

RDBN Food and Agriculture Plan
Foundations Report

Regional District of Bulkley Nechako | Winter 2020

Prepared for



Prepared by



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Executive Summary

Agriculture is a strong, active industry in the Regional District of Bulkley Nechako (RDBN). Growth in small farms producing a range of fresh produce, eggs, and honey continues to complement a well-established beef sector in the region. Ranchers and farmers choose the RDBN for its favourable agricultural attributes. The comparative advantages for farming in the RDBN include but are not limited to:

- Affordable land prices
- Air and water quality
- Lack of urban rural conflict
- Strong industry associations
- Vigour, vitality, and resiliency of producers

Especially given the recent downturn in forestry, food and agriculture are important parts of the culture, economy, and environment of the RDBN. To support the success of the industry, an Agriculture Plan was developed in 2012. Since then many new challenges and opportunities have emerged. In the summer of 2019, the RDBN contracted Urban and Regional Food Strategies to support an update of the 2012 Agriculture Plan.

The overall goals of the Agriculture Plan update are to update baseline data, information, policies, local perspectives and legislative changes impacting the sector, as well as engage stakeholders in creating a shared vision for food and agriculture in the RDBN. This will establish a sound factual basis for informing recommendations and decision making and result in the creation of a detailed 5-year action and implementation strategy to support recommendations.

This Foundation Report is intended to establish the planning context, summarize research and engagement findings, and identify key challenges and opportunities for food and agriculture in the RDBN. The updated RDBN Food and Agriculture Plan will be developed from information in this report. The Foundations report will provide a companion document to the forthcoming Food and Agriculture Plan.

Part 1: Planning Context

The Regional District of Bulkley-Nechako (RDBN) is located north of the Cariboo, in north-central BC. The region covers 73,419 sq. kilometers and has a population of 37,896 (Stats Can 2016b, Census Profile). The Regional District of Bulkley Nechako is comprised of eight member municipalities, seven electoral areas, and fourteen Indigenous territories.

Since 2012, the ALC has approved both inclusions and exclusion in the ALR. Currently, it is estimated that there is a total of 373,541 ha of ALR in the RDBN, representing a modest gain of 136ha in ALR since 2012 (RDBN 2019c). ALR in the RDBN comprises 5% of the total land base.

The Bulkley-Nechako Fraser-Fort George BC Agriculture Climate Change Regional Adaptation Strategies identify four key impact areas with respect to agricultural adaptation in the RDBN:

- Impact Area 1: Increasing wildfire risk

- Impact Area 2: Increasing variability and changing crop suitability
- Impact Area 3: Warmer and drier summer conditions
- Impact Area 4: Changing pests and beneficial insect populations

There are many federal, provincial, and local level policies that regulate food and agriculture. Provincial regulations, including Bill 52 and Bill 15, are relatively new and it has yet to be seen how they will ultimately impact agriculture in the RDBN.

Part 2: RDBN Food and Agriculture Profile (Comparing 2011 to 2016 Census Data)

The total number of farms reporting in the RDBN dropped to 747 from 840, a difference of 93 farms. This change represents an 11% drop since 2011, consistent with the Provincial rate of change, but greater than the National average. Although there is great diversity in food and farming types in the RDBN, the predominant farm type includes other crop farming, cattle ranching and farming, hay farming, and other animal production. Many crops in the RDBN have decreased in total production area from 2011-2016 including hay and field crops, vegetables and greenhouses. Fruits and berries and forest products are the only crop categories that saw modest increases in production area. The total number of cattle and calve operations in the RDBN dropped by 42 farms. The number of animals is also down by 9% from 2011.

The number of sheep and lamb operators reporting, as well as number of animals, has increased in all categories from 2011-2016. Overall, there was a 35% increase in the number of farms reporting in this category, with a related 30% increase in the total number of animals.

Farm size in the RDBN ranges from under 10 acres (27 farms) to over 3,520 acres (38 farms). The most common farm size is 130-179 acres. Since 2011, the number of farms in each size category decreased. However, there is a notable exception of a 67% increase in farms, sized 2,880 to 3,519 acres (8 farms). The predominant use of farmland in the RDBN is natural land for pasture followed by land in crops, area in Christmas trees, woodland, or wetland and tame or seeded pasture.

The total farm capital in the RDBN has decreased in medium to small farms but increased over 40% in the largest farms (35 farms). There is also growth in the middle, with farms half to one million growing by 15% (29 farms). In the RDBN the market value of total farm capital of all 747 farms reporting grew from \$850 million in 2011 to over \$1 billion in 2016, representing growth of 23%. Between 2011 and 2016, farmgate receipts in the RDBN increased by 17% (approximately \$9 million) to \$63 million. BC saw a greater increase at 27%, and Canada saw a 35% increase nationally. Between the 151 farms reporting employees, there are 470 farm employees in the RDBN, of these 225 (47%) are family members.

Part 3: Engagement Findings

The project team used several forms of engagement to involve as many producers and consumers as possible in updating the RDBN Agriculture Plan. Findings were collected via:

- Online producer survey findings
- Hard copy and on-line consumer survey findings
- Stakeholder Workshop findings and RDBN Staff Workshop findings

Part 4: Key Challenges and Opportunities

Based on the research and engagement findings the following challenges and opportunities were identified. These will be used to further develop the goals and actionable items for the Agriculture Plan Update.

Key Challenges:

- Many producers are frustrated and are feeling pushed to the brink.
- The impacts of climate change are projected to increase variability and vulnerability of agriculture.
- The costs and sterilization of farm/ranch/range land associated with invasive and nuisance species are having a significant negative impact on agriculture.
- The lack of general awareness around regional food and agriculture inadvertently undercuts regional agriculture.
- The ability of producers and the Region to grapple with new realities occurring at a fast pace requires more time and resources that are often not available.
- Agriculture plastics, organics, and offals in the landfill are causing waste management problems.

Key Opportunities:

- Continuing to encourage, support, and advocate for agriculture
- Keep doing what the region is good at
- Diversifying the agriculture sector into new markets and products
- Continuing to connect producers and consumers
- Activating research and programs with Northern partners
- Preparing for emergencies
- Developing traditional and new food and agriculture sectors in the RDBN

Part 1: Planning Context

1.1 Introduction

Agriculture in the RDBN has both deep and fresh roots. The beef sector continues to be the dominant and most well-established sector. More recently, growth in small farms producing a range of fresh produce, eggs, and honey are becoming popular. Regardless of the nature of the farm enterprise, ranchers and farmers choose the RDBN for its favourable agricultural attributes. The comparative advantages for farming in the RDBN include but are not limited to:

- **Affordable land prices:** Especially when compared to other more urban regions, agricultural land in the RDBN remains relatively affordable on a cost per hectare basis.
- **Air and water quality:** The favourable biophysical conditions for a range of agricultural activities in many areas of the RDBN, is an important natural resource that enables producers to claim product quality related to these features as part of their unique selling proposition when marketing and distributing their products.
- **Lack of urban rural conflict:** As a largely rural region, the RDBN does not experience the same degree of urban and rural conflict associated with agriculture and urban areas in close proximity (i.e. residential uses conflicting with farm uses e.g. noise, dust, sound, smell).
- **Strong industry associations:** There are many active industry associations and non-profit groups that work to support producers in their respective focus areas. For example, the Cattlemen's Associations, the Smithers Farmers' Institute, and the Northwest Invasive Plant Council work all support different parts of the success of regional agriculture.
- **Vigour, vitality, and resiliency of producers:** Especially visible after the 2018 fire season, the level of community that exists within producers, the larger community, and regional government was demonstrated. With a short growing season, producers have to take full advantage of the productive times of year and withstand the longer season of overwintering herds and crops. This dynamic contributes to a culture of hard-working, problem-solving, and mutually supportive producers.

2019 witnessed a record downturn in the BC forestry industry, with over 20 mills closing, costing BC communities over 3000 jobs.¹ Structural issues such as high log prices and decreased timber supply are identified as key drivers in this downturn.² With the loss of forestry jobs that provide the economic lifeblood for many rural communities in the province, including in the RDBN, many communities are looking for ways to diversify the economy and create viable livelihoods for a range of people. As a result, a renewed focus on agriculture and non-timber forest products is occurring. Updating the RDBN 2012 Agriculture Plan is part of the movement to increase the economics and opportunities in food and agriculture.

¹ <https://vancouversun.com/news/local-news/forestry-crisis-shows-up-with-deepening-decline-in-b-c-s-trade-figures>

² <https://www.cbc.ca/news/canada/british-columbia/dwindling-supply-high-fees-blamed-for-downturn-in-b-c-forestry-1.5284570>

Food and agriculture have been, is, and will continue to be an important part of the culture, economy, and environment of the Regional District of Bulkley Nechako (RDBN). To support the success of the industry, an Agriculture Plan was developed in 2012. Since then many new challenges and opportunities have emerged. In the summer of 2019, the RDBN contracted Urban and Regional Food Strategies to support the updating of the 2012 Agriculture Plan.

Goals of the Agriculture Plan Update

The overall goals of the Agriculture Plan update are to:

1. Update baseline data and information on the food and agriculture sector in the RDBN.
2. Engage stakeholders in creating a shared vision for food and agriculture in the RDBN and updating the 2012 (food) and agriculture plan.
3. Update policies and actions to reflect new data and information, consumer and producer perspectives, as well as provincial legislative changes.
4. Establish a sound factual basis for informing recommendations and decision making.
5. Create a detailed 5-year action and implementation Strategy to support Plan recommendations.

This Foundation Report is intended to establish the planning context, summarize research and engagement findings, and identify key challenges and opportunities for food and agriculture in the RDBN. The updated RDBN Food and Agriculture Plan will be developed from information in this report. The Foundations report will provide a companion document to the forthcoming Food and Agriculture Plan.

How to Use This Document

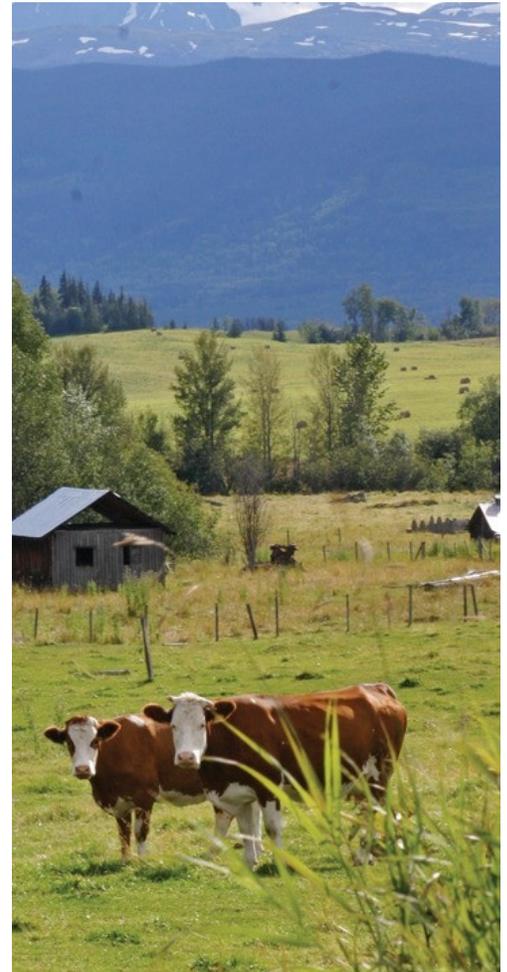
This document contains four Parts:

Part 1: Planning Context: This section highlights all of the relevant policies and regulations impacting food and agriculture.

Part 2: RDBN Food and Agriculture Profile: This section presents a profile of food and agriculture in the RDBN.

Part 3: Engagement Findings: This section summarizes the findings from multiple engagement points including surveys and workshops.

Part 4: Summary of Key Challenges and Opportunities: This section synthesizes information from Parts 1-3 into an inventory of key challenges and opportunities for food and agriculture in the RDBN. This information will be used to further develop the goals and strategies for the agriculture plan



Methods and Process

The project team has used multiple methods in a process to identify key challenges and opportunities facing agriculture in the RDBN. These include:

1. Document review and internet research
2. Comparative analysis of 2011 and 2016 Census of Agriculture
3. Consumer and producer on-line and print survey (Over 200 responses)
4. Producer workshops (Three workshops, Twenty-six participants)
5. RDBN staff workshop (Nine staff members)
6. Food and Agriculture Working Group (FAWG) (Ten members)

The process for developing the agriculture plan includes three main phases with key milestones and deliverables in each:

Phase 1	Project Start up meeting	June 6-19
	Communications and Engagement strategy	July 9- 19
	RDBN Staff workshop	Sept 10- 19
Phase 2	Consumer survey	June 28- Oct 15- 19
	Producer survey	Aug 21- Oct 15- 19
	FAWG Meeting #1	Sept 30 ⁻¹⁹
	Stakeholder workshops:	
	Smithers	Oct 8- 19
	Vanderhoof	Oct 9- 19
	Burns Lake	Oct 10- 19
	Foundations Report (V1.0)	Nov 22- 19
Foundations Report (V2.0)	Dec 2-`19	
FAWG Meeting #2	Dec 10- 19	
Phase 3	RDBN Food and Agriculture Plan (V1.0)	Feb 21-20
	FAWG Meeting #3	Feb 26-20
	Present plan to RDBN Rural & Ag Committee	March 5-20
	RDBN Food and Agriculture Plan (V2.0)	March 24-20
	RDBN Board of Directors Approve Plan	March 19-20
	Develop and execute marketing plan	March - Onward

1.2 Planning Area Overview

The RDBN is located north of the Cariboo in north-central BC. The region covers 73,419 sq. kilometers and has a population of 37,896 (Stats Can 2016b, Census Profile). Figure 1 depicts the boundaries and areas within the RDBN.

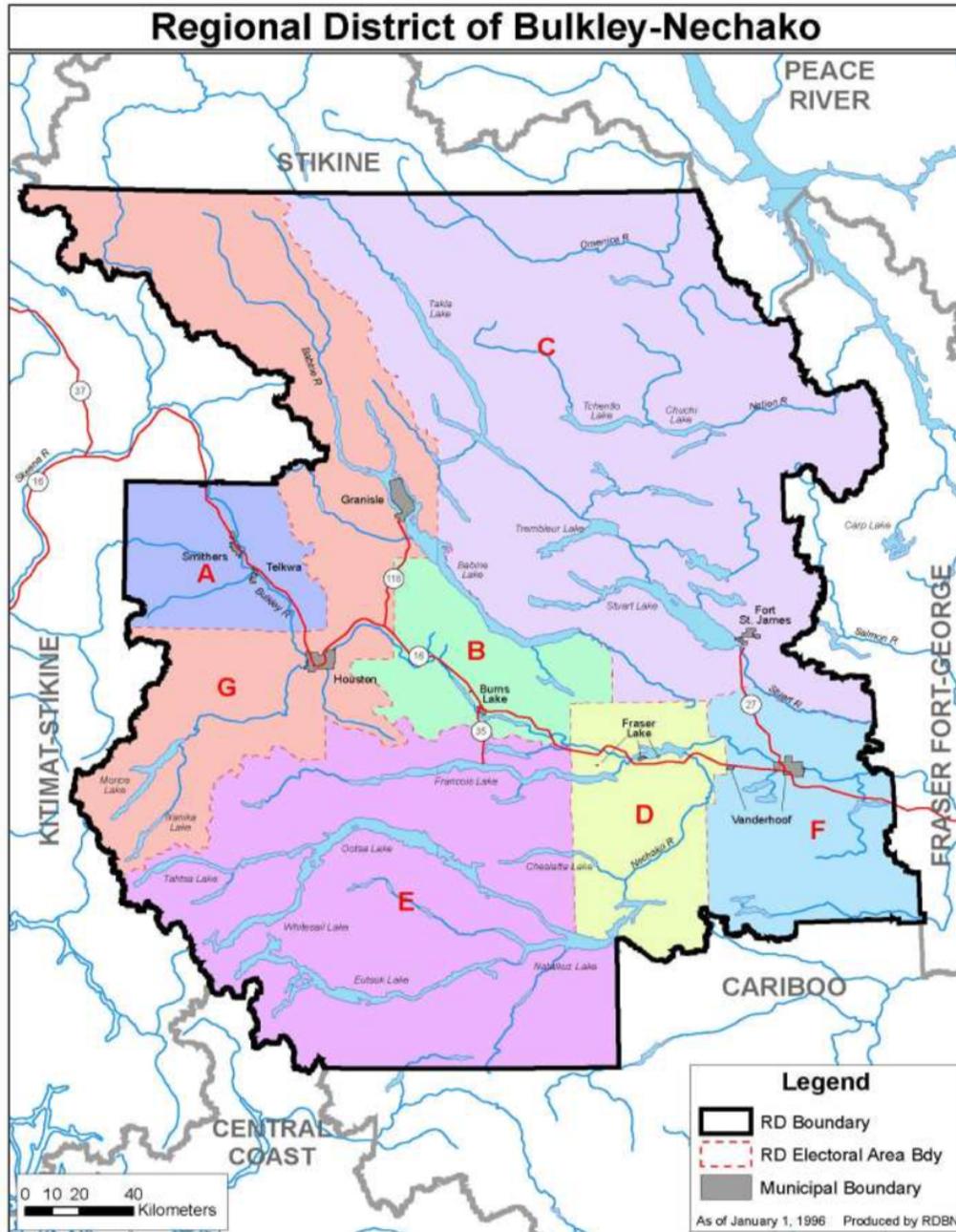


Figure 1: Regional District of Bulkley Nechako

1.3 Communities in the RDBN

The Regional District of Bulkley-Nechako is comprised of eight member municipalities, seven electoral areas, and fourteen Indigenous territories.

Table 1: Communities in the RDBN

Municipalities	Electoral Areas	Indigenous Communities
<ul style="list-style-type: none"> • Smithers • Granisle • Burns Lake • Fort St. James • Houston • Fraser Lake • Telkwa • Vanderhoof 	<ul style="list-style-type: none"> • Area A Smithers • Area B Burns Lake • Area C Fort St James • Area D Fraser Lake • Area E Francois/Oostsa Lake • Area F Vanderhoof • Area G Houston 	<ul style="list-style-type: none"> • Ts'il Kaz Koh, Burns Lake Band • Saik'uz First Nation • Binche Whut'en First Nation • Skin Tyee Nation • Cheslatta Carrier Nation • Stellat'en First Nation • Lake Babine Nation • Takla First Nation • Nadleh Whut'en • Tl'azt'en Nation • Nak'azdli Whut'en First Nation • Wet'suwet'en First Nation • Nee Tahi Buhn Band • Yekooche First Nation • Office of Wet'suwet'en – (Traditional Territories)

There are seven Official Community Plans (OCP) and one Rural Community Plan in the RDBN.³ Currently there is no regional growth strategy for the region and therefore no regional context statements in the OCPs.

- Electoral Area "A" Smithers Telkwa Rural OCP
- Electoral Area "B" & "E" Burns Land Rural and Francois Lake (North Shore) OCP
- Electoral Area "C" Fort St. James Rural OCP
- Omineca Settlement Corridor OCP
- Electoral Area "D" Endako. Fort Fraser, Fraser Lake Rural OCP
- Electoral Area "F" Vanderhoof Rural OCP
- Electoral Area "G" Houston, Topley, Granisle OCP
- Electoral Area "E" Southside Rural Community Plan: Resource document.

Agriculture is consistently represented in the goals, objectives, and policies in the OCPs as well as in the regional zoning bylaw RDBN (2019b). For example, the vision of agriculture in the Area A OCP demonstrates the commitment to agriculture that is aligned with all of the OCPs in the RDBN:

³ <https://www.rdbn.bc.ca/departments/planning/land-use-planning/official-community-plans>

Maintaining the viability of the area’s agricultural sector is critically important to the character and economy of the area. The residents of Electoral Area A support the goals and recommendations of the RDBN Agriculture Plan. The importance of the role of the Agricultural Land Reserve in preserving land for agricultural use is recognized. The consumption of local agriculture products is encouraged through promotion and support of local vendors. The intrusion of residential development into agricultural areas is recognized as a potential problem that will be guarded against (RDBN, 2014).

