

13.1.2 Community Supported Agriculture (CSA)

Community Supported Agriculture programs (CSAs) are direct-to-consumer programs in which consumers pay up front for a "share" of the projected crop harvest of a local

[75] This number aligns with Census Canada data on Farmer's Market use by PRRD farmers
[76] Powell River Farmers' Market, Kelly Creek Market or Texada Farmers' Market
[77] Based on survey of local restaurant operators and retail grocery stores

farmer or group of farmer. This kind of arrangement distributes the risks and rewards of farming among farmers (predictable market) and consumers (better price). The food is delivered directly to member consumers or to collective drop points on a weekly basis throughout the growing season. CSAs generally have between 35 and 200 consumer and farmer stakeholder members.

- Food Box Programs (door to door delivery)
  Most large urban centres have a number of delivery options that feature both organic and locally produced food. These include the delivery of a box of food on a regular basis. The boxes usually include a mix of fresh and packaged foods.
- Other Direct to Consumer Programs
  A much smaller proportion of the direct-to-consumer market are options such as pick-your-own farms, on-site farm stands and stores, and gleaning programs, in which consumers are invited to harvest crops that are left in fields, usually after harvest.

13.1.3 Food Sheds

Food sheds are locally centralized locations where multiple farmers can bring their farm products for direct distribution to consumers. These localized or neighbourhood food hubs can function as centralized “farm gates” and also have potential to incorporate value-added food processing.

13.1.4 Farmers' Markets

Farmers' markets are communal spaces in which multiple farmers gather to sell their farm products directly to consumers. Farmers' markets may be managed by a farmers’ association, municipality or private operator, and offer farmers the opportunity to sell their goods seasonally or year-round, depending on local production.

Farmers typically pay a vendor's fee to sell at Farmers’ Markets, and must transport their own farm products to the farmers' market site – often at times of peak production. In order to genuinely support local farmers, Farmers’ Markets must provide them with a venue that:

- Clearly prioritizes the selling of farm fresh products
- Reaches the maximum number of consumers (resident and out of town) of local food or horticultural products
- Rewards successful farm vendors and limits unprofitable non farm vendors
- Offers consistent (flat fee) rather than variable (% of takings) cost structure to farmer vendors to support growth of sales and profitability

- Provides high value return on the time / money farmers invest in order to sell at the market
- Supports farmers in growing their customer base through branding and onsite product promotions
- Promotes the consumption of local foods and locally produced value-added products made from local ingredients
- Finds innovative ways of the value of local fresh and value-added products with a ongoing variety of point-of-sale activities and information formats, including:
    - Harvest / product forecasts for farmers' market vendors for the following week
    - Local food preparation onsite
    - Recipes for jam, jelly, salsa, pickles, spaghetti sauce, applesauce, apple butter etc, based on produce available that week
    - Step-by-step directions on home canning, freezing, drying or preserving fresh products for sale at the market
    - In depth profiles of local farmers

13.2 Powell River Farmers' Market / Open Air Market

The Powell River Farmers' Institute operates the largest Farmers' Market in the PRRD. As the premier venue for sales of local farm products, this market has a clear responsibility to act as a key promoter of farm products and a core organizer of sales opportunities for local farmers. However, there has been no practice of data collection or consumer research to evaluate or even benchmark key aspects of the market's performance.

Because of this, two on-the-ground surveys of the Powell River Farmers' Market / Open Air Market were conducted as part of the current study:

- A 2 day survey of Fall Fair, held at the Market on September 16-17, 2017
- A 1 day survey of the Saturday morning Farmers' Market on September 23, 2017

13.2.1 Fall Fair Survey

Fall Fair is Powell River's oldest harvest celebration event, and celebrated its 85th anniversary on the weekend of September 16-17, 2017, taking place from 12:00 pm to 6:00 pm on both days.

FARMER REPRESENTATION AMONG FALL FAIR VENDORS

Farm vendors accounted for only ten[78] (14%) of the seventy vendors selling at Fall Fair, with ten other vendors (14%) using local farm products to some degree in their value-added goods or prepared food items. This means that 72% of 2017 Fall Fair vendors were selling goods or services with no link to local farming.

FALL FAIR FARM VENDOR SALES

Farmers who sold goods at Fall Fair and participated in the survey reported value of their Fall Fair sales as follows:

- 20% reported $200 to $399 in sales
- 20% reported $400 to $599 in sales
- 10% reported $600 to $799 in sales

EVENT ATTENDANCE

Based on headcounts conducted onsite on both days of Fall Fair, it was estimated that 1,550 people of all ages. If we subtract the 10% of attendees who were visitors, 7% of the local population attended the event over its 2 day, 12-hour duration.

13.2.2 Farmer's Market Survey

Due to constraints of time and staff, this survey unfortunately had to be conducted on a rainy Saturday morning (September 23, 2017) between 10:30 am 12:30 pm.

FARMER REPRESENTATION AMONG FARMERS' MARKET VENDORS

Farm vendors accounted for ten (25%) of the forty vendors selling at the farmers' market on that day, 2 other vendors (3%) sold wild-harvested products, and 4 further vendors (10%) used local farm products to some degree in their value-added goods or prepared food items. Thus, 62% of farmers' market vendors, on the day surveyed, were selling goods or services with no connection to local farming.

FARMERS' MARKET VENDOR SALES

Farmers who sold goods at Farmers' Market and participated in the survey reported value of their sales as follows:

- 70% reported $200 to $399 in sales
- 30% reported $400 to $599 in sales

[78] This number represents just 42% of Farmers' Institute members and 19% of all local farmers

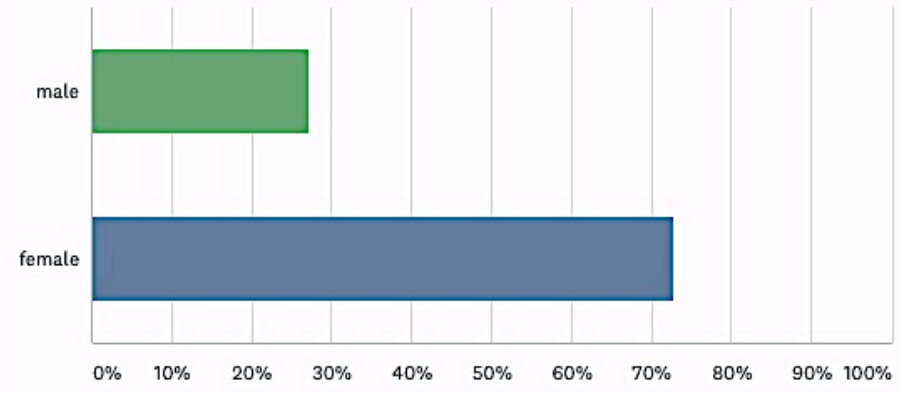
EVENT ATTENDANCE

Based on headcounts conducted onsite during the Farmers' Market, it was estimated that 150 people of all ages (0.75% of the local population) attended the event over its two-hour duration, on that day. This attendance figure is likely to have been skewed by the rain and wind that lashed the market on that day.

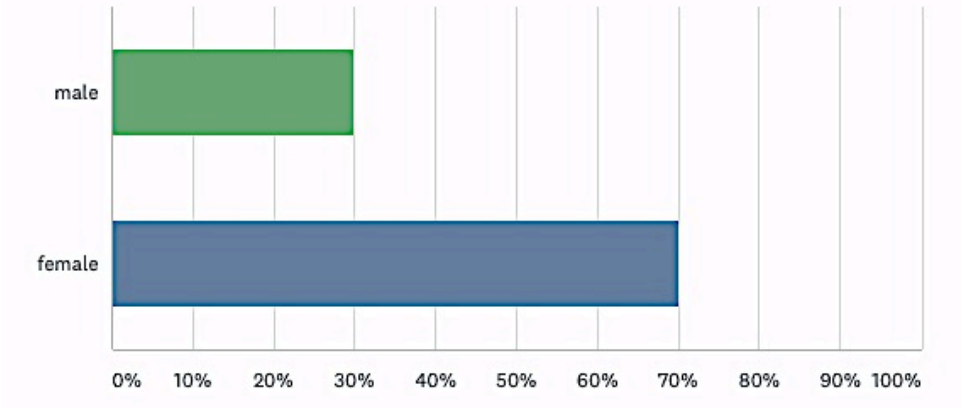
13.2.3 Consumer Data from Both Surveys

167 individuals were surveyed at Fall Fair over a two-day period, 41 individuals were surveyed at the Farmer's Market. This section compares the 2 sets of consumer data.

