



Photo: Cheryl Uphill

Regional Snapshot Series: Agriculture Agricultural Economy in the Fraser Valley Regional District



Image courtesy: Chinook Economic Partners Corp



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The Fraser Valley Regional District is comprised of 6 member municipalities and 8 electoral areas.

City of Abbotsford, City of Chilliwack, District of Mission, District of Hope, District of Kent, Village of Harrison Hot Springs and Electoral Areas A, B, C, D, E, F, G and H.



A NOTE ON CENSUS DATA LIMITATIONS

Although every effort has been made in the preparation of the Regional Snapshot Series to present the most up-to-date information, the most recent available Census data is from 2016.

CHOICES FOR OUR FUTURE: our Regional Growth Strategy

Though occupying a relatively small geographic area, agriculture forms a significant component of the Region's economy, producing 39% of provincial gross farm receipts in 2015.

Given the importance of agriculture, *Choices for Our Future*, the FVRD's Regional Growth Strategy adopted in 2004, recognizes that population growth has exerted considerable pressures on agricultural lands and that future growth must not negatively impact the agriculture sector.

"...Foster economic growth in the agricultural sector..."
– *Choices for our Future*

A REGION DEFINED BY AGRICULTURE TODAY AND INTO THE FUTURE

Agriculture: A 21st century industry

The Fraser Valley Regional District (FVRD) is comprised of six member municipalities and eight electoral areas and features a variety of diverse communities, from small rural hamlets to the fifth largest city in British Columbia. The FVRD is one of the most intensively farmed areas in Canada, generating the largest annual farm receipts of any regional district in British Columbia. Notwithstanding the rapid population growth of the region, agriculture has flourished and remains a crucial component of the region's economy.

Proximity to large markets in combination with high quality soils, favourable climate and accessible water as well as the diversity of the sector and proximity to educational and research institutions makes the Fraser Valley Regional District a centre for agricultural production and innovation today and into the future.

Although the region is home to a diverse range of large and small farms, agriculture in the Region is big business conducted in a highly sophisticated manner requiring substantial capital investment. Agriculture's influence goes far beyond the farm gate. As a primary industry, the production of food and other agricultural products not only provides inputs to other sectors of the economy, but is also a significant consumer of goods and services. A strong agricultural economy is essential for the regional and lower mainland economy as a whole and efforts to protect and enhance this sector should remain a key focus of regional policy going forward.

Fraser Valley Regional District and surrounding area



Image: ESRI, i-cubed, USDA FSA, USGS, AEX, GeoEye, AeroGRID, Getmapping, IGP, FVRD

COMPETITIVE ADVANTAGE

A COMBINATION OF FACTORS

High quality soils, a moderate climate, water and access to markets

Soils in the Fraser Valley are some of the richest in the country supporting a broad range of vegetables, field and cereal crops, small fruits, nursery products, sod, pasture and other crops.

Climate in the primary agricultural areas of the FVRD is characterized by mild winters, warm summers and a narrow range of temperatures that only occasionally drop below zero. As a result, the region has one of the longest frost-free periods in Canada, making it one of the best agricultural areas in the country.

Summers are generally mild, although the marine influence which moderates summer temperatures along the coast does not extend far inland. The average July maximum temperature of 24.4°C in the Chilliwack and Abbotsford area is higher than that at Vancouver International Airport, which has a July average maximum temperature of 22°C, although the differences on a daily basis can be significantly greater.

The region experiences approximately 1,700 mm of precipitation a year, with approximately 1,400 mm falling between October and April. Although heavy winter rains can create challenges, they recharge the region's aquifers that are tapped for irrigation purposes during the dry summer months.

Proximity to markets

The combination of good soils, moderate climate and access to water within close proximity to a local market of over 2.5 million people today and one that will become a market of almost 3.6 million by 2041, provides both challenges and opportunities for agriculture in the region.

Increasingly, Lower Mainland consumers are becoming aware of the bounty at their doorstep and are making choices at local supermarkets with respect to where their food comes from. Close proximity to markets can reduce shipping costs for the agricultural sector, therefore encouraging a healthy local food processing industry so that it can continue to process foods produced in this region in the future should be a priority for local, regional and provincial decision makers.

The Fraser Valley's close proximity to the Metro Vancouver market and highly developed air, rail and port facilities provides opportunities for the region's agriculture industry to further develop potential export markets. Data on markets for FVRD farm goods is not readily available. However, provincially, agriculture/aquaculture exports have remained relatively constant over the years, making up 10.6% of BC's total exports in 2015. With trade barriers lowering, Fraser Valley products are finding their way to other parts of Canada, the United States, Asia, Europe and other parts of the world.

British Columbians still must rely on food imports. Some commodities are produced in BC for export and are replaced by cheaper foreign imports. For example B.C. produces high quality greenhouse tomatoes that are sold to the U.S. while at the same time it imports less expensive field tomatoes from California (BC Ministry of Agriculture and Lands, *BC's Food Self Reliance*, 2006). The *BC's Food Self Reliance* report states that BC Farmers produce 48% of all foods consumed in BC meaning that, given the seasonality of food production and climate limitations, food imports will remain a necessity. However, food imports can be subject to external influences such as political unrest, increasing energy costs, flooding/drought, disease, trade disputes and other issues that can disrupt access to food. For this reason it is important for the lower mainland to maintain a level of food self reliance to act as a buffer against unanticipated disruptions.



What is Agricultural Land?

Although 5% of the province's land base is considered capable for agriculture, not all land is created equally and there is significant variability in terms of the ability of land to support the production of diverse agricultural products.

According to the Provincial Agricultural Land Commission, "...the main limiting factors in British Columbia are climate and topography. Climate determines the heat energy and moisture inputs required for agricultural production. Topographic limitations mostly restrict the ability to use cultivation equipment. Soils with all their variability are also a key limiting factor. Depending upon their properties and characteristics they may be appropriate for sustaining the production of certain agricultural products, but not others." www.alc.gov.bc.ca/ALR/What_is_Ag_Land.htm

Although agriculture takes place in other parts of the province, the environment, soils and topography in the Fraser Valley enable the production of a wide variety of agricultural goods that cannot occur anywhere else in the province. This makes the quality of land in the FVRD important in both a provincial and national context



ECONOMICS OF AGRICULTURE

A NATIONAL PERSPECTIVE

Agriculture plays an important economic function nationally and provincially.

Agriculture and the agri-food sectors contribute significantly to Gross Domestic Product (GDP) and employment at both national and provincial levels. Although primary agriculture alone accounts for a small share of the total economy, the agri-food system, that depends on primary agriculture for inputs, is far more influential. Indeed, according to the Government of Canada, the food and beverage processing industry was the most important manufacturing sector in Canada in 2014, accounting for 16.0% of the total manufacturing sector GDP. (Agriculture and Agri-food Canada, *An Overview of the Canadian Agriculture and Agri-Food System*, April 2016 pg. xiii)

The food and beverage processing industry, which consumes almost half of Canada's agricultural output, is one of the most important manufacturing sectors in Canada. During 2008-09, the food and beverage processing industry became Canada's largest manufacturing activity, which has held true over the past six years. The value of food and beverage shipments has increased to \$103.4 billion in 2014 (from \$78 billion in 2009). Meat and dairy processing together account for 42% of the real value of food and beverage shipments, which has remained steady (approximately \$43.5 billion). (pg. 69)

There is a tendency to view farming as merely the growing of food and pastoral landscapes. The reality is that growing food or other agricultural products is only one part of a much larger supply chain in which the farmer is both a consumer and producer of goods and services. According to Agriculture and Agri-Food Canada, nation-wide, producers spent a record \$50.2 billion in operating expenses which flowed back into the broader economy. In 2014, it was estimated that the agriculture and agri-food system accounted for over 13% of BC's employment. (pg. 29)

Provincial context

British Columbia does not have the extent of agricultural lands found in other parts of Canada, with only 5% of BC's total land area, or 4.4 million hectares, capable for agriculture. Nevertheless, British Columbia's agriculture/aquaculture food system collectively generated \$12.3 billion in consumer sales and 320,000 jobs in 2014.