1.4 History of the area

Indigenous History and Traditional Territories

As in most regions of the province and country, Indigenous people have lived in the region since time immemorial. There is a long history of human settlement in the area now called the Regional District of Bulkley Nechako. The area has many diverse ecosystems which provided, and continue to provide, a wide range of food and fiber sources for First Nation and settler communities.

There are many communities and traditional territories within the boundaries of the RDBN. The communities are listed below as a way to acknowledge the historic, current, and future connection that many indigenous people have in the RDBN.

RDBN Electoral Area	First Nations Communities within Electoral Boundaries
A	None
B	Ts’il Kaz Koh First Nation (Burns Lake Band) Lake Babine Nation Wet’suwet’en First Nation
C	Binche Whut’en Nak’azdli Whut’en T’lazt’en First Nation Takla Lake First Nation Yekooche First Nation
D	Stellat’en First Nation Nadleh Whut’en
E	Cheslatta Carrier Nation Nee Tahi Buhn Band Skin Tyee Nation
F	Saik’uz First Nation
G	None

The communities listed above are First Nations with Elected Band Council offices in the community. There are additional First Nations that identify traditional territory within the region.

In addition to these, the Office of the Wet'suwet'en, whose office is in Smithers, is governed by the Wet'suwet'en Hereditary Chiefs residing throughout the traditional territories.⁴

The Carrier Sekani Tribal Council provides political and technical support to seven First Nations who belong to the CSTC association. The member First Nations of the CSTC are: Ts'il Kaz Koh First Nation (Burns Lake Band), Nadleh Whut'en, Saik'uz First Nation, Stellat'en First Nation, Takla Lake First Nation, Tl'azt'en Nation and the Wet'suwet'en First Nation⁵

⁴ <http://www.wetsuweten.com/office/about-us/>

⁵ <http://www.carriersekani.ca/about-cstc/>

History of RDBNs Involvement in Agriculture

Since the adoption of the 2012 Agriculture Plan, the RDBN has shifted its role in regional agriculture from being solely a regulator to also being a promoter and economic developer in agriculture. Promoting and advancing agriculture through providing access to grants, workshops, lobbying senior levels of government and relationship building are all roles that the RDBN has expanded into since 2012. This transition has been based on building relationships between producers and the Regional District and has opened the door to collaboration, which has helped to build momentum in and recognition of the agriculture sector. Key milestones illustrating this shift include but are not limited to:

- Establishing Agriculture Committee (2016)
- Presenting to Federal Senate Review on foreign ownership (2017)
- Halting of the forestation of agriculture land for carbon offsets (2016)
- Coordinating with NDI's funding areas and interests (2017)
- Establishing RDBN Agriculture Coordinator position (2017)
- Increasing capacity for emergency preparedness (2018)
- Advocating around ALR regulations (2014)
- Launching the Connecting Producers & Consumers Guide 2014-Present)
- Developing and implementing Climate Action strategies (2018-Present)
- Providing small grants for community events (2015-Present)
- Hosting multiple agriculture forums and workshops (Ongoing)

Within these key milestones increasing capacity for emergency preparedness and promoting agriculture are further detailed below as an important part of the RDBNs involvement in agriculture.

Increased Capacity for Emergency Preparedness: The RDBN has experienced years of wildfire events and flooding. In 2018, 3,170 livestock were relocated through the support of Emergency Management BC. There were many other animals relocated from hobby farms which were ineligible for support, but the region received donations of bagged animal feed and hay from across the province that was distributed to hobby farmers. There were also 3,980 livestock which were sheltered in place and participated in the RDBN Emergency Hay program. After the event, producers could apply to the 2018 Canada – British Columbia Wildfire Recovery Initiative.

In 2017-2018 there were Livestock Emergency Preparedness workshops administered by BC Agriculture and Food Climate Action Initiative. The RDBN Agriculture Coordinator presented eleven Emergency & Livestock Preparedness workshops in 2019 in partnership with BC Wildfire staff. The Agriculture section of the RDBN website has Regional Emergency Preparedness materials available.

Promoting Agriculture: Since 2014, the RDBN has been producing the Connecting Consumers and Producers Directory, which is updated annually, distributed regionally, and is also made available on the RDBN website. The RDBN Agriculture Coordinator works with producers to be included in the directory. The RDBN Economic Development staff manage the Connecting Consumers and Producers Community Event grant program and details on this program are updated annually on the RDBN website.

Every year, RDBN Economic Development staff procure sample sizes of regionally made items, such as jars of honey, beeswax soap and beef jerky, as promotional items and hand-outs for Connecting Consumers and Producers Community Events.

The RDBN supports many events, including agriculture events, through the RDBN Rural Grant In-Aid Program. Information is available through the Economic Development Department at the RDBN.

The RDBN Planning Department includes agriculture in all the region's individual Official Community Plans (OCP). The OCP's includes agriculture in Land Use Designation, Objectives and Policies and also in Implementation with ALC information. The agriculture objectives in regional OCPs are:

- To protect and preserve farmland and soil having agricultural capability for agricultural purposes.
- To encourage the expansion and full utilization of land for agricultural purposes.
- To support the objectives of the Provincial Agricultural Land Commission.
- To encourage a diversity of agricultural uses and opportunities.

The RDBN supports youth in agriculture initiatives at various levels. For example, School District 91, Nechako Lakes, has Project Agriculture inviting secondary students to farms in the Vanderhoof area to experience a day on the farm. The Bulkley Valley Groundbreakers Agriculture Association is a non-profit organization focused on local food and gardening education in the form of active, hands-on workshops and experiences that teach children and youth how to plant, grow, harvest and cook local food. The Nechako Valley Food Network holds workshops and events to educate the community on local food.

Farm to School BC has added a northern representative for the Northwest Region Hub. Farm to School programs bring healthy, local food into school and provides students with hands-on learning opportunities that develop food literacy skills. The program is supported by the Province of British Columbia and the Provincial Health Services Authority.

BC Agriculture in the Classroom (AITC) works with educators to bring local agriculture to BC's students. Together with farmers, teachers, and agriculture specialist, the AITC teaches students about the story of our food in BC.

BC 4-H clubs in the region offer local youth the opportunity to become productive adults through knowledge, leadership, citizenship and personal development. Many agriculture commodity groups are represented in the clubs in the region and local 4-H is building the agriculture leaders of tomorrow.

The Pleasant Valley Cattlemen's Association hosted their first agriculture 2-day event in 2019 with some assistance from the RDBN Connecting Consumers & Producers Community Events grant. The 2-day event was very successful with over 450 youth in attendance. The organizers are working on making this an annual event

1.5 Water and Soils in the RDBN

The RDBN contains a diverse geography that leads to significant variations in climate and temperature throughout the RDBN. Overall, the ecosystem is dominated by the sub-boreal spruce zone.

Water

As summarized in the 2012 Agriculture Plan, the Nechako River arises from the Nechako Plateau and flows north toward Fort Fraser, then east to Prince George where it joins the Fraser River. Its main tributaries in the region are the Stuart, Endako, Chilako and Nautley rivers. The Nechako is one of the main tributaries of the Fraser River, although most of its flow has been diverted through the Coast Mountains (as a result of the Nechako Reservoir) to the Kemano generating station. The Bulkley River is 257 km long with a drainage basin covering 12,400 square km. Much of the Bulkley is paralleled by Highway 16. It flows west from Bulkley Lake, between Burns Lake and Houston, and joins with the Morice River near Houston. The Bulkley then continues north past Quick, Telkwa and Smithers before joining with the Skeena River near Hazelton. (RDBN, 2012)

Soils and Agricultural Capability

The ALC uses the “Land Capability Classification System for Agriculture in British Columbia” to determine the agricultural capability of land. This system provides consistent guidelines for assessing agricultural capability of land. Where this mapping is not available, the Canada Land Inventory mapping is used to determine the agricultural capability of land. Both systems identify land according to its potential and limitations for agriculture using a rating system of Class 1 to 7, with several sub-categories of limitations used where necessary.

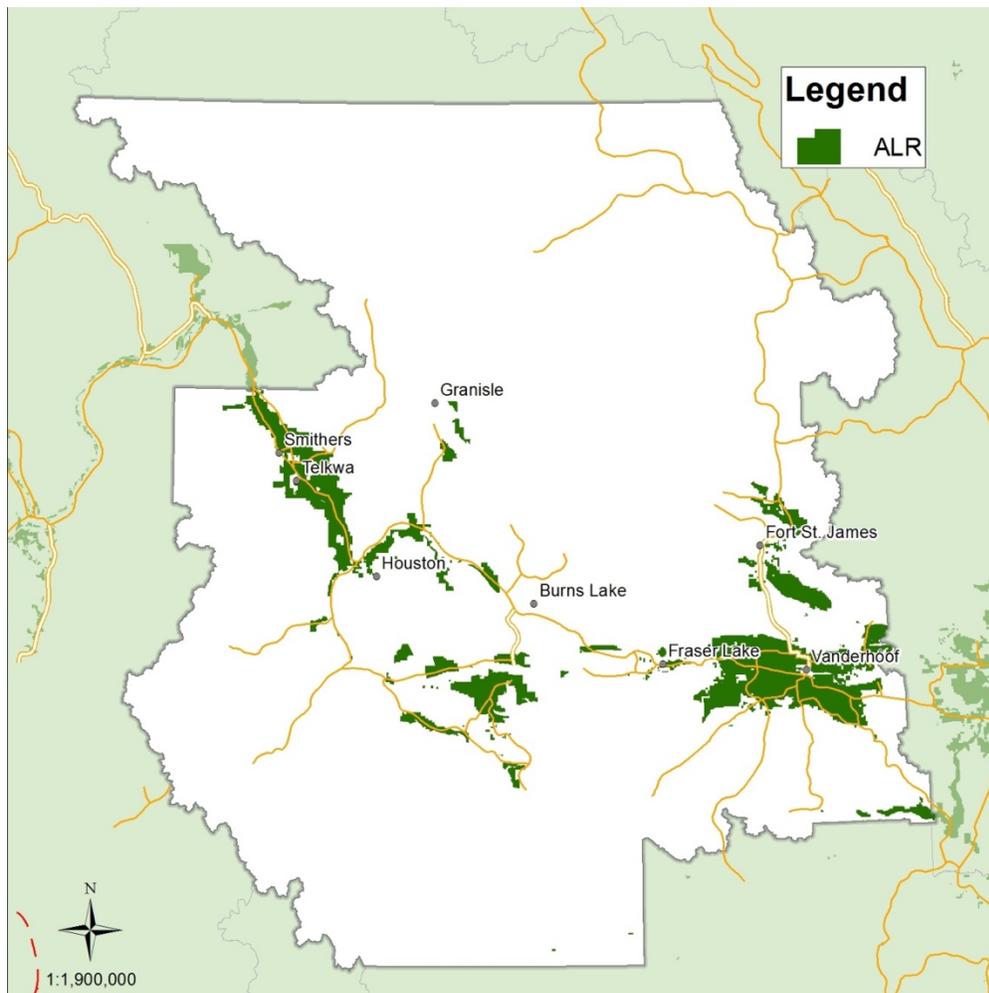
Most soils in the RDBN fall within classes 3 through 7. Class 1 land has minimal limitations when associated with the most amenable climates in the Province. In Class 2 to Class 5 lands have increased limitations. Class 6 lands have limitations that preclude arable agricultural activities yet are capable of sustaining native and/or perennial uncultivated agriculture. Class 7 lands have limitations that preclude all arable and natural grazing agricultural systems, regardless of the climate. Whether or not land is currently in agricultural production does not impede the agricultural capability of soils (RDBN, 2012).

Agricultural Land Reserve in the RDBN

In 2012, there was 373,405 ha of ALR in the RDBN (BC Ministry of Agriculture, 2014a). Since 2012, the ALC has approved inclusions and exclusion in the ALR. For example, the ALC has approved 269 ha⁶ of land being included in the ALR (ALC, 2017, 2018, 2019). There have also been a number of exclusions, although they do not exceed ALR inclusions. Currently, it is estimated that there is a total of 373,541 ha of ALR in the RDBN, representing a modest gain of 136ha in ALR since 2012 (RDBN 2019c). ALR in the RDBN comprises 5% of the total land base in the RDBN. Figure 2 illustrates the amount and location of ALR in the RDBN.

⁶ ALR Land Inclusion for the last three fiscal years 2017, 2018, 2019 is 66, 135, and 68, respectively. ALC Annual Reports do not consistently disaggregate information for RDBN prior to 2017.

Figure 2: Agricultural Land Reserve in the RDBN (ALC, 2016)



1.6 Climate Change Projections for the RDBN

“In the coming years, climate change will impact the agriculture sector in British Columbia in a range of different ways.” (BC Agriculture & Food Climate Action Initiative, 2019)

The Bulkley-Nechako Fraser-Fort George BC Agriculture Climate Change Regional Adaptation Strategies identify four key impact areas with respect to agricultural adaptation in the RDBN (BC Agriculture & Food Climate Action Initiative, 2019):

- Impact Area 1: Increasing wildfire risk
- Impact Area 2: Increasing variability and changing crop suitability
- Impact Area 3: Warmer and drier summer conditions

- Impact Area 4: Changing pests and beneficial insect populations⁷

These impacts are largely driven by temperature and precipitation changes. The Bulkley-Nechako & Fraser-Fort George region’s complex topography creates considerable climate variability over short distances. Climate characteristics and projections from the Climate Plan are summarized in Tables 2-4 below.

There is considerable variation in average annual precipitation across the region (measured in millimeters) with the majority of precipitation falling in the Hazelton, Omineca and Rocky mountain ranges. Smithers (in the northwest) receives an average of 498 mm of annual precipitation, Prince George (central) receives 638 mm, and Vanderhoof (slightly west of Prince George) receives 488 mm. Projections for average annual precipitation indicate an increase of 4.6% above the annual regional baseline (859 mm) by the 2020s, and an increase of 9.5% by the 2050s.

The magnitude and frequency of extreme events, related to both temperature and rainfall, are forecast to increase with climate change.

Climate Characteristics, Temperature and Precipitation Projections

Table 2: Climate Characteristics for Smithers and Vanderhoof (BC Climate, 2019)

Climate Variable	Time of Year	Smithers	Vanderhoof
Mean Temperature (°C)	Annual	3.9 °C	3.4 °C
Precipitation (mm)	Winter	113 mm	119 mm
	Spring	85 mm	88 mm
	Summer	145 mm	144 mm
	Fall	156 mm	137 mm
Growing Degree Days (degree days)	Annual	1,140	161
Frost Free Days (days)	Annual	175	161
Growing Season Length (days)	Annual	176	174

Table 3: Temperature projections for the RDBN

	by 2020s	by 2050s	by 2080s	
Annual average temp.	+ 1.6°C	+ 3.2°C	+ 5.3°C	Baseline of 1.6°C
Annual frost-free days	+ 25 days	+ 52 days	+ 87 days	Baseline of 146 days
Growing degree-days	+ 230 days	+ 520 days	+ 920	Baseline of 817 days

Table 4: Precipitation Projections for the RDBN

	by 2020s	by 2050s	by 2080s	
Summer	+ 2%	+ 1%	- 4%	Baseline of 197 mm
Fall	+ 5%	+ 16%	+ 28%	Baseline of 268 mm
Winter	+ 6%	+ 7%	+ 14%	Baseline of 233 mm
Spring	+ 6%	+ 13%		

⁷ <https://www.rdbn.bc.ca/departments/agriculture/climate-change>

Projected Impacts of Climate Change on Agriculture

There are many projected climate change impacts on agriculture. Table 5 below highlights the range of potential impacts based on analysis from the BC Agriculture & Food Climate Action Initiative, 2019.

The BNFFG Regional Adaptation program is running from 2018 to 2023 with specific projects that address the four key impact areas funded by the Government of Canada and British Columbia through the Canadian Agriculture Partnership with other potential funders. The completed BNFFG plan and details regarding projects are available at www.bcagclimateaction.ca and the RDBN Agriculture website page.

Table 5: Potential impacts of climate change on agricultural production in the (BNFFG) (BC Agriculture & Food Climate Action Initiative, 2019)

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
<ul style="list-style-type: none"> • Increase in summer average temperatures, potential decrease in summer rainfall • Increase in extreme heat events • Increase in winter and spring temperatures (more rapid snowmelt, drier conditions) 	<p>Increasing wildfire risk:</p> <ul style="list-style-type: none"> • More frequent and intensive wildfire events 	<ul style="list-style-type: none"> • Increase in costs associated with preparing for, managing and responding to wildfire • Feed and bedding shortages and increase in associated costs • Lost production during active wildfire and recovery period • Negative impacts to animal and crop health, productivity and yield from smoke • Road closures and loss of access to inputs and to distribution channels • Loss of power and associated irrigation • Stress and psychological challenges for producers
<ul style="list-style-type: none"> • Increase in variability of conditions (including temperatures, precipitation and extremes) 	<p>Increasing variability:</p> <ul style="list-style-type: none"> • Fluctuating and unpredictable seasonal conditions • Increased uncertainty of frost risk timing (spring/fall) • Increased variability in spring and fall 	<ul style="list-style-type: none"> • Risk of livestock injury due to freeze/thaw • Reduced insulation from snow; increase in forage crop winter damage/ winterkill • Uncertain timing of blossom set and spring growth • Reduced windows for crop development and seasonal tasks (e.g., pollination, planting, germination and harvesting)
<ul style="list-style-type: none"> • Increase in average temperatures • Increase in growing degree days • Increase in growing season length 	<p>Changing crop suitability ranges:</p> <ul style="list-style-type: none"> • Changing seasonal conditions • Changing production windows 	<ul style="list-style-type: none"> • Potential for additional cuts of hay within season • Opportunities to grow new varieties and types of crops • Potential for season extension

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
<ul style="list-style-type: none"> • Increase in minimum winter temperatures 		<ul style="list-style-type: none"> • Increase in management complexity, risk and cost (e.g., with season extension) • Inconsistent yield and quality of previously suitable crops • Difficulty in identifying suitable crops for changing conditions
<ul style="list-style-type: none"> • Increase in average temperatures • Increase in summer temperatures • Potential decrease in summer precipitation • Reduction in snowfall (and associated snowpack) 	<p>Warmer & drier summers:</p> <ul style="list-style-type: none"> • More frequent and extended dry periods in summer • Lower summer and fall stream flow levels (more rapid and earlier spring melt) 	<ul style="list-style-type: none"> • Increase in water demand and decrease in water supply • Increase in need for water storage • Increase in costs associated with water supply and water distribution infrastructure • Increase in need for dugout maintenance • Impacts to crop yields and quality (particularly non-irrigated crops) • Increase in need for purchased feed • Late harvest (i.e., due to delayed growth or delayed seed head formation) • Changes to timing and use of rangelands (versus hay) for grazing cattle
<ul style="list-style-type: none"> • Increase in annual temperatures • Increase in winter minimum temperatures • Shifting precipitation patterns 	<p>Changes in pests, diseases, invasive species:</p> <ul style="list-style-type: none"> • Increasing winter survival rates • Increasing in number of cycles in a year • Introduction of new pests and diseases • Changing range/distribution of pests, diseases and invasive species 	<ul style="list-style-type: none"> • More frequent and increased damage to crops • Impacts to livestock health • Reduction in forage and pasture quality/yield • Increase in costs for management of pests, diseases, and invasive species
<ul style="list-style-type: none"> • Increase in precipitation in winter, spring and fall • Increase in frequency and intensity of extreme rainfall 	<p>Extreme precipitation events:</p> <ul style="list-style-type: none"> • Increase in runoff • Potential for more rain-driven flood events • Increase in excess moisture 	<ul style="list-style-type: none"> • Increase in site-specific flood risk and drainage issues • Reduced access to fields and risk of compaction • Increase in risk of soil erosion and landslides (exacerbated by wildfire impacts) • Damage to infrastructure (e.g., dams and water storage) • Potential for animal health risks from disease or flooding • Impacts to soil health from nutrient leaching

Projected Climate Changes	Projected Effects	Potential Agricultural Impacts
		<ul style="list-style-type: none"> • Damage to riparian areas (erosion, washouts, silting etc.) • Negative impact on crop productivity and quality and changes to crop production (e.g., silage instead of hay)
<ul style="list-style-type: none"> • Increase in average and seasonal temperatures 	<ul style="list-style-type: none"> • Increase in extreme heat events: • Increasing number of days per year over 25°C and over 30°C 	<ul style="list-style-type: none"> • Increase in crop water demand • Change in timing of animal husbandry (e.g., need to shear early or more often) • Increase in crop damage and loss • Increase in prevalence of some pests and associated damage • Impacts to livestock health and productivity • Challenges controlling temperature in poultry and dairy barns
<ul style="list-style-type: none"> • Increase in average temperature • Increase in extreme events (e.g., wildfire, floods etc.) • Potential for longer, warmer and drier summers 	<ul style="list-style-type: none"> • Changing ecosystems and wildlife populations/distribution: • Changes in range and distribution of plant and animal populations • Reduction in feed/water sources for wildlife 	<ul style="list-style-type: none"> • Forest encroachment on grazing lands • Changes to plant physiology and nutritional content (e.g., in forage crops) • Increase in conflict with wildlife (bull elk, grizzly bears and wolves) • Increase in pressure on agricultural lands from distribution of deer, elk (loss of crops and feed)

1.7 Policy, Program, and Regulatory Context

There are many policies and regulations that set the context for agriculture and help to delineate roles and responsibilities for local government in agriculture. This section summarizes the Federal, Provincial, and Local policy and regulatory context for food and agriculture in the RDBN.

