

3.2 Farm Land and Food Security

Introduction

Farm Land and Food Security in the Cowichan Valley Regional District

Food and agriculture are key components of the Cowichan Region's economy. The maintenance of a productive farming community supports local food production, which in turn reduces transportation-related greenhouse gas emissions¹²⁷, fosters self-sufficiency, provides insurance against disruptions in food supply, and protects consumers from increases in food prices due to rising fuel costs.

Farm land also provides key ecological services such as habitat for wildlife, refuelling areas for winter bird migration and pervious surfaces for groundwater recharge, and it contributes to the rural feel of the region. Organic waste (appropriately processed) can be applied on farmland, reducing the volume of material sent to the landfill and improving soil productivity.

Cowichan's temperate climate and fertile soils allow for year-round food production, and the area is well suited to many different agricultural activities – particularly at lower elevations along the east coast of the region.¹²⁸ The rivers, lakes, ocean and forest provide additional food sources, including fish, shellfish, sea vegetables and mushrooms.

Imported food travels an average of 2,500 kilometres from farm to plate.¹²⁹

Measuring Farm Land and Food Security

In measuring the state of farm land and food security, it would be ideal to be able to track trends in the total amount of land capable of being farmed versus the area actually being farmed in the region, as well as the kinds of food being grown relative to regional food production targets, the amount of food being purchased locally versus imported from out of the region, and the sustainability of agri-business (which provides economic stimulation for communities, income and employment generation for farmers, and food security for citizens).

127 The fossil fuels and other resources needed to grow, package and transport food in large quantities contributes significantly to greenhouse gas emissions (3% in BC and Canada, 8% in the US, 14% worldwide) and environmental depletion.

128 Cowichan Economic Development Commission (CEDC), 2009. Cowichan Region Area Agricultural Plan–State of the Industry Report and Visions, Goals and Objectives addendum.

129 The average North American meal travels close to 2,500 kilometres from farm to plate. (<http://www.organicagcentre.ca/Docs/LocalFoodProcurementPolicies.pdf>) To transport this average meal, we consume 4 to 17 times more petroleum than if the same meal were made from local ingredients. (Worldwatch Institute <http://www.worldwatch.org/node/1749>)

Considerable data have been collected for the 2009 Cowichan Region State of the Agriculture Industry report, and additional data are available from the Agricultural Land Commission and Statistics Canada's Census of Agriculture.

Indicators included in this report are:

- > Local food production (food security)
- > Farm land – total available and percentage in use
- > Farm size and productivity
- > Crop/livestock diversity

Local Food Production

Indicator and Measures

The Cowichan Region is one of the major agricultural areas on Vancouver Island, and has the potential to produce much of the food its residents need. Historically, the region produced large volumes of vegetables, berries and dairy products that fed a significant portion of the population,¹³⁰ as recently as 50 years ago, Vancouver Island farmers produced 85% of the Island's food.¹³¹

The Cowichan Agricultural Area Plan's Visions, Goals and Objectives document establishes a goal of 45% local food production, and has translated this goal into finite targets for food production.¹³² These targets are based on the number of hectares needed to produce a healthy diet for the current population of the Cowichan Region, as outlined in the Canadian Food Guide.¹³³

Findings

The Cowichan Economic Development Commission estimates that the Cowichan Region currently produces about 18% of its total food needs (Vancouver Island produces approximately 10% of the Island's total food needs).¹³⁴

¹³⁰ Cowichan Economic Development Commission, 2009.

¹³¹ Scott, 2004.

¹³² Cowichan Economic Development Commission. 2009.

¹³³ As outlined in "BC's Food Self-Reliance" www.agf.gov.bc.ca/resmgmt/Food_Self_Reliance/BCFoodSelfReliance_Report.pdf

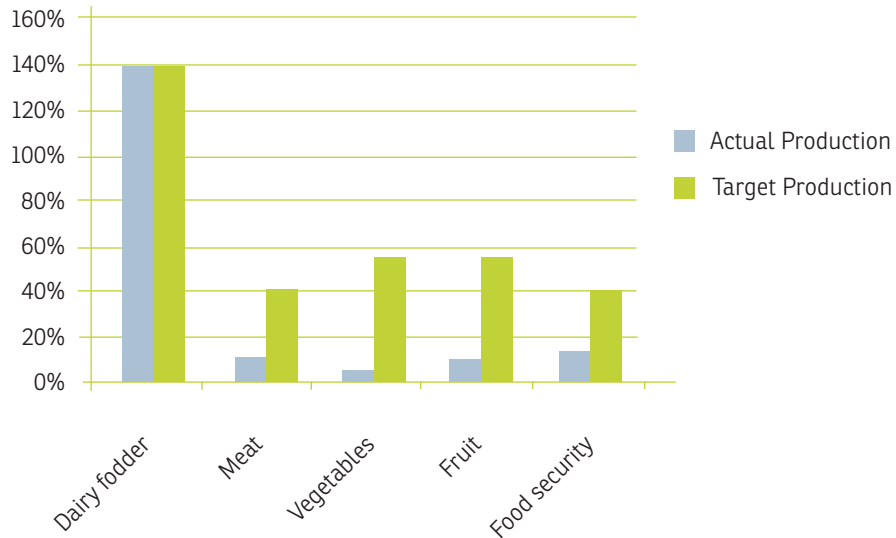
¹³⁴ Haddow, 2004.



