CREATING CLIMATE CHANGE RESILIENCE:

ENHANCING FOOD PROCESSING IN THE CVRD

April, 2014

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Executive Summary

Introduction

The Cowichan Valley Regional District (CVRD), The BC Agriculture and Food Climate Action Initiative, and other organizations within the CVRD have done considerable work in agriculture planning, economic development for small agriculture enterprises, and analysis of climate change impacts on agriculture in the CVRD. There is strong consensus that strengthening local processing capacity will improve and diversify access to processing and storage options, increase producer flexibility in bringing their products to market, and enhance climate change resiliency. The purpose of this report is to better understand the current status of food processing in the CVRD, to identify both barriers and opportunities for enhancing food processing in the region, and to develop a set of specific recommendations for expanding food processing and enhancing climate resilience.

Agriculture and food trends in the CVRD

The agriculture industry is evolving in the CVRD. Even though the population has been growing by almost 1% per year, the total land area farmed is gradually decreasing. The biggest declines have been in pastureland, which corresponds with significant declines in the population of meat and dairy animals. The implication for food processing is that there will generally be fewer crops and fewer meat animals available for value-added processing.

The CVRD is experiencing a positive increase in the number of food processing jobs per 1,000 residents and the number of processing jobs is increasing relative to the number of farming jobs. An interesting employment aspect of the food processing sector is that the median food processing employee age is just under 30 years old, whereas the median age for a farmer is 56 years.

About fifty years ago, Vancouver Island produced about 90% of the food it consumed. However, that situation has now become completely reversed, with Vancouver Island now importing 90% of its food. The 2009 Agriculture Area Plan for the CVRD estimated that the Region was 19% food self-sufficient. According to the 2011 Sustainable Economic Development Strategy for Cowichan Region, the average household spends $7,870 on food each year. Given that the average household size is 2.4 persons, we estimate that the total value of food consumed each year in the CVRD is about $264 million.

Food processing and storage in the CVRD

The CVRD is home to about 50 processors. One third are wineries. Of the remaining food processers, about 20% are meat producers, 25% are bakeries, 27% of specialty producers and the remainder are egg, dairy and beverage processors. Just under half of the processors are located in Duncan. Cobble Hill has the second largest concentration (about 25%).

About 350 people are employed in food manufacturing (excluding alcohol production) and that is rising by 2.5% per year. This means that the growth in processing jobs in the CVRD is outpacing population growth. Given that there are about 36 firms, the average number of employees per firm is about 10.

Significant gaps exist in the District's food processing infrastructure. Only three publicly available shared-use commercial kitchens in the Valley focus on serving food processors. There are four abattoirs in the CVRD along with another three in the adjacent Regional Districts, which is just sufficient to meet local demands. No shared processing facilities with a proper packing line exist in the CVRD despite multiple efforts by various groups. Facilities exist in other parts of Vancouver Island that do custom food processing but they tend to be for larger quantities and for specialized products.

The CVRD has no major cold storage facilities within its boundaries. However, there are companies that provide cold storage in the adjacent districts. These facilities have capacity to handle an increase in food storage demand from Cowichan Region Processors.

Despite the lack of food processing and storage infrastructure within the CVRD, a number of key planning initiatives are underway that could lead to an expansion of food processing. These initiatives include:

- A Cowichan Food Producers Coop (Cow-Op), led by the Cowichan Coop Association.
- A community based agriculture education program, led by Vancouver Island University.
- A local food/agriculture branding campaign, led by Cowichan Economic Development.

Trends affecting the CVRD food processing sector

A number of positive and negative trends are influencing the food processing and storage sector in the Cowichan Region. These trends are summarized as follows:

- **Political** – The B.C. government identified agri-foods as a key growth sector in the B.C. Jobs Plan. The federal and B.C. governments substantively support the agriculture and food processing sectors, although both levels of government provide limited funding for agri-food training and for equipment and infrastructure for agri-food processors. Regional government support has been relatively strong.
- **Economic** – The area of land farmed in the CVRD has declined by 40% over the past 20 years and the percentage of imported foods has increased from 10% to over 80%
- **Social** – Demand for buying local is rising and efforts are intensifying to establish new local-buying food hubs and shared use food enterprises.
- **Technological** – Food processing infrastructure has declined over the past 20 years and food storage infrastructure has been completely lost.
- **Legal** - Regulations for meat processing facilities are becoming more stringent and quotas for supply-managed products have shifted from the Cowichan Region to the Fraser Valley.
- **Environmental** - Concerns about the impacts of climate change on food supply are rising, resulting in a number of new climate adaptation studies and initiatives.
- **Demographic** - The average age of farmers is rising (age 52 in 2000 to age 56 in 2011) and young people are not stepping in to take their place.

Processed food categories with potential for expansion

The following categories of processed foods appear to have good potential for growth:

Vegetable Processing

- Value-added berry processing – berry juices and individually quick frozen (IQF) packaged berries
- Value-added vegetable processing – IQF packaged vegetables (e.g. corn, peas), canned veggies, squash soup, borsht soup
- Dehydration and fermentation - cabbage sauerkraut, dehydrated stews for the marine market

Dairy Processing

- Cheese production
- Yogurt manufacturing – the CVRD has no yogurt production

- Fresh milk production for farm-gate sales
- Increased egg production – the CVRD is self-sufficient but Vancouver Island is in a deficit

Meat Processing

- Expanded small scale chicken processing using a mobile abattoir
- Expanded meat processing
- Meat pies - strong demand from British, Australian, and New Zealand residents

Other Types of Processing

- Prepared meals
- Pasta sauces
- Breakfast foods (e.g. granolas, rolled oats)
- Beer production with hops produced on-site or locally
- Distillery production using barley produced on-site or locally (there is one in Courtenay)

Mobile food processing

Mobile food processing is another area of strong opportunity. Processing foods using mobile facilities can significantly improve the economics of small scale food processing because one vehicle travelling to a number of small farms and food producers is far easier, safer and cheaper than each food producer having to load up their product, transport it to a central facility, process it, and then transport it back. Mobile facilities can be general purpose, such as North Dakota's travelling commercial kitchen, but most are customized for a specific product type. The two types that are most relevant to the Cowichan Region, and which are already being developed include mobile apple processing and mobile poultry processing.

The owners of Blue Moon Winery in Comox purchased a German-made mobile apple processer in 2012, partly to process their own apples into apple cider but also to serve other customers in the region. So far they have focused on processing apples for orchard growers in the Comox Valley but they are willing to transport their apple-processing unit down to the Cowichan Region for farms with at least six trees.

A local meat producer is looking to establish a mobile poultry abattoir in the CVRD, similar to the one that is already operating on Salt Spring Island. However, it appears that the meat processing regulations are posing significant constraints on the Salt Spring abattoir, which is required to return to a docking station each day, removing much of the costs savings typically associated with this type of operation.

Climate change issues related to food processing

The food processing and distribution system is not vulnerable to climate in the same way that production agriculture is, but there could be some significant impacts, particularly in the sectors that are more energy□intensive. Agricultural processing operations may experience two kinds of climate change impacts: those experienced directly and those related to climate change impacts on agricultural production. There are five main processing elements that could be affected:

- **Transportation and other infrastructure-related elements** - Extreme weather events and sea level rise may affect transportation infrastructure, which will affect delivery of produce and livestock to processing facilities as well as shipping of goods from the facilities. An increase in average temperatures also poses challenges in the way good are shipped, as warmer temperatures may require a shift from ambient transport to refrigerated transport.
- **Storage** - Similar to the issue of needing more refrigerated transportation, ambient temperature

food storage may need to be supplemented with increased refrigerated storage as ambient temperatures rise or more intense heat waves occur. Depending on their locations, storage facilities may also need to adapt to climate change impacts such as flooding or droughts.

- **Processing scheduling** - As with transportation scheduling, processing scheduling may be affected by climate change impacts experienced by producers. Livestock and crop harvest times and yields differ depending on ambient temperatures as well as extreme temperatures and extreme weather events
- **Food safety** - Food safety is likely to be impacted by climate change through several mechanisms. Food□borne pathogens, such as cholera and mycotoxins, are likely to expand their geographic range, and outbreaks are often associated with extreme weather events. In the meat slaughter sector, higher temperatures would increase the costs of refrigeration, packaging, handling, and storage of perishable meats that are vulnerable to pathogens such as E-coli.
- **Expansion opportunities** - Processing facilities looking to expand due to product success or benefits reaped from new crops or greater yields may experience barriers. For example, those requiring water for their activities may be prone to water quality and quantity issues resulting from flooding, drought or salinization.

The uncertainty of climate change impacts on producers and processors necessitates integrated, extensive and flexible processing facilities.

Recommended actions

Based on the stakeholder interviews and analysis, 45 recommended actions were identified. These were shortlisted to the following 16 along with an identification of lead organizations for implementation.

Table 1. Shortlist of recommendations and associated lead organization for implementation

Description of Recommendation	Key Actions	Lead Organization
Policies and Regulations		
1. Identify new meat slaughter rules that foster local meat processing	• Establish task force to review regulations • Study meat regulations elsewhere • Discuss findings with BC government	Union of BC Municipalities
2. Ensure local policies/laws support food processing activities	• Identify immediate actions • Determine land availability • Update plans to include processing • Collaborate with other governments • Encourage municipalities to support processing	CVRD
3. Research marketing quotas rules to support local processing	• Conduct study on quota system impacts • Present results for BC Government • Present results to marketing boards	Economic Development Cowichan
Education and communication		
4. Encourage food buyers to buy from local processors	• Create on-line resource to connect buyers and sellers • Develop/distribute promotional materials • Attract food brokerage and delivery enterprise • Host local buying events • Develop institutional procurement pilot project	Economic Development Cowichan
5. Give processors info on how to become wholesale ready	• Deliver “wholesale ready” program • Promote program to processors • Show how to meet needs of schools	Food Processor Associations
6. Provide business	• Design business support program	Food processor

training/support for food entrepreneurs	• Obtain funding for program • Deliver the program • Provide follow-up coaching • Evaluate and refine program	associations
Planning and Management Systems		
7. Publish directory CVRD processors, buyers, and facilities	• Catalogue processors, buyers, sellers and facilities • Publish buyer product needs • Provide online access to the information • Promote local food directory	Economic Development Cowichan
8. Develop agri-tourism plan that profiles processors	• Identify ways to integrate processing with agri-tourism • Develop an agri-tourism guide • Connect residents/visitors to restaurants and farm events • Encourage policies that facilitate tours, events and homestays • Update all relevant websites	Economic Development Cowichan
Processing Infrastructure and equipment		
9. Establish shared use processing facility with test kitchen	• Obtain funding for and conduct feasibility study • Obtain funding for and write business plan • Secure funds and construct facility	Non-profit organization
10. Access existing shared processing equipment/storage	• Identify potential opportunities to share idle equipment • Create online equipment sharing platform • Publicize the equipment sharing platform • Explore other collaborative processing opportunities	Cowichan processors
11. Create online food ordering website	• Identify the best online food ordering platform • Develop a business plan • Launch the website and promote it	Non-profit organization
12. Create food hub with processing, storage, distribution, and retail sales	• Obtain pre-development funding • Determine the structure and design of the food hub • Raise capital for and construct the hub • Promote the food hub • Evaluate the success of the food hub	Non-profit organization
Organizational structures		
13. Establish community agriculture training/incubator program	• Determine the scope, funding and delivery organizations • Establish the program • Publicize the program	Local universities
14. Create a food production/processing consortium/peer group	• Engage with processors, food processing associations, & local economic development agencies • Determine the organizational structure and terms of reference • Launch the consortium • Identify other groups to partner with	Cowichan processors
15. Create a food innovation district	• Determine the scope and location • Determine the boundaries and planning parameters • Conduct infrastructure improvements • Establish the district and attract businesses and visitors	Municipality
16. Enhance local financing for processors	• Convene workshop with funding groups • Implement the funding strategies • Publicize the program	Economic Development Cowichan

Potential outcomes from successful implementation

Ten potential outcomes were identified that relate to the successful implementation of an expanded food processing program in the CVRD. These outcomes include the following:

- Increased processing revenues
- New processing jobs created
- Increased number of processing enterprises
- Increased tourism revenues
- Increased local food reliance
- Improved climate resilience
- Increased buy local awareness/support
- Improved processor profitability/viability
- Improved access to skilled processing labour
- Increased access to financing

For those outcomes that can be quantified, an effort was made to estimate the aggregate impact over a ten-year period. The results are summarized in the following Table:

Description of Outcome	Current Level	After 10 years under current trend	After 10 years with successful program	Increase above current trend
Processing Revenues	~$14 M	~$20 M	~$30 M	~$10 M
Processing Jobs	~400	~600	~850	~250
No. of Processors	~50	~72	~110	~40
Tourism Revenues	~$9 M	$13 M	$18 M	$5 M
Food Self Sufficiency	18%	18%	28%	10%

These numbers should be used with caution because they include a number of significant assumptions. However, they indicate that a well-implemented food processing expansion campaign could deliver very significant benefits in terms of new local economic activity, employment, tourism and local food resilience.

1.0 Introduction

1.1 Background

The Cowichan Valley Regional District (CVRD), The BC Agriculture and Food Climate Action Initiative, and other organizations within the CVRD have done considerable work in agriculture planning, economic development for small agriculture enterprises, and analysis of climate change impacts on agriculture in the CVRD. There is strong consensus that strengthening local processing capacity will improve and diversify access to processing and storage options, increase producer flexibility in bringing their products to market, and enhance climate change resiliency.

1.2 Report objectives

The purpose of this report is to better understand the current status of food processing in the CVRD, to identify both barriers and opportunities for enhancing food processing in the region, and to develop a set of specific recommendations for expanding food processing and enhancing climate resilience.

For the purposes of this report, processed foods include food, beverage, or natural health products that have been processed from raw ingredients into food, or of food into other forms. Food processing typically takes clean, harvested crops or butchered animal products and uses these to produce marketable and often long shelf-life food products.[1] Seafood products are excluded from this study. Hobby food processors that make only very small batches of foods, representing less labour than one full time equivalent position, are also excluded.

1.3 Data collection methods

The primary data collection methods used to prepare this report included:

- Review of published documents on food processing, agriculture and climate change in the CVRD.
- Review of economic and agriculture data in the region.
- Interviews with selected food processors and other agriculture and climate change specialists in the region.
- A review of relevant documents in other jurisdictions as well as selected interviews.
- A stakeholder workshop conducted in February 2014 to obtain feedback on recommended strategies.
- Development of an economic model to forecast current trends and future potential growth of the food-processing sector over 10 years.

The reviewed documents are listed at the back of this document along with a list of interviewees in Appendix A. The document reviews and interviews were conducted from the beginning of December 2013 to end of February 2014.

2.0 Agriculture and food trends in the CVRD

2.1 The agriculture industry is evolving in the CVRD

Agricultural activities are changing in the CVRD, as they are in many other parts of the province. Table 2.1, derived from the CVRD agriculture census, highlights some of the key sectors and how they have changed over time and how they compare with Vancouver Island (VI) as a whole.

Table 2.1 Key agricultural statistics for the CVRD from 1996 to 2011

Agriculture Parameter	1996	2001	2006	2011	% change '06 –'11	% change VI '06 –'11
General farm data						
Population	70,978	71,998	76,929	80,332	4.4%	4.4%
Total land area farmed (ha)	13,656	13,996	11,559	11,394	-1.4%	-3.0%
Land area farmed as % of total	3.9%	4.0%	3.3%	3.3%	0%	
Number of farms reporting	772	691	700	685	-2.1%	5.1%
Average farm size (ha)	18	20	17	17	0.7%	-7.7%
Farmland owned	71%	78%	86%	85%	-1.5%	
Farmland Leased	29%	22%	14%	15%	9.0%	
Farmland Use						
Land area in crops (ha)	5,497	5,954	5,159	5,349	3.7%	0.6%
Land area in pasture (ha)	2,297	2,198	1,560	1,318	-15.5%	-14.6%
Land area in field crops (ha)	4,820	5,635	4,413	4,960	12.4%	1.2%
Land area in fruits, berries, and nuts (ha)	132	143	172	220	27.9%	136.4%
Land area in vegetables (ha)	X	55	63	88	39.7%	31.3%
Greenhouses						
Number of vegetable greenhouses	25	23	23	26	13%	
Greenhouse area (m^2)	11,122	18,738	n/a	n/a	n/a	
Animal Production Numbers						
Hens and chickens	414,722	377,256	281,003	209,881	-25.3%	-25.1%
Dairy cows	4,242	3,853	3,632	3,582	-1.4%	-7.7%
Cattle and calves	12,214	11,674	10,174	9,569	-5.9%	-14.9%
Sheep and lambs	X	2,958	2,274	2,826	24.3%	2.8%
Pigs	X	940	952	297	-68.8%	-24.4%
Llamas	71	314	697	431	-38.2%	-22%
Goats	938	832	1,021	712	-30.3%	-12.3%
Honey bee colonies	2,357	1,149	1,072	1,297	21.0%	-23.6%
Economic Data						
Farm Receipts ($millions)	$40.5	$38.7	$47.6	$48.0	1.1%	2.4%
Farm Expenses ($millions)			$43.5	$44.9	3.2%	0.8%
Net Farm Profit %			8.5%	6.6%	-22.3%	28.2%
Wages and salaries ($millions)	$7.5	$6.7	$9.4	$8.9	-5.5%	-0.4%
Wages and salaries as % of receipts			19.9%	18.6%	-6.5%	-2.7%

Source: Agriculture Census from Statistics Canada, Vancouver Island (VI) figures include the Sunshine Coast

These figures show that even though the population has been growing by almost 1% per year, the total land area farmed is gradually decreasing. This trend is occurring across Vancouver Island at a slightly higher rate. The biggest declines have been in pastureland, which corresponds with significant declines in the population of meat and dairy animals (excluding sheep, which are fluctuating). In contrast, berry production and vegetable production are increasing. The biggest increase in crop production has occurred in other parts of Vancouver Island where blueberry production has increased more than three fold.

Animal production numbers have fallen for most animal types in Cowichan Region and in across Vancouver Island, with the exception of sheep production. The number of honey bee colonies increased in the CVRD but fell for Vancouver Island.

Farm revenues have been gradually rising in the Valley and for Vancouver Island. In the CVRD, expenses have increased at a more rapid rate, resulting in a significant decline in farm profitability. For Vancouver Island as a whole, profitability increased but because profits were lower, Vancouver Island profitability has just caught up to the profitability of the agriculture sector in the Valley. Wages and salaries represented about 19% of total revenues in the Valley in 2011 whereas they were 23% for Vancouver Island in 2011.

These agriculture trends have implications for food processing in the following ways:

- The gradual decline in the land in agricultural production and the decline in farms means that there will generally be fewer crops available for value-added processing.
- The increase in berry and vegetable product creates opportunities for selling value added vegetable products (e.g. frozen berries, canned vegetables).
- The significant decline in animal production has caused a corresponding decline in processed meat and dairy products.

2.2 Food sector employment is growing

The number of food and agriculture jobs in the CVRD is steadily rising, as it is across Vancouver Island, as shown in Table 2.2.

Table 2.2 Food and agriculture job trends in the CVRD and Vancouver Island/Coast

	Vancouver Island/Coast Region				Cowichan Valley Reg. District		
	2001	2006	2011	% chg	2006	2011	% chg
Agriculture Jobs (incl. aquaculture)	4,470	4,620	5,080	10%	845	915[2]	8%
Food processing jobs (excl. aq.)	1,745	1,910	2,530	32%	210	300	43%
Total food and agriculture Jobs	6,215	6,530	7,610	17%	1,055	1,215	15%
Population (000s)	384	407	425	4%	77	80	4%
Food Processing jobs/1000 pop	4.5	4.7	5.9	27%	2.9	3.9	34%
Processing Jobs as % of Total Food and Agriculture Jobs	28%	29%	33%	14%	20%	25%	24%

Source: Statistics Canada Census, Regional Economic Analysis Vancouver Island/Coast 2009[3]

Both the Regional District and the Island are experiencing a positive increase in the number of food processing jobs per 1,000 residents and the number of processing jobs is increasing relative to the number of farming jobs. Unfortunately, there are no publicly available figures on food processing revenues for the CVRD. However, according to Statistics Canada, 21,115 people were employed in food processing in BC in 2011 and the BC food processing industry generated $7.05 billion in revenues.

Given that the number of processing jobs is about 33% of the agriculture jobs in the CVRD, and the agriculture sector is generating annual revenues of $48 million, it might be reasonable to assume that the CVRD processing revenues are $48 million X 33% = $16 million per annum.

An interesting employment aspect of the food-processing sector is that the median food processing employee age is just under 30 years old, whereas the median age for a farmer is 56 years[4]. This suggests the food-processing sector is a good complement to the primary agriculture sector in that the combined food and agriculture attracts a wider age range of employees.

2.3 Food self-sufficiency has declined significantly

About fifty years ago, Vancouver Island produced about 90% of the food it consumed. However, that situation has now become completely reversed, with Vancouver Island now importing 90% of its food.[5] In 2006, a provincial government report was released describing the level of food self-sufficiency for BC as a whole. It showed the BC farmers produce 48% of all non-valued added foods consumed in BC[6]. However, according to Canada's Food Guide, British Columbians are not eating as many fruits and vegetables as they should for a healthy diet. Factoring in recommended consumption levels of fruits and vegetables, BC's food self-reliance drops to 34%.

Food self-sufficiency for the CVRD was addressed in the 2009 Agriculture Area Plan[7]. The primary results are presented in Table 2.3 and reveal that using 2006 figures, the CVRD was 19% food self-sufficient. However, we estimate that this percentage is lower today because from 2006 to 2011, the CVRD population increased 4% but food production, based on total farm receipts, only increased 1% (see bottom row of Table 2.3).

Table 2.3 Food self sufficiency in the CVRD (excluding seafood)

Agriculture Parameter	Required Production 2006 (ha)	Actual Prod. 2006 (ha)	2006 Prod. as % of req.	Potential Prod. Goal	Prod. Goal as % of req.	% change in % of required
Dairy	1,539	2,213	144%	2,213	144%	0%
Grain for Dairy production	3,693	0	0%	0	0%	
Meat (non-fish) and alternatives	30,310	5,151	17%	14,246	47%	276%
Grains and breads	2,231	0	0%	0	0%	0%
Vegetables	1,362	94	7%	817	60%	857%
Fruit	1,169	172	15%	702	60%	400%
Total based on 2006 data	40,311	7,630	19%	17,977	45%	236%
Revised totals using 2011 data	42,094	7,694	18.2%	18,942	45%	247%

Source: Agricultural Area Plan, CVRD 2010

Over the past 10 years a number of food producers and distributors in the CVRD have ceased operating. A major chicken producer closed 10 years ago as well the Pacific Seafood Smoked Salmon plant, which closed 3 years ago. General Fruit and Produce was a major local produce distributor that sourced mainly from local suppliers and distributed across the Island, including major retailers such as Thrifty Foods, which has about 25 stores on the Island. The owners of the business eventually sold their property with no successor and closed down the business.

Additionally, the livestock industry in the Cowichan Region is declining due to reduced access to abattoirs and inspected meat processing facilities, increased slaughterhouse waste costs, increased feed and fertilizers costs, and other market factors. Apart from sheep and lamb, all animal production categories have seen a decline in recent years.[8]

According to the 2011 Sustainable Economic Development Strategy for the Cowichan Region[9], the average household spends $7,870 on food each year. Given that the average household size is 2.4 persons, we can estimate that the total value of food consumed each year in the CVRD is about $264 million.

3.0 Food processing and storage in the CVRD

3.1 The CVRD is home to about 50 processors

According to the BC Food Processors Association[10] and the Small Scale Food Processors Association of BC[11], 30 food processors operate in the CVRD out of just over 1,000 processors listed by these organizations in the province. This means that with just 1.7% of the BC population, the CVRD has 2.8% of the processors listed by these two organizations. While this looks positive at first glance, excluding 10 vineyards, the CVRD's ratio of processors to population is just the same as for the province as a whole.

In addition to those listed by the two major processing associations, we identified 19 more processors from the Cowichan Green Community online food producers directory, the Southern Vancouver Island Direct Farm Marketing Association directory and interviews with industry participants. The full list of processors is presented in Appendix B. While this list is likely missing some processors, particularly, small hobby processors, it gives a good sense of the number and range of processors operating in the CVRD. The relative number and types of processors is summarized in Table 3.1.

Table 3.1 Summary of processors in the CVRD by location and type

Processing category	Total	Cobble Hill	Cowichan Bay	Duncan	Ladysmith	Mill Bay	Other
Bakery Items	9	2	1	3	1		Thetis Island (1) Chemainus (1)
Dairy products	3			3			
Eggs	1			1			
Meat	7	1	1	5			
Wineries	16	8	1	6		1	
Beverages	3			2		1	
Specialty Products	10	1	2	3	1	1	Shawnigan Lake (1) Crofton (1)
Total Processors	**49**	**12**	**5**	**23**	**2**	**3**	**4**
Processors/1K Pop.	**0.6**	**2.4**	**1.7**	**0.7**	**0.3**	**0.8**	**0.1**

Source: List of Processors from Full List in Appendix B; List of Farms is from Cowichan Green Community

Geographically, food processors in the CVRD are located primarily in two locations, Duncan and Cobble Hill. Cobble Hill has the most processors per 1,000 residents but this can be attributed to the large number of wineries in that location. In contrast, Ladysmith has the lowest number of processors per 1,000 residents.

According to data file obtained from BC Statistics for 2008 (the most recent year for which data is available), the CVRD had 37 food processors with an average of about between 5 and 9 employees[12]. Only one firm had over 50 employees and no food processing firms had more than 100 employees.

3.2 Food processing infrastructure is lacking

Despite CVRD planning efforts, significant gaps exist in the District's food processing infrastructure. Below we describe the existing infrastructure for commercial kitchens, abattoirs, and shared-use processing facilities.

