

# Boundary Area Agricultural Plan

Regional District of Kootenay Boundary

2011

*"I begin with the proposition that eating is an agricultural act. Eating ends the annual drama of the food economy that begins with planting and birth. Most eaters, however, are no longer aware that this is true. They think of food as an agricultural product, perhaps, but they do not think of themselves as participants in agriculture."~ Wendell Berry*

Roly Russell (editor)

Compiled from the combined work of James Calissi, The Boundary and Regional Agricultural Society, The Agricultural Advisory Committee, and Roly Russell. This document draws significantly upon documents prepared by Don Cameron and Associates (Ag Development Initiative: Boundary), Abra Brynne and Jeremy Lack (Ag Feasibility Study for the West Boundary), and the many valuable Agriculture Area Plans from around BC.

BOUNDARY  COUNTRY

Taste: Unlimited.

## VISION

*The Boundary will be home to a thriving agricultural system, producing high quality food and other agricultural products. The region will provide a healthy economic environment for farmers and will be recognized as a center of superior food quality. Agriculture will act as an important cohesive element within the local communities, with farmers working closely with other economic sectors and contributing to the economic, social, and ecological well-being of the region.*



This entire plan—as a live document representing the needs of farms and farmers and a strategic plan for regional food systems—shall be subject to annual or more frequent review and updates.

## ACKNOWLEDGEMENTS

First, thanks to all the local people who took the time to provide their input to this planning process, whether that was at meetings specific to this plan, at our public open houses, with surveys, over the phone, on the internet, or through prior channels (surveys for the Grand Forks and Boundary Regional Agricultural Society or previous consultant interviews for example). The plan wouldn't have traction if it were not created from the input of so many people who care about our place.

Further thanks to those people who have championed the process of producing an Agricultural Area Plan for the Boundary. The process to create this plan either wouldn't have begun or would have concluded with a laclustre document were it not for your continued dedication of energy. The Agricultural Advisory Committee is due sincere thanks for the volunteering of their energy to this process.

*Funding provided by:*



*Disclaimer:* Agriculture and Agri-Food Canada, the B.C. Ministry of Agriculture and the Investment Agriculture Foundation of BC, are pleased to participate in the delivery of this project. We are committed to working with our industry partners to address issues of importance to the agriculture and agri-food industry in British Columbia. Opinions expressed in this report are those of the authors and not necessarily those of the Investment Agriculture Foundation, the B.C. Ministry of Agriculture or Agriculture and Agri-Food Canada.

## EXECUTIVE SUMMARY

Agriculture is a foundational component of the character of the Boundary. The Kettle River watershed is rich with farming history and tradition, supports a diversity of small-lot farmers, and is home to successful large farms. With wise planning, the agricultural sector may bolster the economic resilience of Boundary communities while simultaneously providing a tool for climate change mitigation and sound environmental practices. Likewise, agriculture contributes to the social ties that bind these Boundary communities, and has the potential to provide ultimate regional food security. This agricultural plan assesses the state of the food system, and provides a strategy to nurture a sustainable food and agricultural system in the Boundary.

There are five overarching pillars of sustainable agriculture that are identified:

1. Human Capital: Protecting People's Skills and Knowledge to Produce Local Food in a Changing World
2. Natural Capital: Protecting the Soil and Water While Meeting Climate Challenges
3. Built Capital: Enabling Farmers With Tools & Regulatory Support
4. Financial Capital: Building Profitable Family Farm Businesses & Markets
5. Social Capital: Embracing Urban-Agriculture Relationships and Building an Engaged Society

These five pillars are each supported by a set of strategic objectives and these objectives, in turn, are supported with specific recommendations for policy action.

The key recommended policy action identified in this plan is the establishment of an Agricultural Development Coordinator. The majority of the remaining recommendations derived from the plan hinge somewhat upon the creation of this position: these other recommendations range from the revision of bylaws that pertain to agricultural land through to the

creation of an Agricultural Advisory Committee (AAC) or the creation of a local food charter. With guidance from a effective Agricultural Development Coordinator and a strong Agricultural Advisory Committee, the agricultural sector in the Boundary has the potential to grow into something vibrant, thriving, and sustainable.

This plan is relatively unique for a number of reasons. Primarily, this plan is unique in serving both as a guide for clarifying decision-making on agricultural lands in the Boundary *and* as a strategic plan for the food system in the region. Secondly, this plan is intended to act as a 'live' document, implying that components of this plan will continue to evolve as feedback is received and this plan is updated. Just as this plan is the product of a great deal of community input and volunteer time, it will continue to gain direction from the feedback of the greater community.

Opportunities for agriculture in the region are discussed, as well as some of the challenges faced by the agricultural sector. Challenges include such facets as farm sizes (this is a region dominated by small farms), lack of infrastructure, and commodity markets that are unresponsive to local economy, while opportunities include components such as the rapid growth in consumer demand for 'local', organic and 'known' foods—which the small farms of the Boundary region may be effectively poised to take advantage of.

Agriculture is in a position to be the most effective sector contributing to the economic, social, and ecological well-being of the Boundary region. Community engagement, clear vision, and available capacity will all be necessary to achieve this vision, and a strategy for taking steps toward this position are included herein.

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## INTRODUCTION TO THIS PLAN

A vibrant local agricultural system relies on active farmers working with fertile land, supported by appropriate government regulation and necessary infrastructure, with available and appropriate market outlets in an environment rich with engaged consumers. This Boundary Area Agricultural Plan (BAAP) aims to help our region navigate toward that vision. To do so, the plan presents recommendations for the agricultural system organised into five key economic pillars of a robust and vibrant agricultural system:

1. Human capital (the skills and knowledge necessary for wise farming)
2. Natural capital (the land and water)
3. Built capital (both physical, including the equipment and facilities, and intangible such as zoning or regulatory systems)
4. Financial capital (the money)
5. Social capital (the character of society and the interactions between people that help create a sustainable food system)

There is unavoidable overlap with some of the necessary action items that are recommended; these five pillars of a vibrant agricultural system are inextricably intertwined. Nonetheless, it serves a useful organizational purpose to assume for the purposes of this plan that we can categorize components of this imagined healthy food system and agricultural sector in this way.

There are two distinct modes of agricultural production that contribute to the agricultural sector that exists in the Boundary today; large production for commodity markets, and small-scale production for local and niche markets.



Figure 1: Perusal of Land Capability Maps in Rock Creek at an Open House for the Plan.

The successful commodity markets currently in the area (for example, nursery production, potatoes, cattle) rely on efficient production, provincial, federal, or global demand, and economies of scale (that is, producing more of the same thing often reduces the cost per unit of production so bigger might be better) to be successful. The smaller scale product markets rely more on local or regional demand, and value-added processing to be successful. These very different strategies both are essential for the region's agricultural character and both demand very different strategies to be successful. Further, it is important to respect the contribution of both of these modes of production to our regional agricultural system: while very few farms produce the vast majority of the farming income in the area, many more local people are involved with small farms and thus these smaller farms contribute more to our social identity based on numbers of people involved. Thus although the large commodity market farming in the region contributes more to the financial capital of the area, the smaller farms potentially contribute more to the social capital of the area, resulting in two different but equally necessary contributors to regional economic development and a sustainable agricultural sector.

### WHAT IS SUSTAINABLE AGRICULTURE?

*"Agriculture that supports and nurtures a good quality of life, both now and in the future, respecting and maintaining the ecological, social, and economic processes on which life and society depend<sup>1</sup>."*

<sup>1</sup>Adapted from "Strategic Plan for sustainable agriculture—Sydney region, 1998, NSW Agriculture."

This definition leaves us with a simple interpretation of sustainable agriculture, that being agriculture that supports a good quality of life. It is important to note that this encapsulates both the financial elements of development that are stereotypically considered as economic development, as well as the social and ecological elements of human well-being.

As quoted from the 1990 'Farm Bill' of the USA, the term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term:

- satisfy human food and fiber needs;
- enhance environmental quality and the natural resource base upon which the agricultural economy depends;
- make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
- sustain the economic viability of farm operations; and
- enhance the quality of life for farmers and society as a whole."<sup>2</sup>

## WHAT IS FOOD SECURITY?

Typically, food security is defined as having food available and accessible. The United Nation's Food and Agriculture Organization (FAO) defines food security<sup>3</sup> as existing:

*"...when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary*

<sup>2</sup> Subchapter I: Findings, Purposes, and Definitions, U.S. Code, Title 7, Chapter 64-Agricultural Research, Extension and Teaching, Available at GPO Access: [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse\\_usc&docid=Cite:+7USC3103\(8/23/07](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+7USC3103(8/23/07)

<sup>3</sup> Trade Reforms and Food Security, Chapter 2. Food security: concepts and measurement, 2003, FAO. Website accessed Sept 5, 2011. <http://www.fao.org/docrep/005/y4671e/y4671e06.htm>

*needs and food preferences for an active and healthy life."*

Currently, much of the discussion surrounding food security is explicitly focused on ensuring that those community members living in poverty have access to and ability to acquire sufficient and nutritious food. As Abra Brynne and Jeremy Lack note in the Agricultural Feasibility Study for the West Boundary, although necessary and valuable, this approach is too narrow to be fully useful for the Boundary food system. To quote further from that document:

"Any jurisdiction that cannot feed its citizens is at the mercy of whoever does. This is the big picture of food security which underlines the importance of retaining productive farm land, farmers, and their skills.

The Boundary area has an abundance of land for its population base and a good supply of water to support irrigated production. However, if farming itself is not economically viable, we lose a critical piece of our community food security not just in the loss of land under some form of cultivation, but the knowledge base and skills built up, often, over generations.

For the art of farming (as opposed to the economy of farming) is essentially about knowing how to live and work in a particular place and ecosystem."<sup>4</sup>

## WHAT IS ECONOMY?

The term economy, used as a noun, can be defined as the wealth of resources of an area or a sector, generally understood in the flows and ebbs of goods and services. The word is derived from the Greek *oikonomos*, derived from the two Greek roots of *oikos* (meaning 'house') and *nomos* (meaning 'manage'). This makes the broader definition of this word more clear; economy is the management of our house, whether that be a home or a nation. The cooption of the term to refer purely to financial matters is a more recent turn, while at its root economy refers to management of

<sup>4</sup> Page 5, Agricultural Feasibility Study in the West Boundary, prepared by Abra Brynne and Jeremy Lack

resources that are financial, social, and environmental. This is the interpretation that is adopted herein.

In his recent writing, Bill McKibben has coined the term 'Deep Economy' in an attempt to rescue the rich depth of the word, and appreciate a greater meaning in the idea of economic development. He speaks of deep economy as follows<sup>5</sup>:

*"It's more a trajectory than a utopian vision. It tends to draw in its supply lines instead of extend them. It produces using more people instead of fewer. It's an economy that cares less about quantity than about quality; that takes as its goal the production of human satisfaction as much as surplus material; that is focused on the idea that it might endure and considers durability at least as important as increases in size."*

If we are to properly build and monitor a strong and sustainable regional economy that embraces agriculture as a foundational pillar, we need to address these more complex elements of economy.

## PLANNING PROCESS FOR THE BAAP

The Agricultural Development Initiative: Boundary report, completed in 2007 by Don Cameron and Associates, identified a list of priorities for agriculture in the Boundary. The first recommendation was that the RDKB undertake to develop an Agriculture Area Plan for the District.

Once funding was earmarked for the Agriculture Area Plan, an Agricultural Advisory committee (AAC) was struck. The composition of the AAC was as follows:

NAME	AFFILIATION
Andison, Mark	Regional District of Kootenay-Boundary – Director of Planning
Behrens, Werner	Local Farmer
Culic, Dennis	Local Farmer
Davis, Gord	Local Farmer
Dean, Donna	Regional District of Kootenay-Boundary – Planner
Janzen, David	Kettle Valley Food Cooperative
MacAlpine, Tony	Local Farmer
MacDonald, Greg	Local Farmer
Perepolkin, Irene (Chair)	Director for Electoral Area D
Russell, Roly (Vice Chair)	Local Farmer
Withler, Carl ( <i>ex officio</i> )	BC Ministry of Agriculture
Ann Rixin	Local Farmer
Rick Seymour	Local Farmer

Calissi Farms was awarded the contract to create the Plan, but upon nearing completion of the plan, unforeseen circumstances prohibited the project from actual completion. In August of 2011, Roly Russell was approached to take the material produced up to that point and edit the text into a more robust document.

## A VERY BRIEF HISTORY OF THE BOUNDARY

To give a very short version of history in the Boundary and the prevalence of agriculture in that story, we take an excerpt directly from the boundarybc.com website, home to the recent branding initiative of the Boundary Economic Development Commission (BEDC) and Community Futures:

"From up on the mountains and grassland plateaus, down to where rivers meet and roadways wind, Boundary Country stories are about centredness and growth.

<sup>5</sup> Boudway, Ira (March 23, 2007). "Bill McKibben says we're stuffed". Salon.com. Retrieved 2011-09-29.



First Nations people have always lived here. It has long been a central trading area. In the 1850's, American prospectors started to arrive in search of storied treasures. By the 1860's, the rush was on for copper, gold, silver and zinc. Boundary Country fast became the most-important copper-producing region in the entire British Commonwealth.

Thousands of miners flocked to the valleys and the Dewdney Trail was pushed through from Rock Creek to the coast of British Columbia. Then the railroads came!

As the cities were established, a new influx of settlers arrived: Doukhobors -- "Spirit Wrestlers" -- from Russia and the Ukraine. Grand Forks was their first stop in British Columbia. They established orchards and gardens, beehives and mills.

Every decade has brought its own twists and turns and now the Boundary Country story includes artists, weavers, ranchers, farmers, merchants, professionals and maybe, if you're lucky, you.

Today, there's still no shortage of adventures in Boundary Country. Maybe you'll make a bee-line to the Farmer's Market—and then keep going 'til you get to the farm. [...]"

The Soil Survey of the Kettle River Valley produced by Sprout and Kelley has a thorough and insightful history of the region up until 1961.<sup>6</sup>

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<sup>6</sup> Sprout, P.N. and C.C. Kelley, 1964. Soil Survey of the Kettle River Valley, B.C. Soil Survey, Rpt. No. 9, B.C. Dept. Agric. and Can. Dept Agric.

CHALLENGES AND OPPORTUNITIES FOR AGRICULTURE<sup>7</sup>

OPPORTUNITIES

CONSUMER DEMAND FOR QUALITY LOCAL FOODS HAS INCREASED DRAMATICALLY.