Canadian Agri-Food System:

The Canadian agriculture and agri-food system accounted for 6.6% of total Canadian Gross Domestic Product (GDP) in 2015. (p. 7)

The Canadian agriculture and agri-food system provided one in eight jobs in 2015, employing over 2.3 million people. (p. 28)

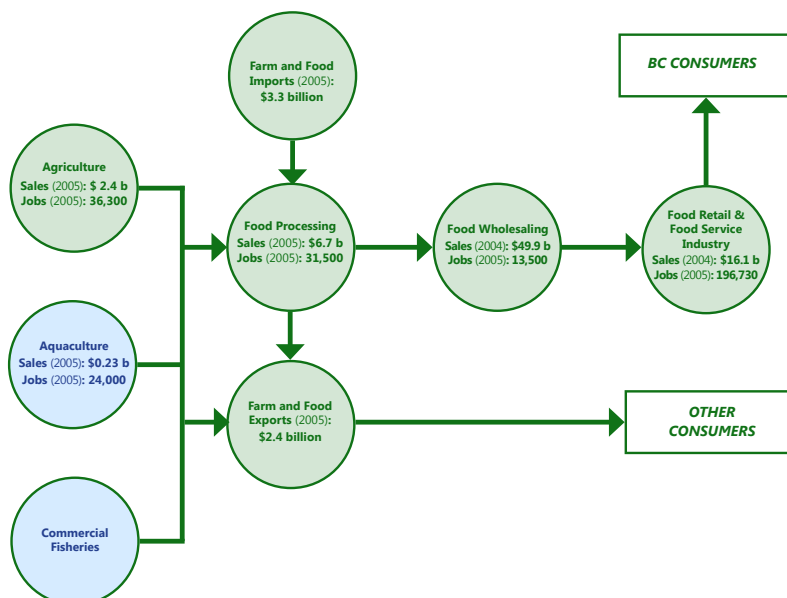
The U.S. is Canada's largest export market, accounting for 51.4% of the value of all exports. Three main commodity groups accounted for over two-thirds of all exports: Grains and Grain Products (25.8%), Oilseeds & Oilseed Products (23.2%), and Live Animals, Red Meat, & Other Animal Products (19.3%). (p. 7)

Record high cattle and hog prices, as well as relatively high grain and oilseed prices, have supported high farm market receipts in recent years.

According to a 2010 study commissioned by Agriculture and Agri-food Canada, the main reason given for looking to purchase locally-produced food was to support the local economy. (p. 62)

(Agriculture and Agri-food Canada, *An Overview of the Canadian Agriculture and Agri-Food System*, April 2016)

Estimated Economic Impact of the BC Agri-food System



Source: BC Ministry of Agriculture *Fast Stats, Agriculture, Aquaculture & Food*, 2006

ECONOMICS OF AGRICULTURE

FVRD IN A PROVINCIAL CONTEXT

Fraser Valley ranks #1 in BC based on gross farm receipts

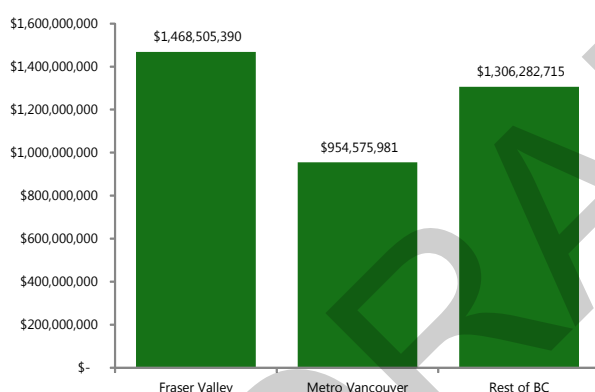
British Columbia ranks number three or higher in Canada in relation to a wide range of products, many of which are produced in the Lower Mainland. Collectively, the FVRD and Metro Vancouver generate 65% of provincial gross farm receipts for a total of \$2.4 billion. In 2015, the FVRD generated 39% of total provincial gross farm receipts and was responsible for 44% of the total provincial increase from 2010 to 2015.

Gross farm receipts reflect only one aspect of the economic impact of agriculture in the FVRD. Farm operators are significant consumers of goods and services, which are embodied in agriculture's operating expenses. In 2015, total farm operating expenses totalled \$1.2 billion, much of which flowed back into the local economy.

The broader agricultural economy, which includes food processors, transporters, wholesalers, retailers and other food services industries adds yet another level of economic activity.

Provincial Gross Farm Receipts (2015)

Source: Statistics Canada, 2016 Census of Agriculture



FVRD Farm Business Operating Expenses (2010 and 2015)

	Dollar Amount
Total farm business operating expenses (2015)	\$1,222,076,351
Total farm business operating expenses (2010)	\$950,128,254
Breakdown of Selected Components (2010)*	Percentage
Total feed, supplement and hay purchases	23.4%
Total wages and salaries	18.2%
Livestock and poultry purchases	13.4%
Custom work, contract work and hired trucking	3.8%
All fuel expenses (diesel, gasoline, natural gas etc.)	3.7%
Seed and plant purchases (excluding material purchased for resale)	3.4%
Fertilizer and lime purchases	3.2%
Repairs and maintenance to farm machinery, equipment and vehicles	2.7%
Electricity, telephone and all other telecommunications services	2.2%
Repairs and maintenance to farm buildings and fences	1.7%
Rental and leasing of land and buildings	1.5%
Veterinary services, drugs, semen, breeding fees, etc.	1.5%
Purchases of herbicides, insecticides, fungicides, etc.	0.9%
Rental and leasing of farm machinery, equipment and vehicles	0.3%

* Detail has been terminated in the 2016 Census of Agriculture. 2010 detail data is included to give context.

Source: Statistics Canada, 2011 Census of Agriculture & 2016 Census of Agriculture

BC in National Rankings by Commodity

Blueberries	1
Cranberries	1
Raspberries	1
Appricots	1
Sweet Cherries	1
Grapes	2
Floriculture	2
Nursery Products	2
Tomatoes, greenhouse	2
Sweet Peppers, greenhouse	2
Mushrooms	2
Apples	3
Cucumbers, greenhouse	2
Dairy Products	3
Hens and Chickens	3
Eggs	3
Turkeys	3
Canola	4
Cattle	6
Hogs	6
Potatoes	7

Source: Statistics Canada, Census of Agriculture and BC Ministry of Agriculture *Fast Stats, Agriculture, Aquaculture & Food*, 2014

BC Dairy, Egg, and Poultry Industries

BC Dairy, Egg, and Poultry Industries (BCDEPI) represents the supply managed commodities that play an important role in both the FVRD's and province's economy.

A 2011 PwC* analysis of the provincial economic impact of the BCDEPI value chain found that it "...impacts the BC economy through direct expenditures on goods and services, the employment of workers and the generation of tax revenues for local, provincial and federal governments." (pg. 1)

"...Total value added generated by the BCDEPI value chain in British Columbia is estimated to be \$1.6 billion. It is estimated that the BCDEPI value chain generates employment of 31,726 FTEs with associated salaries and wages of \$917.8 million, a 3% reduction from 2009." (pg. 1)

"...Employment in the BCDEPI value chain was slightly larger than the mining, quarrying, and oil and gas extraction industry at 24,700 employed." (pg. 1)

* PwC - PricewaterhouseCoopers

Source: BC Dairy, Egg, and Poultry Industries (BCDEPI), *Economic impact of British Columbia's dairy, chicken, turkey, hatching egg and table egg industries – 2011 update*, PwC 2013



Food Processing

An estimated 55% of all food processing firms in British Columbia are located in the Lower Mainland. According to the 2011 British Columbia Manufacturers' directory, there are more than 50 food and beverage businesses in the FVRD, with the largest employing over 200 workers. Major food related manufacturers in the region include: Lucerne Foods Ltd, Canadian Inovatec, Abbotsford Growers Co-operative, Fraser Valley Duck and Goose, Johnston Packers and Fraser Valley Meats.