Commercial Kitchens

There are only three official shared-use commercial kitchens in the Valley that are focused on serving food processors and that are publicly available:

- A 920 sq. ft. commercial kitchen in Duncan run by the Cowichan Green Community (CGC) and located in a newly refurbished building that also houses the Cowichan Green Community and social housing. The kitchen is used by CGC for cooking workshops and to prepare processed foods for sale at the farmers' market. It is also rented by one restaurant to make value added product for retail. It contains a gas range, convection oven and other basic kitchen equipment and has four staff. Charge-out rates are $100/day, $50/4 hours and $20/hour for for-profit businesses and a discount for not-for-profit organizations. They are at 60% capacity and feel are meeting current community demand. There is 2,700 sq. ft. space that could be used to build cold storage.
- A small commercial kitchen in Cobble Hill run by the operators of Cobble Hill Hall. The kitchen is rented mainly for private functions ($35/hour or $100/day). The kitchen is 500 sq. ft. and has a commercial propane stove with two ovens six burners and a grill, commercial electric fan with fire extinguisher over ovens/burners, commercial stainless steel dishwasher, commercial stainless fridge, stainless steel countertops with double stainless steel sinks along with one hand washing sink. According to the operators there is plenty of capacity for additional use.
- A 2,000 square foot commercial kitchen in Duncan, operated by the Clements Centre, which serves people with disabilities. It is very near the Vancouver Island University, making it an ideal spot for hosting food processing training and skills development events.[13]

In addition to these facilities, the Regional Health Authority has identified a number of commercial kitchens that serve multiple operators. However, it is unknown how many of these facilities are accessible to new food processors. It is possible that most of these facilities are not available to outside parties. The location and type of these facilities, including those mentioned above, is summarized below in Table 3.2 and listed in Appendix C.

Table 3.2 Number & type of approved multiple-operator commercial kitchens in CVRD

Location	Number of Kitchens
Chemainus	2
Cobble Hill	1
Crofton	2
Duncan	12
Ladysmith	2
Lake Cowichan	5
Mill Bay	1
Shawnigan Lake	1
Total	26

Type	Number of Kitchens
Community facility (e.g. school, hall, neighbourhood house, food bank)	12
Recreational facility (e.g. camp)	8
Business facility (e.g. vineyard, farm)	6

Source: http://www.healthspace.ca/viha Confirmed by Stacy Stowa, Duncan Environmental Health Office

Most of the kitchens, not surprisingly, are located in the populated area of Duncan as well as Lake Cowichan. These kitchens are generally quite small and not equipped for processing or long-term storage of larger quantities of food.

Abattoirs

There are four abattoirs in the CVRD along with another three in the adjacent Regional Districts, as shown in Table 3.3. This is sufficient to meet the current meat processing needs. However, this is only likely possible given the significant declines in meat production that have occurred over the past 20 years.

Table 3.3 Class A abattoirs in or near the Cowichan Region

Name of Abattoir	Location	Beef	Lamb	Pork	Chicken	Turkey	Bison	Goat	Deer	Rabbit	Emu
CVRD Abattoirs (all Class A)											
Braun's Custom Butcher Shop	Duncan	✓		✓			✓	✓			
Hidden Valley Processing	Duncan	✓	✓	✓							
Island Farmhouse Poultry	Cowichan Bay				✓	✓					
Westholme Meat Packers	Westholme	✓			✓	✓					
Abattoirs in Adjacent Regional Districts											
Maplewood Farms	Victoria		✓					✓			
Rod Plecas Livestock Service	Nanaimo	✓	✓	✓			✓	✓	✓	✓	✓
Valleyview Farms	Nanaimo	✓	✓	✓					✓	✓	

Source: BC Centre for Disease Control List of Licensed Class A and B meat Plants

Shared processing facilities

No shared processing facilities with a proper packing line exist in the CVRD despite multiple efforts by various groups. These initiatives are summarized below.

An attempt was made to develop a shared processing in 2000[14]. It was called the Warmland Specialty Foods Cooperative (WSFC) and it was designed to achieve the following goals:

- Meet stringent federal HACCP[15] regulations so that it could serve new start-up food ventures.
- Support food entrepreneurs with business plan development, market research, recipe creation, training, access to processing facilities, and marketing.
- Create opportunities for existing farmers to supplement their incomes with value-added products.
- Work with farmers and ag organizations to identify the best food processing opportunities.
- Develop a highly visible agri-tourism processing and retail facility.

Unfortunately, it appears that the Co-op was not able to find funding to build a suitable facility that would enable the separate processing of produce, poultry, fish, and meat.

A similar initiative was launched in 2005 in Nanaimo. It was called the Vancouver Island Heritage Foodservice Society[16]. It was to include a co-packing processing facility in Nanaimo, a meat processing facility near Nanaimo, and a vegetable processing facility near Duncan. Unfortunately, it also failed even though it included a number of strategies to improve the economics. For example, the Society planned to use the leftovers from the processed vegetables to make soups and the leftovers from the processed meats to make sausages and jerkies. They also planned to hire staff with mental disabilities to perform more menial food processing tasks to avoid high staff turnover rates associated with those positions.

Yet another attempt was made in 2007, facilitated by Economic Development Cowichan[17]. The business plan for this initiative was designed to have individual units for each processor, designed to HACCP standards as well as common areas that included offices, a boardroom, a lunch room, potential shared warehouse space and potential for a retail outlet. They concluded that there was a business case for such a facility provided that it was a for-profit enterprise with mostly established businesses. While the concept is still being actively promoted on the Cowichan Region website, no further action has been taken.

A number of facilities exist in other parts of Vancouver Island that do custom food processing. However they tend to be for larger quantities and for specialized products. For example, St. Jeans Cannery and Smokehouse[18], in Nanaimo, has a 12,000 sq. ft. production facility and 18,000 sq. ft. warehouse

Distribution

Most locally processed foods that are not direct marketed are distributed through conventional distribution channels such as Sysco, Cold Star, retail own distributors, major produce distributors, and large dairy distributers such as Dairyland and Island Farms. The remainder is typically distributed by processors in their own vehicles.

In the past year, Trigo Distributors have established themselves as the only distributor primarily distributing locally grown/locally processed foods on Vancouver Island. Trigo Distributors, previously Ambrosia Distributors, was bought by Bruno Trigo 1.5 years ago and renamed. Trigo sources mainly from about 20 Saanich farmers (produce, eggs and some meat) and distributes to about 40 restaurants in Victoria. They also supply a few schools and other public institutions.

Items that are not readily available on Vancouver Island are sourced from the Okanagan, Fraser Valley and further afield. Farmers deliver the product to their warehouse in Victoria and then they distribute it on to their customers. Bruno, the owner, is an ex-chef and understands the needs of his restaurant customers. Trigo is expanding its territory and taking on more farmers and customers. They reached out to growers in the Cowichan Region but had no response.

3.3 Cold storage facilities exist nearby but not in the CVRD

The CVRD has no major cold storage facilities within its boundaries. However there are companies that provide cold storage in the adjacent districts, as shown in Table 3.4. There is also a cold storage facility in Port Hardy called Keltic Storage but it is for seafood only. These facilities have capacity to easily handle increased food storage demand from Cowichan Region Processors

Table 3.4 Food Storage Facilities in Southern Vancouver Island

Regional District/Cold Storage Firm	Total size	Refrigerated space	Frozen space	Ambient space
Cold Star Freight - Victoria	36,000 sq. ft.	11,000 sq. ft.	25,000 sq. ft.	0 sq. ft.
Cold Star Freight - Nanaimo	25,000 sq. ft.	15,000 sq. ft.	10,000 sq. ft.	0 sq. ft.
Nanaimo Cold Storage		1,000 sq. ft.	1,000 sq. ft.	1000 pallets

Source: Interviews with food storage facility operators. Cold Star Freight has another 10,000 sq. ft. in Comox. Note that1000 pallets like require about 12,000 square feet of space

Large operations such as Sysco, Thrifty Foods and independent grocers (e.g. Country Grocers, Quality Foods and Fairways) have their own storage and distribution facilities on the Island. National chains such as Safeway and Save on Foods have warehousing on the mainland and ship to the Island using their own trucks. Most retailers also rely on 3rd party distributors as well as manufacturers to supply additional food items such as produce (e.g. Van Whole), dairy (e.g. Dairyland) and meat (e.g. Hallmark).

The cold storage facilities in Table 3.4 handle very little Island produced food, except seafood. Most of the food they handle is imported from the mainland. Both Cold Star and Nanaimo Cold Storage have stated goals for 2014 to increase their business with local growers, processors and retailers. Cold Star has submitted an application to build an additional 70,000 sq. ft. ambient warehouse at their Nanaimo location to help local independent retailers manage their inventory better.

If more Island products were produced and exported off Island then the trucks that typically travel across to the mainland empty could carry Island products, producing a more efficient and cheaper service.

Established cold storage businesses offer a number of benefits to CVRD processors because they:

- Have established relationships with many customers including larger retailers, restaurants and public institutions.
- Have storage facilities on the mainland to support off Island food exports.
- Are HACCP certified, which some customers (especially larger retailers) insist on.
- Have a large number of trucks on hand for a wide distribution network including off Island.
- Are cost efficient – Cold Star charges a $15 handling fee per pallet, $25/month storage and about a $50 delivery fee per pallet (depending on location). They also offer flexible prices and services depending on the customers' needs (e.g. breaking down full pallets).
- Can deliver items from multiple producers to customers on one combined delivery.
- Offer an efficient and low cost system by consolidating storage and distribution in a larger facility.
- Are located within 40 minutes drive of the CVRD and can pick up product direct from producers.
- Have goals to support local food production and to work with local food producers.

3.4 Some key initiatives are underway to support more processing

Despite the lack of food processing and storage infrastructure within the CVRD, a number of key planning initiatives are underway that could lead to an expansion of food processing. These initiatives include:

- **A Cowichan Food Producers Coop (Cow-Op)** - It will initially be an online virtual farmer's market as well as distribution service with a refrigerated van available to bring products to market. A detailed feasibility study, funded by the BC Coop Association, has already been prepared and the proponents are already recruiting founding members.
- **A community based agriculture education program** – This initiative is being developed through Vancouver Island University has three main components: primary production skills development; value-added production and industry development (processing, branding, management); and food studies (the social, political, economic, aspects of our food system).[19]
- **A local food/agriculture branding campaign** – This program has been developed by Economic Development Cowichan and includes the tag line: "Celebrate Food. Celebrate Life."[20]

3.5 A number of trends are affecting the CVRD food processing sector

A number of positive and negative trends are influencing the food processing and storage sector in the Cowichan Region. These trends are summarized as follows:

Political

- The B.C. government identified agri-foods as a key growth sector in the B.C. Jobs Plan. The federal and B.C. governments substantively support the agriculture and food processing sectors, although both levels of government provide limited funding for agri-food training and for equipment and infrastructure for agri-food processors.
- Regional and local government support for agriculture and food processing is strong in the CVRD as evidenced by: the completion of the CVRD Area Agriculture Plan, the creation of an Agricultural Advisory Commission, support for – and hosting of –the Islands Agriculture Show and allocation of staff time and resources (via Economic Development Cowichan) to agriculture related activities.

Economic

- Farm receipts are growing but not as fast as population, resulting in a gradual shrinking of per capita farm receipts.
- Sales of food products through direct farm marketing channels such as farm-gate sales, online channels and farmer's markets are rising[21]. A recent report indicates that 17% of all agriculture-related revenues in the Cowichan Region come from product sold directly to consumers. For small farms that figure increases to 40%.[22]
- The percentage of imported vs. locally produced food has increased from less than 10% to over 80% today.
- The area of land farmed in the CVRD has declined by 40% over the past 20 years[23].
- The price of farmland is continuing to rise, making it increasingly expensive for new farmers.

Social

- Demand for buying local is increasing, supported by a Cowichan Brand marketing campaign.

- Efforts to establish new local-buying food hubs and shared use food enterprises are intensifying.

Technological

- Food processing infrastructure has declined over the past 20 years and, despite continuing attempts to change this, the CVRD has no shared use co-packing facility
- Food storage infrastructure has been completely lost within the Cowichan Region.

Legal/regulatory

- Regulations for meat processing facilities are becoming more stringent, leading to a decline in meat production.
- Quotas for supply managed products have shifted from the Cowichan Region to the Fraser Valley

Environmental

- Concerns about the impacts of climate change on food supply are rising, resulting in a number of new climate adaptation studies and initiatives.
- The number of organic farms in the CVRD is rising[24].

Demographic

- The average age of farmers is rising (age 52 in 2000 to age 56 in 2011) and young people are not stepping in to take their place.

3.6 Expanded food processing provides numerous benefits

Local food processing provides a critical link between local primary food producers and local markets. Expanding food processing, storage, and distribution offers a number of important benefits:

- **Greater economic prosperity** - Expanded food processing creates new jobs and boosts local economic activity. In addition to direct economic benefits, food processing creates significant indirect economic benefits. The ratio between direct and indirect benefits is often referred to as the "multiplier effect" and food processing has the highest multiplier effect in the Canadian manufacturing sector. For every $1 of GDP created in the food processing sector, $1.87 is created in the general economy. Similarly, every new food processing job creates 2.44 indirect new jobs, whereas other manufacturing jobs only have an average job multiplier of 1.21.[25]

Other studies have demonstrated that locally-produced foods sold directly to local buyers generate higher margins and up to 3 times the spin-off economic impact and returns on investment compared with traditional supermarkets.[26] Regional processing also allows producers to differentiate themselves in the marketplace.

- **Increased tourism** – Visitors to less-urban areas such as the Cowichan Region are keenly interested in authentic food experiences that involve visiting local farms, wineries, and artisan food producers. If marketed well, these agri-tourism initiatives can significantly increase the number of visitors and the length of time that they will stay in the region.[27]
- **Enhanced farm viability** - Farmers that conduct value-added processing of their primary farm products increase their revenues and improve their overall farm viability and climate change resilience. The extra income from processing activities may make it possible for farm family members to reduce the need for off-farm employment. For farmers that operate on ALR land,

food processing is an allowable activity provided that 50% of the ingredients for the processed products were produced on the farm.

- **Greater product diversification** - A key direction for local producers is to diversify products to insulate against economic cycles and against losses due to climate change induced extreme weather events. Food processing enables producers to test, develop, and bring to market a wider-range of items to a larger number of customers.
- **Lower transportation costs and GHG emissions -** Local food processing reduces the transportation costs and associated greenhouse gas emissions relative to products that are processed further away and imported. For processed meat products, slaughtering and butchering animals closer to the farm is more humane as it avoids the stress of long distance travel to far away abattoirs.
- **Improved food security and self-sufficiency** - The CVRD has only a few days of fresh food supply. Expanded food processing increases the number of food supply days, making the Valley more food resilient in the event of escalating climate change-induced severe storms.
- **Increased local product availability** - By increasing capacity for producers to aggregate, store, process/add value, and distribute products in the region, more products become available in more locations to meet rising consumer demand for local products.

In Appendix D, we present a range of strategies that have been used successfully in other jurisdictions to expand food processing.

4.0 Processing opportunities and constraints

4.1 Certain processed food categories are ripe for expansion

Based on our initial research, we have identified the following processing activities as having good potential for growth:

Vegetable Processing

- Value-added berry processing – berry juices and individually quick frozen (IQF) packaged berries
- Value-added vegetable processing – IQF packaged vegetables (e.g. corn, peas), canned veggies
- Soup processing - Squash soup, borsht soup
- Dehydration and fermentation - cabbage sauerkraut, dehydrated stews for the marine market

Dairy Processing

- Cheese production
- Yogurt manufacturing – the CVRD has no yogurt production
- Fresh milk production for farm-gate sales
- Increased egg production – the CVRD is self-sufficient but Vancouver Island is in a deficit[28]

Meat Processing

- Expanded small scale chicken processing using a mobile abattoir
- Expanded meat processing
- Meat pies - strong demand from British, Australian, and New Zealand residents

Other Types of Processing

- Prepared meals
- Pasta sauces
- Breakfast foods (e.g. granolas, rolled oats)
- Beer production with hops produced on-site or locally
- Distillery production using barley produced on-site or locally (there is one in Courtenay)

Health Protection Environmental Services stated there were no major challenges to licensing an existing processing facility or building a new shared processing facility in the region. There is enough water in the region and any regulations, such as food safety, are no more challenging than a normal facility. Any shared facility would need to have a food storage plan and a separate food handling and safety plan.

Another potentially large opportunity area is to capture food waste and process it into value-added products. According to a Vancouver based study nearly 50% of all produce grown locally is wasted before it reaches the customer.[29]

A significant opportunity exists to partner with the Cowichan Tribes as they have 200 acres of good agricultural land that is currently under-used. It is relevant to note that the Cowichan Tribes used to operate a fairly large vegetable processing facility. Unfortunately, the facility was closed down a number of years ago and a recent assessment of the facility suggests that it cannot be restored.[30]

4.2 Good opportunities exist to create CVRD storage facilities

A November 2013 study on the Feasibility of a Food Hub for the Cowichan Region suggests that good opportunities exist to rent existing food storage facilities or create new ones within the CVRD, if needed[31]. Potential existing facilities that could be used for storage, include:

- Hope Farms (walk-in cooler/freezer with dock loading)
- Riverside facility (cooler)
- Repurposed building on the north side near Mission Road (cooler)

This study also indicated a few locations where cold storage facilities could be created, including:

- OUR Ecovillage, Shawnigan Lake
- Whipple Tree Junction
- Pioneer Mall

4.3 Mobile food processing has strong potential

Processing foods using mobile facilities can significantly improve the economics of small scale food processing because one vehicle travelling to a number of small farms and food producers is far easier, safer and cheaper than each food producer have to load up their product, transport it to a central facility, process it, and then transport it back. Mobile facilities can be general purpose, such as North Dakota's travelling commercial kitchen[32], but most are customized for a specific product type. The two types that are most relevant to the Cowichan Region, and which are already being developed include mobile apple processing and mobile poultry processing. Each one is briefly discussed below.

The owners of Blue Moon Winery in Comox purchased a German-made mobile apple processer in 2012, partly to process their own apples into apple cider but also to serve other customers in the region. So far they have focused on processing apples for orchard growers in the Comox Valley but they are willing to transport their apple-processing unit down to the Cowichan Region for farms with at least six trees[33].

The processing unit is capable of pressing, pasteurizing, and packaging and the economics make very good sense if the alternative is to send the apples to a third party processor. The owners believe that the apple-processing unit could be used for processing other fruits and berries but they have so far only processed apples. They hope to experiment with other fruits this year. Their services and prices are all listed on their website at http://www.pressingmatter.ca

A local meat producer is looking into getting a mobile poultry abattoir for the Cowichan Region, similar to the one that is already operating on Salt Spring Island. However, it appears that the meat processing regulations are posing some significant constraints on the Salt Spring abattoir, which is required to return to a docking station each day, removing much of the costs savings typically associated with this type of operation. A good source of information on mobile poultry processing can be found at http://www.mobilemeatprocessing.com

4.4 US study suggests large potential for new food processing jobs

A US study entitled, The 25% Shift to Local Food, provides compelling research on the number of jobs and economic activity that could be achieved in northeast Ohio region if they achieved a 25% increase in the percentage of local food purchased by residents of those states. The study estimated that almost 28,000 new jobs and over $4 billion in new economic activity could be generated by such a shift in a

region with a population of 4.1 million people. It was further estimated that 4,000 new processing jobs could be created. If the Cowichan Region were able to achieve a similar 25% shift and a similar increase in jobs relative to its 80,000 population, the result would be about 80 new jobs for the region.

If the breakdown of food processing jobs created in northeast Ohio was similar to the Cowichan Region, the resulting number of jobs would be as shown in Table 5.1. Because, the Cowichan Region already has a strong and growing winery sector, we believe that the increase in jobs could be higher. We present estimated job creation numbers in Chapter 7.

Table 4.1 Job creation potential of expanded food processing based on US study

Food Processing Sector	Jobs Created in 25%shift report	Pro-rated number of jobs in the CVRD
Meat products	1,308	26
Bakery and bread products	424	8
Wineries, breweries and distilleries	294	6
Confectionary products	268	5
Fruit and vegetable processing	233	5
Dairy products	200	4
Non-alcoholic beverages (soft drinks, tea, coffee)	193	4
Cereal and pasta products	191	4
Frozen food products	180	4
Snack food products	150	3
Seafood products	141	3
Grain processing	121	2
Dressings and condiments	91	2
Other food manufacturing	288	6
Total	**4,082**	**82**

Adapted from the 25% shift: The benefits of food localization and how to realize them

While there are likely to be significant differences in the development of food processing in the Cowichan Region relative to Northeast Ohio (e.g. more wine production; less confectionary, snacks, cereals, and grain processing), it is still useful to see the relative growth opportunities in the various processing sectors. It should be noted, that many of these sectors do not depend on local ingredients and can generally be developed anywhere there is sufficient demand for the end product.

4.5 Barriers to expanded food processing

A number of barriers to expand food processing exist in the CVRD (and other regions). These include:

Business/Financial Barriers

- **Poor access to financing** – it is difficult to obtain financing and the administration requirements for grants can be onerous. Farm Credit Canada requires a business plan as a pre-requisite for financing.

- **Poor economies of scale** – Small processors face high ingredient and supply costs, because they cannot get volume discounts. Small processing runs are also less cost effective.
- **Challenging export logistics** – The ferries to the mainland pose extra logistics challenges for processors that export. For example, island meat processors can lose a few days on their "fresh before" dates compared with lower mainland meat processors.
- **High land costs** – Land and building costs are high in the CVRD relative to many other parts of the province, although this is where the CVRD has an advantage over lower mainland suppliers.

Infrastructure Barriers

- **Lack of processing infrastructure –** The equipment and facilities for local processing are limited. In addition, food storage facilities do not have sufficient demand in the off-season to be viable.
- **Lack of local ingredients for processing –** Outside of dairy and meat products, there is a shortage of local ingredients for processing. This causes processors to have to buy ingredients from outside sources at potentially higher prices.
- **Lack of irrigation water in some areas –** For processed foods that require irrigation of the crop ingredients, there are some areas of the CVRD where there access to irrigation water is constrained. There is no shortage of water for food processing.
- **Lack of training programs –** Government support for food production-related skills training is much lower in Canada than in the United States. The Vancouver Island University proposed the development of an agriculture resource and innovation centre but they are still waiting for funding[34]. On-farm processors can access Farm Business Advisory Services.
- **Lack of trained staff –** There is a shortage of trained staff and low wages in the sector that results in poor staff retention.[35] Small processors are also often not "wholesale ready" and lack knowledge about the need for standardized packaging, consistent pricing, and prompt customer communication. They also lack basic business entrepreneurship skills on how to effectively manage and grow a food processing enterprise.

Regulatory/Government Support Barriers

- **Scarce and costly marketing board quotas -** Buying quotas from local egg, dairy, and poultry marketing boards is expensive and restrictive for small producers. Suppliers in a region are not given a priority for quota within their region, except for the Turkey Marketing Board, which provides entry quota for farms serving regional markets outside the Fraser Valley. This creates a situation in which some Island producers buy quota on the mainland, then ship their products there for processing, only to import the finished product back again. Additionally, quotas do not allow for diversification of product (e.g. organic products).
- **Restrictive rules -** Meat inspection rules have changed over the past few years, creating extra costs and challenges for slaughterhouses and meat farmers. Further, the Cowichan Region does not allow producers to apply for a Class C or D slaughtering license because the region has Class A slaughtering facilities. These lower class licenses would allow them to slaughter onsite for direct sales or sales to selected third party organizations (e.g. restaurants) at a lower cost.
- **Strict licensing regulations** – Starting a new business can be challenging due to cumbersome licensing regulations. For example, to start a new dairy business, a farmer must submit a business plan to the BC Milk Marketing Board (BCMMB). They are then required to meet all of the requirements of the BCMMB before certificates and licenses to operate are granted. For dairy processors, a license from BC Centre of Disease Control (BCCDC) is also needed.

- **Lack of government coordination –** A lack of cohesion exists among regulatory agencies. No single agency exists on Vancouver Island with the capacity or mandate to lead the development of a regional food strategy that includes processing.[36]
- **Competing product subsidies –** Some imported food processed products are heavily subsidized, making it hard for locals to compete against them.
- **Trade agreements** – Trade agreements are one of the largest barriers to procuring local food for public institutions like the University of Victoria. International trade agreements such as the North American Free Trade Agreement (NAFTA) are not an issue, apart from possible issues in the Comprehensive and Economic Trade Agreement (CETA), which are currently being negotiated. However, the New West Partnership Trade Agreement (NWPTA) and Agreement on Internal Trade (AIT) have clauses that restrict local procurement.
- **Restrictive zoning bylaws** – Some zoning bylaws do not consider food production as an eligible agricultural practice, which can limit the building of processing facilities on farmland.

Social/Cultural/Consumer Demand Barriers

- **Rigid retailer buying habits –** Large food retailers and distributors tend to want to buy in large quantities and even to have year round purchasing contracts with fixed pricing. This is also true for institutional buyers. For example, Safeway and Save on Foods source their poultry from the mainland because they want one supplier to supply all their Island stores. This is the same for Thrifty Foods, except where customers specifically demand local brands.
- **Lack of consumer awareness –** Consumers are not aware of the range of local producers, although a Cowichan product branding campaign is helping to address this.
- **Lack of farmer awareness –** In some cases, farmers perceive that they are not able to do processing when in fact they can (e.g. lack of awareness that they can process on ALR if more than 50% of the ingredients are grown on the land).
- **Rigid consumer buying habits –** Even though consumers are aware that buying local is more helpful to the local economy, they continue to buy non-local products because those products are slightly cheaper, they are loyal to popular brands, they want the convenience of buying products out of season, and so on.
- **Small local customer base –** Vancouver Island has a small and dispersed population (750,000 residents) compared with the Lower Mainland (2.5 million people).
- **Lack of innovation among some producers –** While the Cowichan Region has many innovative food processors, some producers in the Valley have been slow to adopt new technologies, cultivate new crop varieties, and create new food products to meet changing consumer demands.