The Rhode Island Agricultural Partnership produced an insightful 5-year strategic plan for agriculture<sup>8</sup> in that region, and they provide an interesting insight into these types of changes in the markets and the rationale for a focus on local food:

*A gradual shift in the industry also began to emerge in the 1980s as farmers moved from dairy, wholesale marketing and mono cropping toward a retail focus that has gathered steam and is now largely the emphasis in RI.*

*This retail-oriented focus includes emphasis on diversification and value-added products and venues, and initiatives such as farmers markets, roadside stands, cooperative marketing and other local buying initiatives and efforts. These transforming changes in the marketplace combined with many other factors and state, local and nongovernmental support and initiatives have led to a resurgence in farming. This resurgence has also been bolstered of late by the local food movement, which has its origins in*

<sup>7</sup> A number of these points have been taken from the Growing Forward 2 discussion paper "Charting the way forward to 2020"

<sup>8</sup> A Vision for Rhode Island Agriculture: Five-Year Strategic Plan. May 2011. Rhode Island Agricultural Partnership

*the increasing recognition of vulnerabilities in the current global food system and the need to recreate a more sustainable, healthy and locally based food system.*

*The "green" industry remains vital and the largest contributor to the economy of agriculture in RI, accounting for more than 62 percent of the state's total agricultural market share. However, shifts within the industry are also occurring with the recent downturn of the housing market as the ornamental industry looks to diversify and adapt to changing markets. Agritourism and aquaculture have also emerged in recent years as a new and important trend in the state's agricultural sector.*

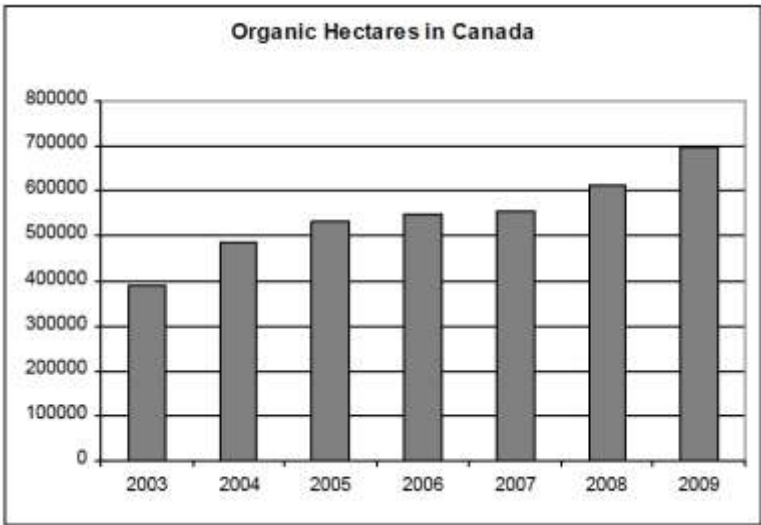


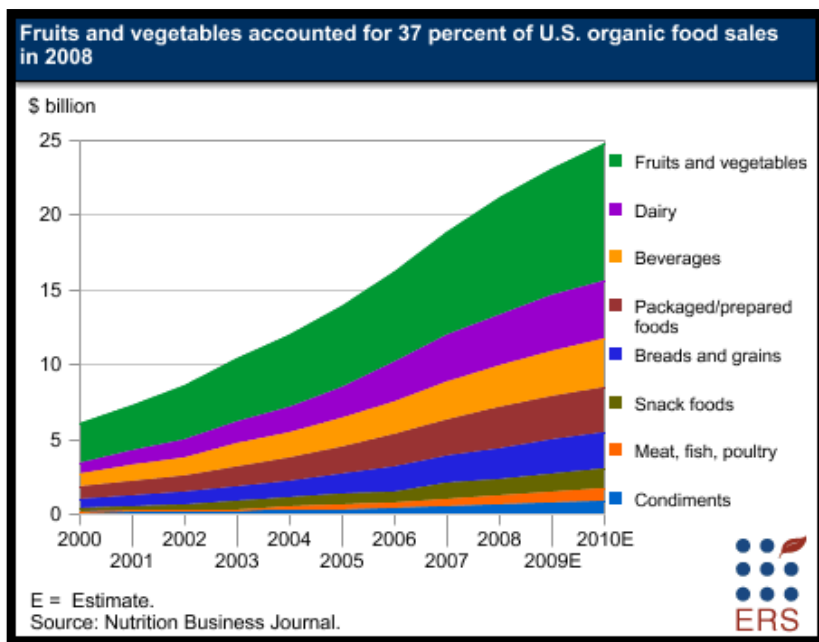
Figure 2: Growth of certified organic acreage is consistently increasing. (Macey, 2009)

The largest grocery retailer in the United States, Wal-Mart, has a more extensive local food program (including an online feature) across the US than the other top ten grocery retailers. Wal-Mart defines their local food as grown in the state of sale: one-fifth of Wal-Mart produce is source within-State during summer season<sup>9</sup>.

Consumers who value high-quality foods produced with low environmental impact are willing to pay more for locally produced food<sup>10</sup>

<sup>9</sup> Martinez, Steve, et al. Local Food Systems: Concepts, Impacts, and Issues, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.

<sup>10</sup> Martinez et al. 2010



### CONSUMER DEMAND FOR ORGANIC PRODUCE CONTINUES TO INCREASE<sup>11</sup>

Canada's organic food sector is the fastest-growing agricultural sector in Canada, growing by an average of 20 per cent a year<sup>12</sup>. The value of organic sales across Canada was estimated at \$2 billion in 2008, which was an increase from \$1.2 billion in 2006—66% growth in just two years. Of those sales, 20% of organic sales were made direct-to-consumer<sup>13</sup>. Nonetheless,

<sup>11</sup>Figure accessed at: <http://www.ers.usda.gov/Briefing/Organic/Gallery/OrganicSales.htm>

<sup>12</sup> <http://www.conferenceboard.ca/hcp/Details/Environment/area-under-organic-farming.aspx>

<sup>13</sup> Agriculture and Agri-food Canada: The Canadian Organic Sector, Trade Data and Retail Sales (2008)

as of 2008 Canada still imported 90% of organic grocery items, and 80% of organic produce sold in the country<sup>14</sup>.

### FOOD SECURITY CONCERNS ARE BECOMING A CRITICAL GLOBAL POLICY ISSUE.

Although this issue has raised a number of regulatory hurdles (e.g. the current meat regulations), it provides added market share to local producers who have the advantage of customer trust in farming practices.

### CONCERNS ABOUT HOW FOOD IS PRODUCED ARE BECOMING MORE COMMONPLACE.

Greater appreciation for how food is produced—coupled with food safety problems in the industrial food production system—helps promote local food system. This adds to the potential reputation risk involved with having a health problem, but if that risk is managed properly can be a significant benefit to smaller scale producers.

### DRYLAND AGRICULTURAL OPPORTUNITIES.

Given the challenge of climate change and potential competition for limited water resources that is likely to arise in the future, exploring alternative modes of agricultural production seems prudent. Sprout and Kelley postulate that the Kettle River valley between Westbridge and Midway, and also between Carson (where the Kettle River enters Canada west of Grand Forks) and Laurier (where the Kettle River leaves Canada South of Christina Lake), is too hot to permit dry farming.

In 1961, roughly 20% of the field crops reported in the Agricultural Census were cereal grains, much of it grown in dryland conditions. There were 2,589 acres in grain reported in total, with 974 of wheat, 649 of barley, 445 of oats, 292 of rye, and 226 of mixed grains. Cultivated hay and other forage crops

<sup>14</sup> <http://www.conferenceboard.ca/hcp/Details/Environment/area-under-organic-farming.aspx> (copyright permission pending).

were grown on 10,466 acres. The total area in grain and hay was 13,055 acres. In 2006 on the other hand, for the entire Regional District, there was about 1,600 acres of grain in total, with very few acres in wheat, 232 in barley, 405 in oats, 391 in rye, 115 in triticale, and 465 in mixed grains. Cultivated hay and alfalfa were grown on 13,451 acres (5,296 and 8155 acres, respectively). Clearly we have the growing capacity and climate for greater grain production (we're growing significantly less in 2006 than in 1961), but forage crops are currently more popular.

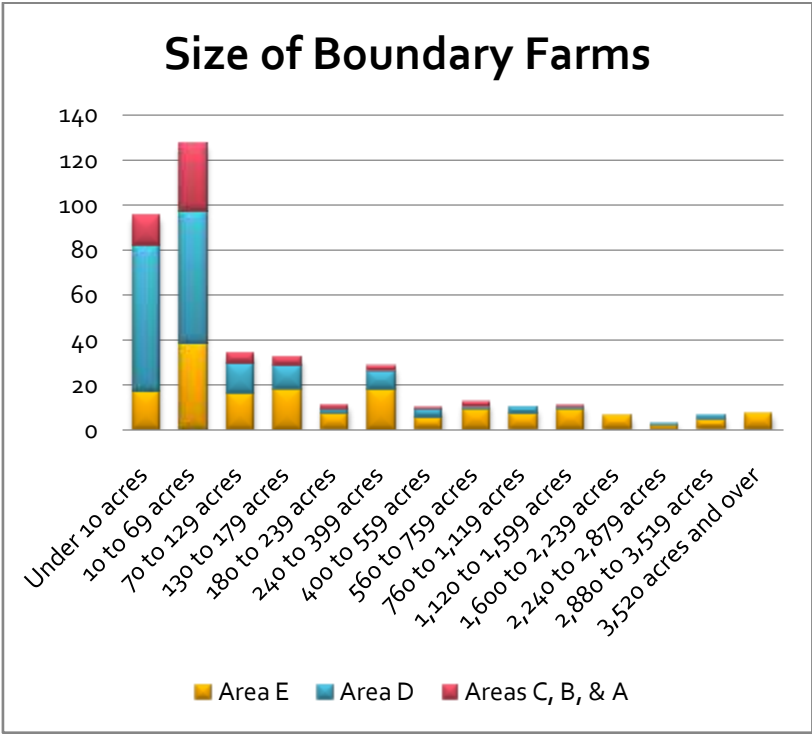
**AGRI-TOURISM OPPORTUNITIES**

The Boundary region has an important tourism sector with much of that activity focused on visitation during the summer months to Christina Lake. On-farm or on-ranch bed and breakfast operations are gaining increasing popularity. The Agricultural Land Commission allows for up to 10 units of seasonal agri-tourism accommodation on ALR land unless otherwise prohibited by a local government bylaw.

**BOUNDARY FARMS ARE SMALL**

The farms in the Boundary region are generally small. In area D a great many farms are less than 10 acres with the average 54 acres, while in Area E the average farm is 255 acres. Areas C, B and A have a combined average size of 41 acres.

This prevalence of small-lot agricultural enterprises in the Boundary is both an opportunity and a challenge: it is difficult to achieve economies of scale with a fragmented land base, yet small-scale value-added products may be amenable to an agricultural land base dominated by small parcels.



**FOOD-PRODUCTION SYSTEM ARE BEING VIEWED IN A MORE INTEGRATED WAY.**

The short supply chain regional food systems are more integrated from farm to fork than the traditional food supply system; since more attention is being paid to this integration, regional food systems may be able to capitalize on this shift.

## CHALLENGES

### 'COMMODITY' MARKETS ARE CHALLENGING TO ENTER SUCCESSFULLY BECAUSE FINANCIAL RETURNS ARE INDEPENDENT OF LOCAL ACTIVITY.

Economies of scale work very well for commodity agricultural production. The cereal grain fields of the Canadian Prairies are a good example, or even the nursery operations in the Boundary. Given the small average lot size in the region, and limited infrastructure available, the potential advantage that local Boundary producers have rests in these rapidly growing markets (such as local foods and certified organic)

### LACK OF PROCESSING, MARKETING AND DISTRIBUTION INFRASTRUCTURE LIMITS THE ABILITY OF FARMS TO MEET DEMAND

Given that there are a lot of small farms in the region, the large capital investment for tools, marketing, and distribution is relatively out of reach from the typical Boundary producer. Models have been proposed to try to overcome this challenge, through options such as farm equipment co-operatives and promotion of cluster activities.

Difficulty in access to commercial kitchen facilities, for example, has the potential to limit the ability of local producers to sell certain products at Farmer's Markets (given current regulations from the Centre for Disease Control re: Temporary Food Markets). There are proposals to establish community-accessible commercial kitchens, which would help surmount this challenge.

### AGEING FARM OPERATOR POPULATIONS INCREASE SUCCESSION RISKS

The average age of farm operators in the Boundary is now over 54 years old<sup>15</sup>. Given that succession by younger farmers is key to the long term sustainability of the sector, new strategies are going to need to be created to encourage young people to farm.

### LAND IS BECOMING UNAFFORDABLE FOR FARMERS.

This is a benefit for those getting out of the agricultural industry, but it creates a challenge for both succession planning and for conservation of agricultural lands.

Although the costs are creeping higher, unused and underused agricultural lands are available throughout the Boundary area. These lands do have some associated shortcomings, such as smaller parcel sizes in the Grand Forks area.

The combination of the longstanding farmlands protection of the Agricultural Land Reserve, the farming activity protection provisions of the Farm Practices Protection Act, and the engagement of local government in the agricultural area plan process offers a high level of farming security for expanding and new agricultural enterprises.

### MINIMAL FARM ADVISORY SERVICES

The BC Ministry of Forests and Range formerly stationed a range management officer in Grand Forks. That staff person was transferred to the Ministry of Agriculture's Kelowna regional office and now services a much larger area, and has much reduced time resources to service the study area's producers.

<sup>15</sup> Statistics Canada, Agricultural Census 2006.



Local governments and Community Futures Development Corporation of Boundary Area do not offer a specialized agricultural advisory service; however, the latter offers its business development services, including loans, to the agricultural sector.

The Central Okanagan Economic Development Corporation is an example of a local government entity that has instituted an agricultural sector advisory service as part of its overall economic development efforts.

### LACK OF AN AGRICULTURAL INDUSTRY CLUSTER

The Boundary region has a strong agricultural heritage but does not have a dominant agricultural product around which an economic cluster could grow. For instance, the southern Okanagan has had a longstanding tree fruit industry cluster that includes a large base of orchardists, agricultural suppliers, nurseries, BC Fruit Growers Association, several packinghouses, marketing agencies (such as BC Tree Fruits), and a research centre (Agriculture and Agri-Food Canada's Summerland Research Centre). This area also has an industry cluster built around its wine industry. In the Fraser Valley, there are important clusters built around each of the dairy, berry and vegetable greenhouse industries.

A dominant product or group of similar products attracts suppliers, associated services and provides the basis for a strong industry advocacy organization.

### DISTANCE TO METROPOLITAN MARKETS

The nearest Canadian metropolitan markets in Vancouver and Calgary are a significant distance from the Boundary area entailing high transportation costs for farms producing small amounts of their products. The northeast Washington state market is an opportunity given that Spokane is within 175 km of Grand Forks.

### LOW RETAIL PRICES

Low prices for products will reduce supplies for product derived from small farms too. For example, low vegetable prices at retail food stores lowers the prices in farmers' market and at farm gate sales.

Low retail prices impact the way in which small farmers sell inputs to other small farmers. For example, small farmers purchase calves for grazing on their pastures from other small farmers. If retail prices for beef are too low, then this exchange is not likely to occur.

### TIME DEMANDS ARE GREAT

Because most small farm operators also work off farm, they have much less time to stay abreast of new technologies, cultivars, breeds, and inputs compared to full-time farmers. This can erode their competitiveness over time.