Small-scale food processing facilities also have a role to play. The development of smaller food processing facilities in recent years reflects a trend of farm enterprises incorporating small food processing facilities and retail outlets into their business. This trend is taking advantage of increasing consumer interest in organic produce and demands for locally produced foods.

External competition, achieving economies of scale, labour costs and supply and ensuring a long-term supply of agricultural inputs are on-going challenges facing the food processing industry.



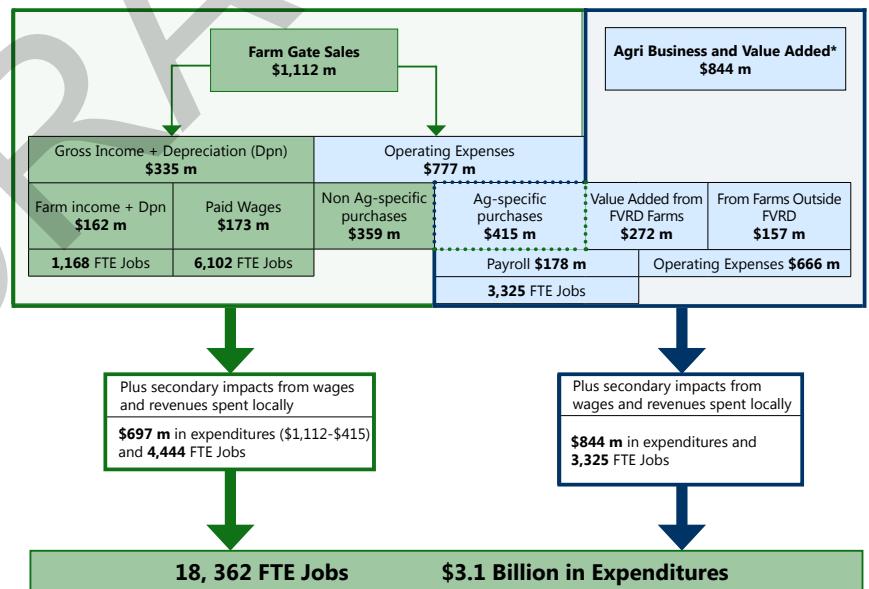
ECONOMICS OF AGRICULTURE REGIONAL CONTEXT

Agriculture is the foundation of the Region's economy

The importance of the broader agri-industrial and agri-food system to the Region as a whole can be difficult to determine, given that agricultural enterprises in the region do business throughout the Lower Mainland and beyond. For example, food processing plants in Abbotsford may process products grown in Delta or the Township of Langley. This interdependence points to the importance of protecting the viability of agriculture throughout the Lower Mainland, not just in the FVRD.

In 2015, the FVRD commissioned a study assessing the potential impacts of freshet flooding on Fraser Valley agriculture, as well as options for resilience. Using 2011 census data, this study generated an estimate for the economic impact of agriculture in the FVRD, the results of which are presented below. As shown, agriculture drives \$3.1 billion in annual economic activity and supports 18,000 Full Time Employment (FTE) jobs. Farm based production within the FVRD accounted for 11,700 FTE job and \$1.4 billion in expenditures. The value added sector provided and additional 3,300 FTE jobs and \$1.69 billion in expenditures. Farms outside the FVRD support 18% of the agri-industrial and value-added sector. Within the FVRD, Abbotsford is a key node for food processing and other agriculture activities. Based on previous studies, it can be estimated that around 70% of the region's agri-industrial and value-added economic activity comes out of Abbotsford, roughly \$2.2 billion.

Estimated Economic Impact of Agriculture in the FVRD



Source: NHC, 2016. Data from Stats Can 2011 Census of Agriculture

The other benefit of agriculture to the Region's economy is its relative stability. Over the economic ups and downs, agriculture has held its own. As discussed earlier in a national context, the agriculture sector in the FVRD has stayed relatively stable at a time when more economically sensitive sectors, such as construction and related manufacturing sectors, have faltered.

This is not to say that the agriculture sector is not facing significant economic challenges. As discussed elsewhere, the industry is facing challenges that need to be addressed in such a way that preserves and strengthens the viability of agriculture in the FVRD and the Lower Mainland as a whole.

AGRICULTURAL LAND RESERVE

PRESERVING AND PROTECTING A VALUABLE RESOURCE

The ALR has been a critical growth management tool in the Lower Mainland

Protecting agricultural land, and the productivity that such lands represent, is essential for not only maintaining, but growing the region's agricultural economy. The Region recognizes that 21st century agriculture carries exciting opportunities in terms of technology and innovation and that we are well positioned to capitalize on what is the competitive advantage of a strong and diverse agricultural economy.

The Agricultural Land Reserve (ALR) was established between 1974 and 1976 with the purpose of protecting British Columbia's agricultural land base. Although the ALR makes up only 5.1% of the Region's 14,000 sq kilometres, this small land base supports one of the most diverse and productive agricultural areas in Canada.

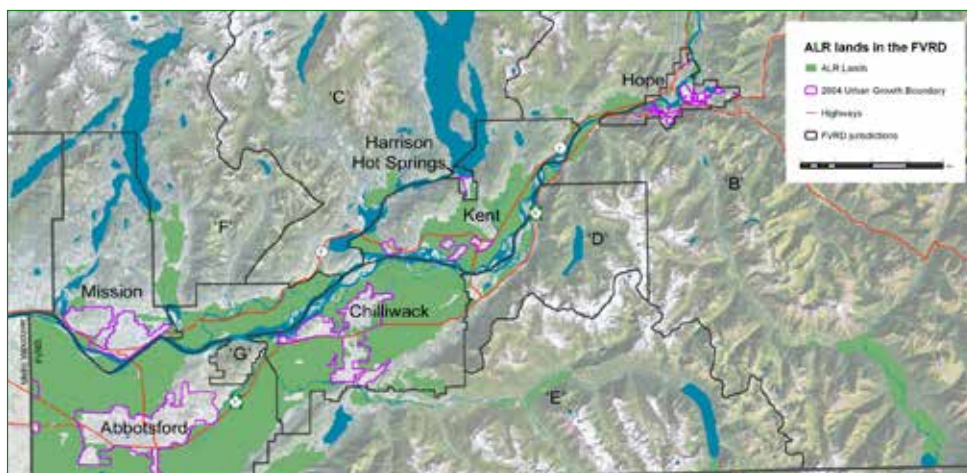
The ALR is administered by the Agricultural Land Commission, an administrative tribunal at arm's-length from the provincial government. The purposes of the Commission are:

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

The ALR has played an important growth management role in the Lower Mainland. There is little debate that without the ALR, the development trends that were in place in the early 1970's would have continued and that the region today would be characterized by urban sprawl. Instead, the FVRD is characterized by increasingly dense urban cores surrounded by active, highly productive and economically important agricultural lands.

Section 46 of the Agricultural Land Commission Act (ALC Act) requires that every Official Community Plan or Regional Growth Strategy must be consistent with the ALC Act, the regulations and the orders of the Commission; otherwise an inconsistent provision is of no force or effect. The ALC played an important role in the development of the FVRD's *Choices for Our Future* RGS and the establishment of the Region's Urban Growth Boundaries.

Primary Agricultural Land Reserve Areas in the FVRD



Source: BC Agricultural Land Commission

"The mission of the Agricultural Land Commission is to preserve agricultural land and encourage and enable farm businesses throughout British Columbia."

Agricultural Land Commission

Land in the ALR as % of Total Area

	ALR Ha	% Total Area
Abbotsford	27,459	70.6
Chilliwack	16,950	58.1
Mission	1,530	5.8
Hope	357	7.6
Kent	6,579	29.4
Harrison Hot Springs	134	18.7
Electoral Area A	693	0.3
Electoral Area B	5,747	1.8
Electoral Area C	1,171	0.3
Electoral Area D	823	3.5
Electoral Area E	1,225	1.9
Electoral Area F	2,236	1.1
Electoral Area G	5,172	44.9
Electoral Area H	1,403	12.2

Source: BC Agricultural Land Commission

Farm Practices Protection (Right to Farm) Act

In addition to the Agricultural Land Reserve, agricultural activities are protected under the Farm Practices Protection (Right to Farm) Act. Farmers have a right to farm in farming areas provided they use normal farm practices and follow other legislation listed in the Act. The Right to Farm suite of legislation provides a mechanism for the province to limit local government restrictions on agricultural activities.