GENDER ENGAGEMENT FALL FAIR

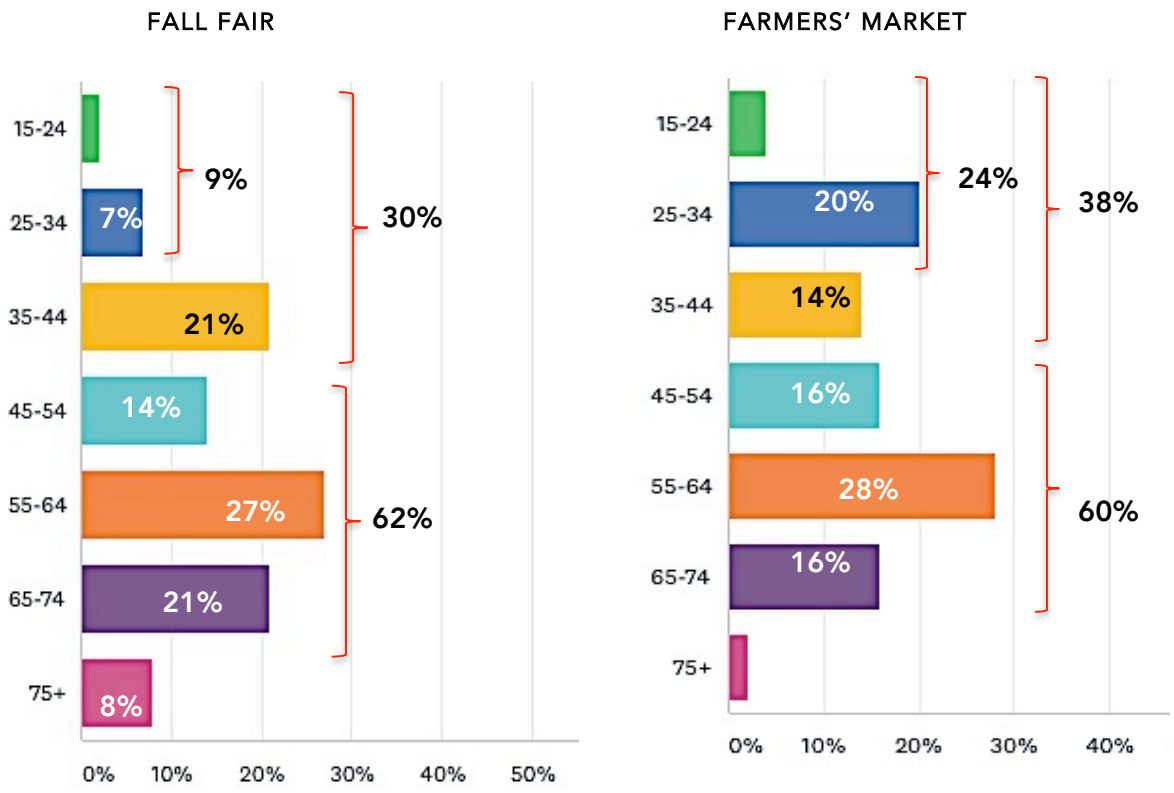


GENDER ENGAGEMENT FARMERS' MARKET

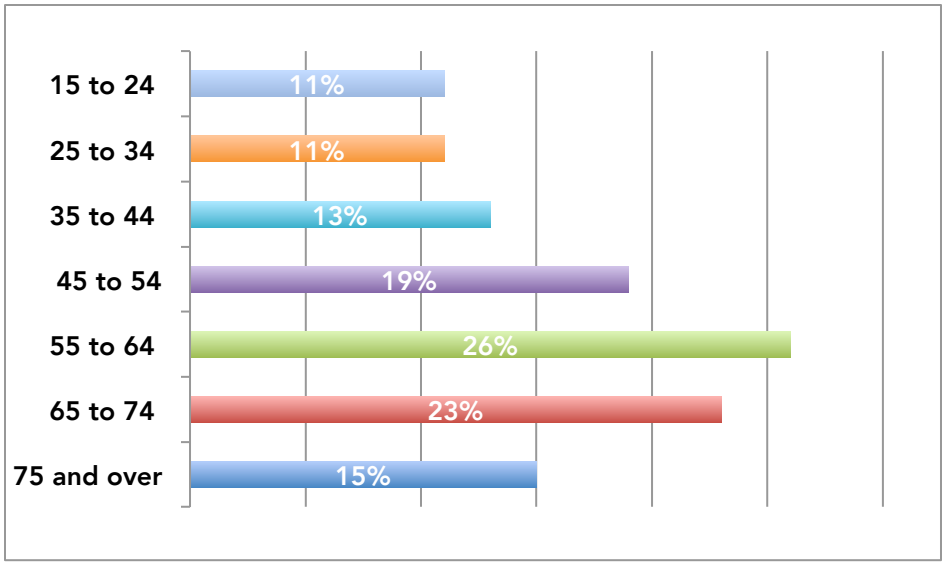


The overall ratio of roughly 30:70 between men and women attending both events is significant when we consider that Powell River's population distribution by gender is much closer to 50:50 (9,965 males to 10,165 females, according to 2016 census).

ENGAGEMENT BY AGE GROUP

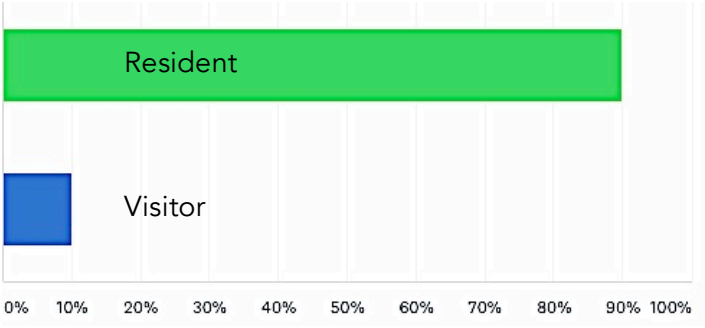


The age distribution of attendees at both events closely matches age distribution in the PRRD (Census Canada, 2016)

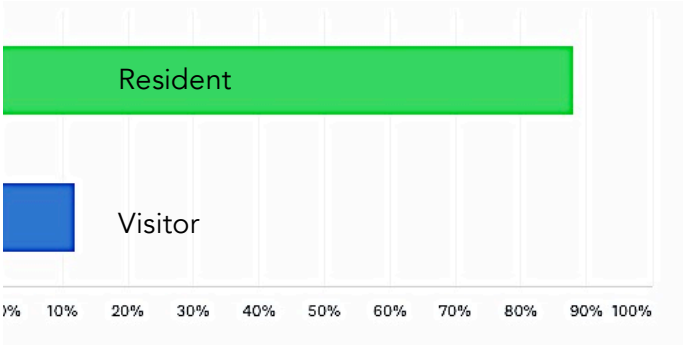


RESIDENT AND VISITOR ENGAGEMENT

RESIDENT OF POWELL RIVER – FALL FAIR



RESIDENT OF POWELL RIVER – FARMERS' MARKET



CONSUMER REPORTED PURCHASES

FALL FAIR PURCHASES

FARM / GARDEN GOODS 32%
- a. 21% produce
- b. 3% cut flowers
- c. 3% soaps (local herbs)
- d. 3% preserves
- e. 3% plants
- f. 1% eggs
- g. 1% meats

PREPARED FOOD 38%
- a. 24% from food vendors
- b. 14% baked goods

OTHER 30%
- a. 10% crafts
- b. 20% not sure

FARMERS' MARKET PURCHASES[79]

FARM / GARDEN GOODS 78%
- a. 63% produce
- b. 4% eggs
- c. 8% meats
- d. 2% seeds,
- e. 6% cut flowers

PREPARED FOOD 59%
- a. 39% baked goods
- b. 20% foods from food vendors

OTHER 20%
- a. 16% crafts
- b. 2% use low-income coupon.

[79] Farmers' market consumers purchased items from multiple categories

TOP 5 MOST REPORTED REASONS FOR ATTENDING

Fall Fair

- 63% Social
- 58% Local Produce
- 53% Food Vendors
- 52% Support for Local Farmers
- 49% Entertainment

Farmers' Market

- 82% Local Produce
- 62% Support for Local Farmers
- 50% Baked Goods
- 42% Food Vendors
- 36% Entertainment

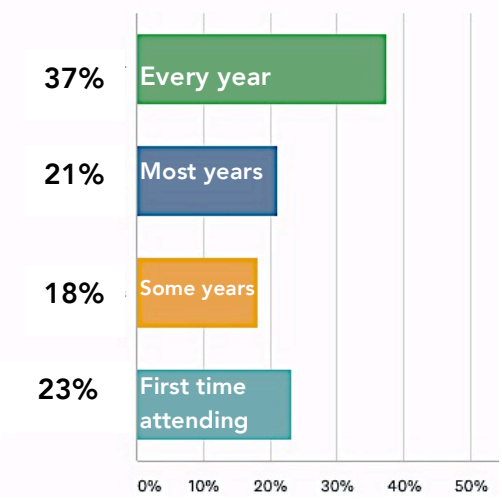
CONSUMER REPORTED PURCHASES VS REPORTED MOTIVATION

Based on actual purchases, consumers at both events over-reported farm produce as a motivation in attending:

- 58% of Fall Fair attendees gave farm produce as a reason for attending, while only 32% purchased it.
- 82% of Farmers' Market attendees gave farm produce as a reason for attending, while only 63% purchased it

CUSTOMER LOYALTY FALL FAIR

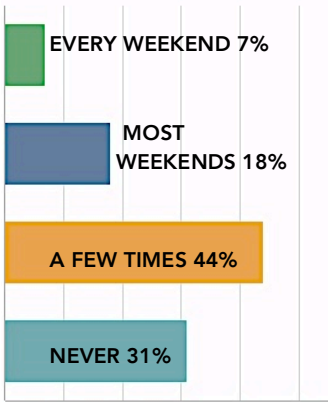
How regularly have those surveyed at Fall Fair 2017 attended this annual event?



CUSTOMER LOYALTY FARMERS' MARKET

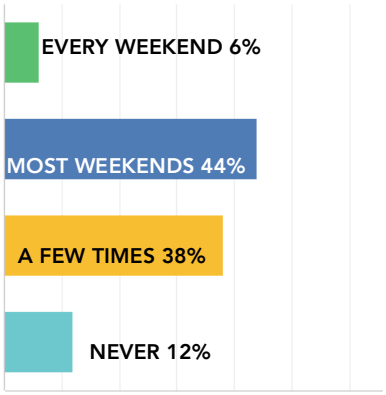
FALL FAIR

How regularly did those surveyed at **Fall Fair** 2017 attend the Open Air Market this summer?



FARMERS' MARKET

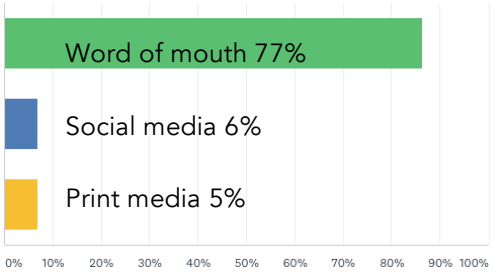
How regularly did those surveyed at the **Farmers' Market** attend the Market this



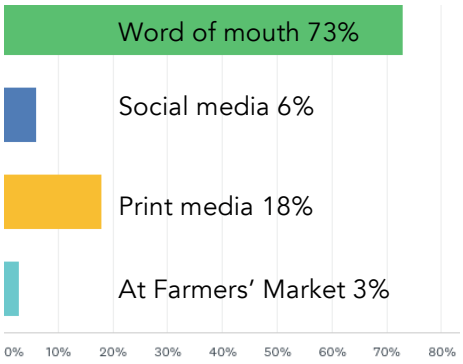
PROMOTION

We asked those surveyed how they became aware of the event or venue.

Farmers' Market Survey



Fall Fair Survey



13.3 Survey of Local Retail Grocery Stores

The potential for sales of local food products directly to retail grocers was also investigated as part of this study. Local retailers were interviewed to identify factors that support or present barriers to the purchase of local farm goods.

The following information was derived from individual 40-minute interviews with 5 local grocery store owner/managers. Three were large chain stores (Safeway, Save On and Quality Foods) and two were independent owner-operated businesses (Ecossentials and Pacific Point). Two other establishments (The Chopping Block and Mitchell Brothers) were approached but TCB was too busy until October and MB did not respond. A guarantee of confidentiality was given to all participants, so the data below does not identify specific responses to the questions, except where this would be publicly accessible information. Questions and responses are summarized below.

Q1 Are you currently selling local food?

YES.
All but one of the large chain stores (Quality Foods) currently stock some locally grown produce. Safeway and Save On Foods currently offer only local fruit and vegetables: the purchase of eggs and other animal products is complicated by existing supply agreements and cold chain regulations. Local products and regular farm suppliers included:

- Vegetables
    - Bushman Farm
    - Hatch-A-Bird Farm
    - Paradise Valley Produce
    - Terra Nostra Farm
    - Windfall Farm
- Fruit
    - Coast Berry Company
    - Rusty Gate Farm
- Eggs
    - Funky Beets Farm
    - Hatch-A-Bird Farm
    - One Tree Farm
- Meat[80]
    - Serendipity Rabbitry (Eco-essentials only)

[80] Although the store did not participate in the retail survey, The Chopping Block – a specialty butcher, is the only establishment that cuts, wraps, packages and sells local meat products obtained under a Class D License. It has long-established links both to local livestock farmers and to local consumers who want meat from animals that are raised locally and sustainably.

Q2. What kinds of challenges have you faced in selling local products?

PRICE

The main challenge is price. The farmer has to charge $4/lb for tomatoes to cover her costs, and the retailer needs to get $5/lb to cover his, but the consumer won't pay more than $3.50/lb, so there is a real problem. All stores acknowledged that there is a subset of consumers who will pay $5/lb for local tomatoes but, according to one retailer: "They're buying their local stuff up at the Farmers' Market, not in the grocery store".

