WEAVING CHAINS OF GRAIN:
EXPLORING THE STORIES, LINKS AND BOUNDARIES OF SMALL-SCALE GRAIN INITIATIVES IN SOUTHWESTERN BRITISH COLUMBIA

by

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Abstract

Grain related activities have recently appeared in southwestern British Columbia, exhibiting dynamic social histories as a result of links between landscapes, farmers, processors and consumers. Traceable social networks that assist grain's journey from field to plate characterize these social histories, which are contingent upon information about the chain process being shared with consumers. The *depth* of a given social history hinges upon the "social length", or the number of geographically proximate links that contribute to the process. Grain chains with deep social histories help strengthen existing network connections as well as assist in developing new ones. Long social networks contribute to the production of trust and reciprocity, commonly understood as social capital. Challenges facing grain chains in SW BC, including production methods, access to seeds and machinery, marketing strategies and power dynamics have engendered unique models of community-supported grain production.

Keywords: grain chains, short food supply chains, alternative food networks, local food systems, SW BC, social history

Subject Terms: food supply, food industry

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To Demeter and my family

Table of Contents

List of Maps

List of Tables

Glossary

AFN	Alternative Food Networks
BSA	Bakery-Supported Agriculture
CSA	Community Supported Agriculture
CSP	Community Supported Processor
GWP	Global Warming Potential
LCA	Life Cycle Assessment
SFSC	Short Food Supply Chains
TLC	The Land Conservancy

Prelude

I can't help but weave my own personal journey into the narrative of this social research. The data generated and articulated in these pages is an account of my travels and experiences, representing the culmination of three years of theorizing, practicing and researching the phenomenon of small-scale grain initiatives. Four years ago I knew very little about grains, other than what I learned by reading the miller's story in *The Canterbury Tales* in high school. All that changed in the winter of 2006, when during a volunteer internship with the Farm Folk/City Folk Society[1] in Vancouver BC, I was given a simple task: find out about the history of grain production in the Fraser Valley and on Vancouver Island. As was exemplified by the plight of Smith and McKinnon (2007) in "The 100-mile Diet," grain grown in this region is a very hard thing to come by.

After months of digging through dusty boxes in archives, museums and libraries near Vancouver, rigorous internet searches and many conversations, I found out that grain was commonly grown here by settlers as recently as the 1940's. Evidence including variety lists of strains that are all but extinct or at the very least, 'overlooked' in grain farming today, painted a Fraser Valley landscape rich with golden swathes of grain. The municipality of Delta alone produced 6000 tons of combined cereal crops in 1892, with settlers in Chilliwack and Surrey producing 1500 and 1000 tons respectively (Second Report to the Ministry of Agriculture, 1892). Extensive field trials were conducted at the Dominion

[1] www.ffcf.bc.ca

experimental farm in Aggasiz, where rumor has it that the wheat cross that resulted in the Marquis variety was developed (Morrison, 1960). The *Mainland Guardian*, a newspaper from the 1840's, reported 40 to 50 bushels of wheat to the acre between the town of New Westminster and the mouth of the Fraser, an area that is now characterized in part by big box stores, industrial parks, junkyards and car lots.

I then dove into books outlining theories about the origins of food production, introduced myself to the botany of cereal grains, and began to see the vast implications that early agriculture, including grain agriculture, brought to the once nomadic populations of the world; the symbolic and physical bonds of community built around the grain fields, the social, economic, technological and environmental changes which re-ordered parts and patterns of human interaction, the rise and consolidation of political powers, and in many cases the abuse of that power. After internalizing my own theories about grain as an integral component of social and ecological life, I abandoned the archival component and became much more interested in the potential for reviving the industry.

News of a few growers and millers working at this revival in their own ways reached me through my connections at Farm Folk/City Folk. I wanted to be a part of that. I wanted revolution. My mindset at the time told me that in order to write about this, I simply had to abandon the objective researcher position so well touted by early anthropology in favor of a more subjective and participatory approach. I convinced myself that I had to become a part of this experiment, even a few square meters at a time. So on Earth Day in the spring of 2006, I planted a 3m X 2m plot of ground with wheat of an unknown variety that I acquired from a small yellow envelope at a Seedy Saturday event in Vancouver. The grain grew. Growing up on the coast and driving through the prairies only once, at night, this small patch of earth was the first grain field I had ever seen. I watched it grow. I nurtured it,

harvested it, threshed it by hand and with a fan, milled it in a coffee grinder and made two loaves of bread, all the while posting some pictures and my rambling thoughts on a blog under the name of the "local-grain-initiative".[2] It wasn't a very significant achievement. Small lots of cereal grains are actually quite easy to grow and harvest by hand. I would later find out about people in this region growing small patches of grain for more years than I have been alive. It was just that a little yellow envelope and the seeds within it gave birth to stalks of golden wheat that danced on those warm, breezy August nights, changing the course of the next two years of my life.

The following spring I seeded more wheat in a few plots after buying a few sacks of whole grains from Anita's Organic Mill in Chilliwack and a kitchen scale hand crank grinder from a survivalist website based somewhere in the Midwest. Then I set up a table at the Sechelt farmers' market near my home on the Sunshine Coast, processing what I called "hand milled flour blends". It took me 8 long minutes, a sore arm and an unknown amount of sweat to make one pound of flour. In those first months, grossing $16.00 per day meant that my business spoke of little potential for success and undoubtedly *homo economicus*, the rational man, would have likely walked away. But in those days I was driven whole-heartedly by my calling to spread the message of grain, and I viewed the few coins in my box at the end of the day more as donations than as business revenue. My wife and then 1-year-old son accompanied me almost every week, chiming in with an appropriate Amen here and there as the coins dropped into the box. In spite of my less-than-professional set-up and my fire and brimstone vigor, a few people bought some of my coarse flour. One even came back before the summer was out, saying he had never tasted grains like that before. A repeat customer; now I was sold.

[2] www.local-grain-initiative.blogspot.com

As part of my pre-research agenda in the fall of 2007, I attended the first ever "Bread and Wheat Festival" in Victoria, BC organized by seed grower, author, educator and activist Sharon Rempel. Sharon's commitment to a grain rebirth in Southern B.C. is a product of years of experience. Seed and the story that always tags along is a part of Sharon's passionate life's work. In some ways, it is also the proverbial yoke that she has carried for so many years on her own. The festival featured growers selling bags of grain, millers moving bags of flour and showcasing the latest in home milling equipment, local bakeries with tasting stations, lectures, workshops, seeds for sale and loads of networking potential. This festival represented a focus on linking together place-based grain initiatives with local support as well as celebrating the return of Red Fife, a landrace wheat variety, to B.C.'s fields. The festival was met with outstanding success. The work was celebratory, political, critical and artistic. It was the first time I saw the convergence of small projects coalescing into something greater.

The following spring, I seeded more grain, three small plots this time, bought a small 6-in electric stone mill and a faster hand crank that could also grind finer flour, all this in the hopes of 'streamlining' production at the market. The connections I made with farmers enabled me to secure a small supply of 'local' grain, grown in the Fraser Valley and on Vancouver Island. Armed with something that no one else around me had, grain as the missing link in our region's local eating challenge, my customer base grew. On peak market days, I was moving 10 kg to 20 kg a week, telling the story of that grain and preaching about our relations with grain to a congregation of shoppers lining the farmer's market aisle. I preached not an 'end is near' message but rather one about 'the grain is near' and could be 'here' if we open our eyes and our backyards. I ran a number of small participatory workshops for high school and university students, getting them to pound grain in a mortar

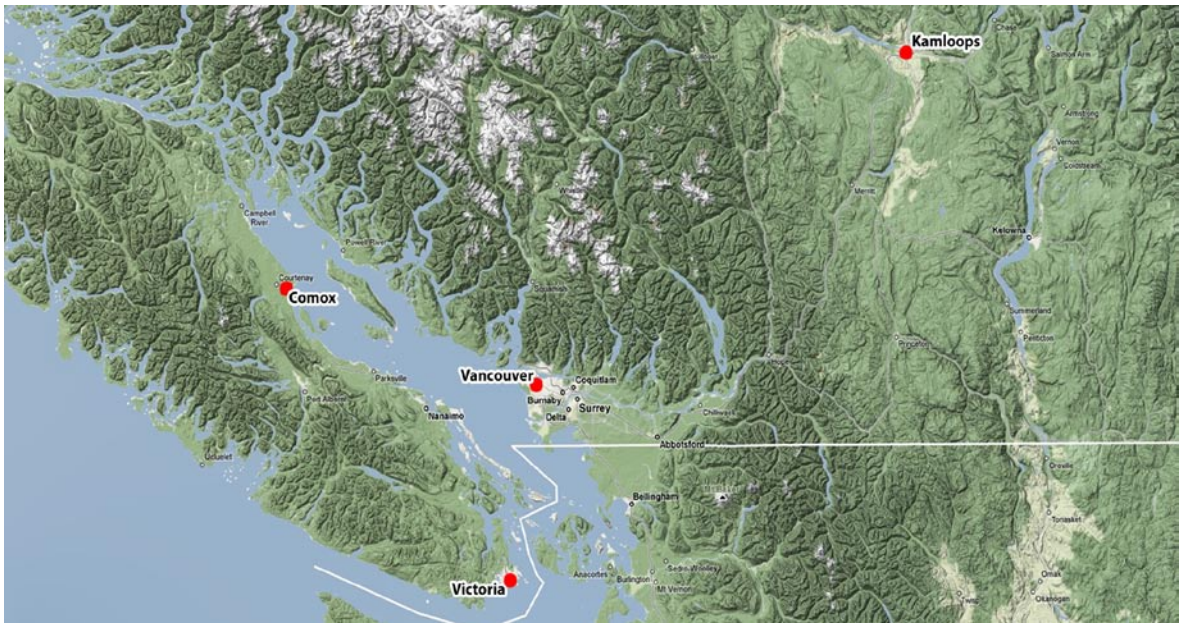
and pestle, grind grains with the hand crank and knead this dough, all the while throwing out a grand narrative about the importance of cereal grains to humanity. The performance was engaging, but due to my baking skills at the time, the bread we created had more in common with the unleavened griddle breads of early farming civilizations than the artisan breads that I so longed for them to taste. But almost every slice got eaten and the students walked away with a picture of grains that extended from that deflated loaf backwards to the very origins of agriculture.

As the days shortened, I harvested a half a pound of seed from my small plots at the same time that grain sales began winding down. But I had plans to last me through the fall and winter. I finally was going to do what I wanted to do when this project moved from the historical to the present day. I was going to travel around, talk to grain growers, millers, bakers and activists about their experiences with grain in the region. And I was going to tell some kind of a story about it.

Methodology: Field Sites, Set and Setting

The target area of my study is the southwestern quadrant of British Columbia, hereafter referred to as SW BC. This region encompasses Vancouver and the Lower Mainland, the Gulf Islands of BC, Vancouver Island, the Sunshine Coast, the Fraser Valley and areas east and northeast of the Fraser Valley extending up through the Nicola valley and into the North Okanagan (see Map 1). Although the original research question about the history of grain production in the Fraser Valley and on Vancouver Island did in fact emerge and was explored within 100-mile limits of Vancouver, during my field site selection, I pushed the conceptual boundaries of this ‘local’ area to include the Fieldstone Granary in Armstrong, B.C. due to their contribution of spelt to many grain chains on the coast.

Map 1. Southwestern British Columbia (SW BC)



Note. Adapted from Google Maps, March 10, 2009.

Halfway through my fieldwork, I travelled further outside of this region to find out more about an interesting initiative elsewhere. Although not in SW BC, the Nelson/Creston grain CSA (approximately 850 km from Vancouver) presented an exciting and innovative look at a model that offered hope in the face of many challenges confronting grain initiatives in SW BC.

The setting changed dramatically depending on where I was; ocean side farms, lashed by the sea breeze rippling over bays connected to the Strait of Georgia, quaint farmsteads set between sloughs with vistas of towering mountains as the Fraser Valley begins to narrow into the mountains travelling eastward, the dry, flat plains of the North Okanagan, scattered with sparse stands of spruce and pine. From kitchens with cast iron hand crank mills to complexes where giant machines pounded, rattled and hummed while grain danced on tables or got crushed into billions of particles of flour. Whether antique home ovens, wood-fired brick or cob ovens or conventional bakery units, the smell of baked

goods excited my senses just the same. The participants in this study were engaged in similar activities but on different scales and often with different intentions. The landscapes and field sites varied significantly as well.

This qualitative study was carried out over the late summer and early autumn of 2008 as a multi-sited ethnography. Multi-sited ethnography explores "sites that are connected to one another in such ways that the relationship between them are as important for this formulation as the relationships within them; the fields are not some mere collection of local units" (Hannerz, 2003, p. 362). In other words, the links that allow grain products as well as knowledge to be shared between various sites demand as much analysis as the individual nodes within the network. This study investigates the operations of actors at localized nodes, as well as the role of linkages to other relevant and related field sites.

Throughout the course of my fieldwork, I corresponded with a number of actors located in SW BC who are involved in the experimentation, production, promotion, processing and retailing of cereal grains. Some of these field sites were chosen at the outset on the basis of their location and the sizes of their operations**,** while I was directed to other potential participants through networking during the study itself. In order to broaden the range of my sample, a few participants from each of the main links in the grain chains were selected; growers, millers, bakers. Several activists and educators were also interviewed. Consumers of local grain products were not interviewed although a number of actors involved in retailing local grain products spoke from their experience about high levels of consumer demand.

Fourteen semi-structured interviews were conducted, in addition to participant observation at 12 sites. None of the participants I approached declined an interview or a meeting. In anticipation of potential issues surrounding confidentiality within this small circle

of participants, I developed a design for consent in which actors were given the choice to be identified. In order to share their thoughts and advance their personal or organizational agendas, I offered to safeguard identities in order to allow actors the ability to speak freely without fear of their reputation being damaged. While both options were available, every participant gave me written or verbal consent to use their names, business names and/or organizational titles in the final report.

Participants were asked questions about their role(s) in the grain chains, their connections to other links in the larger grain network, motivations for becoming involved in grain related activities, and thoughts on the successes and challenges of these initiatives. I also queried participants about their conceptions of the 'local' with regards to grain. The richness and diversity of the responses that were gathered, as well participant observation and experiences over the years, have contributed to the findings in this study.

In addition I also conducted many informal interviews, attended a variety of public lectures and speeches, took several mill tours, drove a combine, cleaned some grain, watched public presentations at farmers' markets, marveled at mounds of dough rising in the warmth of bakeries, shared meals with the excited public and was gifted sacks or pails of whole grains in many of the places I went. In addition to travelling for curiosity and research, I ended up travelling as a messenger in some sense, carrying knowledge, news and greetings (and in some cases, the staff of life itself) to actors in different localized nodes.

I found that almost half of the participants interviewed held dual roles such as grower/miller, miller/baker or grower/activist. On another note, while none of the millers or bakers in this study are exclusively using grain grown in SW BC, many of the processing initiatives that were selected are in fact working towards increasing their supply of local

grains through network connections, direct relationships with farmers, through contract growing arrangements and even by purchasing Community Supported Agriculture (CSA) shares.

All but a few of the formal interviews were tape-recorded, transcribed and coded for key themes. Extensive field notes were recorded at many sites and photographic documentation was also used. The common themes emerging from early interviews and noted observations informed the development of later, more specific research questions.