A "normal farm practice" is defined as an activity "that is conducted by a farm business in a manner consistent with proper and accepted customs and standards as established and followed by similar farm businesses under similar circumstances."

Where conflicts arise, the Farm Industry Review Board can review complaints about farm practices and have the ability to order a farmer to improve or to stop poor farm practices. The board employs a peer review process to investigate complaints and attempts to resolve disputes before hearings are held.



AGRICULTURAL DIVERSITY

BROAD RANGE OF INDUSTRY GROUPS REPRESENTED IN THE FVRD

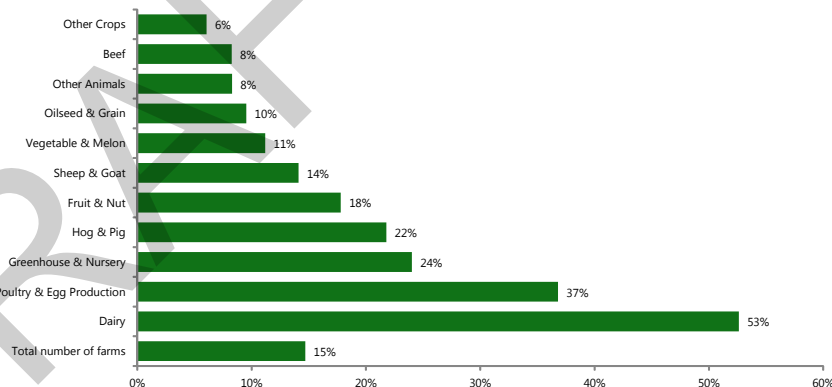
A diverse agriculture sector provides a stable economic base for the region

The Fraser Valley's agricultural sector is one of the most diverse and resilient in Canada, with a broad range of commodity groups represented. The benefit of such diversity lies in the ability of farmers to quickly respond to market shifts or unexpected events that cause disruptions, such as the 2004 outbreak of Avian Influenza that impacted the poultry sector.

The diversity of agriculture in the FVRD is reflected in the range of industry groups (by NAICS classification) represented by farms in the FVRD. Most striking is the fact that, in 2016, 53% of all dairy operations in British Columbia are based in this Region.

FVRD Farms Classified by Industry Group % of Classified Provincial Farms (NAICS classification*)

Source: Statistics Canada, 2016 Census of Agriculture



* North American Industry Classification System (NAICS): Standard used by Statistics Canada in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to Canada's business economy.

The type of agriculture practiced in the region varies between communities. As represented by the number of farms, dairy, beef and greenhouse/nursery farms are more numerous in the Chilliwack area, whereas poultry and fruit farms are more numerous in Abbotsford.

Although data is not available at the Regional District level, the distribution of gross farm receipts by commodity type shows that for the Lower Mainland-Southwest Census Agricultural Region (FVRD, Metro Vancouver, Sunshine Coast RD, and Squamish-Lillooet RD), the top three industries are greenhouse, nursery, and floriculture; poultry and egg; and dairy cattle and milk. Collectively, these three farm types account for around 75% of the gross farm receipts in the region. In the FVRD, greenhouse, dairy, and poultry are prominent.



Census of Agriculture Statistical Area Definitions

Census Consolidated Subdivision (CCS)	Jurisdiction
Abbotsford	Abbotsford
Fraser Valley B	Electoral Area A Electoral Area B Electoral Area C Hope
Fraser Valley D	Kent Harrison Hot Springs Electoral Area D
Fraser Valley E	Chilliwack Electoral Area E Electoral Area H
Fraser Valley F	Mission Electoral Area F
Fraser Valley G	Electoral Area G

Source: Statistics Canada, 2016 Census of Agriculture

2015 Gross Farm Receipts

Census Consolidated Subdivision	Gross Farm Receipts
FVRD (CD)	\$ 1,468,505,390
Abbotsford (CCS)	\$ 853,070,776
Fraser Valley B (CCS)	\$ 4,132,981
Fraser Valley D (CCS)	\$ 71,643,455
Fraser Valley E (CCS)	\$ 461,756,656
Fraser Valley F (CCS)	\$ 11,419,651
Fraser Valley G (CCS)	\$ 66,481,871

Source: Statistics Canada, 2016 Census of Agriculture

2015 Operating Expenses

Census Consolidated Subdivision	Operating Expenses
FVRD (CD)	\$ 1,222,076,351.00
Abbotsford (CCS)	\$ 721,263,978.00
Fraser Valley B (CCS)	\$ 3,711,219.00
Fraser Valley D (CCS)	\$ 55,880,490.00
Fraser Valley E (CCS)	\$ 379,496,384.00
Fraser Valley F (CCS)	\$ 9,641,055.00
Fraser Valley G (CCS)	\$ 52,083,225.00

Source: Statistics Canada, 2016 Census of Agriculture

Agriculture production continues to grow

In spite of increased urbanization in the Fraser Valley, agricultural production has continued to grow in terms of livestock, land under cultivation, and agriculture taking place in greenhouses.

Historical Trends 2006 to 2016

		2006	2011	2016
Farmland Use				
Crops	ha	33,394	36,309	37,214
Summerfallow	ha	94	39	x
Pasture (managed)	ha	2,925	3,440	x
Pasture (unmanaged)	ha	11,233	15,799	13,060
Other*	ha	8,957	8,170	7,993
Total	ha	56,603	63,757	61,236
Crops				
Field Crops**	ha	24,410	26,348	26,574
Fruits, Berries & Nuts	ha	4,219	5,381	5,470
Vegetables	ha	2,311	2,199	1,927
Other	ha	2,454	119	3,243
Total	ha	33,394	34,047	37,214
Mushrooms (farms)	#	17	16	14
(area)	m2	120,760	97,163	97,714
Greenhouses (farms)	#	161	159	154
(area)	m2	1,185,946	1,467,514	1,591,236
Nursery Products	ha	1,773	1,703	1,438
Sod Grown for Sale	ha	376	407	402
Christmas Trees	ha	252	203	168

* "Other": includes 'Unimproved Land', 'Other Improved Land' and 'Woodland'

** Field crop area does not include those crop areas not included for reasons of confidentiality

*** "Other" Crops: also account for area figures not provided due to confidentiality in 2006 and 2011 data

x data withheld for confidentiality

Source: BC Ministry of Agriculture, 2011 Census of Agriculture
Statistics Canada, 2016 Census of Agriculture

A significant increase, as shown below, is the number of farms reporting the raising of honey bees. Between 2006 and 2016, the number of farms raising bees increased 118% from 51 farms to 111. The honey bee is a keystone species for agriculture: according to the B.C. Ministry of Agriculture, \$200 million in agriculture production is dependent on honey bee pollination every year in the province. Recent trends indicate that bee populations are struggling, as the data here suggests. It is important to do what we can to encourage this species to thrive.