The food processing recommendations presented in later chapters of this report have been selected, in part, to specifically address and overcome these barriers.

5.0 Climate change issues related to food processing

5.1 General climate change issues and potential impacts

Climate change mitigation (actions that reduce changes to the climate) and adaptation (actions that adapt our way of living to existing and anticipated climate change impacts) are both necessary components of effective risk management to agricultural production. Continuing to prioritize greenhouse gas emissions reduction will help avoid new climate change impacts, while existing greenhouse gases already added to the atmosphere (with additional future emissions) will translate into significant ongoing climate change-related impacts for decades to come. Appendix E details climate change predictions for the Cowichan Region in 2020, 2050 and 2080. The key expected climate change impacts are as follows:

Temperature - Projections show the Cowichan Region is warming. This will produce more new 'growing degree days'.[37] Warming will be greater in inland areas than in coastal areas, and greater in winter than in summer. The annual number of frost-free days is also projected to increase. These factors may make it possible to grow produce and food for livestock earlier and later in the growing season.

Precipitation - Over the last century, changes in precipitation in the Cowichan Region have been between -5% and +10%. The increases occurred mainly during the summer months.[38] Cowichan Region's annual precipitation is expected to continue increasing slightly in the coming decades, but with notable decreases in the summer. This could lead to flooding in the winter and spring seasons, and periods of drought in the summer months.

Hydrology - Trends for annual stream flow along the south coast are mixed, some increasing and others decreasing, while low flow levels have decreased.[39] As current warming continues, more precipitation will come as rain, less as snow. This will occur primarily in winter when the portion falling as snow on Vancouver Island is projected to decrease much more sharply than elsewhere in BC.

In the Cowichan Region, warmer and wetter winters will increase the likelihood of winter flood events. Peak flows in the spring will decline and continue to occur earlier, while total flows in summer and fall will decline. Together with rising temperatures and evaporation rates this mean a longer dry season and low flow period between May and October, with a rise in drought conditions.[40] The potential for more rain-driven flood events and negative impacts to groundwater recharging is also projected to increase.

Weather Extremes - BC's century-long pattern of increasing extreme hot temperatures, and fewer extreme cold temperatures, is projected to continue. Extreme weather events - both wet and dry - are expected to become more frequent. Heavy rainfall events are already increasing in the spring, and there is an increase in both extreme wet and extreme dry conditions in summer. The intensity and magnitude of precipitation events are projected to increase, making agricultural growing and transportation conditions unpredictable. The number of summer "warm days"[41] is projected to double and extremely hot days are projected to triple, having a negative effect on potable water availability and increasing the risk of wildfires.

Sea Level Rise - Global sea level has risen more than 20 cm since 1899, though this varies significantly by location due to land movement (rising or falling) and climate and weather variability. Projections show this trend will continue. Estimates for the BC coast over the next century suggest a minimum sea level rise of 80 cm for the east coast of Vancouver Island.[42] Currently, a combination of a severe storm event at high tide during an El Nino year could overwhelm coastal flood protection infrastructure even without additional sea level rise. In coastal areas, potential decreases in groundwater recharge rates together with rising sea level could lead to salinization of groundwater supplies, making irrigation and potable water for livestock challenging.

Table 5.1 Summary of potential climate change impacts on agriculture

Description of Potential Impact	Category
Increased interruptions, delays and damage to crops, land and infrastructure, due to extreme weather events.	Extreme weather delays/damage
Increased delays and interruptions of imported food and agricultural input supplies due to critical distribution infrastructure damage from severe weather events.	Extreme weather delays/damage
More frequent flooding of fields and inadequate drainage, particularly during the winter.	Excess water
Increasing competition for limited water resources, particularly in the summer and fall.	Water shortage
Wildfire damage to crops, land and infrastructure due to hotter summertime temperatures.	Fire damage
Changes in types, prevalence and timing of pests, diseases, invasive species and weeds.	Biological pests
Potential for longer growing seasons and/or new crop types to be grown.	Growing season
Increasing pressure to convert agricultural land to other uses (e.g. if the land is continually flooded or becomes unsuitable for growing)	Land pressure
Possibility of increased public support for local agricultural production in light of more frequent disruptions to food supply.	Local food support

Note: This list excludes climate change impacts on fish and seafood.

It is common for the agricultural sector to adapt to climatic conditions, as agriculture is sensitive to climatic variability and extreme events. Adaptive decisions are not likely to be made in light of (or in response to) climatic conditions or risks alone because such decisions are typically driven by the interaction of multiple forces.[43] Such decisions are likely to be made as part of ongoing risk management.

Adaptations can occur at several scales from an individual farm to a national public policy, involving interrelated but different actors. At the local or regional scales, the amount of adoption of adaptations will vary depending upon local circumstances. These insights provide an important backdrop for understanding the various dimensions of agricultural adaptation to climate change. Typical adaptation considerations in the Cowichan Region have involved responses to flooding, drought and wildfire conditions.

Climate change creates the potential for variations and extreme events of a magnitude and scale not previously experienced. This is likely to push farmers beyond their current capacity to adapt.[44]
A complete account of projected climate change impact agricultural challenges is detailed in Appendix F.

5.2 Climate change impacts specific to food processing

The food processing and distribution system is not vulnerable to climate in the same way that production agriculture is, but there could be some significant impacts, particularly in the sectors that are more energy□intensive. Agricultural processing operations may experience two kinds of climate change

impacts: those experienced directly and those related to climate change impacts on agricultural production. There are five main processing elements that could be affected:

- Transportation and other infrastructure-related elements (direct impacts)
- Storage (direct and indirect through production impacts)
- Processing scheduling (indirect through production impacts)
- Food safety (indirect through production impacts)
- Expansion opportunities (direct and indirect through production impacts)

Each of these elements is discussed briefly below.

Transportation and other infrastructure-related elements

Extreme weather events and sea level rise may affect transportation infrastructure, which will affect delivery of produce and livestock to processing facilities as well as shipping of goods from the facilities. Road and bridge outages from heavy rainfalls and flooding or early or late snowfalls or freezing would negatively affect the ability of producers, suppliers, processors and retailers to transport raw ingredients, shelf-ready ingredients and products. Port activities and delivery of ingredients and products via ferry may be impacted by sea level rise and increased storms as well. We estimate that over half of Cowichan Region processors import ingredients via ferries, making adaptation to climate change impacts in this transportation system an area of high priority.

As average temperatures change, the growing locations of crops may change as well. Certain crops currently grown in Cowichan Region may be grown in more northerly areas in the future. These geographic shifts may mean that storage and shipping facilities, and road and rail infrastructure need relocation. Similarly, changes in sea level also could have important implications for the location and operation of storage and shipping facilities at major ports.[45]

An increase in average temperatures also poses challenges in the way good are shipped. Currently, mild climates allow shipping at ambient temperatures in simple trucks or shipping containers. Higher temperatures and heat waves may result in food damage in production and transportation using these options. Thus, there may be an increased need to use refrigerated trucks to ship produce to processing and storage facilities. Relying on non-refrigerated shipping options may result in loss of product. This would represent a significant increase in shipping costs.

Transportation scheduling could also become a major issue. Rail, truck and sea transportation services often have shipping scheduling agreements with producers, producer organizations, processors and retailers, providing a window of time during which products can be shipped using their services. If ambient temperature shifts or extreme weather events result in crops and livestock yielding at significantly different times, yielding suddenly or yielding in over-abundance, transportation schedules and service providers may be under strain, with producers and processors feeling the negative effects as produce, livestock and products could go to waste waiting for transportation.

Storage

Similar to the issue of needing more refrigerated transportation, ambient temperature food storage may need to be replaced or supplemented with increased refrigerated storage as ambient temperatures rise or more intense heat waves occur. Pre- and post-processing storage facilities may have to expand to meet increased refrigerated storage demand. This may result in increased emphasis on shelf-stable products like pickled and canned goods. Conversely, heat waves, cold spells and extreme weather

events can also decrease the yields of crops and livestock, thus decreasing the demand for storage. The resilience of crops and livestock in the Cowichan Region to climate change impacts will be a key factor in future storage needs.

Depending on their locations, storage facilities may also need to adapt to climate change impacts such as flooding (impacts on storage infrastructure) or droughts (impacts on storage and processing operations that use water). Similar to producers, storage operators may also have to protect against new pests that have migrated with the changing climate.

Processing scheduling

As with transportation scheduling, processing scheduling may be affected by climate change impacts experienced by producers. Livestock and crop harvest times and yields differ depending on ambient temperatures as well as extreme temperatures and extreme weather events.[46] Items processed from fresh ingredients may thus face scheduling challenges due to uncertain yield times and quantities. Processors often expect to make facilities available to process certain items at certain times of year or season. Climate change impacts that result in varying planting and harvesting times, sudden harvests and varying yields will interfere with these expectations and may result in processing pressures from multiple crops in need of simultaneous processing and storage that used to have staggered processing and storage times.[47] Increased processing and storage costs will result if items have to be stored earlier and wait for processing. If scheduling can be accommodated, the storage phase can be skipped, resulting in cost savings.

Food safety (via production impacts)

Food safety is also likely to be impacted by climate change through several mechanisms. Food□borne pathogens, such as cholera and mycotoxins, are likely to expand their geographic range, and outbreaks are often associated with extreme weather events. [48,49] Addressing these increased risks will be the responsibility of producers and processors.

The meat slaughter industry is one area in which important issues may arise. Higher temperatures would increase the costs of refrigeration, packaging, handling, and storage of perishable meats that are vulnerable to pathogens such as E-coli. Changes in the location of livestock production could also necessitate changes in the location of livestock transport, feedlots, and slaughter plants.[50]

Expansion opportunities

Processing facilities looking to expand due to product success or benefits reaped from new crops or greater yields may experience barriers. For example, those requiring water for their activities may be prone to water quality and quantity issues resultant from flooding, drought or salinization.[51] Facilities may be able to offer more cold storage options as temperatures increase, however, this infrastructure can be costly. Also, fluctuations in ingredient availability may make it difficult for processors to gauge their expansion options.

A potential benefit to processors arising from climate change impacts may be the availability of new ingredients for new products. Examples include fruit and vegetable varieties, grape varieties for vintners, and hops for brewers. Availability of new ingredients will depend on successful experimentation with new crops as the climate changes.

The uncertainty of climate change impacts on producers and processors necessitates integrated and flexible processing facilities.

6.0 Evaluation of recommended actions

6.1 Preparation of initial long list of recommendations

Based on our interviews with key stakeholders (see Appendix A), our analysis of the food processing sector, and our research on food processing initiatives in other jurisdictions, we prepared a list of 45 recommended actions to expand food processing and deliver significant climate change benefits in the CVRD. These recommendations were grouped into five broad categories:

- Policies and regulations
- Education and communication
- Planning and information management systems
- Processing infrastructure and equipment
- Organizational structures

This long list of recommendations is presented in Appendix G along with a rationale for why the recommendation was included.

6.2 Selection of final recommendations shortlist

Our next task was then to reduce the number of recommendations by about 2/3s. To do this we established the following evaluation criteria and assigned a relative importance weighting to each:

Criteria	Description	Weighting (out of 100%)	Rationale for weighting
Increased processing	Magnitude of new processing activity and associated new jobs and economic activity	30%	Increased processing not only helps local economy but increases food self sufficiency and climate change resilience
Cost benefit	Benefit of recommendation relative to cost	30%	Cost benefit is important because only initiatives with high benefits relative to costs will get done.
Degree of control	Amount of control that parties within the CVRD have over implementation	15%	This is of lesser importance because even if outside parties need to implement the initiative, the initiative should still score well
Ease of implementation	Degree of ease to implement recommendation	25%	This is important because a complicated process for implementation is a large barrier

Using these weighted evaluation criteria, we scored each of the recommendations and reduced the number from 45 to 23. The results of our scoring are presented in Appendix H.

Because our scoring was unavoidably subjective, we organized a stakeholder workshop, held at the Economic Development Cowichan offices on February 5, 2014 to present the list of shortlisted recommendations and obtain consensus on the final shortlist. We received excellent feedback from the group and by combining some recommendations and deleting a few others, we arrived at a final short list of 16 recommendations. This list is presented in Table 6.1 along with the key actions associated with each recommendation and the key parties to lead the initiative.

Table 6.1 Final Short List of CVRD Food Processing Recommendations

Description of Recommendation	Key Actions	Lead Organization
Policies and Regulations		
1. Identify new meat slaughter rules that foster local meat processing	• Establish task force to review regulations • Study meat regulations elsewhere • Discuss findings with BC government	Union of BC Municipalities
2. Ensure local policies/laws support food processing activities	• Identify immediate actions • Determine land availability • Update plans to include processing • Collaborate with other governments • Encourage muni's to support processors	CVRD
3. Research marketing board quotas to support local processing	• Conduct study on quota system impacts • Present results for BC Government • Present results to marketing boards	Economic Development Cowichan
Education and communication		
4. Encourage food buyers to buy from local processors	• Create on-line resource to connect buyers and sellers • Develop/distribute promotional materials • Attract food brokerage and delivery enterprise • Host local buying events • Develop institutional procurement pilot project	Economic Development Cowichan
5. Give processors info on how to become wholesale ready	• Deliver "wholesale ready" program • Promote program to processors • Show how to meet needs of schools	Food Processor Assoc.'s
6. Provide business training/support for food entrepreneurs	• Design business support program • Obtain funding for program • Deliver the program • Provide follow-up coaching • Evaluate and refine program	Food Processor Assoc.'s
Planning and Management Systems		
7. Publish directory CVRD processors, buyers, and facilities	• Catalogue processors, buyers, sellers and facilities • Publish buyer product needs • Provide online access to the information • Promote local food directory	Economic Development Cowichan
8. Develop agri-tourism plan that profiles processors	• Identify ways to integrate processing with agri-tourism • Develop an agri-tourism guide	Economic Development Cowichan

	• Connect residents and visitors to restaurants and farm events • Encourage policies that facilitate tours, events and homestays • Update all relevant websites	
Processing Infrastructure and equipment		
9. Establish shared use processing facility with test kitchen	• Obtain funding for & conduct feasibility study • Obtain funding for and write biz plan • Secure funds and construct facility	Non-profit organization
10. Access existing shared processing equipment/storage	• Identify potential opportunities to share idle equipment • Create online equipment sharing platform • Publicize the equipment sharing platform • Explore other collaborative processing opportunities	Cowichan processors
11. Create online food ordering website	• Identify the best online food ordering platform • Develop a business plan • Launch the website and promote it	Non-profit organization
12. Create food hub with processing, storage, distribution, and retail sales	• Obtain pre-development funding • Determine the structure and design of the food hub • Raise capital for and construct the hub • Promote the food hub • Evaluate its success	Non-profit organization
Organizational structures		
13. Establish community agriculture training/incubator program	• Determine the scope, funding and delivery organizations • Establish the program • Publicize the program	Local universities
14. Create a food production/processing consortium/peer group	• Engage with processors, ind. associations, and local economic development agencies • Determine the organizational structure and terms of reference • Launch the consortium • Identify other groups to partner with	Cowichan processors
15. Create a food innovation district	• Determine the scope and location • Determine the boundaries and planning parameters • Conduct infrastructure improvements • Establish the district and attract businesses and visitors	Municipality
16. Enhance local financing for processors	• Convene workshop with funding groups • Implement the funding strategies • Publicize the program	Economic Development Cowichan

In the next chapter, we provide more details on each of these 16 recommendations, including case examples, recommendations on who should lead and support the initiative, key actions, expected actions, and how the recommendations can link to and integrate with other recommendations.

7.0 Write-Ups for Shortlisted Recommendations

7.1 Identify New Slaughter Rules that Foster Local Meat Processing

Proposed actions:

- **Establish a province-wide multi-stakeholder task force to review the current Meat Inspection Regulations** - The task force could identify changes to regulations that would benefit small scale meat producers and small scale slaughter houses.
- **Conduct a study of meat slaughter regulations in other jurisdictions** – To support the work of the task force, it would be useful to understand how meat slaughter regulations work in other jurisdictions that appear to be operating successfully from an health and cost efficiency perspective.
- **Conduct discussions with the provincial government** – Because the provincial government is primarily responsible for setting meat slaughter rules, it will be important to meet with them and discuss the range of options identified by the above-mentioned task force.

Key parties to lead/support initiative:

Lead	Union of BC Municipalities (UBCM)	The Community Economic Development Committee of the Union of BC Municipalities (UBCM) could play a convening role for the Task Force, as they have previously looked at meat regulations and their impacts on the agricultural community.
Support	Other municipality groups and BC Food Processor's Association	UBCM could be supported by the Federation of Canadian Municipalities (FCM) with respect to reviewing federal meat slaughtering rules. The BC Ministry of Health has also worked closely with the BC Food Processor's Association in the past on regulatory issues, making them a good partner to involve on the Task Force. Economic Development Cowichan could play a supporting role of encouraging UBCM and others to take action. The Agricultural Advisory Committee (AAC) may also be able to play a supporting role.

Background/rationale: Over the past 15 years the number of animals processed on Vancouver Island has fallen significantly: 50% for hens and chickens, 30% for cattle and calves, 70% for pigs and 30% for goats. Sheep and lamb processing has declined a small amount since 2001. One of the principal reasons for this decline is the introduction of new meat inspections rules that have increased costs and reduced access to both abattoirs and inspected meat processing facilities. In an effort to reduce these impacts, the rules were changed again, which also had cost impacts.

Current Challenges: The major challenges with the current meat inspection rules are as follows:

- Class A slaughterhouses cannot operate as class B, C, D or E facilities. Class A slaughterhouses are able to slaughter the largest volumes and supply the larger customers such as the major retailers. However, in rural areas like the Cowichan Region, few of these large customers exist. Therefore Class A slaughterhouses need to diversify their income by being able to operate under different classes. This rule change could be restricted to rural regions where it is needed.

- In rural areas, it is difficult to access meat inspectors within 24 hours, making planning and scheduling of inspected slaughtering more difficult and costly.

- In rural areas, slaughtering in large batches under a Class A license is not ideal, because there is little production in between batches, making it hard to offer steady employment for staff.

- While BC meat inspection regulations have improved since 2004, when strict regulations were implemented and responsible for the closure of a large number of small slaughter houses, they are still highly bureaucratic and centralized[52], making the process costly for small slaughter houses. This makes their products more expensive than non-local items and imported products, such as beef from New Zealand.

- Mobile slaughterhouses are required to have pre-approved docking stations that the mobile slaughterhouses have to return to each day and which are subject to frequent inspections. These rules greatly reduce or even nullify the cost benefits of a mobile unit.

Meat producers say that changing the meat inspection regulations will have the biggest impact on the industry because other factors such as rising feed costs and rising land costs are hard to influence. A change in the rules could significantly increase access to abattoirs and meat processing facilities.

Desired outcomes- Possible desired outcomes could include the following:

1. Increase the number of accessible meat slaughtering facilities to 8 in the region.
2. Increase the number of meat producers, who now have easier access to slaughter facilities.

Linkages to other recommendations:

Rec. 2 – Ensure local policies/laws support food processing activities	Even if meat slaughtering rules are changed, slaughtering facilities still face other challenges such as zoning and marketing quotas, the latter which impact on poultry and somewhat on dairy cows.
Rec 3 – Research new marketing board quota rules that support local processing	The marketing boards and commissions have an impact on poultry and dairy cow production that requires slaughtering facilities.

7.2 Ensure local policies/laws support food processing activities

Proposed Actions

- **Identify immediate needs for supporting and/or removing barriers for food processing.** Consider hosting a meeting with representatives from industry and local government to identify the needs, barriers, and solutions to reestablishing food processing.
- **Determine the amount and type of lands currently available to support a range of food processing types and scales** – This should be done in consultation with industry and local government. Also identify the amount and type of land that will be needed in the future. Include this information in the online Directory (Recommendation 7).
- **Update Regional Plans to include food processing priorities.** These plans will create a more supportive environment for existing and potential new food processing enterprises in the CVRD.
- **Collaborate with other local governments -** in forums such as Union of BC Municipalities, support the review of senior government policies that hinder food processing development. This approach may also form recommendations in subsequent strategy documents.
- **Encourage municipalities to develop policies to actively support food processing.** Beyond adopting Regional Context Statements and Official Community Plans (OCPs) that include food processing policies, encourage municipalities to find other ways to support food producers and processing such as hosting events, developing educational materials, promoting regional food businesses and fostering links between tourism and food processing.

Key parties to lead/support initiative:

Lead	CVRD	The CVRD can develop regional policies to support the expansion of food processing activities as part of a regional growth strategy. Member municipalities can then include support for food processing facilities through the Regional Context Statements in the Official Community Plans. For more immediate needs (i.e. resolving local barriers to food processing), the CVRD can act as a resource and facilitator between industry and municipal partners.
Support	Member Municipalities	Local governments within the CVRD can develop land use and zoning policies to ensure a long-term land supply for food processing activities. Municipalities can also prioritize food processing in other activities such as planning for agriculture and investing in infrastructure.
Support	Food Processing Industry Associations	Barriers and opportunities for enhancing food processing can be brought forward by industry to local government partners. Demonstrating industry demand for land or other support mechanisms stimulates new policies and rule changes needed for success.

Background/rationale: Regional and municipal governments regulate and ultimately influence the general location, allowable activities, and permitting of food processing activities within their jurisdiction. For example, ensuring that there is a sufficient supply of serviced industrial land to accommodate food processing is a key local government role. Local government can have both a restrictive and enabling impact on food processing through land use policies, zoning and bylaws. By aligning land use policing, zoning, and bylaws with the needs of food processors, local governments can play a significant role in expanding food processing. However, typical municipal bylaws and policies often have a restrictive impact on local food processing.

Case examples: A number of other municipal and regional governments actively address the need for food processing. These include the following:

- **The Metro Vancouver Regional Growth Strategy**[53] identifies the preservation of industrial land as a priority (Strategy 2.2). Food processing facilities are specifically identified in this strategy (Strategy 2.3) and many municipalities in Metro Vancouver allow food processing in industrial and other zones.
- **The District of Central Saanich Agricultural Area Plan**[54] identifies value-added processing as a key part of overall farm viability. This plan goes beyond simply providing a land base by including multiple strategies to increase food processing capacity such as regional approaches for shared facilities and resources, collaboration opportunities, communications and outreach, and information sharing, among others.
- **The Washington Department of Commerce** has identified Innovation Partnership Zones as a way to cluster and take advantage of the Region's talent, resources and entrepreneurialism.[55] This action stems from research findings showing that developing infrastructure and attracting investment to rural areas are priorities.

Desired outcomes: Possible desired outcomes could include the following:

1. All local plans and Regional Context Statements support food processing activities.
2. All policy gaps and barriers are addressed to effectively encourage and regulate food processing activities.
3. Engaged senior governments are in dialogue to review policies to allow a wide range and size of food processing enterprises to flourish.

Linkages to other recommendations:

Rec. 8- Develop agri-tourism plan that profiles local processors	An agri-tourism plan can outline a vision for re-establishing food processing in the CVRD and outline goals and policies for all municipalities to adapt and adopt locally.

7.3 Research New Marketing Quota Rules that Support Local Processing

Proposed Actions:

- **Conduct study to identify the impacts of the quota system on local production** – It is important to start with an objective analysis of the impacts on the current system and an identification of the key strategies to enhance local production for supply-managed commodities. This would ideally be funded by the Farm Industry Review Board (FIRB) but could also be funded by a group of Regional Districts that are experiencing a significant drop in production of supply-managed commodities.
- **Present the study results to the BC FIRB**– The study recommendations should be presented to the BC FIRB, as it has power to create new rules to govern the marketing boards.
- **Present the study results to the marketing boards and commissions** – Concurrently, the study recommendations should be presented to the marketing boards so that they can consider what changes they could make (separate and apart from changes the BC FIRB may request).

Key parties to lead/support initiative

Lead	CVRD	Because this issue primarily relates to BC government policy, the CVRD is the most appropriate organization to take the lead and establish a joint research group with all the other Regional Districts outside the Lower Mainland and Fraser Valley and perhaps with the UBCM.
Support	Farm Industry Review Board	It is within the mandate of the BC FIRB to revise the rules so that local food production is given first priority in each market
Support	Food policy organizations	Food policy organizations can play a role in increasing awareness about the reduction of local production for supply managed commodities

Background/rationale: The production of certain agricultural sectors is regulated and controlled by a quota system in BC. Those that relate to processed foods include broiler chickens, turkeys, hatching eggs, table eggs, and dairy cows. The supply of these commodities are managed by the following organizations, most of which allow for some local production by small-scale producers:

Agency	Commodity	Maximum production without quota	Small scale production levels with a permit
BC Chicken Marketing Board	Broiler chickens	Up to 200 birds for on farm/ family consumption	200 to 2,000 birds with a permit
BC Broiler Hatching Egg Commission	Broiler hatching eggs not for retail sale	No production allowed without quota	No permits offered
BC Egg Marketing Board	Egg laying hens	Up to 99 laying hens for direct marketing only	100 to 399 laying hens (free run, free range, and certified organic only)
BC Turkey Marketing Board	Turkeys	Up to 50 birds for on farm/family consumption	51 to 300 birds with a permit for direct sale or independent retailer.
BC Milk Marketing Board	Dairy cows	Class E license holder in remote location not accessible by road/car ferry	Class D license holder in Cottage Industry Program processing only milk from own cows

These marketing boards and commissions are monitored by the BC Farm Industry Review Board (FIRB). The goal of the marketing boards is to control supply to match demand so as to avoid surpluses and

maintain price stability. Supply managed commodities offer the significant benefit of supporting BC farmers and restricting imports. However, the current system tends to work against regional and local production such that the level of production of these commodities on Vancouver Island is much lower than consumption levels. The reasons for the reduction in local production include the following:

- Quotas used to be allocated regionally for most supply managed commodities so that regional production better matched regional consumption levels. However, quota can now be purchased anywhere in the province. Because quota prices are slightly higher in the Fraser Valley, quotas have increasingly shifted to that region..
- Quota prices have risen significantly over the past 15 years. For example, the quota for egg laying hens increased from $40-$50 per bird to $300-$325 per bird since 2000. At current prices, it is unaffordable for new farmers to buy quota, not only because of the larger up front investment because of the significantly longer time it takes to recoup the quota fees through egg sales.
- The net effect of the current system is that production of most of these commodities continues to decline in the Cowichan Region as quota is sold to producers outside the Region. The result is that more and more of these foods are now being shipped to the Cowichan Region at an increased transportation cost and with a greater environmental impact. It also creates a structural problem because every time that a local processor discontinues operations, their equipment is sold and the land is repurposed, making it much more difficult to re-build production even if new quota was made available.