Finding Grain Chains in SW BC

If you want to buy some local grain, you can walk into a few mill-bakeries on Vancouver Island and on the right days of the week, if it's not already sold out, buy some twenty mile or thirty mile bread; maybe even a 4.92 km loaf if you are lucky. With the right connections you may be able to purchase a few delicacies made with local grains milled by hand in the Salt Spring Island village of Ganges. You may stumble upon a few loaves at a table during an abundance festival on little Lasqueti Island. Throughout the summer, you could score a kilo or two of flour at one of the Sunshine Coast farmers' market milling operations, or buy a loaf of bread at a Duncan market. The popular Roost Bakery on Vancouver Island farms and mills its own grain right out the back and I am certain that there are more places that I do not know about. Despite this grain flowing into the region's food stream, the fact of the matter is that at the present moment, small-scale grain initiatives in SW BC cannot meet but a fraction of a percent, if that, of the total grain demand in the region. But the quest for food security is not what makes these initiatives and these projects and chains interesting objects of analysis. There is something more.

In summary, this thesis set out to explore how various independent actors and landscapes are linked together, and how these links contribute to the strength of emerging grain chains in SW BC. This thesis argues that while moving grain from fields to plates, grain chains in SW BC produce unique social histories as a result of links forming between landscapes, farmers, processors and consumers. A given social history is the result of actors sharing knowledge of the various, traceable stages in a local supply chain. While the social history is partly contingent upon information about the process and the product being shared with consumers often via face-to-face transactions, the *depth* of a given social history also hinges upon the "social length", the number of geographically proximate links which contribute different local layers to the process. In addition to helping story a product and a process, deep social histories help strengthen existing connections and inspire new connections within the larger grain network. As such, deep social histories are active agents in building social capital between different actors at different localized nodes. Overall, social histories assist grain chains in providing information about the conditions of production and processing as well as allowing actors to read and understand the social elements of a given exchange process.

In response to numerous challenges to the production of local grain in SW BC, including debates around production methods, access to seeds and machinery, pricing schemes, marketing strategies and power dynamics, certain unique models are emerging. These unique models including equipment sharing cooperatives, Community Supported Agriculture (CSA) arrangements, contract-growing operations, Bakery Supported Agriculture (BSA) initiatives, community supported processor (CSP) programs and the development of "community seed banks" (Rempel, 2007) are attempting to dismantle or help overcome such barriers.

The structure of this thesis is as follows: In Chapter 1, an overview of the role of conventional grain chains and alternative food systems is outlined. The theoretical concept of social history is explained and applied to several examples from the region. Employing this theoretical framework, Chapter 2 offers insight into the specifics of particular grain chains in SW BC. Chapter 3 outlines some of the many challenges facing grain initiatives in SW BC while Chapter 4 demonstrates how one particular grain initiative in BC responds to these challenges, using an in-depth case study. Chapter 5 offers some conclusions and recommendations for the future.

Chapter 1.

Supply Chains, Value Chains and the Social History of Grain Chains

1.1. Grain is moving

Grain is moving from farmers to tables every day, most of it through large complex exchange systems that must appear, if they do at all, as a mystery to most consumers. For the last few hundred years, international trade has been integral to the global grain industry (Antle & Smith, 1999) and as such the global grain trade has reached epic proportions with cereal production doubling in the last 40 years, and expected to double again by 2050 in order to meet the food demands of an increasing global population (Tillman et al., 2002). Wheat in particular is one of the most important food crops in the human diet. Increases in global wheat production since the 1950's are a result of higher yields stemming largely from technological and scientific advances in machinery, transport, post harvest storage and handling techniques as well as seed breeding. 2009 is forecasted to bring in a record 2,272 million tons of cereal grains worldwide with wheat production alone hovering around 680 million tons (FAO, 2009), accounting for approximately 30% of the world's overall cereal grain production. With these staggering numbers in mind, the huge role of global grain chains cannot be overlooked.

In this study, the concept of a grain chain is used to refer to the processes of grain moving from fields to processors, sales channels and consumers. The grain chain is made

up of landscapes, actors, technology and the relationships between them. Grains move through “a complex set of relationships in the marketing chain” which “…provides important services that change the time, space and form dimensions” (Antle & Smith, 1999, p. 14). Since grain needs to be planted and harvested seasonally, cleaned and then stored, milled and baked in order to reach the consumption stage, the concept of a grain chain captures the complete exchange dynamics of a given grain/flour/baking process. The grain chain concept at a general level helps conceptualize the necessary ‘transactions’ or ‘exchanges’ that link many of these initiatives together. Although each operation is technically *independent*, the required infrastructure for getting grain from production to consumption is characterized by a process that makes links in a grain chain essentially *dependant* on one another.

1.2. Conventional grain chains

Canada produces 2.32% of the world’s cereal grain (FAO, 2006) importing 3.37 million metric tons of maize, bread, pastry and breakfast cereal (FAO, 2004). However, as a net exporter of over 16 million metric tons of wheat and barley in 2004 (FAO, 2006), Canada’s role in the global grain trade is noteworthy. The grain and oilseed industry in Canada is expected to reach a record 68.1 million tons in 2008-2009, up from 60.7 million tons in 2007-2008 (Agriculture and Agri-food Canada). Canada has a reported 28 million hectares in production of wheat alone (Statistics Canada, 2008). Most of this grain is produced in Manitoba, Saskatchewan and Alberta. This means that the vast majority of the grain consumed in other provinces is travelling to us from elsewhere.

While large debates are active around the future of its marketing role in the Canadian grain industry, at the present time the Canadian Wheat Board (CWB),

established in 1935, plays one of the most integral roles in this system. The CWB is a farmer-controlled organization established by the Canadian Wheat Board Act, which “gives the CWB sole marketing authority for wheat and barley produced by the 75,000 grain farmers of western Canada for export and domestic human consumption.” The CWB holds 20% of the international grain market (CWB, 2009). This production, transport and handling system emphasizes uniformity, safety and quality. Farmers deliver their harvests to a terminal where their grain is graded and then pooled. Only registered varieties approved by contract are accepted. In addition to providing for a portion of the domestic market, this pooled grain is exported to over 70 countries (CWB, 2009). In essence, the CWB takes over the marketing responsibility, acting as the sole selling authority for both wheat and barley for export as well as domestic markets (Veeman, 1998), leaving farmers with a focus on growing grain. Since most of the grain in the international market has low protein and low gluten counts, Canada holds a key place in the market for producing a variety of *Hard Spring Wheat* (e.g., CRSW) with “prime milling and baking characteristics” (Measner, 2007, p. 36) separating Canadian grain from most global grain commodities and allowing them a larger share of the international market. The CWB establishes prices and markets and “…payments to producers are based on a system of annual price pools that average net sales returns for the major classes of grain, adjusted by grade and location” (Veeman, 1998, p. 3). In a sense, this system works quite smoothly; ‘controlled’ by a complex machinery of farmers, facilities, chemicals, transport and pricing that exists just behind the scenes. For the average consumer, however, this type of grain process is essentially out of *our* control.

1.3. Consolidation and control

While the global production of cereal grains is predicted to rise, increasing consolidation of the industry by a few key players accompanies this trend. Through horizontal integration, expanding into the same level of the food system (i.e., production) and vertical integration, that is expanding “upstream or downstream” (i.e., owning production, processing and distribution channels) the power of transnational corporations to dominate, consolidate and control food systems is happening at a rapid pace (Hendrickson & Hefferean, 2002). At the present time, just five private companies control 80% of the global grain trade (Pugh, 2007) and “are very integrated up and down the supply chain” (Measner, 2007, p. 30) controlling seed supplies, agro-chemicals, grain elevators for storage, flour milling facilities and food processing outlets. Measner (2007) points out that in Canada in particular, milling companies, malting companies, primary handling companies, transport concentration and increases in farm size are all experiencing a similar trend toward consolidation and foreign control. In one sense, it is the required links in the grain chain process that can enable such concentration and consolidation.

The contention that the CWB is “outdated” and is simply preventing grain farmers from “shouldering their way into the open market and capturing lucrative returns” (Pugh, 2007, p. 9) *can* be seen as another form of consolidation and control. However, according to its supporters (Pugh, 2007; McLaughlin, 2007; Measner, 2007), CWB operations act as a means to counter such a trend. The CWB acts as a barrier to increasing corporate control over all aspects of the grain industry through its cooperative marketing strength and its influence of key parts of the Canadian grain sector. Furthermore, it helps separate high quality Canadian grain from “undifferentiated” commodities through quality, marketing and labelling schemes. The consistency, identity and quality help build trust and social capital

between contributing farmers and consumers (McLaughlin, 2007). The focus on quality and consistency has earned the confidence of customers around the world (Pugh, 2007).

Whether they are global, national or local in scope, almost all cereal crops reach consumers via a chain-linked process. At the present time, consumers face “the complexity of global agri-food systems that link together diverse people, places and processes through product flows and multiple intermediaries” (Lowe, Phillipson, & Lee, 2008, p. 227). Since each link contributes something to the process and the product, a study of grain chains draws some important concepts from traditional value chain research.

1.4. Value chain research

A value chain can be defined as follows:

> The value chain describes the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use...As can be seen from this, production *per se* is only one of a number of value added links. Moreover, there is a range of activities within each link of the chain. (Kaplinksy, 2000, p. 121)

Studying supply chains or value chains most often employs a strictly economic lens. The focus on each component of the chain is important because each link has an impact on cost and the objective of good supply chain management is to be “efficient and cost effective across the entire system” (Simchi-Levi, Kaminsky, & Simchi-Levi, 2000, p. 2). Although the value chain concept emerged as a means to measure economic competency and outline the roles of other actors in increasing a company’s competitiveness, a general sense of the concept “indicates activities that add value to a product or a service” (Block et al., 2008, p. 381). In some cases, value chains are seen as active agents in the production

of social networks, but the primary emphasis is still directed at linking operations together in order to “maximize efficiency and effectiveness and drive out unnecessary cost” (Code, 2009). While there is a focus on the economic value produced by a given supply or value chain, such analysis must also explore the potential energy that is drawn from within the larger “production network”. The production network can be defined as that “which maps both the vertical and horizontal links between actors, recognizing that certain value chains often share common economic actors and are dynamic in the fact that they are reused and reconfigured on an ongoing basis”. This distinction offers a glimpse into the particular related activities of key actors, keeping in mind that the production network is much larger and more complex than a given value chain (Sturgeon, 2001, p. 6). With regards to food chains, Fine (1994) claims, “the passage of food from farm to mouth comprises a sequence of distinct activities that are none the less, structurally bound into a unified whole that is integrated with other economic activity…” (p. 522). These “distinct” yet “unified” activities assist in recognizing that the operations of individual chains are part of a larger whole. Overall, value chain or supply chain research focuses its attention on the economic benefits awarded to different actors at different nodes within the chain, and the economic advantages of such relationships to the chain as a whole. In the case of food chains in particular, while not overlooking the economic exchanges inherent in supply chains, other theoretical frameworks draw attention to the *multiple* benefits of linked actors and processes.

1.5. Alternative food networks and short food supply chains

Although the influence of capital intensive global agribusiness firms can make change seem impossible, Hendrickson and Heffernan (2002) suggest that there are spaces

for alternative food systems to emerge, spaces that a consolidated and globalized agribusiness cannot 'guard'. Large firms are unable to produce for "smaller, more differentiated markets", emerging niche markets or "food fads" (p. 360).

> In our view, these vulnerabilities are exactly the place where farmers, workers, consumers, and communities need to position alternatives. To be effective these alternatives must be personalized and sustainable and propose a new vision, a vision of authentic social, economic and ecological relationships between all actors in the food system. (Hendrickson & Heffernan, 2002, p. 361).

At a broad level, categorizations such as *alternative food systems* investigate the ways that communities seek to "re-socialize and re-spatialize food" (Renting, Marsden, & Banks, 2003, p. 398), by offering social and local dimensions to food production and consumption. In reaction to the distancing process championed by industrial/global food systems, Short Food Supply Chains (SFSC) have arisen as a way to conceive of transformed links between various points on the food system. Since the markets that accompany SFSC's are "socially constructed", rather than being governed solely by traditional market forces, SFSC's are a product of "…the active construction of networks by various actors in the agro-food chain such as farmers, food processors, wholesalers, retailers, and consumers" (Renting et al., 2003, p. 400). Marsden et al. (2005) outline three types of SFSC. These are:

> *Face-to-face:* where a consumer purchases a product direct from the producer/processor on a face-to-face basis. Authenticity and trust are mediated through personal interaction. The Internet also now presents opportunities for a variant of face-to-face contact through on-line trading and web pages.
>
> *Spatial proximity:* products are produced and retailed in the specific region (or place) of production, and consumers are made aware of the 'local' nature of the product at the point of retail.
>
> *Spatially extended:* where value and meaning laden information about the place of production and those producing the food is translated to consumers

> who are outside of the region of production itself and who may have no personal experience of that region. (pp. 426-427)

All of these manifestations offer “options” to consumers, and allow consumers a greater degree of control over their consumption choices based on “knowledge, experience or perceived imagery” (Marsden et al., 2005, p. 425). However, trust is a key component of such supply chains. For trust to accompany the process, “responsibility and community at some level” (McLaughlin, 2007, p. 24) must be present. The choices and exchange systems offered by SFSC require high levels of trust, connection and communication. The focus on embedded information and traceability is what accords SFSC their difference. In order to be able to make choices about the process and the products, consumers must be aware of direct connections within the supply chains and/or trust labelling and retailer communication.

Although the ‘social capital’ terminology is highly contested (Portes, 2001; Carr, 2004) “…since its inception, the social capital concept has been associated with local community relationships” (Carr, 2004, p. 44). Seen in this light, the general understanding of it “captures the idea that social bonds and social norms are an important part of the basis for sustainable livelihoods” (Pretty & Ward, 2001, p. 210). The four components of social capital outlined by Pretty and Ward all contribute to the production of community relationships in their own way. These are: (a) trust, (b) reciprocity and exchanges, (c) common rules, norms, and sanctions and (d) connectedness, networks and groups (p. 211). All of these elements emphasize the obligations people feel towards participation in partnerships and relationships of exchange. Block et al. (2008) suggests that values such as “trust, cooperation and inclusiveness…combined with goals that are ethical, could lead

to projects that act as models for ways in which values could be imbued through a food system" (p. 382).

The social 'value' of embedded information, face-to-face exchanges, and the required emphasis placed on trust, communication and social relationships in SFSC offers a different focus than the bottom line 'cost effectiveness' of each exchange transaction in traditional value chain studies. Hinrichs (2000) points out that "marketness and instrumentalism" (price and individual motivations) have definite influence over the "social embeddedness" of a food transaction, noting that "…local level ties and connections do not, after all, occur in some social vacuum, untouched by the larger workings of the world" (p. 301). However, the attention given to face-to-face exchange here is not meant to say that economic or personal gains are not contributing factors to an actor's participation in local food system arrangements. It is simply a suggestion that exploring varying levels of social exchanges in food transactions (undoubtedly influenced on different levels by price and personal gain) is a departure from a traditional economic perspective of value. Sage (2003) found that in some alternative food networks there is "a definite moral content to transactions beyond the exchange of products for cash" (p. 50). Since economic value is often tied to traditional notions of viability, broadening understandings of value to include certain social elements requires that understandings of viability also be expanded.