Plan Area & Map of the Boundary Region

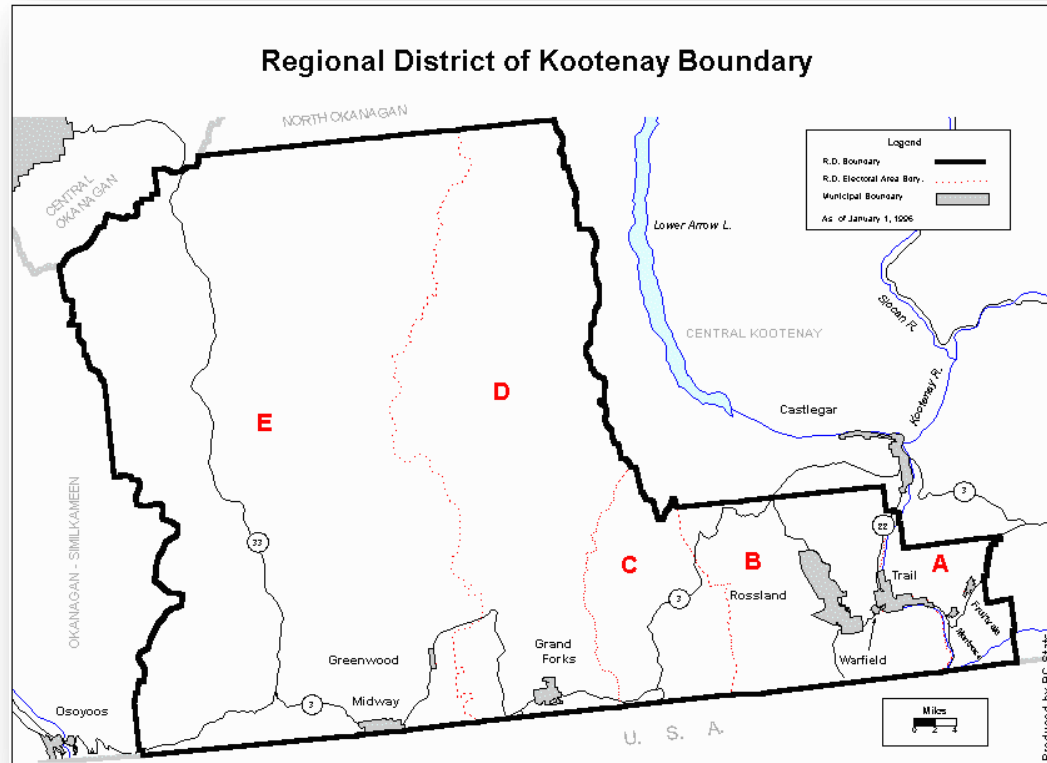
As mentioned, this plan is articulated as a plan for agriculture in the Boundary, not solely applicable to decision-making pertaining to the agricultural lands. The geographical coverage of the plan includes Electoral Areas 'C', 'D', and 'E' of the Regional District of Kootenay Boundary, effectively the western two-thirds of this Regional District. Zoning suggestions herein apply to the non-municipally governed lands in the Boundary:

- Electoral Area 'E' includes the unincorporated communities of Rock Creek at the junction of Highways 3 and 33, the small hamlet of Bridesville on the Anarchist Mountain portion of Highway 3, the ranch lands of the Christian Valley, and the unincorporated community of Beaverdell, situated along Highway 33 between Kelowna and Rock Creek. The southeast corner of Electoral Area 'E' surrounds the small municipalities of Greenwood and Midway. These areas are the centre of ranching activity in the Boundary and are home to some of the large nursery production systems.

- Electoral Area 'D' rings the City of Grand Forks, and extends north up the Granby River Valley. The Area D region contains the main agricultural commodity enterprises in the

Boundary, such as the largest nursery operations, and potatoes, as well as a diversity of small-lot agriculture and market gardens.

- The unincorporated community of Christina Lake is the main population centre of Electoral Area 'C'. The community's winter population of approximately 1,400 increases more than four times to an estimated 6,000 in the summer<sup>16</sup> as the southern half of the lake is ringed by a mixture of summer homes (many owned by residents of Trail and Rossland) and vacation accommodation. There is minor agricultural production in Area C.



Above is a map of the Regional District of Kootenay Boundary, which shows the boundaries of Electoral Areas 'C', 'D' and 'E' and the municipalities of Grand Forks, Greenwood and Midway.

<sup>16</sup> Population increase estimate sourced from the community's web site, see <http://www.christinalake.com/community/index.php>

## MAKING THIS A 'LIVE' STRATEGIC DOCUMENT

This Agricultural Plan is explicitly intended to act as a 'live' document. This means that feedback into the development of this Plan will continually be incorporated into the content of the Plan.

## STRUCTURE OF 'THE PLAN': COMMUNITY INSIGHTS

Community consultation throughout the Boundary region over the last two years identified a suite of issues, which were turned into strategic objectives for agriculture in the Boundary. These were then classified under five key pillars of sustainable agriculture, each of which was repeatedly identified as important within the Boundary. The Boundary area producers and consumers would like to see:

### Human knowledge and skills

- a. a culture of knowledge, innovation, and extension
- b. efficient human resource and succession planning
- c. vigorous community food systems

### Natural capital

- a. appreciation of ecological goods and services
- b. protection and conservation of agricultural lands
- c. effective on-farm environmental management
- d. adaptable agriculture and climate change resilience
- e. wise water management
- f. wise range management
- g. control of invasive plants

### Infrastructure and intangible tools

- a. that access to tools is not unnecessarily limiting Boundary agriculture
- b. development of sector-specific strategic plans to reduce obstacles
- c. regulatory support and proactive avoidance of disputes

### Financial capital and Markets

- a. active trade and helpful inter-governmental initiatives
- b. informed management of business risk
- c. efficient taxation

### A Healthy Society (Social Capital)

- a. a secure food supply

- b. people reconnect with the source of their foods and embracing local foods
- c. understand the connection between local foods and health
- d. implementation of the Boundary Area Agricultural Plan
- e. celebration of our agricultural heritage and promising future.

Most of these strategic objectives are accompanied by implementation strategy (or strategies) and specific policy actions.

## BOUNDARY AREA AGRICULTURE, OR AGRICULTURAL AREA?

Why is this an 'Area Agricultural Plan', rather than an 'Agricultural Area Plan' as seems to be the chosen language in the rest of the province? This document is designed to be a plan for agriculture in the Boundary Area, not solely a plan for agriculture areas within the Boundary.

The genesis of this document was shepherded by people who dedicated their care and energy into producing a vision for a forward-thinking and creative document that would be both used and useful into the future. An Agricultural Area Plan is a document that guides decision-making on agricultural lands; although a traditional Agriculture Area Plan is necessary and important in its own right, this document aimed to be more than that, intending to act as both a policy document for agricultural lands *and* a strategic document for the food system in the region. This means that this document is not restricted to decision-making on agricultural areas in the region, it is also focused on how we can ensure that Boundary area agriculture itself thrives, drawing on the entire community. Thus, this is a plan for 'Boundary area agriculture', not restricted to decision pertaining to Boundary agricultural areas.

## GOALS, STRATEGIES, & RECOMMENDED ACTIONS

### 1. HUMAN CAPITAL: PROTECTING PEOPLE'S SKILLS AND KNOWLEDGE TO PRODUCE LOCAL FOOD IN A CHANGING WORLD

#### introduction

Human capital is the knowledge, skills, and experience within people. The knowledge of when to plant garlic in the autumn, knowing how to grow lentils productively in this valley, understanding how to adapt to the challenges of climate change or how to fix your broken tractor: these are examples of the kinds of human capital that we need to nurture to make agriculture in the valley thrive.

The 'keystone' of an arch is that central stone that helps keep the others from collapsing: if there is a comparable policy recommendation in this document, it is that an agricultural development coordinator is employed to facilitate, communicate, and coordinate the remainder of the recommendations in this plan.

#### vision element

- 1.a. A Culture of Knowledge, Innovation, and Extension

#### strategic objectives & policy recommendations

- 1.1. Improve knowledge communication to develop profitability.  
**1.1.1. Employ an Agricultural Development Coordinator<sup>17</sup> to help develop programs and respond to day-to-day inquiries.**

<sup>17</sup> "Agriculture Information Officers offer on-farm visitation in the areas of crop and livestock management, environmental sustainability, financial management and human resources. Staff at the Agriculture Information Centre provide clients with a first point-of-contact for accurate

- 1.1.2. RDKB appoint a staff person to serve as RD liaison to the agricultural community and to serve as the initial contact for agriculture-related inquiries and concerns.
- 1.2. Ensure appreciation of agricultural history.
- 1.3. Ensure producers are aware of new and emerging technologies and trends in the industry.
- 1.3.3. Develop a speaker series focused on consumer demand for higher value secondary food.
- 1.3.4. In partnership with Selkirk College and/or Community Futures, develop an outreach program for producers with a focus on trends in consumer demand.<sup>18</sup>
- 1.3.5. Produce a newsletter/e-newsletter specifically for Boundary food producers.
- 1.3.6. Explore and document existing research regarding new breeds or varieties of livestock, poultry, and crops that have potential to improve profitability. A component of this could include establishment of on-farm tester groups for these breeds/varieties.
- 1.4. Ensure producers are aware of and capitalize on government programs
- 1.4.7. Ensure that local producers are aware of Ministry of Agriculture programmes (such applicable "Growing Forward"<sup>19</sup> components, or other programs in place to aid producers). Accomplish this in part by creating a document outlining potential project funding for industry.

and timely information on a wide variety of aspects of commercial agriculture."  
<http://www.gov.pe.ca/af/ard-info/index.php3>

<sup>18</sup> The shaded policy recommendation herein represent policy recommendations that are expected to be under the mandate of the Agricultural Development Coordinator. **Similarly, those policy recommendations in bold indicate the highest priority recommendations as determined from public consultation (e.g. interviews, online surveys, face-to-face surveys, open-houses).**

<sup>19</sup> <http://www.agf.gov.bc.ca/apf> and <http://www.agr.gc.ca/growingforward>

## background to policy recommendations

The establishment of an individual in a non-volunteer position dedicating their time to encouragement of the agricultural sector is the highest priority recommendation of this plan. An appropriate draft mission for the Boundary agricultural development coordinator might be borrowed from the Rhode Island Agricultural Partnership:

*The mission of the Boundary region Agricultural Development Coordinator is to foster the economic viability of the region's agricultural producers, establish a self-sustaining and coordinated delivery of agricultural services and knowledge to farmers, provide increased food security and access to local food for all Boundary people, and cultivate support among the public and policy makers for the future of agriculture.*

This mission stresses both the support of economic viability of the region's farmers (implicitly defined to include social and ecological economy as well as financial), and the delivery of knowledge (interpreted as communication about government programmes, broader market dynamics, and regulatory issues, in addition to traditional 'education'). It recognizes that this position ought to be self-sustaining and coordinated. Finally, it also is explicit that a great deal of the work that needs to be undertaken to support Boundary agriculture deals with cultivation of support and knowledge among the wider community.

## vision element

- 1.b. Efficient Human Resources and Succession Planning

## strategic objectives & policy recommendations

- 1.5. Ensure adequately trained agricultural labour force is available
  - 1.5.8. Assess current and future labour needs, including training needs.
  - 1.5.9. Develop programs with Selkirk College and the local high school to ensure there is adequate training and labour in the region. Facilitate agricultural education of high school students interested in agriculture.
  - 1.5.10. The Boundary AAC and the Agriculture Extension agent encourage the BC Ministry of Agriculture to further nurture small-farms through business planning tools, financial incentives, and reduced regulatory obstacles for small farms.
  - 1.5.11. Approach feasible locations (e.g. the Hardy Mountain Doukobour Village) to examine the possibility of establishing an incubator farm on the property.
- 1.6. Help to make land suitable for agriculture available for new farmers at affordable prices, and facilitate the transmission of knowledge about agricultural land capabilities.
  - 1.6.12. Make Agricultural Land Capability maps available on the RDKB web site.
  - 1.6.13. Secure funding to complete a Land Use Inventory, and make it available via the RDKB website.
  - 1.6.14. Examine the feasibility of establishing an Agriculture Land Trust or work with existing land trusts to lower financial burden on new farmers.
- 1.7. Realign local policies regarding secondary dwellings for farm families and farm labour.
  - 1.7.15. RDKB and local municipalities review bylaws relating to secondary dwellings for farm families and farm labour and amend



accordingly<sup>20</sup>; Align Area 'D' secondary dwelling policies with provincial ALR policy by allowing secondary dwellings for family and farm labour use.

1.7.16. Enforce bylaws appropriately via bylaw officer.

### background on policy recommendations

Succession planning is critical to the sustainability of any enterprise, agriculture included. These policy recommendations suggest ways to improve the potential issues of an ageing agricultural sector and lack of replacement.

A first step in understanding our situation in regards to succession planning would be to compile an assessment of labour needs, both for the future and currently. Government programs are in place that aim to assist with seasonable labour recruitment, if needed.

Attempting to create an educational environment where the art and science of farming can be passed on is critical, and this could be pursued at both the community college and school system level. The models of 'incubator farms' found elsewhere may be appropriate for our region. Locally, the BC Land Conservatory owns the Hardy Mountain Doukabour Village in Grand Forks. The site operates as a historical site; however, a portion of the property contains agricultural land and may serve as an exciting incubator farm, tourism draw, and farm history educational site if there were interest from within the local group managing the site.

The capital costs of entering agriculture for young farmers are prohibitive; models of making farming more financially reasonable to enter exist elsewhere (e.g. Agricultural Land Trusts, improved agricultural leasing systems), and an assessment of models most appropriate for the Boundary

could produce an effective way to increase new entrants into agriculture. For instance, several residents of Saltspring Island have recently established a "land trust" called the Salt Spring Island Farmland Trust. It is a charitable trust that can accept donations of both land and money. The donated or acquired land is then utilized for agriculture, particularly for enhancing access to agricultural land by new entrants.

Similarly, greater knowledge of available options for those entering agriculture or expanding their operations would be satisfied in part by adding the Land Capability Mapping done by Herb Luttmerring to the RDKB's impressive online mapping website. Some funding would likely need to be secured to assist with this conversion, a task that may potentially be wrapped into a potential Land Use Inventory mapping proposal.

Family succession is the traditional model of farm succession plan. Public input has made clear that the current Area D regulations restricting secondary residences (i.e. allowance only for a single family residence regardless of parcel size) are detrimental to family farm succession planning. It is recommended that these bylaws be revised to fall more in line with the ALR regulations, accompanied with restrictions on home-plate size and siting, rental properties, and setbacks to avoid inappropriate conversion of agricultural land. Simultaneously, policy objectives need to restrict expansion of non-agriculturally related secondary dwellings.

Finally, there is community interest in hiring a bylaw enforcement officer to ensure that bylaws (including farm-related bylaws) are being respected. The cost-benefit of this position would have to be researched to determine an ideal model.