Historical Trends in Livestock 2006 to 2016

Livestock	2006		2011		2016	
	Farms	Livestock	Farms	Livestock	Farms	Livestock
Hens & Chickens	584	11,396,784	698	11,912,986	780	13,773,480
Turkeys	42	434,543	65	521,889	57	492,140
Total Other Poultry	111	371,172	114	428,848	130	x
Cattle & Calves	868	92,722	745	93,369	651	103,034
Dairy Cows	376	44,300	324	44,029	285	46,770
Beef Cows	305	4,297	241	3,038	200	2,826
Pigs	84	96,565	59	75,029	73	69,817
Sheep & Lambs	174	4,002	168	4,734	159	3,864
Horses & Ponies	456	2,634	420	2,493	334	1,589
Goats	121	3,822	121	3,399	140	4,139
Mink	6	104,700	7	35,648	6	x
Bison	2	x	2	x	3	x
Deer	4	x	4	x	4	x
Llamas & Alpacas	64	324	81	373	57	202
Rabbits	na	na	27	x	47	996
Colonies of Bees - Honey	51	5,459	70	5,047	111	14,110

x data withheld for confidentiality

Source: Statistics Canada, 2016 Census of Agriculture

FVRD in Provincial Rankings

Commodity	% BC Total	Rank in BC
Brussels Sprouts (ha)	95.2%	1st
Other Poultry	91.5%	1st
Pigs	84.2%	1st
Raspberries	82.2%	1st
Broccoli (ha)	79.3%	1st
Laying Hens 19 wks +	69.5%	1st
Hens & Chickens	69.5%	1st
Sweet Corn (ha)	61.5%	1st
Dairy Cows	59.7%	1st
Turkeys	55.7%	1st
Corn for Silage (ha)	54.6%	1st
Cauliflower (ha)	51.4%	1st
Sod (ha)	44.8%	1st
Mushroom Growing Area (sq m)	42.4%	2nd
Blueberries (ha)	38.6%	2nd
Other Fruits Berries & Nuts (ha)	38.4%	1st
Green Peas (ha)	37.5%	2nd
Nursery Area (ha)	37.3%	1st
Peppers (ha)	35.6%	2nd
Total Area in Vegetables (ha)	33.4%	2nd
Goats	23.2%	2nd
Organic Animals or Animal products (Farms)	21.4%	2nd
Strawberries	18.7%	2nd
Colonies of Bees	15.0%	3rd

Source: BC Ministry of Agriculture, 2011 Census of Agriculture

Lower Mainland-Southwest CAR* Gross Farm Receipts by Commodity

Farm Type	Total Gross Receipts	% Total
All Farms	\$1,920,747,557	
Greenhouse, nursery, and floriculture	\$615,276,903	32.0%
Poultry and egg	\$515,555,689	26.8%
Dairy cattle and milk	\$387,563,011	20.2%
Fruit and tree nut	\$172,237,983	9.0%
Vegetable and melon	\$100,741,187	5.2%
Other animal	\$58,610,476	3.1%
Hog and pig	\$30,868,997	1.6%
Other crop	\$19,766,012	1.0%
Beef cattle	\$16,016,244	0.8%
Sheep and goat	\$2,538,126	0.1%
Oilseed and grain	\$1,572,929	0.1%

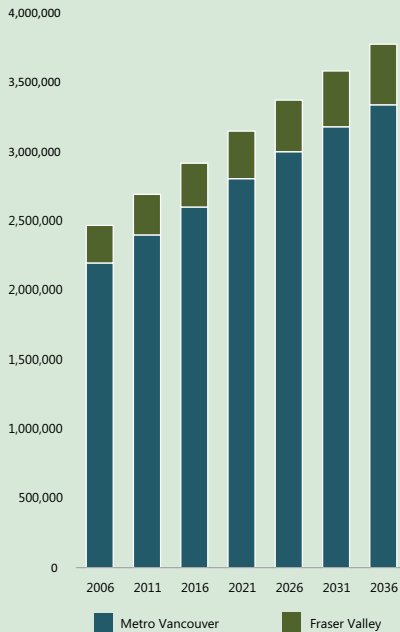
Source: BC Ministry of Agriculture, 2011 Census of Agriculture

*Lower Mainland-Southwest Census Agricultural Region (CAR): FVRD, Metro Vancouver, Sunshine Coast RD, and Squamish-Lillooet RD



Lower Mainland Population Growth

Source: FVRD, BC Stats



Farmland Price per Acre

Parcel Size	Metro Van	Fraser Valley
5 acres	\$150,000-\$350,000	\$80,000-\$110,000
20 acres	\$110,000-\$120,000	\$70,000-\$80,000
40-60 acres	\$50,000-\$80,000	\$50,000-\$70,000

Source: Home on the Range: Cost Pressures and the Price of Farmland, VanCity Credit Union, 2016



AGRICULTURE CHALLENGES GROWTH AND OTHER PRESSURES

Farming at the edge of one of the fastest growing metropolitan regions in Canada is a challenge

The FVRD is located on the periphery of one of the fastest growing metropolitan regions in Canada. The lower mainland is expected to see an additional 1.1 million people by 2036, the vast majority of which will locate in Metro Vancouver. This type of growth will pressure lands in both Metro Vancouver and the FVRD in a number of ways, including increasing land costs, water supply quantity and quality, air quality, land use conflicts, pressures on the ALR, taxation and others.

The skyrocketing cost of land in the region is causing significant challenges for local farms. According to Farm Credit Canada, the financial viability of farm businesses becomes questionable when land prices reach \$80,000 per acre. The table to the left, taken from a 2016 VanCity study (www.vancity.com/AboutVancity/News/MediaReleases/AgriculturalLandPricesIncrease-Apr6-2016), shows that farm land values in the Fraser Valley are approaching this limit, with the viability of small scale farms already compromised. In the FVRD, nearly 40% of all farms are below 10 acres. A consequence of high land values is an increase in local food prices. In order to keep farming sustainable in our region and boost local food consumption, more needs to be done to protect agricultural land from speculative pressures.

A survey undertaken by Metro Vancouver in relation to its Regional Food Systems Strategy (www.metrovancouver.org/planning/development/AgricultureAndFood) found that 93% of respondents believed that preserving agricultural land is at least "somewhat" or "very" important, with 67% stating it was very important. But the survey also found that 6% of respondents felt that protecting agricultural land was not important, based mainly on the belief that there are other areas of the province which can be used for food production and therefore ALR land should be developed. The fact is that the lower mainland is, in many cases, the only location in the province where certain agricultural products can be produced.

Agriculture faces other challenges including: globalization, currency exchange rates, achieving economies of scale, labour costs and labour supply, water supply, fuel costs, and regulations/taxation from all levels of government.



AGRICULTURE OPPORTUNITIES

AN EXCITING FUTURE

Building on agricultural expertise and an entrepreneurial spirit

This region has been a centre for agricultural research and innovation for almost 125 years. Facilities such as the Pacific Agri-Food Research Centre, Abbotsford Agricultural Centre, Animal Health Centre, UBC Dairy Education and Research Centre, and UFV's Agriculture Department are resources that benefit Fraser Valley farmers. The Region is also home base for the BC Agriculture Council and other commodity-related organizations that represent industry interests in BC.

Pacific Agri-Food Research Centre

Located in the District of Kent, the Agassiz Experimental Farm, now known as the Pacific Agri-Food Research Centre, was founded in 1888 as one of the five original Experimental Farms in Canada.

Today the Pacific Agri-Food Research Centre in Agassiz has a land base of 310 hectares (plus a 7.5 ha field site in Abbotsford) and includes poultry research facilities, a feed mill, the Avian Research Centre, greenhouses, and a weather station that has been collecting data since 1889.

The Centre houses a laboratory and office complex conducting research on a wide range of subjects including the preservation and conservation of poultry genetic resources. Other areas of research include: healthier crops, livestock welfare and production, innovative solutions for health and wellness, and new and improved quality for food products. In addition, UBC's Dairy Education and Research Centre is on site, leading to increased collaboration between the Centre and University on dairy cattle research.

http://www4.agr.gc.ca/resources/prod/doc/science/pdf/PARC-CRAP_e.pdf

UBC Dairy Education and Research Centre

The University of British Columbia Dairy Education and Research Centre operates in conjunction with the Pacific Agri-Food Canada Research Centre. The Dairy Centre opened in 2000 with the goal of providing education and research programs in support of the dairy industry in BC and beyond. The Centre is unique in Canada and is one of the largest in the world.