1.6. Social, ecological and economic viability

The viability of a given farm or other enterprise in the food system is often measured in economic terms. Higgins (2002) notes that the 'problem' of low-income-earning farm operations brought the central role of economic viability to bear as a key measurement tool. In order to 'account' for such viability, factors such as farm income and rural indebtedness

were collected and tallied. Specific contextual factors combined with the discourse of agricultural economists enabled “a distinct low income problem to be possible in which some farmers were seen as a threat to their own future viability” (p. 372). Governing such viability issues became a key concern and after calculations were applied, farms that were not economically viable based on a standard equation were often encouraged to leave the industry (Higgins, 2002). When viewed in solely economic terms, the small family farm is often seen as “an obstacle to overcome in the process of economic development” (Rosset, 2000, p. 77).

To challenge economic viability as the dominant measurement tool, exploring different forms of viability with regards to food chain links is particularly pertinent. Despite being “nested within global agro-industrialized circuits of capital and commodity flows” Jaroz (2000) suggests that social relations of cooperation and trust are key things to consider when assessing the “viability and vibrancy of rural food networks” (p. 279). The contention that small farms are “multi-functional” also needs to be taken into account. In addition to protecting agrobiodiversity and green space, farms provide a number of other social benefits. As Rossett argues:

> More bushels of grain is not the only goal of most farm production; farm resources must also generate wealth for the overall improvement of rural life including better housing, education, health services, transportation, local business diversification, and more recreational and cultural opportunities.
>
> (Rossett, 2000, p. 79)

Taking a multi-functional approach towards viability is particularly relevant to local grain chains analyzed in this thesis. While not overlooking the need to gauge and assess the economic viability of such operations, focusing on the transition to sustainable production, processing and transport methods to secure a sense of long-term “ecological viability” is equally important. Furthermore, directing attention towards the continued

production of strong social networks to assure that such grain chains are ‘socially viable’ is another key project for these operations.

1.7. A lesson in social history

While traditional value chain research explores the economic advantages rewarded to different supply chain actors and the supply chain as a whole and SFSC focus on embedded information as it assists with traceability in the supply chain, neither of these models specifically considers the role of chain actors and the length of the chain itself as it pertains to the production of unique social histories. For the purposes of this study, the depth or intensity of a given social history is contingent upon three key issues.

The first is the number of times that a grain product is handled by different actors between different geographically proximate nodes. These geographically proximate nodes are understood as different ‘local layers’ and the ‘social length’ of a given grain chain is contingent upon the number of different chain actors involved. The second criterion involves the number of face-to-face exchanges, or relationships mediated by trust, open communication and reciprocity occurring at and between these nodes. Sage (2003) suggests, “the ability to construct value and meaning from the product establishes the basis for a relationship of regard” (p. 49). These relations of regard are integral to the production of a given social history. The third component entails the ability of retailers to communicate a traceable process at the point of sale. This can occur through direct conversation or through signage or labelling.

Grain chains in SW BC can be accurately conceived of as SFSC since they incorporate all three of elements of short food supply chains as defined by Marsden (2005). There are many “face-to-face” exchanges in most of the chains observed. In many of these

cases and others, the contributing links are “spatially proximate”, separated by very small distances when compared to the distance covered by conventional supply chains. Even in the case of initiatives relying on distributors to begin the process, chains that could be characterized as “spatially extended”, the information about the product is available at the point of pick up, throughout the following processing stages, and in most cases, from the retailer to the consumer as well.

A crucial contention is that in most alternative supply chains, “the chain is usually shorter in terms of the number of chain actors” (Forsman & Pannenan, 2000, p. 6) and that in many cases, “the shortening of food chains is implicit to re-worked producer consumer relations…” (Feagan, 2007, p. 29). With regards to SFSC in particular, Marsden et al. (2005) claim it is not the number of times a product is handled or the distance over which it has travelled that is critical, but that the focus is instead on the product reaching consumers embedded with information.

Based on this information, it is clear that SFSC contribute an appropriate framework for criteria two and three outlined above. However, examining the role of *local layers and social length as a means to produce, map and measure these unique social histories* is an important theoretical departure from either value chain or short food supply chain research. For the purposes of this paper and the theoretical framework being used for analysis of the data, the number of times that the product is handled at different geographically proximate nodes becomes a critical component in relation to the production of deep social histories.

1.8. The social length and strength of short food supply chains

In addition to helping move a given product from its conception to its consumption, supply chains can be characterized in part by the number of chain actors involved. Each actor involved assists the chain process and at the same time lengthens the supply chain socially. In order to map the depth of a given social history, one must examine each chain on its own. In order to simplify this process, I have developed a 6-quadrant map that can be used to approximately locate specific exchanges with regards to their local layers and their social length.

Table 1. The 6-quadrant Map

Totally local: Production, processing, retailing all happen in a given region.	Locally subsidized: Distribution and processing activities are local although production is not.	Totally imported: Retailing activities happen in a local area but production and processing are done elsewhere.
Complex social history: The product moves via many different links (socially long) and through all face-to-face exchanges. Emphasis placed on communicating the process is high.	Layered social history: Process moves via several different links (socially layered) and involves a few face-to-face exchanges. Emphasis placed on communication is important but may not happen in every transaction.	Simple social history: The product moves via only one link (socially short) and is often sold without any reference to the necessary links involved.

It is imperative to note that the depth of a given social history is not meant to quantify the 'value' of any one social relationship in the chain since it is clear that many 'socially short' transactions may be quite rich in their depth. The social history concept utilized here is contingent upon the three criteria noted above. The qualifiers of "short, layered and long" are meant avoid such a judgment, drawing attention instead to the number of links involved. These links are made up of different "local layers" which contribute to this process.

1.9. The role of local layers

In order to understand the role of different local layers, a brief exploration of the different ways that the local can be conceptualized is required. Local food systems appeal to notions of 'local', 'place' and 'community' "which are commonly conflated as some form of localized, geographic space" (Feagan, 2007, p. 29). However, recent scholarship has revealed that traditional understandings of the local as *only* "geographically bounded" (Buller & Morris, 2004) *can* produce a "defence localism" (Winter, 2003) as part of a larger shift towards an "un-reflexive localism", which ignores a range of power dynamics and politics that can accompany a strictly geographical interpretation of the local (Dupuis & Goodman, 2005). These politics could include such things as hegemony, domination or exclusion (Sefang, 2006) resulting from the creation and protection of demarcated local food regions, essentially posing questions such as "…who is in and who is out?" (Feagan, 2007, p. 29).

However, the idea that multiple factors and perceptions influence how producers and consumers conceptualize the idea of the local food systems (Selfa & Qazi, 2005) is particularly relevant here. Taking this approach requires moving from a one-dimensional view of the local (either it was grown locally or not) to a multi-dimensional view, recognizing that there are many distinct local layers (local production, local processing of many levels and local retailing) that contribute to the grain chain process. Place-specific understandings given by actors themselves may challenge traditional understandings of the local as defined in only geographically proximate terms (Selfa & Qazi, 2005). As Berthold-Bond (2000) notes, "…the local is relational. It comes into being as a response of the inhabitants to that landscape in which they dwell" (p. 17). This implies that producers, processors and consumers may understand the local in distinct ways. The agricultural history of the region,

proximity to markets, other food procurement policies and the importance put on “quality” and “freshness” all have a major impact on how actors within these food networks define and actualize their participation in local food arrangements (Selfa & Qazi, 2005). The local layers in the grain chains under study could include such things as sites of production, cleaning facilities, mill locations, bakeries and sales outlets which each contribute their own local layer to the grain chain process.

Although many Alternative Food Networks (AFN) get branded together, the importance of the links involved in getting grain to consumers merits specific exploration of such arrangements**.** Despite the overarching categorization of “alternative food networks”, grouping them uncritically “undermines the depth and diversity of this growing sector and does not do credit to the array of creative/innovative relationships orchestrated through new producer consumer partnerships” (Venn & Kneafsey, 2006, p. 256). Their study, as well as others (i.e., Holloway & Kneafsey, 2007), suggests exploring the specific and unique patterns of exchange operating underneath the broad heading of AFNs.

Although insightful in their critique of broad AFN categorizations, both of these studies do not specifically consider the impacts of relationships between typical *producer-consumer* exchanges*.* However, their focus on separating these ‘alternative systems’ into more contextually specific arrangements is integral when it comes to analyzing the diverse and dynamic characteristics of grain chains. Within each chain, each pattern of exchange is layered. This understanding leads to the exploration of other links present, links that are not identified by the dominant and most often analyzed, producer-consumer relationship.

Within the context of alternative grain chains specifically, other links such as the producer to non-consumer processor (i.e., grower-miller) and processor to consumer (i.e., miller/baker-consumer) are crucial to the maintenance of these networks. Since grain,

unlike many crops, requires several levels of processing before it is consumed, these other links cannot be overlooked. So, the relative complexity of the process itself, the necessary stages (links in the grain system) provide multiple layers, or what could be considered 'opportunities' for exploring this particular alternative food system with specific attention given to the array of other exchange relationships located *between* producers and consumers.

Although the various local layers are important in this study, since each local layer has a social actor or actors behind it, the local layers are integral as they pertain to the production of social length. Through the multi-stage process of moving grain from field to plate each grain chain builds a distinct social exchange network that accompanies the final product. This social exchange network can be characterized as the social history of a given grain chain.

1.10. A mapping exercise

In applying the 6-quadrant map to specific exchange processes, the resulting combinations are what make this model particularly interesting. A few examples will help outline its application. The first is an excerpt from my interview with John McKenzie, the owner of Anita's Organic Mill in Chilliwack, B.C.

> J: This farmer approached us from Lynden, WA,[3] and he has certified organic acres, the wheat looks great, it tastes great, we are just getting the specs made up and he's got 60 tons of it.
>
> C: If you were to buy that, would you market it as being a local wheat? Do you make a conscious effort to tell people where the grains are coming from?

[3] Lynden is a small town just across the US border in Washington State, less than 50 km from Anita's mill.

> J: Um, well. I guess the short answer is, yes, I would. Unfortunately, I would say that 90% of my sales of soft wheat flour, pastry flour goes into bakeries and so it just gets ripped open and dumped in….On the grocery side I definitely can market that, yeah. With Whole Foods, like with the Whole Foods piece on the grocery, yeah, I would do a whole thing on where the wheat was from. Absolutely.
>
> C: I guess it would be up to those individual bakeries if they want to continue that marketing further. Here's a pastry that we got from wheat that was grown in say, Washington.
>
> J: But to be honest with you, I would probably mill all that 60 tons of wheat and about 90% of it would get milled up and sent to a food production company in bulk totes and dumped in to make food; cereal or granola bars or what have you. The odds of that happening are higher than it getting sold in one-kilogram bags through Whole Foods.
>
> (Interview 2, Sept 8, 2008)

Although a small percentage of this grain would carry its story through to consumers, in this instance, you could consume grain products that were 'totally local' on the upper level, but that produced only a layered or a simple social history with regards to the links in the processing and retailing elements of the grain chain. The story of this totally local grain is cut short by the production company stage. The origins of the grain and the local milling layer are not shared with consumers. In a sense, the local character of this grain is erased because the process is not communicated. This exemplifies the contention that 'totally local' products cannot always be equated with the production of deep or complex social histories.

By attempting to separate the local dimensions of a product from its social dimensions, this theoretical framework avoids an important pitfall. As Albo (2006) and others have noted, the narrow focus on the "small scale, local or regional" dimensions mean that projects have the tendency to "project the local as the ideal scale" (p. 359). This is what Born and Purcell (2006) refer to as "the local trap". According to Born and Purcell

(2006) “the local trap refers to the tendency of food activists and researchers to *assume* something inherent about the local scale” (p. 195, italics added). The idea that the local scale is taken for granted as the end in itself, rather than a strategy or a means to an end (a more socially just food system, a more ecologically sustainable food system or whatever that desired end may be) forces researchers and food planners into a similar trap as the one identified by Hinrichs (2000). The tendency to “conflate spatial relations with social relations” (p. 301) makes the local scale imply a socially enacted food system. While there is evidence that local dimensions often help socialize components of the grain chains, it cannot be *assumed* as such. By examining the process of specific grain chains with the 6-quadrant map in mind, one may find evidence of this connection, or one may not**.**

Returning to the map, the following example from my fieldwork experience exemplifies another interesting combination.

> If any customers ask Nina Raginsky, the flair and energy behind the home based Little Red Hen Bakery on Salt Spring Island, about some of the wheat used in her bread, there is definitely a story to tell. When I arrived for our interview, we had already arranged for me to take some grain to Vancouver Island to give to Michael Doehnel, who she calls the hummeller, or the ‘one who takes the awns[4] off of grains’. In order to bring me up to speed and share the significance of this grain, Nina recounts the local and social history of this grain: a local resident gave the seed to Malcolm Bond to grow on the north side of Salt Spring Island. Malcolm planted it at his Farm Bon Acres and successfully harvested a few hundred pounds of this unknown variety of wheat and gave some to Nina. Now I enter the story and become a part of this wheat’s ‘social history’ when it travels in the trunk of my car to Michael’s garage. Michael will clean it with his machinery and then this grain is moving again, bound for the True Grain Mill in Cowichan Bay where Bruce will turn it into flour. This flour will then be sent back to Nina for use in the 12 loaves of bread that she sells a week. (Field notes, October 7, 2008)

In the case of this wheat, someone will consume totally local grain that also has a deep social history because there were seven different exchanges involved in putting that

[4] A hair or a bristle that grows on many grasses.

wheat in some of Nina's breads. Knowing Nina, she will probably tell this interesting story to her consumers. Many of the exchanges involve face-to-face transactions while others are based on trust and reciprocity that have developed over time through conversations and exchanges. This exchange process is 'long' in the sense that it has more links, but as the 6-quadrant map illustrates, each geographically proximate link adds a local layer and thus depth to the overall process. As this example illustrates, a totally local grain chain that also produces a complex social history is often one that is spatially short (i.e., all links are in proximate regions), yet at the same time it is socially long (multiple different links contribute to the process).

Other examples of grain chains with layered social histories would include organic spelt growers in Armstrong having their grain cleaned just down the road at the Fieldstone Granary, that cleaned grain sent down to Anita's Mill, and the milled spelt flour making its way to a whole range of bakeries or farmers' market baking stands in SW BC. Another example is southern Vancouver Island wheat milled in Roberts Creek, sold to a baker in the nearby town of Gibsons who then delivers these sourdough local loaves by bicycle to a group of customers who have signed up for a month of wholesome, fresh bread. As long as traceability is preserved and the emphasis placed on communicating this chain linked process is high, such grain chains would meet the requirements for layered social histories.

By employing this framework, even small bakers and millers who are locally processing grains, (whose exact origins are only known through labelling or direct communication with a distributor), are nevertheless active agents in using *some* local layers to increase the social histories of the products they sell. In these types of activities for example, the six-quadrant map would reveal that the process and the product are most often "locally subsidized" but have the potential to move beyond a simple social history. The

social history of the process and the product can be ‘built up’ depending on the communication, traceability and number of links involved.

