

**CANADIAN SUPPLY MANAGEMENT: A FOOD SOVEREIGNTY POLICY?
BRITISH COLUMBIA AND NEW ZEALAND INDUSTRY STAKEHOLDER
PERSPECTIVES ON DAIRY POLICY IN A NEOLIBERAL ERA**

by

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Abstract

As the concept of food sovereignty enters its third decade, greater analytical attention is needed to understand potentially enabling policy mechanisms in specific contexts. The Canadian supply management system for dairy, egg and poultry production is a national policy framework that controls production levels, sets prices, and limits imports. In theory, it is congruent with certain economic and political food sovereignty principles; however, the concept and value of supply management is increasingly challenged and critiqued from various socio-political perspectives. The research presented in this thesis examined supply management as a policy framework for dairy production, and its implications for food sovereignty in British Columbia (BC). In order to provide greater understanding of producer perceptions of a supply managed policy framework in relation to economic, political and socio-cultural aspects of milk production, I conducted 27 in-depth interviews with stakeholders from the BC dairy sector as well as textual analyses of industry reports. I also conducted interviews with 10 stakeholders from the New Zealand (NZ) dairy sector as a comparative case study of producer perspectives on dairy production in a liberalized policy environment. Results suggest that supply management in the BC dairy industry is more conducive to food sovereignty than the neoliberal and neo-cooperative organization of the NZ dairy industry. Yet while supply management supports economic viability for producers and demonstrates capacity for democratic governance and the development of social goals, it also has the potential to propagate economic, political and social inequities within the industry. In particular, producer identification with neoliberal economic objectives renders both supply managed and liberalized dairy systems subject to cultural forces that challenge food sovereignty principles. To function as a food sovereignty framework, supply management will require political adjustments and socio-cultural shifts both within and outside of the industry.

Preface

The research topic reported on in my thesis was identified by Dr. Hannah Wittman (Academic Director, Centre for Sustainable Food Systems, University of British Columbia), and was designed and executed with support from my supervisory committee, including Drs. Hannah Wittman, Kent Mullinix (Director, Institute for Sustainable Food Systems, Kwantlen Polytechnic University), and Marina von Keyserlingk (Professor, Animal Welfare Program, University of British Columbia). During the design stage of my research I also received support in the form of feedback from academic and industry experts, including Dr. Art Bomke, Dr. Jim Thompson, Walt Geortzen, and Tars Cheema. The thesis research conducted in New Zealand was executed under the host supervision of Dr. Hugh Campbell (Chair, Sociology Department, University of Otago) and with support from Dr. Christopher Rosin (Research Affiliate, Centre for Sustainability, University of Otago), and Dave Lucock (Field Research Manager, Agricultural Research Group on Sustainability [ARGOS]).

I designed, organized, conducted, transcribed and analyzed 37 semi-structured interviews for the research reported in this thesis; 27 in British Columbia, Canada and 10 in the South Island of New Zealand. I also analyzed industry reports, accessed through the public marketing board website. All of the activities I performed were conducted with guidance from my supervisory committee.

I obtained the Ethics Certificate (H14-00212) for this research, titled ‘Supply Management in the Dairy Industry: Implications for Food Sovereignty’ from the UBC Behavioural Research Ethics Board on April 1, 2014.

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List of Abbreviations

AAFC	Agriculture and Agri-Food Canada
BC	British Columbia
BCDA	British Columbia Dairy Association
BCFIRB	British Columbia Farm Industry Review Board
BCMMLB	British Columbia Milk Marketing Board
BCMA	British Columbia Ministry of Agriculture
CDC	Canadian Dairy Commission
CDIC	Canadian Dairy Information Centre
CMSMC	Canadian Milk Supply Management Committee
DIRA	Dairy Industry Restructuring Act
DFC	Dairy Farmers of Canada
FSC	Food Secure Canada
NFU	National Farmers Union
NZ	New Zealand
NZDB	New Zealand Dairy Board
OECD	Organization for Economic Co-operation and Development
UBC	University of British Columbia

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For the cows, from whom we harvest