LOW SALES VOLUME

All respondents commented that there is an issue with getting enough people to purchase local products at the store price, although for the big stores this is less of a problem, due to their far larger sales volumes and ability to absorb losses.

CONSUMER KNOWLEDGE/CULTURE

Linked to the above, all respondents said that, in general, Powell River consumers are still more interested in getting the best prices on food from big stores than in paying more for locally grown. Interestingly, there was some suggestion that this is just as much an "old school" cultural thing as it is related to the number of low-income earners. One retailer commented that even in similar sized towns where he has worked, with a comparable proportion of low-income earners, consumers were more "tuned in" to buying local and/or organic. There was general agreement that consumers don't understand why quality local produce is priced the way it is, and that there is a need for greater education. However, it was also noted that things are changing, slowly, and that as the demographics here shift and imported food prices continue to rise, there is likely to be an increasing interest in buying local.

CONSISTENCY OF SUPPLY

It is difficult for small-scale growers to supply large volumes of quality produce on an ongoing basis. Larger stores require consistency of supply over time (customers expect to get product X at the same price, year-round so supply can be a real issue). However, all of the retailers surveyed spoke of this as something they understood and were willing to work with.

Q3. What would make it easier for you to offer more locally grown food?

BETTER AWARENESS OF LOCAL SUPPLIERS

This emerged as a significant issue for the larger stores. Managers are busy and not always able to research who and what is out there, even if they have a niche for a particular local product.

LESS RESTRICTIVE REGULATORY ENVIRONMENT

The requirement for products to be inspected and recorded for traceability can present obstacles for both farmers and chain-store retailers. One manager mentioned that it can take 6 pages of paperwork to get one new product on the shelves.

STREAMLINED PROCESS FOR ENGAGING WITH FARMERS

In general, respondents noted that dealing with individual farmers on a piecemeal basis had it limitations, and that it might be easier if farmers had a way of organizing themselves (either into a cooperative or via a broker) to streamline this process.

Q4. Have you noticed customers asking for more local products?

NO.
Most interviewees responded 'no' to this question, but one of the big stores said that they regularly had people asking for local via their in-store suggestion box, which is why they are working to increase their supply.

Q5. If you're not currently selling local food, is this something you're interested in doing?

YES.
The manager of the one store that is not currently supplying local food (QF) indicated a strong interest in supplying local food; he is new to the position and not ready to take it on at this point, but would be interested to see who is out there and how they might work together.

Q6. What was the deciding factor in the move to sell local food?

COMMITMENT TO COMMUNITY AND LOCAL FARMERS
For all those who are currently selling local food, the decision to do this came from a sense of commitment to the community, and to local growers, and recognition of the importance of supporting the local economy.

Q7. Is the supply of local food an issue for you in terms of "head office"?

NOT EXACTLY.
All 3 chain store managers reported having capacity to make decisions to buy local, but the degree to which they were exercising that capacity varied. Managers said that if they can demonstrate consumer demand, meet regulations and sell the majority of what they buy, there is no barrier to increasing the amount of local produce they sell. However, doing these three things is partially dependent on the time they have available to source products and promote them. There are also limits to the types of promotion possible, as only products sold in all chain outlets can appear in store flyers. Overcoming old chain regulation is probably the largest issue.

Q8. Are you buying direct from individual farms or groups of farmers?

BUYING DIRECTLY FROM INDIVIDUAL FARMS.

Q9. What made you choose to work with these farms?

In most cases, farmers approached retailers with their products. In a few instances, the store manager identified an opening for a particular product and went looking for it. The development of these relationships, and the trust and understanding (particularly of supply issues) that builds up over time, was cited as an important factor for all of the stores selling local food.

Q10. Do you have any point of sale marketing for these products? What

guides your marketing approach?

NO MARKETING PLAN OR APPROACH.
Very little point of sale, or any other marketing, was reported. All those selling local products said they thought they either needed to do, or wished they could do more promotion – not just to advertise the availability of products, but to educate consumers about who is growing the food and what it is they are buying.

Q11. How will you evaluate your success in selling local?

NO PLANS TO DO SO.
No one had any plans to do this, although for the big stores it is built in to the numbers – "if those are okay with head office, then things are good".

13.4 Survey of Local Restaurants

The potential for sales of local food products directly to local restaurants was also investigated as part of this study. Restaurant operators were interviewed to identify factors that support or present barriers to the purchase of local farm goods for their businesses. The following 13 restaurants took part:

- Brooks Café
- Coastal Cookery
- Costa Del Sol,
- Culaccino
- Fruits and Roots
- Granada
- Magpies
- Modern Peasant
- Modern Peasant
- Moose 'n' Edies
- Shingle Mill
- Skeeter Jack's
- Snickers
- Thaidal Zone

LOCAL RESTAURANT SURVEY

Q1 Do you think that eating locally grown, wild harvested or processed foods is a value of your clientele?

YES - 9 NO - 4

YES - Additional comments

- That's our target clientele.
- They want ethical not just local.
- Produce in particular.
- They don't request it but notice when we provide it.

NO - Additional comments

- Not sure.
- Thought it would be when we started the business, but now we're not so sure people actually care.
- They don't ask for it, and don't like higher prices or change.

Q2 Have your customers requested that you serve locally grown, wild harvested or processed foods?

YES - 6 NO - 7

Q3 If yes, what items are most often requested?

MEAT – 4 PRODUCE & GREENS – 4 EGGS – 1 FISH/SEAFOOD – 1

Most of those who answered yes indicated 2 products that customers were requesting. One respondent noted that if a local menu item is too expensive or inconsistent then customers ultimately request 'the old stuff.'

Q4 Do you currently offer any local foods on your menu?

YES - 8 NO - 5

Q5 If yes to Q4, what local items do you serve?

MEAT – 2 PRODUCE & GREENS – 4 FISH/SEAFOOD – 4

Q6 If yes to Q4, who are your local farm suppliers?

TERRA NOSTRA FARM – 3
SUNSHINE COAST AQUAPONICS – 2
MYRTLE CREEK FARM - 1
CHOPPING BLOCK - 1

Q7 If yes to Q4, what was the deciding factor in your decision to use local food items?

"A local grower reached out: came into the kitchen, did a demo and kept in touch." (1)
"Dependability of the suppliers & availability & consistent quality of product." (3)
"We'd rather buy local when possible." (4)

Q8 If yes to Q4, what was customer response to these items?

"Not much response from customers." (8)
"People get numb to the message of 'local' food: it's used too much." (3)

Q9 Does the use of locally sourced food present any challenges to your operation?

YES.
All 13 restaurants answered in the affirmative. Although some restaurants have established good working relationships with specific farmers, overall challenges in play for all respondents included:

- Need for consistent price point
- Need for year round supply
- Lack of advance communication from farmers about crop plans
    - One respondent reported a local farmer arriving unannounced with a truckload of carrots, expecting the restaurant to purchase them
    - Farmers' livestock slaughter plans / harvest schedules are not communicated to restaurants
    - One respondent suggested farmers create a calendar or chart of what crops are planned for each season and make a commitment to honour that production plan over multiple seasons
    - Farmers' production not aligned with the actual needs of restaurants
- Farmers not understanding the business of restaurants
    - Restaurant timelines: buying and menu planning done well in advance
    - Restaurant peak service times (throughout day and year)
    - Restaurant clientele expectations: consistent quality / availability of menu items
    - Need to procure planned volumes of certain goods to support quantity of sales and volume-based pricing of menu
- Multiple respondents wanted one reliable local source for menu items used in large volumes, with several making similar comments: "We buy 15,000 lbs of potatoes/carrots/onions a year. It would be great if someone could commit to supplying these items, so we could procure them locally."
- Multiple respondents expressed interest in a "meet and greet" for local farmers and restaurateurs, scheduled in an off peak season for both groups
- Multiple respondents expressed concerns about lack of safety certifications of local food versus food products supplied through highly regulated commercial cold chain.

13.5 Local Food Safety and Risk Management

Before moving on to the issue of social procurement, the question of local food safety and associated risk exposures needs to be addressed.

Any perishable BC food product that is sold outside of the boundaries of the regional district in which it is produced is heavily regulated at every step (production, packing, storage, wholesaling and retailing) and traceable directly to point of production.

However, certified safety practices and risk management strategies for perishable food that is gathered, produced and consumed within the regional district are – with the exception of local farm meat products and a handful of GAP-certified local farmers – nonexistent.

13.5.1 Safety of Local Farm Meat

A Class D slaughter license authorizes its the holder to slaughter his own or another farm's animals to procure meat that may legally be sold. In order to obtain this license, a local farmer must complete government mandated food safety training and have his or her premises approved by Vancouver Coastal Health.

MANDATORY FOOD SAFETY TRAINING AND FOOD SAFETY PLAN

Successful completion of Slaughtersafe Food Safety Training is a mandatory requirement for all Class D and E applicants. Farmers must demonstrate a clear understanding of critical food safety control points in the slaughter process and develop a food safety plan to guide pre-slaughter, slaughter and post-slaughter handling of meat, in order to address possible sources of food contamination. Vancouver Coastal Health Authority assesses and evaluates a local farmer's food safety plan and proposed slaughter site prior to issuing a Class D or Class E licence.

NEED TO COMMUNICATE EXISTING FOOD SAFETY CONTROLS FOR LOCAL MEAT

From interviews with local restaurant operators conducted as part of this study, it's clear that the risk management and food safety components of a Class D license are poorly understood at the local level. In the case of locally slaughtered meats, there is a real need to effectively communicate the food safety standards that the Class D license guarantees to the community at large, and potential restaurant markets in particular.

13.5.2 Safety of Local Produce (Fruit and Vegetables)

Three local producers have operations that are certified organic, but though this certification resonates with consumer demand it does not address the issue of food safety. Some local producers have penetrated provincial markets – Coastal Berry Company is an excellent example – by GAP certifying their products. And GAP certification is definitely advisable for farms that produce one or two specialty crops. However, as noted previously, the cost of certifying multiple crops can be insupportable for small local farms.

13.5.3 Safety of Value-Added Food Products

A few farms – Coastal Berry Company, for instance – are developing value added products (such as juice) that are closely linked to established field production and food safety practices. Such products meet provincial and federal standards for food safety. Aside from these farms, current local production of value-added food products through canning, drying, etc. is largely home-based and/or driven by the desire to minimize local food loss or waste (e.g. PR Gleaners). All of this activity is unregulated.

13.5.4 Safety of Traditional Food

Roy Francis, head of Community Development for Tla'amin Nation, has identified a need for local standards and training in the safe handling, processing and cold storage of traditional foods such as elk and deer meat and salmon.

13.5.5 Need for a Strategic Local Plan

The Tla'amin people have been consuming local wild meat, fish and plant foods for more than 10,000 years. Powell River has a long tradition of local farming, with local farmsteads that are more than 100 years old and a farmers' harvest event (Fall Fair) that has existed for 85 years. To date, there has never been a food safety incident related to foods products that have been sourced or produced within the PRRD.

However, even one instance of a negative human health impact from local food – however small the actual risk of such an event – could present a huge threat to the ongoing viability of local markets: potentially devastating sales of products from Powell River farms, as well as exposing local retailers, restaurateurs, and farm operators to litigation.