It should be acknowledged that some recent efforts have been made to address the situation but a variety of market and regulatory factors make this situation particularly difficult to address.

Desired outcomes: Possible desired outcomes could include the following:

1. Increase the CVRD production of supply managed commodities as % of CVRD consumption levels (this could include increased production of both quota producers and small scale quota exempt producers).
2. Increase the number of new processors of supply managed commodities (e.g. by making it less costly and less difficult to buy quota).

Linkages to other recommendations:

Rec. 2 – Ensure local policies/support food processing activities	Because an effort to research new quota rules could lead to new policies, it makes sense to bundle it with other policies and rules that support food processing activities.

7.4 Encourage food buyers to buy from local processors

Proposed Actions:

- **Create an on-line resource that connects local food buyers and sellers -** This will likely be a partner investment initiative. It is critical that resources are provided to keep this resource up to date and well managed, promoted, and tracked. Using an existing on-line ordering platform will add efficiency to this process.
- **Develop and distribute promotional materials -** A communications strategy that targets key audiences (retail and wholesale) with key messages in multiple formats is ideal. Promotional materials should be focused on increasing business connections as well as providing consumer education on the importance of buying Cowichan Grown products.
- **Develop strategies to attract a regional food brokerage and delivery enterprise -** An enterprise that brokers deals and provides distribution services will complement the on-line local food resources and add critical capacity to the regional food system. This enterprise can also help expand the "Cowichan Grown" brand and disseminate promotional material.
- **Host events that foster local food buying and selling relationships-** Bring together buyers (e.g retailers, wholesalers, restaurants, and institutions) and sellers to negotiate and sign purchasing and supply contracts. Also consider a consumer-based promotion such as "Buy Cowichan Grown" week.[56]
- **Develop an institutional food procurement pilot -** Large civic institutions like hospitals, care homes, schools, jails, and municipalities have large purchasing budgets. If they spend even a small portion of these budgets on regional foods, it could significantly increase processor revenues. A receptive institutional partner could develop a local food procurement pilot program focused on regionally processed foods.

Key parties to lead/support initiative:

Lead	EDC	The Economic Development Commission can continue to support the roll-out of the Cowichan Grown brand, possibly helping to build connections between municipalities that could work collectively to cross-promote Cowichan regional food products to wholesale and retail purchasers.
Support	Restaurant and Food Retail Industry	Industry groups such as processors, restaurants, institutional purchasers, and food retailers, play a critical role in the uptake and promotion of the Cowichan Grown brand. With this increased awareness and uptake of regional food purchasing, word of mouth promotion between industry partners is also a meaningful way to connect local food buyers and producers.

Background/rationale: Connecting local food buyers with local food sellers is key to expanding regional food processing. While the lack of processing infrastructure is often identified as a primary barrier, the lack of information resources, on-line tools and other programs also limits buying and selling relationships (e.g. information on what is available locally, by whom, where, and in what volumes). There are four main categories of food buyers, including: consumers, grocery retailers, restaurants, and institutional buyers.

Case examples: A number of jurisdictions have developed creative solutions to connect food buyers and local food processors as follows:

- **The True North Fraser partnership**[57] aims to raise the profile of the tourism and agriculture assets and enterprises in the region.

The Partnership, unique in BC, brings together the municipalities of Pitt Meadows, Maple Ridge, and Mission to achieve common objectives in economic development through tourism and agriculture. A key part of the program is a branding and identity program that allows producers and processors to label their goods with the True North Fraser brand. This helps producers to clearly identify and market their products as local.

- **The Island Farmer's Alliance** on Vancouver Island developed a similar program called "Fresh From the Island", which uses the image of a Rooster to profile Vancouver Island grown foods.[58]
- **Meet Your Maker** is an annual event held in different regions in BC that connects hundreds of food buyers (restaurants, caterers, grocers, food delivery companies) with food sellers (processors, farmers, fishers, and ranchers). Since 2008, this event hosted by Farm Folk City Folk, has provided a forum for food businesses to meet, negotiate and sign contracts.[59]
- **The City of Markham** developed a successful local food procurement strategy that included these local food targets[60]: Year one - 10% of total purchases; Years two to five - 5% increase annually; Total goal: 30% local sustainable food. By year three, Markham's percentage of local sustainable food was verified at 25% of total food purchase budget. This was achieved through using a third party certifier (Local Food Plus) and by including these targets in supplier contracts.
- **Local Food Plus**[61] is an Ontario based non-profit that certifies farms and processors as sustainable and local. This label is used by restaurants that want to ensure that the processed products they buy are local and sustainable. This eliminates many of the barriers restaurants and other food purchasers currently have in identifying legitimate local food dealers. LFP works with municipalities and businesses to develop local sustainable food purchasing networks.

Desired outcomes: Possible desired outcomes could include the following:

1. **The Cowichan Grown brand becomes widely recognized -** Wholesale purchasers and retail customers can easily identify and buy from regional food processors. The Cowichan Grown brand is also recognizable in other regions on Vancouver Island and in BC.
2. **Food retailers have easy access to current database regional food products** - Through events, promotion, and word of mouth, 10 new/existing purchasing contracts are established each year.
3. **Restaurants have multiple ways of purchasing regional food products** - Information systems help restaurants to establish processor-direct contracts, food supplier agreements, and also allows them to advertise what products they are seeking and in what volumes.
4. **Institutional buyers increase local food purchases to 15% of total purchases over three years**- Food supplier contracts are amended to include **incremental** targets of shifting 15% of the overall budget to purchasing regional products.

Linkages to other recommendations:

Rec. 7- Publish directory of CVRD processors, buyers and facilities	Providing a regional food buying and selling directory with match-making functionality may be implemented through the development of the on-line purchasing platform.
Rec. 11- Create online food ordering website	A key way to connect local food buyers with producers and processors (and vice versa) is using an on-line platform. The online ordering platform is a critical component of the overall program to encourage food buyers to buy from local food businesses.

7.5 Train processors to be wholesale ready

Proposed Actions:

- **Design and deliver a "wholesale ready" program** - Contact both Food Processing Associations to develop a relationship and work with them to design, fund, promote and include "Wholesale Ready" material/workshops as part of their program.
- **Promote program to Cowichan Region businesses** - Co-ordinate a workshop within the region and facilitate a network of Cowichan Region businesses for ongoing "wholesale ready" support (e.g. Listserve).
- **Show growers how they can expand into processing** – Provide workshops and events to show interested growers how they can value-add their products and meet wholesale requirements.
- **Highlight the pros and cons of direct selling vs. wholesaling** - Give food producers and processors info on the pros and cons of direct selling vs. wholesaling. Demonstrate possible benefits of 3rd party brokers/distributors.
- **Show processors how to meet the wholesale needs of schools** - Identify processed foods that meet the BC Healthy Foods Guide requirements so that processors can sell into school nutrition programs.

Key parties to lead/support initiative:

Lead	Food Processors Associations	Both of the two major food processing associations can play a lead role on this recommendation.
Support	Cowichan Region organizations	This would be supported by Cowichan Region Economic Development office and Cowichan Green Community to promote the programs to local businesses as well as to organize a workshop within the region.

Background/rationale: A large percentage of processors in the CVRD are small and sell most of their products directly to the consumer through farm gate sales, farmer's markets and online channels. When processors begin to sell "wholesale" (i.e. where their product is sold by a 3rd party to the consumer), they need to meet the specific requirements of the wholesale buyers. While this presents some challenges to the processor, it also opens up additional revenue channels.

Wholesale buyers include food distributors, restaurants, institutions, caterers and food retailers. They buy the vast majority of their processed foods from processors outside Vancouver Island and even outside British Columbia. They typically buy processed foods in large quantities and have specific requirements related to packaging type, labeling, farm or plant inspections and certifications, quality standards, availability, bulk pricing, and promotions.

Case examples:

- **The BC Ministry of Agriculture**[62], in partnership with the Small Scale Food Processors Association[63] offer business services to help BC businesses be successful, called Growing Forward 2 (GF2) Agri-food Business Development Program. Services include support on business plan writing[64], marketing strategy, human resources and accounting. The program is available for both farms[65] and processors[66].

- **The Small Scale Food Processors Association** has its own set of workshops called "Recipe for Success[67], which includes 7 modules covering the following topics: business planning, food processing and regulations, the market, product development, labeling and packaging, distribution and promotion, and pricing.
- **Food Secure Canada** also has a Food Business Bootcamp[68] that has webinars on business structures, business modeling and business landscapes. Farm Folk City Folk also provides services in this area. For example, they held a session called "Brand Management and Building Relationships with Buyers" with Bob Morrisseau (Bm2 Brand Management) and Dave Wilson (Choices Markets) at their Meet Your Maker[69] conference in February 2014.

Desired outcomes: Possible desired outcomes could include the following:

1. Increase the number of CVRD processors that supply wholesale.
2. Expand the wholesale sales of processors that currently sell wholesale.

Linkages to other recommendations:

Rec. 4- Encourage food buyers to buy from local processors	To increase the success of recommendation 5 it advised effort be put in to recommendation 5 first to increase the pool of qualified businesses that can sell wholesale to food buyers.
Rec. 6 – Provide business training/support for existing and new food entrepreneurs	Recommendation 5 and 6 are both workshops and information sharing recommendations executed by the same or similar organizations.
Rec. 14 – Create a food production/processing consortium/peer group	Having a peer group provides ongoing support for businesses, which enhances their learning by providing on the ground experience and advice.

7.6 Provide business support to existing and new food processors

Proposed Actions:

- **Design a business support/coaching program** – It should be tailored to the kinds of processors that are most likely to operate in the CVRD. The program can be divided into two streams; one for prospective processors on how to start a new processing business and one for processors that already sell processed foods but that need help to expand their business.
- **Obtain funding for the program** - This will likely be a shared cost model between the processors and government agencies that will benefit from the downstream tax revenues generated from food processing revenues.
- **Deliver the program** – Conduct the program, ideally with a group of businesses going through the program at the same time so they get the benefit of networking with each other.
- **Provide follow-up coaching** – To maximize the impact of the program, it is important that the processors continue to receive some kind of follow up coaching or mentoring for a minimum of 1 year after the program. These mentors could include retired processors or business people that are willing to share their knowledge for little or no cost. They could also be made available to other processors that need support but do not go through the program
- **Evaluate and refine the program –** The success of the program should be carefully evaluated and, if necessary, changed to better meet the needs of the processors. Other ways to improve business skills training for processors could be to encourage business program instructors to have their students prepare business plans and marketing plans for the processors as term projects.

Key parties to lead/support initiative:

Lead	BC Food processor associations	Both processing associations have run successful business support programs, so it makes sense for one of them to take a lead in delivering these services.
Support	Post secondary institutions	This could include the Duncan campus of Vancouver Island University and Camosun College.

Background/rationale: One of the biggest impediments to expanded food processing is that processors lack the business skills to establish or grow their food processing business. Their chances of success improve significantly if they have access to business support and coaching on how to increase their business.

Case examples: A number of jurisdictions provide business support programs for food processors:

- **In the Williamette Valley in Oregon, a Food Biz Boot Camp** was held for food processors and sparked the business plan implementation of 8 new food entrepreneurs. The event was followed by food business counseling sessions and specialized food seminars. A side benefit of the boot camp was the bonding that occurred among the participating food entrepreneurs, which led to a group-buying consortium for food ingredients. Larger food processors were able to access the Food Innovation Centre in Portland as well as the Oregon State University's food science facilities.
- **The BC Food Processors Association (BCFPA**) conducted a food business development program for existing processors to expand their business in 2013. The program included 10 food businesses and was followed by mentoring and coaching.[70]

- **The Small Scale Food Processors Association (SSFPA**) conducts a "Recipe for Success" online program, which is designed to give existing and prospective food processors the foundations for growing a successful business[71].

Desired outcomes: Possible desired outcomes could include the following:

1. Create 5 new processing ventures each year (e.g. 10 prospective processors go through the program each year and 50% subsequently launch a processing venture).
2. Create 10 new processing jobs each year (e.g. 10 existing processors go through the program and the average business expands their business by one full-time equivalent (FTE) employee.

Linkages to other recommendations:

Rec. 5 – Train processors to be wholesale ready	A key element of the business training program should be to help processors understand what their primary buyers need in the way of processed products and the way they need those products to be provided (e.g. proper packaging and labeling, properly inspected for food safety, kosher, allergen-free, etc.).
Rec. 13 – Establish community scale agriculture training/incubator program	In addition to business skills, processors may also need to be trained about processing technologies, food safety, and other information specific to the processing industry.
Rec 14 - Establish a regional processing consortium	The consortium membership could play a strong business support role by coaching and mentoring their fellow members.

7.7 Publish directory of CVRD processors, buyers and facilities

Proposed Actions:

- **Catalogue CVRD processors, buyers, sellers and facilities** – Create a local food directory by collecting comprehensive data on the business type, food product(s) grown, raised, made and/or processed, location, contact information, farm-type, and special features. Consider this database as the 'back-end' for a dynamic online resource.
- **Publish buyer's lists of product needs, volumes and delivery schedules** - Establish a system for food buyers to post up to date information on their local purchase orders, quality/certification standards, and price points.
- **Construct a website to provide access to the database of information** - This will likely be a website that contains the Directory as well as several other functions as recommended in this plan.
- **Promote and disseminate the local food Directory -** Aligning with other marketing and promotion activities, promote the Directory, how to access it, and the benefits it provides to target audiences. Consider using a range of formats including websites, social media, print media, and swag.

Key parties to lead/support initiative:

Lead	CVRD and EDC	CVRD staff working with EDC staff, which is a CVRD department, would provide the critical resource breadth to develop and launch a directory, likely as part of a larger communication and marketing strategy.
Support	Industry Partners	Industry partners including producers, processors, distributors etc. can support the CVRD and EDC by providing information about their businesses. Industry groups may also pool resources to provide matching funding for the hard costs associated with developing, launching and promoting a Directory.
Support	Community Organizations	Community organizations can support the CVRD and EDC by sharing existing information on local food businesses. The Cowichan Green Community would be a good choice as they already have an online directory of local food producers. Once a directory has been published, community organizations can also support its dissemination.

Background/rationale: This is a supporting strategy for other recommendations such as creating an on-line processed food ordering platform (Rec. 11), developing a program for connecting buyers and producers, (Rec.4), and accessing shared processing equipment (Rec. 10). We note that a number of parties have compiled relevant information but there is no single information resource that provides this information specific to the Cowichan Region. These parties include the following:

- The Cowichan Green Community has an excellent directory of local processors that sell direct to consumers, but it does not include a list of wholesalers that grocery retailers, restaurants and institutional buyers can access.
- The BC Food Processors Association (BCFPA) has members that operate in the Cowichan Region
- The Small Scale Food Processors Association (SSFPA) has members in the Cowichan Region
- The Wine Islands Vintners Association lists its winery members.

To our knowledge, no comprehensive list exists for processing facilities and equipment that existing or new food processing entrepreneurs can access. Also, there is no list of products that buyers are seeking to buy locally and the selling requirements (e.g. packaging, certifications, labeling) required to sell them.

Case examples: A number of jurisdictions have developed directories of regional food processors, buyers, and facilities. Good directories are up to date and have searchability, even matchmaking functionality. Examples include:

- **Maryland Buyer Grower Directory 2013**[72] is a static resource that provides local food industry-specific information to growers, producers, processors, buyers and distributors. The directory is available as an online file and provides information on a range of topics from grower's insurance and promotion for on-line resources for the agribusiness community, to lists and specific contact information for regional food businesses.
- **Hamilton Local Food Directory**[73] is a website that provides product and business information for medium to small-scale buyers and producers. Its content could be customized for the CVRD.
- **The Agriculture and Rural Development Ministry of the Province of Alberta** has published an on-line directory of Agriculture Processing Industry Listings.[74] While this resource is largely organized by food processing categories, a similar system could be applied to indicating processing facilities for rent, purchase or development as well as locations and contacts for commissary kitchens, commercial processing equipment and/or space rental.

Desired outcomes: Possible desired outcomes could include the following:

1. All food businesses in the CVRD are catalogued in the Local Food Resource including whether they do retail and/or wholesale sales.
2. All publically accessible food processing facilities are listed, including those from adjacent districts where there is a shortage of facilities with the CVRD.
3. All food buyers in the CVRD are listed, including their buying requirements.
4. All food-related organizations including community groups, educational institutions, government departments with a food mandate.

Linkages to other recommendations:

Rec. 4 - Encourage food buyers to buy from local processors	By publishing a local food Directory of who is selling what, when, and how much, food buyers are able to more efficiently identify suppliers that can meet their business needs. It also allows businesses to more easily connect, creating an enterprising network of regional food producers, processors, distributors and buyers.
Rec. 11 - Create online food ordering website	Functionally, the Directory can be built-into the on-line ordering website, providing the database of business information.

7.8 Develop an agri-tourism plan that profiles local processors

Proposed Actions:

- **Identify ways to integrate processing activities with agri-tourism efforts** - include processors in future agri-tourism planning, marketing and communications efforts. Draw on existing efforts in the wine industry. Work with vintners to expand on their efforts and create partnerships with local producers and processors. Identify local processors that want to increase their agri-tourism offerings but lack momentum or feel restricted to do so. Work with these processors to overcome barriers.
- **Develop an agri-tourism guide** through engagement with local producers, processors, and agriculture and tourism organizations. The guide will borrow from existing guides in other jurisdictions, to explain agri-tourism, its opportunities, and how to develop and implement agri-tourism strategies. The guide will also highlight the Cowichan Green Community online Local Food and Farm Map.[75] Promote the Cowichan Grown brand to producers and processors.
- **Connect residents and visitors to restaurants and farm events** that feature locally grown and processed food. Encourage local retailers to feature local producers and processors. Partner with the hospitality industry and local and provincial tourism organizations to develop good quality, unique lodging that match the experiences and desires of visitors. Identify visitor services needed to enjoy recreational activities on farms and at processing facilities and encourage development and support for them.
- **Encourage new policies and rules that facilitate events, tours and homestays** (within reason and without compromising agricultural/forest resources).
- **Update all agri-tourism, local agricultural organization and local government websites** with participating processor information. Coordinate agri-tourism marketing for the region.

Key parties to lead/support initiative:

Lead	EDC	EDC, which has a mandate to promote tourism, would be the best party to lead this initiative.
Support	Local wineries	Some local wineries already have experience in this area and can lend their mentorship and guidance in organizing a broader agri-tourism initiative.
Support	BCFPA, BC tourism organizations BC agri-tourism	In addition to support from other processors, it is within the BCFPA and tourism organizations mandates to provide assistance with establishing and promoting this type of business development. The BC Agri-tourism Alliance[76] can also play a strong support role.

Background/rationale: Agri-tourism is a niche industry that shows promise in BC. For instance, BC's increasing number of wineries and their associated restaurants, cafés and shops have attracted tourists and agri-tour participants in recent years. There is a recent trend in food awareness that encourages knowing where and how food is produced and processed. This represents an opportunity for producers and processors to offer accommodations at, and tours of, their facilities.

Agri-tourism has been a way to attract people who are interested in meeting food producers, buying fresh produce, hand-picking produce, interacting with livestock, staying at on-farm bed and breakfasts, or sampling farm products. Most of these agri-tourism activities typically occur at the producer level, although agri-tourism happens at the processing level through wine tours, micro-brewery tours, and specialty product producers (e.g.: cheese makers, bakeries).

Expanding agri-tourism to more fully include processors can create opportunities to attract larger audiences, offer a greater variety of agri-tourism experiences and encourage tourism-based partnerships between local producers and processors. These opportunities create more revenues for producers, processors and other local businesses. Some processors interested in pursuing agri-tourism business ventures will have to make changes to their premises to accommodate tourist stays and/or visits.

Case examples: Agri-tourism approaches vary from region to region, but have similar components:

- **Agri-tourism in Mount Hood, Oregon**.[77] Mount Hood lies in Clackamas County and has an extensive agri-tourism master plan for the region.[78] The plan highlights opportunities for agri-tourism education, "agri-tainment", fee-based recreation, hospitality, and on- and off-farm sales. It also covers marketing approaches and navigating land-use laws. Traditionally a winter tourist destination, Mount Hood recently bolstered its agri-tourism offerings in other seasons. The area has successfully increased agri-tourism by implementing the agri-tourism master plan, including hosting an agri-tourism website, fostering connections between producers, processors and local businesses, and increasing fees for recreation offerings. In addition to promoting its farms, the area also promotes its wineries, breweries, culinary outfits, and local textile operations to tourists.
- **Sustaining Agriculture (CISA) in Western Massachusetts** - Various local governments and farming organizations have developed guides for producers and processors on attracting tourism to their operations. The not-for-profit Community Involved in Sustaining Agriculture (CISA) in Western Massachusetts has one titled: "Creating Successful Agri-tourism Activities for Your Farm".[79] CISA's guide walks users through definitions, agri-tourism trends, developing business plans and marketing approaches, legal considerations, and assessing risk – items that are typically unknown to the average processor. The guide is easy to follow and conveys all of the information needed for setting up a successful agri-tourism program on a farm or processing facility.

Desired outcomes: Possible desired outcomes could include the following:

1. Significantly increase tourism revenues from visitors interested in local food.
2. Increase consumer awareness and support for buying local
3. Increase profitability of processors through collaborations between wineries and food processors

Linkages to other recommendations:

Rec. 4 – Encourage food buyers to buy from local processors	There is a shared marketing and information-sharing opportunity here.
Rec. 7 – Publish directory of CVRD processors, buyers and facilities	The processors directory can coincide with identifying and publishing agri-tourism participants.
Rec. 12 – Create a food hub with processing, storage, distribution, and retail sales	The food hub will bring together processors and producers and yield opportunities for agri-tourism promotion.

7.9 Establish a shared use processing facility with test kitchen

Proposed Actions:

- **Obtain funding for a feasibility study –** various organizations such as Vancity Credit Union, Ministry of Agriculture and Real Estate Foundation have grants available for feasibility studies that look in to growing the local food sector. Other funding sources could include the Investment Agriculture Foundation.
- **Conduct the feasibility study –** the feasibility will look at other cases studies of similar enterprises in similar rural regions, as well as the demand for such a facility in the region and the equipment and resources needed.
- **Obtain funding for a business plan –** using the same organizations as the feasibility study.
- **Write the business plan –** the business plan will go in to more specifics as to what the facility will do, its size, staffing, type of business it will support and operating costs and revenues. As well as looking at the cost to build it and the governance structure to manage it.
- **Secure funds and construct the facility –** based on the findings of the business plan, secure funding such as mortgages, loans, grants and other financing options to construct the facility.

Key parties to lead/support initiative:

Lead	Local University	Vancouver Island University is well positioned to lead this initiative because it has a history of supporting local food security issues and has partnered with the Cowichan Green Community[80]. Camosun College is a good alternative if VIU is not able to take this on
Support	Ministry of Agriculture & Food Proc. Associations	The Ministry of Agriculture is part of a multi-faceted initiative called Growing Forward 2[81]. The Food processing associations also have programs that are specifically targeted at start up processors. The Island Coastal Economic Trust may also be able to support this initiative.

Background/rationale: While a few shared-use small commercial kitchens exist in the Cowichan Region, there are no large, publically accessible, facilities with processing, labeling, packaging equipment and on hand support and advice. Small commercial kitchens are useful for businesses selling in smaller quantities at farmers' markets or to restaurants and small independent retailers. These small processors cannot justify investing in their own processing plant. Shared processing facilities foster new food processing enterprises in the region by supplying equipment and space at a lower cost and risk than businesses investing in their own. These kitchens often have food scientists, business consultants and food regulation consultants on hand to provide guidance and advice.

Case examples:

- **Toronto Food Business Incubator** is a nonprofit society that has a 4,000 sq. ft. commercial kitchen. The incubator offers hands-on management assistance, education, information, technical and vital business support services, networking resources, financial advice as well as advice on where to go to seek financial assistance. On the average ninety-five percent of an incubator's clients graduate, and eighty-seven percent of incubator graduates remain in business, according to the 'Impact of Incubator Investments Study', published in 1997, (NBIA).

- **Commissary Connect, Vancouver** is a privately owned and operated commercial kitchen since January 2013. The kitchen is 4,000 sq. ft., with 1 cooler and 1 freezer, ovens and burners. The area is divided into fifteen 10ft x 10ft spaces for businesses to rent long and short term. Businesses can bring in their own equipment and are also charged by the minute when using the kitchen's own equipment. Each space is rented for ~$2,000/month, but can be shared by up 3 businesses. Most businesses are small processors who sell at local farmers' markets, to local retailers, restaurants and coffee shops, online sales and through food trucks. Demand for the space is high with very little vacancy. The kitchen also plans to support businesses with book keeping, sales, marketing and distribution.

- **Woodland Smokehouse** is a privately owned 10,000 sq.ft. shared used commercial kitchen established in Vancouver in 2011. Full time users have designated spots and dedicated use of equipment and a food preparation area. There is dry space, cooler and freezer storage (full time users get shelving in each) as well as a flash freezer. The kitchen is fully equipped and full time users have unlimited use at no additional charge. The facility also has a loading bay area and retail outlet where the tenants can sell their products (tenants are charged a percentage of sales to cover store operating costs). Full time users pay $2,300/month while others pay $250/day. A book keeper does the books for full time users. Senior staff advise tenants on product selection, preparation, ideas and regulations. Businesses tend to be suppliers to retailers and restaurants.