Federal

Food Policy for Canada

The Government of Canada has engaged people and experts across the country to develop a Food Policy for Canada. In 2019, the Government announced \$134 million in funding to support the policy (Agriculture and Agri-food Canada, 2019). The Policy has four action areas that will help to create a range of programs and investments. These include:

1. Help Canadian Communities Access Healthy Food
2. Make Canadian Food the Top Choice at Home and Abroad
3. Support Food Security in Northern and Indigenous Communities
4. Reduce Food Waste

Canadian Agricultural Partnership

Previously called Growing Forward 1 and 2, the Canadian Agricultural Partnership (CAP) launched in 2018. CAP is a five-year, \$3 billion investment by federal, provincial and territorial governments to strengthen the agriculture and agri-food sector. For BC, there are a range of programs that are administered through the Province of BC.⁸



Canada Agricultural Products Act

The Canada Agricultural Products Act regulates the import, export and inter-provincial trade and marketing of agricultural products. The Canadian Food Inspection Agency (CFIA) administers many of the agricultural import and export activities. This Act standardizes agricultural grading and inspecting procedures across Canada.

Canada GAP

Canada GAP is a food safety program for companies that produce, handle and broker fruits and vegetables. The program has received full recognition from the federal government, and

⁸ <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/programs>

is designed to help implement and maintain effective food safety procedures within fresh produce operations.⁹

Additional Federal Legislation Affecting Agriculture

Additional federal legislation that influences various aspects of the agriculture industry includes:

- Canada Grain Act
- Fertilizers Act
- Canada Wildlife Act
- Fisheries Act
- Consumer Packaging and Labelling
- Food and Drugs Act
- Customs Act
- Health of Animals Act
- Excise Tax Act
- Migratory Birds Convention Act
- Excise and Import Permits Act
- Pest Control Products Act
- Farm Debt Mediation Act
- Plant Protection Act
- Farm Income Protection Act
- Seeds Act
- Farm Products Agencies Act
- Species at Risk Act
- Feeds Act
- Transportation of Dangerous Goods Act

⁹ <https://www.canadagap.ca/program/>
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Provincial

There are many provincial regulations that directly and indirectly impact agriculture. This section provides a general overview of the regulations most directly linked to agriculture in order to establish the planning and policy context for the RDBN Agriculture Plan. It is not intended to be a comprehensive bibliography of all programs and regulations that may impact agriculture and not all regulations and programs are listed.

Feed BC, Grow BC, Buy BC

The Province of BC has three main initiatives targeting and strengthening BC's agri-food and seafood sector and expand the domestic market for BC food and beverage products. Grow BC focuses on helping young farmers access land and support fruit and nut growers and processors to expand local production. Feed BC focuses on increasing the amount of BC product being purchased by hospitals, schools and other government facilities. Buy BC is focused on helping local producers and processors market their products by re-establishing a strong, recognizable Buy BC brand and supporting industry led Buy BC marketing activities (Province of BC, 2019).

Agricultural Land Commission Act (ACLA)

ACLA sets out a legislative framework for the establishment and administration of the ALR (ALC, 2018b). Up to the 1970s nearly 6,000 hectares of prime agricultural land were lost each year to urban and other uses in BC. The Provincial government responded by introducing BC's Land Commission Act on April 18, 1973. The Agricultural Land Commission (ALC) was created with the following mandate:

- To preserve agricultural land;
- To encourage farming on agricultural land in collaboration with other communities of interest;
- To encourage local governments, first nations, the provincial government and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, bylaws, and policies.

Agricultural Land Reserve Use Regulation

The Agricultural Land Reserve Use Regulation , specifies permitted land uses within the ALR. Land use activities permitted in the ALR Regulation do not require an application or approval of the ALC if the use complies with any conditions or parameters set out in the ALR Use Regulation. For more information on permitted farm and non-farm uses please go to: <https://www.alc.gov.bc.ca/alc/content/alr-maps/living-in-the-alr/permitted-uses-in-the-alr/>.

Some of these regulations are currently under review as part of the Ministry of Agriculture's review of the ALR. The Province has proposed expanding the uses that are permitted within the ALR. The consultation and Regulation review process is ongoing at this time. Land use activities not included in the Regulation, such as subdividing land, building additional residences or excluding land from the ALR, require approval by the ALC through the application process.

Agricultural Land Reserve General Regulation

The Agricultural Land Reserve General Regulation sets out application procedures for changes to land use in the ALR.

Bill 52

On February 22, 2019, the Agricultural Land Reserve Use Regulation was approved by B.C.'s Lieutenant Governor in Council, bringing into force changes to the Agricultural Land Commission Act under Bill 52 – 2018, Agricultural Land Commission Amendment Act, 2018 (ALC, 2019). Bill 52 is intended to end proliferation of large mansions and lifestyle estates in the ALR, end dumping of illegal fill in the ALR, and ending two-zone separation of the ALR.

One of the key changes is the new role for the ALC in overseeing residential use and structures on ALR land. In cases where land owners wish to build more housing in the ALR (e.g. more than one residence, or larger principal residence than the 500m² maximum), they must initially apply to the RDBN who would then forward the application to the ALC for a 'non-adhering residential use' for ALC review and approval.¹⁰ Residences beyond the primary residence require ALC approval except with manufactured homes that may be placed in the ALR if they are for family members, authorizations are approved prior to Feb 22, 2020, manufactured home is 9 meters or less in width, and size is not altered after Feb 22, 2020. If the additional residence are necessary for farm use, then the application goes to the local government for review and approval; "[local government] may not approve more than one residence on a parcel of land unless the additional residences are necessary for farm use".¹¹ Applications for farmworker housing must be approved by the local government and the ALC.

Regarding fill, Bill 52 introduces a new requirement for landowners to submit a notice of intent to the ALC prior to proceeding with bringing fill into the ALR. According to the ALC, "This enhanced oversight will be balanced with exemptions for farmers and ranchers that bring fill onto their parcels as part of their regular maintenance and farm operations".¹²

Reaction to Bill 52 has been mixed with some rural regions considering the changes not suited to the community and context.

Bill 15

Bill 15 proposes to replace the regional panels that review land use applications in the ALR with 'administrative regions' and transfer the approvals role to the ALC. Bill 15 also removes ability for individuals to apply to the ALC for land exclusions.

¹⁰ For more information on Bill 52 please visit: <https://www.alc.gov.bc.ca/alc/content/alc-act-alr-regulation/the-alc-act-and-alr-regulations>

¹¹ Section 18(ii) of ALC Act

¹² For more information on fill regulations please see ALC Information Bulletin #07: https://www.alc.gov.bc.ca/assets/alc/assets/legislation-and-regulation/information-bulletins/information_bulletin_07_-_soil_or_fill_uses_in_the_alr.pdf

As with Bill 52, there some mixed reactions to Bill 15, some supportive some in argument against the proposed changes citing concern over the erosion of property rights (West Coast Environmental Law, 2019).

Farm Practices Protection Act

The Farm Practices Protection (Right to Farm) Act was passed in 1996. The intent of the Act is to protect farms, using “normal farm practices”, from unwarranted nuisance complaints involving dust, odour, noise and other disturbances. The Farm Practices Board, now called the Farm Industry Review Board (FIRB), was established to deal with complaints that arise from the Act and to determine whether the issue results from normal farm practices.

Local Government Act

Certain provisions of the Local Government Act address farming activities through community planning; zoning; nuisance regulations; removal and deposit of soil; weed and pest control; water use and drainage. Under the Local Government Act Agriculture plans are not statutory documents but may be amended to OCPs as a local area plan.

Land Title Act

The Land Title Act gives Approving Officers the power to assess potential impacts of proposed subdivisions on farmland. Each municipality has their own Approving Officer who is responsible all subdivision application within the municipal boundaries. In regions like the RDBN, the Ministry of Transportation and Infrastructure is responsible for subdivision in rural areas.

BC Assessment Act

Section 23 of the Assessment Act and BC Reg 411/95, the Classification of Land as a Farm Regulation (the “Farm Class Regulation”), set out the requirements that must be met for land to be classified as “Farm” for assessment and tax purposes. Land classified as Farm must be used all or in part for primary agricultural production.

Water Sustainability Act

The 2016 Water Sustainability Act (WSA) is the principal water management legislation in BC and plays a key role in the sustainability of BC’s water supply. The Act provides for the licensing of activities including use, diversion, and storage of water. The WSA outlines the mechanisms for granting groundwater licences through Provincial regulations. This could help to better manage water in dry regions. The WSA allows the provincial government to make orders to protect “critical environmental flows” in times of scarcity, meaning flows to protect fish populations and aquatic ecosystems (Province of BC, 2016). Regarding agriculture, including livestock watering, the water sustainability act is still being finalized.

Water Sustainability Plans

The new Water Sustainability Act augments the current ability to undertake Water Sustainability Plans under Part 4 of the Water Act. The intent is to have a watershed-defined

or issue-defined process where interested parties, including local governments, the provincial government, water users and First Nations, can come to an agreement about most aspects of water. Plans are not limited to water allocation but may consider water quality, drought planning, water sharing, changes to existing licences, and anything else set out in the terms of reference.

Water Sustainability Plans may designate “dedicated agricultural water”, also known as agricultural water reserves. This allows the water sustainability planning process to prioritize or establish unique rules for agriculture, which will be particularly useful when considering how reductions in water use will be handled through drought planning and management.

Provincial Agriculture Zone Wildlife Program

The Provincial Agriculture Zone Wildlife Program (PAZWP) was developed in 2009 to accommodate special objectives in agricultural zones and provide special opportunities for hunters. PAZWP helps coordinate crop damage prevention, mitigation and compensation strategies for damage done by certain species of wildlife. PAZWP has helped increase hunting opportunities in agricultural areas and ungulate winter range zones.

Forest and Range Practices Act and Range Act

The Forest and Range Practices Act (FRPA) and its regulations govern the activities of forest and range licensees in BC. The statute sets the requirements for planning, road building, logging, reforestation and grazing. The Range Act gives the right to use Crown land for grazing or hay cutting. However, it is the FRPA and its various regulations that give direction on how and when rangeland may be used.

The Range Planning and Practices Regulation requires that those who use Crown lands for livestock grazing must submit either a Range Use Plan (“RUP”) or Range Stewardship Plan (“RSP”) for approval by the Ministry of Forests, Lands, Natural Resource Operations and Rural Development prior to using rangeland.

Environmental Management Act

The Agricultural Waste Control Regulation and associated Code of Practice fall under the Environmental Management Act. These regulate practices for using, storing and managing agricultural waste material in order to prevent pollution. The Regulation and the Code deal with agricultural waste storage and on-farm composting. The former Organic Matter Recycling Regulation has been replaced by the Agricultural Environmental Code of Practices¹³ and specifies how composting is conducted in private and commercial facilities, including feedstock, size, technology, siting and procedures, and compost quality in addition to other air quality standards.

The RDBN operates two sub regional landfills and one secondary landfill as well as eight transfer stations throughout the region (RDBN 2012). No current capacity to compost

¹³ http://www.bclaws.ca/civix/document/id/complete/statreg/8_2019

agricultural waste or to recycle agricultural plastics, although effort has been made towards exploring a concept to develop a composting facility at the Clearview eastern sub regional landfill. In 2018, the RDBN Board approved the development of a solid waste management plan and suggested the plants incorporate more composting as part of waste diversion in the later part of the 10-year plan.

Meat Inspection Regulation

Until 2004, meat inspection in BC was decentralized and the decision to implement inspection programs for locally marketed meat was left to the discretion of local governments. On-farm slaughter for commercial purposes was legal and largely unsupervised. In 2003, the BSE (Bovine Spongiform Encephalopathy) outbreak, also known as “mad cow” disease was the catalyst for province regulation of meat inspection. The Meat Inspection Regulation (MIR) established the requirements for all provincially licensed slaughter facilities in BC. The regulation came into force in 2004, and compliance became mandatory on September 30, 2007. The graduated licensing approach includes several levels of slaughter operation for provincially licensed facilities:

- Class A facilities include slaughter and ‘cut and wrap’ services;
- Class B facilities include slaughter only;
- Class C was temporarily introduced in 2007 to make it possible for many slaughter operators to become fully licensed. These licenses have been phased out;
- Class D - Retail Sales – permits direct producer sales to local consumers and to retail establishments with geographic restrictions. Restricts production to between one and 25 animal units (approximately 11,350 kg live weight); and
- Class E - Direct Sales –permits direct producer sales to local consumers. Restricts production to between one and 10 animal units (approximately 4,540 kg live weight). Class E licenses are also limited to the designated geographic areas but may be available to other rural and remote areas of the province on a case-by-case basis.

BC Environmental Farm Plan Program

The Canada-BC Environmental Farm Plan (EFP) Program is a voluntary program that assists farmers in developing an environmental action plan for their farm that enhances natural resources and reduces the possibility of accidental harm to soil, air, water and biodiversity values. Those who enroll in the program become eligible for cost-share funding for certain on-farm Beneficial Management Practices projects through the Canadian Agriculture Partnership and the BC Agricultural Research and Development Corporation (ARDCorp). The program is free, voluntary, and confidential.

Local and Regional

Land use regulation by local governments is established under the Community Charter and the Local Government Act, which contains extensive land use regulations, zoning powers and subdivision powers. This enables local governments to adopt regional growth strategies and OCPs that establish a framework for land use regulation, including zoning bylaws. While the

Province has largely delegated authority over land use and development to local governments, it has retained authority over agricultural land, forest land, riparian areas, heritage sites, Electoral Area subdivision and the Provincial road network.

Municipal zoning bylaws regulate and permit uses within zones. Zoning bylaws can influence agricultural land in several ways, including through the setting of minimum parcel sizes and maximum building foot prints, setting parameters around secondary dwellings, setbacks, and establishing the potential for subdivision of agricultural lands, to name a few.

Connecting Consumers and Producers

The Connecting Consumers and Producers Guide has been published by the RDBN every year since 2014. The guide is free to take and it is free to be included. Basic information on the farm, where it is, and where to buy products is provided. Other information on recipes, farmers markets and other food related



events are also included. Within the Connecting Consumers and Producers program, there are small grants (up to \$1100) available for community events. Please go to <https://www.rdbn.bc.ca/departments/economic-development/connecting-consumers-and-producers> for more information.

Agricultural Land Use Inventories

Agricultural Land Use Inventories, or ALUIs, are detailed studies of specific areas to understand agricultural activities on farmland. ALUIs do not typically make any recommendations but rather provide baseline data intended to be compared over multiple time periods allowing for trend analysis that can help inform planning, investment and decision making.

Within the RDBN two ALUI studies have been completed in 2014: one for Smithers Telkwa, Electoral Area A (BC Ministry of Agriculture, 2014a), and the other for Vanderhoof and Electoral Area F (BC Ministry of Agriculture, 2014b). These studies should be considered as companion documents to this Foundation Report. Without multiple years to compare, this information provides detailed baseline data for these two areas.

The Smithers and Vanderhoof areas were selected due to the proximity of farming to other land uses and factors such as development pressure on farmland, fragmentation, and other complexities not as influential in the more rural areas.

The Smithers ALUI indicates that by land cover, a total of 10,617 ha or 38% of the inventoried ALR is actively farmed. An additional 163 ha of land outside the ALR is farmed. A total of 12,390 ha or 44% of the inventoried ALR has limited potential for cultivation due to topographical, physical or operational constraints and 4,219 ha or 15% of the inventoried ALR is available and has potential for cultivation but is not currently farmed. (BC Ministry of Agriculture, 2014a).

The Vanderhoof ALU indicates that by land cover, a total of 19,459 ha or 53% of the inventoried ALR is actively farmed. An additional 147 ha of land outside the ALR is farmed. A total of 6,221 ha or 17% of the inventoried ALR has limited potential for cultivation due to

topographical, physical or operational constraints and 9,655 ha or 26% of the inventoried ALR is available and has potential for cultivation but is not currently farmed (BC Ministry of Agriculture, 2014a).

In summary, although there is over 13,800 ha of combined Smithers and Vanderhoof ALR lands with potential that is not currently being farmed, much of the land in the Smithers and Vanderhoof areas is either limited by natural features or is already being used for production.

Part 2: RDBN Food and Agriculture Profile

2.2 Farm Characteristics

Number of farms

The total number of farms reporting in the RDBN dropped to 747 from 840, a difference of 93 farms (Tables 6 and 7). This change represents an 11% drop since 2011, consistent with the Provincial rate of change, but greater than the National average. This suggests that the longevity of farms in BC face unique challenges not experienced by all areas of the country.

Table 6: Total number of farms and percent change between 2011 and 2016

	2011	2016	% Change
Canada	205730	193492	-5.9%
BC	19759	17528	-11%
RDBN	840	747	-11%



Table 7: Number of farms reporting in the RDBN by Electoral Area (Statistics Canada- 2016)

		Area A	Area B	Area C	Area D	Area E	Area F	Area G	Total
Number of Farms	2016	219	35	32	67	77	299	55	747
	2011	182	50	35	83	95	305	53	840
# Change		37	-15	-3	-16	-18	-6	2	-93
% of Total		28%	4%	4%	9%	10%	38%	7%	100%

Farm Type

Although there is great diversity in food and farming types in the RDBN the predominant farm type includes other crop farming, cattle ranching and farming, hay farming, beef cattle ranching, and other animal production.