<sup>20</sup> Area C OCP provides an example of potential verbiage: "One single family dwelling per parcel, where the parcel is less than 20ha in area; b) Two single family dwellings per parcel where the parcel is 20ha in area or larger, provided the single family dwellings are sited in a manner that would allow future subdivision in conformity with Section 408(5). Parcels in the Provincial Agricultural Land Reserve are also subject to the regulations of the Agricultural Land Commission"

## vision element

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- 1.c. Vigorous and Safe Community Food Systems<sup>21</sup> (robust supply chains)

## strategic objectives & policy recommendations

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- 1.8. Increase the level of innovation and investment in secondary processing.
- 1.8.17. Explore the best options for wrapping the region's food system into the current branding initiative, for example inviting artisan food makers from other regions to train local entrepreneurs in the Boundary, or establishing a sabbatical program where chefs are invited to the region to test new recipe ideas using locally produced ingredients.
- 1.8.18. Commission a study to examine the feasibility of a community commercial kitchen incubator to potentially work in partnership with the Kettle Valley Food Coop.
- 1.8.19. Review agricultural zones in the Zoning Bylaws of Area C & D and amend them as necessary and appropriate to allow on-farm processing of livestock<sup>22</sup>.
- 1.9. Develop an agricultural industry that is knowledgeable about food safety regulations and protocols and able to adapt to change. (food safety)<sup>23</sup>

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<sup>21</sup> Policies and objectives listed under 'Social Capital', mentioned a few pages ahead, encompass the social structures that support a vigorous community food system, like farmer's markets, the local food coop, or community gardens

<sup>22</sup> Currently, processing under a Class 'E' permit for livestock processing (small numbers of animals from mainly on-farm) is considered an accessory use to agriculture and thus is permitted; potential conflicts with livestock processing associated with a mobile abattoir operating with a Class 'B' license needs to be reviewed more thoroughly.

<sup>23</sup> The GFBRAS mobile abattoir project is an example.

- 1.9.20. Encourage local farmers to produce Environmental Farm Plans to better understand regulatory environments and secure some funding for farm improvements.
- 1.9.21. Follow the suggestion in the Grand Forks Sustainable Community Plan in adopting a 'Farmers Market plus' as an early success project
- 1.9.22. Identify any gaps between current agricultural practices and food safety protocols and develop programs with producers to ensure standards are met. Ensure the agriculture industry is aware of government programs that assist with the transition to new and better food safety management practices.
- 1.9.23. Liaise with nursery industry to ensure best management practices such as plant quarantine and biohazard regulations are met.

## background on policy recommendations

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Given the predominance of small-lot agriculture in the region and the difficulties competing with large-scale commodity markets identified earlier, value-added processing is an essential economic tool for increasing profit margins for area producers. There are myriad existing models of techniques for adding value to local food products, and the next iteration of this agricultural plan ought to include an assessment of different strategies of adding value to agricultural products. A community commercial kitchen may be one way to promote such community value-adding for small producers; the Kettle Valley Food Coop and/or the Grand Forks and Boundary Regional Agricultural Society may be interested in assisting with management of such a facility.

Food safety processes are critical for avoiding the severe reputation risk associated with a negative food health event in the region. Although an inconvenient hurdle, the regulations in place to ensure food safety protocols are being followed are important to avoid a market crash associated with consumer behaviour. The Environmental Farm Plan is one tool available to ensure that producers are aware of these sometime confusing levels of government regulation: the region's farms would be well-served to investigate the program (which also helps financially address any on-farm problem areas identified in the planning process).

## 2. NATURAL CAPITAL: PROTECTING THE SOIL AND WATER WHILE MEETING CLIMATE CHALLENGES

### introduction

Natural capital is the resource that fuels all of our physical economies (through supply of raw materials for production of goods, for example), and what surrounds our lives daily. The idea of ecological goods and services is becoming widespread: ecosystem or ecological services are broadly defined as the contributions of ecosystems to human well-being. Recognizing the implicit value of these benefits is important to ensure that our decision-making processes properly evaluate the role that ecosystems (whether these are so-called 'pristine' systems or are highly managed ecological systems like agriculture) play in contributing to our well-being. Healthy soil, clear air, and clean and abundant water are all necessary components of ecosystem goods that we need to manage wisely.

### vision element

- 2.a. Appreciated Ecological Goods and Services
- 2.b. Protected Agricultural Land: the Agricultural Land Reserve and beyond.

### strategic objective & policy recommendations

- 2.1. Bolster the RDKB and municipal mechanisms for sustaining farmland in the Boundary Area. Encourage sustainable management practices on range land.
  - 2.1.24. Strengthen policies within the Area 'C' and Area 'D' OCPs. See Appendix A [suggested OCP revisions].
  - 2.1.25. Create long term planning policies and regulations for Area 'E' which foster respect of agricultural lands within the ALR and otherwise.
  - 2.1.26. OCP policies concerning housing, farm gate sales, urban agriculture, and agri-tourism need to be expanded and refined within official community plans. Develop OCP policies to limit the

expansion of municipal infrastructure which may jeopardize agricultural land.

- 2.1.27. Maintain an Agriculture Advisory Committee (AAC) to advise the RDKB on agricultural issues; ensure applications for agricultural land exclusions are reviewed by the AAC. [See appendix G: Draft Terms of Reference for the AAC]<sup>24</sup>
- 2.1.28. Use taxation incentives to encourage amalgamation of contiguous parcels, but only if no non-agricultural uses are proposed as conditions of the amalgamation.
- 2.2. Limit the foot-print and guide set-backs of residences on agriculture land so the area of farmable land is maximized. Define maximum residential footprints<sup>25</sup> where not already defined.
  - 2.2.29. Incorporate minimum and maximum setbacks from roadways and maximum home-plate restrictions for agriculturally zoned land into land use bylaws after reviewing comparable bylaws in other jurisdictions. Allow exceptions where strong arguments for preserving land or agricultural efficiency can be made.
- 2.3. Increase agricultural use of vacant agricultural land.
  - 2.3.30. Create a database of lands for lease and farmers wishing to lease land to decrease vacant agricultural land area. Encourage the use of long term leases of agricultural land, and encourage/facilitate long-term leases for absentee owners.
  - 2.3.31. In cooperation with the Boundary Weed Management Committee, develop an awareness program targeted at absentee land owners with noxious weed problems, and an information package to be shared with new landowners with noxious weed problems. Educate landowners regarding the BC Weed Control Act.

<sup>24</sup> The Regional District of Kent's AAP has some insightful recommendations, such as "Decision Guidelines Form" for their AAC, and an established "Agriculture Impact Assessment Process" to help guide their decision-making process with transparent process. Given the advantages of these two protocols, the Regional District may consider drafting and adopting similar protocols for the Boundary AAC.

<sup>25</sup> The Strengthening Farming Program of the Ministry of Agriculture is developing a bylaw standard for residential uses in the Agricultural Land Reserve to guide local governments. It will be helpful in determining appropriate maximum foot print policy for the RDKB.

### background on policy recommendations

Agriculture in the Boundary is not yet exposed to the same development pressures experienced in other parts of the province; this is a good opportunity to proactively set reasonable zoning regulations to restrict the scale of home (to avoid rural 'mansions' that are not agriculturally sensitive). Two important tools in this process are 'home-plate' restrictions that limit the foot-print of residences, and maximum/minimum set-backs which aim to maximize available useful agricultural land. Given the diversity of geography in the region, these zoning regulations will not be able to be 'cookie-cutter' regulations from other jurisdictions: in some cases, for instance, residential siting may best be made far from access roads if the proposed location is in poor agricultural land within the parcel. It is recommended that palatable zoning regulations be put in place now to avoid potential future conflict: if not before, the next annual review of this plan ought to propose potential zoning regulation wording for the relevant OCPs.

The Agricultural Advisory Committees around the province offer an efficient and important bridge between the agricultural community and government. It is recommended that the Boundary AAC be maintained and supported by the RDKB and/or the BEDC. This is a cost-efficient tool for making decisions related to agriculture. It is suggested that local agricultural groups such as the Cattlemen's Association and the Grand Forks and Boundary Regional Agricultural Society are significantly involved in this organization, and a strong Terms of Reference are drafted that try to foster the engagement of AAC members. More information on the AAC and Terms of Reference are found in Appendix X.

As expected, the notion of introducing zoning regulations and policies to Area E is popular with some residents and unpopular with others. Currently, the lack of local zoning in Area E leaves no avenue for community input into land-use decisions. There are no land-use policies in place that allow for local input on proposals that are made for lands within the ALR in area E, and there is poor capacity for enforcement on the province-wide scale of the ALC. As such, it is recommended that some degree of zoning be established within Area E to ensure there is a way for local people to provide input on local land-use decisions. The process of creating such zoning would clearly require significant community consultation.

A land-lease database held by the RDKB could be an effective tool for both management of underused land and lowering entry capital requirements for new farmers. It is recommended that this tool be explored further.

The Boundary Weed Management Committee has been in place since 1998 to assist with regional management of noxious and nuisance weeds. They provide information and equipment to assist land-owners with their weed concerns, with a mandate to 'educate people about noxious weeds and invasive plants and to coordinate management efforts towards similar goals across the Boundary'. It is recommended that the Boundary Weed Management Committee be partnered with to target new and absentee landowners with information regarding weeds in the region.

### vision elements

- 2.c. Agricultural Adaptation and Resilience to Climate Change
- 2.d. Wise Water Management
- 2.e. Range Management
- 2.f. Control of Invasive Plants

### strategic objectives & policy recommendations

- 2.4. Create a farming sector that is adaptable and resilient to climate change challenges.
  - 2.4.32. Create a document for farmers highlighting the potential climate change scenarios as they pertain to our local climate and local farms. Research and communicate the potential advantages of dryland agricultural crops and other cultural changes to adapt to climate change.
- 2.5. Use the EFPP to help inform farmers about environmental regulatory environments
  - 2.5.33. Promote the value of environmental farm planning within the agricultural community. Stress the creation of wise water management plans where groundwater contamination may be an issue.
- 2.6. Ensure agricultural lands which require irrigation have their irrigation needs assessed, have their access to water preserved for future use, and are using water efficiently.
  - 2.6.34. Assess irrigation needs for agriculture. Assess the current irrigation infrastructure to ensure the delivery capacity of future water needs is adequate.
  - 2.6.35. Develop an education and awareness program in conjunction with water metering to ensure farmers are irrigating efficiently and effectively. Identify government programs which financially aid farmers in upgrading on farm irrigation systems.

- 2.7. Ensure water quality meets the Canadian Drinking Water Guidelines.<sup>26</sup>
  - 2.7.36. Develop a guide for agricultural practices which reduce ground water contamination by nitrates and distribute to agricultural producers. Clarify process for enforcement of aquifer contamination infractions.
  - 2.7.37. Review ground and surface water quality monitoring reports.
- 2.8. Enforce the Weed Control Act.
  - 2.8.38. Identify needs for grazing leases into the future
- 2.9. Develop a strategy to explore genetically modified organisms (GMO).
  - 2.9.39. Establish a public consultation process to receive input on GMO agricultural products from the community and develop a proactive strategy regarding management of GMO products in the region.

### background on policy recommendations

Again, the Environmental Farm Planning Program provides a single-source compilation of environmental regulations and a tool for coordinating on-farm management of environmentally relevant decisions. The program should be promoted and facilitated as a cost-efficient tool to communicate these issues and provide farmers with resources to deal with potential problems (e.g. deer fencing, erosion prevention plans, etc).

<sup>26</sup> 2.10 of the Area D OCP: "It is recognised that the two principal contributors to water quality degradation in Area D are agricultural activities and in-ground sewage disposal systems which serve rural residential households. It may become necessary for the Regional District to take aggressive action to prevent further degradation of water quality. In ALR areas, density is already strictly controlled by both the Agricultural Land Commission and Zoning. Therefore corrective actions in the ALR are more likely to be effective if they address farm practices."

It is also noted by Wei et al (1993. *Quaternary International*, Occurrence of Nitrate in Groundwater, Grand Forks, BC) that "A detailed land-use survey of the entire study area is recommended for documenting existing land-use practices including cropping and irrigation practices, fertilizer and pesticide use, and location of septic systems for estimating relative nitrogen loading into the aquifer." This action item is already included in section 1, as action item 1.6.13.



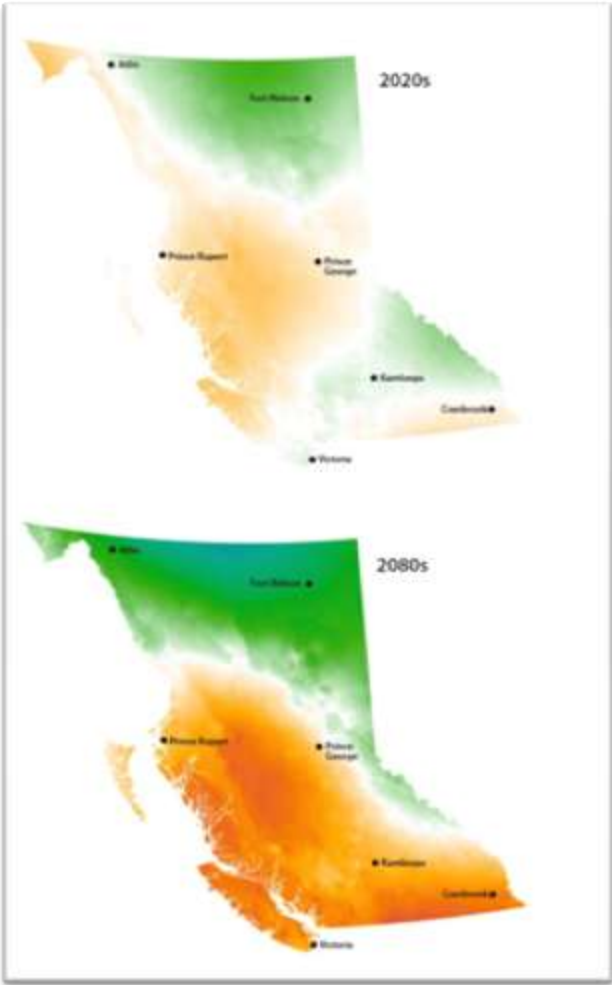


Figure 3: A model climate change forecast based on the 'A2' scenario demonstrating changes in summer precipitation (orange indicates less than 'normal', green indicates more. (From Spittlehouse, 2008.)

Currently, only about 45% of the licensed surface water use is actually being drawn upon: the region needs to be positioned to avoid an over-

consumption of water if water licensees currently not using their licenses begin irrigating more actively. It is important to recognize that this will be accomplished through both regulatory changes (e.g. the changes in the BC Water Sustainability Act<sup>27</sup>) and cultural changes (e.g. increased efficiency of water use, dryland agriculture), and will not be as effective as is possible if only one of these two approaches is relied upon.

Table 1: Water licence allocation and reported water use.

Year <sup>28</sup>	Electoral Areas of Regional District reporting in agricultural census	Area under irrigation licences with precedence of year or earlier (hectares)	Irrigated area reported in agricultural census for year (hectares)	Percent utilization of licenced water
1950	C, D, & E	1707	1669	98%
1960	C, D, & E	2315	1895	82%
1970	A, B, C, D, & E	4823	2716	56%
1981	A, B, C, D, & E	7628	3661	48%
1986	A, B, C, D, & E	7422	3656	49%
1990	A, B, C, D, & E	7408	2970	40%
1995	A, B, C, D, & E	7192	3541	49%
2000	A, B, C, D, & E	7077	3174	45%

It seems unavoidable that agricultural water metering will become more common as we move into the future. It is recommended that some energy is put into determining how this might come into effect, to ease the transition for Boundary growers. It has been demonstrated that water meters incent increased water use efficiency even in the absence of regulatory restrictions,

<sup>27</sup> <http://livingwatersmart.ca/>

<sup>28</sup> Table 7 from Aqua Factor Consulting Inc. 2004. Potential Effects of the Cascade Heritage Power Project on the Allocation of Water in the Kettle River Basin.

and thus a potential early *voluntary* introduction of water meters promoted by the Regional District may be a wise proactive water management tool.