Desired outcomes: Possible desired outcomes could include the following:

1. Five new processing businesses start up each year by relying on the lower costs of a shared commercial kitchen.
2. One new processing business per year that graduates from the facility that sets up its own stand-alone processing facility.
3. Twenty local businesses use the facility per year to test new products or for over capacity processing.

Linkages to other recommendations:

Rec. 12 - Create food hub with processing, storage, distribution and retail sales	The processing facility could partner with or develop from any existing shared commercial kitchen space or future food hub.
Rec. 13 - Establish community agriculture training/incubator program	The processing facility could be a training, research site for the community agriculture training/incubator program.
Rec. 14 - Create a food production/processing consortium/peer group	Any food consortium or peer group could be housed or coordinated from the processing facility, with one of their jobs managing any financing initiatives or tax credits for processors.
Rec. 15 - Create a food innovation district	The facility could be housed in and even be a key element of a food innovation district.

7.10 Access shared processing equipment and storage

Proposed Actions:

- **Identify potential opportunities to share idle equipment** – This initiative could be launched with a meeting of processors to identify the range of equipment that could be realistically shared. This meeting could also be used to identify a party that would be willing to develop an online equipment sharing platform or even a list of parties that have equipment, such as the mobile apple press in Comox, that they are willing to share or rent.
- **Create an online equipment sharing platform** – Whichever party that is identified in the previous step would create a website or a module within a website that allows processors that have equipment or facilities to offer for rental or donation to other processors that might need it. Typically these sharing platforms charge a small commission on every transaction so they can be fully self-funding and even profit generating.
- **Publicize the equipment sharing platform** – A key ingredient for success is to create a publicity blitz so that an initial set of equipment/facility listings are put up on the site quickly, making it more likely that someone looking for processing equipment can find what they need.
- **Explore other collaborative processing opportunities** – In addition to sharing equipment, it would be useful to explore other collaborative opportunities. One opportunity is to explore the feasibility of collaboratively processing food waste. With increasing severe storms, the amount of food waste could rise and it would be helpful to have a way for processors to collaboratively access this waste and turn into valuable products. It would be useful to conduct a small study to identify opportunities for food waste processing, the coordination of which could be done through a shared use commercial kitchen or shared used processing facility.

Key parties to lead/support initiative

Lead	Cowichan Processors	As this recommendation directly reduces the cost of production for Cowichan processors, it makes sense that they would take the lead on it
Support	Non-profit organizations	Non-profit organizations that have online information about processors could add a module for processors to find out what share processing equipment is available and then to book it.
Support	Processing Associations	The processing associations can also support this initiative by creating a province wide web portal for processors to make their processing equipment available (typically for a rental fee) and enable processors to schedule their access to the equipment.

Background/rationale: One important way that small scale processors can improve the economics of food processing is by sharing equipment and cold storage, collectively buying equipment and cold storage, or by accessing equipment and cold storage owned by others. This recommendation excludes shared processing facilities and shared use commercial kitchens, which are addressed in recommendation 9.

This recommendation is inspired by a new business model called the Collaborative Economy where new online platforms and digital media (such as smart phones) are allowing individuals and businesses that own idle assets to make them available to other individuals and businesses in a way that reduces resource consumption, saves money (by avoiding the need to buy dedicated equipment) and builds community through the exchange transactions.

Case Examples: A number of initiatives are taking place in the CVRD and nearby to share equipment and storage facilities. These include:

- **A mobile apple processor was purchased in 2012 by Blue Moon winery in Comox.** They use it to process their own apples into apple cider and to serve other customers in the Comox Valley. They have indicated a willingness to bring it down to the Cowichan Region and do on-farm processing for orchards with at least six trees. The unit is capable of pressing, pasteurizing, and packaging and the economics are very compelling for low grade fruit that otherwise be sold to a third party processor. There is potential to use this equipment to process other fruits and berries.
- **A mobile meat abattoir is being used on Salt Spring Island.** While the economics of mobile poultry abattoirs are favourable in many other jurisdictions, the BC meat inspection regulations have made the economics challenging on Salt Spring. As a result, it is unlikely that the Salt Spring abattoir will travel to the Cowichan Region nor does it seem financially viable for the Cowichan Region to develop its owned shared use mobile abattoir.
- **A number of small scale poultry producers** in the Cowichan Region share poultry cages, which are used to transport the meat birds to the existing, stationary abattoirs.
- **A number of cold storage facility operators** in or near the CVRD have expressed a willingness to rent storage space to CVRD processors. This includes Cold Star Freight, and Nanaimo Cold Storage.
- **A food hub** is being established in the Capital Regional District and there appears to be a willingness to allow Cowichan processors to access their processing and storage facilities, provided that they have capacity.

It is likely that other processing equipment is being shared by Cowichan Region processors. In future, this idea will likely be expanded to include shared ownership of assets that processors needs to access but that no one party wants to own.

Desired outcomes: Possible desired outcomes could include the following:

1. CVRD processors with extra or idle equipment or facilities generate supplemental income.
2. CVRD processors that need equipment or facilities can avoid having to buy it or rent it for their dedicated use thereby saving them money.

Linkages to other recommendations:

Rec. 9 – Establish shared use processing facility	This recommendation also deals with shared use facilities and it is possible that the shared use processing facility could also be listed on the shared use equipment platform.
Rec. 11 – Create online food ordering website	This recommendation is also an online resource so there could be reciprocal links between the two sites, which would enhance the viability and success of both platforms.

7.11 Create Online Food Ordering Website

Proposed Actions:

- **Identify the best online food ordering platform** – Research off-the-shelf online food ordering websites and compare their costs against building a custom website exclusive to the Valley.
- **Develop a business plan for the service** - Prepare a 3 year business plan that addresses governance structures, policies and procedures, staffing, costs and revenues, and marketing.
- **Launch website and promote the service -** Hire a coordinator and supporting staff, conduct training for both staff and processors, and conduct an initial marketing campaign to attract customers to the site.

Key parties to lead/support initiative:

Lead	Non profit organization	Cowichan Co-op Association is currently forming a growers' co-operative and looking at online platforms to sell the co-op's products. As the co-op becomes established, additional suppliers could be added on including processors. The Cowichan Green Community is an ideal partner in this initiative and they already have an online platform highlighting local processors.[82]
Support	CVRD	The CVRD could support this initiative by publicizing the website.

Background/rationale: Online ordering provides a low cost sales channel for processors. Dozens of processors, primarily meat processors, sell online within the Cowichan Region using websites that they have developed exclusively for themselves. A number of these processors are able to sell all of their products from these websites. However, other processors that would like to increase their online sales or do not have any online presence could potentially benefit from a multi-vendor online food ordering website. Multi-vendor websites make it much easier for buyers to find and buy the products they want from just one website. Ideally, there would be two websites, one for consumers that are buying at retail prices and the other for wholesalers that are buying at wholesale prices. Examples of direct to consumer platforms include: Farmigo[83] and Small Farm Central[84] while wholesale platforms include Local Orbit85 and Local Food Marketplace[86].

Case examples: There are dozens of communities across North America using online platforms to sell products direct to wholesale and retail buyers. Organizations using such platforms include:

- **North Eastern US:** Michael Rozyne, a founder of the fair trade company Equal Exchange, founded Red Tomato[87]. The organization is a non-profit distributor/ broker that, buys fruits and vegetables from farms, packages and brands the produce with the Red Tomato and farm name, and sells it to retailers across Northeastern USA. Red Tomato use their own proprietary software program.
- **Rhode Island:** Farm Fresh Rhode Island[88] was founded in 2004 as a not for profit to increase access to local food. They now support wholesale, mobile markets, food hubs, CSA programs and farmers' markets. Farm Fresh Rhode Island use their own proprietary software program.
- **Southern Manitoba:** Harvest Moon[89], based in Winnipeg, is a small group of local farmers that sell direct to buying groups, delivering once a month. Harvest Moon use Local Food Marketplace as their online inventory and ordering tool.
- **Regina, Saskatchewan:** Farmers Table[90] is a non-profit organization made up of independent Saskatchewan family farmers working together to distribute their sustainably grown local farm products to Saskatchewan eaters.

- **Foodhub.org[91] is an on-line tool for local food sellers and buyers.** The services are open to commercial buyers producers, distributors, industry suppliers, farmers' markets, trade associations, and non-profits. The FoodHub provides a member directory and on-line market place for buying and selling local food. It also provides resources and information on a range of topics like direct marketing, business management, industry organizations, and farm to school programs, among others. Other on-line ordering platforms also provide similar services. [92,93]

Desired outcomes: Possible desired outcomes could include the following:

1. Achieve $300,000 per year in new direct-to-consumer sales of Cowichan produced primary and processed foods through the online platform within three years.
2. Achieve $300,000 per year in wholesale sales of Cowichan produced primary and processed foods through the online platform within three years.

Linkages to other recommendations:

Rec. 4 - Encourage food buyers to buy from local processors	The online platform will make it easier for wholesale buyers to buy from a number of small farms and processors. The online platform will give small growers and processors a tool on par with what major distributors use to manage, market and sell their products. This is very appealing to wholesale buyers because they are always looking for ways to save time and have consistency in their work process (e.g. correct invoicing).
Rec. 5 - Train processors to be wholesale ready	The online platform will help the growers and processors manage their sales, inventory and invoicing, however to maintain loyalty and increase sales with established wholesale buyers they also need to understand other needs of the buyer such as product type, pricing, packaging and promotions.
Rec. 12 - Create food hub with processing, distribution, and retail sales	As the growers' co-op grows additional infrastructure will be needed such as storage and a truck. This could take the form of a hub and be located near current infrastructure such as a commercial kitchen and other processors.
Rec. 15 - Create a food innovation district	The businesses with an established food district could use the online platform. Vice-a-versa businesses using the online platform could start to become or relocate to a food district.

7.12 Create food hub with processing, storage, distribution, and retail

Proposed Actions:

- **Obtain pre-development funding** - This will likely be a partner-funding model with funds coming from external sources, senior levels of government, and industry. Pre-development planning is necessary for effective implementation and to bring food hub owners and operators together to invest in the food hub.
- **Determine the feasibility, ownership structure, and design for the food hub-** Work with funding and industry partners to undertake community engagement, financial feasibility assessments and detailed planning and design for the food hub.
- **Raise capital for the food hub** – Once the financial, ownership, and management systems have been established, raise capital funds for the food hub. Consider a capital campaign and implementation strategy that starts with an on-line food hub component that then expands into a physical food hub as demand grows and investment is easier to attract.
- **Construct the physical and/or virtual food hub** – Working with respective local government and developers, construct the food hub.
- **Promote the food hub** – To support the success of the food hub, develop a marketing campaign aimed at attracting and maintaining regional buying and selling users to the hub.
- **Evaluate the success of the food hub** – Assess any challenges in the management and operation systems to identify solutions and refinements to the model.

Key parties to lead/support initiative:

Lead	Non-profit organization	The Cowichan Cooperative Association has established a plan to develop a distribution food hub, which can hopefully be expanded into a physical food hub with processing, distribution and retail.
Support	CVRD	The Cowichan Valley Regional District can also be a partner and facilitate the early discussions and events to bring potential food hub investors and users together. The CVRD can also provide information on ideal location options for a food hub as well as information on any existing, underutilized facilities. They can also allocate district owned land for this purpose.
Support	EDC	Economic Development Cowichan can provide a supportive role in establishing physical and virtual food hubs and promoting the Cowichan Grown brand through the food hub.
Support	Funders	Grant funding will likely be required for pre-development planning as well as for capital investments. Funding partners potentially include Western Economic Diversification, VanCity, and Victoria Foundation.

Background/rationale: Regional food processing and distribution facilities are one of the largest gaps in linking and growing regional food supply and demand. It is difficult for individual businesses to invest in the land, facilities, and equipment needed for growing their businesses. Physical food hubs are shared facilities that cluster services and equipment bringing greater overall capacity for regional processing, storage, and distribution. Physical food hubs can include warehousing, cold storage, office space, food business incubation and product development facilities, and commercial processing equipment including kitchens. Virtual food hubs are on-line databases that connect local food buyers and sellers.

They often contain inventories local food businesses (producers, processors, wholesale/retailers, distributors, industry orgs etc.) as well as functional tools such as online ordering systems.

Case examples: A number of other jurisdictions have developed physical and virtual food hubs. These include the following:

- **Red Tomato is a food hub based near Boston, Massachusetts**.[94] After establishing as a distributor for one farm, the business grew into a marketing, product development and brokerage organization for multiple farms. The Red Tomato hub facility is supplied by 20-25+ main small to medium farms. Currently, its primary customers are food retailers. A unique aspect of Red Tomato is the marketing and branding services offered to suppliers. Products are sold under the Red Tomato brand, but farms are also identified on the label.
- **Eat Oregon First**[95] is a producer owned and operated distribution hub on the outskirts of Portland OR. Farmers bring products directly to the hub that are then aggregated in the 12,000 sq. ft. warehouse located on commercially leased property. The hub stores, portions, and prepares the product before it is distributed to 120 food service clients. The hub also undertakes the product marketing.
- **Organic Valley Produce Program**[96] in La Farge, Wisconson is a for-profit cooperative known for their dairy products. Organic Valley has been aggregating produce from over 150 growers and small-scale grower cooperatives in the upper Midwest for over 21 years.

Two food hub projects are in the early stages of development in Victoria and the Cowichan Region. The Victoria Community food hub[97] is proposed to include a 3,000 sq. foot processing facility, 5,000 sq. feet of shared office space, and a 4,000 sq. foot food aggregation warehouse for food banks, local farmers, and distributors. The Cowichan Food Cooperative aims to establish a facility that pairs famers with restaurateurs. The facility would have aggregation, storage and distribution capacity.

Desired outcomes: Possible desired outcomes could include the following:

1. Increase awareness and support for buying local.
2. Increase the amount of foods processed and sold in the Cowichan Region.

Linkages to other recommendations:

Rec. 9 - Establish a shared use processing facility with test kitchen	The food hub would provide an ideal location for a shared use processing facility and test kitchen. These functions should be considered in future development stages of the food hub.
Rec. 11 - Create and online food ordering website	An on-line food ordering website can be the precursor to developing a virtual food hub, which then expands into a physical food hub.
Rec. 15 - Create a food innovation district	If a physical food hub is developed, it can be the centerpiece of a food innovation district.

7.13 Establish community agriculture training/incubation program

Proposed Actions:

- **Determine the scope, funding, and delivery organization(s)** – Considerable development work has been done by Vancouver Island University on a community based agriculture program so hopefully this task will be more of an update than a new task. Funding sources still need to be resolved. It would be worthwhile to canvas other universities and colleges on Vancouver Island to determine their interest and capacity to provide a role here.
- **Establish the program** – Once the program scope and funding are in place, the program(s) will then need to be set up.
- **Publicize the program** – The program(s) will need to be publicized both for recruitment of students but also to increase awareness among processors who may wish to hire the graduating students.

Key parties to lead/support initiative:

Lead	Educational institutions	As this is primarily an educational endeavor, it makes sense for an institution like the Vancouver Island University to take the lead
Support	Processing associations	Both the processing associations and the processors themselves can support this initiative by describing their training needs.

Background/rationale: One of the constraints to expanding food processing in the CVRD is that there is a shortage of education, training, and skills development programs to serve the local agriculture community. This means that people are interested in seeking a job or starting a processing business need to go outside the Valley to obtain training. It also means that processing enterprises can find it difficult to find qualified staff to fill processing job positions. The main university in the CVRD, Vancouver Island University, does not currently offer a community based agriculture training program but has been working to develop one. In 2009, VIU conducted an agriculture resource and innovation centre feasibility study. The study indicated the following:

- Education courses are needed in soil science, plant science and animal science.
- Skills development and professional development in a wide range of agricultural and farm management activities are needed as well as consumer education and research and innovation.
- A continuing-education model of education, training and skills development was deemed most appropriate.

This study specified a proposed budget of $150,000 per year but was not able to raise this funding. Since then, the concept has been further refined and scaled down so it may now have a better chance of moving forward. VIU staff indicated that it was unlikely that the program would include research or test kitchens but it was felt that this might be feasible at nearby institutions such as Comosun College or the University of Victoria.

Case Examples: A number of relevant agriculture education and training programs exist in other areas. These include:

- **The University of the Fraser Valley** offers an agriculture technology program at their Chilliwack campus. It focuses on both family farmers and large-scale agri-business processors. They specialize in horticultural crop production, integrated pest management, livestock production and agricultural technology.

- **The Aboriginal Education Society of BC**, created in 2005, provides support services to Aboriginal people in animal husbandry, organic production, greenhouse operations and agricultural business.
- **Olds College in Alberta** (just south of Red Deer), offers a Bachelor of Science degree in Agribusiness. It is quite entrepreneurial in its focus as it builds on technical agriculture diploma training to give students managerial and entrepreneurial skills to run an agriculture-related business.
- **The Nova Scotia Agriculture College** in Halifax offers a bachelor program in agriculture with focus areas such as agricultural business, agricultural chemistry, agricultural mechanization, and so on.
- **The Farm Start program** in Guelph offers programs specifically designed to encourage new farmers with non-farm backgrounds to enter the agriculture sector.

While only Canadian agriculture programs are profiled here, there are equally strong or stronger programs in the United States.

Desired outcomes: Possible desired outcomes could include the following**:**

1. Significantly increase education, training and skills development related to food processing within the CVRD.
2. Significantly increase education, training, and skills development related to start and running a food processing enterprise within the CVRD.

Linkages to other recommendations:

Rec. 6 – Provide business training/support for new food entrepreneurs	Both recommendation 6 and 14 have a training and education focus and there is potential for overlap between these programs. It will be important to ensure that these two initiatives are well coordinated.
Rec. 14 – Create a food processing consortium/peer group	One of the activities of a processing consortium or peer group may be to provide skills development and training workshops.

7.14 Create a food production/processing consortium/peer group

Priority Actions:

- **Engage with processors, the food processor associations and local economic development** - Determine the useful functions the consortium could serve. Prioritize the functions based on their input. Liaise with the associations to ascertain the viability of establishing a local consortium of food processors under their purview. Liaise with local economic development agencies to establish their roles and ability to help fund and support the consortium.
- Determine **the organizational structure and terms of reference –** Choose the type of legal entity the consortium will adopt (e.g.: information network, contractual consortium with lead organization, formal consortium as a new company/legal entity – probably incorporated up as a not-for-profit entity). Establish terms of reference, governance roles and responsibilities, contractual agreements (probably memorandums of understanding) and other legal arrangements for the consortium entity.
- **Launch the consortium** - Elect the board of directors and establish a periodic meeting schedule. Publish and communicate the consortium vision, rationale for being, membership process, etc. Establish a schedule for reports for the consortium members and greater community
- Identify **other consortia or groups to partner with -** Identify groups that would be beneficial partners, supporters or liaisons for the food processing consortium. Establish a formal rapport with them.

Key parties to lead/support initiative:

Lead	Food Processors	The food processors located in the Cowichan Region need to lead this recommendation.
Support	BCFPA, local food organizations, processors	BCFPA and/or a local food organization can also help establish and run the consortium, with membership fees enabling the capacity to do so. Processors can apply for membership once the consortium organizing body is established. Local economic development agencies can support the initiative through funding and membership involvement.
Support	CVRD	CVRD can play a coordinating role in establishing the consortium and offering legal navigation to establishing the organization.

Background/rationale: A local food consortium/peer group would benefit local producers and processors by pooling networks of contacts, best practices, and technological know-how. It would also aid in the exchange of knowledge on what initiatives are underway in the region and beyond while fostering opportunities for collaboration and support among its members. A local group could bolster employment opportunities, technological innovation, business development and marketing opportunities.

A number of networking groups and peer groups include members from the Cowichan Region, including the Vancouver Island cluster of the BC Food Processors association (see case example), the Wine Island Growers, the Cowichan Agricultural Society, however no one organization exists to coordinate the efforts of all processors that operate in the Cowichan Region.

Case examples:

- **The BC Food Processors Association (BCFPA)** – They have several peer groups, including a Vancouver Island Cluster.[98] Peer group membership is open to relevant business owners and organization representatives. The groups meet periodically (usually quarterly) to discuss issues relevant to the group and its members. Group meetings focus on learning opportunities (discussion, invited speaker), meeting with other peer groups (e.g.: sales and marketing), professional development and mentorship. They encourage coordination between members and allow detailed learning and discussion on topics of interest producers and processors ranging from farming practices to technology to policy. The BCFPA peer groups have small memberships. Meetings are generally held at a member's processing facility and include a facility tour.
- **The Quebec (City) Health Food Consortium**[99] Managed by Quebec International, it promotes economic development in the Quebec City metropolitan region through four business sectors, one of which is a Business Cluster Development. There are four business clusters, of which food processing is one. The food processing business cluster is composed of companies making baked goods, snack foods and jams/preservatives, dairy products, meat processing products, pickled, dried, frozen and preserved fruits and vegetables, alcoholic and non-alcoholic beverages, and prepared foods. Processors in the cluster represent 130 medium to large sized companies supporting 5700 jobs. Quebec International coordinates its members, connects companies to food research efforts in the region, markets the region, and helps members with business development.

Desired outcomes: Possible desired outcomes could include:

1. Increased collaboration among the processors, including increased cost sharing.
2. Improved technical processing skills and business skills through peer mentoring.
3. Improved advocacy in terms of encouraging processor friendly policies.

Linkages to other recommendations:

Rec. 1-3 – Policies and Regulations	Advocacy and policy initiatives could benefit from having an organization that represents local processors.
Rec. 13 – Establish community agriculture training/incubator program	The training/incubator program could have linkages to the consortium.

7.15 Create a food innovation district

Proposed Actions:

- **Determine the scope and geographic location of the district** - Articulate and document the rationale, need, assets and opportunities for a food innovation district. Engage stakeholders and the public in a process to determine the vision for the district and the most desirable and appropriate scale, location, focus and parameters for the district. Ideally, it will be located in an area that already has significant processing activity, infrastructure, and or training facilities.
- **Determine the district boundaries and planning parameters**. Location decisions must address and balance the needs of different users and uses. Needs include access to transportation, proximity of farm suppliers, and the presence of complementary uses like restaurants, retail, and health services. Assess the planning and zoning parameters that will aid or hinder implementing the district. Find ways to address the barriers using inputs from project stakeholders.
- **Conduct infrastructure improvements, establish the district and attract businesses** - Establish financing mechanisms and funds for renovation, streetscape and other infrastructure improvements as well as district branding, promotion, and regional linkages. Once these issues are addressed, establish the district and work to attract businesses. Create the district brand and publicize the district.

Key parties to lead/support initiative:

Lead	Municipal & Regional officials and staff	The food innovation district needs the support of elected officials to get started. Support will be needed from Municipal and Regional staff to determine zoning and land-use provisions.
Support	Local econ. dev. orgs, business associations, community development orgs.	Economic organizations like the Chamber of Commerce, business associations and community development groups are key to the success of development and operation of the district. Food and agricultural organizations are imperative to the district's success as well, to act as supporters, active networkers and communicators with producers and processors. Finally, local businesses are important to engage in supporting the district by using its services and outputs (e.g.: purchasing local value-added foods).

Background/rationale: A Regional-District-supported food innovation district helps focus local and regional attention on local food production and processing while creating business opportunities for producers and processors. Food innovation districts can be defined as "A geographic concentration of food-oriented businesses, services, and community activities that local governments support through planning and economic development initiatives in order to promote a positive business environment, spur regional food system development, and increase access to local food."[100] Much like the increasingly common business acceleration zones for high-tech companies, food innovation districts build on business synergies that occur when related enterprises locate in close proximity; share resources, information, and ideas; and grow investment and jobs with business development support.

Case examples:

- In the 1980s, a river Valley on the edge of Burlington that used to be a farm had fallen into disuse. Will Raap started a small garden shop on the edge of the Valley and identified the potential to grow 10% of Burlington's fresh food at the Intervale Centre.[101] Intervale now houses a huge web of businesses including the Gardener's Supply, Burlington Electric's McNeil

Generating Station, the Sugarsnap Café and the Stray Cat Flower Farm and Market. The Intervale Center is a non-profit organization that runs the 350 acres including a dozen farms, Community Supported Agriculture (CSA) programs, a compost project, a conservation nursery, produce and farm product distribution and storage enterprises, and farm consulting services.

- The Intervale Center is a nonprofit that engages local farmers and eaters at every step of the supply chain of local food, from pre-production planning to post-consumer waste disposal. It has a local food education program for young people, a farm enterprise business incubator for new farmers, business consulting services for established farmers, and a land preservation initiative.
- In the Eastside Neighbourhood of Lansing Michigan, the Allen Neighborhood Center and many other neighborhood and Lansing community organizations have worked collaboratively for years to build a food innovation district.[102] The Ingham County Land Bank has made vacant property available for gardening, and Urbandale Farm, Flood Plain Farms, and Learning Leaves Farm have taken root on the four square mile area. Local economic development officials are recognizing food's role in bringing new activity and investment to Eastside Lansing. Food district elements in the Eastside Neighbourhood include urban farms on land acquired by the city's land bank along with city trails and new restaurants. The Allen Neighborhood Center operates a weekly year-round farmers' market, an urban farm share program with produce from its Hunter Park Gardenhouse, youth gardening programs, an incubator kitchen and food storage, food hub services and facilities.
- Financing for the Allen Neighborhood Center's new kitchen incubator, storage facilities, year-round market, and food hub functions comes largely from community and family foundations, the Michigan Economic Development Corporation's Farm to Food Program, and a Michigan Department of Agriculture Regional and Rural Development Food System grant.