The PRRD, Tla'amin Nation, the Municipality, the Farmers' Institute and local farmers and wild harvesters[81] need to examine this issue, and, if necessary work together to create a Strategic Plan for Local Food Safety that includes a plan for local farmer and wild harvest food safety training, as well as a risk assessment and crisis management plan to address the reality of current exposure.

13.6 Social Procurement

Social procurement is the strategic use of a large organization's purchasing power to create positive social, economic and workforce development outcomes in the local or regional economy. Social procurement, in the context of the current study, means that local organizations who purchase food in volume make a commitment to buy local food, in order to create sustainable markets for local farmers and sources of healthy food for the individuals the organization serves. Examples of potentially viable local organizations:

- PR Hospital
- PR Extended and Senior Care Facilities
- School District 47
- Inclusion Powell River

PR hospital and the extended care facility were willing to participate in the restaurant/food service survey reported above, but the food purchasing agents for both facilities were unavailable at the time it was conducted.

The Superintendent of Schools for SD47 has confirmed the district's interest in purchasing from local producers, with reservations that are similar to concerns expressed by local restaurant operators in response to Q9 in section 9.4, above: That local farmers are able to align themselves with the specific needs of the organization they supply, and provide quality/safety assurances for the food products they supply.

In order to move the very promising idea of local social procurement into its next phase, two things are needed:

- The creation of a Strategic Plan for Local Food Safety that defines and limits food safety risk exposure for both farmers and local organizations
- A facilitated 'meet and greet" between local farmers or farm collectives and local organizations with capacity to implement social procurement

[81] This includes Tla'amin hunters and fishermen who procure and process elk, deer and salmon for communal feasts.

14 Market / Sector Development Opportunities

14.1 Agroforestry

Agroforestry is a land management approach that integrates the growing of trees (and the management of cut blocks after timber harvest) with the cultivation of crops. It may have potential to improve land use on existing Powell River farms.

Agroforestry systems are designed and managed for a planned result. Objectives are to enhance production of both the crop and the status of the site, while simultaneously providing environmental, economic and social benefits.

Agroforestry blends agriculture, forestry and conservation. Trees stands or cuts are combined with crop cultivation in a single management framework that targets overall productivity. Both enterprises are managed and evaluated as a single system rather than as separate parts. This integration can involve intentionally retaining or adding crops in agricultural production systems or in forest systems at different stages of their lifecycle

Agroforestry is intended to minimize negative and maximize positive interactions between trees, crops and humans. Management intensity depends on the system design and planned results.

Activities such as silvopasture (use of woodlands for livestock pasture) and intercropping (creating and managing growing environments in woodlots) have potential to provide financially viable and ecologically sustainable land use possibilities to farms with challenging landscape or timber coverage issues.[82]

14.2 Agro-tourism

Agro-tourism is a new and growing niche that encompasses both the agricultural and the tourism sectors. A number of Powell River farms add to their food production income with agro-tourism activities:

- Farm stays, B&Bs, cabin rentals
- Farm tours

[82] See *A Guide to Agroforestry in BC*, Small Woodlands Program of BC, 2001 for a comprehensive description of Agroforestry practices: https://woodlot.bc.ca/wp-content/uploads/2014/04/A_Guide_to_Agroforestry_in_BC.pdf

- Event hosting
- Farm cuisine
- Specialty courses, Immersion in aspects of farm life
- Farm stores and cafes (a more sophisticated version of the farm gate, often with goods that are hand-crafted from farm products

These add-on farm activities bring tourist dollars to the PRRD and promote farm life and create additional markets for farm products. Local agro-tourism is currently being developed on an ad hoc, farm-by-farm basis. The extent and types of farm-level agro-tourism initiatives in the PRRD should be more fully investigated, as other communities have benefited economically and socially from its capacity to enhance both farming and tourism at the local level.

14.3 Value Chain

The ultimate goal of the local food movement is to develop community self-sufficiency through complete local food systems that encompass the entire food value chain – production, storage, processing, packaging, distribution, sales and waste management – all within a single regional district.

The best source of long term wealth and security for local food producers is in value-added activities that convert perishable goods into food products with extended shelf life and distinctive, marketable qualities: fruit and berries into juices and jams; vegetables into sauces and spreads. Complete regional value chains are possible. Links of the value chain that can be crucial to the long-term success of local food producers include:

- Market and consumer research
- Value-added product development
- Business plan development
- Securing business financing / project funding
- Merchandizing (product branding and packaging)
- Product certification
- Securing access to / maintaining cold storage and warehousing infrastructure
- Establishing processing capacity (commercial kitchen, kitchen hardware and equipment, chefs, culinary technicians, workflow patterns, food safety certifications)
- Sales and Promotion
- Distribution systems
- Business management for sustainability of value chain components

And – like retailers, restaurants and social procurement partners – food value chains have to be able to rely on farmers' commitment to the process:

- Production forecasts (expected volumes/quantities and harvest/slaughter dates)
- Stable price/value point for products supplied
- Relatively uniform product quality
- Ability to provide product at volume required within agreed timelines
- Clear communication about upsets or changes to agreed supply plan

14.3.1 Commercial Kitchen

There is growing interest among PRRD farmers and food security advocates in creating reliable access to commercial kitchens. There are a number of commercial kitchens within the community where value chain activities could be explored as a pilot program, with a range of possible governance models and use options

Governance / financing

- Co-op or managed use model
- Member / User fee or profit share
- Ongoing outreach to external funders (grant writing, fundraising)

Production Use Options

- Independent use: Individual members/users have access to the kitchen for processing of food products. Must sign off on Facility Use Agreement that define expected food safety practices, housekeeping standards, etc.
- Supported production - e.g.: Culinary Arts students and grads staff the kitchen and produce food products from farm goods

Enhanced Use

- Product and market development services
- Business development and management services
- Promotion, sales and distribution services

15 Non-Timber Forest Products

The economic wealth of BC's forests has long been measured in terms of the timber used to make conventional forest products, notably softwood lumber, newsprint and wood pulp. In actual fact, sales revenue and seasonal employment generated by BC's non-timber forest products make a significant contribution to many rural communities and households across the province.[83]

Non-timber forest products are the botanical (plant) and mycological (fungus) materials – other than conventional wood products – that are found in forests. They include native plants and mushrooms that are gathered in the wild (from the understory of both timber-productive and non-timber productive forests and land) or cultivated in agroforestry operations.

15.1 Traditional Harvest and Use of Plants

The traditional harvest and use of plants within First Nation cultures embodies complex social, spiritual, and ecological insights that cultivate balance, harmony and respect in the relationships between human beings and the visible and unseen worlds that support them.

THE 13 MOONS OF THE TLA'AMIN, KLAHOOSE AND HOMALCO NATIONS

All time-keeping systems on the planet have been created by humans, originally based on their recognition of patterns in the natural world:

- Sun rising and setting
- Moon waxing and waning
- Tides rising and ebbing
- Cycle of the seasons
- Migration of birds and animals
- Spawning of fish
- Flowering and fruiting of plants

The traditional Northern Salishan calendar has thirteen moons rather than twelve months. The Tla'amin Ancestors travelled widely over their lands in a patterned seasonal round that was guided by the 13 moon calendar, lightly harvesting food and materials, and processing them for storage and winter use in accordance with its cycles.

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[83] For a more detailed description of the sector, see the 2012 Discussion Paper: *Non-timber forest products in British Columbia: Policies, practices, opportunities, and recommendations:* http://ruralnetwork.ca/sites/default/files/tools_resources/111.pdf

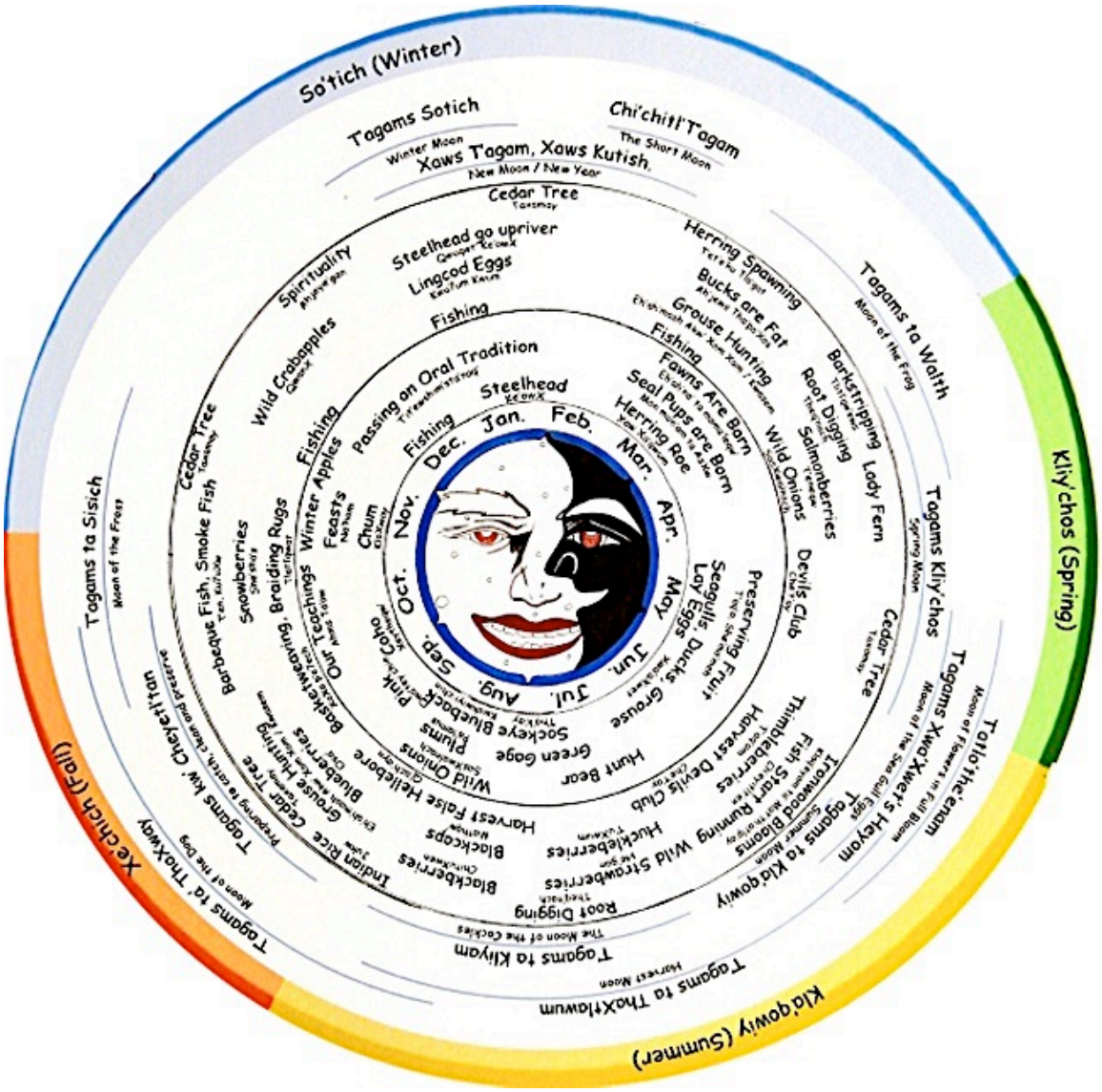

Illustration of the 13 Moon Cycle by Karen Galligos[84]

Each moon told them of coming events in the natural world, signaling that the time had come for certain food gathering, spiritual, and social activities. They had an intimate familiarity with their forests, coastlines and rivers, and respect and gratitude for the gifts the land and sea provided in accordance with the rhythms of the 13 moons.