Understanding how climate change may impact Boundary area agriculture could position area farmers to be able to adapt more readily and avoid future problems<sup>29 30</sup>. One potential challenge that climate change will bring is less predictable weather patterns. Water needs for agriculture may change, and a proactive scenario-based plan would situate our agricultural sector in a good position to respond and react to the changes that we may see.

Water availability, for example, is forecast to change with climate change. In the central Boundary, ClimateBC software models<sup>31</sup> indicate that we might expect to see a slight increase in amount of precipitation in the winter months (~3cm by 2080), while summer months are expected to get drier (~4cm less summer precipitation by 2080, or 15% less) and about 3 or 4 degrees hotter. In turn, this one forecast would expect to see dramatic increases in degree days of 50- 100%. This is a forecast based on one of the more extreme scenarios (known as 'A2') from the Intergovernmental Panel on Climate Change where globally we stay on the same trajectory we are currently on. Clearly, for agriculture, the timing of water supply is extremely critical. Thus a climate change adaptation strategy and information package to inform local farmers would be a useful document.

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<sup>29</sup> Spittlehouse, D.L. 2008. Climate Change, impacts, and adaptation scenarios: climate change and forest and range management in British Columbia. B.C. Min. For. Range, Res. Br., Victoria, B.C. Tech. Rep. 045. <http://www.for.gov.bc.ca/hfd/pubs/Docs/TrrTro45.htm>

<sup>30</sup> <http://www.for.gov.bc.ca/hre/topics/climate.htm> provides some synthesis of forecasts from climate change models for BC, as does the ClimateBC software. From a planning perspective, "Taking Action on Climate - BC Local Government Examples – DRAFT" provides examples from around the province where local governments have taken action or adopted legislation to meet potential climate challenges. See <http://www.toolkit.bc.ca/> for details.

<sup>31</sup> Spittlehouse, D. 2006. ClimateBC: Your access to interpolated climate data for BC. Streamline Watershed Management Bulletin 99:16-21. Numbers presented are based on the GCSMA2 models, and are clearly surrounded by extremely high ranges of variation and uncertainty.

Explore the ClimateBC model forecasts at: <http://genetics.forestry.ubc.ca/cfgc/ClimateBC/Default.aspx>

Water quantity is a common concern among area residents, yet water quality is frequently mentioned as a key concern. For example, the Grand Forks aquifer is classified by the Ministry of Environment as heavily developed and highly vulnerable to contamination. Contamination of ground water, for example, is a real threat: as the Ministry of Environment notes, "Elevated levels of nitrate nitrogen in excess of the Canadian Drinking Water Quality Guideline of 10 mg/L, for example, have been found in a significant number of domestic wells in the Langley, Abbotsford, Osoyoos and Grand Forks areas of the province."<sup>32</sup> Indeed, in 1989, 42 % of wells tested by submitted samples from Grand Forks area residents had elevated (> 5mg/l) levels of nitrate and nitrite nitrogen<sup>33</sup>. Areas south of Carson Road toward the east end of Carson Road, the Nursery area are two key locations of the elevated nitrate levels<sup>34</sup>. Further studies have used stable isotope analysis to identify that the elevated nitrate levels are likely derived from inorganic nitrogen sources (not manure nor septic systems, but more likely inorganic nitrogen fertilizers from agricultural practices). Indeed, Wei and colleagues conclude that "Although the source of elevated nitrate in the aquifer cannot be conclusively determined, it is generally accepted that the source is from human activities and is not naturally occurring. In the absence of proving up a definitive source, it would be prudent to focus public awareness and education, plus best management practices on both agricultural and sewage disposal activities to generally minimize the overall potential loading of nitrogen into the aquifer from all possible sources." It is thus recommended that effective policy for management of groundwater contamination problems be created.

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<sup>32</sup> Ministry of Environment, Water Stewardship, Ground Water Issues in BC: [http://www.env.gov.bc.ca/wsd/plan\\_protect\\_sustain/groundwater/library/issues\\_bc.html](http://www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/library/issues_bc.html) accessed 2011 Sept 25.

<sup>33</sup> Sather, S. (1989). Assessment of Nitrate Levels in Groundwater at Grand Forks. Unpublished memorandum, Ministry of Environment. File 82E/1 #21.

<sup>34</sup> Mike Wei, Diana M. Allen, Vicki Carmichael and Kevin Ronneseth. no date. State of Understanding of the Hydrogeology of the Grand Forks Aquifer. Ministry of Environment.

### 3. BUILT CAPITAL: ENABLING FARMERS WITH TOOLS & REGULATORY SUPPORT

#### introduction

Infrastructure provides the necessary physical and organizational structures for an enterprise to operate—this is known as built capital. These are the tools we use, whether they are tangible such as a combine harvester or a garden hoe, or they are intellectual and intangible such as laws and regulations.

#### vision elements

- 3.a. Ensure Farming Tools are Not Unnecessarily Limiting Area Agriculture
- 3.b. Establish Sector Strategic Plans to Reduce Obstacles
- 3.c. Create Regulatory Support and Proactively Avoiding Disputes

#### strategic objectives & policy recommendations

- 3.1. Create a shared equipment system for small-plot farms.
  - 3.1.40. Assess the feasibility of a shared farm equipment co-operative or a 'small tool library'.
- 3.2. Foster programs to ensure the agricultural industry is able to take better advantage of secondary processing of meat.
- 3.3. Reduce the potential for urban/rural conflict through land use policy.
  - 3.3.41. Establish communications material to educate new rural land owners about the 'Right to Farm' Legislation.
  - 3.3.42. Develop RDKB and municipal bylaws for buffer areas to ensure appropriate buffer zones to reduce potential for urban/rural conflict. The use of Development Permit areas might be engaged to ensure that potential future conflicts are proactively avoided.
- 3.4. Ensure local bylaws support agri-tourism.

3.4.43. Review local bylaws with regard to ensuring that agri-tourism is encouraged.

3.5. Ensure compatibility between the ALC (and their ALR decision-making guidelines), BC Assessment, and the predominance of small-lot agriculture in the RDKB

3.5.44. Lobby the ALC and the BCA to protect small farms

#### background on policy recommendations

The lack of small tools for small-plot farmers is a critical logistical issue. Many farmers want to engage in small-scale growing but are prohibited by the cost of the necessary equipment. It has been proposed by the Grand Forks and Boundary Agricultural Society that a 'small tool coop' or 'farm tool library' be established that would allow farmers to pool resources to have temporary access to a set of equipment they might not otherwise be able to afford.

One obstacle that was identified in community consultations was the potential of restrictions to on-farm processing of livestock in certain zoning regulations. Although with a class 'E' license for livestock processing is considered an accessory use, the potential for a mobile abattoir using a class 'B' license may introduce novel complications to these regulations. It is suggested that these bylaws are reviewed to provide opportunities, if feasible, for reasonable forms of such on-farm value-added activities. It may be that amendments to the zoning bylaw would be the necessary regulatory tool for these ends.

Ensuring that new land owners in the farming areas are respectful of farmers activities and understand the 'Right to Farm' legislation is important to proactively avoid future disputes. The AAP for the District of Kent, for example, recommends that upon subdivision "all property owners with land bordering, or adjacent to, agricultural land to have an appropriate covenant, under Section 219 of the Land Title Act, attached to their properties identifying agricultural practices that may occur and ensuring that respect for buffering and other edge-plan strategies is given." Exploring some similar language or techniques may be a productive venture sooner rather than later.

**4. FINANCIAL CAPITAL: BUILDING PROFITABLE FAMILY FARM BUSINESSES & MARKETS**

**introduction**

Without support of strong financial capital, agricultural systems in the Boundary will obviously be in trouble. The puzzle is determining how municipal and Regional District governments might be able to most efficiently leverage small resource input to create large financial capital results.

Regional branding is a good example of a recent project that is focused on inducing long-term increased activity in the regional financial economy. Facilitated access to external markets might be another effective strategy to increase financial activity in the area and build stronger family farms.

**vision elements**

- 4.a. Trade and Inter-Governmental Initiatives support agriculture
- 4.b. Strong programs to enhance the marketing of Boundary products.
- 4.c. Farmers Manage Business Risk Wisely
- 4.d. Taxation is Fair and Effective.

**strategic objectives & policy recommendations**

- 4.1. Improve access to new and existing markets
  - 4.1.45. Nurture the regional branding project established in 2011 by BEDC/Community Futures. Make it as easy to use for Boundary producers as possible so that uptake is high.
  - 4.1.46. Develop a local guide for exporting to the US to be distributed to producers.
  - 4.1.47. Conduct market research to identify lucrative markets outside of the region.
  - 4.1.48. Establish a database of cooperative producers wishing to share a booth, or transportation to out of town farmers markets.

- 4.2. Ensure that agriculture has modern services such as access to high speed internet, and adequate power; and that other infrastructure needs are met.
  - 4.2.49. Identify current shortfalls in services and infrastructure. Review potential future agricultural trends to ensure current service levels and infrastructure (e.g. high speed internet capacity) will adequately support future needs.
- 4.3. Provide tax incentives where reasonable to nurture agriculture
  - 4.3.50. Reduce fees associated with farm buildings by eliminating building code permitting fees for buildings that meet National Farm Building Code of Canada.

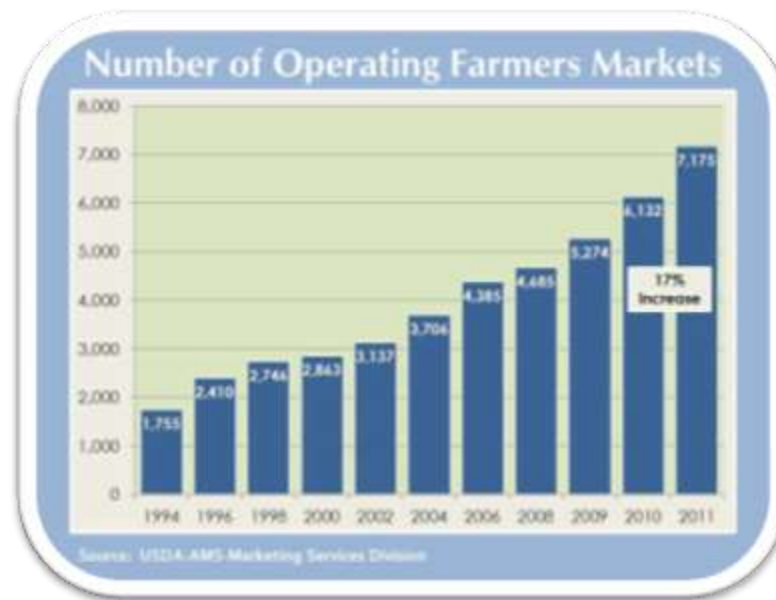


Figure 4: Recent remarkable growth in the number of Farmer’s Markets in the USA.

background on policy recommendations

In 2011, the Boundary Economic Development Commission and Community Futures unveiled the results of an extensive branding initiative for the Boundary area. A central theme of that initiative is local agriculture: in order for this to be a successful branding initiative, it will ideally be easily adopted for the region's producers to join in this brand identity and produce quality food to support this initiative. It is recommended that this branding approach be extended to local producers to help build the brand, as well as a plan be drafted that makes it clear to local producers how they might be expected to capitalize on the new Boundary Country brand.

The market for local foods is growing rapidly., as demonstrated by the dramatic increase in the numbers of farmer's markets in the USA (Figure X above). Again, using a comprehensive review in the USA by the USDA, direct-to-consumer sales have more than doubled in the last decade, Community Supported Agriculture Organizations have grown exponentially in the last twenty years (at an estimated 1400+ currently), and farm-to-school programs in the USA have gone from 2 in 1996 to 400 (in 2004) and 2095 in 2009. 16% of US school

districts have guidelines for purchasing local foods<sup>35</sup>.



<sup>35</sup> Martinez, Steve, et al. Local Food Systems: Concepts, Impacts, and Issues, ERR 97, U.S. Department of Agriculture, Economic Research Service, May 2010.



## 5. SOCIAL CAPITAL: EMBRACING URBAN- AGRICULTURE RELATIONSHIPS AND BUILDING AN ENGAGED SOCIETY

### introduction

As mentioned already, the biggest bottlenecks identified in our food system are the existence of local markets and vocal social demand for local food. Social capital encompasses the social structures and the 'culture' of food that is so important for successful and sustainable agricultural systems. If we can augment and build social capital, other obstacles will be mitigated to some degree by the power of social capital.

Markets such as farmers' markets and food cooperatives can have an enormous impact on local food systems; a great deal of this impact is due to the added social capital that these markets create, not just from improving access to markets. Again, an agricultural development coordinator would be able to help design and facilitate the types of programs that would help fuel our local social capital as it pertains to agriculture.

According to a 2010 US Gallup poll, the three key indicators of "community attachment"—the attachment of people to their home community—are social offerings, openness, aesthetics, and education<sup>36</sup>. Farms and farming culture contribute to all four. Farmer's markets, for example, are open social events that contribute a great deal to people's vision of a particular place. Farming has the potential to serve as a key cohesive element throughout the Boundary communities. Safeguarding and investing in the social capital of our farms is an investment in the sustainability of our communities, not just our farms.

<sup>36</sup> [www.gallup.com/poll/144476/Social-Offerings-Openness-Key-Community-Attachment.aspx](http://www.gallup.com/poll/144476/Social-Offerings-Openness-Key-Community-Attachment.aspx)

### vision elements

- 5.a. A Secure Food Supply
- 5.b. Local Foods & Reconnecting People with the Source of Their Food
- 5.c. Local Food and Health: Raising Social Awareness
- 5.d. Implementation of the Ag Plan
- 5.e. Celebrating and Leveraging our Agricultural History into the Future

### strategic objectives & policy recommendations

- 5.1. Ensure the local supply of food meets current and future needs of the community
  - 5.1.51. Study population growth, consumer trends and foreign food supply risks. Identify potential gaps in future food production in the region and consumer needs.
  - 5.1.52. Consider a program for low-income families wherein 'local food dollars' were provided from donated resources, to be spent at either the Farmer's Markets, The Kettle Valley Food Co-op, or direct at farm-gate. This type of program would encourage healthy eating, fuels the local economy, and acts as a social interaction as well. Many details would have to be established before moving forward.
- 5.2. Promote local food
  - 5.2.53. Support "buying local" to ensure farms are here for tomorrow.
  - 5.2.54. Support and encourage local product sales from farm-gate, farmers markets, roadside stands, local co-ops, and other retail outlets. Help to develop local assets via social media and other relevant outlets such as the Chamber of Commerce. Work to establish a regional network of products being produced so that regional demands are connected to regional supply.
  - 5.2.55. Support the farmers' markets across the region.
  - 5.2.56. Develop a local food charter to guide local food-related decisions.
  - 5.2.57. Support a regional food council as a relevant source of food-related advice to the RDKB.
- 5.3. Support food-in-schools programmes.