In applying a regional goal of 45% local food production/food security, it becomes evident that Cowichan is producing more than enough fodder (e.g., hay, grasses, grains grown to feed dairy cattle), while the production of meat, fruits and vegetables are well below desired levels (Figure 3.11).

Data for seafood, non-timber forest products (e.g., mushrooms) and food grains were not available.

FIGURE 3.11: Actual food production versus food security targets



Source: Cowichan Agricultural Area Plan Visions, Goals and Objectives, 2009.

As part of its Food Security Mapping Project, the Cowichan Green Community is developing a 2010 local food map that will link customers with local farmers selling fresh food.

www.cowichangreencommunity.org

Farm Land – Total Available and Percentage in Production

Indicator and Measures

The 2006 Cowichan Agricultural Area Plan used Canadian and BC agricultural land ranking systems¹³⁵ to determine how much of the region's land base is capable of agricultural production. These systems consider climate and soil characteristics, topography, drainage, and other landscape characteristics, and are not based on the current use of the land.

Part of the region's agricultural land base is protected through the Agricultural Land Reserve (ALR). Each year, the Agricultural Land Commission tracks the amount of land that is added to (inclusions) or removed from (exclusions) the ALR. This data does not monitor whether ALR land is actually being used for agricultural purposes, or what is being grown on that land.

Statistics Canada's Census of Agriculture records the amount of reported land being farmed (within and outside the ALR). This information is also monitored by the Ministry of Agriculture and Lands.

Findings

Total Available Farm Land

Almost 10% of the Cowichan Region's land base – or roughly 33,000 ha – is arable land, meaning land that can be cultivated. Of the region's 33,000 ha of arable land, roughly 50% (16,000 ha) is capable of producing crops such as vegetables, grains and fruit, and approximately 35% (9,400 ha) is considered prime agricultural land (suitable for a wide range of crops).¹³⁶

When the Agricultural Land Reserve was established in 1974, it served to protect close to 22,000 ha of agricultural land. As of March 2008, there are about 17,700 ha of ALR in the Cowichan Valley Regional District (Table 3.2 and Figure 3.12) – for a net loss of approximately 4,300 ha.

While the overall trend for the past 35 years shows agricultural land being removed from the ALR and converted to other uses (residential development, industrial land, recreation facilities, and transportation infrastructures¹³⁷), since 2000, the amount of ALR land has increased by 30 ha.

¹³⁵ These ranking systems are the Canada Land Inventory and the Land Capability Classification System for Agriculture in British Columbia. Both systems identify land according to its potential and limitations for agriculture using a rating system of Class 1 to 7.

¹³⁶ Cowichan Economic Development Commission, 2009.

¹³⁷ Scott, 2004.

TABLE 3.2: Change in ALR, 1974–2008

	1974-2008	2000	2001	2002	2003	2004	2005	2006	2007	2008	2000-2008
Area at designation (ha)	21,984.0										
Inclusions (ha)	420.0	0.0	0.0	14.0	0.0	2.4	80.9	0.0	54.3	5.0	156.6
Exclusions (ha): gov't	3,628.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exclusions (ha): landowner	1,054.0	0.0	0.0	35.0	18.2	36.8	3.0	0.0	30.0	4.0	127.0
Net change (ha)	-4262	0.0	0.0	-21.0	-18.2	-34.4	77.9	0.0	24.3	1.0	29.6
Area as of March 31, 2008 (ha)	17,722										