The Centre's mission is "to be a world-leading centre for dairy education, research and technology transfer". www.landfood.ubc.ca/dairycentre/

University of the Fraser Valley (UFV) agriculture programs

The UFV Agriculture Department is located at UFV's Chilliwack campus where students access programs that combine theory and principles with practical training in horticulture, integrated pest management and livestock production. Given its proximity to the region's diverse agriculture sector, graduates are employed in a broad range of agricultural occupations, including: lab technicians, integrated pest management monitors, nursery managers, farmhands, farm owner/operators, greenhouse managers, landscape technicians and many more. www.ufv.ca/agriculture.htm

BC Agriculture Council

Located in Abbotsford, the BC Agriculture Council's (BCAC) mission is to "provide leadership and to take initiative in representing, promoting and advocating the collective interests of all agricultural producers in the Province of BC". ARDCORP, a wholly owned subsidiary of BCAC, delivers a range of programs, including the Environmental Farm Plan program, to individual producers and the broader agriculture sector across BC. www.bcac.bc.ca



Abbotsford Agriculture Centre

The FVRD's agriculture industry has the advantage of being able to access agriculture experts housed at the *Abbotsford Agriculture Centre* in Abbotsford. The facility is home to provincial Ministry of Agriculture employees working in a variety of branches including the Sustainable Agriculture Management, Policy & Industry Competitiveness, Business Risk Management, Plant & Animal Health, Agri-Food Protection.

The facility is also home to the **Animal Health Centre (AHC)** which is a full-service veterinary diagnostic laboratory. The Animal Health Centre is one of only two laboratories in Canada accredited as a full service Veterinary Diagnostic laboratory by the American Association of Veterinary Laboratory Diagnosticians (AAVLD).

The mandate of the AHC is to diagnose, monitor, and assist in controlling and preventing animal disease in British Columbia. The AHC provides a full range of fee-for-service diagnostic testing, including Pathology, Bacteriology, Virology, and Toxicology. In addition, laboratory staff is frequently involved in the development of new diagnostic tests and the initiation of investigative projects to address emerging disease problems in production animals, poultry, and fish.



REGIONAL FOOD SECURITY IN THE FRASER VALLEY

Supporting a viable, sustainable and resilient industry

Food security is a broad term that encompasses such issues as protecting agricultural land, creating an environment that supports a viable and resilient agri-food system, public access to safe and affordable food and others.

A social and health perspective on food security

According to Canada's *Action Plan on Food Security* (1998), food security "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life".

In comparison to other countries, food security in Canada is quite high, nevertheless, food insecurity in Canada does exist for certain segments of the population. A 2007/2008 Health Canada household food security survey found that food insecurity is more prevalent among households led by female lone parents, families with more than three children, low-income families and aboriginal households. Low income households are often faced with making a choice between healthy food and rent. In the FVRD, more than 11,000 households spend 50% or more of their income on housing, leaving little left over for spending on food.



As discussed in the *Health and Active Living in the FVRD* Snapshot, there are health implications of not eating healthy foods. Increasingly sedentary lifestyles, an aging population, the threat of decreasing air quality and lack of access to healthy food options are all factors that have increased the rate and costs of chronic disease over time. Statistics Canada's 2007/08 Canadian Community Health Survey found that despite this region having one of the most diverse and productive agricultural areas in Canada, less than half the residents of the FVRD consume the recommended minimum of five fruits and vegetables daily.

Although income can be a barrier, it is important to recognize that personal preferences of people who choose not to eat healthy foods also plays a role. Efforts aimed at supporting farmers, farmers' markets and other initiatives that encourage people to eat healthier can ultimately benefit both the healthcare and agricultural sectors.

Community gardens: Supporting agricultural education and awareness

Community gardens promote learning and participation in growing food. Gardeners experience the process of planning, planting, tending and harvesting the benefits of their labour. Community gardens facilitate the gathering of a wide range of community members to come together and learn about agriculture in their communities. There are many other benefits beyond education. They also promote physical activity and healthy eating, reduce greenhouse gas emissions, beautify neighbourhoods, and more.

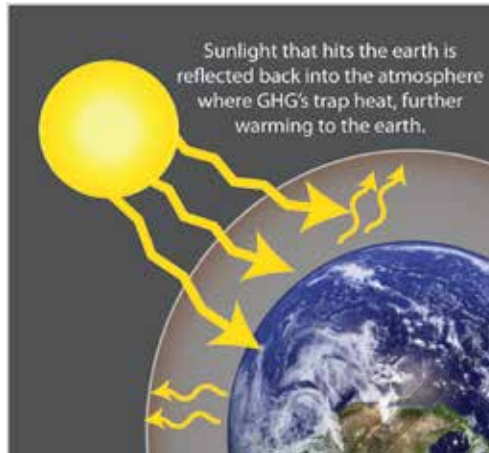
There are several organizations in the region that promote gardening. The Chilliwack Schools Garden Program is one of the oldest school garden programs in Canada, and aims to increase awareness of food production among children. The Valley Permaculture Guild operates several community gardens in the region as well as other local food related initiatives. Here at the FVRD, we operate a small, rooftop garden which raises agriculture awareness in our organization.



REGIONAL CLIMATE CHANGE IN THE FRASER VALLEY

What is Climate Change

Climate change is not a new occurrence. The Climate has fluctuated continuously over eons as part of a natural cycle. However, it is recognized that the increase in the consumption of fossil fuels over the last century has begun to alter the natural cycle by raising the temperature at a higher rate than would normally be the case. Fossil fuels release Greenhouse Gases such as carbon dioxide and carbon monoxide into the atmosphere which then trap the sun's heat, resulting in rising temperatures. The levels of carbon dioxide in the atmosphere have increased approximately 30% since pre-industrial times. Further aggravating the problem, the loss of forest cover reduces the amount of carbon which can be reabsorbed by the earth. (*Changes in concentration of atmospheric carbon dioxide, other greenhouse gases, and aerosols*, B. Geerts and E. Linacre, 2002)



Climate change and Energy are indelibly intertwined. When we consume energy derived from fossil fuels we contribute to Climate Change. The FVRD is no exception. In 2010, residents and businesses in the Fraser Valley Regional District produced about 1.9 million tonnes of carbon. (CEEI report, 2007)

In coming years, a changing climate is expected to impact the agriculture system in a number of ways

The FVRD and the BC Agriculture Council's Climate Action Initiative completed a climate adaptation strategy for the Fraser Valley Regional District in 2015. Analysis showed that while small variations in weather are expected, and managed, on a year-to-year basis, the scope and scale of climate change is anticipated to exceed all other experiences. It is imperative for the agriculture system to plan for, and adapt to, a changing climate before the impacts start to materialize.



Global warming is the challenge of our generation. How we respond will shape the future of not just our environment, but also our economy, our society, our communities, and our way of life.

BC Climate Action Plan





Nicomen Slough Dike E

Dikes in the Fraser Valley

The Lower Mainland has been exposed to historic flooding both from the Fraser River as well as its subsidiaries. As such, much of the land in the region is protected by a system of dikes over 100km long and built over a period of decades and to varying standards. Dikes protect agricultural and urban land alike. In 2015, The Ministry of Forests, Lands, and Natural Resources commissioned an overview assessment of 74 major dykes in the Lower Mainland to evaluate the level of protection and identify deficiencies.

Of particular relevance to the FVRD is that upgrading dikes is a major challenge. Such an undertaking requires significant collaboration and investment to reduce flood risk in the Fraser Valley. A worse case flood scenario for the Valley could see farm losses in excess of \$830 million which could translate into a broader community impact of \$1.1 billion.



A heavy winter rainfall brings Marshall Creek over its banks - Abbotsford, January 2006.