Desired outcomes: Possible desired outcomes could include:

1. Increased number of processors who are attracted to a food friendly zone.
2. Increased number of tourists and tourism related revenues.
3. Increased collaboration and resource sharing among processors within the district.
4. Lower equipment costs within the food innovation district.

Linkages to other recommendations:

Rec. 9 – Establish shared use processing facility	Shared equipment, processing and storage could be housed in the food innovation district.
Rec. 10 – Access existing shared processing equipment/storage	Shared equipment, processing and storage could be housed in the food innovation district.
Rec. 12 – Create a food hub with processing, storage distribution & retail	A food innovation district would be a key part of the food hub.
Rec. 13 – Establish community agriculture training/incubator program	The training/incubator program could take place in the food innovation district and mutual benefits could be recognized between the two initiatives.
Rec. 14 – Create a food production/processing consortium/peer group	A food production/processing peer group could be involved in the initiation and ongoing operations of the food innovation district.

7.16 Enhance local financing for food processors

Proposed Actions:

- **Convene a workshop with potential funding groups to explore financing options** – Because each financing option requires a different approach and probably a different group, a workshop would be useful to identify the range of options and parties willing to move them forward.
- **Implement the programs** – Each financing group would develop their own financing program.
- **Publicize the program** – It will be useful to make processors, and many other parties, aware of the full range of local financing options.

Key parties to lead/support initiative:

Lead	Economic Development Cowichan	This recommendation could be led by a variety of organizations but it likely needs one organization to seed the idea. EDC could provide this role and publicize the non-traditional financing options available to processors.
Support	Cowichan Processors	Individual processor could directly pursue the pre-selling crowdfunding option
	Non-profit organizations	Non-profits could pursue the crowdfunding donation option and a coop organization could pursue the coop financing
	Financial institutions	A financial institution could establish a community lending program
	CVRD	The CVRD could pursue the community bond program

Background/rationale: One of the key constraints in any industry development program is a lack of financing opportunities. Other than traditional bank financing, Farm Credit Canada (FCC) is the primary lending agency for agriculture-related enterprises in Canada. FCC provides a range of financial services and products to farming and farming-related organizations including family farms. Its average loan size is just over $100,000.[103] These include:

- Term loans and lines of credit.
- Syndicated lending with other financial institutions.
- Specialized financings for leveraged buyouts, mergers, acquisitions, and facility expansions.
- Inventory financing for both new and used equipment.

In BC, the Investment Agriculture Foundation is another source of government funding. This is a also a small funding source design to help farm or processing businesses do business plans for things like expansion or diversification (see link in endnote).[104]

However, a range of new, non-traditional local financing options are becoming more available that could allow food processors to more creatively meet their financing needs. These include:

- **Crowd-funding platforms** like Kickstarter and Indiegogo – these are best used to raise money from pre-orders (e.g. $1,000 contribution as an advance purchase of $1200 worth of food).
- **Local investment networks** –food entrepreneurs pitch the processing venture to accredited investors or other eligible investors (e.g. family members, close friends, close business associates, employees, high net worth individuals).

If the enterprise is BC owned and controlled, it could be eligible for a 30% tax credit under the BC Investment Tax Credit Program[105], making eligible investors that much more excited to invest).

- **Co-op financing** – The Co-op association of Canada is developing a loan program specifically for Co-ops. Also, because memberships in coops are not considered "securities" on the BC Securities Act, they can be used to raise money for capital projects.
- **Community loan fund** – Community members work with a local financial institution to create a special loan fund that can only be used to provide local loans.
- **Community bonds** – these have not been used much in Canada because they do not generate the same preferential tax treatment that they do in the US but they can be a way for municipalities to fund food processing infrastructure and then be paid pack from the downstream revenues/taxes.

Case Examples: A number of exciting financing case examples are worth mentioning. These include:

- **Crowdfunding -** A group of young people in Montreal raised $28,000 to develop a prototype for the "farm of the future", essentially a greenhouse that can be operated year round with zero energy inputs. They have released the plans for their prototype to the public for free. This crowdfunding example shows how much can be raised with a good idea.[106]
- **Crowdfunding -** the Awaken Café raised almost $100,000 to open its store in Oakland California by pre-selling coffee.
- **Investor networks -** A group in Port Townsend created a group called LION, which stands for Local Investment Opportunities Network. Essentially a group of accredited or eligible investors meet once a month to hear investment pitches from hopeful entrepreneurs. No government funding is involved and the investors make investments at their own discretion.[107]
- **Coop financing -** Weaver Street Coop Market in North Carolina, uses membership shares to raise money for capital project and the La Montanita Grocery Coop in New Mexico has created a revolving loan fund that is used to support local farmers and food processors.
- **Community loan funds -** A group of customers of the Great Barrington Savings bank in Great Barrington, Massachusetts made an arrangement whereby they would put their money in a special loan fund with the bank that could only be used to provide loans to local businesses. The bank handled the loan approvals and made its typical spread on the interest rate just as it normally would, but the net effect was that local businesses improved their access to debt financing capital.

Desired outcomes: Possible desired outcomes could include the following:

1. Significant increase in the amount of local financing available for food processors.
2. Increase in the number of new food processors who now have new sources of funding.

Linkages to other recommendations:

Rec. 6 – Provide business training/support for new food entrepreneurs	Part of the business training for new entrepreneurs will include financing and raising capital and it will be important for entrepreneurs to know about the full range of financing options.
Rec. 12 – Create a food hub with processing, distribution and retail sales	A successful food hub could be the single most expensive recommendation and the one that is most in need of innovative financing from multiple sources.

8.0 Potential Outcomes and Implementation

8.1 Potential outcomes from successful implementation

In Table 8.1,we present the relative impact that successful implementation of each of the 16 recommended actions will have on a 10 key performance criteria. The size of the squares indicates whether the impact will be small, medium or large.

Table 8.1 Potential Outcomes from a local food processing expansion program

No	Description of category/recommendation	New jobs created	Increased number of processors	Increased processing revenues	Increased buy local support	Increased tourism revenues	Increased local food reliance	Improved climate resilience	Improved processing financial perf.	Improved access to skilled labour	Increased access to financing
	Policies and Regulations										
1	Identify new slaughter rules that foster local processing	■	■	■			■	■	■		■
2	Ensure local policies/laws support food processing	■	■	■	■	■	■	■	■	■	■
3	Research new quota rules to support local processing	■	■	■	■		■	■	■		■
	Education and Communication										
4	Encourage food buyers to buy from local processors	■	■	■	■	■	■	■	■	■	■
5	Give processors info on how to become wholesale ready	■	■	■	■		■	■	■	■	
6	Provide business training/support for food entrepreneurs	■	■	■			■	■	■	■	■
	Planning and Management Systems										
7	Publish directory CVRD processors, buyers, & facilities	■	■	■	■	■	■	■	■		■
8	Develop agri-tourism plan that profiles processors	■	■	■	■	■	■	■	■	■	
	Processing Infrastructure and equipment										
9	Establish shared use processing facility with test kitchen	■	■	■	■		■	■	■	■	■
10	Access existing shared processing equipment/storage	■	■	■	■		■	■	■		■
11	Create online food ordering website	■	■	■	■	■	■	■	■		■
12	Create food hub with processing, distribution, and retail	■	■	■	■	■	■	■	■	■	
	Organizational structures										
13	Establish community agriculture training program	■	■	■	■		■	■	■	■	■
14	Create food processing consortium/peer group	■	■	■	■		■		■	■	■
15	Create a food innovation district	■	■	■	■	■	■	■	■	■	■
16	Enhance local financing for processors	■	■	■			■	■			■

Legend for relative magnitude of impact: small = ■ medium = ■ large = ■

Generally speaking, each recommendation typically has a large impact in two or three areas. We determined that in some cases there will be no impact on a particular performance criterion so we left it blank. While the determination of relative impact is somewhat subjective, Table 8.1 shows that a multifaceted approach covering five types of initiatives and 16 individual initiatives delivers strong and reinforcing benefits across all 10 of the performance criteria.

In addition to determining the relative impact of the various recommendations, we also tried to determine the magnitude of impacts for four performance criteria that could be expressed in quantitative terms. These include:

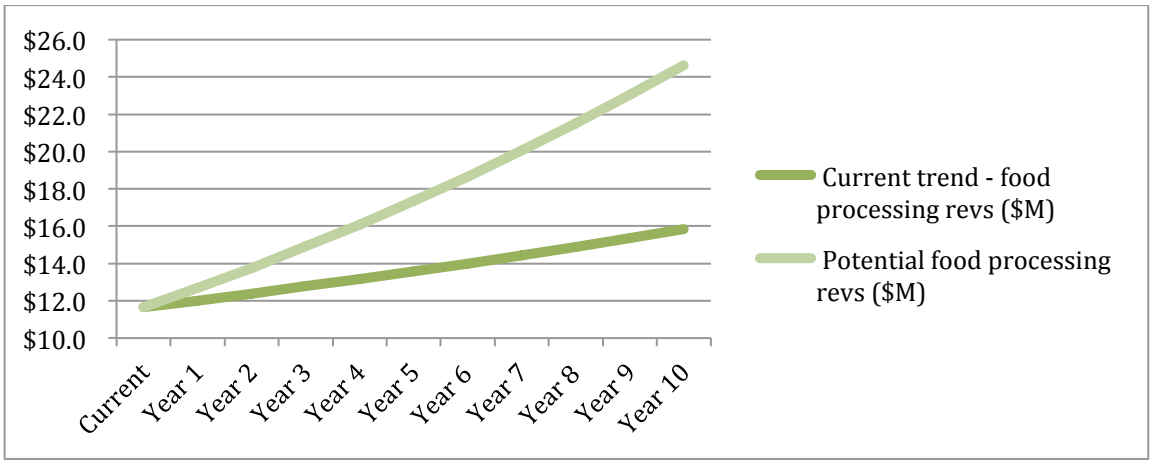
- Increased processing revenues
- Increased processing jobs
- Increased number of processors
- Increase tourist expenditures

To do this, we developed an economic model with a number of assumptions, which allow us to determine what is likely to happen under the status quo for each of the above performance criteria and what their potential growth with a successful food processing expansion plan. The key numerical data for the model are presented in Appendix I. Below we summarize the information relative to each of the four performance criteria. We caution that due to a lack of economic data at the Regional District level, this information has a considerable margin of error and should be viewed primarily to see the general "order of magnitude" impacts of an expanded local food processing program.

8.2 Processing revenues have potential to more than double in 10 yrs

We separated processing revenues into two groups – food processing and wine processing. The current trend and future growth potential for food processing revenues are presented in Figure 8.1.

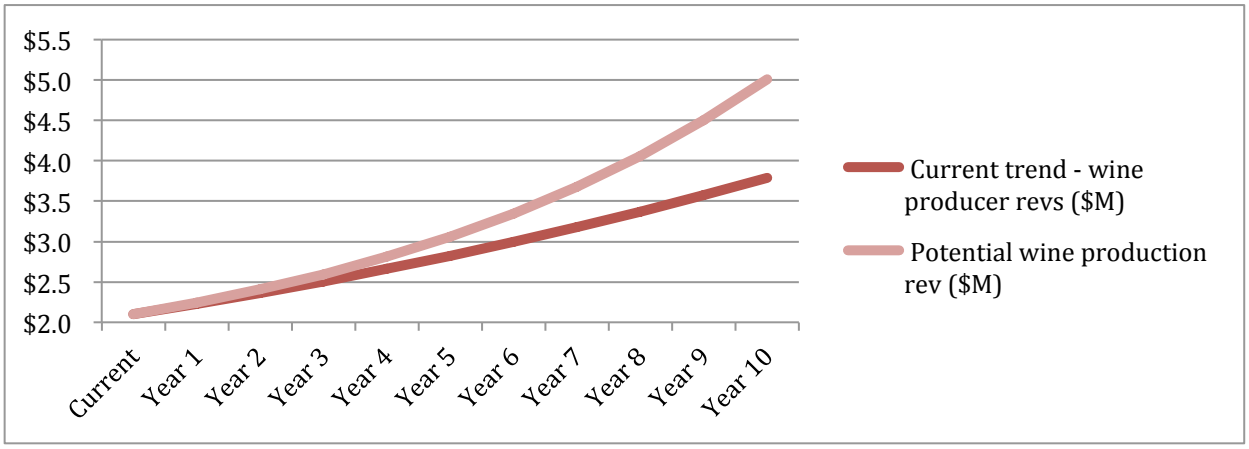
Figure 8.1 Current trend and future growth potential for food processing revenues ($millions)



This chart shows that under the current trend, food processing revenues will increase by one third from almost $12 million per year to almost $16 million, mostly due to price inflation. For the future growth line, we assumed that a successful local food processing program could increase local food self-sufficiency by about 50% from its current rate of 18% to 27%. This would result in an increase of food processing revenues to almost $25 million, which is about $9 million higher than under the status quo.

The current trend and future growth potential for food processing revenues are presented in Figure 8.2.

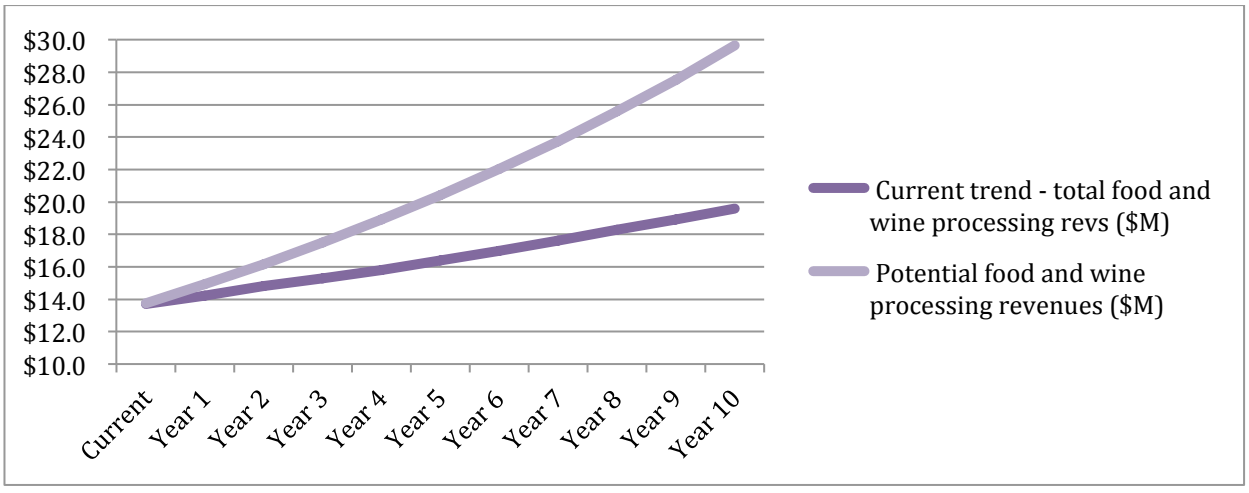
Figure 8.2 Current trend and future growth potential for wine production revenues ($millions)



Under the current trend, wine production revenues, would increase from just over $2 million to $3.8 million, reflecting strong growth in the industry throughout BC (although we used a slower growth rate than for the wineries in the Okanagan). Under the future potential wine production line, we assumed that a strong agri-tourism program would attract new wineries and increase the growth rate to be more in line with the Okanagan wineries, yielding more than $5 million in revenues after 10 years.

We can see the increase in combined food and wine processing revenues in Figure 8.3

Figure 8.3 Current trend and future growth potential for total food and wine processing ($millions)

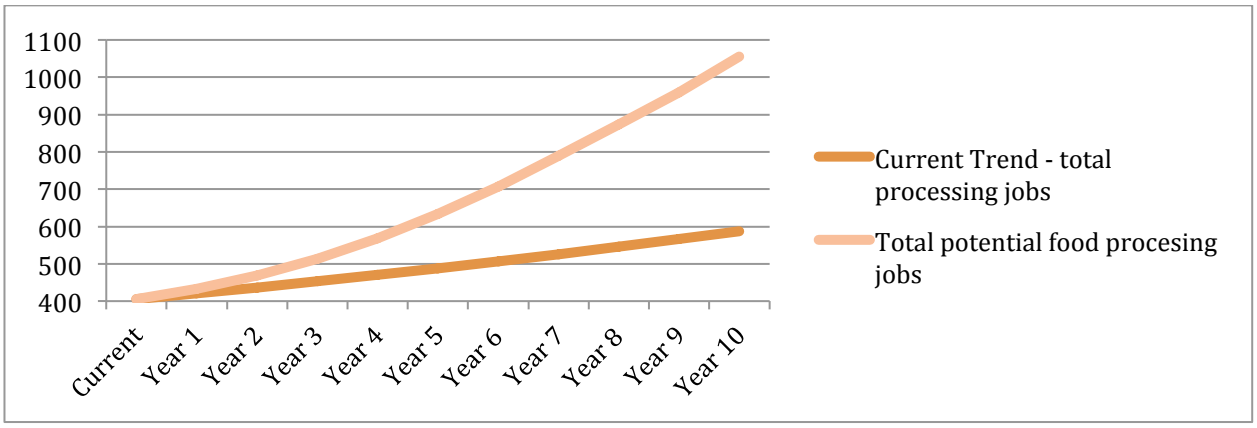


Under the current trend, combined food and wine processing revenues increase by about 40% from just under $14 million to almost $20 million. However, with an expanded food processing program, the potential exists to increase total revenues to $30 million over 10 years, $10 million more per year than under the status quo.

8.3 Over 250 new processing jobs could be added

Figure 8.4 shows the current trend in total processing jobs over the next 10 years as well as the potential increase under a successful local food processing program.

Figure 8.4 Current trend and future growth potential for total processing jobs (food and wine)

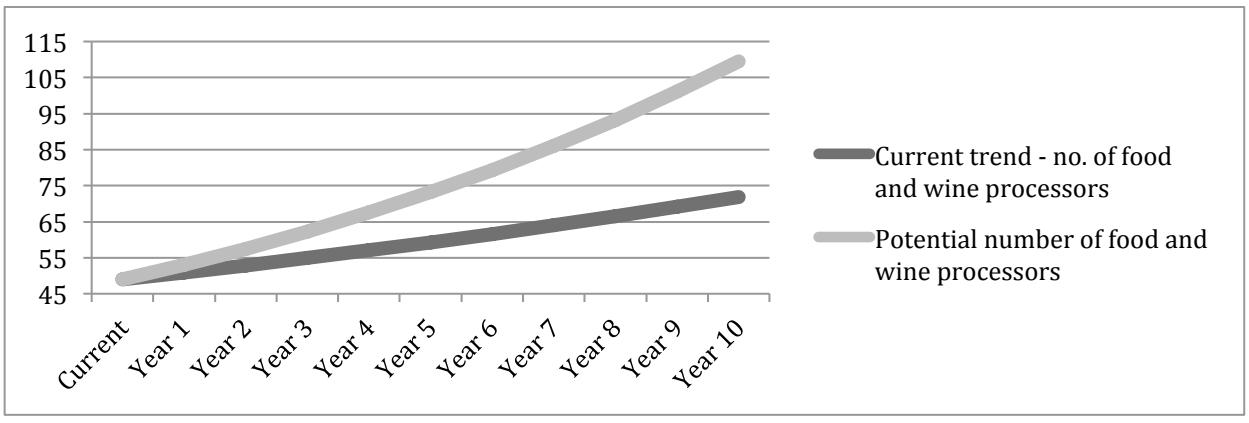


According to Table 2.2, the number of food processing jobs is rising every year in the Cowichan Region. If that trend continues, the Region will add almost 200 new food processing jobs. However with an expanded food processing program, the number of jobs could increase from 400 to almost 850 over 10 years. This represents over 250 more processing jobs than under the current trend. This growth is based on a doubling in the rate of new processing jobs each year by the end of 10 years..

8.4 Over 60 new processors could set up in the CVRD

In Figure 8.5, we present the current trend in the number of processors as well as the potential number of processors under an expand food processing program.

Figure 8.5 Current trend and future growth potential for total number of processors (food and wine)

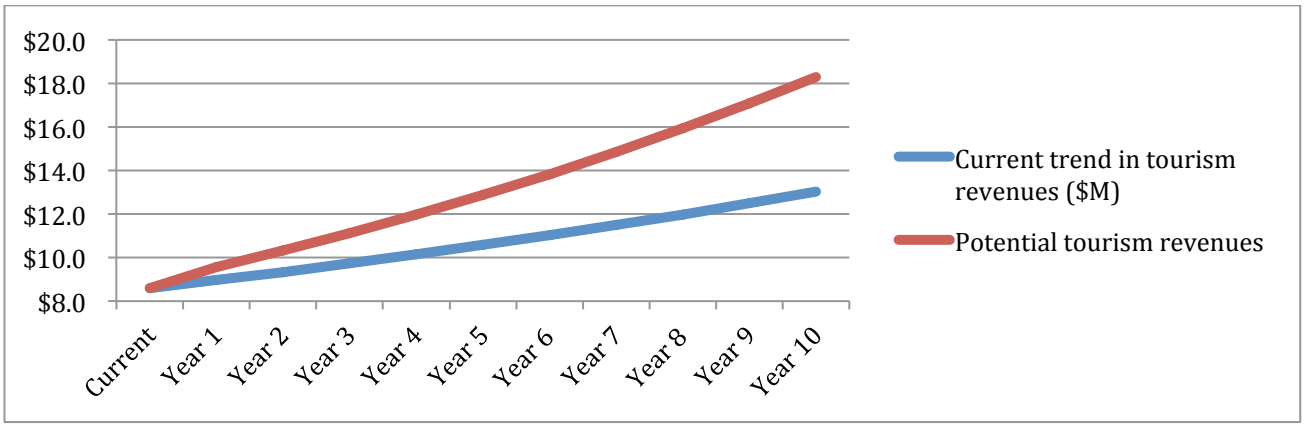


This figure shows that under the current trend, the number of processors would increase from just under 50 per year to rise to just over 70 processors by the end of 10 years. We have assumed that the processors continue to be largely small processors with less than 10 staff. Under the expanded food processing scenario, the potential exists for the number of processors to rise significantly to 110 over 10 years, an increase of almost 40 above the current trend (although it may be less due to consolidation).

8.5 CVRD Tourism revenues could increase by over $5 million per year

Figure 8.6 shows our forecast for the fourth performance metric, which is the increase in overnight tourist expenditures under both the current trend and future potential growth scenario.

Figure 8.6 Current trend and future growth potential for total tourist expenditures



Under the current trend, tourism revenues are expected to rise from just under $9 million per year to about $13 million (barring another recession, which is a reasonable possibility given recent history). Under the future growth potential, we have assumed that tourism visits would increase by 33% as more people extend their visit to the provincial capital to participate in the burgeoning agri-tourism scene in the Cowichan Region. The net effect of this increase will be to more than double tourism revenues from just under $9 million to just over $18 million. This would yield more than a $5 million boost to the Cowichan Region economy each year above the current trend.

8.6 Climate Change impacts of implementing the recommendations

While we were not able to develop any quantitative estimates of the climate change impacts of implementing expanded food processing, we nonetheless believe that, overall, the impacts will be quite positive. New processing organizations, advocacy, education, agri-tourism and knowledge transfer opportunities will bolster public awareness, resulting in higher consumption of locally produced and processed goods. A focus on shared infrastructure and added local processing capacity should encourage greater and more diverse processing in the Region, reducing the need to import processed foods.

Food processors and producers depend on each other for ingredient supply and food preparation. Producers are vulnerable to climate change impacts such as increased flooding, new pests, drought, and increasingly frequent and severe extreme weather events. Such impacts will affect crop and livestock yields, harvest times, transportation of goods (e.g. by ferry to and from the Island) the types of goods that can be produced, and the geographic region in which they can be produced. This will in turn affect processing schedules, storage capacity, food safety and facility locations. Increased local food processing will help address climate change mitigation and adaptation concerns, as long as the bulk of the ingredients for processing are locally sourced.

Potential climate change effects to transportation are perhaps the most concerning for processors. Much of Cowichan's food is currently imported by plane and ferry. Extreme weather and flooding could disrupt food transportation, delivery and distribution to processors and consumers in Cowichan. Conversely, climate change-induced transportation disruptions also affect processors distribution and exportation of

their products. This makes a compelling case for increased local food production, storage, processing and retail. More local food product availability is a climate change adaptation strategy – making the Cowichan region more self-sufficient and resilient.

A great deal of food that is imported to Cowichan is grown in regions that are vulnerable to climate change impacts as well. Drought and unusual pest infestations in the southern United States, for example, are affecting crops and yields. Decreased yields will reduce imported product availability and increase imported food product prices. Replacing imported food with local food production and processing enhances food security in the event of negative climate change impacts in regions that supply food to the Cowichan area.

Producers are generally more vulnerable to climate change impacts than processors and as such need to be proactive in implementing climate change adaptation strategies. In addition to undertaking farm infrastructure-related precautions and preparations, producers could diversify their revenues (i.e.: increase economic resilience) by starting on-farm or local processing businesses for value-added products. Small farm operations could benefit from shared processing and storage infrastructure, such as that offered by a Food Hub (see Appendix D) or in partnership with peers. If climate change impacts negatively affected their farming operations, producers would have an additional source of income and they would have increased options for processing ingredients that may not otherwise be marketable. Appropriate processing and storage facilities would help producers maintain their sales in the event that weather events reduced their crop yields.

A Food Hub and actions that foster peer-to-peer knowledge sharing and cooperation will likely have positive effects in relation to climate change impacts. Processors will benefit from sharing best practices on climate change adaptation measures (e.g. addressing refrigerated transportation needs, transportation scheduling in the event of disruption or increased/decreased demand, storage and processing scheduling, food safety concerns, etc.) and will be able to respond to producers' needs in the event that climate change impacts affect their farm products.

There is a risk that greenhouse gas emissions will increase as a result of expanded processing. As processed food production increases, so does the opportunity to export these goods, resulting in increased transportation demand. Peer-to-peer producer and processor networks, well-supported local farming and processing organizations, efforts to engage large food consumers (e.g.: local businesses, hospitals, government offices) and efforts to inform consumers about the benefits of purchasing locally grown and processed foods are all important elements in creating a local market that encourages local sales, thereby minimizing exports and keeping emissions low.