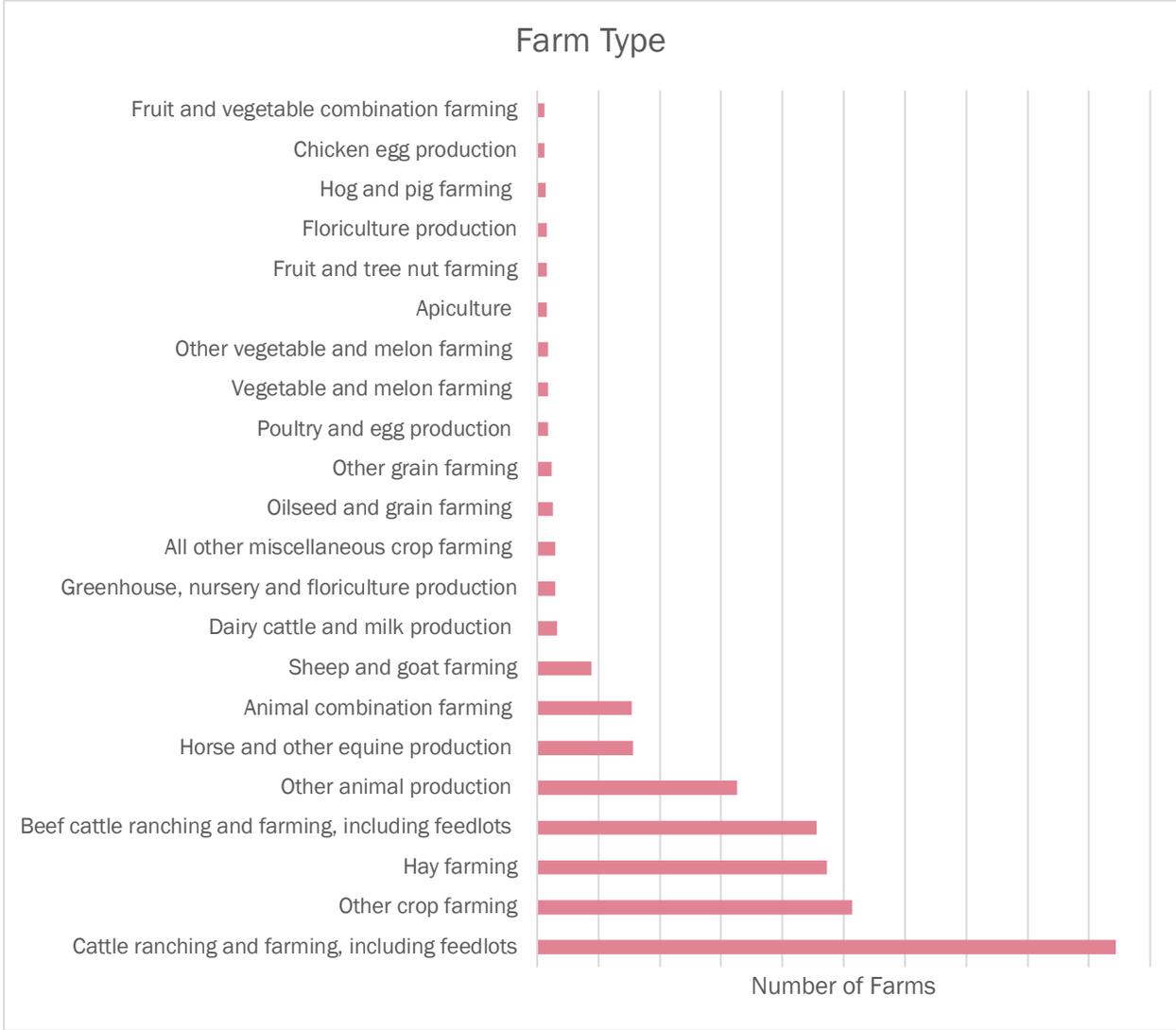


Figure 4 Farm Type in the RDBN (Statistics Canada- 2016)

Since 2011, there has been growth in sheep and goat farming as well as oilseed production but a retraction in other areas like horse and equine production, other crops, and hay farming.

Crops

Tables 8 through 15 summarize productivity data for various crop and livestock types. The tables compare information from 2011 and 2016 censuses, and calculates % change during this period. Rows in yellow indicate a negative percent change and rows in green indicate a positive percent change, although many are very modest and likely within the margin of error. Many crops in the RDBN have decreased in total production area from 2011-2016, including hay and field crops, vegetables and greenhouse. This is likely associated with the overall 11% decrease in farms reporting in the RDBN. The decrease of 45% in hay and field crops is significant as the number of farms did not decline, indicating that producers are not producing as much hay as 2011 levels, despite regional demand. Fruits and berries and forest products are the only crop categories that saw modest increases in production area, which could be reflecting growth in mixed produce farms.

Crop Type	2011	2016	% Change
Hay and Field Crops			
Number of farms reporting	10	10	0%
Hectares	975	537	-45%
Fruits Berries and Nuts			
Number of farms reporting	18	19	6%
Hectares	9	11	22%
Vegetables (Excluding Greenhouse)			
Number of farms reporting	35	25	-29%
Hectares	21	20	-5%
Greenhouse Products			
Number of farms reporting	26	21	-19%
Square metres	12,214	7,668	-37%
Greenhouse flowers			
Number of farms reporting	13	11	-15%
Square metres	7,692	6,009	-22%
Greenhouse vegetables			
Number of farms reporting	16	15	-6%
Square metres	1,780	1,208	-32%
Other greenhouse products			
Number of farms reporting	5	3	-40%
Square metres	2,741	452	-84%
Total area under glass, plastic or other protection			
Number of farms reporting	26	21	-19%
Square metres	12,405	8,021	-35%
Forest Products in the Year Prior to the Census			
Number of farms reporting	20	18	-10%
Dollars	646,777	783,953	21%

Table 8: Crop Type Changes 2011-2016 (Statistics Canada- 2016)

Livestock

Cattle and Calves

The total number of cattle and calve operations in the RDBN has dropped by 42 farms reporting in 2016. The number of animals is also down by 9% from 2011- 2016. Although the

Census indicates drops in number of farms reporting and number of animals in most categories, number of operators and animals in dairy cows increased as well as heifers for beef and dairy cow replacement. However, it should be noted that these changes could be indicative of an off-year, or outlier, and does not necessarily represent an overall trend. Table 5 provides detailed cattle calf information and % change between 2011 and 2016.

Yellow highlight indicates a negative percent change and green highlight indicates a positive percent change.

	2011	2016	% Change
Total cattle and calves			
Number of farms reporting	473	442	-7%
Number of animals	61,525	56,113	-9%
Calves, under 1 year			
Number of farms reporting	406	393	-3%
Number of animals	20,030	19,999	0%
Steers, 1 year and over			
Number of farms reporting	237	212	-11%
Number of animals	8,711	3,416	-61%
Total heifers, 1 year and over 6			
Number of farms reporting	319	327	3%
Number of animals	8,758	6,608	-25%
Heifers for slaughter or feeding			
Number of farms reporting	133	94	-29%
Number of animals	4,870	1,617	-67%
Heifers for beef herd replacement			
Number of farms reporting	240	279	16%
Number of animals	3,358	4,404	31%
Heifers for dairy herd replacement			
Number of farms reporting	19	22	16%
Number of animals	530	587	11%
Total cows			
Number of farms reporting	406	400	-1%
Number of animals	22,710	24,694	9%
Beef cows			
Number of farms reporting	386	376	-3%
Number of animals	21,542	23,428	9%
Dairy cows			
Number of farms reporting	33	41	24%
Number of animals	1,168	1,266	8%
Bulls, 1 year and over			
Number of farms reporting	336	312	-7%
Number of animals	1,316	1,396	6%

Table 9: Cattle Calf 2011-2016 (Statistics Canada- 2016)

Sheep and Lambs

The number of sheep and lamb operators reporting as well as number of animals has increased in all categories from 2011-2016. Overall there was a 35% increase in the number of

farms reporting with a related 30% increase in the total number of animals. Consistent with data in farm type, sheep and lamb are a growth sector in the RDBN. Table 10 details number of rams, ewes, and lambs in 2011 and 2016.

Yellow highlight indicates a negative percent change and green highlight indicates a positive percent change.

	2011	2016	% Change
Total sheep and lambs			
Number of farms reporting	69	93	35%
Number of animals	2,690	3,488	30%
Rams			
Number of farms reporting	46	61	33%
Number of animals	103	155	50%
Ewes			
Number of farms reporting	61	82	34%
Number of animals	1,263	1,486	18%
Lambs			
Number of farms reporting	58	72	24%
Number of animals	1,324	1,847	40%

Table 10: Sheep and Lambs 2011-2016 (Statistics Canada- 2016)

Pigs

The number of operators reporting as well as number of animals has increased in all categories from 2011-2016. Although the total number of animals is estimated to be under 1000, the total number of animals has more than doubled, which indicates an upward trend.

	2011	2016	% Change
Total pigs			
Number of farms reporting	49	81	65%
Number of animals	459	977	113%
Boars			
Number of farms reporting	16	24	50%
Number of animals	19	37	95%
Sows and gilts for breeding			
Number of farms reporting	23	36	57%
Number of animals	68	131	93%
Nursing pigs			
Number of farms reporting	6	13	117%
Number of animals	35	150	329%
Weaner pigs			
Number of farms reporting	19	42	121%
Number of animals	213	325	53%
Grower and finishing pigs			
Number of farms reporting	23	38	65%
Number of animals	124	334	169%

Table 11: Pigs 2011-2016 (Statistics Canada- 2016)

Other Livestock

The number of goats and rabbits has increased whereas the number of horses and ponies, llamas and alpacas has decreased from 2011 to 2016. Table 12 provides detail on 2011 and 2016 number of farms reporting and number of animals.

Yellow highlight indicates a negative percent change and green highlight indicates a positive percent change.

	2011	2016	% Change
Horses and ponies			
Number of farms reporting	427	352	-18%
Number of animals	3,021	2,346	-22%
Goats			
Number of farms reporting	33	42	27%
Number of animals	998	1,142	14%
Llamas and alpacas			
Number of farms reporting	27	24	-11%
Number of animals	199	66	-67%
Rabbits			
Number of farms reporting	25	38	52%
Number of animals	298	313	5%

Table 12: Other Livestock 2011-2016 (Statistics Canada- 2016)

Poultry

The total number of farms reporting hens, chickens, turkeys and other poultry has increased 18% between 2011 and 2016. The Census data for number of birds is limited.

	2011	2016	% Change
Total hens and chickens			
Number of farms reporting	169	200	18%
Pullets under 19 weeks, intended for laying table eggs			
Number of farms reporting	36	61	69%
Laying hens, 19 weeks & over, that produce table eggs			
Number of farms reporting	144	168	17%
Layer and broiler breeders (pullets and hens)			
Number of farms reporting	13	18	38%
Broilers, roasters and Cornish			
Number of farms reporting	44	58	32%
Turkeys			
Number of farms reporting	23	29	26%
Other poultry			
Number of farms reporting	21	49	133%

Table 13: Poultry 2011-2016 (Statistics Canada- 2016)

Eggs

Between 2011 and 2016, there has been minor growth in egg production for both table and hatching eggs.

Yellow highlight indicates a negative percent change and green highlight indicates a positive percent change.

	2011	2016	% Change
Table eggs			
Number of farms reporting	82	89	9%
Hatching Eggs			
Number of farms reporting	3	9	200%

Table 14: Eggs 2011-2016 (Statistics Canada- 2016)

Bees

Four new farms began to report honey bee colonies in 2016. Correspondingly, there has been a 28% increase in the number of bee colonies in the RDBN, between 2011 and 2016.

	2011	2016	% Change
Colonies of honeybees			
Number of farms reporting	21	26	24%
Number	370	474	28%

Table 15: Bees 2011-2016 (Statistics Canada- 2016)

Farm Size

Farm size in the RDBN ranges from 27 farms under 10 acres to 38 farms over 3,520 acres. The most common farm size is 130-179 acres. Figure 20 illustrates the range of farm sizes in the RDBN.

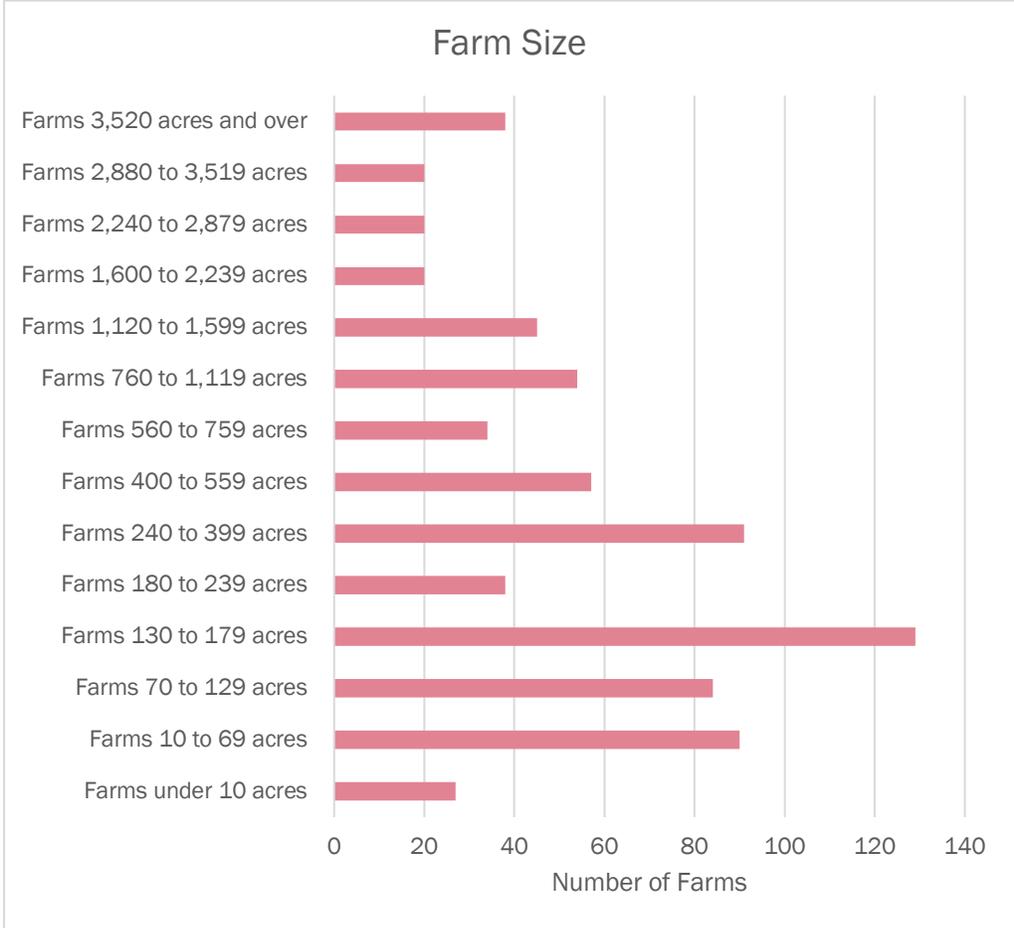


Figure 5: Farm Size (Statistics Canada- 2016)

Since 2011, the number of farms in each size category decreased. However there is a notable exception of a 67% increase, eight farms, sized 2,880 to 3,519 acres. This could suggest that businesses are purchasing land, potentially as multiple parcels, in the RDBN. Also, according to the headquarter rule, a farmer whose business is headquartered in the RDBN will be asked to count all farm holdings in the Agriculture Census, even if those properties are outside of the census area. In this way, these new large farms may or may not include properties outside of the RDBN.

Land Use and Tenure

The predominant use of farmland in the RDBN is natural land for pasture followed by land in crops, area in, woodland, or wetland and tame or seeded pasture.

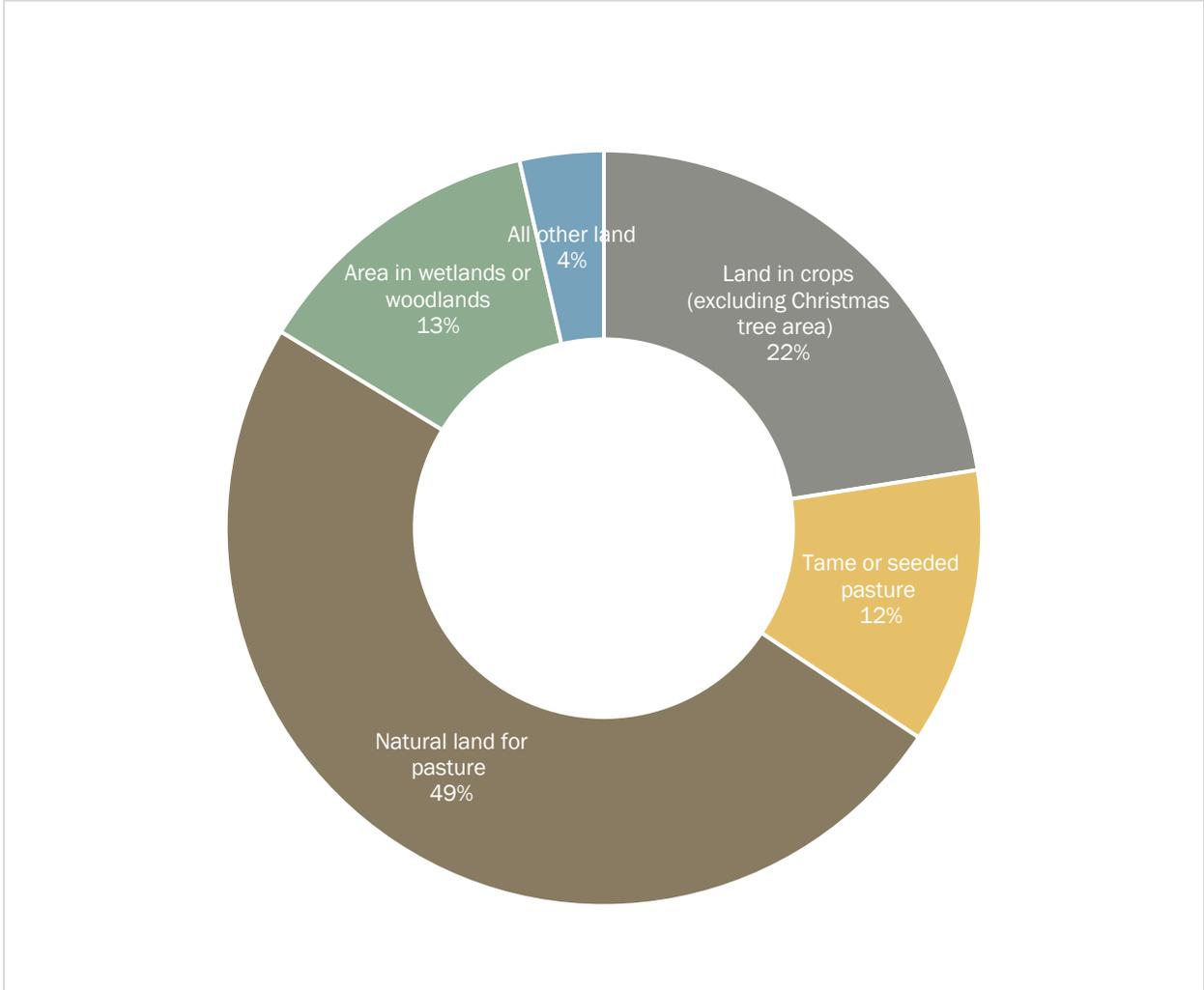


Figure 6: Percentage of Land Use by Hectare (Statistics Canada)

Overall, with the decrease in the number of farms reporting in the RDBN, land use in almost all areas has decreased. This is consistent with Provincial and National trends in land use. Most notably, since 2011, the number of farms reporting summerfallow land had decreased 43% a difference of 12 farms from 2011 to 2016. The area of summerfallow land decreased by over 60%. This change could suggest market shifts or challenges or a lack of new entrants.