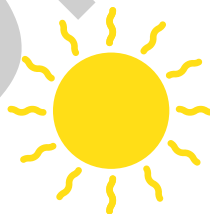
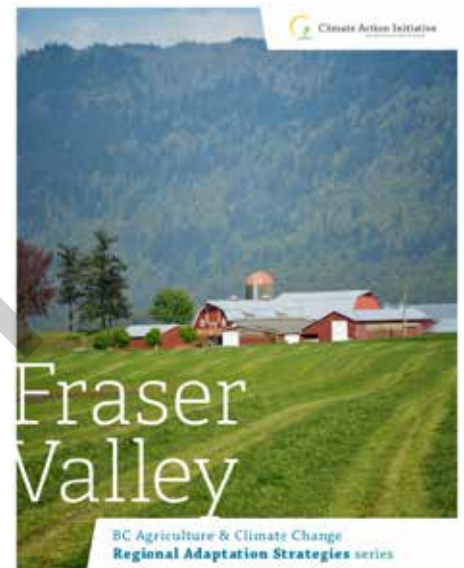
REGIONAL CLIMATE CHANGE UNDERSTANDING THE IMPACTS

Climate predictions in the Fraser Valley

There are several climate trends expected to affect agriculture in the Fraser Valley. The first is changes in temperature. Temperature projections call for an increasing trend in all seasons, with summer warming slightly more. By the 2020s, an annual average of 1°C warmer is expected to be the norm. Also expected are 15 more frost-free days and 184 more growing degree-days annually, which may in some cases be a benefit to for some agriculture (Regional Adaptation Strategy, 2015, p.6-7).

Changing precipitation is also a concern. The overall annual trend for precipitation is for an increase of 4% by 2020, which will grow to 7% by 2050. During the summer months, a decrease in precipitation is expected while winter months will experience an increase. Also, a marked decrease in the amount of falling snow is projected (Regional Adaptation Strategy, 2015, p. 7).

Extreme weather patterns are also expected to change. In the next several years, projections show an increase in the magnitude, frequency, and intensity of extreme weather events. Abnormally high temperatures are likely to occur more often, while low temperature events will occur less frequently. Models predict that we will see 2.6 times the number of summer warm days (days in the summer months that are warmer than the 90th percentile



DRIER, WARMER SUMMERS

- Increased drought risk
- Disrupts flowering and pollination
- Increased pest and disease pressures

historic baseline temperature for that day), and 3.8 times the number of extremely hot days (days so hot they used to occur only once every 10 years). The intensity and magnitude of extreme rainfall events are also projected to increase. In fact, we can expect 1.6 times the number of extremely wet days (days so wet that in the past they would occur once every 10 years) (Regional Adaptation Strategy, 2015, p. 7).

WETTER WINTERS

- Flood risk
- Erosion and nutrient leeching
- Crop damage



Climate change impacts on agriculture

There are five main impact areas associated with the previous climate projections (see Regional Adaptation Strategy, 2015, p. 13-32).

Impact 1: Warmer, drier summers

Agriculture relies on water, consuming both surface and groundwater for irrigation. Water sources in the region are already stretched and demand is only going to increase as temperatures rise. Without adequate irrigation, crop yields and quality will be impacted, as well as livestock health and productivity. On the other hand, increased temperature may present better harvesting conditions.

Impact 2: Increased precipitation and extreme events

Large amounts of precipitation can cause site specific flooding, causing crop loss and other damages. Heavy precipitation can also cause erosion and nutrient leaching, which impact both plant health and productivity.

Impact 3: Increased Freshet Flood Risk

Freshet flooding is a seasonal event which is the result of spring/summer snowmelt upstream. With climate change, it is expected that the magnitude and frequency of large floods on the Fraser River will increase. It is estimated that a worst case flood will cause over \$800 million in damage to farmers' assets and have an impact of \$1.1 billion on the FVRD's economy as a whole (Freshet Flooding and Fraser Valley Agriculture: Evaluating Impacts and Options for Resilience Study, 2016, p.15).

Impact 4: Changes to pests and pollinators

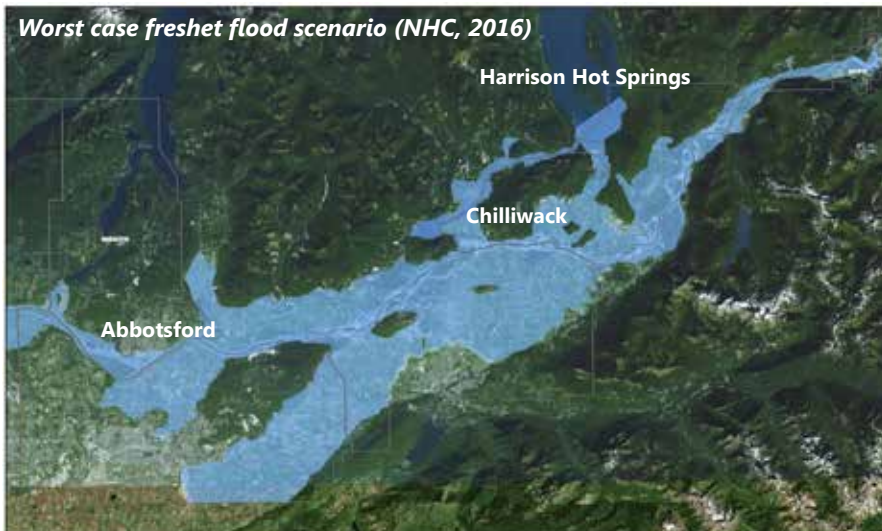
Warming temperatures are already introducing pests to the region. Spotted wing drosophila is a new pest that has moved into BC due to warming and causes damage to berry crops. Extreme temperatures also increase the prevalence of plant and livestock diseases, and reduce the effectiveness of pollinators.

Impact 5: Greater frequency and intensity of extreme heat events.

High temperature early in the season can affect germination and establishment rates for some vegetables and sudden increases in temperature can cause damage to berry crops. For some commodities, such as mushrooms, rising temperatures can increase climate control costs. Also, early ripening creates pressure to harvest quickly and difficulty in preventing spoilage. Farmers are already experiencing labour force challenges as crops that used to ripen sequentially, are now ripening at the same time making it difficult to find available labour. Livestock can also be impacted by high temperatures resulting in reduced growth and high stress.

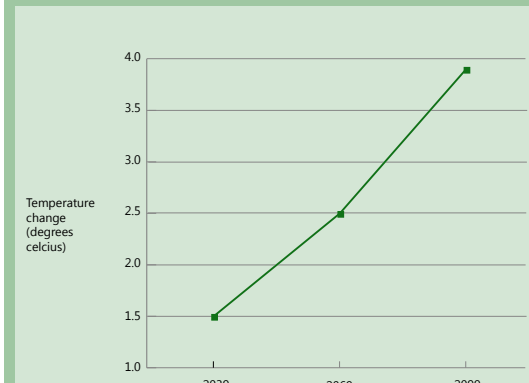


Worst case freshet flood scenario (NHC, 2016)



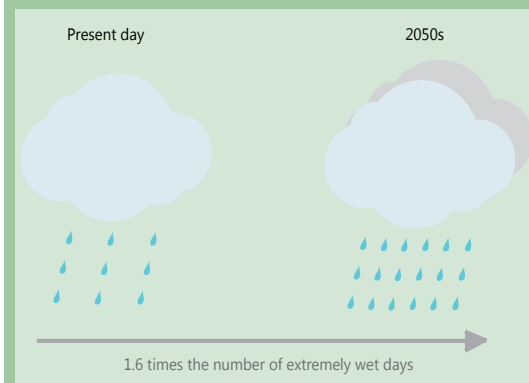
Projected Annual Average Temperature Change (2029-2099)

Source: PCIC Regional Analysis Tool, 2016



Projected Increase in Extreme Precipitation Events

Source: PCIC Regional Analysis Tool, 2016



Lower Mainland Flood Management Strategy

The Lower Mainland Flood Management Strategy is a collaborative, regional initiative commissioned by the Fraser Basin Council. It aims to protect the Lower Mainland from Fraser River and other flood risk. The initiative brings together 43 funding partners including the federal and provincial government, 27 local governments, and 12 other organizations.

Phase 1 of the strategy was completed in 2016, and will be followed by phase 2 (development of an action agenda) over 2016-2018 and phase 3 (implementation of the strategy) in 2018.

See: http://www.fraserbasin.bc.ca/water_flood.html



SUPPORTING AGRICULTURE GOVERNMENT INITIATIVES

Supporting a viable, sustainable and resilient industry

Governments provide support to agriculture through a wide variety of policy measures. These range from municipal and regional initiatives to federal programs.