[84] Source of illustration: Tla'amin and Simon Fraser University Heritage and Archaeology Project, http://www.sliammonfirstnation.com/archaeology/13moons.html

Beginning in late December to early January, the cycle of the 13 moons is as follows:

1. Winter Moon
2. New Moon
3. Short Moon
4. Frog moon
5. Spring Moon
6. Moon of flowers in Full Bloom
7. Moon of the seagull eggs
8. Summer Moon
9. Harvest moon
10. Moon of the cockles
11. Moon of the dog
12. Moon of preserving
13. Moon of the frost

Within Tla'amin culture, the healing and nutritional properties of specific plants can only be realized through processes of gathering and use that honour the cycles, insights and relationships embodied in the 13 moons and ensure that the plant will be available to present and future generations.

Not withstanding the plant's innate properties, medicine can only be created when the plant is gathered and used in accordance with proper protocols:

- The person gathering the plant or part of the plant has the right to do so
- The time of year is right for the plant / part of plant to be gathered
- The plant / part of plant is gathered from a permitted / appropriate site
- The plant / part of plant is gathered in the appropriate way
- The right amount (not excessive, not damaging) of the plant is taken
- The plant medicine is prepared in the correct way
- The correct words and ceremonies are used to honour the plant and the medicine at specific stages

15.1.1 Conservancy of Traditional Knowledge

For First Nations, the intentional cultivation of native species that are threatened by unregulated wild harvest – and the licensing / branding of these plant products - can potentially act as a form of conservancy of cultural and environmental legacies and intellectual property rights.

Since the adoption of the Universal Declaration of Human Rights in 1948, intellectual property has been considered a fundamental human right of all peoples. Traditional knowledge encompasses the beliefs, knowledge, practices, innovations, arts,

spirituality, and other forms of cultural experience and expression that belong to an Indigenous community.

Only recently, however, has the need to protect, preserve and provide for the fair use of Indigenous intellectual property – traditional knowledge – entered the domestic and international debate on intellectual property rights. Of particular concern to Indigenous peoples has been the unlicensed use of their traditional knowledge by non-Indigenous groups and organizations.

Unlike western practices of disseminating knowledge through publication, traditional knowledge systems exist principally in the form of songs, proverbs, stories, folklore, community laws, common or collective property and inventions, practices, protocols and rituals. Indigenous knowledge sets are transmitted through specific cultural mechanisms and often through designated community knowledge holders, such as elders. The knowledge is generally considered to be the collective possession of a community, rather than the private possession of one individual or one corporation.

Often, Indigenous traditional knowledge systems contain a rich understanding of plant, crop and tree species, medicines, animal breeds, and local ecological and biological resources. They may also include useful technologies and adaptations to local environments. Traditional knowledge is not static. Sophisticated and adaptive, it evolves and responds to changes in the physical and social environment.

For Indigenous peoples such as Tla'amin Nation, protection of traditional knowledge is a question of fundamental justice. Not only is it vital to preserve and control their legitimate cultural heritage, they must assert their intellectual rights over the knowledge their traditional culture has developed - knowledge that Indigenous peoples worldwide have seen – and continue to seen - freely exploited by people and groups outside of their cultures.

All of us have a strong incentive to ensure the fair use of traditional knowledge, because this knowledge has a great deal to offer modern society. Insights into: resource management, sustainable development and the conservation of biological diversity; health; human rights; social order; trade and economic development. In some parts of Canada traditional ecological knowledge is being married to western scientific practices to improve environmental impact assessment processes and resource management, as well as genetic and medical research.

However, as the awareness and use of traditional knowledge continue to grow in mainstream policy and economic sectors, so does the misuse and misappropriation of this knowledge.

Pharmaceutical companies have applied traditional knowledge of natural resources, such as medicinal plants, and profited from this knowledge without offering any compensation to the Indigenous communities who are its custodians.

First Nations have voiced growing concern for the protection of traditional knowledge and practices, including the expropriation of traditional knowledge without compensation. The importance of protecting and preserving Indigenous traditional knowledge has been recognized in several international instruments, including:

- The Universal Declaration of Human Rights
- The Convention on Biological Diversity[85]
- The draft United Nations Declaration on the Rights of Indigenous Peoples,
- The International Labour Organization Convention No. 168
- The International Covenant on Economic, Social and Cultural Rights

However, in Canada, effective domestic legislation that clearly protects Indigenous traditional knowledge has not been adopted.It therefore falls directly upon First Nation communities to ensure that necessary measures are taken to protect their traditional knowledge.

15.1.2 Intellectual Property Rights

Aboriginal communities have historically made limited use of Canadian intellectual property law to protect their tradition-based knowledge.

The difficulty experienced by Indigenous peoples in trying to protect their traditional knowledge under intellectual property (IP) law stems mainly from this law's definition of "intellectual property" – knowledge that is new, original, innovative or distinctive. IP law also emphasizes the proprietary rights of the individual.

On the most fundamental level, the perspectives and values of western IP law are incompatible with, if not detrimental to, those of traditional communities, where knowledge is handed down from generation to generation and preserved within a community of people. Traditional Knowledge develops and maintains group identity and ensures survival, rather than promoting individual economic gain.

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[85] The Rio Declaration (known as Agenda 21) and the Convention on Biological Diversity adopted at the 1992 Earth Summit in Rio de Janeiro, Brazil, emphasize the need for governments to "respect, preserve and maintain knowledge, innovations and practices of Indigenous and local communities," and encourage the right of traditional communities to share in the economic and social benefits "arising from the utilization of such knowledge, innovations and practices."

Even when IP protection is shown to apply to traditional knowledge, Indigenous communities must shoulder the massive costs involved in registering and defending an IP right in order to lay claim to it. Justice, under IP law, is effectively unavailable to the vast majority of First Peoples.

Existing IP law demonstrably serves transnational corporations and other non-Indigenous interests, who can and do lay claim to Indigenous knowledge without acknowledgement or compensation for the communities who have developed that knowledge.

For these reasons, the development of local business opportunities related to non-timber forest products must be structured in a way that provides clear economic and social advantages to Tla'amin First Nation, respects the community's traditional knowledge, and protects the intellectual, cultural and property rights of the Tla'amin people.

15.2 Categories of Non-Timber Forest Products

Globally, there is increasing investment and market interest in the potential of wild-harvested and cultivated native plants. These include:

FOREST BASED FOODS
Forest based foods include wild blueberries, wild mushrooms and native understory plants such as wild ginseng and fiddleheads.

ORNAMENTAL PRODUCTS
These include horticultural species bred from wild species (such as cedars and maples); and decorative or artistic products such as ferns, wreaths, fresh or dried floral greenery (e.g., salal).

FOREST PLANT EXTRACTS AND NUTRACEUTICALS
Plant extracts are used to make pharmaceutical and nutraceutical products. The term "nutraceutical" is used to describe any product with health benefits in addition to basic nutritional value.

15.2.2 Ornamentals

There is potential to harvest ornamental plants from the forest understory in advance of a timber harvest. The seed balls of plants – such as ferns – that would normally be laid waste and lost during the logging pass, can be harvested and sold into the ornamental horticulture sector.

15.2.3 Nutraceuticals

Nutraceuticals are intended to promote wellbeing, control symptoms and block malignant processes, with a focus on preventing rather than curing disease. They are used to improve health, prevent chronic diseases, postpone the aging process, increase life expectancy and/or support ongoing functions and integrity of bodily systems.

Nutraceuticals have been proven to be effective in treating diseases such as diabetes and renal and gastrointestinal disorders, as well as strengthening the immune system and reducing susceptibility to certain diseases. Specific nutraceuticals have also been effective in combatting a range of established conditions, including allergies, Alzheimer's disease, cardiovascular diseases, cancer, eye conditions, Parkinson's diseases and obesity.

15.3 Markets For Medicinal Plants

The majority of pharmaceutical and nutraceutical applications of plant extracts mirror or are closely related to their traditional use in Indigenous communities. None of these Indigenous communities have ever been compensated for the use of their knowledge.

The industry of plant-derived drugs is currently worth more than US $40 billion worldwide. 25% of modern prescription drugs contain plant extracts or active ingredients derived from fewer than 100 wild plants. In British Columbia, which encompasses some of Canada’s riches plant collection areas, traditional medicinal plants may have greater economic potential than those collected for food.

15.4 Cultivation of Medicinal Plants

The ongoing development of the medicinal plant market worldwide depends on ensuring sustainable supply and harvesting practices, together with quality standards and controls.

The cultivation of specific medicinal plants within the forest could offer Tla’amin Nation significant business development opportunities. Several local medicinal plant species are easily cultivated in existing forest and cut block settings, yielding natural product that is lightweight, easy to process and in high demand in national and international markets. Cultivation can also allow for the selection of medicinal plant strains that are hardy, produce larger yields and have higher active ingredient content.

15.5 Local Expertise

15.5.1 Local Practitioners

PLANT MEDICINE

TOM & BERTHA TREAKLE: The Treakles created Tla'amin Sunshine Herbals, a line of medicinal creams made from wild harvested local plants. They sell their product at the Powell River Farmer's Market. As they near retirement, their son is taking a more active role in the business.

PLANT FOODS

ERIC BLANEY: Eric is the owner/operator of both I'Hos Cultural Tours and the Tla'amin Convenience Store. His businesses integrate market niches in tourism and food services with innovative dishes that feature traditional food plants such as stinging nettle. He retains an accredited ethno-botanist as part of his I'Hos Cultural Tours team.

AGROFORESTRY/NON TIMBER FOREST PRODUCTS

FIDEL FOGARTY: Mycologist and consultant Fidel Fogarty divides his time between homes in Lund and Robert's Creek. Fidel has studied the science of BC's medicinal plants and fungi for 30 years, and has acted as principal scientist on multiple agro-forestry / non timber forest product projects for both government and private industry. Fidel has designed and implemented botanical and mycological product development projects with BC First Nations, the Science Council of BC, BC Ministry of Forests, Canadian Forest Service, BC Hydro, Weyerhauser, Forest Renewal BC, University of British Columbia, and botanical product companies (AVEDA). Fidel's company, Pacific Reishi Ltd, specializes in economic development planning and market analyses for botanical forest products, and environmental and technology law related to the production of non-timber forest products. He is a strong advocate for First Nation Intellectual Property rights, and actively promotes the development of First Nation owned enterprises that cultivate in-demand non timber indigenous plant products. Fidel is currently on the Board of the Sechelt Community Forest.

15.6 Profiles of Indigenous Plants

Detailed profiles of 12 local plants are provided in the INDIGENOUS PLANTS.pdf document that was created for and is appended to this report. The INDIGENOUS PLANTS document also identifies 14 further forest and foreshore plants that are recommended for further investigation as potential agroforestry or wild harvest products.

The plants discussed this document are culturally and environmentally significant to the Tla'amin people. Several are exceptional candidates for agroforestry (hardy, low plant weight, easy to process, proven in clinical trials, strong markets).

Although the information in the INDIGENOUS PLANTS document is submitted in fulfillment of specific requirements of this research project, it is regarded as the Intellectual Property of the Tla'amin Nation, intended and available exclusively for the business development use of the Tla'amin people.