FIGURE 3.12: Location of Agricultural Land Reserve parcels, 2009



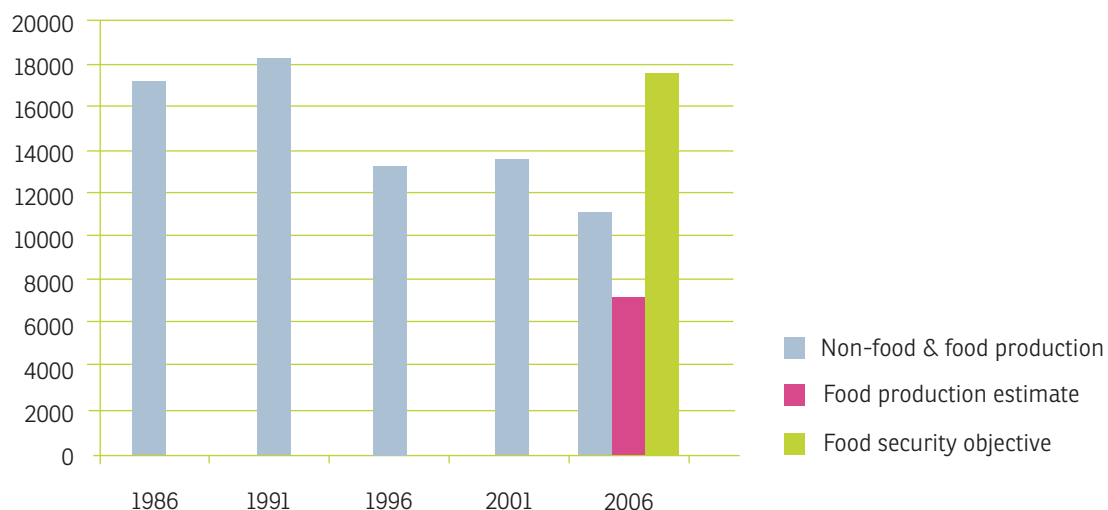
Source: Cowichan Green Community, 2009.

Percentage of Farm Land in Production

The reported amount of land being farmed has shrunk from a high of more than 18,600 ha in 1991 to about 11,600 ha in 2006 (Figure 3.13).¹³⁸ This figure of 11,600 ha includes non-food items (e.g., Christmas trees, vineyards, maple tree taps, sod, flowers and other nursery products).

The Cowichan Agricultural Area Plan estimates that the area includes a total of approximately 7,630 ha of food producing farm land.¹³⁹ This Agricultural Plan indicates that, to achieve 45% food security, the total amount of farm land in production would have to reach 17,977 ha. This means that the amount of farm land being used to produce food needs to more than double (from 7,630 ha to 17,977 ha) to achieve the region's food security target (Figure 3.13).

FIGURE 3.13: Area in farm production versus food production target



Sources: BC Ministry of Agriculture and Lands, 2008. Cowichan Valley Regional District Agricultural Overview, Cowichan Agricultural Area Plan, Vision, Goals and Objectives, 2009.

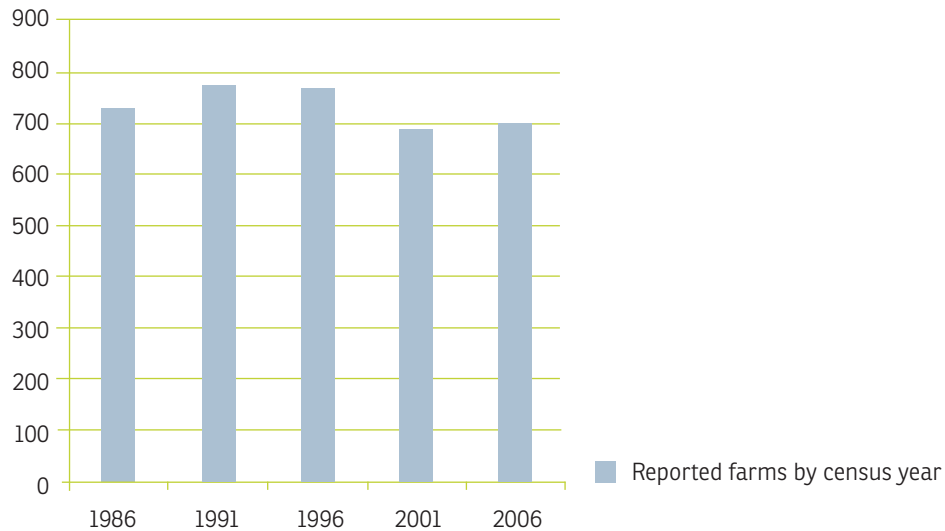
138 Ministry of Agriculture and Lands, 2008.

139 Cowichan Economic Development Commission, 2009.

The 2006 Census of Agriculture indicates that there are 700 farms in the Cowichan Region. The number of reported farms has remained fairly consistent since 2001, but has declined by more than 10% since the 1996 census (Figure 3.14).

The District of North Cowichan is home to a large percentage of the region's reported farms (55%), with most of the balance located in the South Cowichan area (28%) – including Cobble Hill, Cowichan Bay and Shawnigan Lake – and Saltair and on the Gulf Islands (12.5%).¹⁴⁰ This breakdown largely mirrors the location of the region's most fertile and arable land: on the east coast of the region, in the low elevation and floodplain areas.