Chapter 1: Introduction

1.1 Research context: food sovereignty and agricultural policy in Canada

The concept of food sovereignty emerged in the mid-1990s as a critical paradigm through which to address widespread environmental, social and political crises within the global food system (Edelman et al., 2014; Holt-Giménez, 2009; McMichael, 2005, 2009, 2014; Wittman, 2011). While the current food regime facilitates globalisation and commodification of food crops for capital (McMichael, 2009), the food sovereignty framework proposes alternative food and trade networks grounded in ecology, democracy and equity. It comprises an extensive set of goals including but not limited to: re-localisation of food systems; ecological sustainability through agro-ecological production methods; social justice and equitable access to agricultural resources; control and autonomy¹ for local food providers; economic viability and security for farming families and communities; and respect for place, life, and diversity (Desmarais & Wittman, 2014; La Vía Campesina, 1996; McMichael, 2009; Nyéléni Forum for Food Sovereignty, 2007). At its core, food sovereignty addresses social control over the food system. One of the key goals for those in support of food sovereignty is to challenge inequities in the distribution of power in agricultural systems and to include marginalized stakeholders – e.g. small-scale producers – into decision-making processes through deliberative democracy (Andrée et al., 2011; La Vía Campesina, 1996; Patel, 2009).

Despite a comprehensive ideological and theoretical framework for food sovereignty, the ability to secure a sovereign food system is, by virtue of the definition itself, spatially and

¹ According to Stock & Forney (2014), farmer autonomy is an umbrella term describing both a core value of farmers' self-identities as well as a social tool that reinforces these identities while simultaneously navigating broader, dynamic agricultural contexts. In practice, farmer autonomy may manifest in many forms including 'resistance to market logics...or the prioritization of non-economic goals in farm strategies' (p.169).

temporally contextual. It depends on the local history, social construction, and ecology of a given place, and is contingent on local food providers' ideologies and conceptions of rights (Pimbert, 2009; Wittman, 2009, 2011). Even the concept of 'local', a key characteristic of food sovereignty that includes physical, social, economic, cultural and political proximities, is contextual and difficult to precisely define (Edelman et al., 2014). Ultimately, there is no one single path to describe or develop food sovereignty in a given region; the term food sovereignty therefore broadly refers to the democratic rights of citizens to control their own food systems through many venues of social and political reform (Wittman, 2011).

Although Canadian food providers face many of the same issues as those in the Global South², including income crises and increasing farm debt, declining government support for agricultural services, commodification of resources, consolidation and loss of market power within the supply chain, and reduced control over agricultural policies, Canadian food systems exist within unique historical and sociopolitical contexts (Desmarais & Wittman, 2014; Wittman et al., 2011). Since the colonial period, Canada has relied on exports – primarily to Britain and the United States – for its industrial development (Hart 2002). Following World War II, agricultural policies in Canada incrementally adopted protectionist measures, similar to other industrialized countries (Skogstad, 1987, 2008a, 2008b) and aligning with what Friedmann (2005) refers to as a mercantilist food regime – a historical period characterized by agricultural support through state-protectionist programs such as tariffs and subsidies. In particular, objectives for increased stability, increased farm incomes and reduced market risks were unique

² Food sovereignty movements emerged in the Global South. The Global South refers to nation-states considered economically, politically and socially 'developing', and bearing the brunt of global capitalism (Harris, 2008). These countries are generally, but not exclusively, located in the Southern Hemisphere.

elements of Canadian agricultural programs and regulations such as the establishment of marketing boards (Barichello, 1995).

Although Canadian agricultural policies are still largely reflective of a mercantilist food regime, they have undergone programmatic changes since the 1980s, towards market-oriented policy frameworks and industry structures that decrease regulatory and financial dependence on the state (Barichello, 1995; Bélanger-Gulick, 2013; Skogstad, 2008a, 2008b). The history of conflict, regulatory changes and eventual dismantling of the Canadian Wheat Board – a centralized, collective grain marketing organization – exemplifies the evolution of neoliberalization³ within Canada’s agri-food sectors (Magnan, 2013). Today, the Canadian food system exists within an increasingly urbanized, commercialized, and liberalized setting, and still relies heavily on trade policies to guide economic development. In 2013, Canada was the world’s fifth-largest exporter of agriculture and agri-food products after the E.U., the U.S., Brazil, and China, with approximately half of the value of primary production exported internationally. It was also the sixth largest agriculture and agri-food importer in 2013, with 61.4% of these imports procured from the U.S. (Agriculture and Agri-Food Canada [AAFC], 2015a). At the farm level, increasing consolidation and specialization of Canadian agriculture since World War I has resulted in fewer and larger farms that account for most of the primary agricultural production, with an average growth of primary agricultural productivity exceeding 1.5% per year (Veeman & Gray, 2010).