- 5.3.58. Partner with the Ministry of Education's BC Healthy Schools Program to ensure locally produced food is part of healthy eating.
- 5.3.59. Assess childhood nutrition and bringing agriculture knowledge into the school systems.
- 5.4. Ensure that policy facilitates attainment of high quality of life for farmers, and development of supportive infrastructure is encouraged.
- 5.5. Review this plan after five years or less, and regularly revisit the vision for Boundary agriculture
- 5.6. Assess the District of Kent's notion of an agricultural working group.
- 5.7. Compile an agricultural history of the area, highlighting the early agrarianism and Doukhobor farming activities.
  - 5.7.60. RDKB organize an annual farm tour programme (Circle Farm Tours).
  - 5.7.61. Encourage Agri-tourism across farm types, and investigate the feasibility of establishing more culinary tourism..
- 5.8. Leverage local museums for communication of agricultural history and inspire future innovation.
  - 5.8.62. Nurture the fall fair.

### background on policy recommendations

Unlike other parts of the province, arable land and human capital do not appear to be limiting agriculture in the Boundary—we're in an area rich with history and human skills, and surrounded by abundant productive land and plenty of water. It seems that the essential element that is currently deficient is the availability of local markets for local products. Beyond the actual creation of these markets, it appears as though the more efficient 'pressure point' in the system for encouraging local agriculture would be a focused strategic plan for building the social capital around agriculture in the boundary. Support and grow the farmer's market, encourage the grocery stores to carry more local produce, encourage the development of the Kettle Valley Food Coop, and teach local producers how to wisely market their goods. If the social capital is available and interested in local food markets, the energy will be there to create those markets.



Figure 5: The outdoor sign from a successful local food restaurant on Saltspring Island.

## APPENDIX A: THE LEGISLATIVE AND REGULATORY BACKDROP

There is a complex array of regulatory bodies and legislation that have impacts on agriculture and agricultural lands. For farmers attempting to navigate this tangle, the Environmental Farm Planning Process helps to identify the overlap and important regulations pertaining to particular types of on-farm actions. Here, we briefly review some of the more fundamental and obvious regulatory acts that have impact on farms and farming.

It is important that the policies presented in the Boundary Agricultural Plan do not contradict regulatory frameworks in other municipal, regional, provincial, or national arenas.

### OFFICIAL COMMUNITY PLANS & ZONING BYLAWS

All electoral areas within the Regional District have Zoning bylaws and Official Community Plans (OCPs), with the exception of Area E.

#### AREA E (WEST BOUNDARY)

Electoral Area E is lacking in any guiding regulatory framework for agricultural on a local or regional scale. Area E does have zoning bylaws in place for Jewel Lake (Jewel Lake Rural Land Use Plan, Bylaw 855). There is a small amount of land in the Jewel Lake area that is within the Agricultural Land Reserve, and Section 3.3 of Zoning Bylaw 855 deals explicitly with agricultural lands, though the key material policy is (5) that “The Regional District will encourage the Agricultural Land Commission to support the minimum parcel sizes and permitted land uses identified in this Bylaw.”.

Within Area E, zoning bylaws are also in place for Mt. Baldy (Area E Mount Baldy Zoning Bylaw 1340), and Big White (Area E Big White Zoning Bylaw 1166). Neither 1340 (Mount Baldy) nor 1166 (Big White) contain any

reference to agriculture. Area E has OCPs in place for Mt. Baldy and Big White (OCP Bylaw nos. 1335 and 1125, respectively). Neither of these OCPs contain any agricultural references, with the exception that the Mt Baldy OCP lists range rights as priority rights to other uses.

Currently, the lack of local zoning in Area E leaves no avenue for community input into land-use decisions. There are no land-use policies in place that allow for local input on proposals that are made for lands within the ALR in area E, and there is poor capacity for enforcement on the province-wide scale of the ALC.

#### AREA D (GRAND FORKS & GRANBY WATERSHED)

Electoral Area D has an Official Community Plan (OCP Bylaw nos. 1250 and 852, respectively) and an Area D Zoning Bylaw no 1299. The content of these OCP and zoning bylaws can be found on the RDKB’s website<sup>37</sup>.

The significant heritage of agriculture in Area D is recognized in the Area D OCP, with the goal stated therein to encourage the development of a community reflecting the existing rural and agricultural character of the region. The goals for agricultural land use stated in the Area D OCP are:

- To develop policies and regulations for arable portions of Electoral Area D which are supportive of agricultural operations.
- To minimise the opportunities for incompatible land uses to become established in predominantly agricultural areas.
- To encourage farming practices which minimise impacts upon the environment

It is worth noting that the valley-bottom lands surrounding the Kettle River are classified as ‘Agricultural Resource’ lands, while the remaining lands in the ALR that are found elsewhere (including the Granby River

<sup>37</sup> <http://www.rdkb.com>

watershed lands, ALR lands west of Grand Forks along Highway 3, and ALR lands elsewhere in the Area) are classified as Rural Resource lands. This Rural Resource designation allows for a more diverse suite of primary activities (e.g. forestry, interpretive centres, guest ranches et cetera), although the more stringent regulations imposed by the Agricultural Land Commission Act still takes precedence in limiting these secondary uses. The Zoning Bylaw and OCP, on the other hand, provide more stringent restrictions on the number of single family dwellings per parcel, limiting lots in agriculturally zoned lands to one single family dwelling regardless of size.

It also needs to be noted that the OCP for Area D indicated a class of "Extensive Agricultural Objective" that included lands in the Granby valley, which a minimum subdivision size of 20 ha to retain viability for ranching operations. However, it appears that much of this zoning class (other than the area just north of Grand Forks, upriver from the old dam site on the river) has been altered to 'Rural' class. It is recommended that this confusion be clarified by an assessment of this potential contradiction.

Further clean-up of the Area D OCP might be accomplished by:

1. Section 3.4: Class 6 may be good for some types of agriculture, so perhaps these should not be excluded?
2. Section 3.4: No details on how the Plan intends to encourage the owners of agricultural land to actively farm their properties.
3. Section 3.4.: much of the detailed text from the ALC ought to be given it's own section, since it's background material, not objectives.
4. Section 3.4.1: Titles have changed to the 'Agricultural Waste Control Regulation' of the 'Environmental Management Act'.
5. Section 3.4.2: Studies of the Grand Forks aquifer seem to indicate that inorganic fertilizer is the cause of elevated concentrations of nitrate. Some plan to deal with this problem ought to be under discussion.

Grand Forks city has recently developed a Sustainable Community Plan<sup>38</sup>, in which it is noted (10.3.8) that it is policy to 'support and encourage agriculture as a vital contributor to the local and regional economy'. Further, it is a stated objective (13.2.1) to "Protect the productive agricultural use of land designated within the Agricultural Land Reserve." and policy to achieve this includes:

13.3.2 acknowledge and protect lands within the ALR for sustainable food production

13.3.6 encourage local food production and promote the sale of locally produced goods in local retail outlets

There are no implementation measures noted to accomplish these policies.

#### AREA C (CHRISTINA LAKE)

Electoral Area C also has both a Zoning Bylaw (no. 1300) and an OCP (no. 1250).

The majority of the small area of ALR lands in Electoral Area C are located in the 'Rural 1' zone.

There are some specific ambiguities in the Area 'C' OCP<sup>39</sup> that ought to be reconciled:

- 2.5.1 Goal: 'agricultural lands' are not defined.
- 2.5.1 Agriculture is encouraged within the ALR, but not elsewhere?
- 2.5.2 How is a high value for agriculture assessed?

<sup>38</sup> Draft Final Report, City of Grand Forks Sustainable Community Plan, May 2011.

<sup>39</sup> Thanks for Donna Dean for identifying these discrepancies.

- 2.5.2 Agriculture is encouraged within the ALR, but not elsewhere?
- 2.5.3.2 No agriculture specific zone is identified.
- 2.5.3.3 Not a policy, so text ought to be relocated.
- 2.5.3.4 Not a policy, so text ought to be relocated.
- 2.5.3.5 Not a policy, so text ought to be relocated.

## PROVINCIAL AGRICULTURAL POLICY

There has been a spate of Agricultural Area Plans (AAP) being produced in the province over the last decade or so, at least partially as an artifact of the funding made available by the provincial government. The Regional District of Central Kootenay (RDCK) has recently completed an Agriculture Area Plan; given that the RDCK is one of the 'local' food producing regions for the RDCK, and is situated with fewer people and more agricultural land, it is particularly important for Boundary residents to be attentive to the RDCK agricultural plan<sup>40</sup>.

As companion to these many plans that are being (or have been) created on the Regional District or Municipal scale, the Province of BC recently completed "The British Columbia Agriculture Plan: Growing a Healthy Future for B.C. Families." This plan rests on the vision that "Continued development and growth of an economically viable and resilient agriculture and food sector which contributes significantly to:

- the health of British Columbians;
- climate change mitigation;
- environmental sustainability; and

- a growing B.C. economy<sup>41</sup>."

This BC Agriculture Plan provides "[...] a vision and direction for sustaining farm families, improving profitability through direct farm marketing while playing an important role in reducing the greenhouse gas emissions that contribute to climate change."

## THE LOCAL GOVERNMENT ACT

The Local Government Act gives local governments the power to create regulatory legislation such as OCPs and Bylaws. Planning processes such as bylaw creation, OCP development, or weed and pest control bylaws, for example, have the potential to directly relate to agricultural land management and zoning. Farm bylaws and Development Permit Areas can also be used by local government to institute local regulations. Some examples:

Section 877 of the LGA states that an OCP must include statements regarding the approximate location, amount, and type of present and proposed agricultural land uses.

Section 917 of the LGA provides the potential content of farm bylaws that can be enacted by local governments.

Section 919.1 states that an OCP may designate Development Permit Areas for the purpose of protecting farming, to establish objectives to promote water conservation, or to establish objectives to promote the reduction in greenhouse gas emissions: all of which could be used to manage agricultural land use in the Boundary.

<sup>40</sup> Located currently on the RDCK website, at: [http://www.rdck.bc.ca/development/planning/projects/agriculture\\_area\\_plan.html](http://www.rdck.bc.ca/development/planning/projects/agriculture_area_plan.html)

<sup>41</sup> The British Columbia Agriculture Plan: Growing a Healthy Future for B.C. Families, n.d., [http://www.agf.gov.bc.ca/Agriculture\\_Plan/](http://www.agf.gov.bc.ca/Agriculture_Plan/)

## NOTICE OF INTENT FOR PROPOSALS TO PLACE FILL OR REMOVE SOIL (NEE 'SOIL CONSERVATION ACT')

The Soil Conservation Act's was repealed in 2002. Its intent was to protect soil on land in the ALR by regulating its removal and the placement of fill.

The process of removing or adding soil to lands within the ALR now requires that a person who intends to place fill or remove soil for specified farm uses or specified non-farm uses must file a Notice of Intent with the Agricultural Land Commission. The ALC may then request further information if deemed necessary.

## WEED CONTROL ACT

The Weed Control Act places responsibility for control of noxious weeds upon occupiers of land. It provides for appointment of inspectors to ensure compliance and, failing that, for a method by which they can control weeds with costs recovered from the occupier. Weed Control Committees may be established by municipal councils to administer the Act within a municipality. A committee reports to the municipal council and the Minister. Land owners bear the cost of weed control.

## THE AGRICULTURAL LAND COMMISSION ACT

The provincial government had the foresight in 1973 to approve the Agricultural Land Commission Act and established what has become an important tool in the provincial policy regime to protect farmland. The ALCA is the most prominent and influential agricultural planning instrument in BC. Roughly 5% of the provincial land base is contained within the Agricultural Land Reserve, and these lands are managed to control non-farm uses and encourage farming as the primary use.

Importantly, the ALR takes precedence over local bylaws or other regional/local legislation. It is interesting to note that an audit of the Agricultural Land Commission (ALC) in 2010 found that although the ALR has been a very effective tool for preserving agricultural lands, there were four specific challenges facing the ALC:



Figure 6: Objectives (red) and drivers (green) of 'Growing Forward 2'

- the ALC has not determined that the boundaries of the ALR are accurate and include lands that are both capable of and suitable for agricultural use;
- the ALC has identified limitations in its ability to preserve agricultural land and encourage farming through the application process;
- the ALC is not sufficiently involved in proactive long term land use planning with local governments to encourage farming on a broad basis; and
- oversight of the decisions made by its "delegated authorities" needs strengthening to ensure that agricultural land is being preserved and farming encouraged.

These conclusions make it clear that actions taken by local government are likely to be indispensable for the continued protection of agricultural lands in the region.

## THE LAND TITLE ACT

The Land Title Act provides The Provincial Approving Officer and officers of the Regional District with opportunities to require buffering between agricultural and development areas, and to assess the impacts of development on farmland.



## THE FARM PRACTICES PROTECTION ACT

This act is also known as the 'Right to Farm Act', given that the intent of this legislation is to allow farmers to engage in 'normal farming practices' and not be subject to legal action. Introduced in 1995, this act ensures that farmers on ALR lands are able to farm without hindrance of nuisance actions, nuisance bylaws. This Act created the Farm Industry Review Board, a tribunal that hears complaints and determines if the issues are arising from 'normal farming practices'. The Act establishes a process to resolve concerns and complaints in order to:

- let farmers farm;
- keep farmers out of court;
- deal fairly with concerns and complaints; and
- deal with poor farm practices.

## NATIONAL AGRICULTURAL POLICY

The national policy framework 'Growing Forward' is the current agreement between the provincial/territorial governments and federal governments. This agreement is intended to deliver programs that are "simple, more effective, and tailored to local needs"<sup>42</sup>, with a vision for a profitable, innovative, competitive, market-oriented agriculture, agri-food and agri-based products industry. Example programs that are funded through the Growing Forward agreement are the Environmental Farm Plan Program (EFPP), AgriInvest, and AgriStability.

This current Growing Forward agreement between federal and provincial/territorial governments expires in March of 2013, with a successor framework—creatively titled 'Growing Forward 2'—currently being designed to come into effect for 2013-2018. The two primary

objectives of this policy agreement are 1) to develop domestic and international markets and trade, and 2) to achieve adaptability and sustainability. The corresponding drivers identified to attain these goals are Innovation and Infrastructure.

Both the two broad objectives and two drivers of Growing Forward 2 are well mirrored within the Boundary Area Agricultural Plan.

## THE CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

The goal of the new CEPA is to protect the environment and the health of Canadians from toxic substances and other pollutants. CEPA has regulations on many items, including managing toxic substances, clean air and water, controlling and moving waste, and enforcement. The goal is to prevent pollution and control toxic substances. In doing so it reduces the risk that hazardous substances pose on the environment and human health.