FIGURE 3.14: Reported farms by census year, 1986 to 2006



Source: BC Ministry of Agriculture and Lands, Cowichan Valley Regional District Agricultural Overview, 2008.

The actual number of farms operating in the region may be significantly higher than the census data.¹⁴¹ Some farmers prefer not to report their farming operations to avoid quota or supply management restrictions. Also, urban farming is an emerging trend that has yet to be properly accounted for.¹⁴²

¹⁴⁰ Cowichan Economic Development Commission, 2009.

¹⁴¹ Judy Stafford, Cowichan Green Community, personal communication, 2009.

¹⁴² Judy Stafford, Cowichan Green Communities, personal communication, 2009. For more information, see 2009 CVRD Issues and Opportunities, Phase 1 Discussion Paper.

An indication of the scope of unreported farms can be found in a 2000 study of small scale farming in South Cowichan. This study found that 10% of farm land in the South Cowichan sub-region was being used to grow food (including non-quota poultry and egg production) strictly for the benefit of family and friends.¹⁴³ A new Food Security Mapping Project being conducted by Cowichan Green Community may provide a more complete summary of farm operations.

Farm Size and Productivity

Indicator and Measures

Statistics Canada's Census of Agriculture data records farm size. Productivity is measured in farm receipts (farm revenues), which are also tracked using census data.

The Ministry of Agriculture and Lands monitors the number of reported farms in operation and the total hectares they are farming. However, due to the reluctance on the part of some farmers to be counted, this under-represents the number of farms. Also, direct sales at farm gates and at farmers' markets are not tracked, resulting in an incomplete picture of total farm receipts.

Findings

The average farm size in the region has been decreasing steadily for at least the past 20 years. In 1986, the average farm size was 31.2 ha; in 2006 it was 16.5 ha (a decline of 50%). Throughout this time, the majority of farms remained less than 52 ha in size, although there has been a slight increase in mid-sized farms (52–161 ha) (Figure 3.15).

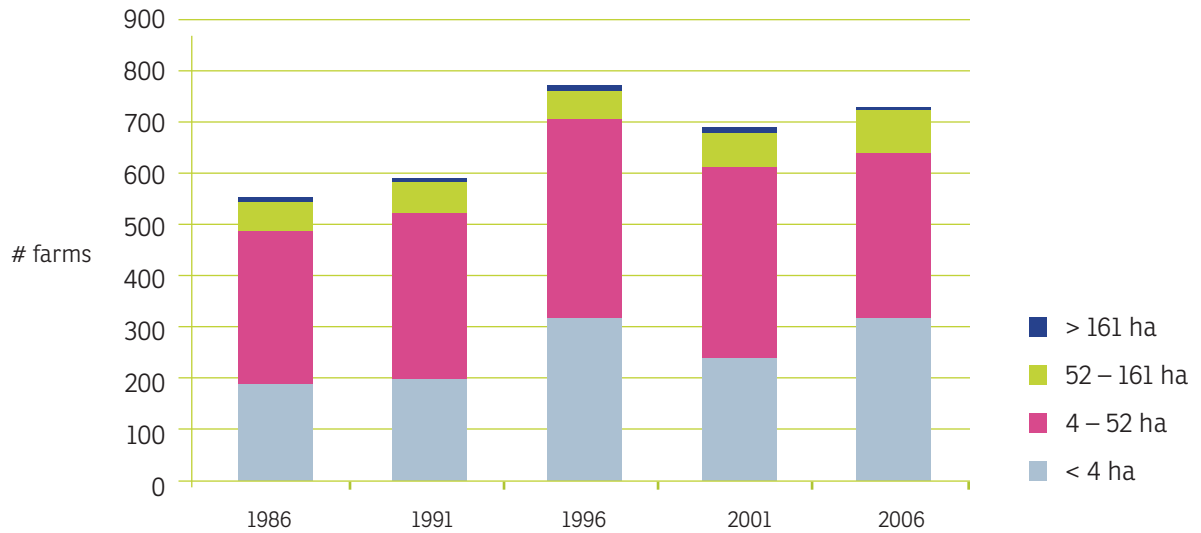
Despite the overall decrease in farm size, total farm gate sales increased by almost 50% between 2000 and 2005, and by 90% since 1986 (Figure 3.16).¹⁴⁴ In other words, farms are becoming smaller and more intensely productive. The average revenue per hectare increased from \$1,467 in 1986 to \$4,114 in 2005, a 280% increase. This increase in intensity may be partially attributable to more land under irrigation (each added hectare of irrigated land can displace 3+ hectares of non-irrigated land ¹⁴⁵).