As such, it should remain a confidential part of this document, not for general public view without explicit consent of Tla'amin Nation.

16 Commercial Composting: Salish Soils

Salish Soils is an established and successful composting company owned and operated by a member of the Sechelt Band. The company produces high quality compost with strong product demand in coastal BC and Vancouver Island.

In late 2017 the Powell River municipality, in partnership with the PRRD's Let's Talk Trash Team, launched a 6-month pilot to test a residential composting program in selected neighbourhoods within the city. The compost collected through this program is currently shipped to Salish Soils in Sechelt – an expensive and unsustainable practice in the long term. Both the city and the PRRD would like to see a local composting facility operating locally.

For the past few months Tla'amin Nation and Salish Soils have been in discussions about the potential for the establishment of a Salish Soils composting operation in Powell River, owned and operated by Tla'amin.

Not only would a local composting facility divert food waste from the landfill, it could also help to reduce the cost of soil inputs and – depending on farmer participation - provide an off-farm disposal site for organic farm waste.

While some local farmers believe that no commercial compost is as pure and cost effective as the compost they make on their own farms, others see it as a value-added activity and think that the addition of a highly efficient commercial composting operation could increase the locally developed soil augmentations available to Powell River Farms.[86]

With the municipality testing infrastructure and capacity to deliver a city-wide composting program, there appears to be genuine potential for success in a local commercial composting venture.

Discussions between Salish Soils and Tla'amin Nation are ongoing, and a decision regarding this business opportunity is expected within the coming months.

[86] Welcome Harvest Farm, on Texada Island, has been manufacturing and selling its wide range of 100% organic fertilizers and soil amendments locally and across Canada since 1986.

17 Funding for Local Agriculture/Food Initiatives

Funding opportunities need to be viewed in a manner that targets specific outcomes or initiatives, as funding opportunities specifically for the small farm sector at the provincial or national level currently do not exist.

17.1 Consultation and planning

17.1.1 Union of BC Municipalities

COMMUNITY 2 COMMUNITY (C2C) FORUM GRANT

The goal of a C2C Forum is increased understanding and improved overall relations between First Nations and local governments. Forum events are intended to provide a time and place for dialogue to build on opportunities, support reconciliation efforts, resolve issues of common responsibility, interest or concern, and/or to advance tangible outcomes. C2C Forums must include direct dialogue between elected officials and/or senior staff of neighbouring First Nations and local governments and have one or more of the following objectives:

- Strengthening relationships and fostering future co-operative action by building stronger links between First Nation and local government elected officials and senior staff
- Advancing First Nations and local governments to more formal relationships through protocols, MOUs, service agreements and/or collaboration on plans or projects
- Supporting local reconciliation efforts and shared capacity building
- Developing or improving coordinated approaches to emergency prevention, response and recovery.

Eligible Applicants

Any local government (municipality or regional district) or First Nation (Band or Tribal Council) may apply to host a Regional C2C Forum. First time and repeat applicants are eligible.

Eligible Events & Activities

- Events must occur between April 1, 2018 and March 31, 2019.
- Events must include direct participation by the elected officials and/or senior staff from both First Nation(s) and local government(s).
- Willingness of the elected officials and/or senior staff of the partnering community to participate in the event must be confirmed and provided in writing to UBCM.

17.1. 2 Island Coastal Economic Trust

ECONOMIC DEVELOPMENT READINESS PROGRAM
The economic development readiness program is designed to provide support for communities, First Nations and organizations as they move along the economic development continuum. The program has six focus areas. Find your fit from the options below. See complete EDRP program guidelines for further details.

QUICK START IMPLEMENTATION FUND
Funding: Up to $15,000 (up to twice a year).
For: Implementation funding for easy to realize objectives arising from a recent economic development strategy or development of business planning or project planning required to access funding or implement key strategic objectives arising from a recent economic development strategy. Target: Communities with a recent economic development strategy and limited financial and organizational capacity to implement strategic priorities.

17.2 Agricultural Sector Capacity Building

17.2.1 Rural Dividend Fund

COMMUNITY CAPACITY BUILDING FUNDING STREAM
- Projects that build the resources, capabilities and capacities of communities to deal with their key economic challenges and changes.
- Projects that provide or improve community services to support economic diversity, expand market accessibility and enhance quality of life to attract investment

COMMUNITY AND ECONOMIC DEVELOPMENT FUNDING STREAM
- Projects that help rural communities plan to build a foundation for economic growth or improve community vibrancy.
- Projects that implement strategies to support economic growth.

17.2.2 Island Coastal Economic Trust

ECONOMIC DEVELOPMENT READINESS PROGRAM
The economic development readiness program is designed to provide support for communities, First Nations and organizations as they move along the economic development continuum. The program has six focus areas. Find your fit from the options below. See complete EDRP program guidelines for further details.

- **SECTORAL DEVELOPMENT STRATEGIES FUND**
  Funding: Up to $30,000 (up to twice a year).

For: Development of targeted sectoral strategy to attract investment and/or increase sector productivity and/or grow business opportunities.
Target: Sectoral organizations, regional economic development organizations or other non-profit organization with the capacity to analyse and implement recommendations.

- **REGIONAL COLLABORATION / MARKETING STRATEGIES**
  Funding: Up to $30,000 (up to twice a year).
  For: Regional collaboration or marketing initiatives which enable communities or organizations to jointly reach new or broader markets and/or use resources more efficiently.Target: Non-profit organizations, industry organizations or regional collaborative structures (community, FN, non-profits) with the capacity to develop/implement regional initiatives.

17.2.3 BC Ministry of Agriculture

- **FIRST NATIONS AGRICULTURE BUSINESS DEVELOPMENT**
  The First Nations Agriculture Business Development initiative supports the economic and social development of agriculture in First Nations communities in BC. First Nation Business Development Agrologists are available to assist with agriculture endeavours.

- **AGRICULTURAL OPPORTUNITIES ASSESSMENTS**
  Agricultural Opportunities Assessments assist First Nations communities in determining the feasibility of agricultural development options. They include up to $5,000 for service from a qualified advisor to complete an agricultural opportunities assessment and/or business planning functions. Work performed by an advisor could include meeting with the community, reviewing the current agricultural resource base, and providing a suite of agricultural options with economic analyses showing enterprises most likely to succeed. Access to this planning will enable communities, associated corporations or individuals to make more informed agricultural management decisions.

17.2.4 First Nations Agricultural Association

FNAA assists in the start-up promotion and sustainability of Aboriginal agri-businesses in British Columbia by assisting Aboriginal communities and producers to build capacity and develop their agriculture, agri-food, or traditional agricultural based businesses through the provision of culturally appropriate assistance, marketing, education, and financial products and service.

17.3 Access to Traditional Foods / Food Security

17.3.1 Vancouver Foundation

FIELDS OF INTEREST GRANT - HEALTH AND SOCIAL DEVELOPMENT

In this field of interest, VF looks for social innovations to create systemic changes that support and encourage the ability of adults, families and communities to create healthy, caring, safe and supportive environments for all members of the community. Vancouver Foundation usually funds up to 50% of the budget for a project. Both cash contributions and in-kind donations of services or goods for incurred expenses are considered valid matching funds. The outcomes VF is looking for include:

- Transforming systems that address population-wide social determinants of health
- Addressing systemic barriers
- Positioning communities to contribute to, and seek information about their health

Vancouver Foundation offers three types of Field of Interest Grants:

- *Develop* (up to $10,000 for up to one year)
- *Test* (up to $75,000/year for up to three years)
- *Grow* (up to $50,000/year for up to three years)

17.3.2 Aboriginal Peoples' Program

ABORIGINAL LANGUAGES INITIATIVE

The objectives of the Aboriginal Peoples' Program (APP) are to:

- promote, revitalize and preserve Indigenous languages and cultures;
- strengthen Indigenous cultural identity; and,
- increase Indigenous participation in Canadian society.

The Aboriginal Languages Initiative (ALI) supports the preservation and revitalization of Indigenous languages through community-based projects and activities. Expected results of the ALI program include:

- Indigenous people have access to community-based projects and activities that support the preservation and revitalization of Indigenous languages and cultures;
- Indigenous communities are assisted in their efforts to enhance languages and cultures; and
- Indigenous languages and cultures are preserved and enhanced as living cultures.

17.3.3 Public Health Agency of Canada

PROMOTE HEALTHY LIVING / PREVENT CHRONIC DISEASE

This Public Health Agency of Canada's fund supports community partnerships that promote healthy living (i.e., physical activity, healthy weights, tobacco cessation) and

chronic disease prevention (i.e., obesity, cancer, diabetes, cardiovascular disease) through an integrated approach that focuses on common risk factors. Funded projects will support the Agency vision (*Curbing Childhood Obesity: A Federal, Provincial and Territorial Framework for Action to Promote Healthy Weights* & *Declaration on Prevention and Promotion*, to prioritize action on health promotion and prevention of disease/disability/injury in community

Funding Amount and Duration

The request for federal funding for each project must be for at least a minimum of $200,000 and must not exceed $5 million. The funding duration must be between 24 months (2 years) and 60 months (5 years).

Requires Matched Funding

Consistent with the multi-sectoral partnership approach of this invitation, projects must obtain matched funding in terms of financial (cash) contributions from non-governmental or private sector partners. Organizations submitting under this invitation must be prepared to seek financial support from other sources if and when they are invited to submit a full proposal for funding. Following successful proposal review, project approval will not proceed until matched funding is secured.

- A matched funding ratio of 1:1 is required for funding under the ISHLCD. A minimum of 1:3 matched funding is required for projects funded under the FTCS. Final determination of the matched funding ratio for any particular project rests with the Public Health Agency of Canada.

17.4 Agro-tourism / Food Based Ecotourism[87]

17.4.1 BC Ministry of Tourism

RESORT MUNICIPALITY INITIATIVE

The Resort Municipality Initiative (RMI) program is managed by the Ministry of Tourism, Arts and Culture. The program is intended to assist small, tourism-based municipalities to support and increase visitation. The RMI program funds projects which result in the following key outcomes for resort-based communities:

- Increased resort activities and amenities
- Increased visitation and visitor activity
- Increased private investment
- Increased employment in the community
- Increased tourism contribution to the local economy
- Increased municipal tax revenue
- Diversification of municipal tax base and revenue

[87] Ecotourism tours that include/feature Tla'amin traditional foods

17.4.2 Rural Dividend Fund

COMMUNITY CAPACITY BUILDING FUNDING STREAM

- Projects that build the resources, capabilities and capacities of communities to deal with their key economic challenges and changes.
- Projects that provide or improve community services to support economic diversity, expand market accessibility and enhance quality of life to attract investment

COMMUNITY AND ECONOMIC DEVELOPMENT FUNDING STREAM

- Projects that help rural communities plan to build a foundation for economic growth or improve community vibrancy.
- Projects that implement strategies to support economic growth.

WORKFORCE DEVELOPMENT FUNDING STREAM

- Projects that offer training and skills development opportunities, especially for youth, so they stay in the community or return if they have left.
- Projects that help ensure resilience in the local workforce by attracting, retaining and training workers.

BUSINESS SECTOR DEVELOPMENT

- Projects that increase new business creation, business growth and adaptability in the community.
- Projects that allow communities to retain existing businesses and encourage their expansion.