1.11. The stories of grain chains in SW BC

In SW BC, the majority of the local grain that is retailed to consumers travels through a grain chain. From farmer to cleaner, cleaner to miller, miller to baker, face-to-face exchanges often occur until a certain moment when the grain ‘goes public’. This could mean it gets sold as flour to 10 or 20 customers at a farmers’ market or becomes local bread for a hundred weekend loaves at a bakery. But because there is so little local grain at the moment (see Chapter 2), the point at which the grain goes public carries with it an important responsibility. Consumer demand and dynamic grain chains are putting local grain products in the hands of the public. More importantly, they put it there with *a specific social history that can fluctuate in intensity*.

Penker’s (2006) study of conventional bread chains in Austria found that while most of the links that brought grain from fields to sales outlets were in geographically proximate regions, most retailers didn’t communicate this process to consumers. Conversely, in the case of SW BC and the alternative grain chains in operation, many of the people retailing these products pass on those qualities with the final product. That place-person-process is a key ingredient in how that grain came to be in the hands of retailers. In one sense, grain chains are helping to get local grains, or locally-processed grains to local consumers. But at the same time, they are essentially telling their own story to interested consumers, making that end product their venue and their vehicle**.**

In conclusion, a given social history is the product of linked actors who communicate the stages in a traceable food supply chain with each other and with consumers at the point

of sale. Deep social histories, produced by those chains that involve multiple actors at different localized nodes contribute to social capital by: (a) increasing trust and reciprocity between actors, (b) making the local layers visible, and (c) by strengthening existing connections and helping build new ones within local food networks and short food supply chains.

Chapter 2.

The Re-Emergence of Grain Chains in SW BC

> The sun is intense, even as it begins its descent towards the tops of the mountains. The rattle and whir of the spinning header overpowers the sounds of nature, doing its job though, throwing straw, seeds and chaff up into the air. For a moment the seeds are suspended, caught somewhere between plant and harvest. I gaze out into the field ahead and see the silhouette of a young girl dancing amongst the short stalks of wheat. I laugh to myself thinking this may be a common sight on the prairies but a unique experience for this child here. She gathers up the straw and piles it high, creating shade from the late summer sun and hiding beneath. Yelling over the roar of the engine, Jim asks me if I want to have a turn driving. I take my place in the driver's seat and rest my hands on the steering wheel of the 1950's faded red Massey-Harris combine, focusing on the pass ahead while trying to keep a steady hand and cut a straight edge as we slowly move from one end of the field to the other. The sound of the cut seed pouring out into the hopper behind me keeps me glancing backwards and I can feel the smile stretching across my face. Keep looking ahead. Keep it straight. Small movements. After three years of interest in grain, I am finally engaged, trying to keep a steady line as I participate in the seasonal reward of farming; a real harvest. Jim smiles at me, shouting over the noise of the combine that I am doing pretty well. Reveling in this pivotal moment, a huge smile breaks across my face.
>
> (Harvest notes from Aggasiz, B.C., early September, 2008)

On a quaint farmstead just outside of Aggasiz, Jim grows wheat**.** Jim's farm, along with many others, is located in the southwest region of BC, the most agriculturally diverse region in the province. With 42% of farms located in the southwest, this region accounts for more than 62% of gross farm sales in the region despite only encompassing 6% of the agricultural land in the province (BC Ministry of Agriculutre, 2001). However, grain and cereal crops are a scarce component of overall food production in the southwest, accounting for only 0.05% of regional farm receipts and encompassing only 0.04% of

farmland use in 2001 (BC Ministry of Agriculture and Lands, 2002). Over the past 115 years, grain production in southwestern BC has shifted from a successful staple crop grown by most farmsteads (Second Report to the Ministry of Agriculture, Victoria, BC, 1893) to a barely perceivable percentage of the overall agricultural output of the region.

2.1. Vanishing grains

A number of factors account for this vast transformation, including Canada's prairie "wheat boom" of the early 20th Century. The completion of the Canadian Pacific Railway, as means to move both migrant labour and grain products, combined with new technology such as plows, seed drills and harvesting equipment allowed for increases in farm size and substantially greater yields. These advances made prairie farming more profitable and efficient (Ward, 1994). The location of prime agricultural land in SW BC in deep valleys bounded by mountains contributed to the high transport and labour costs to move agricultural products out of the province, adding to higher overall production costs of grain farming. Furthermore, it is noted that Fraser Valley grain was seen to be "inferior" to prairie wheat with regards to its milling quality. These factors contributed to the declining economic viability of this industry (Ormsby, 1945). More recently, rising land prices in prime agricultural locations in SW BC have become prohibitive to the development or maintenance of large-scale grain production, which traditionally requires large areas of cheap land. In the Peace River region for example, the average farm size in 2001 was 489.6 hectares (BC Ministry of Agriculture and Lands, n.d.b). In the Fraser Valley, the average farm size was 18.3 hectares in the same year (BC Ministry of Agriculture and Lands, n.d.a). Good farmland in B.C.'s southwest sold in parcels less than 20 hectares

costs between $50,000 and $100,000 per hectare, without any buildings or infrastructure (Campbell, 2006).

2.2. BC grain

Although the grain industry in the southwest has given way to a wealth of berry farms, dairy operations and greenhouse production, a provincial hotbed of grain growing has emerged in a different provincial region. The availability of larger tracts of suitable farmland and a drier climate contributed to the agricultural development of the Peace River region where the vast majority (85-90%) of BC grain is grown. This region is in the northeastern part of the province, approximately 1200 km from the majority of BC's population (located in the south or southwest). Records from 2005 showed the production of 187,000 tons of wheat, rye, barley and oats combined (BC Ministry of Agriculture and Lands, 2006). However, according to the BC Ministry of Agriculture and Lands report on food self-reliance (2007), even with these production amounts, BC's grain can meet only 14% of provincial grain needs in recent years. As was noted above, with only 0.04% of land in the southwest devoted to grain crops, grain chains in SW BC are not poised to make up for the vast gulf between provincial production and consumption.

In spite of this, recent years have seen a dynamic, diverse and interacting landscape of grain-related activities appearing in SW BC. Although still statistically insignificant, in the few years since the authors of "The 100 mile Diet" (Smith & McKinnon 2007) struggled to find a grain farmer to supply them with *any* local grains, at least 10-20 small-scale grain initiatives have become active and engaged (see Map 2).

Map 2. Grain Activities in SW BC

Note. Adapted from Google Maps, March 10, 2009.

This map gives a general sense of grain related activities in the region. Because I did not connect personally with all these initiatives (many of which I was only told about during interviews or conversations) it is imperative to note that this map is not meant to capture *all* of the grain operations in this region but acts as a simple representation of nodes or clusters of activity. Michael Porter defines a cluster as "a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities" (1998, p. 199). The various grain initiatives in SW BC are clustered together both in terms of geography and their interests.

These grain initiatives are enacting many of the same steps that exist in conventional supply chains; growing, harvesting, processing, transporting, baking and retailing. But many of these particular short grain supply chains are refashioning parts of conventional supply chains, integrating tenets of a more alternative food system into their activities. The organization of such grain related activities stems in part from food self

reliance shortcomings (BC Ministry of Agriculture, 2007) and is driven as well by concerns around climate change and food miles (Edward-Jones et al., 2008). These issues often focus on the need for “full cost accounting” (Horrigan, 2002) with regards to production, transport and consumption. There are also concerns around a “quality turn” (Goodman, 2003) for food products and projects or larger explorations of a “good food value chain”, one which “conveys the notion that activities within the food chain are replete with values about what people think is good for themselves, for their community and for society” (Connell, Smithers, & Joseph, 2008, p. 170). Motivations also stem in part from a desire to reclaim some control from a concentrated and consolidated system of exchange (Hendrickson & Hefferean, 2002) with the focus on strengthening “sustainable community food systems” (Feenstra, 2002) and developing a more “civic agriculture”, broadly understood as “agricultural activities that are tightly linked to a community’s economic and social life” (Lyson, 2000). In general, “a demand for information about food and its provenance” (Lowe et al., 2008, p. 228) which has opened up a niche market for local grains may provide the impetus for many of these emerging initiatives. Most of these concerns require a strategy for action. The most common strategy is often the development or strengthening of local food systems.

According to Morris and Buller (2003) local food is typically associated with provisioning systems that are ‘alternative’ to conventional food chains focusing on products being grown, processed and consumed within a geographically-bounded area (p. 559). While many of BC’s grain initiatives have been operational for some time, with the idea of ‘local food’ reaching out through popular writing (Smith & McKinnon, 2007; Kingsolver, 2007; Pollan, 2006), these grain initiatives are undoubtedly becoming more visible.

2.3. Types of grain chains in SW BC

It is clear that a single, unified grain chain does not exist, either locally or globally. Instead, distinct grain chains operate within certain areas and are based on certain patterns of exchange. In SW BC, there are a number of grain chains operating because of geographical conditions (links in proximate regions) and/or pre-established patterns of exchange. However, the expansion of grain related activities means that different actors, and thus, different chains, are coming into contact with one another and in fact often share similar actors. As Maye and Ilbery (2006) point out, the diversity of businesses linked together in some alternative supply chains "creates interesting spaces of exchange and practice as new producer enterprises try to establish business relations with intermediaries which are well established in the region" (p. 352). New growers looking to make contacts with established mills and bakeries is a characteristic of recent years. Sturgeon's (2000) contention that individual value chains are "reused and reconfigured on an ongoing basis" offers some insight into the dynamic nature of SW BC grain chains.

In very innovative but very rare 'single-site chains,' grain is grown, processed and baked within the same location. The Highland House and Farm on Vancouver Island is an example of a one-link chain,[5] where harvest and post-harvest infrastructure as well as a marketing and sales outlet exist in one location; on the farm.

In much more common 'multi-site chains' whole grains move from a farmer to a distributor or a cleaning facility. Then they move to a mill-bakery or a local miller and then to a bakery, or in some cases, directly to the consumers. All of the grain initiatives observed in this study are part of these multi-site chains.

[5] www.highlandhousefarm.com

Building on the idea of a "value web" offered by Andrews and Han (cited in Block et al., 2008, p. 380), Block et al. (2008) suggest that such a web implies that "…relationships potentially run from all members in the web to all other members" (p. 380). While some chains do in fact link with others, the idea that *all* potential links meet up in some fashion is not accurate, and as will be noted in Chapter 3, is not always possible or desirable. However, it is accurate to say that these individual grain chains are connected in some way to a larger network that is involved in the production, processing and distribution of cereal grain products. Although the potential exists, whether these geographically proximate chains will evolve into a complex and layered value web remains to be seen.

2.4. Growing grain

Although there is a strong spelt industry emerging near Armstrong, B.C., with growers working acreages between 15 and 50 acres, up until the harvest of 2008, the majority of other grain-growing activities in SW BC which I observed could be separated into two levels:

1. "Experimental" or "micro-fields", which would encompass seed growing, variety testing or growing for personal use on generally less than ¼ acre;
2. "Small-scale production" which would be for personal use, direct sale to customers, home-based millers and bakers, perhaps a few bakeries with mills. This production would generally happen on plots between ½ and 10 acres.

According to one grower, this distinction would be between "gardening grain" rather than "farming grain" (Interview 12). But in some sense, 2008 marked a turning point and forced the emergence of a new category due to shifts in the scale of grain production in the region. A 'large' harvest (approximately 30 tons) forced the conceptual and actual creation

of a new category that I will call “small commercial production”. It cannot be ignored that 30 tons of food grade grain brings significant ‘shifts’ to the region in comparison to the scale of years past. This harvest combined with crop losses elsewhere, influenced the diversity as well. Whereas 2007 saw at least four or five varieties of grain from different farmers move to mills and bakeries and then to consumers, if you bought local bread this year, chances are it was made from one farmer’s grain.

2.5. Milling grain

Most of the millers interviewed spoke of their services as producing “a different product” or “a fresher product”. Some spoke of milling as “an artisanal activity” or even “a sacred act”. Patricia Reichert, owner of the Salt Spring Flour mill, expressed her motivations for starting a local processing facility.

> I suppose that a long time ago, communities all had their own flourmills. And so you used the grain that was grown locally in the area and milled it and ate it and baked your bread from it and whatnot. So the whole idea of a local, community based flour-milling business really appealed to me. I wasn’t on the lookout to start something that was going to compete with Robin Hood[6] because I didn’t think that was really where we wanted to go with our food system. (October 23, 2008)

2.5.1. Home based/farmers’ market millers

Beginning at the ground level, what could be considered *home-based/farmers’ market millers* use hand-crank mills and/or small, upright stone mills to add value through local processing to organic grains brought in from outside the region. However, many of these operations have at some point, milled and sold grains sourced from the region.

[6] A large corporate Canadian flour milling/food processing company.

Two interviewed millers in particular use the local farmers' market as their sales venue. Simon and Fran Cudworth, of the movable "Periwinkle Granary" run a unique mill/bakery operation in Powell River, B.C. Simon talked about the value of face-to-face exchanges for both the vendors and the customers. In some cases, such face-to-face exchanges compound the social history while providing entertainment to all parties involved. Simon contends:

> It's almost like people like to be entertained. You go to Europe and everyone is like "Come on, darling. Let's get some bread for you. I'm the man of the market and blah blah all that, all day long. They all love it but we don't do that as much here. I do cause I'm that kind of person but they love it. (September 1, 2008)

In addition to the market acting as an effective sales venue for these home based millers, the market provides a great opportunity to communicate the social history of the fresh flour they sell. While they openly communicate that their grain is not grown locally, that it comes from Alberta and Saskatchewan, their milling and baking services provide an important local layer that is contingent upon the first local layer which imports grain from central Canada (Anita's Mill). These two layers inscribe a layered social history as the grain moves from a distribution point to consumers. Through their sales venue, they have the opportunity to communicate the process directly to consumers complete with a little flair and entertainment.

When talking about selling their flour through a local, weekly delivery box of organic food, Fran identified the importance of social interactions saying that, "the biggest disadvantage I think to Sunshine Organics is you are that one step removed from your customers...One of the things that I find rewarding at the market is the contact with the person and the feedback and all the rest of that."

Based on the three criteria for producing a deep social history (number of links, number of face-to-face exchanges, communication of the process at the point of sale) this situation with the box program is particularly interesting in the context of producing just such a history. Although the direct face-to-face contact between the miller and the individual customer is removed, Sunshine Organics adds another local layer as well as another social link into that grain chain. If the process of this grain is communicated to the shareholders, this new link can potentially add to the depth of the social history while at the same time creating a new sales venue.

2.5.2. Bakery mill arrangement/small lot retail

Scaling up, next we encounter *bakery/mill arrangements and small lot retail* operations. These initiatives have substantially larger stone mills and mill flour for in- house artisan baking use, sell some flour to other small bakeries, or offer bags of flour for sale in their own or other retail outlets (i.e., locally-owned supermarkets). Many of these bakery/mill arrangements are processing locally grown grains. In a few cases, contract-growing arrangements provide a direct connection between specific growers and specific bakeries. One can presume, based on conventional grain trading systems, that such a connection would be rare in large commercial bakeries. Such bakeries may not even know their delivery people or the mill where the flour came from let alone the farmer who grew the grains. However, moving to this greater level of connection is not without its risks. All of a sudden bakeries are sharing the risks of grain growing with farmers themselves. Bruce, the miller at True Grain Bakery, comments on this year's crop;

> …we planted 16 acres hoping to yield 16 tons of grain that we could move towards having local grain for a lot of our bread instead of just a special loaf but we had a rough spring…Collectively we are learning a lot about growing grain on the island cause it hasn't been done for several years and organically. So we

> had a wireworm, which pretty much wiped out most of the crop. So we only got one ton out of an expected 16. (October 9, 2008)

In spite of the fact that the learning process cost all three of the parties involved some revenue, Bruce remains optimistic, recognizing "what it's all about", that is, the excitement of "having a loaf available". Experiments and learning are an exciting part of such unique arrangements. This type of direct relationship between a farmer and a mill/bakery connects two different local layers in this particular grain chain. The face-to-face exchanges which characterize this partnership as well as the marketing and labelling of the final loaf cover all the requirements for a layered social history. I was also informed that Wildfire Bakery in Victoria, B.C. purchased some red spring wheat, some of Tom's other grain crop, for use in some of their baking this year. This partnership will also be communicated and the local aspect of the bread will be marketed.