The vast majority of farms in the RDBN are owned. Other forms of tenure are listed in Table 22 below. As the number of farms reporting in each area-tenure type exceeds the total number of farms reporting, this could indicate that farms have several forms of tenure within their holdings.

Land Tenure	Number of farms reporting 2016	Hectares
Total Farms Reporting	747	245,379
Area owned	725	135,526
Area leased from governments	134	74,144
Area rented or leased from others	148	35,485
Area crop-shared from others	66	3,373
Land area used through other arrangements	48	3,203
Total area of land used by others	73	6,352

Table 16: Land Tenure in the RDBN (Statistics Canada)

Farm practices

Tillage

The total land area prepared for seeding in the RDBN has increased by 29%, or approximately 4000 hectares between 2011 and 2016. The area of no to zero till seeding increased by 17% between 2011 and 2016, although the number farms reporting decreased by 10. This could suggest that no to zero till practices are becoming more common.

Land Inputs

Farms in the RDBN use a range of inputs to support production including herbicides, insecticides, fungicides, commercial fertilizer, lime and trace minerals, nutrients. The number of farms reporting the use of insecticides increased from 2 to 14 from 2011 and 2016, respectively. There is also an increase in the use of commercial fertilizer and lime. The area of land where manure is incorporated into soil is down 24%, whereas manure not incorporated into soil increased by over 50%. More farms are using liquid manure not incorporated into soil with more land with increases over 100% from 2011 to 2016.

Irrigation

The amount of irrigated land in the RDBN decreased 8% from 2011-2016. This is inconsistent with Provincial and National trends that have seen an increase in irrigated land. In other regions in BC forage land is being irrigated for the first time due to longer, drier summers.

Organics

The RDBN has few producers reporting organic products in the census. Provincially, number of organic products has decreased by 4%. Nationally, the number of transitional and organic is increasing.

Farm Operators

As of 2016, the RDBN has 1,165 farm operators down by 10% since 2011 (Stats Can 2016, Table 37). The number of farm operators under 35 has increased 43% (n=30) in the RDBN, from 70 in 2011 to 100 in 2016. This could indicate that new entrants are moving to the RDBN

to start farming and/or take over the family farm. More farmers in the RDBN are writing succession plans that mostly involve family members (Stats Can, 2016).

Operators aged 35 to 54 decreased the most, by 30% (n=170). This is consistent with the provincial and national trends. The number of farmers over 55 years old remained relatively stable. The average age of operators has increased slightly from 54.9 years to 55.4 years. (Stats Can, 2016).

Fewer operators are reporting pay from non-farm work and operators reporting no paid non-farm work has remained constant at 515 operators (Stats Can, 2016).

More farmers are living on farm with a jump for 115 in 2011 to 440 in 2016 (Stats Can, 2016).

On farm technology

Although the census indicates that more farms in the RDBN are on-line, some with high-speed internet, and more generally using computers (Stats Can, 2016), the reality is that many producers do not have broadband access and the RDBN currently has established a Broadband Committee.

2.3 Food and Farming Economics in the RDBN

Farm Capital

Total Farm Capital

The total farm capital of farms in the RDBN has decreased in medium to small farms but increased over 40% (35 farms) in the largest farms. There is also growth in the middle, with farms half to one million growing by 15% (29 farms). Generally, this is consistent with national and provincial trends with the exception of a 73% (196 farm) increase in farms under 100k in BC (Stats Can, 2016).

This trend could indicate a contraction of the agriculture industry under 2 million, but growth in investment in farms over \$2 million in total farm capital.

	2011	2016	% Change	# Farms
Farms, under \$100,000	14	9	-36%	-5
Farms, \$100,000 to \$199,999	50	35	-30%	-15
Farms, \$200,000 to \$349,999	188	104	-45%	-84
Farms, \$350,000 to \$499,999	145	113	-22%	-32
Farms, \$500,000 to \$999,999	199	228	15%	29
Farms, \$1,000,000 to \$1,499,999	104	88	-15%	-16
Farms, \$1,500,000 to \$1,999,999	55	50	-9%	-5
Farms, \$2,000,000 to \$3,499,999	44	62	41%	18
Farms, \$3,500,000 and over	41	58	41%	17

Table 17: Farms Classified by Total Farm Capital (Statistics Canada, 2016)

Farm Capital by Category

In the RDBN the market value of total farm capital of all 747 farms reporting grew from \$850 million in 2011 to over \$1 billion in 2016, growth of 23%. Total value of land and buildings increased by 17% and the value of all machinery and equipment increased by 19%. There are approximately 2,054 tractors, 290 swathers, and 1,119 trucks, cars, and passenger vehicles owned in the RDBN, worth approximately \$41 million dollars (Stats Can 2016, Table 34).

Farm business operating expenses

Even though the number of farms reporting in the RDBN is down 11%, farm business operating expenses have increased 6%. This could indicate an increase in operating costs and potentially new farm input costs (Stats Can 2016, Table 35). Provincial and national operating expenses have also increased since 2011, by 21% and 36%, respectively (Stats Can 2016, Table 35).

Farm Gate Receipts

Between 2011 and 2016, farmgate receipts in the RDBN increased by 17% (approximately \$9 million) to \$63 million. In BC this change was greater at 27% increase, and 35% nationally. In the RDBN, the growth areas are in farms with \$100,000 to \$2,000,000 in farm gate receipts. Farms under \$10,000 experienced the greatest loss of farms with a -31% change (105 farms). Generally, RDBN trends are consistent with provincial and national trends.

This trend indicates that sales and value chains are working well for farms over 100,000, but smaller farms are making less sales and are likely less profitable. This could reflect gaps/barriers in the value chain, market, and/or regulatory context for these scales of operation.

	2011	2016	% Change	# Farms
Total gross farm receipts (excluding forest products sold)	\$54,186,702	\$63,186,797	17%	\$9,000,095.00
Farms, under \$10,000	340	235	-31%	-105
Farms, \$10,000 to \$24,999	171	166	-3%	-5
Farms, \$25,000 to \$49,999	141	124	-12%	-17
Farms, \$50,000 to \$99,999	91	87	-4%	-4
Farms, \$100,000 to \$249,999	58	75	29%	17
Farms, \$250,000 to \$499,999	22	37	68%	15
Farms, \$500,000 to \$999,999	10	17	70%	7
Farms, \$1,000,000 to \$1,999,999	4	2	-50%	-2
Farms, \$2,000,000 and over	3	4	33%	1

Table 18: Farms classified by total gross farm receipts (Statistics Canada- 2016)

Direct Sales

The number of farms reporting direct sales has increased from 2-14 farms in the period between 2011 and 2016. There was also an increase of 29 farms for a total of 40 farms reporting farmgate sales, kiosks, and u-picks (Stats Can 2016, Table 43).

Farm Jobs

Out of the 151 farms reporting, there are 470 farm employees in the RDBN, of these 225 (47%) are family members. This includes 134 full time year-round jobs, 75 part-time year round jobs, and 261 seasonal or temporary jobs (Stats Can 2016, Table 36). Fulsome data for 2011 is not available.

2.4 Food and Agriculture Processing and Distribution

Provincially Licensed Animal Slaughter Facilities in the RDBN

There are three licensed animal slaughter facilities in the RDBN:

Country Locker Phone: 250-567-4774 6900 Teichroeb Rd Vanderhoof, BC V0J 3A1	Slaughter and processing: cattle, swine
Newsat Farms Phone: (250) 567-0112 18706 Langston Rd, Vanderhoof, BC V0J 3A1	Slaughter and processing: poultry, turkey
Bulkley Valley Custom Slaughter Phone: (250) 846-5168 13380 Lawson Road, Telkwa, BC V0J 2X2	Slaughter and processing: poultry, rabbit. Slaughter only: cattle, swine, sheep, goats.

Farmers Markets

There are many seasonal farmers markets in the RDBN:

Market	Operating season and hours	Location
Bulkley Valley Farmers' Market (Smithers)	Open Saturdays 8:30 am- 12:30pm from May to September. Winter market: Saturdays October- April.	Smithers Central Park
Burns Lake Community Market	Open Fridays- 9:00 am to 2:00 pm from July- August.	Heritage Centre
Fort St. James Farmers' market	Open Fridays - 11:30 pm to 4:00 pm from May through September.	Stuart Drive near Spirit Square
Fraser Lake Community Market	Open Fridays 12:00-4:00 from June to September.	30 Carrier Cres
Houston BC Farmers Market:	Open Thursdays 3:00-7:00pm from June to September.	Steelhead Park
Vanderhoof Farmers' Market	Open Thursdays - 10:00 am to 2:00 pm from June through September.	Ferland Park

2.5 Farm Type by Electoral Areas

Area A

Total number of farms = 182.

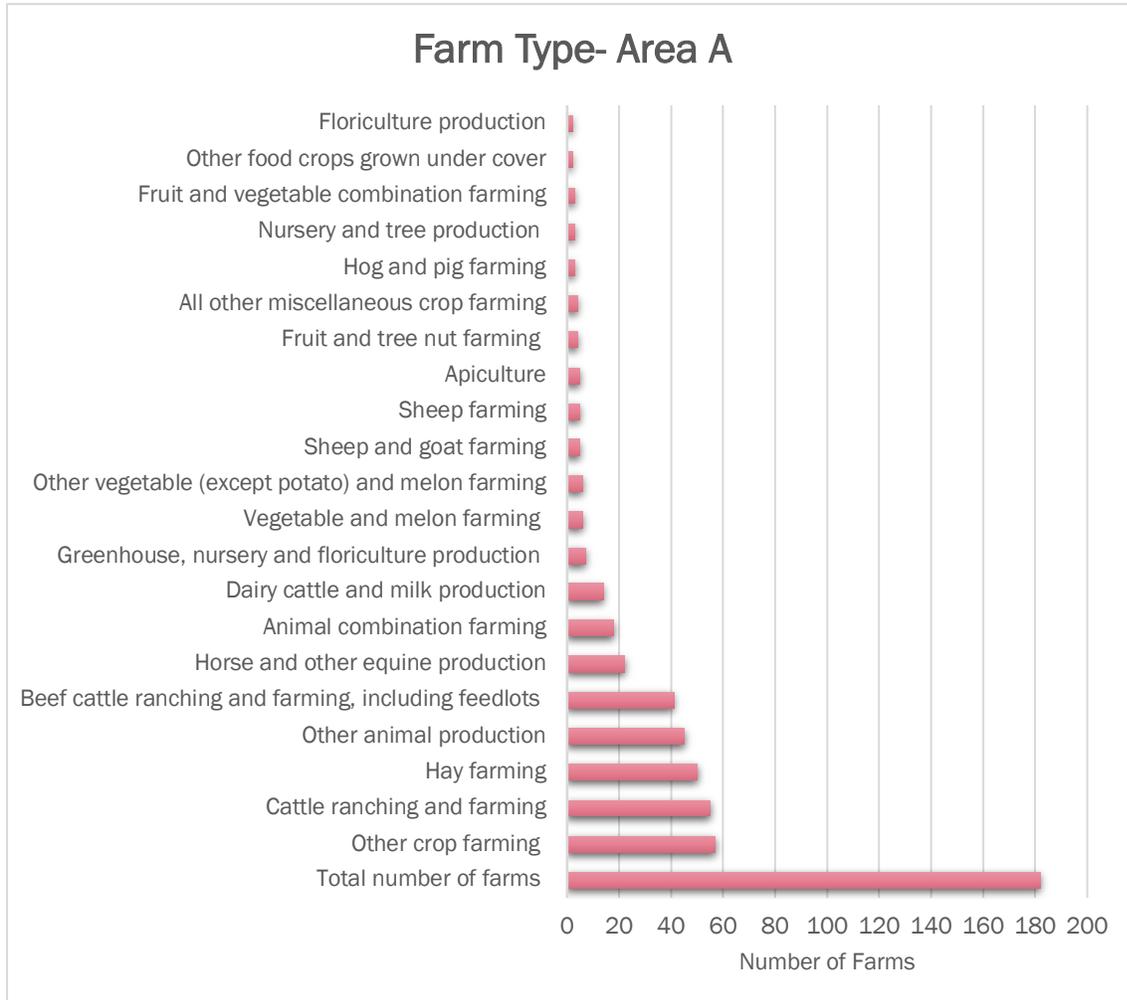


Figure 7: Area A Farm Type (Statistics Canada- 2016)

Area B

Total number of farms= 35

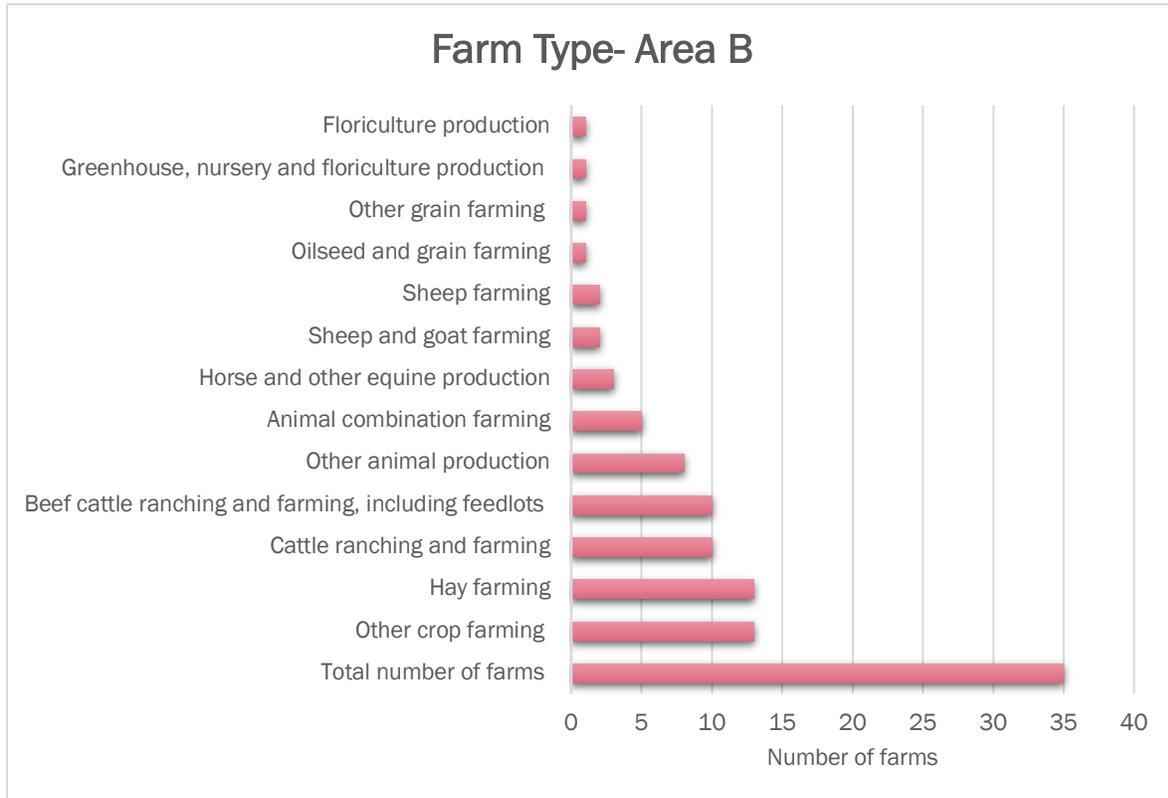


Figure 8: Farm Type area B (Statistics Canada- 2016)

Area C

Total number of farms = 32.

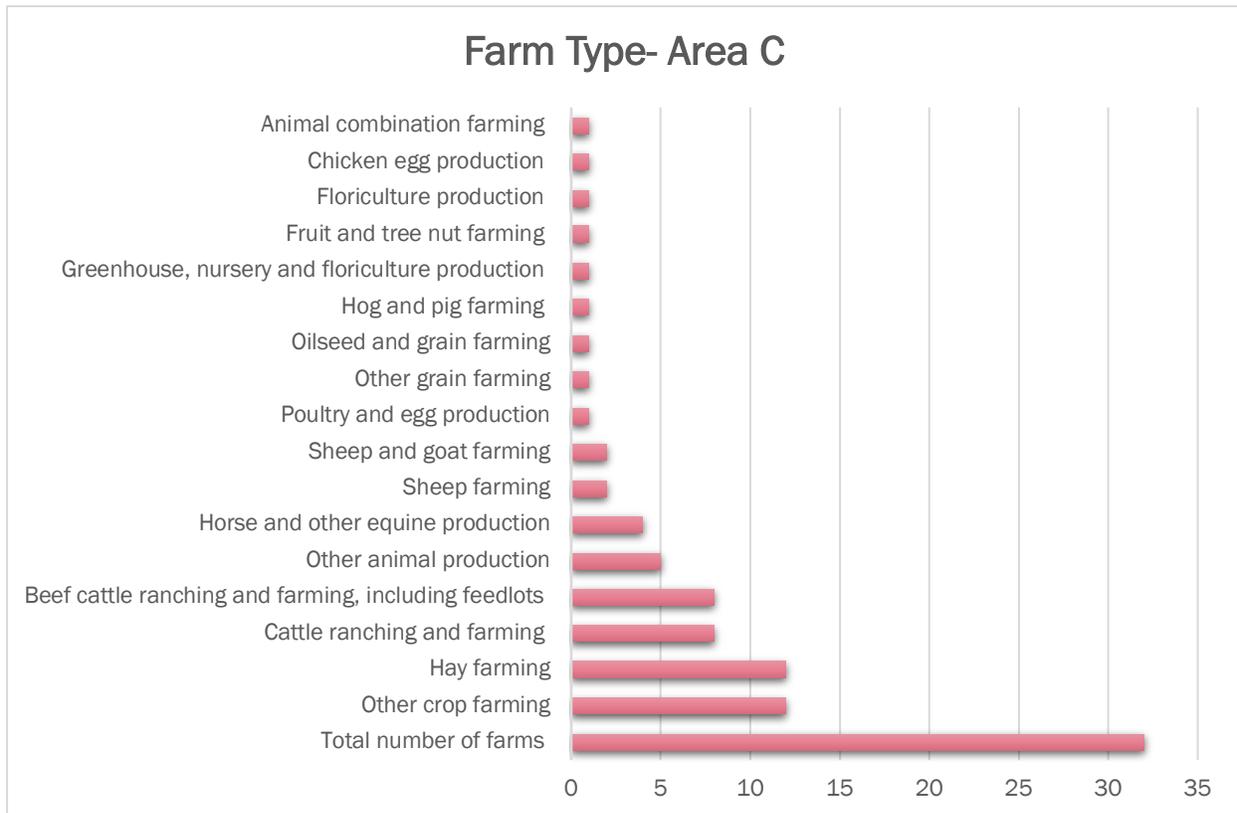


Figure 9: Farm Type Area C (Statistics Canada- 2016)

Area D

Total number of farms = 67.