³ Neoliberalism values market logic and aims to re-orient the state to adopt market mechanisms. This is generally achieved through deregulation, trade liberalization, and privatization of public services (Bockman, 2013). Neoliberalism is also reflected in individual and community ideals of efficiency, competition, profitability, and self-help (Bockman, 2013; Hamann, 2009).

Canada's limited historical experience with non-export agriculture, the colonization and marginalisation of Indigenous food systems, incremental adoption of a market-driven agenda, liberalization of trade policies, and pressure to increase production using technology all represent unique and pressing challenges to the achievement of food sovereignty (de Schutter, 2012; Kneen, 2012; Qualman, 2011; Wiebe & Wipf, 2011). Within the current national context, a number of discourses have emerged around avenues and opportunities for Canadian food sovereignty, incorporating a diversity of players from farmer organizations, civil society research and working groups, and Indigenous communities (Andrée et al., 2011; Desmarais & Wittman, 2014). Early discussions of Canadian food sovereignty were brought forward by the two Canadian member organizations of La Via Campesina, the international agrarian movement founded in 1993 that has been the primary fora for food sovereignty discussions globally. These two organizations, the National Farmers Union [NFU] and L'Union Paysanne in Quebec, focused primarily on agricultural production practices and trade policies; in particular, preliminary discussions addressed a context of increasingly unstable farm incomes, loss of producer power, diminished numbers of family farms and decreasing farmer shares of the consumer dollar (Desmarais & Wittman, 2013; Desmarais et al., 2011; Kneen, 2012). Following the 2007 Nyéléni International Forum for Food Sovereignty, additional non-governmental and civil society organizations in Canada began contributing to international discussions and engaging in sociopolitical efforts to advance food sovereignty (Desmarais & Wittman, 2014; Wiebe & Wipf, 2011). Within these discourses, proposed political instruments and mechanisms for food sovereignty in Canada include the development of a comprehensive national food policy, democratic and participatory policy-making processes, a constitutional right to food, and agricultural policies oriented toward localised and environmentally sustainable food systems that

benefit farmers, consumers, communities and economies while increasing food security (Kneen, 2012; MacRae, 2011; Wiebe & Wipf, 2011).

While numerous political instruments could potentially be utilized for implementing food sovereignty principles, such as the development of a national Guaranteed Livable Income to ensure fair food prices for producers, this thesis focuses on the potential of national supply management systems⁴ (Lines, 2014; Rosset, 2008); within Canada, the supply management policy framework governing dairy, egg and poultry production sectors has been identified as a clear existing mechanism that has been utilized for building alliances and coordinating efforts towards the achievement of food sovereignty (Andrée et al., 2011; Desmarais & Wittman, 2014; NFU, n.d). The research presented in this thesis examined supply management as a policy framework for dairy production, and its implications for food sovereignty in British Columbia.

1.2 Research question

Since its inception in the 1960s, Canadian supply management has been a contentious policy framework. Both the overarching concept and regulatory details of supply management have been debated extensively amongst political, industry and civil society groups; in recent years, supply management has garnered particular attention during the development of international trade negotiations (see Chapter 2.1 for further discussion). The implications of supply management have been analyzed from a range of perspectives, though most frequently from an economic lens on the premise of conforming to a globalized neoliberal food regime. The

⁴ The *Institute for Supply Management* broadly defines supply management as ‘the identification, acquisition, access, positioning, management of resources and related capabilities the organization needs or potentially needs in the attainment of its strategic objectives’. It involves an integration of multiple components such as inventory control, distribution, procurement, quality and materials management, and manufacturing supervision (Cavinato, 2010).

history and state of supply management policy in Canada generally are also well documented (e.g. Skogstad, 2008a); however, recent academic literature does not consider the implications of supply management from the perspective of producer stakeholders. Drawing on food regime and food sovereignty theories, the work presented in this thesis addresses this information gap. Ultimately, the purpose of my research was to understand the role of a supply management policy framework in the development of food sovereignty in the BC dairy industry. My primary research question was therefore as follows:

What are the implications of a supply management policy framework on the capacity for food sovereignty, from the perspective of BC dairy stakeholders?