17.5 Local Food Festivals

17.5.1 Destination BC

BC TOURISM EVENTS PROGRAM (TEP)

The province launched the Tourism Events Program (TEP) to support the delivery of events that can increase the volume of visitors to British Columbia, and/or increase global recognition for the province.TEP provides incremental funding to eligible events to support their marketing or promotional activities in order to increase and broaden the impact of the event.

Eligibility

- The event must take place in B.C and demonstrate financial viability (i.e. majority of operational funding is confirmed).
- The event is a sporting competition, arts, cultural celebration or festival.
- The event is a discrete event, meaning it engages or attracts a focused audience (spectator group or television viewership) for a limited period of time. Events, shows, tours or projects held over an extended period of time are not eligible
- The event may be part of a multi-year or annual series.
- Events are eligible for funding for a maximum of three years

- Events may not be primarily commercial or academic in nature (e.g. consumer shows, symposia, conventions, meetings and conferences, seminars and clinics, educational competitions, etc.); however, ancillary events/festivals created to coincide with these examples may be eligible.

Program Criteria

The event must offer high tourism value:

- Attracts incremental visitors from outside the local area who are visiting specifically for the event;
- Increases visitor expenditures
- Lengthens the tourism season and/or,
- Encourages increased length of stay

The event must provide evidence (letters of support, in-kind contributions) of support from community partners.

Desirable Criteria:

- Raise awareness, nationally and internationally, of British Columbia's tourism brands by having provincial, national and/or international broadcasting or other media reach;
- Motivate Canadians and people from around the world to experience British Columbia's natural beauty, diverse activities and world-class infrastructure by drawing the largest number of visitors in relation to the size of the host community;
- Offer significant economic impact relative to the size of the host community
- Generate tourism and economic benefits for the surrounding region (multiple communities) and/or a remote community

17.5.2 Canadian Heritage

BUILDING COMMUNITIES THROUGH ARTS AND HERITAGE - LOCAL FESTIVALS

The Building Communities Through Arts and Heritage program supports activities and projects that celebrate local historical heritage as well as local artists and artisans, and are intended for and accessible to the general public.

Program objective

Engage citizens in their communities through the expression, celebration and preservation of local heritage. The Building Communities Through Arts and Heritage program delivers Local Festival funding for recurring festivals. Successful applicants may receive up to 100% of eligible expenses to a maximum of $200,000 for festivals that:

- Present the work of local artists, artisans, or performers
- Actively involve members of the local community;
- Are intended for and accessible to the general public.

17.6 Human Resource Development

17.6.1 Ministry of Social Development and Poverty Reduction, Employment Program of British Columbia

RESEARCH AND INNOVATION
Funding for community organizations and partners to explore, identify and/or test innovative and untried ways of delivering programs that help individuals to find, keep or return to work. This can be done through research and/or time limited pilot projects.

PROJECT-BASED LABOUR MARKET TRAINING
Funds projects that provide benefits to both the community and to individuals by offering a combination of classroom and job-based training to assist eligible individuals in obtaining skills they need for employment. Occupation-related skills and essential workplace skills must be a component of the training program. Intake of 8-15 individuals required per training cycle.

17.7 Other Possible Funding Sources

17.7.1 Environment and Climate Change Canada

ECOACTION COMMUNITY FUNDING PROGRAM
Program provides financial support to community groups for projects that have measurable, positive impacts on the environment.

17.7.2 Federation of Canadian Municipalities

GREEN MUNICIPAL FUND
FCM's Green Municipal Fund (GMF) provides funding for plans, feasibility studies, pilot projects and capital projects. Learn more about who is eligible for funding and which initiatives and sectors are funded.
Eligible initiatives
Learn which projects are eligible for funding in the following focus areas:

- Sustainable neighbourhood and brownfields action plans
- Energy efficiency and recovery
- Transportation and fuel efficiency
- Water quality and conservation
- Waste management and diversion
- Brownfields

17.7.3 BC Civil Forfeiture Office

COMMUNITY CRIME PREVENTION STREAM

This is an annual grant opportunity (usually announced in November) that provides one time funding for a specific project or initiative related to any one of the following issues:

- Crime Reduction and Community Safety
- Indigenous Healing and Rebuilding
- Serving Victims Through Restorative Justice
- Child and Youth Advocacy Centres

17.7.4 FortisBC

NATURAL GAS BOILER REBATES

Whether building new or upgrading, improve your building's energy performance and qualify for a rebate of up to $45,000 by installing a high-efficiency natural gas boiler. And now, food processors, greenhouses and other commercial customers who use process heat are also eligible for rebates.

Eligibility requirements*

1. Must be a FortisBC commercial rate class natural gas customer.
2. Must be a property owner or long-term leaseholder of an existing commercial building or a builder/developer or property owner of a new commercial construction project.
3. You must be using the boiler for space, pool and/or process heating. (Note: backup, standby or secondary boilers are not eligible.)
4. Submit an application and supporting documentation no later than 365 days after the purchase date of the product(s) (as shown on the paid invoice) or installation date (as shown on the Gas Inspection Request or Gas Certificate of Inspection), whichever is first, and install the product(s) within 180 days of submitting the application and supporting documentation.

17.7.5 FortisBC

NATURAL GAS KITCHEN EQUIPMENT REBATES

Choosing high-efficiency cooking equipment can be a good investment when it's time to upgrade or when building new. We've made it easier by offering rebates ranging from $200 to $3,500 per appliance.

Eligibility requirements*

1. You must be a FortisBC commercial rate class natural gas customer.
2. Appliances must be installed in a commercial kitchen.
3. Applicants must own the facility where the appliance is installed, or own the appliance.

18 Recommendations

18.1 Farmers

Individual farmers need to reflect on their production choices and the motivations behind them, and clarify their intended markets.

- Cold chain standards require certifications whose cost is prohibitive to multiple crop production plans. Farmers who want to enter regional and provincial markets have to make choices about what crops they can afford to certify.
- Local market surveys conducted as part of this study clearly indicate that farm operators who are willing to commit to meeting the needs of local restaurants or social procurement partners can establish long-term markets for their produce.
- Farmers individually and collectively need to start committing some part of their production to value chain activities that extend the shelf life and expand the market for their goods.
- Farmers need to improve their production planning, business and marketing skills and their overall communication practices in dealing with secondary consumers.
- Certain local farm products and services have potential to create commonalities of interest (price setting, cooperative selling, collective purchase of inputs) and the establishment of local producer stakeholder groups (Class D License Holders, PR Egg producers, PR Veg producers, etc.) could help to realize this potential.
- Explore Agroforestry principles and practices[88] as a way of expanding and or improving use of woodlots on existing farmland. For example:
    - Shade Agro-forests
    - Sun Agro-forests
    - Intercropping
    - Silvo-pasture

[88] See *A Guide to Agroforestry in BC*, Small Woodlands Program of BC, 2001 for a comprehensive description of Agroforestry practices that could improve farmland use. https://woodlot.bc.ca/wp-content/uploads/2014/04/A_Guide_to_Agroforestry_in_BC.pdf

18.2 Farmers' Institute

The Farmers' Institute has a critical role to play as a key promoter of local farming and farm products. It can offer a clear and vibrant image of farming to local consumers, and actively support the economic viability of farm operations in the PRRD.

18.2.1 Host Farmer Q & A Session with PRESS

- Host an event at which summary findings of this report can be presented directly to local farmers

18.2.2 Manage the Farmers' Market for farmers' benefit

- Decide what the name of the market is – "Farmers' Market" or "Open Air Market." Choose one name and stick with it.
- Discard the current "% of sales" fee for vendors and implement a flat fee – one price for all vendors. The existing fee structure is alienating high value farm and food vendors (we know this because they told us). Right now the most popular vendors are subsidizing those who bring few or no customers to the market. This is not a sustainable business practice.
- Recruit new vendors
- Conduct consumer and vendor surveys at least once a year
- Routinely count the number of people who attend the market and look at strategies to increase attendance
- Create strategies and set targets to increase farmer participation in the market
- Reward consistently successful farm vendors
- Support new farmer vendors in growing their customer base through branding and onsite product promotions
- Promote the value of local fresh and value-added products with a ongoing variety of point-of-sale activities and information formats

18.2.3 Manage the Farmers' Institute's Online Brand

- Although the Agricultural Association and the Farmers' Institute have officially amalgamated, websites for both organizations are still up on the Internet. This is confusing for consumers and defeats the purpose of an online presence. Take down the AA website.
- Redesign and upgrade the FI website to improve visual architecture, logical flow, content and wow factor: This is the online face of Powell River Farmers, or at least it should be. Add a platform that supports farm gate sales (daily bulletins – list of produce and meats currently for sale, and where). Identify all known

local farms (including non member farms) as a basic information service to the public. Upload local farm supplier list (appended) to the website to support consumers. Honour long time farmers and celebrate female and young farmers.

18.2.4 Act to Increase Farmers' Institute Membership

- Local farmers need to be able to function as a collective
- Use the appended list of local farmers to reach out to non-member farmers in the community – let them know you want to hear from them
- Canvas member and non member farmers on their wants and needs re:

  - Skills and training
  - Information access
  - Resources and supports
  - Commercial kitchen
  - Social Procurement
  - Cold storage
  - Interest in CSA sales
  - GAP certification training
  - Business management
  - Strategic Plan for Local Food Safety
  - Value Added product development
  - Crop and harvest projection
  - Expanding farm gate sales
  - Participating in local food festivals

18.2.5 Create producer stakeholder groups

- Use the list of "local farm goods suppliers" to facilitate the creation of producer stakeholder groups (PR veggie Producers, PR D License Holders, PR egg producers, etc.) comprised of members and non members; challenge them to find commonalities and opportunities
- Engage your youngest FI members in organizing membership drives and product stakeholder groups

18.2.6 Support Horticulture Training Program

- Review Horticulture Technician Foundation Training Program outline attached to this document
- Publicly support this training on the FI website
- Identify new or existing farmers who want credentialed horticulture training
- Identify farmers who are willing to provide field experience opportunities for students in Horticulture program
- Identify farmers who have scope to employ Horticultural students

18.2.7 Build Organizational Capacity

- Host "meet and greets" between farmers, restaurateurs, social procurement candidates, retailers

- Host farmer discussions on the findings of local retail and restaurant surveys
- Host a GAP certification information workshop[89]
- Invite BC tourism to make a presentation on Agro-tourism
- Host "aspiring and retiring" meet and greets between old and new farmers (members and non members)
- Talk about farm succession planning
- Host agroforestry speaker to support farmers in enlarging their farmland use options (e.g. intercropping, silvopasture, etc.)

18.2.8 Support Local Food Safety / Risk Management Plan

Based on feedback from local secondary markets, there is need to create a food safety plan for local produce and traditional foods that would enhance market appeal and manage exposure risks. PRRD, the Municipality, the Farmers' Institute, Tla'amin Nation, SD 47, VIU and local farmers and wild harvesters[90] need to examine this issue, assess current risk exposure, and work together to create a Strategic Plan for Local Food Safety that, if needed, includes food handling and processing safety training, evaluation of local warehousing and cold storage capacity, as well as a crisis management plan to address assessed risk.

[89] BC Agriculture offers free, in-community training and orientation to GAP principles and certification systems for groups of 12 or more farmers.