8.7 Discussion of key parties to lead and support implementation

In the previous chapter, we identified key parties to lead and support the implementation of each recommendation. In Table 8.7 we show them together, so that we can better see the relative roles of each organization and how they are involved in the various recommended initiatives. The star symbols indicated the key parties to lead an initiative, while the check marks indicate supporting organizations.

It is encouraging to see that most organizations are only taking the lead on one or two initiatives. It is also interesting to see the large support role that both the food processing associations and the community groups play in these recommendations.

Figure 8.7 Key parties to lead and support implementation of the recommendations

No	Recommendation	CVRD	Economic Dev and Tourism	Member Municipalities	Prov/Fed Governments	Municipal Gov. Assoc.'s	Food processors	Food Processing Associations	Financial Institutions/funders	Food buyers (e.g. retailers)	Community Organizations	Post Secondary Institutions
		Government					Industry				Community	
	Policies and Regulations											
1	Identify new slaughter rules the foster local meat processing				✔ MOH	★ UBCM		✔			✔ AAC	
2	Ensure local policies/laws support food processing activities	★		✔				✔				
3	Research new quota rules to support local processing		★		✔ FIRB	✔ UBCM					✔	
	Education & Communication											
4	Encourage food buyers to buy from local processors		★ EDC					✔		✔		
5	Train processors to become wholesale ready		✔					★			✔	
6	Provide business training/support for food entrepreneurs							★				✔
	Planning & Mgmt Systems											
7	Publish directory CVRD processors, buyers, & facilities		★	★			✔				✔ CGC	
8	Develop agri-tourism plan that profiles processors		★ EDC					✔			✔	
	Processing Infrastructure											
9	Establish shared use processing facility with test kitchen				✔ MOA			✔	✔ ICET			★ CC
10	Access existing shared processing equipment/storage						★ CP				✔	
11	Create online food ordering website		✔								★ CCA	
12	Create food hub with processing, distribution, storage, and retail	✔	✔		✔ WED						★ CCA	
	Organizational structures											
13	Establish community agriculture training/incubator program						✔					★ VIU
14	Create food production/ processing consortium	✔					★				✔	
15	Create a food innovation district	✔	✔	★			✔			✔	✔	
16	Enhance local financing for processors		★ EDC				✔		✔		✔	

AAC = Agr Advisory Cttee, CC = Camoson College, CCA = Cowichan Coop Assoc, CGC = Cowichan Green Comm, CP= Cowichan Processors EDC= Ec Dev Cowichan, FIRB = Farm Industry Review Board, ICET = Island Comm Econ Trust, MOA = Ministry of Agriculture, MOH = Min of Health, UBCM = Union of BC Munis, VIU = Vancouver Island University, WED= Western Econ Development

8.8 Key implementation phases

Below we have identified 4 key phases for the 10 year implementation program

Key Activities in Year 1: Planning and organizing

The first phase of implementation will focus on getting organized and developing a detailed processing plan. This plan will build on the recommendations and actions described in this report and organize them according to:

- High level goals (e.g. increase processing revenues, expand processing infrastructure, improve climate resilience),
- Measurable objectives (e.g. increase processing revenues by a certain amount by a certain date),
- Supporting actions, including costs, responsible parties, and deadlines.

The plan should also include a set of key performance indicators, which can be used to determine (and report on) the overall success of the program. We propose the following as an initial set:

- Change in processor revenues
- Change in number of processing jobs or report processing employment income
- Change in production volumes of key types of processed foods
- Change in the number of food processing enterprises
- Change in the building space dedicated to food processing or storage
- Change in the value of locally processed foods purchased by CVRD buyers
- Change in the carbon footprint of the food processing industry
- Change in the level of climate change vulnerability of the CVRD

A food processing coordinator will need to be hired or allocated with formal job duties to advance the plan and coordinate the key parties. Ideally, this staff person will operate out of the offices of Economic Development Cowichan. The major food processing associations and local community groups can support this planning effort by integrating it into their own planning processes.

This phase is also about forming partnerships with the organizations leading each of the recommendations. Once the relationships have been finalized then each leading organization needs to develop their own detailed strategies and objectives for the recommendation. This will include a review of the current situation and determination of end goals. Once the processing plan has been developed, the leading organizations can then approach the supporting organizations and brief them of their role and the goals of the project.

Once the recommendation leaders have their action plans, objectives and finalized the supporting organizations, then each initiative will need to be resourced accordingly. We recommend that long term budgets be implemented to identify the long term cost of implementing the recommendation. These budgets should be coordinated to avoid submitting separate funding requests to the same funders. Funding could be needed for additional staff, consultants, research, community engagement and business plans.

Key Activities in Years 2 to 3: Launching and Engaging

With funding, plans, and organization networks in place, the key focus of this phase is to begin launching the initiatives and engaging with the community members who will benefit or be impacted by each initiative. Following the initial community outreach, it may be necessary to conduct further research, identify key decision makers, and draft policy changes. For more expensive items, such as the Food Hub, commercial kitchen, and shared use processing facilities, formal business plans that are more detailed than in phase 1, may need to be prepared. Hopefully, some of the less complicated recommendations will be able to be completed.

Key Activities in Years 4 to 6: Gaining momentum and influence

By this stage, the community will now be well aware of the expanded food processing initiative and it will start to gain momentum with more food entrepreneurs wanting to set up enterprises and the Food Processing Associations noticing that something unique and exciting is happening in the Cowichan Region. At the same time, the key stakeholders will be expanding their influence and will hopefully be having success with new, local processing friendly policies and regulation. This influence will also translate into concrete actions for advancing the "big ticket" items such as a broad based agri-tourism strategy, the food innovation district, and the food hub.

Key Activities in Year 7 to 10: Evaluating and enhancing

By this point most or all recommendations should have been fully implemented. As a result, the key focus of this final phase will be to evaluate the impact and performance of the various initiatives and to identify ways that they can be enhanced. It will be important to measure the impact on the community, the resilience of local agriculture to climate change as well as the economic benefits to local businesses and the CVRD. If the 16 recommendations are implemented well, there should be such a significant increase in local food processing and local food culture that the focus will shift from moving plans forward to responding to a growing number of new food-related opportunities

Appendix A - List of interviewees

(sorted alphabetically by last name)

Candice Appleby – Executive Director, Small Scale Food Producers Association (SSFPA)

Mark Burdge - Owner, Hope Farm

Mark Cardin – Owner, Hidden Valley Processing (very brief discussion)

Ian Christianson - Owner, Morningside farm (egg producer)

Colin Convoy – General Manager, Nanaimo Cold Storage

Bob Crawford - Representative, Cowichan Agricultural Sociaty and Chicken Marketer*

Alan Elliott - Owner, Libre Naturals (owners of the brand No Nuttin')

Larry George - Land and Governance Manager, Cowichan Tribes

Gerry Giles – Cobble Hill Hall (e-mail exchange only)

Paul Gosh – Director, Data Services, BC Statistics

Wayne Haddow - Regional Agrologist, BC Ministry of Agriculture*

Rob Hatch - President, Nanaimo Cold Storage

Kelly Hawes – President, Cold Star Freight Services

Debra Hellbach – Industry Development Consultant, BC Food Processors Association*

Jenny Horn – Vancouver Island University and co-owner, Left Field Farm*

Rick Juliusson – Proprietor, Free Range Consulting

Heather Kaye – Urban Farm Supervisor, Cowichan Green Community Kitchen*

Kathy Lachman – Economic Development Officer, Economic Development Cowichan*

Jim Kelly - Manager, Cobble Hill Hall

David Lestokay - Farmer and prospective yogurt producer

Marla Limousin, Owner, Pressing Matter (Mobile Apple Processing)

Carim Linklater - Chair, Cowichan Food Cooperative Association*

Emily MacNair – Coordinator, BC Agriculture Climate Action Initiative*

Marlene Madsen – Sales & Marketing Manager, Island Farmhouse Poultry

Don McMurray – Arbutus Ridge Farms

Gayle Palas – Project Manager, Web Advisors (Advisor to BC Food Processors Association)

Norm Quist - Owner, Westholme Meat Packers*

Stacy Sowa – Health Protection and Environmental Services (Duncan)

Bruno Trigo – Owner, Trigo Distributors

*Those designated with an asterisk participated in the stakeholder workshop on Feb 5, 2014

Appendix B List of CVRD food processors

Processor Name and Category	Location	Types of products	Total
Bakery Items (good supply)			9
Island Bakery Ltd.	Cobble Hill	Bread, buns, and rolls	
Saskatoon Berry Farm	Cobble Hill	Saskatoon Pies, Jam, and Frozen Berries	
Nonuttin' Foods Inc	Duncan	Granola Bars	
Saison Market	Duncan	Breads, baked goods, preserves and wine	
Westfalia Bakery	Duncan	German bakery, wholesales to restaurants	
Utopia Bakery	Chemainus	Breads	
Old Town Bakery	Ladysmith	Breads, including wholesale	
Howling Wolf Farm	Thetis Island	Pies, jams, jellies	
True grain Bread	Cowichan Bay	European breads	
Dairy			3
Happy Goat	Duncan	Goat's milk cheese, goat meat	
Mary Point Dairy	Duncan	Cheese (formerly Hilary Cheese)	
Morning Mist Ice Cream Co. Ltd	Duncan	Ice cream (formerly Udder Guy's Ice Cream)	
Eggs		**Islands farms distributes**	2
Island Eggs	Near Duncan	Processing only – not a producer	
Farmer Ben's Eggs	Duncan	Eggs	
Meat		**Quite a few small beef producers**	7
Baird Brothers Farm	Cobble Hill	Beef	
Bird's Eye Cove Farm	Duncan	Beef, pork, poultry, honey	
Cowichan Valley Farm	Duncan	Turkey, Chicken and Beef	
Westholme Meat Packers/Quist Butchers	Duncan	Cowichan Valley meats – Class A slaughter facility	
Braun's custom butcher shop	Duncan	Vaux road – Class A Slaughter facility	
Hidden Valley Processing	Duncan	Class A Slaughter Facility	
Island Farmhouse Poultry (farmgate)	Cowichan Bay	Poultry (majority sold retail)	
Vineyards			16
Averill Creek Vineyard	Duncan	Wine	
Alderlea Vineyards	Duncan	Wine	
Blue Grouse Vineyards and Winery	Duncan	Wine	
Deol Estate Winery	Duncan	Wine	
Vigneti Zanatta Winery	Duncan	Wine	
Twenty Two Oaks Winery	Duncan	Wine	
Cherry Point Estate Wines	Cobble Hill	Wine	
Damali Lavendery Winery	Cobble Hill	Wine	
Divino Winery	Cobble Hill	Wine	
Glenterra Vineyards	Cobble Hill	Wine	
Merridale Ciderworks	Cobble Hill	Cider	
Silverside Farm and Winery	Cobble Hill	Wines from berries	
Unsworth Vineyards	Cobble Hill	Wine	
Venturi Shultz Vineyards	Cobble Hill	Wine and Vinegar	
Rocky Creek Winery	Cowichan Bay	Wine	
Enrico Winery	Mill Bay	Wine	
Beverages			3
Van Isle Artesian Springs	Duncan	spring water	
Team Farm	Duncan	Teas	
Wise Elder Elderberry Farm	Mill Bay	Elderberry drinks, syrups, tea, honey, liqueurs	
Specialty products			10
Arbutus Ridge Farms	Duncan	Deli foods, dips, sauces, bulk, prepared salads	
Long ears farm	Duncan	Chutney, salsa, and tapenades	
Songlines Health Products	Duncan	Emu gels, jerky, oils & products	
OUR Ecovillage	Shawnigan Lake	Jams, Jellies, fermented products plus duck, chicken	
Organic Fair	Cobble Hill	Chocolate, coffee, tea, spices	

Processor Name and Category	Location	Types of products	Total
Cowichan Pasta	Cowichan Bay	Pasta wholesale	
Kilrenny Farm	Cowichan Bay	Pasta, sauces, sausage	
I Be Jammin'	Crofton	Jam, jelly, chutney, pickles	
Golda's Fine Foods	Mill Bay	Sauces (hemp, pesto, tapenade)	
Yellow Point Cranberries	Ladysmith	Cranberry jams, sauces, and preserves	
		Total processors	**50**

Source: This list was compiled from five sources: the BC Food Processors Association Directory, the Small Scale Food Processors Association Directory, the Southern Vancouver Island Direct Marketing Association list of producers, the Cowichan Green Community Food Producers Directory and information from some of the interviewees in Appendix A

Appendix C Multiple use commercial kitchens in the CVRD

Below is a list of kitchens rented/leased by multiple caterers or operators, licensed by Vancouver Island Health Authority in the Cowichan Valley Regional District.

Kitchen	Address
Chemainus	
COWICHAN NEIGHBOURHOOD HOUSE ASSOCIATION	9796 Willow Street
ROYAL CANADIAN LEGION BANQUET HALL #191	9775 Chemainus Road
Cobble Hill	
COBBLE HILL HALL	3550 Watson Road
Crofton	
CAMP QWANOES	1148 Smith Road
CROFTON COMMUNITY CENTRE	8104 Musgrave Street
Duncan	
ART TO EAT	431 Cairnsmore Street
AVERILL CREEK VINEYARD	6552 North Road
BIRD'S EYE COVE FARM	5881 Genoa Bay Road
COWICHAN EXHIBITION MULTI-PURPOSE HALL	7380 Trans Canada Highway
COWICHAN GREEN COMMUNITY	360 Duncan Street
COWICHAN RIVER BIBLE CAMP - FOOD	5070 Riverbottom Road West
DEERTRAIL COTTAGE GROUP HOME	1711 Escarpment Way
DUNCAN ELKS LODGE #69 - KITCHEN	149 Station Street
FRAT. ORDER OF EAGLES-BANQUET KITCHEN	2965 Jacob Road
PROVIDENCE FARM KITCHEN	1843 Tzouhalem Road
QUEEN MARGARET'S SCHOOL - CAFETERIA	660 Brownsey Avenue
TS'I'TS'UWATUL'LELUM	5755 Allenby Road
Ladysmith	
EAGLES HALL - LADYSMITH - KITCHEN	921 First Avenue
NORTH OYSTER COMMUNITY CENTER	13467 Cedar Road
Lake Cowichan	
BC TEEN CHALLENGE	8801 Youbou Road
COWICHAN LAKE DISTRICT SENIORS CENTRE	55 Coronation Street
GERARD'S SPECIALTY FOODS LTD.	102 205 South Shore Road
HOME GROWN LIVING FOODS	7490 Nantree Road
MEALS ON WHEELS - LAKE COWICHAN	121 Point Ideal Road Box 670
Mill Bay	
FRANCES KELSEY SECONDARY SCHOOL	953 Shawnigan Mill Bay Road
Shawnigan Lake	
SPENCER HALL (CAMP PRINGLE)	2520 Shawnigan Lake Road West

Source: http://www.healthspace.ca/viha

Appendix D Processing strategies used elsewhere

In this Appendix, we present a range of food processing strategies being implemented or planned in other jurisdictions. Some of the strategies are specific to a geographic area while others are tied to a particular processing expansion approach.

Food Hubs: an integrated approach to processing

Food hubs are facilities that house more than one enterprise to support local food producers, including food aggregation cross-docking stations for more efficient distribution, food storage facilities, commercial kitchens, food processing equipment, and indoor farmers' markets. They help increase the amount of local food being produced and sold within the local region. The resurgence of food hubs in North America is driven by a lack of distribution infrastructure and services that allow growers and processors to take advantage of the increasing demand for local food and get a larger share of the food dollar through direct-marketing.

In the US alone 168 food hubs now exist as defined by the National Food Hub Collaboration (NFHC). A breakdown of the different types of hubs is provided in the table below.

Table 1 Number and Percentage of Food Hubs by Legal Status and Market Model

Food Hub Legal Status	Number	Percentage
Privately held	67	40%
Nonprofit	54	32%
Cooperative	36	21%
Publicly held	8	5%
Informal	3	2%

Food Hub Market Model	Number	Percentage
Farm to Business Institution (F2B)	70	42%
Farm to consumer (F2C)	60	36%
Hybrid (both F2B & F2C)	38	22%

Source: Based on 168 regional food hubs identified by the National Food Hub Collaboration (as of Dec 1, 2011).

Small and medium-sized farms, distributors and processors hold the most opportunity for augmenting and securing local food supply given their marketplace flexibility, higher product quality and traceability and capacity to build the brand and value of local food through longer, stronger buyer relationships.

Food hubs can help expand food-processing capacity by providing:

- A health and safety certified facility to research, develop, and produce processed food items.
- Specialized machinery for commercial processing and packaging.
- Test kitchens for researching and developing new products.

- Frozen, dry, and cold storage.
- Loading docks and circulation for truck traffic.
- A publically accessible showcase area.
- Waste management systems.
- Food incubator facilities.
- Office space.

> "Food hubs represent an exciting, emerging trend in local and regional food systems development. They tackle a critical need: the infrastructure and business management needed to handle the logistics of bringing food from the farm to the plate—things farmers often don't have the time or resources to accomplish." FarmAid US.

According to a 2011 NFHC survey, food hubs generate an average of $1m in revenues per year. Some of these hubs have seen double and even triple digit growth over the past few years. A food hub feasibility study was recently prepared by the BC Coop Association for a facility to be located in Duncan, providing evidence of local community support for this kind of food enterprise.[108]

Farmer-run food processing and distribution hubs

Eat Oregon First is a farmer-run food distribution hub based in Hillsboro, Oregon, 15 miles from Portland. The hub predominantly distributes meat products such as beef, poultry and pork (70% of sales) as well as seafood and eggs (remaining 30% of sales). They have 120 customers, of which all except two, are food service chefs. The products are aggregated at a 12,000 sq. ft. warehouse and processing plant that was funded by the food hub and located on commercially leased property.

The group is made up of 6 farms/ranches and 1 commercial fishery. Each year they decide on each of their roles and what they will produce. The hub buys the product from the farms, which bring the product to the facility. The hub stores, portions, freezes and prepares the product before it is distributed to the customers. They have their own drivers and trucks, which distribute 4 days per week to Portland. They see the drivers as key to their business as they educate their customers about the product. The hub does all the marketing and sales of the product and uses software to manage their inventory and data.

This model is relevant to the CVRD because it is focused on meat products, which make up the largest category of food processed in the Valley. At present, most Cowichan meat products are sold directly to consumers or cooperatively marketed through Country Grocer, Island Pastures Beef, and other independent grocers[109].

Virtual distribution hubs

Red Tomato is based in Plainville, Massachusetts, 35 miles outside of Boston. It began in the 90s as a distributor for one farm and one customer. They soon realized it was too costly to run a warehouse with trucks and lots of staff, so they morphed into a marketing, product development and brokerage organization. The product is now aggregated at one of the farms and distributed by third party distributors.

Farms that supply the hub are small to mid-sized farms because they have little opportunity to distribute elsewhere. About 40 to 50 farms participate in the program (20 to 25 main ones). The product mix is 60% apples, 10% peaches, 10% tomatoes, 3% strawberries and a variety of vegetables for the remainder. Interestingly, they do not do crop planning with the farmers, but instead collaborate to match growers with customers, who then work individually on supply and demand.

Their primary customers are large retailers and distributors located in New England, Boston, Connecticut and New York City. They are currently working on diversifying their customer base to incorporate small, medium and large-scale customers. A key part of their services is marketing and branding. Products are sold under the Red Tomato banner, but also each individual farmer is identified on the relating product.

Most of the farms in the Cowichan Region are micro-farms who are not very near large retailers, so it is unclear to what extent this model could be employed in the Valley.

Food incubators

All three western provinces have established food incubators of varying sizes. Each are discussed below.

Saskatchewan: The Saskatchewan Food Industry Development Centre (Food Centre[110]) is a non-profit food incubator based in Saskatoon, Saskatchewan funded mostly through an $8.5 million AgriFood Innovation Fund (AFIF) endowment. Launched in 2000, it provides food processors technical assistance, product development support, business advice and equipment at affordable rates. They offer 3 facilities depending on the needs of the client and the scale of the production needed. These are offered on a graduated basis where they scale up as the product or client scales up.

The Food Centre does not offer large-scale long term storage facilities, but provides enough storage for one day's worth of processing. The Centre serves 35- 50 longer-term clients, and responds to 10 to 20 new walk-in clients each month. Since launching, they have "graduated" 13 businesses, which have moved on to process out of their own facilities. Eleven of them located their production facilities in Saskatchewan and generate more than $2 million per annum to the local economy.

Alberta: The Leduc Food Processing Centre (LFPC), located near Edmonton, Alberta, is an integrated food processing, incubation and innovation centre[111]. The facility has expanded from 30,000 sq. ft. to 140,000 sq. ft. since it launched in 1984[112]. As a Provincial facility and initiative of Agriculture and Rural Development, the LFPC offers professional services and top-of the line processing equipment to help small to medium enterprises research, develop, and produce new products. On-site food scientists work with business owners to develop new products and the equipment to make sauces, frozen foods, and other products. The LFPC also has an incubation wing, the Agrivalue Processing Business Incubator, where food businesses can set-up a semi-permanent processing operation within the centre.

British Columbia: The Food Innovation Centre in Chilliwack[113] was established in 2009 with funding from the joint Federal/Provincial "Growing Forward" program as a food technology commercialization centre. It was designed to be part physical and part virtual. Unfortunately, it was closed in July 2013 due to reduced budgets and limited financial support from industry.

Given that the BC facility closed, it is highly unlikely that a food-processing centre is viable for the CVRD.

Food processing consortiums

As part of the Williamette Valley Resilience Compact Project in Oregon, a Food Security Report was published entitled, "Williamette Valley Food Systems: Opportunities for Increasing Climate Change Mitigation and Preparedness, Food Security, and Economic Development".[114] This report indicated that there was greater interest in and work being conducted on local food processing than for any other topic researched for the report.

The following initiatives were mentioned:

- A plan by the Williamette Food Processing Consortium to incubate small food processing businesses and provide business advice and support.
- A series of one day fill-your-pantry events where processors sell processed products to consumers thereby shifting storage space requirements from the processor the consumer. The number of events has expanded from 1 event in 2010 to 3 events in 2011 to 4 events in 2012. About 5,000 pounds of food are sold at a typical event.

This report also highlighted the merits of shared processing facilities, a supportive regulatory environment, as well as financial incentives (e.g. tax breaks to enhance regional processing).

In a separate report[115] on the activities of the Williamette Food Processing Consortium, the following initiatives were highlighted:

- A FoodBiz Boot Camp was held and sparked the business plan implementation of 8 food entrepreneurs. The event was followed by food business counseling sessions and specialized food seminars. A side benefit of the boot camp was the bonding that occurred among the participating food entrepreneurs, which led to a group-buying consortium for food ingredients.
- Larger food processors were able to access the Food Innovation Center in Portland as well as the Oregon State University's food science facilities.
- A list of food business resources was developed that included commercial kitchens, cold storage facilities, bottling facilities, and packaging facilities. These resources were not readily apparent to either the food businesses or local economic development providers.
- The consortium explored the potential for larger processors to share their facilities and equipment with smaller processors. However, the complexity of line conversions made this challenging although the large processors indicated they could likely help with packaging or re-packaging.

A significant finding of the consortium was that it did not usually make economic sense for farmers to expand into processing. Their highest value was to sell fresh, unprocessed products although it was valuable to establish customer/supplier relationships with processors.

Given that the Williamette Valley has similarities to the Cowichan Region, this approach would appear to have merit.

Food processing strategies, Puget Sound, Washington

A 2012 report on Food Processing in Western Washington[116] identified a number of opportunities for expanded food processing in Puget Sound including:

- Processing fresh fruits and vegetables into ready-to-eat products
- Processing fruit for puree and juices
- Freezing fruits and vegetables
- Jarring and pasteurizing pickles, sauerkraut and fruit juices
- Formulating, jarring and pasteurizing baby food
- Warehousing for dry, fresh, and frozen products, including meat.
- Custom processing or co-packing facilities that provide canning, freezing, drying, labeling packaging and storage.

The report also included a number of recommendations for expanding food processing:

- Provide better information about food processors, ingredient suppliers, facilities, distribution, etc.
- Consider the feasibility of establishing a food hub.
- Consider creating a food innovation district.
- Increase institutional purchasing of locally processed products.
- Enhance organizational, business management support, and networking for processors.

A separate report that looked at King County[117], the most populated area within the Puget Sound, made a number of additional recommendations:

- Food processing, packaging and direct sales should be considered agricultural activities and regulations should be developed to support them.
- The County should work with food producers, cities, nearby counties and others to develop processing infrastructure and promote sales to consumers, institutions, restaurants and retailers.
- The County should develop incentives that help processors reduce energy use, increase food security and provide a healthy local food supply.

Many of these approaches are relevant to the CVRD although it will take involvement of the Agricultural Land Commission to get food processing classified as an agricultural activity.

Food processing strategies, Sacramento, California

The Sacramento Area Council of Governments (SACOG) is currently studying how best to improve the regions ability to process food.[118] The Sacramento region has about 2.5 million people who spend about $7 billion per year on food, of which only about 2% is grown in the region. The region produces around $1.8 billion worth of food each year but most of it is exported out of the region.

Since 2007 SACOG has directed an ongoing project called the Rural-Urban Connections Strategy (RUCS)[119]. One of its key objectives is to "Increase Local Processing Capacity". The region has seen recent closures of processing plants that have, in turn, affected local farming (e.g. the closing of the peach processing facility in Yuba City reduced the number of acres of peaches in Yuba and Sutter counties). Stakeholders recently re-defined processing as an innovation that boosts local food production. Two relevant areas of the strategy research are summarized below.