In light of international trade negotiations such as the Trans Pacific Partnership (TPP), there has been speculation regarding the future of Canada's supply management systems. Some critics have called for abolition of the policy framework and adoption of aggressive growth strategies (e.g. Grant et al., 2014), often referring to expansion of dairy sectors in other countries following liberalization of their agricultural policies (Doyon, 2011; Hall Findlay, 2012). As such, in addition to exploring the presence of a supply management system (BC), I examined a system in which supply management has been eliminated. New Zealand (NZ)'s agri-food sector is cited as a 'paradigmatic exemplar' of neoliberal reform including dramatic liberalization of agricultural production (Lawrence & Campbell, 2014, p. 264). Considering its small size, NZ has become a disproportionately large player on the international stage since the 1980s, trading with over 150 countries and possessing one of the most open economies amongst Organisation for Economic Co-operation and Development [OECD] countries (Patman & Rudd, 2005). Due to its competitive advantage on global markets, dairy has become a significant contributor to the NZ

economy and is currently the nation's most valuable export commodity (Statistics New Zealand, 2014); in 2013/2014, dairy contributed 37% of the total value that NZ earns from its merchandise exports (DairyNZ, 2014). The NZ dairy sector is therefore a valuable comparative site in which to examine changing models of food system governance, in the context of a globalising food regime (Le Heron, 2003; Rosin, 2013, Stock et al., 2014).

One of the key differences between Canadian and NZ dairy industries is their respective reliance on exports, especially with respect to the size of the country. Supply management quota systems restrict the amount of dairy Canada can export internationally; in 2014, Canada exported 95.3 million kg dairy products (Canadian Dairy Information Centre [CDIC] 2014a), generating CAD\$281 million in revenue (Table 1). In NZ, dairy is the biggest exporter earner; 95% of dairy products are exported to over 150 countries, generating roughly \$14 billion a year.

Overall, this research contributes to a growing body of literature analysing place-based and systemic conditions for the development of food sovereignty in specific contexts, as called for by critical food sovereignty researchers (Edelman et al., 2014; Patel, 2009; Schiavoni, 2014; Wittman, 2011).

Table 1. *Demographic and economic characterization of the dairy sector in Canada and New Zealand*

	Canada	New Zealand
Human population	35.99 million ^a	4.65 million ^h
Number of dairy farms	11,683 ^b	11,927 ⁱ
Number of milk cows	953,200 ^c	4.92 million ⁱ
Average herd size	77 ^d	413 ⁱ
Milk produced	7.83 billion litres ^e	20.7 billion litres ⁱ
Cows/capita	0.03	1.06
Litres milk/capita	217.6	4451.6
Gross Domestic Product (GDP) (direct) of dairy production (year; % national GDP)	CAD\$5.6 billion (2013; 0.35%) ^f	NZD\$5 billion (2010; 2.8%) ^j
Value of international dairy exports	CAD\$281 million ^g	NZD\$14-18 billion ^k

Source: ^aStatistics Canada (2015a); ^bCDIC (2015a); ^cCDIC (2015b); ^dCanadian Dairy Commission [CDC] (2015); ^eCDIC (2015c); ^fÉcoRessources (2015); ^gCDIC (2014a); ^hStatistics New Zealand (n.d.); ⁱLIC & DairyNZ, 2014; ^jSchilling et al. (2010); ^kMinistry for Primary Industries (2015)