## MARKETING BOARDS (SUPPLY MANAGED COMMODITIES)<sup>43</sup>

The Natural Products Marketing (BC) Act provides for the creation of marketing boards and commissions to administer schemes for the promotion, control and regulation in the province of the production, transportation, packing, storage and marketing of natural products, or the prohibition of the same. At present, eight marketing boards administer schemes. Supply managed boards are:

- BC Broiler Hatching Egg Commission

<sup>42</sup> Accessed September 2001: <http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1200339470715>

<sup>43</sup> Text mainly from the BC Farm Industry Review Board website: [http://www.firb.gov.bc.ca/boards\\_comm.htm](http://www.firb.gov.bc.ca/boards_comm.htm)

- BC Chicken Marketing Board
- BC Egg Marketing Board
- BC Milk Marketing Board
- BC Turkey Marketing Board

Regulated industries are:

- BC Cranberry Marketing Commission
- BC Hog Marketing Commission
- BC Vegetable Marketing Commission

The operations of the boards and commissions are funded entirely by producers through licence fees or levies.

The presence of these board means that farmers intending to sell these types of products need to either operate with fewer animals or less product than the minimum quota requirement, or purchase a quota (for example, Springhill Farms in Westbridge operates under an egg quota). The costs for quota can be prohibitive, and can alter famer's plans: Jeremy DeVries (Grand Forks) originally intended to run a cow dairy, but the costs of quota were prohibitive; goat and sheep dairies are not controlled by such boards, so he began Udderly Organic Goat Dairy.

## APPENDIX B: CURRENT SNAPSHOT OF AGRICULTURE IN THE REGION (PRIMARILY PREPARED BY J. CALISSI)

### FARMS AND FARM OPERATORS

There are less than 600 farm operators in the Boundary, operating 342 farms (there are 767 parcels classified as 'farm' in the region, though many farms are composed of more than one parcel). The average age of the operators is 54 years of age, with a range of 53 to 55 years of age between the three regions—this average age is increasing each census. The following table itemizes the numbers of farms and farm operators by the three main sub-areas and the overall plan area.

	Area E <sup>44</sup>	Area D	Area C, B & A <sup>45</sup>	Total
Total number of farms	163	169	60 (10 in Area C)	392
Total number of operators	250	250	100	600
Average age of operators (yrs)	55.4	54.1	52.7	54.4
Total male operators	150	150	55	355
Total female operators	95	90	40	225

Source: Statistics Canada

<sup>44</sup> Note that Statistics Canada reports agricultural data on the basis of Consolidated Census Subdivisions (CCS). For example Area E includes the municipalities of Greenwood and Midway as well as Electoral Area E of the RDKB. It does not report agricultural data by census subdivision, such as Electoral Area E or the City of Greenwood.

<sup>45</sup> Statistics Canada aggregates the areas in some cases because there are too few farm operations in an area. This occurs with the reporting for Area C. Because Electoral Area C contains relatively few farms (10 in 2006), Statistics Canada aggregates, for public reporting purposes, the data for Electoral Area C with the data for Electoral Areas A and B of the RDKB.

### FARM LAND AREA

Currently, only approximately 57% of the ALR land based is farmed actively enough to gain 'farm' status for tax purposes<sup>46</sup>. Roughly 77% of the ALR land area and nearly half of Boundary farms are located in Area E. The large land base and farm size is largely due to the predominance of the cattle industry in the area. Lands in Area D were historically subdivided into smaller lots for horticultural production. Lots sizes of 10 acres or less are common in Area D, especially in the Grand Forks area.

	Area E	Area D	Area C, B & A	Total
Total area of farms (hectares)	41,634	9,190	2,437	53,260
Average area of farms (hectares)	225	54	41	136
Parcels classified as 'Farm' (ha)	-	-	-	49,455

Source Statistics Canada and BC Assessment.

Lands in the Agricultural Land Reserve constitute 2.3 to 8.9 percent of the total land base of the study area. Not all lands in the study area are suited to agriculture due to climate, lack of fertile soils and slope.

<sup>46</sup> RDKB analysis.

**Table 3-6: ALR Area**

	Area 'C' Christina Lake	Area 'D' Rural Grand Forks /Granby	Area 'E' Rock Creek, Bridesville, Kettle Valley, Christian Valley	Total
Land Area (km <sup>2</sup> )	530.61	2,116.43	4,307.49	6,954.53
ALR Area (km <sup>2</sup> )	12.26	87.72	381.49	494.55
Portion of Land in the ALR	2.3%	4.1%	8.9%	7.1%

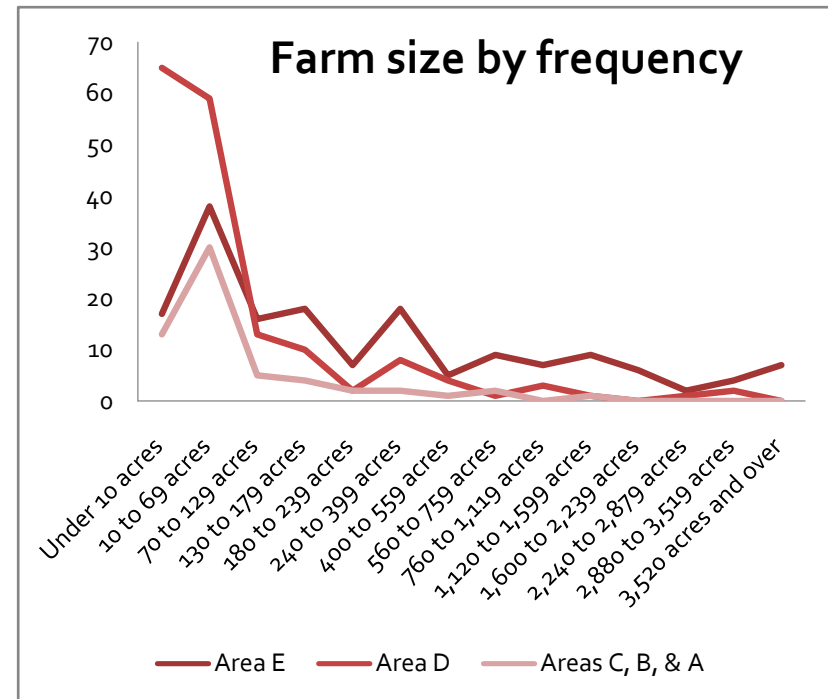
Farm acreage in the region is generally small, with 24% of the farms in the RDKB under 10 acres, and a remarkable 38% in Area D specifically. The rest of British Columbia, as a comparison, contains 27% of the acreages on farm under 10 acres. Acreage in the rest of Canada are notably larger (~5% under 10 acres).

**FARM FINANCES**

**Table 3-7: Farm Finances (2005)**

	Area E	Area D	Area C, B & A	Total
Total gross farm receipts (\$)	5,836,759	15,473,603	2,131,934	23,442,296
Total farm capital (\$)	200,411,866	117,553,735	44,769,953	362,735,548

Source: Statistics Canada



The gross farm receipts in 2005 for the area are approximately \$23 million, of which 65 percent is derived from Area D (Grand Forks). Area E contains the largest amount of farm capital. Farms in Grand Forks have larger ratios of gross sales to farm capital. This is skewed heavily by the horticultural and potato industries in the Grand Forks area. Sales per hectare of intensive horticultural crops, such as vegetables and ornamental plants are significantly higher than those from land used for grazing and forage.

Gross farm receipts for British Columbia exceed \$2.5 billion in the same year and total farm capital for the province was \$25 billion. The RDKB comprises nearly one percent of the provincial gross farm receipts and greater than one percent of the farm capitalization of the province.

Gross farm receipts increased from \$13 million to \$23 million over 1996-2006 period. Since cattle numbers declined and cattle prices remained largely unchanged from 1996 to 2006, increase in nursery acreage is likely the explanation for increased farm receipts.

Farms with sales of less than \$25,000.00, occupy 56% of the enterprises. This is greater than the British Columbia and Canada, where 48% and 22% of the farms grossed less than \$25,000.00

	1995	2000	2005
Gross Farm Receipts (\$)	13 Million	18 Million	23 Million
Gross Farm Capital(\$)	177 Million	233 Million	363 Million

Source: Statistics Canada

Gross Farm Capital doubled during the 1995 to 2006 period. This is largely due to increases in land prices during the period.

## CROPS

Animal fodder crops of either alfalfa or other tame hay crops occupy ninety-five percent of the land base dedicated to crop production. Next in importance are agronomic crops such as barley, oats and fall rye. The balance of the acreage is in horticultural crops. Supply managed horticultural crops in 2010 included 127 acres of potatoes and 10 acres of onions (Source: BC Vegetable Marketing Commission).

Much of the acreages of each crop are small, produced by a limited number of farmers (29 in total); hence the specific acreages are not reported for confidentiality reasons.

	Area E	Area D	Area C, B & A	Total
Land in crops	4,366	1,916	311	6,593
Alfalfa	2,311	852	138	3,301
Other hay	1,141	585	146	1,864
Barley	213	19		232
Oats	132			132
Fall rye		52		52
Nursery products	x	x	x	191
Christmas trees	114			114
Vegetables*	5	19	1	25
Apples		4		4
Grapes			5	5

Source: Statistics Canada

\* Does not include potatoes or onions, there are not enough potato farms in the region for the data to be publicized.

Field crop acreages have declined, which is likely a reflection of the decline in cattle numbers, as less winter feed is required for the smaller population. Most other crops decreased in acreage, except nursery crop production which increased 34 percent. Fruit crops have taken a particularly large drop in acreage over the last ten years, from 34 ha in 2001 to 9 ha in 2006.

Land in parts of the region is suitable for intensive horticultural production. Although winter temperatures can be a limiting factor, there are micro-climates which may be suitable for certain varieties of wine grape production (although this is a risky venture: consult the 2002 Grape Growing Feasibility Study for the Boundary for further details and see Appendix E). Current nursery production focuses on winter hardy plants destined for sale into prairie markets.

	1996	2001	2006
Field Crops	7,627	7,908	5,581
Fruit	34	34	9
Vegetables	30	33	25
Nursery Products	131	147	191
Christmas Trees	85	259	114

Source: Statistics Canada

Potatoes and onions are controlled crops and acreage is managed by the BC Vegetable Marketing Commission. According to the BC Vegetable Marketing Commission there were 127 acres of potatoes and 10 acres of onions produced in the region in 2010. The Commission forecasted the acreage of potatoes to decline in coming years due to aging farmers and low market prices for potatoes.

Currently the BC potato producers have filed a trade action against the United States with regard to dumping of potatoes in the BC market, which if proven successful would set a floor price for potatoes entering BC from the US.

## LIVESTOCK

Cattle dominate the livestock industry in all areas of the Kootenay Boundary. Area E is the largest livestock area, with 76 percent of the cattle population. Cow-calf operations are the typical ranch operation, with calves sent to southern Alberta and the US for finishing and processing.

	Area E	Area D	Area C, B & A	Total
Cattle and Calves	10,423	2,579	638	13,640
Goats	63	66	21	150
Hens and chickens	4,194	1,715	1,617	7,568
Honey Bees	X	X	X	686
Horses and Ponies	531	282	180	983
Sheep and Lambs	484	361	68	913
Pigs	74	84	59	217

Source: Statistics Canada

In the interviews, the cow-calf producers expressed concerns about cut-backs to grazing land by the province. In general, cattle are grazed on forest range or private lands, with cattle returning to lower lying areas in the winter for winter feeding and calving during the spring.

The lands are also suitable for intensive animal production such as hogs, poultry and dairy production. There are few producers that raise and maintain these animals in the plan area. Competitive disadvantages in feed costs and a lack of a major dairy processing facility and abattoir have limited the growth of livestock alternatives from cow-calf operations in the Boundary region.

Over time cattle numbers in the region has declined, with recent reductions in chickens numbers. Pigs are seemingly very volatile, and sheep and lambs more idiosyncratic. Horse populations in the District are slowly increasing.



	1996	2001	2006
Cattle and Calves	15,399	15,151	13,640
Cattle Prices \$/100wt	88	92	87
Hens and Chickens	9,332	9,667	7,568
Pigs	636	95	217
Sheep and Lambs	1,065	1,259	913
Horses and Ponies	916	960	983

Source: Statistics Canada

The decrease in the cattle herd is primarily due to depressed cattle prices. Average prices have remained unchanged since 1996. This is partially due to supply and demand factors; however, Canadian beef farmers were affected by BSE in 2003 and then by new country of origin labeling which partially arose from the BSE crisis.

While prices have remained constant, costs have increased. Feed prices have increased since 2007 due to increased demand for grain used by the ethanol industry. Fuel prices have also increased. Fixed costs, such as repairing fencing, and annual Animal Unit Months, which is the monthly fee ranchers must pay to graze cattle on crown land (currently at \$2.00 per animal per month).

In the recent past range lands have been impacted by the closures of sawmills in the area. Reduced timber harvesting due to depressed lumber prices have resulted in less clearing of forest land and reduced available range grasses that cattle feed on. With reduced cattle prices, ranchers have been less able to put inputs into their hay production, resulting in reduced hay yields. Consequently cattle are on the range earlier, impacting the health of the range.

## LAND COSTS

Although viewed as expensive, land costs are lower in the region than comparable land in the Okanagan or Fraser Valley. Urban use of agricultural land is less in the area, reducing this demand component.

## RETAIL OUTLETS FOR LOCAL PRODUCERS

Marketing products is challenging for Boundary small scale farmers and is a primary hurdle to financial viability. Given the prevalence of small-lot agriculture in the region, it is important that local markets are developed and local demand encouraged to a greater degree. These small farms will have an extremely difficult time competing with commodity markets that leverage economies of scale: Farmer's Markets and the Kettle Valley Food Co-op provide local markets for local products.

The Grand Forks Farmers' Market operates two days per week between the May holiday weekend and the Thanksgiving weekend. Rock Creek and Greenwood also have smaller weekly farmers' markets during the summer months. There are farmers' markets in Rossland, Nelson and Kelowna. They benefit smaller producers who have smaller volumes of product and need a sales outlet. Vendors tend to stay solely with the Grand Forks market, although one vendor also brings product to the farmers market in Nelson and Rossland.

The Farmers' Market in Grand Forks is a farmers' and crafters' market, with 60 percent of the 29 members being farmers. Vendors come from as far away as Christina Lake and Beaverdell to bring goods for sale. Vegetables typically start with one greenhouse grower bringing product early in the season (capturing a niche market for early-season vegetables at a price premium), with field vegetables arrive in June. Meat products are limited, but goat meat is available. The only local abattoir is run by Adrian Baiton in Rock Creek.

The Kettle Valley Food Co-op<sup>47</sup> was recently incorporated (2009) and is currently operating under an online sales model while building the customer and capital base. Orders are placed every weekend, followed by a 'distribution day' mid-week (currently only in Grand Forks, but plans are to extend the distribution into the West Boundary and potentially Christina Lake). This organization has established itself with a mission of providing a local market outlet for local producers, and has adopted a multi-stakeholder co-op model with both producers and consumers as members/owners. Many local producers are beginning to sell their products through the Kettle Valley Food Co-op.