2.5.3. Small lot commercial

Although Anita's Organic Mill in Chilliwack is not currently milling any local grains,[7] they represent an important local processor on a much larger scale than the previous two categories. Despite the fact that most of the grains are coming from the Prairies, by acting as a distributor of high quality, organic grains for other local processors, Anita's offers the first local layer and sparks the production of a social history for many grain chains in the region.

According to John McKenzie, the owner of the mill, the local is "…food miles and all that, but underneath local is the desire for people to know the farmer, to know where your

[7] There is talk however about Anita's milling some Aggasiz grown grain in the fall of 2009 as a part of a grain chain for the emerging Urban Grains CSA based in Vancouver.

food comes from. To know that there are people behind it; that it's not industrial..." Although most clients do not know the farmers, they trust Anita's quality standards and commitment to supporting organic production methods. In many cases, John McKenzie knows the farmers personally and strives to develop strong relationships with them. Many local processors in the region are linked to Anita's mill. Simon and Fran of the Periwinkle Granary talk about their connection:

> They [Anita's] phone us up and say I hope you don't mind but we gave your name. This lady wants to do what you are doing somewhere and we wondered if you mind talking to her about the mill cause they want a mill, you know so they link us that way rather than being just customer number 134916. (September 1, 2008)

Despite the fact that they operate on a significantly larger scale than all the other millers I spoke with, milling 6-8 tons on a given day, whether in the form of whole grains or milled flour, they add the first traceable *local* layer for many grain chains in the region.

2.6. Baking

Carol Spencer, owner of the popular Wildflour Bakery in Comox, got her start literally in the backyard. "I had an oven that I built in my yard and I was at the farmers' market for three years. We were baking in snow and hail and hurricanes". In the past, Carol sold her breads at the local farmers' market and would travel to nearby Hornby Island in order to "hang out and meet people who loved good bread and sell a couple hundred loaves". Carol now bakes inside, sometimes upwards of 100 loaves a day, with a wood fired oven nestled in a bakery on Church Street in Comox BC. I heard that she was using local, or had used local grains so I asked her about it during our conversation:

> I have to tell you my first experience with Joanne's rye, real 100% rye that you turn into flour, a rye mash. You mix it with water, you need stuff that's really

> coarsely ground and you add lot of water to it and then you bake it for a long time so the sugars develop in the bread and when I took that first rye loaf out of the oven and I looked at it and I smelled it and I thought, "Oh my god this smells amazing". It's got beautiful color and then I cut a couple of slices off of it and I started eating and in a very short amount of time I suddenly felt more connected to where I was and I felt really grounded. (October 2nd, 2008)

In this case as well as others, the local layers and the traceable social history become part of creating an experience. By labelling these creations as "locavore rye" and noting on the bags of grain that it was "naturally grown in the Comox Valley", Carol fulfills her responsibility to share pieces of the grain chain with consumers. Interacting personally with the grower and miller before it reached her bakery and then when she turned it into bread and sold it gave this particular grain chain a layered, perhaps even complex social history. Knowing this process was a key part of the experience for both the baker and her customers. Although Carol is not currently making breads with local grains, the experience seems to have resonated with her and others.

Nina Raginsky, of the Little Red Hen Bakery on Salt Spring Island, expresses similar sentiments about sharing the experience:

> I am really drawn to grain. And of course potatoes too but grain is just something sacred and it nourishes me and it nourishes everyone I feed bread to. It's very nourishing, well you know what I mean it's local grain, you can just taste how good and nourishing it is. (October 7, 2008)

One could argue it is precisely because of the local layers and, in the case of Nina's breads, the production of a layered or complex social history, that such bread is seen as nourishing and also 'experienced' as such. While a commercial loaf may have been enriched with essential vitamins and minerals, a dash of local layers and a good story with lots of characters are often left out of the mixing bowl.

Although there are many more unique grain chains to explore and many more exchanges that could be expanded upon, the few examples used attempt to outline the criteria used to locate a given grain chain in relation to the 6-quadrant map. There are, of course, a number of other factors that influence the desire to utilize just any of the local layers available and as will be seen in Chapter 3, certain grain exchanges may avoid or overlook potential links in the region.

2.7. Promoting traceability and preserving identity

Although conventional global grain chains have historically eliminated farmer and variety identification through pooling in centralized locations and regulated varieties, Smyth and Phillips (2001) outline “identity preserved production and marketing” (IPPM) programs that are increasingly characterizing certain supply chains in the Canadian grain industry. These schemes are often a result of consumer demand that seeks higher levels of traceability within the supply chain. Although IPPMs are “typically developed for niche market products and are typified by small acreage and low volumes” (Smyth and Phillips, 2001, p. 3), the qualifiers of “small acreages” and “low volumes” must be recognized in the relative context of prairie grain agriculture.

While generally not referred to so specifically, similar IPPM schemes exist in most of the alternative grain chains in SW BC. Emphasis is placed on small batches of grain, identified with a specific farm and a specific farmer and in some unique cases, even a particular farmer variety. As a result, this system treats grain as a small farm product rather than a homogenous commodity.

Since their focus is on large volumes and is global in scope, conventional grain supply chains inevitably erase direct face-to-face exchanges between production and processing and retailing. According to Forsman and Paanenan (2004):

> Although the pursuit of transparency in the entire chain is accepted as a common goal in a conventional food supply chain, including, for example, the product origin, this may be obscured when the product goes through several links before reaching the end-user. (p. 6)

The global length of some supply chains is a contributing factor to this obscurity. In the past, exported wheat typically remained in the destination country. Now, destination countries may send wheat products back to the country of origin in a new form, complete with value added from their processing services (Klien & Kerr, 2005, p. 553).

In the case of SW BC, the vast majority of this grain is for regional or local use and moves only short distances between sites of production, processing, retailing and consumption. It makes its way to local processors who process and then retail the products, most often through face-to-face transactions. So, the small-scale of production, short distances, direct relationships between actors and the final stage of communication contribute to the traceability of specific grain products. These characteristics help with "creating space" (Feenstra, 2002) for an alternative to conventional grain trading systems. The communication of this difference is of key importance.

> For those operating at the production [or processing] end of the food chain…creating a difference in 'quality' between specific products and mass-produced products; creating a difference between geographical anonymity in food provenance and territorial specificity; and creating a difference in the way certain foods are produced. Furthermore, having achieved such a difference, it needs to be acknowledged, highlighted and marketed… (Barham cited in Ilbery et al., 2005, p. 118)

In a recent study, Ilbery et al. (2005) examined labelling and accreditation schemes used to communicate differences with regards to local food products. In SW BC grain chains, promotional activities, local labelling, and marketing and/or direct sales are the most common methods of preserving the identity of local grain products. Forsman and Paanenan (2000) note that the "marketing of local foods requires that the marketing and distribution channels to be used support the identity of a local food item" (p. 6). Emphasizing the local character of certain products is a common feature at several Vancouver Island bakeries. Appealing to notions of proximity, "Twenty-mile", "Thirty-mile", or "4.92-kilometer" loaves are ways of communicating and marketing the distance between farm and oven.[8] Local identification acts as a key 'value added' for grain in this region, giving farmers, processors and retailers a definite marketing advantage.

While IPPM schemes at the national or local level help differentiate grain products, actors in alternative grain chains in SW BC are in a unique position since they are responsible for numerous aspects of this supply and communication chain on their own. According to Rempel (2008), a local value chain "doesn't need government regulatory agencies to survive; it will survive with the people involved in the chain" (p. 14). Farmers are responsible for growing the grain, but are not told what variety/varieties they can or cannot grow. A combination of formal and informal field trials, consumer demand as well as the ease of access to good quality seed in the quantities needed assists this selection process. Individual actors, rather than centralized regulators, are also responsible for the cleaning and quality control of the harvested grain. Growers can choose to have their grain tested, but the lack of formal regulation means that individual buyers must trust growers, and the buyers must themselves take on the responsibility of determining any issues around quality,

[8] Interesting questions raised regarding changes in value within the "hyper-local" context (e.g., 4.92 km).

safety and cleanliness.[9] Finally, rather than there being a set price for a set amount of grain, since SW BC is outside of the CWB region, each actor involved is responsible for the marketing and pricing of his or her own product.

2.8. Definitions of the local

Although we know that the local can be conceived of in ways that are broader than simply 'encircled regions' (cf. Selfa & Qazi, 2005; Dupuis & Goodman, 2005), the vast majority of the participants interviewed in this study employed a geographical understanding. However, the local as a set geographical region varied significantly. The understandings of local given by various actors in the grain chains ranged from very, very small areas, to areas "where I can drive in a day", to broader bioregions, to larger, geographically inter-related areas. Many participants didn't believe that a 100-mile diet is truly feasible for a number of reasons including lack of appropriate minerals in the soil, cultural dietary preferences and the contention that grain can be produced best on the prairies and shipped out here. Others advocated moving towards even greater levels of local provisioning, suggesting a 10-mile, or a 'zero mile diet' (Interview 6). However, in one distinct case, local was understood in relation to transport techniques. In this actor's view, if a distance barrier can be breached by sustainable transport, a strict geographic interpretation of local is on less stable ground (Interview 4).

[9] Although in some grain chains testing does occur.

2.9. Testing the niche

On a global scale, grain is a commodity (large scale, commodity and/or export oriented) yet in SW BC, grain production has become a niche activity, aided by the emphasis placed on developing/strengthening or marketing of local food systems. Wiskerke (2003) claims that developers of new technologies and strategies "…create protected spaces or niches in which novelties can mature" (p. 431). Although many niches are spaces within the dominant system and are not strictly alternative to conventional exchanges, niches assist producers or processors with increased "control over their supply chains" and may highlight "innovative links to compete in a system which favors large scale production" (Maye & Ilbery, 2006, p. 351-352). In a sense, when Smith and McKinnon (2007) articulated that grain grown in SW BC is scarce at best, they posed a local grain question that for some, turned into a local grain problem that then required 'solving' of some sort. This 'problem' created a local grain niche in which a variety of novel initiatives could experiment and expand. In essence, this niche opened up opportunities for more people to propose, or act out solutions to this problem.

Although many growers had been experimenting with grain crops long before Smith and McKinnon singled out grains as a major lacuna in an achievable and comfortable local diet in the region, a few growers interviewed during this study admitted that in fact they only recently gave food grains a try, wheat in particular, attempting to provide for a potential growing demand or to satisfy already interested parties. Many small millers have been active for many years, some nearly a decade, while a few small milling operations have sprung up in the last few years. A whole range of bakers and chefs got more excited about finding locally grown grains to include in their repitoire.

In order to carry a niche forward, the niche is subject to a certain kind of testing. Weber et al. (1998) claim that testing is:

> …a process of articulating, specifying and sharing a set of expectations and visions for the real potentialities of novelties. Testing could lead to the emergence of a strong network of actors willing to invest in and carry a novelty forward. This process will ultimately lead to the development of better artifacts and practices and possibly a much smoother diffusion process as a better fit is achieved between the artifacts and their practices and the social environment. (Weber et al. cited in Wiskerke, 2003, p. 433)

According to Ross (2006), "customers are major players in test marketing, product evaluation or new product or service development" (p. 118). As such, the value of customer feedback is a crucial component of strengthening this niche.

Although the consumer market must be tested to explore the demand for, and the potentials and limitations of local grain products, the subjects of such tests are not just consumers in the public realm. The actors themselves, farmers in particular, engage in their own sort of testing. Agrologist Megan Halstead, who conducted some field trials at the UBC farm, offered these thoughts:

> There's still a few people that haven't tried growing it that want to try growing it and that's where, well from my perspective, it has to start there with people growing it to see if they like growing it and if it doesn't work for them it might just fade away. That's a possibility. But if the network sort of talks a bit about it and finds out what people's experiences with it have been and sort of work on it a bit, it could really work; it could stick around. I don't know if it will ever be much more than a cottage industry but that's totally cool too. (October 1, 2008)

As was noted above, testing *could* lead to the development of a strong network. As many participants suggested, the sharing of farmers' experiences (both positive and negative) is crucial to this development.

2.10. Testing the economics

In another sense, growing wheat in a niche market also has to be economically tested. Very few participants explicitly cited niche market economic advantages as *the* motivating factor. However, as one grower noted: “I think there does have to be money in it for a lot of farmers to really take it seriously and make it an actual industry and not just a couple of crazy nutty people that are out there growing grain” (Interview 3).

Although the discussion so far has emphasized the importance placed on traceability, social networks, the social history and communication, the economics of growing, processing, marketing and selling local grain products are a definite motivating factor. Based on the data gathered as well as my own observations and experiences, pricing for a niche market can assist the economic viability of small grain initiatives. In the present market, whole grains may sell for anywhere between one and three dollars a kilo (in some specific cases, selling for even above this). Flour milled in small batches could run anywhere between three and six dollars a kilo while a local loaf sits between four and six dollars.

In terms of potential profit per hectare, growing grain in SW BC may offer an advantage when compared to the prairies. For example, Hamish Crawford, owner of the Highland House and Farm on Vancouver Island out-produces the prairies in terms of bushels per acre, 100 compared to 30 or 50, as a result of irrigation and high inputs of nitrogen (The Island Diet, 2007). But with an annual harvest of only 500 bushels, this comparative advantage can only be taken so far. While discussing potential profit per hectare is somewhat useful, most locally grown grain is sold in ‘small batches’ to consumers, local mills and bakeries. With this in mind, the prices that grain farmers in SW

BC can receive for their grain is a more noteworthy comparison in terms of the strict 'economics' of these operations.

In 2008 for example, prairie grain farmers received between $246.20 and $448.88 per metric ton for all classes of milling wheat (Agriculture and Agrifood Canada, 2008). Even using low to medium rates from SW BC as an example, a ton may run anywhere from $800 to $1200. Differences in per kilo prices are even more striking.

Despite this potential for higher prices, many growers claimed that they didn't want the hassle of selling one or two kilo bags here and there. One grower, who commented on prices being "too high", put a few hundred pounds of grain in a galvanized garbage can at a roadside stand, creating a home-made bulk-bin stocked with local grain for passing motorists. A few hundred pounds of grain could bring in substantially higher prices through direct sales in small batches. However, most growers wanted to make a few big sales to mills, bakeries, or consumers in spite of the fact that they could potentially earn substantially more selling in small batches.