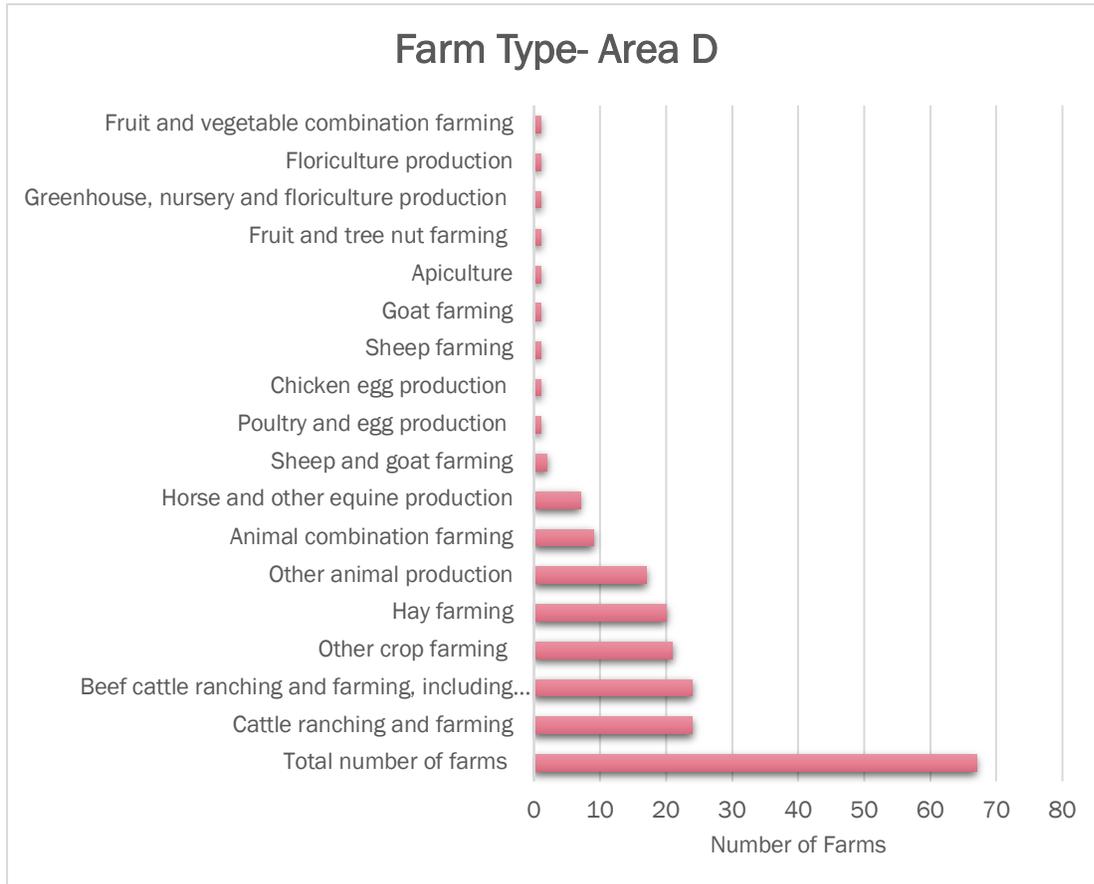


Figure 10: Farm Type (Statistics Canada- 2016)

Area E

Total number of farms = 77.

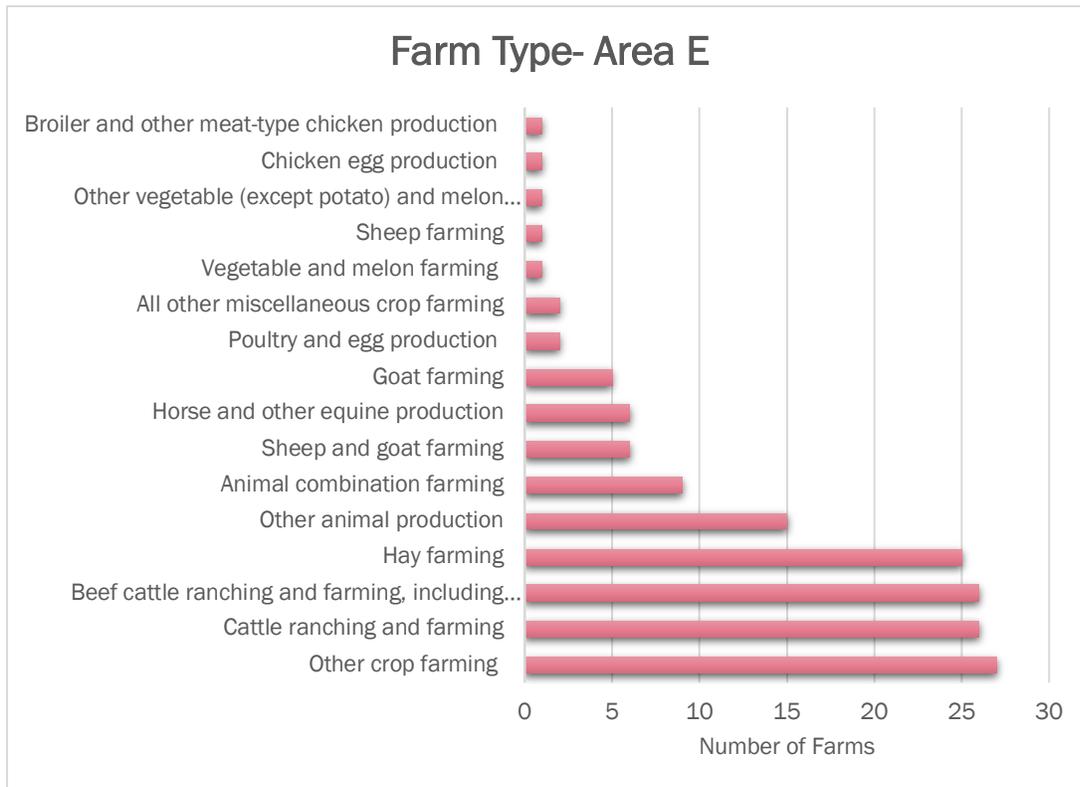


Figure 11:Area E Farm Type (Statistics Canada- 2016)

Area F

Total number of farms = 299.

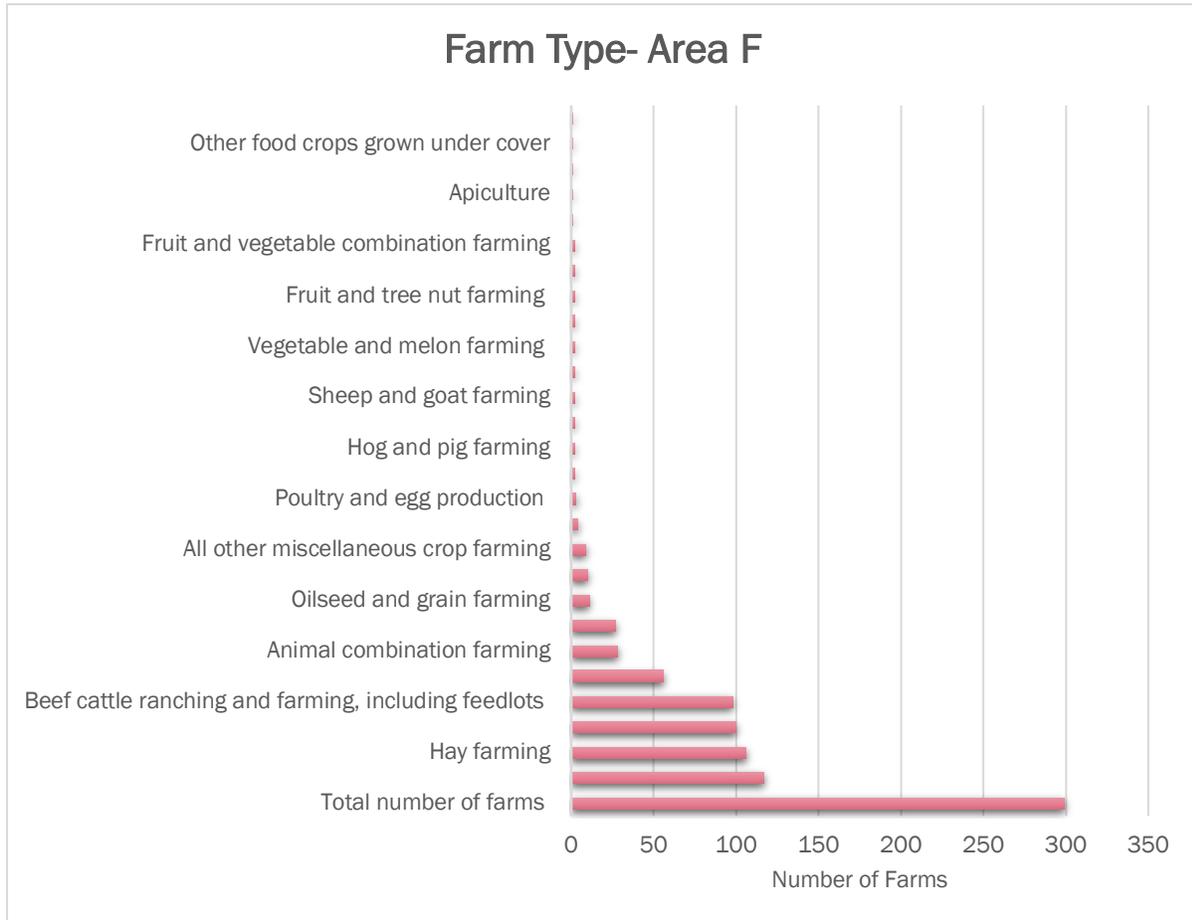


Figure 12: Area F Farm Type (Statistics Canada, 2016)

Area G

Total number of farms = 55.

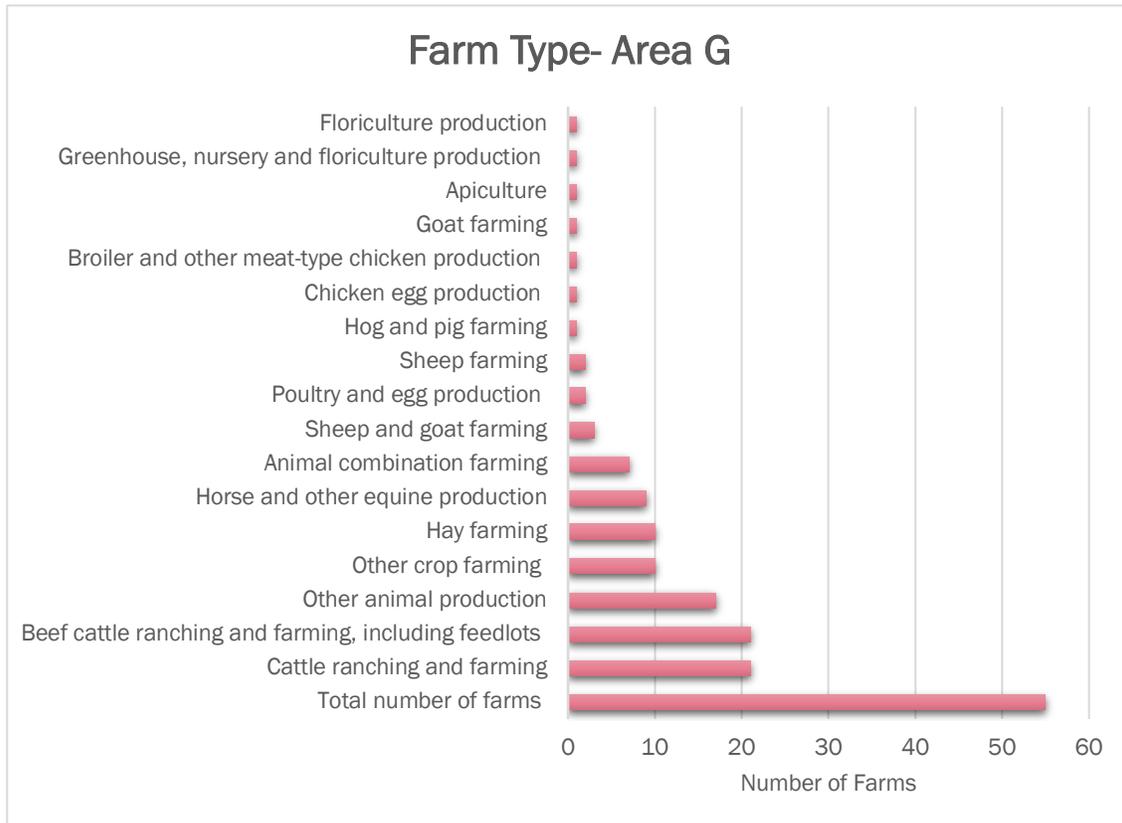


Figure 13: Area G Farm Type (Statistics Canada- 2016)

Part 3: Engagement Findings

3.1 Overview of Key Engagement Points

The project team used several forms of engagement to involve as many producers and consumers as possible in updating the RDBN Agriculture Plan. Key engagement points and methods include:

1. The consumer survey targeted household food buyers and was available on-line through the RDBN website as well as was made available in hard-copy form in farmers markets within the RDBN. Prizes of gift certificates for farmers markets and other local food sources were offered as an incentive to complete the survey. The consumer survey ran from June 28th to October 15th.
2. The producer survey targeted agriculture operators in the RDBN and was available on-line and the Food and Agriculture Working Group and RDBN Agriculture Coordinator promoted the survey through industry associations and word of mouth. The producer survey ran from August 21st to October 15th.
3. Interactive stakeholder workshops targeted producers from across the region and convened in-person meetings to review the 2012 Agriculture Plan and set directions for the Plan Update.
4. RDBN Staff workshop targeted staff to review the 2012 Agriculture Plan, identify gaps, and new focus areas for the Plan update.

This section summarizes the findings from each of these four engagement points.

3.2 Producer Survey Findings

Forty-four producers from around the region completed the survey. All but one respondent actively farms. An even spread of respondents came from large to small farms as indicated by on-farm income. Most respondents do not lease and do not wish to lease farmland (Figures 32 and 33).

Smithers	3
Telkwa	7
Quick	3
Houston	6
Decker Lake	1
Burns Lake	1
Southside	4
Endako	1
Fraser Lake	2
Fort Fraser	1
Fort St. James	2
Vanderhoof	13
Total	44

Producers don't currently and don't wish to lease land

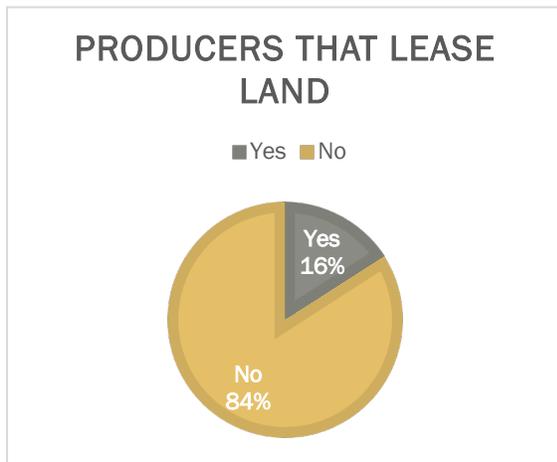


Figure 14: 84% of producers do not lease land

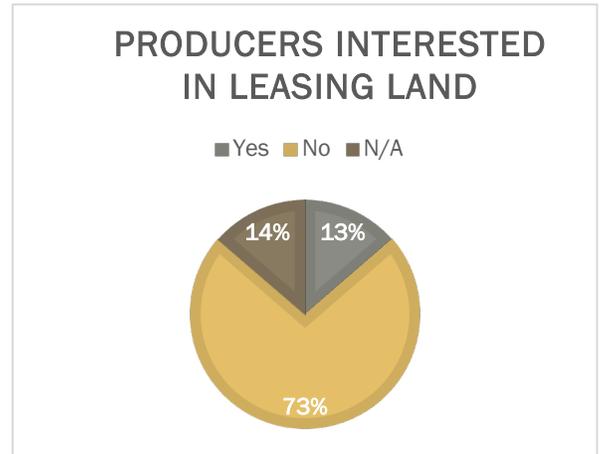


Figure 15: 73% of producers are not interested in leasing land

Beef continues to be the largest sector of RDBN agriculture

Figure 16 shows the range of products sold by survey respondent and Table 19 shows what producers find to be most profitable.

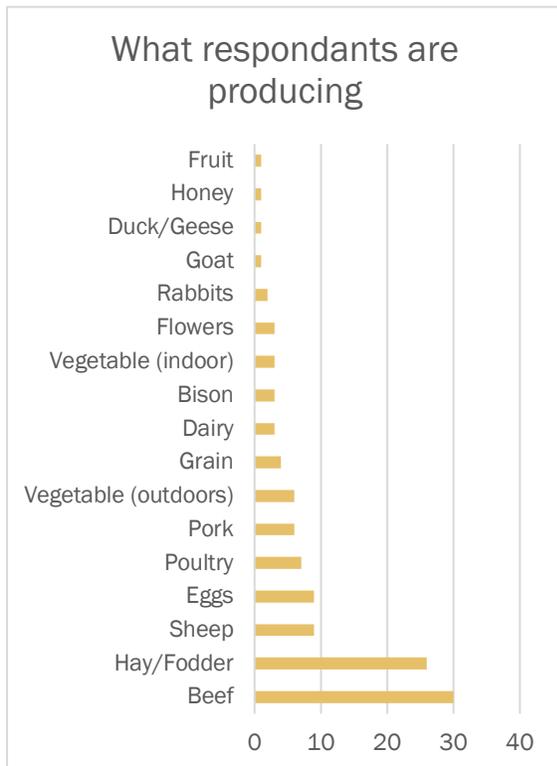


Figure 16: Products sold by survey respondents

Product	# of responses
Beef	17
Hay	9
Pork	3
Bison	3
Beef calves	2
Vegetables	2
Dairy	2
Timothy Hay	1
Lamb Meat	1
Wool Products	1
Alfalfa Hay	1
Malt Barley	1
Carrots	1
Beets	1
Garlic	1
Sheep	1
Eggs	1
Cow/Calf pair	1
Poultry	1
Registered Beef stock	1
Registered Goat stock	1
	52

Table 19: Beef is the most profitable product for most respondents (Producer survey)

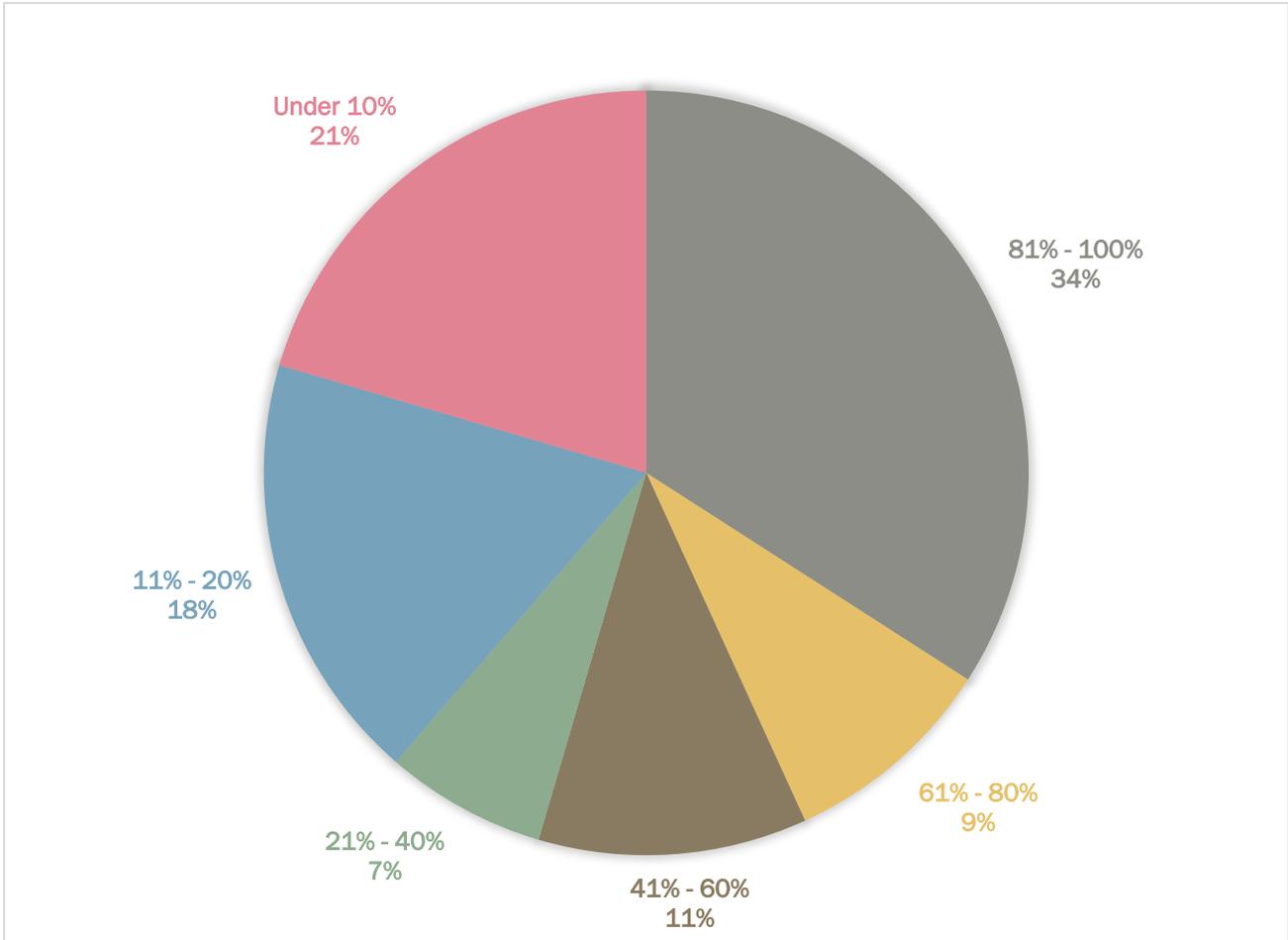
Most farms do not have on farm processing

Most respondents (80%) indicated that they did not have on-farm processing. Of those who do have on farm processing, there is a range of types, including cold storage (4 farms), frozen storage (3 farms), dry storage (2 farms), washing and bagging (3 farms), and commercial processing equipment (2 farms). There are single farms who have meat processing, honey spinner, grain storage and milling, forage compression, baling and labelling.