British Columbia Agriculture Plan: Growing a Healthy Future for BC Families

BC's *Agriculture Plan* Vision is: "Continued development and growth of an economically viable and resilient agriculture and food sector which contributes significantly to:

- The health of British Columbians;
- Climate change mitigation;
- Environmental sustainability; and
- A growing B.C. economy."

This will be achieved by provincial agencies, local/regional governments and community and industry groups implementing strategies linked to:

- Producing Local Food for a Changing World;
- Meeting Environmental and Climate Challenges;
- Building Innovative and Profitable Family Farm Businesses;
- Building First Nations Agricultural Capacity; and
- Bridging the Urban/Agricultural Divide.

http://www.agf.gov.bc.ca/Agriculture_Plan/Agriculture_Plan.pdf

Agriculture planning at the regional and municipal level

The FVRD and our member municipalities are keenly aware of the importance of agriculture to this Region. Over the past decade the FVRD has partnered with Metro Vancouver to develop an *Economic Strategy for Agriculture in the Lower Mainland* and the Cities of Abbotsford and Chilliwack, and the District of Kent have completed or are in the process of developing Agriculture Plans. In 2016, the City of Abbotsford is undertaking an extensive review of agriculture through the "AgRefresh" initiative.

In addition, the Ministry of Agriculture has worked with local governments to undertake agricultural land use inventories to help the province and local governments better understand the nature of agriculture in the region.

Road Map to 2020 - B.C. Agrifood and Seafood Strategic Growth Plan

Launched in 2015 by the Provincial government, Road Map to 2020 is a comprehensive plan to increase overall sector revenues to \$15 billion per year by 2020.

The plan aims to provide direction to the agrifood sector to help:

- Achieve economic growth;
- Adapt to climate change; and,
- Maintain food security.

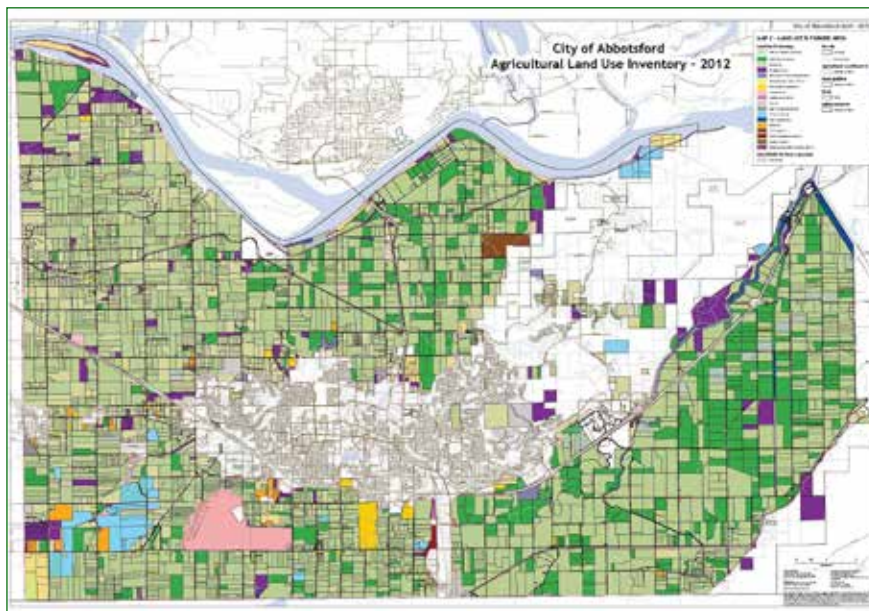
Included in this strategy are 20 new actions including policies that will drive growth in the sector by:

- Increasing production;
- Driving competitiveness; and,
- Building markets.

The plan was developed in collaboration with the Minister's Agrifood Advisory Committee comprised of leaders from the agrifood and seafood sector, business community, local food movement, and agriculture post-secondary institutions.



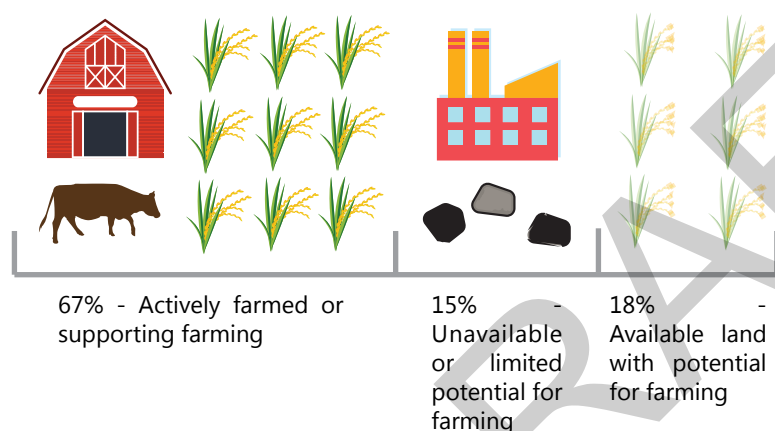
<http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/strategic-growth-plan.pdf>



The most recent inventory took place in the agricultural areas of FVRD in the summers of 2011-2013. These windshield surveys take place during the growing months when the land cover characteristics, agricultural activities and irrigation systems are most apparent. The resulting Geographic Information System (GIS) coverages are a valuable planning tool for both local governments and the province.

Agricultural land use inventories support municipal and regional efforts toward developing agricultural plans and other agricultural initiatives. As an example, the results of this most recent survey and others in the region was fed into the province's Agriculture Water Demand Model (AWDM) to determine current and future water demands for agriculture in the FVRD.

Fraser Valley ALR Land Use



Regional Growth Strategy (RGS)

The *Choices for our Future Regional Growth Strategy*, adopted in 2004, recognizes the importance of agriculture to the region's past, present and future. Since the strategy was adopted, the region has undertaken a number of initiatives in support of agriculture. These include:

- Collaborated with the Ministry of Agriculture to model potential impacts of climate change on water demand in the region;
- Working with the Ministry of Agriculture to model potential impacts of climate change on water demand in the region;
- Regional Growth Strategy Update
- Fraser Valley Regional Adaptation Strategy
- With AGRI, 2011-13 Agricultural Land Use Inventory
- With AGRI, Agricultural Water Demand Model
- Freshet Flooding and Fraser Valley Agriculture: Evaluating Impacts and Options for Resilience Study

Upcoming:

- Support implementation of Climate Action initiatives
- Continue to work with the Fraser Basin Council on a Regional Flood Management Strategy

Environmental Farm Plans (EFP)

The B.C. Environmental Farm Plan Program is administered by the BC Agricultural Research & Development Corporation (ARDCORP) a wholly owned subsidiary of the BC Agriculture Council. The program is funded by *Growing Forward*, a federal and provincial initiative aimed at encouraging producers from across the province to adopt Beneficial Management Practices (BMP) to enhance agricultural sustainability and contribute to a cleaner and healthier environment.

The program is voluntary, involves no cost to the producer and is confidential.

The EFP program involves conducting a risk assessment to identify potential areas of concern in relation to a farm's environmental health. This is achieved through the use of a specifically designed workbook provided by EFP planning advisors (PA). Once issues have been identified, the producer can work with a PA to develop an action plan to manage identified risks and identify priority action items.

Once an EFP has been approved, producers are eligible for cost sharing incentives under the *Growing Forward BMP Program* to undertake projects that will address environmental issues identified through the risk assessment process.

Once all of the priority items have been achieved, the plan is considered implemented and a certificate and gate sign can be issued.

The gate signs allow the public to see that the agriculture sector is doing its part in supporting environmental sustainability. This is important as consumers are paying increasing attention on where their food comes from and how it is produced.

Regional Snapshot Series: Agriculture

Agricultural Economy in the Fraser Valley Regional District

December 2017



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www.fvrd.bc.ca

The Regional Snapshot Series for the Fraser Valley Regional District is designed to provide the public with greater insight into the forces which are shaping growth and change in the region today. For a full list of documents currently available in the series, please visit us on the web at: **www.fvrd.bc.ca**