143 BC Ministry of Agriculture and Lands, *Small Scale Farming in South Cowichan Valley*, 2000.

144 Cowichan Economic Development Commission, 2009.

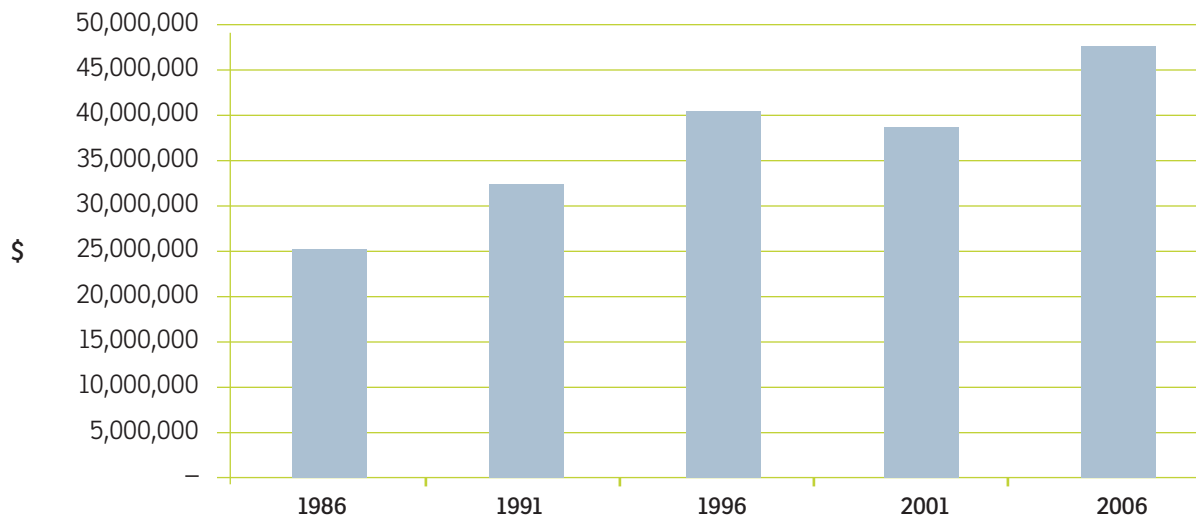
145 Cowichan Economic Development Commission, 2009.

FIGURE 3.15: Farm size, CVRD 1986–2006



Source: BC Ministry of Agriculture and Lands, Cowichan Valley Regional District Agricultural Overview, 2008.

FIGURE 3.16: Total Farm receipts, CVRD 1986–2006



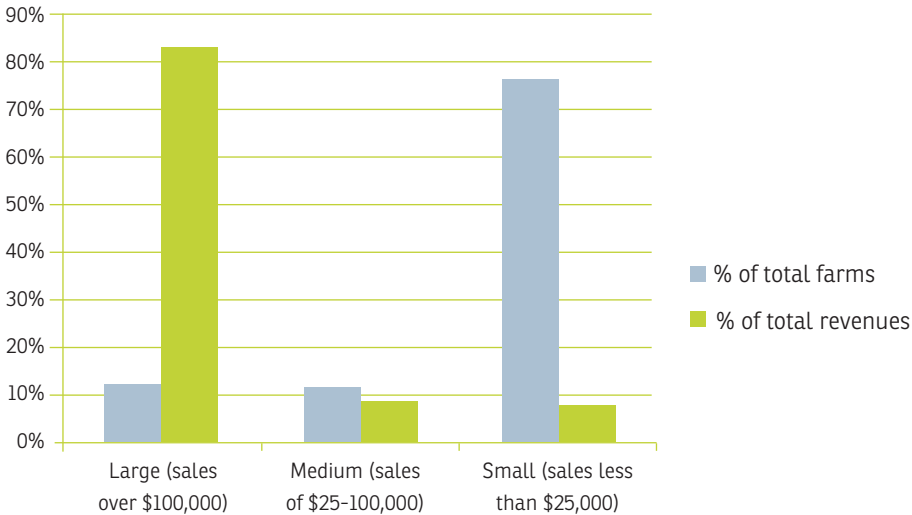
Note: Figures are reported in previous year dollars (e.g., 2006 is in 2005 \$).

Source: BC Ministry of Agriculture and Lands, Cowichan Valley Regional District Agricultural Overview, 2008.