Shared processing facilities – stakeholders identified the benefits of shared facilities as sharing costs and taking advantage of economies of scale, leading to increased affordability and improved market access. Businesses could also collaborate to sell to larger customers as well as share information, ideas, rent and equipment costs. Three type of shared facilities were reviewed:

- **Repurposed Existing Processing Facilities** – e.g. repurposing the Old Sugar Mill in Clarksburg, closed down in 1993, into a micro-commercial centre.
- **Commercial kitchens** – e.g. Chefs Kitchens in Los Angeles (www.chefskitchens.com), which gives smaller businesses flexibility to rent the kitchen hourly and avoid the high capital costs of building a new kitchen.
- **Mobile processing** – offers the benefit of being able to service different regions as well as being shared amongst producers. Mobile processing is particularly applicable to meat production and San Juan Islands in Washington State offers a relevant example[120].

Supportive Plans, Policies and Zoning - Regulations and permitting have been identified as challenges to constructing or repurposing a shared facility unit. More consistent interpretation and application of regulations could help producers and allow for processing plants to be built on farmland.

The approval of these kinds of strategies in the Cowichan Region will take ALC support and local/regional government zoning changes, which could be challenging.

Food processing strategies, Ontario, Canada

A local food guide for Ontario municipalities[121] highlighted the following opportunities to expand local food processing:

- **Encourage the construction of mobile abattoirs** – These are transport trucks or trailers that have cutting and cooling rooms and meet all relevant health and safety standards.
- **Support the establishment of community abattoirs where insufficient supply exists from private sector sources** – The Manitoulin Island Community Abattoir was cited as an example. It is a provincially-inspected free-standing facility that was launched in February 2013 and funded by multiple levels of government, including First Nations, as well as through processor fees.
- **Ensure that zoning bylaws support food processing** – This includes incorporating value-added uses as permitted or secondary uses in planning policies. Official Community Plans should specifically allow pre-cooling, washing, sorting, packing, drying, slicing, coring, cutting, storage, and pickling as permitted agricultural uses.
- **Provide tax breaks for food processing** - Create food processing enterprise zones.

Another Ontario study[122] indicated the need to make processing an allowable use on agricultural land. As noted above, this recommendation will need ALC approval.

Additional food processing strategies from other jurisdictions

In addition to those initiatives and strategies presented above, the following are noteworthy:

- The True North Fraser Partnership (Pitt Meadows, Maple Ridge, and Mission) identified an Agrifood Distribution hub as one of 5 projects as part of the Regional Economic Investment Pilot, an initiative of the BC Jobs Plan. The project has just completed an initial feasibility assessment and is considering next steps.[123]
- The State of Hawaii prepared an Increased Food Security And Self-Sufficiency Strategy in late 2012 that includes a number of recommendations for expanding food processing, including construction of an agricultural processing facility and developing better meat slaughter and processing facilities.[124]
- The Washington Department of Commerce has identified Innovation Partnership Zones as a way to cluster and take advantage of the Region's talent, resources and entrepreneurialism.[125]
- The Gleaners, operating 3 facilities in BC (Lavington, Abbotsford and Oliver), process a substantial amount of produce that would otherwise be wasted. The Lavington processing centre consists of a repurposed ginseng warehouse equipped with a forklift and commercial-grade washing, chopping, and dehydrating equipment. Raw produce (e.g. 3,000 lbs of Wala Wala onions) is dropped off at the processing facility and volunteers use the equipment to dehydrate the onions and then make soup mixes to send to low income countries with a prevalence of hunger.[126]

Appendix E Projected CVRD climate change impacts

Estimated climate change impacts for 2020:

Climate Variable	Season	Projected Change from 1961-1990 Baseline	
		Ensemble Median	Range (10th to 90th percentile)
Mean Temperature (°C)	Annual	+0.9 °C	+0.4 °C to +1.3 °C
Precipitation (%)	Annual Summer Winter	+3% -8% +2%	-2% to +7% -19% to +8% -3% to +9%
Snowfall (%)	Winter Spring	-24% -31%	-46% to -6% -62% to -6%
Growing Degree Days (degree days)	Annual	+232 degree days	+109 to +324 degree days
Heating Degree Days (degree days)	Annual	-316 degree days	-439 to -147 degree days
Frost-Free Days (days)	Annual	+10 days	+4 to +15 days

Estimated climate change impacts for 2050:

Climate Variable	Season	Projected Change from 1961-1990 Baseline	
		Ensemble Median	Range (10th to 90th percentile)
Mean Temperature (°C)	Annual	+1.6 °C	+1.0 °C to +2.3 °C
Precipitation (%)	Annual Summer Winter	+6% -18% +5%	-2% to +12% -28% to +1% -4% to +15%
Snowfall (%)	Winter Spring	-39% -53%	-59% to -22% -71% to -18%
Growing Degree Days (degree days)	Annual	+430 degree days	+247 to +628 degree days
Heating Degree Days (degree days)	Annual	-548 degree days	-772 to -323 degree days
Frost-Free Days (days)	Annual	+16 days	+11 to +24 days

Estimated climate change impacts for 2080:

Climate Variable	Season	Projected Change from 1961-1990 Baseline	
		Ensemble Median	Range (10th to 90th percentile)
Mean Temperature (°C)	Annual	+2.5 °C	+1.4 °C to +3.8 °C
Precipitation (%)	Annual Summer Winter	+8% -19% +10%	-0% to +18% -40% to +1% -1% to +22%
Snowfall (%)	Winter Spring	-54% -73%	-77% to -27% -86% to -23%
Growing Degree Days (degree days)	Annual	+695 degree days	+360 to +1083 degree days
Heating Degree Days (degree days)	Annual	-842 degree days	-1222 to -457 degree days
Frost-Free Days (days)	Annual	+23 days	+14 to +32 days

Source: Information gathered from Pacific Climate Impacts Consortium's Plan2Adapt project. Accessed Jan 2, 2014 at http://www.pacificclimate.org/tools-and-data/plan2adapt

Appendix F: Potential impacts on CVRD agriculture

Projected Climate Changes	Effects	Potential Agricultural Impacts
• Increasing seasonal precipitation (fall, winter, spring) • Increasing annual precipitation	• Increase in excessive moisture on fields • Increase in site-specific flood risk • Increasing potential volume of water • Increased stream turbidity	*Challenging agricultural impacts:* • Reduced sunlight • Waterlogged soils • More frequent flooding • Increased uncertainty • Disrupted planting, fertilization, harvesting • Reduced productivity and quality • Crop losses and damage • Damage to irrigation infrastructure • Pressure on drainage infrastructure and water management • Increased infrastructure costs (construction, maintenance) *Potential opportunities:* Increased viability of water storage & irrigation infrastructure
• Increasing annual and seasonal temperature • Decreasing snowfall • Increasing extreme rain events (intensity, frequency)	• Warmer and drier summer conditions • Shifting streamflow patterns • Sea level rise • Potential salinization of some aquifers (with sea-level rise)	*Challenging agricultural impacts:* • Decreased summer/fall water supply • Potential for some salinated water sources • Decreased forage and hay production (increased feed costs, decreased herd sizes) • Lower water quality for livestock watering • Increased need for water storage, irrigation *Potential opportunities:* Increased horticultural productivity
• Climate change in other growing regions	• Variability of global agricultural production	*Challenging agricultural impacts:* Increase in feed or other input costs *Potential opportunities:* Increased in demand and prices for food production / local food Competitive advantage in changing global markets

Projected Climate Changes	Effects	Potential Agricultural Impacts
• Increase in extreme weather events • Increasing extreme rain events	• Increasing intensity and frequency of extreme conditions • Increased risk of erosion and winter flash flooding	*Challenging agricultural impacts:* • Power supply interruptions • Infrastructure damage • Interruptions in input supplies and increased feed costs • Reduced range of suitable livestock breeds • Increased risk of waterlogged soils, erosion, flooding *Potential opportunities:* Temporarily captive local market Increased awareness of the value of local food
• Increasing annual and seasonal temperature • Decreasing summer precipitation • Increasing summer warm and extreme warm days	• Drier periods in summer • Increased forest fire risk	*Challenging agricultural impacts:* • Asset and infrastructure damage • Increased costs for regional wildfire mitigation • Increased risk of livestock injury & mortality • Costs and social/psychological stress of evacuation & recovery • Cascading effects on distribution and processing infrastructure • Insurance may be more expensive or not available
• Increasing seasonal temperatures • Increasing Growing Degree Days • Increasing frost free days	• Longer growing season • Shifts in crop suitability	*Challenging agricultural impacts:* Increase in cooling costs for barns *Potential opportunities:* • Increased horticultural productivity • Increased suitability of new varieties, breeds, and/or crops • Improved return on investment
• Increasing winter temperature and seasonal temperatures • Increasing spring precipitation and extreme rain events • Drier summer conditions	• Changes in pests, diseases, weeds and pollinators: • Increase in winter survival rates • Increase in number of cycles in a year • Introduction of new pests and diseases	*Challenging agricultural impacts:* • Increase in existing and new pests and diseases of economic significance • Increase in management costs, complexity, uncertainty • Increase in delays and/or reduction of pollination in spring

Source: Climate Action Initiative. BC Agriculture & Climate Change Regional Adaptation Strategies series: Cowichan.

Appendix G Long List of Recommendations

Description of Recommendation	Rationale for recommendation
1.0 Policies and Regulations	
1.1 Permit self-inspected meat slaughter facilities similar to Saskatchewan	Increases no. of affordable and "right-scale" slaughter facilities in rural regions
1.2 Review trade agreement rules on local purchasing and how to manage	Increases volume of locally produced food purchased by local institutions
1.3 Advocate to have food processing activities qualify as agricultural activities	Allows processing facilities to be built on farm premises
1.4 Ensure that policies and laws (including ALR policies) support food processing and storage activities	Allows processing facilities to be built on farm premises
1.5 Provide financial incentives for food processors -e.g. tax breaks, buyer premium	Allows local producers to be more competitive
1.6 Advocate to reform the dairy, egg, and meat marketing board quotas	Reduces competition from Lower Mainland and encourages smaller grows to increase in size
1.7 Streamline and coordinate regulations for food processing, make recommendations to Canadian Food Inspection Agency (CFIA)	Reduces costs of food production
1.8 Advocate policies to both mitigate and adapt to climate change	Gives a higher priority to local food production
1.9 Coordinate with farmers/processors to implement climate change mitigation and adaptation measures	Ensures resiliency of farming operations
1.10 Establish a coordinated emergency weather impact warning system for agricultural producers and processors	Allows farmers to respond quickly in event of potential crop/livestock losses
2.0 Education and communication	
2.1 Encourage local retailers to better support/promote local food processors	Increases demand for locally produced food
2.2 Promote "Cowichan Grown" brand and consumer awareness program that was recently developed	Increases awareness of locally produced food
2.3 Develop institutional food buyer policy that favours local food processors	Increases demand of locally produced food
2.4 Give food producers information and workshops on how to produce food more weeks of year	Increases availability of locally produced food
2.5 Give growers information and workshops on how they can expand into processing or partner with others	Increases availability of locally produced food
2.6 Give food producers info and workshops on the pros and cons of direct selling vs. wholesaling	Gives growers more markets for their products.
2.7 Give processors information on how to become wholesaler ready	Improves chances of processing businesses remaining profitable
2.8 Identify processed foods that meet the BC Healthy Foods Guide requirements	Gives processors access to school lunch programs
2.9 Create a food business boot camp for food entrepreneurs, supported by mentors	Improves chances of processing businesses remaining profitable
2.10 Establish regular communications with producers and processors on climate change issues and actions	Prepares processors for climate change impacts that could affect their operations
2.11 Recruit poultry, dairy, and egg producers that have	Increase supply of producers that require

quota from other regions	quota to sell retail

Description of Recommendation	Rationale for recommendation
3.0 Planning and Information Management Systems	
3.1 Establish and update a food processing strategy for the Cowichan Region	Creates ability to better guide industry growth
3.2 Establish specific goals and performance indicators related to food processing	Better understanding of desired outcomes
3.3 Establish a directory of Cowichan Region food processors, food buyers and processing/storage facilities	Improves knowledge of the industry participants
3.4 Develop an agri-tourism plan that strongly profiles Cowichan Region food processors	Provides economic benefit beyond the food sector
4.0 Processing Infrastructure and equipment	
4.1 Obtain funding for a shared use processing facility with packing line	Creates opportunities for new/small processors
4.2 Create a test kitchen for research and developing new products (possibly use Cornell University model)	Creates opportunities for new/small processors
4.3 Obtain low cost, shared processing equip. (e.g. mobile apple press/poultry abattoir)	Creates opportunities for new/small processors
4.4 Establish local food distribution service with a refrigerated truck, working with large cold storage facilities	Opens up opportunity to deliver to larger customers by aggregating the product
4.5 Build low cost greenhouses and other methods to extend growing season	Provides more inputs for processors
4.6 Create Cowichan-wide online local food ordering website for households and Community Supported Agriculture (CSA) members	Makes it more convenient for buyers to source from small rural farms.
4.7 Create a website for sharing food processing equipment	Low capital cost investment
4.8 Create a food hub that includes processing facilities, farmer's market venue, aggregation site, etc.	Opens up opportunity to deliver to larger customers by aggregating the product
4.9 Improve food processing waste mgmt. infrastructure	Improves operating efficiency
5.0 Organizational structures	
5.1 Establish community-based agriculture training and education program	Provides training for future processing staff
5.2 Create local food processors marketing/aggregation/coordination organization	Improves mutual support and collaboration
5.3 Establish group to run online local food ordering system	Provides centralized site for consumers
5.4 Hire/assign a food processing coordinator in the CVRD to oversee processing plan implementation	Create a clear locus of responsibility
5.5 Create a CVRD food processing consortium/peer group	Low capital cost investment
5.6 Create a virtual food processing centre of excellence/resource centre	Lower capital cost investment
5.7 Establish incubator for food processing entrepreneurs	Supports new food entrepreneurs
5.8 Conduct an annual "fill your pantry" event hosted by local processors (for local consumers and buyers)	Reduces costs of storage; improves cash flow
5.9 Create a food innovation district with a tourism component	Enhances profit and image of food processors
5.10 Create a local lending and equity funding initiative for food processors supported by BC tax credit	Improves access to financing

5.11 Certify local processors to boost consumer confidence Increase consumer support for buying local

Appendix H Scoring of Long List of Recommendations

No.	Description of long list recommendation	Increased processing 30%	Cost Benefit 30%	Degree of control 15%	Easy to implement 25%	Total Score	Add to short list?
1.0	**Policies and Regulations**				**Avg:**	**5.7**	
1.1	Allow self slaughter meat slaughter facilities	4	5	0	5	4.0	
1.2	Review trade agreement rules on local purchasing	3	3	4	5	3.7	
1.3	Advocate for processing to be allowed activity on ALR land	4	4	0	5	3.7	
1.4	Ensure policies/laws support food processing activities	6	8	10	5	7.0	Yes
1.5	Provide incentives for food processors	7	7	10	4	6.7	
1.6	Advocate to reform marketing board quotas	10	10	2	3	7.1	Yes
1.7	Streamline and coordinate food processing regulations	5	7	3	4	5.1	
1.8	Advocate for climate mitigation/adaptation policies	8	8	8	6	7.5	Yes
1.9	Coordinate implementation of climate policies	7	7	5	5	6.2	
1.10	Establish coordinated weather warning system	5	7	7	6	6.2	
2.0	**Education and Communication**				**Avg:**	**6.6**	
2.1	Create retailer-led program to support local processors	7	8	8	8	7.7	Yes
2.2	Promote "Cowichan Grown" Brand	7	8	8	8	7.7	Yes
2.3	Develop institutional buyer policy that favours local proc.	9	8	6	6	7.5	Yes
2.4	Educate farmers on how to extend seasonality	5	5	6	5	5.2	
2.5	Educate farmers on how expand into processing	5	8	8	8	7.1	Yes
2.6	Give processors info on selling through distributors	3	5	9	6	5.3	
2.7	Give processors info on how to become wholesale ready	3	2	7	8	4.6	
2.8	Identify foods that meet BC Healthy Food Guidelines	6	6	8	8	6.8	
2.9	Create food biz camp for food entrepreneurs	8	8	8	8	8.0	Yes
2.10	Communicate with processors on "climate actions"	4	7	8	8	6.5	
2.11	Attract producers with quota from other BC regions	6	6	6	9	6.8	
3.0	**Planning and Management Systems**				**Avg:**	**7.7**	
3.1	Establish and update food processing strategy for CVRD	7	7	10	9	8.0	Yes
3.2	Establish specific goals and performance indicators	5	7	10	9	7.4	Yes
3.3	Publish directory CVRD processors, buyers, and facilities	5	8	10	10	7.9	Yes
3.4	Develop agri-tourism plan that profiles processors	6	7	10	8	7.4	Yes
4.0	**Processing Infrastructure and equipment**				**Avg:**	**6.3**	
4.1	Obtain funding for shared use processing facility	8	8	8	7	7.8	Yes
4.2	Create a test kitchen for researching new products	5	5	9	6	5.9	
4.3	Access low cost shared processing equipment	6	8	7	7	7.0	Yes
4.4	Establish local food distribution service with reefer van	4	5	7	8	5.8	
4.5	Build low cost greenhouse to extend growing season	3	2	8	5	4.0	
4.6	Create online food ordering website	6	9	8	7	7.5	Yes
4.7	Create website for sharing food processing equipment	6	8	8	7	7.2	Yes
4.8	Create food hub with processing, distrib, and retail	8	8	7	5	7.1	Yes
4.9	Improve food processing waste mgmt infrastructure	3	6	6	5	4.9	
5.0	**Organizational structures**				**Avg:**	**6.6**	
5.1	Establish community agriculture training program	7	8	8	6	7.2	Yes
5.2	Create a local processors association	3	6	8	8	5.9	
5.3	Establish organization to run online food ordering system	5	8	8	8	7.1	Yes
5.4	Hire a food processing coordinator for the CVRD	4	6	10	9	6.8	
5.5	Create a food processing consortium/peer group	4	8	8	8	6.8	Yes
5.6	Create a virtual food processing centre of excellence	7	4	6	5	5.5	
5.7	Establish a food processing incubator	7	8	9	7	7.6	Yes
5.8	Conduct annual "fill your pantry" event	5	7	8	8	6.8	
5.9	Create a food innovation district	6	7	9	7	7.0	Yes
5.10	Create financing initiative for processors	4	9	9	8	7.3	Yes
5.11	Certify local processors	3	4	9	7	5.2	
					Total number of recommendations to be added to short list		**23**

Expanded processing future growth potential model

Assumptions	Current	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Population growth rate/annum	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
Average household size	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Increase in consumer price index	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%	2.2%
Current local food sufficiency percentage	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%
Wine consumption per adult, BC (litres)	16.1	16.3	16.4	16.6	16.8	16.9	17.1	17.3	17.4	17.6	17.8
Average price of wine	$13.41	$13.71	$14.01	$14.31	$14.63	$14.95	$15.28	$15.62	$15.96	$16.31	$16.67
Wine expenditures/adult	$216	$223	$230	$237	$245	$253	$261	$270	$278	$287	$296
Adults as a % of total population	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%	79.5%
Current growth rate in processing jobs	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
Typical wine grower revenues/ acre	$10,000	$10,220	$10,445	$10,675	$10,909	$11,149	$11,395	$11,645	$11,902	$12,163	$12,431
Wine production growth rate	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
Acres in production, current trend	210	218	226	235	244	253	263	273	283	294	305
Wine industry jobs per acre	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Average jobs per processor	10.4	10.3	10.3	10.2	10.2	10.1	10.1	10.0	10.0	9.9	9.9
General growth rate for tourist visits BC	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Overnight visits to Van Island/yr	407,000	415,140	423,443	431,912	440,550	449,361	458,348	467,515	476,865	486,403	496,131
Cowichan visits as % of Van Island visits	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Cowichan overnight visits	22,385	22,833	23,289	23,755	24,230	24,715	25,209	25,713	26,228	26,752	27,287
Average spending per overnight visit	$384	$392	$401	$410	$419	$428	$438	$447	$457	$467	$477

Demographic trends	Current	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Population	82,510	83,253	84,002	84,758	85,521	86,290	87,067	87,851	88,641	89,439	90,244
Households	34,379	34,689	35,001	35,316	35,634	35,954	36,278	36,604	36,934	37,266	37,602
Processed food expenditures/household	$4,706	$4,810	$4,915	$5,023	$5,134	$5,247	$5,362	$5,480	$5,601	$5,724	$5,850
CVRD household exp. on processed food ($M)	$162	$167	$172	$177	$183	$189	$195	$201	$207	$213	$220
CVRD wine expenditures ($M)	$14	$15	$15	$16	$17	$17	$18	$19	$20	$20	$21
Total process food expenditures ($M)	$176	$182	$187	$193	$200	$206	$213	$219	$226	$234	$241

Status quo projections	**Current**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Current trend - food processing revs ($M)	$11.6	$12.0	$12.4	$12.8	$13.2	$13.6	$14.0	$14.4	$14.9	$15.4	$15.8
Current trend - wine producer revs ($M)	$2.1	$2.2	$2.4	$2.5	$2.7	$2.8	$3.0	$3.2	$3.4	$3.6	$3.8
Current trend -total processing revs ($M)	$13.7	$14.2	$14.8	$15.3	$15.8	$16.4	$17.0	$17.6	$18.3	$18.9	$19.6
Current trend in tourism revenues ($M)	$8.6	$9.0	$9.3	$9.7	$10.2	$10.6	$11.0	$11.5	$12.0	$12.5	$13.0
Current trend processing jobs	342	355	368	382	397	412	428	444	461	478	497
Current trend - wine production jobs	63	65	68	70	73	76	79	82	85	88	91
Total processing jobs	405	420	436	453	470	488	507	526	546	567	588
Average wage per processing job	$33,948	$33,873	$33,802	$33,736	$33,673	$33,613	$33,558	$33,507	$33,460	$33,417	$33,378
Current trend in no. of processors	33	34	36	37	39	41	43	44	46	48	50
Current trend in no. of wineries	16	16	17	17	18	19	19	20	20	21	22
Total number of processors (incl. wineries)	49	51	53	55	57	59	62	64	67	69	72
Average revenue per processor	$280,587	$279,763	$278,956	$278,168	$277,398	$276,648	$275,917	$275,205	$274,514	$273,844	$273,194

Assumptions with expanded processing	**Current**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Potential local food sufficiency percentage	18%	19%	20.0%	21%	22%	23%	24%	25%	26%	27%	28%
Wine production growth rate	3.8%	4.5%	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%
Potential acres in production	210	219	230	243	258	274	294	316	341	370	403
Potential growth rate in processing jobs	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%
Cowichan visits as % of Van Island visits	5.5%	5.7%	5.9%	6.1%	6.3%	6.5%	6.7%	6.9%	7.1%	7.3%	7.5%
Cowichan overnight visits	22,385	23,663	24,983	26,347	27,755	29,208	30,709	32,259	33,857	35,507	37,210
Average spending per overnight visit	$384	$404	$413	$422	$431	$441	$451	$461	$471	$481	$492

Potential outcomes - expanded processing	**Current**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Potential food processing revs ($M)	$11.6	$12.7	$13.8	$14.9	$16.1	$17.4	$18.7	$20.1	$21.5	$23.0	$24.6
Potential wine production rev ($M)	$2.1	$2.2	$2.4	$2.6	$2.8	$3.1	$3.3	$3.7	$4.1	$4.5	$5.0
Potential procesing revenues ($M)	$13.7	$14.9	$16.2	$17.5	$18.9	$20.4	$22.0	$23.7	$25.6	$27.5	$29.6
Potential tourism revenues	$8.6	$9.6	$10.3	$11.1	$12.0	$12.9	$13.8	$14.9	$15.9	$17.1	$18.3
Potential food processing jobs	342	361	382	407	436	469	506	549	598	655	721
Potentail wine production jobs	63	66	69	73	77	82	88	95	102	111	121
Total potential food procesing jobs	405	427	452	480	513	551	594	644	701	766	842
Average wage per processing job	$33,948	$34,976	$35,807	$36,434	$36,852	$37,062	$37,067	$36,875	$36,494	$35,938	$35,223
Potential number of processors	33	36	39	43	47	51	55	60	66	72	78
Potential number of wineries	16	17	18	20	21	22	24	26	27	29	31
Total number of processors (incl. wineries)	49	53	58	62	68	73	79	86	93	101	110
Average revenue per processor	$280,587	$281,076	$281,092	$280,689	$279,922	$278,843	$277,502	$275,949	$274,236	$272,411	$270,526

	Notes
[1]	Extrapolation from average of last 10 years
[2]	From BC Statistics - no change assumed
[3]	Extrapolation from current trend
[4]	We used current self sufficiency % from Table 2.3
[5]	BC wine institute data
[6]	http://www.sfu.ca/~ahira/BC%20Wine%20Industry%20Hira%20report%20Aug%2011%2011.pdf
[7]	http://www.sfu.ca/~ahira/BC%20Wine%20Industry%20Hira%20report%20Aug%2011%2011.pdf
[8]	BC statistics
[9]	Same growth rate as Table 2.2
[10]	BC wine industry data
[11]	Half the growth rate for bc as okanagan growing faster
[12]	Cowichan Region data
[13]	http://www.sfu.ca/~ahira/BC%20Wine%20Industry%20Hira%20report%20Aug%2011%2011.pdf
[14]	Assume slight decline due to new entrants
[15]	Due to Canada/US exchange rate remaining lower
[16]	From Vancouver Island tourism stats
[17]	Half the 11% population ratio because many visitors just go to Victoria
[18]	Calculated
[19]	Destination BC data for 2014, escalating with consumer price index.
[20]	General goal would be increase self reliance percentage by 50%
[21]	Growth increase to match average for BC as a whole
[22]	Calculated field
[23]	Goal would be to double the annual growth rate over 10 years
[24]	Goal is a 33% increase in tourism visits over status quo
[25]	Calculated field
[26]	Slight increase in average spending on food/wine

References

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