Regardless of many farmers or processors wanting to connect with a wider group of customers, Ross (2007) points out that upscale markets and niche markets for local food often exclude certain groups based on income restrictions. With each grower or processor responsible for setting their own prices, discrepancies around how high prices ought to rise for local grain is definitely an issue of contention. A bottom up approach to price setting, involving dialogue between related actors in the grain chains may help articulate a 'going rate'. However, whether enough actors desire a set price within the network is another issue altogether. Although I was told that a few growers have stopped producing local grain due to low financial returns for their investment and time (Interview 4) and another grower is unsure about continuing to grow wheat (Interview 7) most participants could see a future for

grain related activities in the region. However, the results from these various levels of testing will influence the potential for expansion.

Overall, projects in the region contribute to, and are related to, the process of testing. Within "the larger enterprise of grain related activities", the so called "grain network" there are many innovative *grain projects* or *grain initiatives* emerging at the present time. Island Grains[10] in the Cowichan Valley and the Urban Grains CSA[11] based in Vancouver represent alternative avenues for engaging consumers in the grain/flour/bread process. Such grain initiatives also include the countless individuals planting, harvesting and threshing grains by hand, many of whom have been providing a taste of their daily bread for years without machinery, infrastructure or marketing strategies. The current network includes even those with a special patch in their garden or lawn devoted to one of the most important staples in the human diet. These initiatives provide an opportunity for future research, focusing on the unique dynamics of growing grain for personal use. However, this study focuses its attention on specific grain chains in the region involving farmers and/or distributors, processors and retailers. After analyzing the challenges and barriers facing newly emerging and alternative grain chains in the following chapter, we turn next to one such innovative example, the Nelson-Creston grain CSA.

[10] www.islandgrains.com

[11] www.urbangrains.ca

Chapter 3.

The Challenges Facing Grain Chains in SW BC

This chapter focuses on the potential for expanding grain operations in SW BC by outlining and briefly analyzing some of the challenges or barriers facing such operations. Participants identified numerous barriers that are impacting the development or strengthening of grain initiatives, grain chains, and the larger grain network in the region. The identified challenges are noted in the table below.

Table 2. Challenges Facing Grain Initiatives and Grain Chains in SW BC

Climate factors	Access to machinery for seeding	Networking
Variety testing and field trials	Access to machinery for harvesting	Marketing and pricing schemes
Pests	Seed cleaning facilities	Methods of communication
Access to good land	Storage options	Funding issues
Access to viable seed in the quantities needed	Milling operations with sufficient quality and quantity	Power dynamics
Organic or non-organic production methods	Transport to market	Knowledge and skill sharing

These challenges can be separated into three types; those of a material nature (climate issues, pests, for example), a technical nature (quality and quantity issues, storage and cleaning facilities) and a relational nature (knowledge and skill sharing, marketing and pricing schemes). In this chapter, some of the most commonly noted challenges will be outlined and discussed.

3.1. Material challenges

3.1.1. Climate and pests

Participants reported diverse perspectives on the climate of SW BC as it influences the production of grain crops. Some participants noted that the southwest might not be “a bread wheat region” and should focus instead on the production of soft wheat with lower protein and lower gluten levels, more suitable for pastries among other things. This type of grain is possibly a better fit with the wet springs and autumns on the south coast (Interview 10). Others claimed that the climate for grain is perfect partly because traditional distinctions of winter cereals and spring cereals don’t apply in this area (Interview 8, Interview 11). Others saw the need for a tight fit between suitable varieties and the various microclimates of the south coast (Interview 9). Furthermore, between the geese and the wireworms, grain has some significant natural predators. In numerous cases, crop losses resulted from these predators (Interviews 7, 10, and 11).

3.1.1. Land issues

Due to the high prices of land in SW BC ($50,000 to $100,000 per hectare) grain agriculture may be viewed as economically unprofitable. As one miller noted, when you can grow salad greens that retail for $10 to $16 per pound, even niche market prices for grain crops cause some reservations about investing in grain in the region (Interview14).

A large portion of food grade grain is grown on leased land that is, according to one experienced grower, most often “not good and sweet” (Interview 7). Weed control on leased land is more easily done with the application of chemicals. One grower noted that up to four times as many passes with machinery may be required to prepare, plant and harvest an organic field (Interview 11). Short leases or insecure tenure may influence the desire to put

in the work required for organic production such as investing in the soil fertility of future years, as well as increased tractor and tillage time.

The Community Farms Project, a joint initiative between the Farm Folk/City Folk Society and The Land Conservancy (TLC) in British Colombia, is exploring a response to both of these concerns. This farming model is geared towards providing access to fertile farmland to interested farmers who can lease an acre or two of land for very reasonable rates. This project assists with access to land and the reasonable rates can help offset some of the higher costs of producing grain on a smaller scale. Finally, long leases are available through community farms participating in the project. As was noted by a number of participants, longer leases will assist with time and energy commitments to leased land. This will help with the transition to organic production methods.

3.1.1. Seed issues

Although many experienced growers believe they have found appropriate varieties for local production, there is not a general consensus about which varieties are the best for SW BC. Some local seed growers and breeders have been active for over 20 years and some have grown more than 150 varieties in their years of experience. Some have found a few modern varieties that produce well in the region while others are committed to heritage varieties. Although part of the challenge revolves around variety selection, the other component involves *access* to the seed in the quantities needed. The fact is that modern varieties in the quantities needed for small lot production are much easier to access.

While there are local seed growers supplying other interested growers with heritage grains, one main issue regarding heritage varieties is that there are no bulk producers of these types of seeds. Over the last 20 years, Sharon Rempel has saved, nurtured and

helped promote Red Fife, a landrace variety that has been grown by a number of farmers and gardeners in the region. As a result of regional efforts, some stock is building up. However, despite its rise to fame due in part to its political dimensions (see Rempel 2007 for a more detailed discussion of the politics of Red Fife), many participants believe its characteristics (tall, later maturity, susceptible to lodging) make it an inappropriate variety to advocate for the region. Most of the farmers growing Red Fife above the experimental level order the seed from a family farm located near Saskatoon.

Whether Red Fife or other folk varieties, “community based seed collections are the start of finding answers to local food security and food systems” (Rempel, 2008, p. 16) for those seeking heritage varieties. One participant suggested “a little local army of wheat breeders” (Interview 4) to improve access to heritage varieties. In order to muster the resources to fund this army and cover the investment in variety selection and bulk seed production, sources of funding and government support were identified on a few occasions as a major concern (Interview 4 and 11).

3.2. Technical challenges

3.2.1. Machinery and equipment

Over three quarters of participants noted access to machinery and other equipment as a key challenge for those growers and processors wanting to deal with significant volumes of grain. Carol Spencer recounts this one-acre harvest story from 2004:

We went to harvest around the third week of August and we couldn’t find any equipment. We couldn’t find anyone with small enough equipment to do it and so we got a bunch of scythes and me and three other people went out and started to scythe it down

[laughter] and it was 34° that day and we started at 9:00 in the morning and, by 11:30, we were all vibrating. It's really hard work. So we only got in about 15 feet and that was it, all the volunteer labour I could find so then they took some seed and we plowed the rest under (October 2nd, 2008).

In this case, a lack of *access to* machinery contributed to the loss of this crop. Patricia Reichert also commented on machinery as a barrier:

> I mean people here are threshing their grain by hand!...Well you don't do that if you've got 100 bushels of grain. You need some equipment in order to be able to do it and you need the capital to invest in that equipment so it's a big investment. (October 23, 2008)

The fact remains that some experimental/seed growers are actually growing and threshing grain by hand. But if this grain is eaten, it is mostly for personal use. However, I was also informed by a number of other participants that most of the necessary machinery for small lot production exists, although not everyone involved has purchased their own pieces. Since a substantial capital investment is required to purchase machinery, the idea of every person having to purchase and maintain a combine for his or her 1-acre grain field seems counter-productive. Networking and communication could coordinate equipment-sharing schemes between different actors and bring back the once common practice of contract seeding and harvesting. The procurement of machinery appropriate for the scale of small lot production (pull-type seeders, small stationary threshers) may also open up a range of possibilities. Other factors involved in the "post harvest infrastructure" such as grain storage techniques (Interview 9), grain drying (Interview 9) and cleaning equipment (Interview 14) were also noted challenges on the technical side.

3.2.2. The milling challenge: A quality and quantity issue

The milling issue is particularly interesting because it is often framed as an issue of proximity and availability (i.e., there are no mills close by) but in most cases, proximity and availability form only a portion of the aptly titled “milling challenge”.

Carol Spencer, of the Wildflour Bakery in Comox, gets her flour from Anita’s Mill in Chilliwack, over 250 km away. There are at least four or five home-based or mill/bakery arrangements within a few hours from her bakery, one as close as a 1/2-hour drive. She could order whole grains and add another local layer to the grain chain via a number of more ‘proximate’ millers. But this link is not being made because of the type and quality of the flour produced by these local millers. Not everyone with a mill in their kitchen can provide the quality of grain that is needed for some bakeries. Bruce, the miller at True Grain Bakery in Cowichan Bay also expressed a similar quality sentiment regarding their in-house mill. Others commented on the need for “unbleached flour” (Interview 1) or “white, white flour” (Interview 6) as essential for some baked goods. So when a baker or others say that one of the main challenges is that “there are no mills around here” it is important to note that in more cases than not, there are no mills around that can produce the quality of flour that is needed, as well as in the quantities that bakers need. This quality/quantity factor makes it clear that the milling challenge is not a simple availability issue. The prevailing sentiment from many bakers seems to be that small-scale milling equipment just doesn’t produce a fine enough flour to be used *exclusively* in artisan baking. Many Vancouver Island participants spoke of investing collectively in a large-scale mill to serve island growers and bakers.

Furthermore, regulatory issues (inspected facilities, stringent labelling and packaging requirements) may stand in the way of small mills carrying out local processing

in a given community by influencing marketing outlets, business growth and promotion. I point this out not to say that such strict regulations are bad or good, simply to note that regulations do have influence.

3.3. Relational challenges

3.3.1. Organic or non-organic: An issue of production techniques

Although most growers express interest in moving towards organic production and although the food grain for sale is “totally local”, the application of Round-Up or other chemicals to mitigate the risk of crop losses, tackle weed problems and reduce tractor and tillage time indefinably ruins the party for many. Some consumers will avoid the grain, the bread and the process, other actors will talk negatively about it, some mills won’t touch it, and some bakeries won’t turn it into bread. The fact is that the market for locally grown, yet ‘conventional’ grains is being put to the test.

The lack of organic grain production in the region forces interested parties to choose between non-organic local, or organic imported. It demands that people weigh the local aspect (reduced transport, in many cases, a social relationship with a farmer) against the benefits of organic growing (increased biodiversity, less groundwater contamination from pesticide runoff, freedom from the corporate chemical relationship, etc.) and ‘rationalize’ long distance transport on these grounds. For many people, the answer is easy, for others, different accounting strategies inform their choices to support such practices or not.

Using a streamlined life cycle assessment (LCA) formula, Meisterling, Samaras and Schweizer (2009) found that when conventional and organic wheat in the U.S. is transported the same distance to the market, the “global warming potential” (GWP

measured in units) of the organic wheat system is significantly less than the conventional wheat system. However, taking into account production inputs, grain farming and transport, when transport of at least 420 km from the product origin to the point of sale is factored in, the GWP of both types of bread is virtually equal (although depending on the soil fertility, production inputs and type of transport these numbers may increase or decrease respectively). This study contends that in spite of food miles being an important indicator for "reducing the GWP impacts of agriculture", the origins of food products alone account for only a portion of this reduction. Multiple factors such as "fuel use, fertilizer and tillage matter greatly when discussing the difference between organic and conventional products" (p. 228).

This issue of production techniques is further complicated by the fact that most people who are supporters of local food also happen to supporters of organic production. Considering that the growing conditions of non-organic grain removes part of the value added (the organic component) grain growers may end up in a commodity (local) versus commodity (global) battle. When the economics of transport are externalized and economies of scale are taken into account, the imported will most likely be cheaper, no matter how local the local really is. According to Tom Henry:

> …Because we don't produce at a huge scale, we need more money per ton...I realized that you if grow grain on any scale locally, you actually have to compete with those guys from Saskatchewan...They can get it out here, delivered to the bakery for about two-thirds the price that it costs us to grow it and bag it. So, you have to think about what this means. That if not enough people care about local, you are asking the baker to buy a commodity from us that has only some extra value added as opposed to buying a commodity from the prairies, only cheaper. So that terribly concerns me. That, you get a money minded baker, and you don't have an organic product, then maybe there is no way we can compete. (October 8, 2008)

This local versus organic theme is that it is testing the boundaries of the emerging niche grain market and forces an active and specific dialogue within the region. Many participants noted that local is often taken as synonymous with organic and even times, conflated with sustainability. “Most consumers don’t know the difference between a local food produced with chemicals and an organically grown food. They see both as ‘green’ because they are ‘local’” (Rempel, 2008, p. 10). At the time of my research, Bruce from True Grain Bakery was considering what buying some non-organic, local grains means for his business reputation.

> …There is a big sign out there that says “organic bread”. If we start selling local bread, I think it will resonate with people but I think we have to be careful about the way we communicate that. We don’t want to lead people to thinking it’s local and organic. We have to decide whether we want to be local and/or organic and make sure that people understand the difference. So whatever we do, I think we need to be sure that we communicate it properly. (October 9, 2008)

Communication seems to be key on the retailer /consumer side. As one baker noted, “I trust these people to tell me. I can ask them and they will tell me, yes, I used Round Up” (Interview 6). In this regard, communication must also be taken into account when it comes to a bakery having a relationship with a farmer. Tom Henry articulates what he sees as the best arrangement right now:

> I find it a huge burden to do local and organic, right and I think ultimately, it needs to be local with a relationship with a farmer that you trust and the farmer can use a few more means to handle a production crisis than just organic. Meaning, if you’ve got a crop up, you might have 15 acres up, and in organic, you could actually lose that crop to a pest. Like it’s gone, I would much prefer to have a relationship with a baker and say, we’re losing that crop, what do you guys think if we spray it and if they say no, we could spray it ourselves, feed it to our livestock, or look for another baker that will accept that. (October 8, 2008)

The tension arising on the consumer, processor or retailer side is one component of the larger challenge. Many believe that the market is “just not there for conventionally grown, local grains” (Interview 3), but only the growers attempting to sell such a product, and the market itself can provide sufficient evidence to support or challenge this.

The other side of this challenge has to do with what these different production techniques may mean for a common thread within the network as a whole. The question remains as to whether the grain network as a whole is interested in local grain to increase the local supply (a food security issue) or whether the whole idea of local is enmeshed in the larger ideals around sustainable and organic agriculture. As such, “the costs and benefits of various agricultural practices must be based on local values and local constraints, causing sustainable practices to be region and culture specific” (Tillman & Cassman, 2002, p. 672).

Some actors talked about farmers “beholden to the chemical system” involved in a “sick relationship” (Interview 6). According to one participant, farmers using non-organic production methods simply “nuke the land” and then seed (personal communication, January, 2009). Others claimed those farming with chemicals have “had more failures than successes” (Interview 8). Since this debate treads on moral, as well as material ground, the immediate and total transition to a strictly organic network seems unlikely.

Although this brief discussion is not directed at solving this complicated dilemma, it offers some insight that is relevant when thinking about the growth of the industry and in what direction farmers, processors and consumers want this grain system to go.