The vast majority of the region's farm revenues (83%) are generated from large-scale farms (sales over \$100,000) which represent roughly 12% of all farms. Many of these high output farms are commodity producers who sell their product globally through formal marketing agencies and auctions.¹⁴⁶

Almost in direct contrast, medium-scale/developing farms (sales of \$25,000-\$100,000) and small-scale farms (sales under \$25,000) make up 84% of all farms, and generate 17% of revenues (Figure 3.17). Smaller farmers tend to sell most of their products directly to local consumers and retailers (only one in five uses formal marketing agencies), and almost half (40%) rely entirely on selling their products literally at the farm gate (Figure 3.18).¹⁴⁷

FIGURE 3.17: Percent of total revenue generated by farm size in 2006



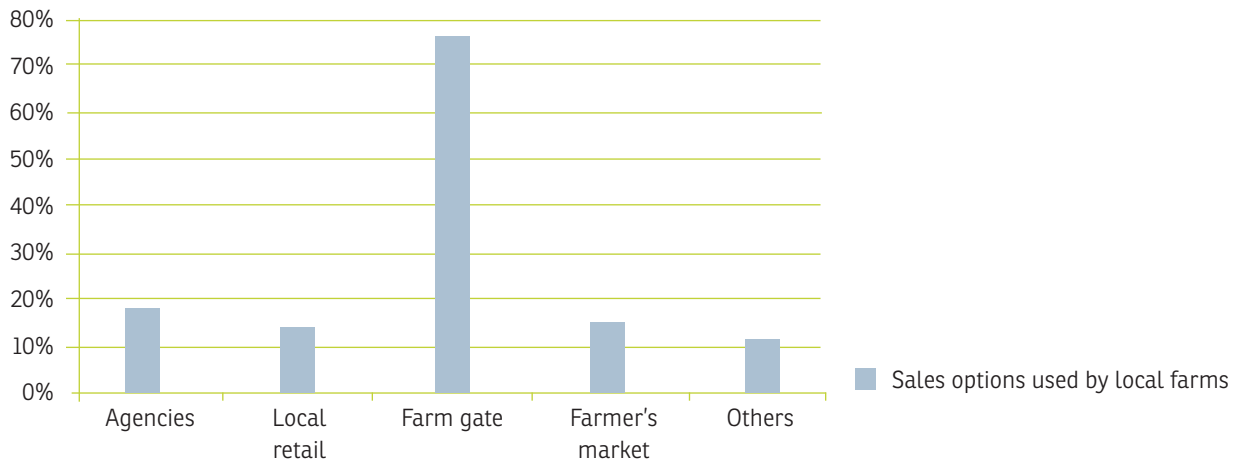
Source: Cowichan Economic Development Commission, State of the Agricultural Industry, 2009.

146 Cowichan Economic Development Commission, 2009.

147 BC Ministry of Agriculture and Lands, Small Scale Farming in South Cowichan Valley, 2000.



FIGURE 3.18: Methods of selling agricultural goods – sample of 72 South Cowichan farms



Source: Ministry of Agriculture and Lands, Small Scale Farming in South Cowichan Valley, 2000.

Crop/Livestock Diversity

Indicator and Measures

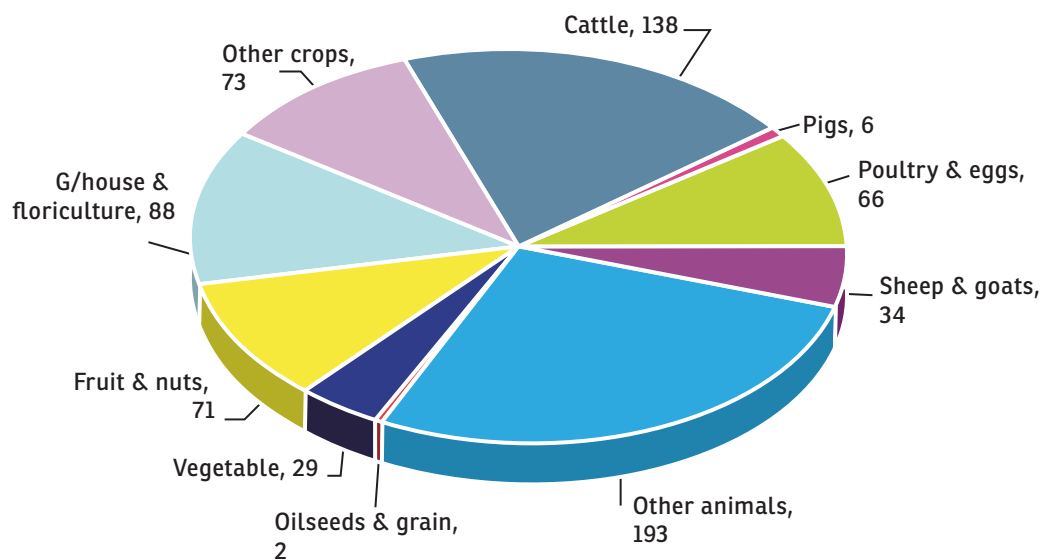
Statistics Canada tracks the variety of crops and livestock in production in its Census of Agriculture. Crop data is available as number of farms and total hectares, while information about livestock is reported as number of farms and number of heads of livestock, making it somewhat difficult to compare these types of production. Also, some farms produce both crops and livestock, so it is not possible to extract distinct totals in these areas of production.