The majority of respondents earn their income from agriculture

Thirty four percent of respondents indicate that they receive 81-100% of their income from their farm operation (Figure 17).

Figure 17: Percent of farm income from agriculture (Producer Survey)



Fencing is the top farm support that respondents are interested in

Many respondents indicated interest in accessing various supports for agriculture in order to increase economics. Fencing, irrigation, and succession planning representing the top three needs.

Fencing	24
Irrigating forage land	16
Succession Planning	12
Processing Equipment & facilities	9
Training & Skill Building	9
Market Research & Growers Guides	7
Distribution Equipment & facilities	6



Additional suggestions for improving farm economics that respondents identified include:

- Marketing and facilitating access in overseas markets,
- Tiny farm hay equipment for under 30 acres,
- Produce washing and packing area plus farm stand.
- Technical support for increase organic matter to help with drought resistance including cover crop establishment, and no-till technology as well as pollinator strip establishment.
- Land clearing to increase land productivity.
- Finding farm labour

Producers face land, operational, marketing and infrastructure challenges

With respect to **land (L)**, invasive species, ALR regulations, soil quality and water supply were identified as the greatest challenges faced by producers. Additional challenges noted by individuals include cutworms and grasshoppers, weather, clearing land, wildlife damage, high cost to rate of return of range tenure.

With respect to farm **operations (O)**, profitability, government regulation, and lack of skilled labour were identified as the greatest challenges faced by producers. Succession planning, lack of farm knowledge, distribution and freight costs, lack of support or an association for large scale grain producers interested in soil & crop improvements, and lack of skilled labour were also noted as top operational challenges.

With respect to **infrastructure (I)**, fencing and construction costs, access to processing facilities, irrigation costs, equipment maintenance and access to broadband internet were noted as the greatest challenges faced by producers.

With respect to **marketing (M)**, direct access to markets and limited time available for marketing activities were noted as the top challenges facing producers.

With respect to new farmers, respondents noted that the primary challenges facing a new farmer as equipment and construction costs (n=41), land costs (n=33), farming knowledge (n=17) and agricultural consultation support (n=10).

			L=Land, O= Operational, I= Infrastructure, M=Marketing		
Fencing & Construction Costs	30	I	Lack of Skilled Labour	10	O
Profitability	29	O	Succession Planning	8	O
Distance to markets	29	M	Limited advertising budget	7	M
Government Regulation	26	O	Conflict with other land uses	6	L
Limited time for marketing	22	M	Lack of Availability	6	L
Invasive Species	20	L	Flooding	4	L
Restrict access to market	17	M	Access to Cold Storage Facilities	4	I
ALR Regulations	15	L	Lack of training/expertise	4	M
Soil Quality	15	L	Access to Power	3	I
Water Supply	15	L	Access to 3-Phase Power	3	I
Access to Processing Facilities	14	I	Road Access	3	I
Irrigation Costs	12	I	Zoning	2	L
Availability of Equipment Maintenance	11	I	Encroaching Development	2	L
Access to Broadband Internet	11	I	Water Quality	1	L
High Land Prices	10	L	Lack of Farming Knowledge	1	O

Table 20 Top challenges faced by producers responding to the survey

Word of mouth is the primary marketing strategy of most respondents

The most popular method of marketing regional products identified by survey respondents include word of mouth (n=38) and social media (n=20). Local producer directory (n=18), the internet (n=17), and Connecting Producers and Consumers guide (n=11) as well as farmers markets (n=7), and the BC livestock Coop (n=7) are also used, but are not as popular. Few respondents used roadside signage (n=4), local print media (n=3), community sponsorships (n=1), or radio (n=1) to promote their products.

Most of the producers responding to the survey indicate that they sell primarily within the region directly to the consumer (n=34). Products are also marketed outside of the region (n=21), at auction (n=18), farmers markets (n=7), local retail (n=7), and local restaurants (n=4).

"I would like to see a system that enables local food [sources] (Save-on Foods, Superstore & restaurants) to access locally grown beef and I don't mean local like Canadian, I mean local as from Burns Lake"

- Survey respondent

Assistance with regulations would most help producers

The top two supports that would most help producers responding to the survey are assistance with regulations and financial support programs for local producers (Figure 18). Forage testing, youth on farm programs, agrologist knowledgeable about irrigation and funding sources are additional supports identified by respondents.

With regard to education and training, survey respondents indicated topics of advanced farm practices and products (n=24) and government regulations (n=22) would be most helpful. Marketing, specific commodity workshops and succession planning were also noted as helpful. Specific topic ideas included financial planning as it related to downsizing and public education in terms of nutritional content and sustainable production of local products.

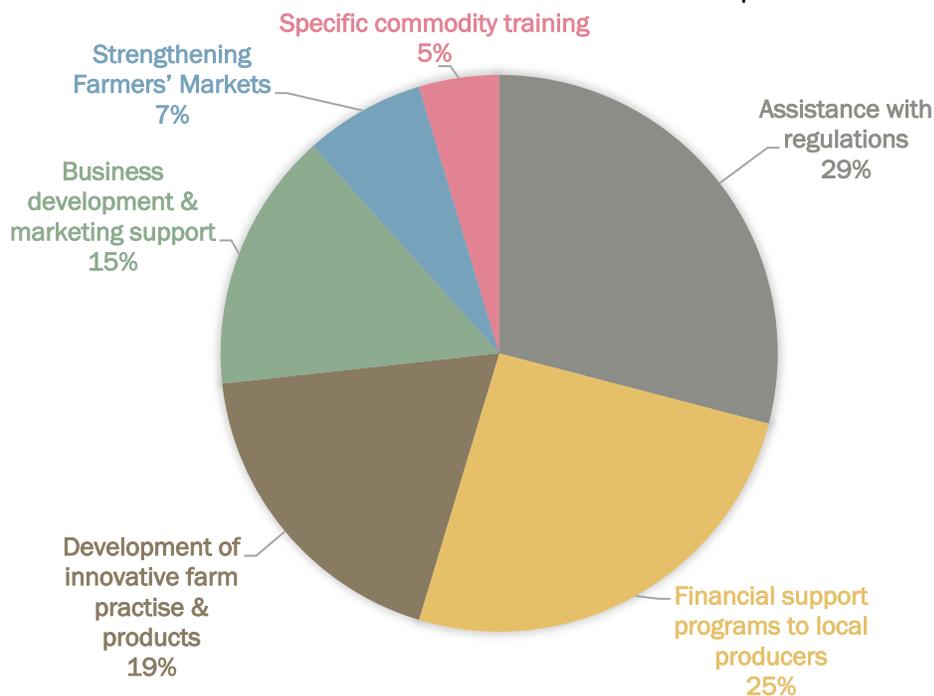


Figure 18: Resources that would most help support producers (Producer Survey)

There are diverse perspectives on what makes agriculture in the RDBN unique

- It's not unique but: what we do, we do it well, we have ability to feed ourselves from Prince Rupert to Prince George
- Has potential to be self sufficient
- Growing season Short but intense growing season
- Clean environment (for the most part), natural settings, "room to roam"
- Some areas with stone free soils good for growing a number of crops
- The physical surroundings and remoteness which is also the greatest challenge. Few people realize the diversity of agriculture and the herd size in this area.
- Our ability to produce quality beef and forage. The challenges of getting those products to market relative to the distance required.
- The Family farm still exists in the RDBN
- Diversity
- We have a pretty diverse agricultural community, with strong consumer demand for local products, which bodes particularly well for smaller scale intensive producers who are marketing through farmers markets or CSA's. Larger producers can often find market premiums from the high transport costs to truck things like feed and hay in from outside the region. There are also challenges that are unique to the region, as a grain grower distance to markets and a lack of infrastructure and grain industry support are challenges.
- People
- There is plenty of it, but we need to get our institutions on board, create local distribution opportunities to increase the ability of local producers to sell within the region
- Availability of land
- There are high numbers of senior farmers and ranchers who may be willing to lease their land to young producers in the near future. The value of productive land in this region is still low compared to similar productive land in other areas, but it is still difficult for young producers to purchase land without some form of government support.
- Breadbasket of BC
- There are a lot of small-scale producers. Most agriculture is livestock related, but there is capacity for more vegetable production if there is a market for it (something more ongoing like a retail outlet that carries local product).

"This is a very challenging climate and location to make a living farming. Farming must be subsidized by timber or outside money in order to start and to expand. I don't think there are many farms that have gone anywhere and actually became profitable businesses without timber subsidies in some form. The weather is often not cooperative and crop failure is common. This country is best suited to growing cows on the range and forage in the fields; that is not unique but mostly that's all this country is really good for."

- Survey respondent

- affordable land and water supply, accessible to intermodal in Prince George, the last stop of CN service before Prince Rupert for overseas market are fundamental reasons for Tophay to have foothold in RDBN in 2013 and keep expansion ever since.

There is lots of potential for the next generation of ranchers and farmers

- Diversity
 - Farm size
 - Farm type
- Consumer trends
 - The consumer desire to know where the food comes from and a greater desire to support and eat local food
 - local grown movement
 - being able to sell directly to the consumer
 - demand for locally grown food and forage
 - I would hope more farm to fork type business models would see success. There's not a lot of margin in farming, or anything these days, so cutting out the middle man or reducing reliance on them would be a positive thing. Support from the government on this would be paramount.
 - Increase the market share for locally produced and processed products, locally, regionally and provincially. Increase our food security nationally, provincially by requiring at least 40% of our basic foods that can be grown or produced in Canada be sourced in Canada.
 - Small farm gate enterprises with access and efficient transportation to larger markets - (potential to market surrounding cities)
 - Direct marketing, 3rd party farm certification and access to reasonable food transportation to larger markets.
- Restorative agriculture
 - Ecosystem based farming (soil building for nutrient dense food and forage as well as drought resistance), animal welfare farming (low stress = healthier animals = healthier people) and local processing (more local jobs and less transport = healthier planet)
 - Transparent farming practices;
 - Working with forestry to develop more access and cooperative programs to develop a healthy forest using livestock as an integral tool, use livestock as a wildfire management tool.

- Values
 - creativity and adaptability
 - Integrity in the food chain.
 - Creating trust in food production.
- Products
 - Vegetables & fruits
 - Always have potential to raise good beef cattle.
 - Beef
 - Might be potential for marketable speciality fruit or veggie crops there is irrigation water available in most areas of our region,
 - Hemp??
 - Changing Climate (Increase of frost-free days for different crops)
 - Greenhouses, tomatoes, peppers cucumbers, things that are hard to grow would be good sellers if greenhouses were implemented throughout the regions.
 - Specialty crops (haskap berries, hops, etc.)
- There is limited potential for the next generation
 - There is a distinct lack of potential as the next generation of young people can make far more money at almost any other job without the barriers to farming being put in by the current government. Our children say it is not profitable.
 - I really don't know, it cost a lot to farm unless you get handed down a farm or ranch. As a young farmer I find it hard to get going so that farming is my only income.
- Help and education
 - with the financial planning of setting up a farm. Be truthful about profit and loss when giving the younger generation the information. Also tell them that government bureaucracy will drive them crazy.
 - There is a lot of farming knowledge in the region. Education around self-sufficiency can be tapped into.
 - Partnerships and on farm mentorships. Many young people want to farm (intensive/small scale model).

I firmly believe that ag has the potential to become an economic powerhouse in the region, especially in my sector of grain and oilseed production. We are the best positioned farmers in Western Canada to access export markets through the Port of Prince Rupert. We will ALWAYS need local markets, and producers who are able to meet that demand, but we also NEED to see the bigger picture of how we grow the industry and effectively capture that export market. That's going to be key to unlocking the economic potential of agriculture in the RDBN

- Survey respondent

- Need to get Agricultural land into the hands of the next generation is there an opportunity to finance new farmers buying out retiring farmers?
- Farm financing and economics
 - the vast land and water supply in RDBN and the huge population in Northeastern Asia which translated into huge demand of food and agriculture products are the greatest potential for next generation of ranchers and farmers.
 - Innovative financing and leasing arrangements for younger producers along with a willingness to try new crops and production practices.
 - Low interest loans for young farmers.
 - Access to new markets e.g specialty markets; export markets;
 - Access to the port at Prince Rupert.
 - Technology to become more efficient

3.3 Consumer Survey Findings

One hundred and sixty people completed the consumer survey. The project team distributed the survey at farmers markets and grocery stores as well as promoted it through events and the District website. The online and paper copy survey ran from June 28 - October 25.

People from across the region completed the survey with the most responses coming from Smithers (n=34), Vanderhoof (n=24), Houston (n=22), Fort St. James (n=18), Burns Lake (n=15), and Fraser Lake (n=11). Responses also were collected from Granisle, Southside, Northside, Fort Fraser, Telkwa, Tl'zaten Nation, Decker Lake, Topley, Witsset First Nation, Evelyn, Rose Lake, Cluculz Lake and Nadleh First Nation.

People mostly shop at grocery chains

Frequently shop. Not surprisingly, the most common place to shop for groceries are grocery store chains (n=127). Twenty-five respondents indicated that they frequently shop at independent grocery stores. Five respondents indicated they buy directly from the farm on a frequent basis.

Sometimes shop. Sixty-four respondents indicated that they sometimes buy directly from farms and sixty indicated they sometimes shop at independent grocery stores. Respondents also indicated that they sometimes shop at bakeries (n=53), deli/specialty meat store (n=33), and grocery store chains (n=24).

This suggests that while most people shop at the grocery chains as their primary food purchasing, many people supplement these groceries with buying directly from producers and that regional products are an important secondary food source.

Many people are interested in purchasing a fresh box delivery

Out of 94 people who responded, 30% indicated they would spend \$20-30 on a weekly food box (Please refer to Figure 19). 22% of respondents indicated that they would spend \$10-20 and \$30-40 for a weekly food box. There also appears to be demand for the high end: 11% of respondents indicated they would be willing to pay \$50-60 for a weekly food box.



Figure 19: Consumer price point preferences for a food box service

People are interested in purchasing a wide range of local products.

Out of 1032 'votes' in a number of food categories, survey respondents indicated they are interested in purchasing a diversity, or bread basket, of regional products. Figure 20 illustrates the even demand for regional products across a range of food categories.

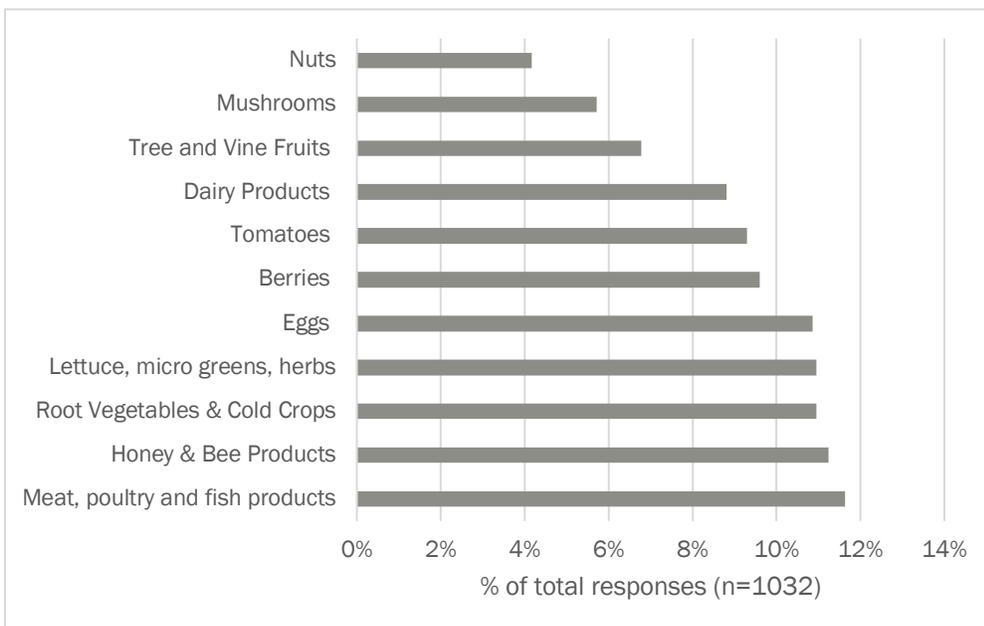


Figure 20: Local products respondents are most interested in purchasing

People associate many benefits with local food systems

Respondents were asked to rate the importance associated with local food systems in four main categories: increased food quality and freshness, responding to climate change, increased regional food security and growing the local economy.

The most important benefit of local food and agriculture systems is viewed to be increased food quality and freshness (n=110). Growing the food and agriculture economy is also considered an important benefit (n=61). Table 21 details respondents rating of benefits of local food and agriculture systems. The red text indicates the most common response to rating the importance of local food benefits.

Table 21: Responses to the benefits of local food and agriculture systems

Level of importance	No. of responses	Percentage of total
Increased food quality & freshness		
100%	110	69%
80%	25	16%
60%	20	13%
40%	5	3%
Total	160	
Responding to Climate Change		
100%	22	15%
80%	12	8%
60%	27	18%
40%	64	43%
20%	23	16%
Total	148	
Increased Regional Food Security		
100%	43	25%
80%	29	17%
60%	43	25%
40%	47	28%
20%	6	4%
0%	1	1%
Total	169	
Growing the local economy		
100%	61	39%
80%	50	32%
60%	30	19%
40%	13	8%
20%	1	1%
Total	155	

Other responses on the most important benefits associated with local food systems included

- Ethical treatment of livestock & supporting local farmers
- Helping out local businesses
- The animals are treated better & the produce is less processed/free unfavourable treatment
- Job security, personnel, quality

Freshness is the most important factor in choosing one food over another

Respondents were asked to indicate the most important factor in choosing one food over another. Overall, freshness is rated as the most important factor, with quality, price and locally produced being indicated as important. Organic and availability were rated the most important by a fewer number of respondents.

Table 22: Factors in choosing one product over another

Choice factor	No. of responses
Freshness	116
Quality	99
Price	83
Locally Produced	75
Organic	41
Availability	36
Total	450

Increased availability would encourage more people to buy local products

Out of 492 ‘votes’, 24% of respondents indicated availability as the top way to encourage more purchasing of local products. Increased convenience and affordability were also indicated by 20% and 17%, respectively.