[90] This includes Tla'amin hunters and fishermen who procure and process elk, deer and salmon for communal feasts.

18.3 SD47 and VIU

SD47 and VIU can help to stimulate growth in the farm sector by implementing horticultural training and by engaging their students in the communications, marketing and business development challenges that stand in the way of local farmers. As the local training providers for the Cooks Trade, SD47 and VIU also have an important role to play in the creation of value-added products.

18.3.1 Host Q & A Session with PRESS

- Host events at which summary findings of this report can be presented to staff and students of SD47 and VIU

18.3.2 Implement Horticulture Technician Training Program

A Horticulture Technician Training Centre will require classrooms, lab and work areas, modern production greenhouses, a nursery and supporting landscapes. Students will produce a wide variety of plant materials as they complete the program, and training should include having students have design and build demonstration gardens.

- Site at Brooks Senior Secondary
- Use portion of ALR lands adjacent to the school
- Emphasize greenhouse horticultural production
- Include opportunities for value-added production
- Identify community partners and employers
- Seek facility funding from Rural Dividend Fund in partnership with City

18.3.3 Engage Students in Local Challenges

SD47 and VIU students could be engaged in a learning-across-the-curriculum assignment that tasked them to work together to address challenges to local farmers and to the local agricultural sector as a whole. In 2018, BC's K-12 curriculum is undergoing a dramatic shift toward innovation and creativity:

- Big Ideas
- Concept-based learning
- Flexible learning environments
- Inquiry and question-based approaches
- Collaboration with community
- Valuing Aboriginal Perspectives and Knowledge

Students from different areas of study could be assigned to teams who collaborate and share expertise to create solutions for course credit. For example:

- Business Education students + Culinary Arts students = new value added food products
- Creative Writing + Visual Arts + Media Arts = new branding /marketing for farm products
- Tourism + Contemporary Indigenous Studies + Culinary Arts = new ecotourism venture
- Earth Sciences + Environmental Science + Chemistry = new greenhouse substrates
- Social Studies + Urban Studies + Human Geography = new models for farming

18.3.4 Support Local Food Safety / Risk Management Plan

Based on feedback from local secondary markets, there is need to create a food safety plan for local produce and traditional foods that would enhance market appeal and manage exposure risks. PRRD, the Municipality, the Farmers' Institute, Tla'amin Nation, SD 47, VIU and local farmers and wild harvesters[91] need to examine this issue, assess current risk exposure, and work together to create a Strategic Plan for Local Food Safety that, if needed, includes fruit/veg post harvest processing and handling, Game Meat and Fish Handling Safety training, evaluation of local warehousing and cold storage capacity, as well as a crisis management plan to address assessed risk.

18.3.5 Support Growth of Local Value-Added Activities

- Work with PRESS, Tla'amin, the City, PRRD, local farmers and Farmers' Institute to determine interest in value-added processing
- Evaluate community capacity (cold storage, commercial kitchen facilities, product development, food processing and packaging, sales and promotion)
- Determine best operating model (user fee with individual use agreement or user fee for kitchen staffed by Cooks Training students and grads, etc.)
- Identify and pursue funding opportunities that could support local value-added program start up

18.3.6 Address Local Farmer /Traditional Foods Training Needs

Work with Tla'amin, the Farmers' Institute, local farmers and hunters to:

- Identify critical skill gaps workforce size and skill requirements related to food handling and processing[92]

[91] This includes Tla'amin hunters and fishermen who procure and process elk, deer and salmon for communal feasts.

[92] Skill/training needs may include: small-scale fruit and vegetable processing and products, production methods, equipment and quality assurance practices; game meat safety training (proper processing temperature control requirements, aging, cutting, curing, smoking, canning, cooking, packaging, etc.), methods, equipment and quality assurance practices.

18.3.7 Support Creation of Non-Timber Forest Product Business Pilot

Work with Tla'amin, Agroforester, MoF, PR Community Forest, City and PRRD to:

- Determine workforce size and skill requirements for forest product pilot[93]
- Identify local forest areas where forest product training could take place
- Identify and pursue funding opportunities for forest product training pilot

18.3.8 Support Creation of Understory Harvest Pilot

Work with Tla'amin, Ethnobotanist, MOF, PRCF to

- Determine workforce size and skill requirements for understory harvest pilot[94]
- Identify local forest areas where understory harvest training could take place
- Identify and pursue funding opportunities for understory harvest training pilot

18.3.9 Support Creation of local Salish Soils Operation

Work with Tla'amin, Salish Soils, Let's Talk Trash, the City and the PRRD to:

- Determine workforce size and skill requirements for Salish Soils operation[95]
- Identify local forest areas where understory harvest training could take place
- Identify and pursue funding opportunities for understory harvest training pilot

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[93] Workforce size depends on plan for pilot. Workforce skill/training needs may include: physical and biological concepts that underlie the practice of agroforestry; social and economic aspects of agroforestry; agroforestry principles, techniques and practice; vehicle & equipment operation; forest worker safety training; processing & packaging; business management, marketing & selling products, etc.

[94] Similar skill/training needs as above, relating to understory harvest activities.

[95] Similar skill/training needs as above, relating to composting operations.

18.4 Tla'amin Nation

18.4.1 Host Q & A Session with PRESS

- Host a session at which summary findings of this report can be presented to Tla'amin community leaders and members

18.4.2 Support Local Food Safety / Risk Management Plan

Based on feedback from local secondary markets and concerns expressed by Tla'amin, there is need to create a food safety plan for local produce and traditional foods that would evaluate and manage exposure risks. PRRD, the Municipality, the Farmers' Institute, Tla'amin Nation, SD 47, VIU and local farmers and wild harvesters[96] need to examine this issue, assess the reality of current exposure, and work together to create a Strategic Plan for Local Food Safety that includes producer safety training,[97] evaluation of local warehousing and cold storage capacity, as well as a crisis management plan to address assessed risk.

18.4.3 Investigate Non-Timber Forest Product Business Potential

- Consult with Agroforester, Tla'amin land administrators, Ministry of Forests, PRRD, city administrators and PR Community forest
- Request a business plan from Agroforester for specific indigenous plants
- Identify local forest areas where agroforestry pilot could be established
- Consult with Agroforester, PRESS, SD47 and VIU to determine workforce size and skill requirements for an Agroforestry pilot
- Identify and pursue funding opportunities for agroforestry pilot

18.4.4 Investigate Understory Harvest Business Potential

- Consult with Ethno-botanist, Tla'amin land managers, MOF, PRCF, PRRD, City
- Identify proposed cut block areas for understory harvest pilot
- Survey understory plants

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[96] This includes Tla'amin hunters and fishermen who procure and process elk, deer and salmon for communal feasts.

[97] Skill/training needs may include: small-scale fruit and vegetable processing and products, production methods, equipment and quality assurance practices; game meat safety training (proper processing temperature control requirements, aging, cutting, curing, smoking, canning, cooking, packaging, etc.), methods, equipment and quality assurance practices.

- Request business plan from Ethno-botanist for identified plant(s) and site(s)
- Consult with Ethno-botanist, PRESS, SD47 and VIU to determine workforce size and skill requirements for an understory harvest pilot
- Identify and pursue funding opportunities for understory harvest pilot

18.4.5 Investigate Business Potential of Salish Soils Locally

- Review results of City's composting pilot (2017-2018)
- Review City's organic waste diversion objectives and organic waste volume projections
- Consult with Salish Soils, PRESS, SD47 and VIU to determine workforce size and skill requirements for an understory harvest pilot
- Work with City and Salish Soils to evaluate viability of business venture
- Identify potential local sites for composting operations

18.4.6 Investigate Potential of Value-Added Activities to Improve Access to Traditional Foods

- Work with PRESS, SD47, VIU the City, PRRD, local farmers and Farmers' Institute to determine local and community interest in value-added products[98]
- Evaluate community capacity (cold storage, commercial kitchen facilities, product development, food processing and packaging, sales and promotion) [99]
- Determine best operating model (user fee with individual use agreement or user fee for kitchen staffed by Cooks Training students and grads, etc.)
- Identify and pursue funding opportunities that could support local value-added program start up

[98] Value-added processing can extend the shelf life of perishable food items and bring new products into the food market

[99] Aging, cutting, curing, smoking, drying, canning, cooking, packaging activities; access to equipment and quality assurance training.

18.5 Powell River Municipality and Regional District

The municipal and regional district governments have crucial roles to play in support of local food security, the local agricultural sector and the success of local business development opportunities and agriculture value chain activities.

18.5.1 Host Q & A Session with PRESS

- Host a session at which summary findings of this report can be presented to city and district staff and leadership

18.5.2 Support development of Horticulture Training Program

- Work with SD47 and VIU to refine siting of Horticultural Technician Training program and ensure zoning compliance
- Partner in pursuing funding opportunities to support development of program facilities
- Support SD47 and VIU in making labour market case for Horticulture Training

18.5.3 Improve access to farmland

- Continue to advocate for soil mapping of the regional district, to identify best farmland available in the area
- Explore ways and means of making some portion of undeveloped city and district lands available for long term lease as farmland
- Evaluate the need for a farmland trust and facilitating the creation of such a trust if need is established
- Work with community partners and stakeholders to access threats to succession of existing farmlands to the next generation of farmers, and develop strategies to prevent existing farmland loss to speculation or other uses
- Identify and pursue funding opportunities that support these objectives

18.5.4 Establish Local Food Safety and Risk Management Plan

Based on feedback from local secondary markets, there is need to create a food safety plan for local produce and traditional foods that would enhance market appeal and manage exposure risks. PRRD, the Municipality, the Farmers' Institute, Tla'amin Nation, SD 47, VIU and local farmers and traditional food providers need to examine this issue, assess current risk exposure, and work together to create a Strategic Plan for Local Food Safety that, if needed, includes fruit/veg post harvest processing and handling,

game meat and fish handling safety training, evaluation of local warehousing and cold storage capacity, as well as a crisis management plan to address assessed risk.

18.5.5 Support Non Timber Forest Product Business Pilot

Work with Tla'amin, Agroforester, Ministry of Forests, and PR Community forest to:

- Create a business plan for specific indigenous plants
- Identify local forest areas where pilot could be established
- Identify and pursue funding opportunities for pilot

18.5.6 Support Understory Harvest Pilot

Work with Tla'amin, Ethnobotanist, MOF, PRCF to

- Identify cut block areas for understory harvest pilot
- Survey understory plants
- Identify and pursue funding opportunities for understory harvest pilot

18.5.7 Support Tla'amin Nation in Establishing Salish Soils Locally

- Share results of City's composting pilot (2017-2018) with Tla'amin
- Share organic waste diversion objectives and organic waste volume projections
- Work with Tla'amin and Salish Soils to evaluate viability of business venture
- Identify potential local sites for composting
- Identify and pursue funding opportunities that could support local composting business start up

19.5.8 Support Value-Added Activities for Local Food Products

- Work with PRESS, SD47, VIU, Tla'amin, local farmers and Farmers' Institute to determine interest in value-added processing
- Evaluate community capacity (cold storage, commercial kitchen facilities, product development, food processing and packaging, sales and promotion)
- Determine best operating model (user fee with individual use agreement or user fee for kitchen staffed by Cooks Training students and grads, etc.)
- Identify and pursue funding opportunities that could support local value-added program start up