Certified Organic production is frequently cited as an option to add value to farm production. The Certified Organic label gives the farmer instant brand differentiation from conventional products and higher prices. Organic produce is among the fastest-growing agricultural sectors in the country (see Challenges and Opportunities section). There are 11 organic farms in the Boundary region, mostly with the Boundary Organic Producers Association, or BOPA. They comprise approximately 2% of the organic operations in the province. Interestingly, there are 67 farms in the Regional District (areas A through E) growing uncertified organic livestock or produce.

Provincially there are examples of farmers who have been successful in using "greener" technologies rather than certified organic. A good example is JD Farms in Langley ([www.jdfarms.ca](http://www.jdfarms.ca)). The farm produces turkeys using no medications; instead they use better sanitation methods in the turkey barns. The farm sends the birds to a local poultry processing facility, where they are inspected, frozen and stored. They market to specialty meat shops throughout the province and operate an on-farm store where they process turkey sausage, meatballs, prepared pasta, burritos, and the like. They also operate a bistro, prepare catering platters, and operate a deli.

<sup>47</sup> <http://www.kettlevalleyfoodcoop.org>

## AGRI-TOURISM

The Boundary region has an important tourism sector with much of that activity focused on visitation during the summer months to Christina Lake. On-farm or on-ranch bed and breakfast operations are gaining increasing popularity. The Agricultural Land Commission allows for up to 10 units of seasonal accommodation on ALR land if recommended for approval by local government.

An example of a comprehensive agri-tourism operation in the Boundary region is Spencer Hill Orchard and Gallery in Grand Forks. It offers outdoor events that include farm tours, live theatre, music, and family festivals. They have a four acre orchard where 18 varieties of apples, pears, peaches, nectarines, plums, and apricots are grown. The gallery hosts and profiles local artisans.

WWOOF'ers (World Wide Opportunities on Organic Farms, aka Willing Workers on Organic Farms) are used in the Grand Forks vicinity. Farmers must be organic and provide accommodation and meals in exchange for 4-6 hours per day.

Another agri-tourism example in the plan area is the agri-tour assembled for the Grand Forks area. Ten agriculture related operations cooperated to coordinate a self-guided agricultural tour and produced a brochure to help market it. The operations include Jerseyland Organics, Alaythia Gardens, Spencer Hill Orchard and Gallery, and Avalon Gardens.

**APPENDIX C: COMMUNITY SURVEYS AND INPUT (LIVE:  
UPDATE AS NEEDED)**

To be added once compiled.

**APPENDIX D: RESOURCE ANALYSIS (J. CALISSI)****SUMMARY**

The following is a written summary of agricultural lands in the study area. Detailed maps illustrate the land capability for agriculture at the 1:20,000 scale. They have been updated as part of this study and have been supplied to the Regional District of Kootenay Boundary where they have been digitized.

The lands in the ALR along the lower terraces and floor of the Kettle, West Kettle, and Granby Rivers are generally arable as these soils are fertile in their nature. They are, however, severely curtailed for cropping by arid conditions if not irrigated. Crops are usually limited to early season cultivated forages. With irrigation, the region's frost free periods and growing degree days allow a wide range of horticultural and field crops to be produced.

Most ALR lands outside the valleys (i.e. valley sides and plateau) are unsuited for cultivation due to severely limiting topography, rock outcrops, and stoniness. These lands provide natural grazing although substantial areas are sufficiently limited to have very little, if any, benefit for agriculture.

**NATURAL MORPHOLOGY AND CHARACTERISTICS OF THE BOUNDARY'S SOIL AND CLIMATE**

Glaciofluvial and fluvial terraces (and alluvial fans to a lesser extent) occupy the majority of the ALR areas at the lower elevations between Westbridge, Rock Creek, and Midway and from Grand Forks to Christina Lake. Lesser areas also occur along the upper Kettle and Grandby rivers. These locations generally have gently undulating or gentle to moderately sloping topography (less than 10% gradients) except along terrace scarps

where the topography is commonly steep or very steep (gradients well in excess of 30%).

Supplemental irrigation is required for most crop production. The deposits are generally sandy in texture with loamy sand or sandy loam the common surface textures. Variations to sand or silt loam occur in limited discontinuous areas. Subsurface and subsoil textures are also mostly sandy (loamy sand or sand) with gravels rising to near the surface in a few areas. The soils are rapid-to-well drained with low to moderate water holding capacity. Stones and cobbles are uncommon in the surface layers in most areas.

Artificial fertilization is needed for most commercial crop production. These soils have mostly developed under grassland vegetation and have a greyish-brown to black surface layer enhanced by accumulated organic matter. Plant nutrient availability and holding capacity is low to moderate, depending on soil textures.

Climatically, the terrace areas are severely moisture deficient and, without irrigation, generally capable of only reliably producing early season forages.

Frost-free periods generally range between 90 and 120 days in the areas between Westbridge to Rock Creek and onward to Midway. Freeze-free periods in the Grand Forks area, lower Grandby Valley and onward to Christina Lake are somewhat higher, between about 120 and 150 days. The range of growing degree days accumulated above 5°C varies from about 1300 to 1500 in the western areas to between 1500 and 1780 near Grand Forks and eastward. Minimum winter temperatures colder than -25°C are not uncommon. These extreme weather conditions limit the production of temperate zone perennial crops such as tree fruits and wine grapes, whereby, winter injury begins to develop and result in mortality to the plants.

## KETTLE, WEST KETTLE AND GRANBY RIVER VALLEY BOTTOMS

Recent alluvial deposits (floodplain) abut most of the Kettle, West Kettle and Grandby rivers and have mostly gentle undulating or sloping topography (less than five percent slope). Lower lying areas are sometimes subjected to freshet flooding; the severity depending on the rise in river levels. Soil drainage varies from well (sometimes rapid) on the higher lying areas to imperfect or poor in the lowest parts (i.e. between the undulations). Water holding capacity is moderate to low.

The surface textures are usually sandy loam or loam (with inclusions of fine sandy loam or silt loam) and grade to sand and gravel with depth. The soils are generally non-stony or only slightly stony except where gravel bars extend to the soil surface and these areas are especially prone to drought. Aridity (moisture deficiency) limits most cropping to early season forages if irrigation is not available. With irrigation a wide range of crops is possible.

The floodplain area lands, because they lie at the lowest elevations, usually have somewhat shorter frost free periods and fewer growing degree days. Frost free periods generally are less than 90 to 120 days, decreasing to about 60 days in the northern reaches of Kettle, West Kettle and Granby Valleys. Growing degree days also decrease to about 100 days. Winter minimum temperatures colder than  $-25^{\circ}\text{C}$  are common.

## AREAS SOUTH OF BRIDESVILLE AREA

The valley sides and lower plateau areas (such as those lying generally south to Bridesville) consist mainly of moderately to strong rolling or steep to moderately sloping morainal deposits interspersed with hummocky, shallow to bedrock areas and steep or very steep exposed bedrock. Scattered, variably sized areas of fluvioglacial deposits, lacustrine and

alluvial materials also occur at some lower lying elevations. Most areas that have more moderate slopes have a 40 to 80 cm thick surface capping of mixed loess and slopewash. Minor amounts of volcanic ash are also intermixed.

The soils are generally well drained and have moderate water holding capacity. They suffer from climatic aridity similar to the valley soils and without irrigation only some forage crops and cereal grains are capable of being grown.

The surface 40 to 80 cm of soil has textures of mainly loam with variations to sandy loam or clay loam. Variable amounts of gravel and some cobbles and stones are usually present. Subsurface/subsoil textures in the morainal and lacustrine areas is moderately gravelly and stony, compact loam or clay loam while in the glaciofluvial areas the textures are mostly gravelly sand or loamy sand.

These soils have developed under dominantly grassland vegetation and have brownish gray to black surfaces enriched with organic matter. Natural fertility is moderate to high.

Most areas falling into this landscape category are limited to natural grazing or are unsuited for agriculture due to excessive slopes (in excess of 30%), severe stoniness, and exposed bedrock. The arable soils discussed in prior paragraphs occupy limited interspersed areas, make cropping difficult, and are better suited to grazing

Climatically these upland areas are severely affected by aridity. Without irrigation cropping is generally restricted to early season forages at the lower elevations with some cereal grains possible at the higher western portions (i.e. south and west of Bridesville). Frost free periods are in the vicinity of 90 to 120 days. The range of growing degree days (above  $5^{\circ}\text{C}$ ) mostly vary between 1300 and 1500.

## NORTH OF BRIDESVILLE AREA

ALR areas north of Bridesville are at higher elevations than lands to the south. The landscape; however, has similar surficial deposits and topography. Included in this general landscape are the discontinuous ALR areas lying to the east between Greenwood and Grand Forks.

The soils are variable, ranging from stony loamy morainal deposits to stony and gravelly glaciofluvial materials. A sandy layer, usually 25 to 40 cm thick, caps both. The soils are well to rapidly drained, with water-holding capacity ranging from moderate to low. Stoniness is mostly moderate, increasing to excessive in some glaciofluvial areas.

The soils are arid if not irrigated and cropping without irrigation is mainly limited to early season forages as well as some cereal grains in favoured locations.

Native vegetation is primarily coniferous forest. The soils (uncultivated) usually have a thin surface forest litter layer underlain by loamy to sandy layers containing varying amounts of gravel, cobble and stone. Frost free periods are mostly in the vicinity of 100 days, shorter at the highest elevations most northerly areas, and in depressional 'frost-pocket' locations. Growing degree days vary in the vicinity of 1250 to 1300.



## APPENDIX E: EXTERNAL LINKS AND EXTRA DETAILS (LIVE: UPDATED AS NEEDED)

America's Heartland Series. Vermont Farmer's Diner, Goat cheese explorations in Wisconsin, and the Kansas City Farmer's market (in operation for over a century!).

[http://www.americasheartland.org/episodes/episode\\_410/index.htm](http://www.americasheartland.org/episodes/episode_410/index.htm)  
accessed on 2011-09-26

Martin Fromme identified, in May 2006 Greenwood council meeting, that the most important needs and concerns for the West Boundary were: transportation, education, food directory, co-op, government advocacy, mapping and communications.

The USDA has an attractive publication regarding graphic displays of research findings. Follow the link to the 2-page spreads to explore some revealing graphics about global food issues (global food security, food trade, et cetera)

<http://www.ers.usda.gov/Publications/EIB48/>

The Boundary Economic Development Commission-Grape Feasibility Study for the Boundary Region. This study, completed in October 2010, concluded that although the growing season was warm enough, the low number of frost free days may not allow the crop to mature and low winter temperatures may damage the vines. The Christina Lake area may be the most promising area based on available climate data, and further investigation there may be warranted.

**APPENDIX F: PRIORITIZATION OF POLICY  
RECOMMENDATIONS, RESPONSIBLE PARTIES, AND  
TIMELINES (LIVE: UPDATED AS NEEDED)**

To be added as available.

## APPENDIX G: TERMS OF REFERENCE FOR THE AGRICULTURAL ADVISORY COMMITTEE.

Agricultural Advisory Committees (AACs) in BC are an effective way for local governments to link with their farm and ranch communities. There needs to be a clear commitment from local government to the AAC in order for it to be a productive and effective committee. The relationship between the AAC and the existing APC will need to be clarified. Here is an example Terms of Reference for the Boundary AAC.

### ROLE OR PURPOSE

The purpose of the Agricultural Advisory Committee is to advise the Regional District of Kootenay Boundary (RDKB) on agricultural issues within the Boundary area, including:

(Choose and add other items as appropriate)

1. recommendations to the Board on ways to preserve and protect agriculture within the Boundary region;
2. applications initiated under the Agricultural Land Commission Act (ALCA);
3. applications to amend official community plans and bylaws with potential impact on agriculture;
4. assisting with comprehensive reviews or development of agriculturally related:
  1. bylaws;
  2. official community plans;
  3. agricultural area plans
  4. farm 'edge' policies
  5. park and recreation plans; and
  6. transportation plans;
5. major development proposals with potential impact on agriculture;
6. irrigation, drainage and other water management issues; and

7. effectiveness of noxious insect and weed control regulations and programmes.

In the review of ALCA applications and bylaw amendments, the Committee shall comment on the following:

8. the effect of the proposal on the agricultural potential of the subject property;
9. the effect of the proposal on adjacent ALR properties and surrounding agricultural production;
10. the effect of the proposal on water resources and transportation issues;
11. a rating of the priority or impact of the application on the maintenance of the ALR;
12. where appropriate, possible alternatives to the proposal; and
13. the identification of issues relating to the protection of the ALR lands specific to the application,
14. including the use of appropriate buffering techniques aimed at enhancing land use compatibility.
15. (Additional suggested roles of the Committee)

The Agricultural Advisory Committee may also make recommendations on:

16. raising awareness of agriculture;
17. enhancing an understanding of agriculture's role in the local and /or regional economy;
18. addressing competition for the agricultural land base;
19. examining legislation to identify improvements to support agriculture;
20. improving opportunities for joint funding of drainage and irrigation works;
21. reporting on the impacts of park and recreation proposals on agriculture; and
22. identifying and effecting change regarding the impact of transportation and utility corridors on agriculture.

## MEMBERSHIP

23. The Committee shall consist of no less than four (4) and no more than twelve (12) members appointed by the Regional District\*, representing a diversity of commodity groups, the processing and distribution sectors and a member of the regional board.

\* Committee members may be recommended by a Farmers' Institute or other local agricultural organizations.

24. Appointments to the Committee will be for three (3) years.

25. The Chair (and Deputy Chair or provision to appoint an Acting Chair in the Chair's absence) shall be elected from the Committee membership at the first meeting of each year. The Chair shall be entitled to vote at all meetings.

## MEETING PROCEDURES

26. The Committee shall meet quarterly or sooner if there are matters to be considered by it. If no matters require attention by the Committee, it is not necessary for the Committee to meet.

27. Meetings of the AAC shall be open to the public unless a resolution indicates otherwise.

28. At all meetings 4 members shall constitute a quorum.

29. Executive and secretarial support for the Committee will be provided by the Regional District of Kootenay Boundary.

30. An agenda for the Committee will be prepared by the RDKB and mailed electronically or physically to Committee members one week in advance of their meeting.

31. The Committee will report to (*specify*)

32. Committee members having a priority interest in an application or who are personally affected by an application /applicant must step aside from the discussion and subsequent vote on that particular matter.

## REMUNERATION AND EXPENSES:

33. Members shall serve without remuneration, but may be paid reasonable and necessary expenses that were directly out of the performance of their duties.
34. RDKB purchasing and expense policy applies to members of the AAC.
35. The routine operation and special initiatives of the Committee will be funded by allocations within (*the Council and Administration budget?*).

## STAFF SUPPORT:

36. The RDKB shall provide administrative, technical and secretarial support for the Committee. Support functions may include the following:
  - organizing and preparing the agenda, in conjunction with the Committee Chair and staff liaison;
  - distributing the agenda packages to Committee members;
  - forwarding the agenda to the Clerk for posting as a public notice;
  - taking and preparing draft minutes and providing the final minutes to the Clerk and Committee members.

## APPENDIX F: MAPS

To be included as a separate document upon identification of critical maps to include.