3.3.2. Marketing and pricing schemes

As the above discussion illustrates, a simple supply and demand equation doesn't always fit. Whereas two acres of organic strawberries are easy to market, sell and distribute, a "U-thresh" for even a small grain field seems less appealing. As was noted earlier, growers and processors are responsible for setting their own prices. Due to the absence of any collective pricing schemes, the same volumes and/or weights of grains and flour are selling for very different prices. As was discussed in Chapter 2, the price differentials between commodity grain/flour/bread prices and grain products in SW BC are quite striking. An important issue to note regarding price is that high prices are also connected to volume. One grower told me that while someone may be able to sell one, two or three tons at $1400 a ton, growers will not be able to sell 20, 30 or 50 tons at this price (Interview 7). For some growers with lots of grain to sell, the ability to successfully market and sell this grain will undoubtedly influence the scale of production in years to come.

3.3.3. Knowledge nodes and skill sharing

Grain chains in SW BC are busy re-learning how to grow, mill, market and sell grain. Sometimes this results in economic losses, crop failures, marketing errors, or the development of inadequate infrastructure. Lots of participants talked about mistakes, about the fact that grains are still new to many growers and that if the industry is going to grow, classes, workshops, programs need to be set up to help interested growers and processors have the most success they can. Due to this learning curve, the importance placed on knowledge, who has it and how it is shared is also a key issue facing the network as a whole.

According to Tillman et al. (2002) “Making the right decisions at the farm level in terms of input use efficiency, human health and resource protection is becoming an increasingly knowledge intensive task” (p. 675). This process is contingent upon a variety of knowledge nodes that contribute to “the cultivation of knowledge” (Bell, 2004) throughout the grain network as a whole. The success of the network will depend on gathering the knowledge from a variety of places (in its various manifestations) and "mobilizing it" as needed. As Sharon Rempel noted, mobilizing this knowledge is going to take “courage, compassion and tenacity” (October 8, 2008).

Embodied knowledge is the product of years of experience. Although there are many with such embodied knowledge, Sharon Rempel represents one such active source. She has nurtured and protected seed, coordinated field days, organized celebratory festivals, held classes and workshops and published material. Over the last 20 years her commitment to wheat breeding and organics has helped spawn the interest in local grain and she is partly responsible for many growers attempting to produce food grade grains in the region. Sharon’s numerous contributions make her a key knowledge node in the grain network.

As Alteri points out, “there is sufficient information, embedded within the farmers, the land and the farming communities (Alteri, 2002, p. 3). Experienced seed grower, author and food activist Dan Jason told me about where we can find some of the knowledge necessary and how we can put it to use. While Dan’s own knowledge would definitely be considered embodied knowledge, after 22 years of grain growing, even Dan said:

> I don’t have all the knowledge but the people who have a certain kind of knowledge are just on this island here, they’re the redneck old farmers who used to, and some of them still do grow field crops. And they know all about tractors and tilling and timing and it’s so straightforward for them…I think

> that's the way. To embrace all these old farmers, maybe turn them on to more organic ways. But they've got the knowledge and the experience. (October 7, 2008)

Once we were armed with this knowledge, I asked Dan what the vision was. He responded:

> It's a pretty simple vision [laughter]. We've got all these fields that are lying empty. A lot of them are even growing hay now so instead of hay, you turn the field over and you plant barley and quinoa and oats and rye and wheat and you just figure out how to harvest it efficiently and you start eating it. That's the main thing. (October 7, 2008)

Complementing this type of embodied knowledge, new and innovative knowledge nodes are emerging in various locations throughout the grain network. A number of growers have gained technical and experiential knowledge through various realms of study and/or years of experience. Many growers and processors have expressed interest in skill and knowledge sharing and some have actually done this on numerous occasions.

Simple ideas of awareness and promotion also act as key knowledge nodes within the network. The Heritage Grains foundation,[12] based in Vancouver BC is busy promoting the revival of heritage grains and conducted a number of public demonstrations at Vancouver farmers' markets. By connecting the role of heritage grains to politics, nutrition, and history, and providing education, networking and support for heritage grains, this organization is an important knowledge. My own participatory workshops and public milling demonstrations help people realize and explore many aspects of grains, flour and bread that often go un-noticed.

[12] www.lilikoi.ca/heritagegrains.org/index.php?pr=Our_Mission

3.3.4. Power dynamics

The prevalence of internal power dynamics and interpersonal conflicts runs the risk of crippling cooperation within the network. Ideals forming around certain vendettas or dogmatic paradigms are a reality in the grain network. People talking about one another, rather than with one another, is a key challenge identified by participants.

> I think the greatest challenge whenever we do something is the inter-relationship challenge between humans. We tend to derail often because we have personality conflicts, power issues you know, whatever and I can tell you that it has been a joy working with all these people. There's been a huge degree of open-ness whenever we start running into personal things. It seems like people just let it go and we move on you know. (Interview 6)

Power dynamics and interpersonal conflicts can affect everything from machinery and equipment sharing to marketing strategies and opportunities. Power dynamics can devalue years of work in field trials and strain collaboration and trust. Most importantly, power dynamics can disrespect and/or overlook the variety of knowledge nodes that hold great potential for expanding grain chains in the region. Most participants are not strangers to these power dynamics. However, participants must acknowledge that many of the numerous types of challenges noted above are related in some way to relational issues present between different groups of actors

Although challenges discussed in this chapter represent some significant obstacles, many of these challenges are not uncommon within the development and/or strengthening of local food systems at a more general level. For example, Ross (2006) identified five major challenges given by farmers involved in SFSC in Maine, USA. These are farmland preservation, training and financing for new farmers, working capital, business planning assistance, and infrastructure such as meat slaughtering or grain milling (p. 119). At least a few of these challenges could be applied to grain initiatives and grain chains in SW BC.

However, as the following case study will exemplify, certain unique models of community grain production are offering innovative grain chain arrangements that counter many of these challenges. In addition to confronting these challenges, such grain chains are also active in the production of deep and complex social histories.

Chapter 4.

The Nelson/Creston Grain CSA

> The rain is relentless as I pull up into the parking lot of the All Season's Café. Located in the back alley above the main street in downtown Nelson, the café blends into the stones and trees that frame the backdrop. People and their instruments passing through the front doors; these are the warning signs of a celebration. By the time the doors have officially opened, a coffee and mimosa combo has already woken me up, and by the time the baskets of baked goods are strategically placed on the tables, the celebration of grains is confirmed. “Research”, I answer as I take a sip from a second mimosa. The three women sharing the table with me nod and seem to accept this answer. “Research about grains grown locally, research about the links between grain farmers, millers and bakers” I add, mostly to confirm this to myself. My gaze drifts to the displays of baked goods, crackers and breads melding perfectly with one another. Chocolate biscotti, slices of red fife bread, almond and cranberry crackers. The raindrops rolling off the edge of the canopy are mesmerizing. The microphone crackles and I turn on the tape recorder.
>
> (September 21, 2008)

In mid-September, I travelled out of SW BC to explore a very exciting grain initiative that I had been interested in for some time. Tucked away in the mountain town of Nelson, in the southeastern corner of the province, I celebrated the harvest of local grains and the successes of the Nelson/Creston Community Supported Agriculture (CSA) project. While out there, I met with the co-organizers and promoters of this exciting project. Their thoughts offered insight into a number of themes emerging from research based in SW BC.

While this 1st-year project was not without its own challenges and undoubtedly encountered some friction, this project was an interesting learning experience for all people involved. This particular arrangement deserves special attention since it offers key insights

regarding innovation and planning, risk mitigation, production and processing arrangements, marketing and sales planning, and active community engagement.

4.1. Innovation

According to Hinrichs (2004), “although innovation is sometimes narrowly seen as new, commercially exploitable technologies, it also encompasses new ways of doing things across diverse arenas of human activity” (p. 35). During a local eating challenge, residents of Nelson were confronted with the same challenge as their counterparts in SW BC, the lack of grain agriculture in their bioregion. Although a number of options existed (i.e., they could cut out grains completely, they could get locally processed flour from a local miller) some committed residents were not going to give up (cut out grains) or compromise (be content with local processing) without first exploring the limits and possibilities of provisioning. Organizer Matt Lowe talks about the simplicity of the experiment:

> It was a very simple idea of, Can the farmers over the mountains, where there is a big agricultural area, can they grow grain? Can they grow my main staple? And what grains? Well, we determined those as we developed the project and we didn’t intend to take care of all the grains, we just wanted to stimulate grain production in the region again. (September 21, 2008)

It was determined that yes, farmers in the nearby Creston Valley (approximately 100 km east of Nelson) could grow just the grain that Nelson residents were looking for. The proposed model for procurement represented a form of innovation on the part of interested consumers. Through a Community Supported Agriculture (CSA) program, a system that “seeks to build communities of farmers and consumer members” (Cone & Myhre, 2000, p. 187) residents re-arranged existing patterns of grain procurement to meet the needs of the community.

In order to understand the significance of the project, a clear understanding of the CSA concept is required.

> In its simplest form, CSA is a contractual agreement between a farm and a group of consumers variously described as “shareholders,” “members,” or “subscribers.” Members purchase a “share” at the beginning of the season, allowing the farmers to plan production for a guaranteed market and providing capital up front to purchase inputs. Thus, shareholders pay the real costs of production and in this way contributes to the support of local, small-scale growers. Risks are shared: if there is a poor harvest, everyone gets less, not just the farmers. The cost of a share, decided in advance, takes into account the estimated costs of inputs and labour and the standard of living of the farmers. (Cone & Myhre, 2000, p. 187)

Since members of typical CSA programs generally receive a weekly share of a farmer’s produce, the Nelson/Creston Grain CSA experimented within the commonly used model, by providing one large share of cleaned grains at harvest time. Because the crop was set up as a one-time harvest, rather than consumers receiving a weekly box over a 20-week period, the potential risk was a lot higher than a typical CSA.

The idea and the planning process emerged from the consumer side of the chain. But rather than consumers simply turning to farmers and saying, “What are you going to do about this?” the consumer side took control. The consumer provided for their needs as the project was on one level about provisioning local residents with local grains. At the same time however, consumer demand was not simply self-serving, as the project was focused around making relationships with organic farmers or helping farmers “caught up” in the conventional system transition to more sustainable techniques. The project was committed to supporting the contracted farmers with very attractive prices for organic grain crops, and sharing in the risk of this exercise.

The West Kootenay Eco-Society in Nelson[13] and Wildsight in Creston[14] organized this CSA, the first of its kind in Canada, collaboratively. The project involved three grain growers located in the Creston Valley. All of these farmers had some previous experience growing grain, and 200 shares were sold at $100 per share. Each share offered 100 pounds of grain, including four different kinds of grains.[15] The certified organic grains were to be delivered after harvest and cleaning to individual shareholders as whole grains.

During the harvest celebration, organizer Matt Lowe talked about the shareholders starting to think like farmers. Thinking about the seeds going in, wondering about the influence of that last rainstorm on the crops, and watching the weather turn as harvest time approached. These shareholders were connected to this crop in a very powerful way. Much of local food literature deals with people wanting to know their farmer, to know where the food comes from. The CSA arrangement facilitates people knowing more than just their farmer, it can bring people into the farmer mentality. Participants commented that everyday weather is now connected to the harvest they were waiting for. Excitement and anxiousness cohabit in this process. Whichever feeling rises to prominence, the new reality is that food and agriculture are dynamic and central components of everyday life.

4.2. Risk mitigation

Risk is one of the major factors influencing the production style of grain growing on the south coast. As one experienced grain grower noted, “It’s once a year, you only get one shot at it” (Interview 8). The experimentation with varieties and the fluctuations in yearly

13 http://eco.kics.bc.ca

14 http://www.wildsight.ca/branches/creston

15 A recent press release (Spring 2009) from the farmers and organizers involved noted that each shareholder received only 81 pounds of grain each (specific reason not reported).

climate can influence the successes or failures of certain crops. One of the strengths of the grain CSA was that partner farmers were not only experienced, but they had a connection with their land.

> None of these farmers have known of a crop failure so, and these are farmers that have grown grain commercially, and are growing big vegetable gardens and so the Creston Valley is really, although it gets drought and you know sometimes it gets, you know some big wind and some rain but by and large is benign. So these guys are confident that it's really suitable, especially for a CSA model. You know where there's a risk and they feel confident they will get a return always. (Interview 5, September 21, 2008)

Many growers on the south coast have expressed interest in being involved in such an arrangement. Part of the excitement about this model stems from the fact that there is some "buy -in" from shareholders that can help offset some of the initial production and processing costs. Shareholders also take on some of the risk, another element that appeals to farmers who are still learning about grain growing in SW BC.

4.3. Production and processing arrangements

As was noted in Chapter 4, equipment and machinery are often noted as barriers to growing the grain industry in SW BC. In the case of Nelson/Creston, this machinery barrier was tackled head on, before the contract was even made. According to Matt Lowe, the farmers themselves took on the cooperative responsibility of 'dismantling' this barrier.

> Some of them do have their own stuff but when we had that first meeting in December, the cool thing was here were the three farmers talking about what we would need come harvest time and during the growing season and next thing you know they are having their own conversation in front of all of us, "What do you have? OK. Well, we can borrow that, we'll use yours". And next thing you know, what used to exist on the prairies way back 100 years or so ago when the prairies were first settled, where everybody was sharing equipment is happening again. (September 21, 2008)

4.4. Milling

What are consumers going to do with 100 pounds of whole grains? This was a major question for the project and, as Matt Lowe said, a certain amount of “magic” was involved in finding the answer to that most pressing question.

> David used to make his own bread in Creston and he used to mill his own grain because that’s how he does things…he heard about this project and he approached me and said I am willing to start up my mill again and mill for this project and we can do it right in Nelson. I will do it one day a week so people can have freshly milled grain all the time. And what a difference. It tastes so much better and it’s way more nutritious for you to mill it on a weekly basis. (September 21, 2008)

The project found an answer to another major challenge and included another local link in the process. This miller is charging a nominal fee for his services and his addition is a distinct and important local layer. While a few individual customers may have their own mills or have their own connection to a miller in the area, I was informed that David was lined up to mill the vast majority of the grain for the shareholders in this project.

4.5. Storage and Transport

The grain was harvested, cleaned and then collectively stored at one farmstead while it awaited transport to the shareholders. Rather than sending a convoy of pickup trucks to move the grain, a number of innovative transport ideas were proposed. The first involved having the multiple tons of grain moved by bicycles over the mountains between the Creston Valley and the town of Nelson. In the end, the grain was transported a short distance by vehicle and then put on a sailboat and sailed to the Nelson lakefront. This innovative and seemingly ‘outrageous’ transport mechanism contributed to the publicity of

the project. The movement of this grain stayed true to the idea of providing sustainable transport and opened up the opportunity for another link to be added to this grain chain. The operators of this sailboat added another rich local layer to this process.

4.6. Marketing and sales

In addition to the 180 shares sold to individual consumers, a local bakery also purchased 20 shares. Because the model was adaptable and there was high value placed on having another local link involved, the price was reduced for this baker.

> …We talked to the farmers and we said we have a bakery on board. This guy he supports all the reasons for this you know, the much broader issue reasons. He is fully an environmentalist. He is fully concerned about what is happening to the earth and he will take the risk, but we said, we think, we don't want to see him bear, um, an enormous risk, so we said how about 75 cents a pound for him and they were still laughing. They said sure, that works for us. (September 21, 2008)

The market prices for organic grain run somewhere between $1 to $1.50 per pound although this price may drop slightly depending on the quantities in which it is purchased. Within the CSA model, an open dialogue between shareholders, producers and processors allows prices to be contingent upon the needs and desires of the community.