This census data likely does not fully reflect the full range of agricultural activities taking place in the region. This is due to a significant number of farmers who choose not to be reflected in census data, as well as an increasing interest in urban or backyard farming. Also, food production from the sea and forests is not presently tracked.

Findings

Of the 700 reported farms in the region, approximately 47% are primarily involved in livestock operations, and approximately 37% are primarily involved in crop operations (Figure 3.19).¹⁴⁸ Many farms produce a combination of crops and/or livestock; a study of small scale farming in South Cowichan found that two-thirds of all farms (66%) are mixed farm operations.¹⁴⁹

FIGURE 3.19: Livestock and crop major production categories (2006)



Source: Cowichan Agricultural Plan, State of the Industry Report, 2009.

The vast majority of crop operations (90%) are comprised of field crops¹⁵⁰, although the production of fruits, berries and nuts¹⁵¹ has risen from 1% to 3% over the past 20 years. This is accounted for largely by grape growing for the wine industry (grape production has grown from 1 ha in 1986 to 75 ha in 2006), as well as an increase in blueberry production (3 ha in 1986, 15 ha in 2006). The total area of cropland under production rose between 1986 and 2001, but shrank between 2001 and 2006 (Figure 3.20).

Vegetable production dropped from a high of 6.6% in 1996 to 1.2% in 2006.

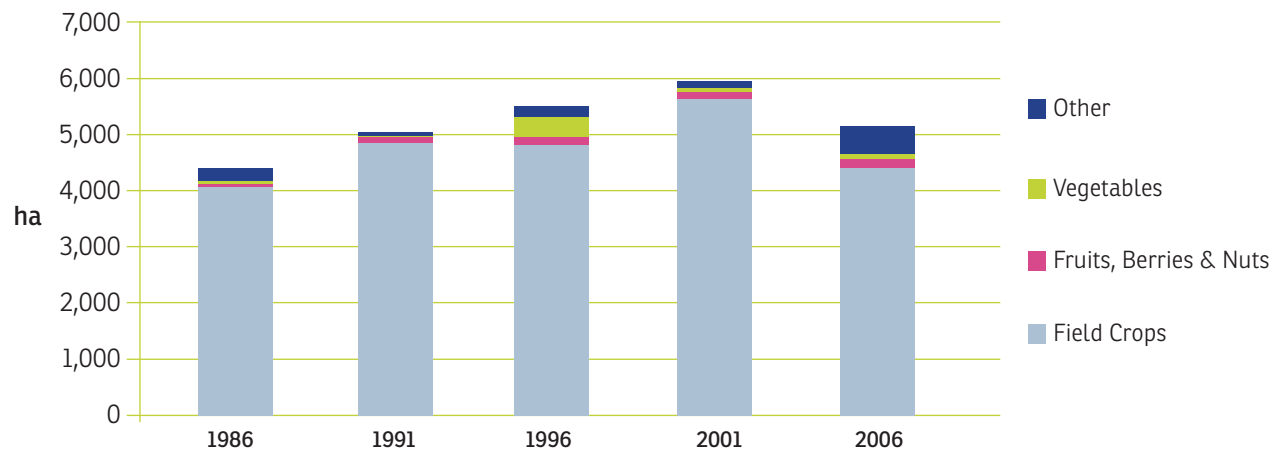
¹⁴⁸ Cowichan Economic Development Commission, 2009.

¹⁴⁹ BC Ministry of Agriculture and Lands, Small Scale Farming in South Cowichan Valley, 2000.

¹⁵⁰ E.g., oats, alfalfa, rye, potatoes, hay, flaxseed, sunflowers.

¹⁵¹ E.g., apples, pears, plums, cherries, peaches, apricots, strawberries, raspberries, cranberries, Saskatoon berries, hazelnuts.

FIGURE 3.20: Crop land, CVRD 1986–2006



Note: "Other" includes crops not individually reported for confidentiality reasons.

Source: BC Ministry of Agriculture and Lands, Cowichan Valley Regional District Agricultural Overview, 2008.

Livestock operations include beef cattle, dairy cattle, chickens, turkeys, eggs, pigs, sheep, goats and honey. Predominantly non-food livestock includes horses, llamas, alpacas and rabbits. In 2006, the Cowichan Region accounted for 91% of all turkeys, 46% of all dairy cows, and 55% of all goats on Vancouver Island.¹⁵²

The 2009 State of the Agriculture Industry report identifies a disturbing trend that has the potential to further compromise the region's ability to reach its food security goal. "The livestock industry is in a state of decline – especially ruminant livestock – dairy, beef and sheep. This is due to a combination of factors including increasing feed and fertilizer costs as well as significant increases in slaughter costs. Dairy production has also moved out of the area in recent years, as quota has become more transferable. This trend is disturbing because a large portion of the land base in the Cowichan Valley is only capable of producing forages. Also, the livestock industry has contributed greatly to helping maintain the agricultural infrastructure of the area."