3.4 Stakeholder Workshop Findings

Over October 8th, 9th, and 10th of 2019, the project team held three producer workshops in Telkwa, Vanderhoof, and Burns Lake, respectively. A total of 26 producers participated in the session. Most attendees primarily came from the beef sector with a few participants coming from the produce and other agriculture sector. The purpose of these workshops was convene food and agriculture people and businesses in the Regional District of Bulkley Nechako to test general plan directions, specific actions, and priorities for the 2020 Food and Agriculture Plan Update. Key themes in feedback included:

Farmers play many roles in addition to growing food

Participants noted that ranchers and farmers play many roles in addition to growing food but that few people understand let alone appreciate these services farms and farmers provide. For example, many farms provide habitat for a wide range of flora and fauna that contributes to regional biodiversity. Farmers are also on the front line of attempting to manage invasive plant and animal species, which provides value to the region as a whole.

Invasive and unwanted species are negatively impacting farm economics

In regards to invasive species the top species listed by workshop participants include: hawkweed, grasshoppers and cutworms. These invasive species are encroaching on farm and rangeland limiting the amount of forage available, sterilizing range land, and increasing management costs. Many noted a problematic relationship with CN rail who brings in invasive species on the outside of train cars. Trains were also noted as a primary source of wildlife fatalities, including moose, especially in the winter.

Invasive species in hydro and pipeline rights of way as well as along roadsides are allowing invasive species to spread more quickly and involve a patchwork of jurisdictions. Participants noted the need for more resources to support the existing efforts of the Northwest Invasive Species Council to implement a coordinated approach to eliminating and managing invasive species.

In regards to unwanted native species, participants noted that elk and bear are causing a range of on-farm problems ranging from herds being physically harmed. Invasive and unwanted native species, although presenting similar challenges to producers, require distinct policy and regulatory approaches.

Understanding and compliance with multiple levels of government regulations is unwieldy for many

Many workshop participants noted that federal and provincial regulations are creating a 'piling-on' effect that is challenging the core viability of farming. Some participants noted that navigating the many layers of regulation from different ministries or departments is a significant challenge alone. Many others noted the lack of communication and coordination between ministries and levels of senior government creates and undue burden on already overburdened agriculture operations. Specific to the recent changes to the Agricultural Land Reserve (Bills 52 and 15), participants noted the importance of adapting regulations to respond to regional differences (i.e. Northern more rural regions vs southern more urban

regions, e.g. don't have the same level of development pressure on farmland in the RDBN). The rules and regulations that are needed in the Fraser or Okanagan Valleys don't necessarily apply in the RDBN and be limiting. Specifically, fill, compost, and secondary housing were the top issues cited regarding the ALR. Water licensing and antibiotics for animals are also specific challenges and are described in more detail below.

Federal Vet Regulations conflicts with sound farm practice

Recent federal level changes to the vet regulations have changed how farmers can access antibiotics to treat livestock. In order to access antibiotics to treat sick animals, the farmer must submit to a farm inspection prior to a vet prescribing the appropriate medication. As noted by several participants, this leaves the animals untreated and sick for weeks after the problem was initially diagnosed. This can lead to a decline in overall herd health that is more difficult and expensive to remedy. In addition, animals are sick for longer, conflicting with what many consider the ethical treatment of animals (i.e. treating illness and disease as soon as possible to reduce pain and suffering).

A Class A or B abattoir is required to increase regional market access and farm economics

A Class A facility is currently being considered in Prince George. While many producers in the RDBN are interested in accessing this facility, many noted that additional Class A or B facility capacity is need in the region in order to market products regionally, provincially and beyond.

Succession planning is a moot point if agriculture is not viable for next generation

Participants noted that some farmers who were undertaking succession planning have stopped as they do not see how anyone can take over operations in the current climate for agriculture. Other farmers report that they are not developing succession plans. Some indicated that support for getting started and options for how to do this would be valuable.

Affordability and accessibility of farm inputs, including labour, is decreasing

Many participants noted the declining availability and affordability of hay, water and other farm inputs. Like many areas of BC, farmers are also struggling to secure a reliable labour pool to support year-round and seasonal farm operations.

There is interest in establishing a local food store and regional-to-provincial distribution systems

Many participants indicated interest in a local food store that would aggregate and retail/wholesale regional products to regional customers. Participants agreed that paying for this service would be acceptable providing it increased overall business economics.

There is interest in understanding potential of new markets and products

- Hemp grain for feed, hemp seed for human food
- Local produce and foods for institutions and restaurants in the region
- Biofuels
- Hemp, institutional and wholesale

A campaign promoting RDBN products would help to connect consumers and producers

Producers noted that the quality of the beef and other farm products in the RDBN is very high and aligned with consumer trends in free range and ethically raised animals. However, they feel that people living in towns and cities don't necessarily know about the quality of RDBN products. Being able to market these products to hungry urban populations will help to establish a regional market.

There is also interest in the RDBN hosting a connecting consumers and producers event that brings both food buyers (including chefs, restaurants, grocery store purchasers) and food producers together to form business agreements and relationships.

There is a great opportunity here to support local storage, education, and procurement but the risk to start as a private entity is high. [It] would be great to further support local non-profits to lead this charge.
- Survey respondent

Another idea for promotion is for the RDBN to investigate a funding envelope that grants to registered non-profits that are involved in local/regional food production and that target local/regional markets.

Specific promotion topics could also include but are not limited to:

- Promoting small scale farming on small acreages
- Promoting of agriculture to the younger generation

The draft general directions for the agriculture plan update are viewed as very or somewhat relevant

Workshop participants were asked to rate the draft general plan directions:

1. Climate change resiliency
2. Emergency preparedness
3. Consistency in land use
4. Market and sector development
5. Education and engagement
6. Preventing and managing invasive plants and animals
7. Affordable access to shavings and hay
8. Reducing agricultural waste in the landfill

Overall participants indicated that these general directions are somewhat or very relevant. In the few areas where a direction was indicated as not relevant reasons were provided: e.g. skepticism on climate change predictions and a lack of need for emergency preparedness were cited as reasons for ranking those directions as 'not relevant'.

3.5 RDBN Staff Workshop Findings

On September 10th, 2019 the project team held a staff workshop with eight RDBN staff that are involved in planning, environmental services, economic development, and District management. The purpose of this workshop was to update and engage RDBN staff in early stages of the food and agriculture plan update. Key themes in feedback include:

The 2012 Agriculture Plan contains some policies that are still relevant and worth keeping

Staff identified efforts around coordinating Official Community Plans and Zoning Bylaws that existed in the 2012 plan should be maintained.

The 2012 Agriculture Plan needs to be updated with current issues and opportunities

Staff identified several new initiatives and issues that the agriculture plan update must address. These include:

- A wildfire component that could include but is not limited to mitigation and adaptation strategies (e.g. grazing cattle on understory, planting trees on rangeland), emergency management, farm insurance workshop, overall communications systems for emergencies, and implementing fire smart emergency procedures.
- Update existing land use inventories to track change and trends over time.
- Coordination with Rio Tinto and other resource sectors to ensure effective management of water levels of natural waterbodies in areas where agriculture is occurring.

Invasive species are a significant issue for agriculture in the RDBN

Invasive species are recognized as a key challenge in the region. The significant impact on agriculture is understood. Staff indicated that the appropriate body to intervene on invasive species is the Northwest Invasive Plant Council (NIPC) that requires further resources to effectively eliminate and manage invasive plants. To this end, RDBN staff support an 'ask' for more funding for the NIPC. The scope of this organization may need to broaden to include invertebrates like grasshoppers and cutworms as well. In addition to roadsides (Ministry of Transportation), rangeland (Ministry of Forests), hydro rights of way (BC Hydro), RDBN staff also recognize pipelines as important invasive species suppression areas. With more access being created by pipelines and other sectors, invasive species are spreading further afield and must be considered. Even though elk and caribou are protected, not invasive species, they are also negatively impacting farms.

Development pressure to subdivide ALR parcels is occurring in areas close to urban centres

Small lot agriculture, largely in Area A, experiences more pressure for subdivision as compared to other more rural areas. As small lot agriculture is often more labour intensive the need to accommodate seasonal and permanent farm workers is an important consideration to the success of these farm operations.

Waste management of agriculture plastics, organics, and offals is a challenge

With a lack of local capacity to recycle agricultural plastics, much of this waste is being burned or ending up in the RDBN landfills. With the large volumes, this is increasingly becoming an issue in waste management. Staff noted that there is potential to recycle this plastic into fireproof fence posts, should the enterprise establish in RDBN to provide this service. Staff also noted that Alberta and Saskatchewan have agriculture plastic recycling services and programs.

The issue of mass carcass disposal was also raised as an issue. The RDBN is being asked by the Province to take on a role of identifying and managing mass grave sites in the event of a catastrophic die off event. With multiple jurisdictions involved with such an effort, the RDBN is hesitant to take on this responsibility. Other questions such as how to manage smaller herd-cull events, how industry needs to be prepared, and what else can be done to encourage on-farm composting systems for large and small animal disposal (e.g. composter and biodigesters). Staff also noted offals from abattoirs also need better management in order to eliminate wildlife attractants. Although there is not composting stream currently in RDBN landfills, it may be considered as part of a future composting plan, reflective of the RDBN Solid Waste Management Plan (SWMP).¹⁵ The SWMP addresses the issues of agricultural waste, as this stream is not accepted as Municipal solid waste as regulated by the Ministry of Environment.

Cost of hay and other farm inputs is an area of growing concern

RDBN staff reported that the cost of hay is a growing concern for farmers. New companies in the region producing compressed hay products for export are viewed favourably from an economic development. These companies can also be viewed unfavourably and are seen to be exporting a product that should be made available to domestic markets, especially when shortages are being reported. Staff noted that should the meat processing plant be established in Prince George, the demand for hay will only increase.

Forestation of agricultural lands

Staff noted that with the global efforts around carbon offsets, the pressure to forest agricultural land has been felt in the RDBN. For many, this is problematic as it removes agricultural land from agricultural production. This issue has been addressed in 2016 and the planting of trees on agricultural land has been halted. The entity owning the lands that have been forested have committed to ongoing monitoring and management of those lands (including managing invasive species).

Foreign ownership of agricultural lands

Staff noted that not all agree that foreign ownership of agricultural lands is an issue. However, some RDBN staff have identified foreign ownership of agricultural land in BC as a complex issue and a concern for many. For example, in the RDBN over 4395ha of land is owned by and

¹⁵ <https://www.rdbn.bc.ca/departments/environmental-services/solid-waste-management/waste-watchers/solid-waste-management-plan>

producing hay for export for another country (UBCM Briefing Note, 2017). BC is currently the only western province without any form of regulation when it comes to the amount of agricultural land foreign entities can purchase. Alberta only allows foreign ownership of up to 20 acres, Saskatchewan 10 acres and Manitoba 40 acres. These strict regulations in the 3 provinces create a funnel effect with foreign investments looking to BC.

Many local producers are experiencing hay shortages, scarcity, and increased cost. Some associate this challenge with foreign ownership and hay export. Other concerns involve ensuring enough agricultural land for new farmers who will be producing in the RDBN. Others however, see the hay export as well as part of economic development in the Region.

This topic was brought to the Union of BC Municipalities conference in 2017 with the purpose of opening dialogue on this complex issue.

Staff noted that further analysis of this issue is required to provide decision makers with a factual basis for acknowledging and potentially addressing this issue.

Understanding the value of the regional food and agriculture economy would be useful

Staff noted that with little known about the jobs and overall economic output created by not only primary agriculture but also other elements of the food value chain, or system, it is difficult for the RDBN to be strategic in determining what policy and other interventions could help to grow the food and agriculture economy in the RDBN.

Issues and opportunities around cannabis and hemp need to be better understood

With the legalization of Cannabis, many companies are starting up and looking for suitable growing areas. While indoor production is not likely to be competitive in the North due to increased costs associated with colder climates, outdoor production could be economically feasible. Hemp and processing hemp products is also on the frontier of emerging agricultural markets. Staff wish to better understand what this looks like and what the potential challenges/management strategies are for developing this sector.

Part 4: Summary of Key Challenges and Opportunities

4.1 Summary of Challenges and Opportunities

This section brings together research and engagement findings to summarize the key issues and opportunities that the RDBN Agriculture Plan update will address.

Key Challenges for Agriculture in the RDBN

Many producers are frustrated and are feeling pushed to the brink: Many producers feel pushed to the brink and associate this condition with the rising cost of inputs and overall farm economics, lack of access to and infrastructure for serving local/provincial markets and provincial and federal government regulations. There is strong alignment around the need for special consideration of the needs and realities of agriculture in the North.

The impacts of climate change are projected to increase variability and vulnerability of agriculture: Although many are skeptical of the temperature and precipitation changes projected for the RDBN, the recent Climate Action initiative study provides a strong case for support in terms of the need to consider climate change in agriculture planning. This also includes the need for more emergency preparedness in the event of extreme events (e.g. fire and flood).

The costs and sterilization of farm/ranch/range land associated with invasive and nuisance species are having a significant negative impact on agriculture: Invasive and nuisance plants, animals, and invertebrates are sterilizing a significant amount of range and farmland that results in hard costs for producers. Nuisance animals like Elk, are also negatively impacting herds and food supplies.

The lack of general awareness around regional food and agriculture inadvertently undercuts regional agriculture: The general population in the RDBN and beyond don't necessarily know and appreciate the diversity of agriculture occurring in the region. From school programs, clubs, and events for youth on agriculture to educating the average consumer on where to buy local products and the many values that farmers provide for the economy, culture, and ecosystem, a shift is required in the general understanding of farming.

The lack of farm labour limits potential for farms: Many farm operations require a combination of full and part time, year-round and seasonal farm labour. However, many farmers are challenged to establish a reliable labour pool to support their business.

The lack of regional food infrastructure hampers the growth of a regional food and agriculture economy: Although farmers markets provide a critical path for regional producers to connect to consumers, these markets are seasonal and often operating for only one day per week. Further, processing and distribution infrastructure could help businesses to scale-up and to target customers beyond the farmers market.

The ability of producers and the Region to grapple with new realities occurring at a fast pace requires more time and resources that are often not available: Topics such as climate change, reforestation of farmland, rapid increase in invasive species, changes to regulations, cannabis, foreign ownership of agricultural land, and new infrastructure projects, are occurring at an accelerated rate and the region is needing to play a larger role than was envisioned when regional levels of government were established in BC. Outdated or a lack of

information (e.g. maps showing waterways that are no longer there, lack of comparative data for land use inventories) compounds this challenge.

Agriculture plastics, organics, and offals in the landfill are causing waste management

problems: The increase in agriculture plastics and organics coming to RDBN landfills is not sustainable. Additionally, offals from meat processing as well as large and small animal carcass disposal requires additional intervention in order to eliminate these products from the landfills and other waste management areas.

Key Opportunities for Food and Agriculture in the RDBN

There are many areas that the RDBN can seize opportunities in. Based on the research and engagement findings, key opportunities include but are not limited to:

Continuing to encourage, support, and advocate for agriculture: Many of the challenges discovered through this process are in the jurisdiction of other levels of government. In these cases, there are a range of strategies that the RDBN already employs in order to address these issues. For example, helping producers and others to understand the changes to the rules and regulations while dispelling misinformation, is an important role the RDBN may continue to play. Another example includes advocating to senior levels of government, industry and others on topics that are outside of the jurisdiction of the RDBN, such as foreign ownership of agriculture land or permitting a Class A or B abattoir. Areas for advocacy will developed as part of next steps. There are also many challenges and opportunities that are within the RDBN's jurisdiction that will be further considered in the development of the plan.

Keep doing what the region is good at: The beef industry in the RDBN has a strong history and industry organization. Top quality meats are being sustainably raised with pride in the RDBN. Finding creative ways to build on these successes is a key opportunity.

Diversifying the agriculture sector into new markets and products: Small lot agriculture, market gardening, hemp and haskap are all identified as the top potential new market directions for the RDBN. Market research into new crops is required to determine the appropriate business strategies for developing these sectors. Emerging sectors such as Non-Timber Forest Products also require market research and partnership formation in order to develop.

Continuing to connect producers and consumers: Building on the success of the Connecting Producers and Consumers Guide, there is a key opportunity for the RDBN to continue to promote, convene, host, and facilitate connecting consumers and producers. This could take multiple forms and involve multi-media such as print, website, radio, and events. Determining the feasibility of a local food store and food box program are additional opportunities for the RDBN.

Activating research and programs with Northern partners: There is untapped potential for the RDBN to work with Northern Development Initiative Trust in developing information, programs, and on-the-ground capacity to grow the regional food and agriculture sector. Further understanding the impact and contribution that agriculture makes in our region as well as current trends and economic opportunities in agriculture are also common research

and engagement interests. Other areas of interest may include RDBN partnering with, or financial support to, organizations involved in: farmer succession planning or education; targeting skilled agriculture business people from other areas of the country and supporting their relocation to our region; and supporting programs targeting new farmers.

Preparing for emergencies: Building on successes and lessons learned from past years, continue to build the RDBN capacity to establish and manage effective emergency operating centres and protocols as well as work with private land owners to prepare for emergencies.

Developing traditional and new food and agriculture sectors in the RDBN: Identifying and connecting producers with the existing supports, incentives, programs etc. as well as identifying gaps that the RDBN or other partners could fill is a key opportunity for accelerating sector-wide growth in food and farming businesses.

Increasing the region's food security: Consumers in the RDBN rely on a network for food distribution. A variety of food can be sourced locally. The region is moderately food self-sufficient, as additional food must be transported into the region. The region is connected to the rest of BC via Highway 16, with the communities of Fort St. James and Granisle also relying on Highways 27 and 118, which connect them to the Highway 16 transportation corridor. A disruption of the provincial food network and/or closure of our highways would create a food crisis. Communities within the region have the potential to increase food-security by utilizing local producers and technology.

4.2 Next steps

This Agriculture Plan Foundations Report has presented the planning context, research and engagement findings, and the synthesis of challenges, opportunities, and key plan directions to inform plan development.

Next steps for the RDBN Agriculture Plan update include engaging the FAWG, drafting the food and agriculture plan, presenting to the RDBN Agriculture Advisory, and submitting the final document to the RDBN Board of Directors for approval.

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Appendices

A: Draft Updated Zoning bylaw (Preliminary Draft)

(RDBN, 2019b)

SECTION 16.0 - AGRICULTURAL ZONE (AG1)

16.0.1 Permitted Uses

1. Principal Uses

1. a) Agriculture
2. b) Farmers' Market
3. c) Guest Ranch
4. d) Intensive Agriculture
5. e) Kennel, Large
6. f) Portable Sawmill
7. g) Primitive Campground
8. h) Single Family Dwelling
9. i) Two Family Dwelling
10. j) Veterinary Clinic
11. k) Notwithstanding Section 16.0.1(1), a maximum of 3 Guest Cabins, 1 Resort Lodge and a Primitive Campsite are permitted on the land legally described as Parcel A of the Fractional NW 1/4 of Section 7, Township 2A, Range 5, Coast District, Plan 9922

2. 16.0.2 Density

1. Not more than two Single Family Dwellings or one Two Family Dwelling shall be located on a Parcel.
2. The combined maximum number of sites for Camping Vehicles or tents in a Primitive Campground is 10 per hectare.

3. 16.0.3 Parcel Area

1. 1. The minimum Parcel area that may be created by subdivision is 16 hectares (39.5 acres).

16.0.4 Setback

1. No Structure or part thereof, shall be located within 7.5 metres (24.60 feet) of any Parcel Line.
2. No Building or portion thereof used for Intensive Agriculture shall be located within:
 1. a) 60 metres (196.85 feet) of a Parcel line;
 - b) 30 metres (98.42 feet) of a domestic well, spring or the Natural Boundary of a lake or Watercourse.