4.7. Active community engagement

In addition to all the positive elements that form a part of this exciting grain chain model, there are also behind the scenes activities that are often invisible to many shareholders. As Matt communicated:

> CSA is a whole lot of work. Just in terms of collecting the members, cataloguing it all, communicating, bringing the people to those farms, because that's a really

> important part of it, newsletters, bringing speakers, you continually need to educate people to maintain their enthusiasm so they are willing to support the farmers. (September 21, 2008)

Civic agriculture, or "agricultural activities that are tightly linked to a community's economic and social life" (Lyson, 2000) is championed as the opposite of, and distinct from the "commodity agriculture" that dominates in the US (Lyson & Guptil, 2004) Although the movement, expressed in initiatives such as CSA's and farmers' markets is an important contribution to reformulating modes of production and consumption, it still falls short of truly civic agriculture by some accounts.

DeLind (2002) critiques manifestations of civic agriculture that emphasize the 'alternative' but overlook the truly civic participation that is needed for food system transformation. She asserts that although much praise goes to the diverse range of projects that it draws together, civic agriculture has the tendency to express itself through the individual behaviour of producers and consumers; producers and consumers now operating within a "green system". This compliance of the individual actor working within traditional market relations overlooks the importance of civic agriculture as a tool for the production of active citizenship and a sense of belonging to a place. DeLind suggests that 'private' choices need to occur in conjunction with public expressions of citizenship. Through inhabitation, or finding the connection to one's place, citizenship finds a loci in which collaborative expressions of democracy become "embodied and public" (p. 221) through common work in a common place.

The Nelson/Creston Grain CSA project comes very close to truly civic agriculture. Although interviews with individual shareholders were not conducted, based on interviews with organizers and participant observation, it is clear that the project itself united a

community and tied that community to their place. Private choices (i.e., an individual wanting to consume local grain products) were only possible through this public expression of citizenship, through a collective procurement project. Perhaps if local grains had been available for sale at the Nelson farmers' market, such expressions of citizenship may have been at the very least, less obvious, or neglected in favor of the alternativeness of face-to-face sales. For residents in Nelson and Creston, the connection to one's place is profound since that place provided the foundation for the development and success of the whole project.

The model addresses many of the challenges identified by grain initiatives in SW BC. Contracting farmers who knew their land and had some experience farming organic grain minimized the risk of growing grain and the risk inherent in the CSA model. A dialogue between growers produced a cooperative equipment sharing arrangement. The post harvest infrastructure, storage, milling and transport were arranged as the project gained momentum. Lastly, the model itself arranged the marketing and sales. The shareholders forward bought their grain. All the marketing that needed to be done was done before the harvest was completed. The grain knew its destination. And the bakery buying in as an individual shareholder (an idea known as Bakery-Supported Agriculture, or BSA) allowed people who were not shareholders access to some of this grain through a local retailer. This shared the wealth in terms of sharing this local flour as well as keeping money circulating within the local economy. Furthermore, each step in the process of moving grain from the field to the tables of shareholders was part of a social network. As was discussed in Chapter 2, the more actors involved in this grain chain, the deeper the social history of the product and the chain as a whole.

The final part of this analysis requires returning to the 6-quadrant map in order to locate this grain chain in terms of its local layers and its social history. This grain arrived to the customer embedded with a traceable record that includes the interaction of people, technology and landscapes. Matt Lowe said that the farmers in the CSA are free of “the whim of global markets and are now in the hands, and I say, really, the nurturing hands of their community” (September 21, 2008). On the other side of the equation, the community is now in the nurturing hands of their local farmers. The numerous links in this grain chain are in geographically proximate regions, most exchanges involve face-to-face transactions (provided via organizers and farmer meetings, farm tours for shareholders, shareholder and miller interactions, miller and baker exchanges, baker and consumer relationships) and knowledge of the process is a key part of shareholder engagement. Based on the 6-quadrant map, the Nelson Creston Grain CSA brought a totally local product to shareholders. Drawing from the criteria outlined in Chapter 2 for mapping the depth of a given social history (the number of geographically proximate links, the number of face-to-face exchanges occurring at these links and the communication of this process at the point of sale) the process met all the requirements for a complex social history, employing both social and local links wherever possible. The complexity of this social history aids the production of social capital. These networks of norms, reciprocity and trust are crucial to the development of local food chains.

Chapter 5.

Conclusions and Recommendations for the Future

This chapter offers some recommendations for grain initiatives in SW BC based on analysis of the data.

5.1. Instill a broad understanding of value in the value chains

Because grain chains in SW BC will not be responsible for providing all the region's grain needs, one of the key processes of many grain chains at the current time is the creation of social networks charged with social capital and complex social histories. Based on the three criteria for gauging the depth of a given social history (number of links involved, number of face-to-face exchanges, communication of this process at the point of sale) the first recommendation would be to critically analyze a trend towards *total* centralization of production, processing, retailing, etc. in new operations (although existing single-site chains should be supported, not overlooked).

Although the traditional idea of value adding, that is, capturing more of the food dollar by doing more steps yourself, makes economic sense, the flip-side is that it removes potential local layers from the social supply chain. Until the industry expands to introduce more independent grain chains, keeping those 'extra' stages in existing grain chain means: (a) the socially-long process produces a richer and more intense social history, (b) allows

more actors to receive a small portion of the economic value while contributing their services, and (c) since it is clear that different stages of the chain require different skill sets (growing, milling, baking), recognizing this allows for well-suited infrastructure to develop since people can find a specific role within the niche and develop their knowledge and skills of this sector accordingly.

5.2. Support your local processor

The second recommendation is to broaden understandings of local with regards to grain in this region. By including local processing activities such as value added milling and bakers working with locally milled flour; participants recognize the importance and contribution of different local layers. Bruce, the miller at True Grain, claimed that what they are doing is "educating people to support the grains that are locally milled. That's a step from the locally grown grains to the locally milled grains. Support the local mill" (October 9, 2008). As was noted earlier, this requires moving from a one-dimensional view of local (either it was grown locally or not) to a multi-dimensional view (i.e., the recognition of different local layers which contribute to the process).

This support is very important for three reasons. By encouraging people to support local processors: (a) the social supply chain is extended, offering multiple opportunities for that chain to be communicated via face-to-face transactions, (b) understandings of the local begin to broaden and become less dogmatic, more fluid and relational, and (c) incremental steps such as this help people get 'involved' in the grain chains in small doses, rather than demanding full immersion. In addition to the higher nutritional value and better taste provided by locally milling flour, one CSA shareholder made this comment:

> Yeah, before this [the CSA] happened, I would support – who was getting grain from someone who was milling it in Creston who was getting it from southern Alberta. So I said to myself "Okay, supporting a local retailer, supporting someone milling in Creston. Keeping more money in the region that way. Because that's all there was available." (Interview 6)

Throughout the course of this research, a few innovative ways to support local processors presented themselves. The first would be what will be termed a CSP (Community Supported Processor) program. This program would revolve around a community setting up shares with a local miller. The share amounts would vary depending on the flour needs of the shareholder, but the CSA model would be similar. A weekly bag or two of flour picked up or delivered, the formation of a relationship between shareholder communities and a miller they know. A nutritious and fresh product for the shareholder, some guaranteed work for a miller which would enable future investment in larger scale equipment or other expenses necessary for 'smart growth'

The second model is already emerging in various ways in various locations. Contract growing for bakeries, or what has been termed Bakery Supported Agriculture (BSA) acts as both a marketing tool and a guaranteed sales outlet. While it only splits the risk between two or three parties, it nevertheless relieves the contracted farmer of the sole burden of production. It offers bakeries an added marketing tool and relieves the farmer of some of the potential stress that emerges from having to grow, market and sell grain.

BSA or CSP programs also encourage an active dialogue between producers, processors and consumers regarding local grain products. The miller in a CSP program can offer the shareholder the option of non-organic, yet locally grown grain or imported certified organic grains. In this fashion, the shareholders have some say in what sort of products the program offers. It allows the program to be fluid enough to react to people's allegiance to a

local grower, or their commitment to organics all the while maintaining an open and active dialogue with a miller they trust.

5.3. Cooperative ideals

Although niche market economics are a motivating factor to the "grain industry" in SW BC, the production of strong social networks is also a powerful characteristic. Under this broad heading of “cooperative ideals”, local grain networks include equipment sharing and knowledge sharing. A specific equipment sharing co-op or something similar would: (a) mean that no one who wants to grow and has the land to grow would be prohibited by simple lack of access to machinery or the capital to invest in such machinery, and (b) allow a person or persons to find their niche within the niche, keeping multiple social links in the chain. This system of equipment sharing, or even options for contract seeding, harvesting or cleaning, could be set up through a formal database or informal agreements between interested parties. Classes, workshops, seminars, participatory growing experiments, field days, festivals and all kinds of research will assist with the transfer of appropriate knowledge and skills within the network and to interested parties in the public domain. Based on the views of one participant, although there is a certain level of individualism in some producers and processors, the sharing of experiences will strengthen the future of individual grain chains and the network as a whole (Interview 3). Rather than suggesting that there is “not room for anyone else to grow grain in the region” (Interview 12), the success of certain grain initiatives in SW BC will assist the development of strong grain chains while adding momentum to the larger grain network.

5.4. Tell people where grain is to be found

The next recommendation is to develop a website for grain initiatives in the region. This website would contain a list of actors involved, update potential processors to the product availability and price, allow an active dialogue to emerge around the needs of others, and offer potential consumers a map of where and how to procure local grain products. The website would become a community based marketing board for grains in SW BC, including a map of all local growers and processors, to be used as a tool for networking and open communication, and a resource for consumers interested in local food procurement thereby acting as a legitimating force for individual actors involved by identifying other initiatives. The knowledge of other initiatives may in fact contribute to links being made that otherwise would be unknown to the actors involved.

5.5. Incremental growth for initiatives and the grain chains as a whole

The final recommendation is what will be termed ‘incremental growth’. This refers to the idea of grain chains, and potentially the larger grain network, growing slowly as an inter-related whole. Even Tom Henry, the biggest supplier at the moment, recognized the value of this need for ‘incremental growth’. He said: “There are possibly hurdles to this thing that are going to close it right down. And there’s possibly not. I suspect if we grow it slowly and carefully I think there can be a nice little local grain culture and economics” (October 8, 2008).

Producing food grade grains requires a whole different set of infrastructure than growing grains for animal feed. Tom Henry’s 30 tons of red spring wheat forced this region to confront some major challenges with regards to growing the food grade grain industry.

During a long talk with Tom Henry, we discussed several issues that challenge the assumption that a simple, drastic increase in supply is all this region needs. Tom and I even talked about it as verging on commodity scale, especially in comparison to overall yields of previous years.

The first issue has to do with the inter-related ideas of supply, volume and availability. Based on this yield, people can finally begin to talk about local grains in the context of food security since the supply side is providing some notable tonnage. Second, it is clear that this amount of grain requires different marketing strategies. It's labour and time intensive to sell 30 tons of grain to individual consumers or small-scale millers. This amount of grain (conventional or organic) requires looking for big sales directly to interested bakeries or millers, perhaps even pre-purchased grain shares. But even Tom talked about the economics of milling:

> Think of it from the mill owner's point of view. This is some of the sobering stuff about local food. Why not just buy a rail car out of the prairies? Organic, or inorganic delivered. They are going to tow that thing and drive it across, leave it beside your mill, or a semi trailer or a B train of grain out of the prairies, they are still going to deliver it cheaper than we can grow it…The local food thing has to sink down into the middle class, way, way, way more before that mill will go, yeah, it's worth buying 80 tons of Vancouver Island wheat at an increased price. Because when you buy bulk the shipping is just not that big a deal. (October 8, 2008)

All these considerations are tied to the idea of 'incremental growth' in their way. When rapid growth occurs in one sector (i.e., a significant increase in the amount of local grain) the other links have to 'catch up', rather than be there and be established, ready to absorb the increase in supply. This can result in: (a) the development of inadequate or inappropriate infrastructure while attempting to catch up, (b) a saturation of the market without alternative options for selling that grain, or c) farmers investing in their own

infrastructure, essentially cutting out, or not involving, other actors (making single-site chains). Although there are challenges to marketing and selling locally grains that are non-organic, if the market absorbs this grain (which it appears poised to do) infrastructure planning can begin with the assumption that more will be grown in the years to come. Although the excitement around locally grown grains often leans towards rapid growth, a certain degree of restraint is needed. As can be learned from Tom's experience, a drastic increase in supply is not simply absorbed without its own challenges and the accompanying pressures involved.

5.6. Conclusions

For many years, big farms, big networks, big business and big trade have almost exclusively controlled one of the most important staples in the human diet. Counter to this trend in which consumer control is traded for the assurance that "Big Ag" will provide equally for all consumers all the time, alternative grain systems are emerging. The development, strengthening and growth potential of small-scale grain operations in SW BC is reliant on the formation and maintenance of diverse, yet inter-connected social networks forming between landscapes, farmers, processors and consumers.

In addition to distributing the economic value between different actors based in the same local region, these networks, otherwise known as grain chains, contain diverse social histories that are contingent upon the number of geographically proximate links that contribute to the process, as well as influenced by that process being shared between the actors involved and with consumers at the point of sale. A long social history aids the production of social capital. Social capital is the defining feature of supply chains wherein the deliberate process of building social exchange networks is characterized by proximity,

communication and trust. Like the many characteristics of Short Food Supply Chains, (SFSC) social value differs from traditional food chain value by privileging the role actors joining together to develop strong social networks, rather than simply to increase the economic rewards of each actor(s) involved. Social value is an important concept since it allows for expanded understandings of viability, giving specific attention to the power of strong social networks to help refashion food supply chains. Awareness of the value of social histories, how they are produced and why they are important will offer theoretical and practical contributions to grain initiatives and grain chains in the region.

Despite holding the potential to be rich writers of complex social histories, individual grain initiatives and linked grain chains in SW BC are faced with numerous challenges. The most commonly noted challenges are access to good land and seed, equipment and machinery sharing, the lack of adequate “post harvest infrastructure” (cleaning, storage, milling facilities), debates around production methods as well as knowledge sharing and power dynamics.

However, in recent years a variety of unique initiatives offer hope in the face of many of these challenges. Emerging from within the communities themselves, Community Supported Agriculture (CSA) operations, contract growing initiatives, Bakery Supported Agriculture (BSA) projects, community supported processor (CSP) initiatives, the development of “community seed banks” as well as equipment and knowledge sharing schemes are attempting to assist the long-term social, ecological and economic viability of these exciting operations.

In closing it is imperative to note that further research is needed to explore whether or not socially long grain chains are a product of necessity (utilizing the *only* infrastructure that exists) or a conscious, strategic goal of operations linking together in order to ‘story’ the

process and the product. Although numerous examples have outlined the multiple benefits of socially long grain chains involving different local layers, with the increased *economic* potential that single-site chains posit to individual operators, a crucial task of future years will be to explore the emphasis given to the *deliberate production of social networks and complex social history* when weighed against the economic advantages of investing in and developing single-site operations.

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