A 2000 report on small scale farming in South Cowichan pointed to another troubling trend. It identified a key limitation to the growth of small scale livestock production as a "lack of auction and processing facilities."

¹⁵² Ministry of Agriculture and Lands, 2008.

The number of certified organic farms has risen in the past few years, from 6 farms in 2001 to 16 farms in 2006. Most of these grow fruits, vegetables or greenhouse crops. Greenhouse production has tripled in the past 20 years, from 14,874 m² in 1986 to 47,101 m² in 2006.

Summary

Agriculture is clearly a thriving and valuable industry in the Cowichan Region. The availability of arable land, coupled with an abundance of small-scale farming (characterized by small acreages, high-intensity production, crop/livestock diversity and direct sales to local consumers and retailers) appears to offer the necessary ingredients to achieving regional food security objectives.

However, current rates of reported productivity fall short of food security targets. Key barriers to achieving these targets include: access to irrigation water (and natural constraints on available water volumes) and skilled labour, an absence of processing and distribution facilities, high land prices, and restrictive food quotas.

Run-off from agricultural operations is contributing to water pollution, but there is no data on the extent of agricultural pollution or the steps being taken to reduce it.

Missing Information

There are several aspects of agriculture and food security that could not be adequately addressed in this report. Items which could be included in future such reports if data were available include the following.

- > Water supply for agriculture: A changing climate means more extreme weather events (droughts, heat waves, floods) that can alter how and what kinds of food can be grown, the kinds of pests and diseases that growers will have to contend with, and the availability of fresh water. As of 2008, about 2,465 ha are irrigated in the Regional District.¹⁵³ Agricultural capability maps indicate that over 9,400 ha could be improved to prime (Class 3 or better) with irrigation – an increase of just under 7,000 ha. Data on groundwater availability are limited, and better information is required on how water supplies might be affected by climate change, and how the increased withdrawal of water for irrigation might affect adjacent ecosystems.
- > Agricultural pollution: Run-off from agricultural operations is contributing to water pollution, but there is no data on the extent of agricultural pollution or any steps being taken to reduce it. The Ministry of Agriculture has been working with some local farms to implement their Environmental Farm Planning approach, which promotes stream bank buffers and other environmentally sustainable farm management practices. The South Cowichan Water Study program has identified this as an area of further study over the next few years in that portion of the region.

¹⁵³ Ehrler-Limousin, 2009.

- > Food processing capacity: Lack of local food processing capacity has been identified as an issue but there is no data to support clear reporting on progress (or lack of progress) to providing the necessary facilities.
- > Food quotas: Supply-management quotas have been identified as a key barrier to achieving food security. These quotas may prevent local producers from meeting local demand. Further examination of this issue is warranted, and could begin with an assessment of existing quotas and how they relate to food security targets.
- > The viability of farming: Small-scale farmers play a vital role in contributing to regional food security. Issues affecting their long-term viability include high land prices and unsustainably low incomes. Related issues include food distribution challenges and access to larger markets, and the availability of skilled labour. Presently, little data exists to provide a more complete understanding of these challenges.
- > Urban agriculture: Many people have become interested in producing food at home or in community gardens. This provides an important contribution to the local food supply, but no data are available to report on this activity.
- > Productive agricultural land within/outside the ALR: At this time, there is no accurate information about the total land area being farmed in the Cowichan Region (ALR and non-ALR), or what is being grown on that land. Current estimates do not include urban farms and farming operations taking place “under the radar.”¹⁵⁴ The Cowichan Region’s 2009 State of the Agriculture Industry report indicates that, of the 32,830 ha of arable land in the region, only 35% are in production.¹⁵⁵ This report also states:

“5.1% of the land in the Cowichan Valley is in the ALR. Only 3.3% of the land base in the region is actively farmed – presumably, most is within the ALR – so a significant portion of the ALR is not actively farmed.”¹⁵⁶

- > Food security: future reporting may want to compare actual levels of food production to the regional objectives, and report on some of the indicators highlighted in the 2010 Cowichan Food Security Plan.¹⁵⁷

154 Judy Stafford, Cowichan Green Communities, personal communication, 2009. For more information, see 2009 CVRD Issues and Opportunities, Phase 1 Discussion Paper.

155 Cowichan Economic Development Commission. 2009.

156 Cowichan Economic Development Commission. 2009.

157 This plan is available at: www.cowichangreencommunity.org/sites/default/files/CowichanFoodSecurityPlanFinalDraft.pdf

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