1.3 Methodological overview

Food sovereignty does not offer a prescribed policy framework but, by definition, emphasizes the inclusion of affected stakeholders in decision-making processes and knowledge generation (Pimbert, 2006). Similarly, the current political context of the Canadian dairy system calls for constructive dialogue among stakeholders in attempts to resolve challenges (Doyon, 2011). I therefore addressed my research question using a qualitative methodology to capture a broad range of individuals' lived experiences and perceptions (Marshall & Rossman, 2011). The research design involved in-depth interviewing and textual analyses of industry documents and reports. In-depth, face-to-face interviewing provided flexibility in data collection. The interviews were scheduled, and I arrived prepared with a list of topics to discuss; however, the interviews

were not scripted and I respected the framework and unfolding of responses provided by the participants, providing open-ended clarification and elaboration when necessary. I achieved methodological and data triangulation by collecting data from multiple sources (including interviews and industry documents) and representing diverse stakeholder perspectives. I also validated findings and interpretations during analysis through member checking and peer review.

This study took place in British Columbia (BC), Canada and on the South Island of New Zealand (NZ). Participants included industry stakeholders who are affected by dairy policy. According to the BC Ministry of Agriculture [BCMA], the journey of milk from the farm to the table relies on the following stakeholders (BCMA, n.d.):

- a. Dairy farm owner, manager and staff (milkers, herdspersons, field personnel)
- b. Breed associations
- c. Artificial insemination technicians
- d. Dairy herd improvement advisors
- e. Veterinarians
- f. Financial advisors and consultants
- g. Milking equipment, farm equipment, building and facility suppliers
- h. Feed producers and nutritionists
- i. Dairy processors
- j. Government inspectors and advisors
- k. Government and university researchers
- l. Bulk milk truck drivers
- m. Milk product deliverers
- n. Store employees

In its list of stakeholders, the Canadian Dairy Commission (CDC – a Crown corporation in charge of facilitating dairy policy, setting support prices and administering national quota) includes national organizations such as the Consumers Association of Canada and Dairy Farmers of Canada, as well as provincial boards such as the British Columbia Milk Marketing Board (CDC, n.d.). I acknowledge this large and diverse group of stakeholders who contribute to the BC dairy system, and additionally recognize the role of consumers, dairy cattle, and community; however, for the purpose of this research, I define ‘dairy stakeholders’ as producers, processors and policy actors (including provincial boards and farmer cooperatives). In New Zealand, a similarly large number of stakeholders are involved in the process of dairy production; again, I selected dairy producers and policy actors (who are often involved in processing) as participants for this research.

All documents and reports analyzed in this research were accessible to the public, and interview participants were not considered to be a vulnerable population in the context of the research project. Once contacted, participants had the choice of responding and agreeing to interviews; they were informed of the research design and agenda, and were given opportunity to provide feedback. It was made clear to participants that they may resign themselves and their contributions from the study at any time with no consequence. All participants were legal adults and considered able-bodied to protect their personal, social and economic interests; this research did not expose participants to risks beyond those experienced in everyday life.

1.4 Thesis overview

This thesis presents research investigating the potential for the Canadian supply management framework to support food sovereignty in the British Columbia (BC) dairy industry. In Chapter 2, I discuss the implications of supply management for food sovereignty

based on interviews with British Columbia dairy stakeholders. The third chapter presents a case study examining the implications of liberalization of agricultural policy on food sovereignty in the New Zealand (NZ) dairy sector, from the perspective of NZ dairy producers. The final chapter highlights any additional discussion emerging from this research and considerations for future research.

Chapter 2: Supply management in the Canadian dairy sector: stakeholder perspectives and implications for food sovereignty in British Columbia

2.1 Introduction

History and structure of Canadian supply management

Supply management is a state-assisted policy framework, developed by federal and provincial governments during the late 1960s and 1970s to address economic volatility and diminished bargaining power for Canadian dairy producers, relative to those downstream in the supply chain (Skogstad, 2008a; Tamilia & Charlebois, 2007; White, 1971). Following World War II, shifts in technology and the marketplace (e.g. an increasing demand for butter substitutes and shift towards off-farm processing) resulted in massive surpluses of milk products and volatile dairy markets (White, 1971). Farmers faced economic inequities and instability, as well as diminished market power. In response, the federal government introduced a succession of policies throughout the 1960s and 1970s. The early attempts to manage surpluses of production involved significant government purchases and deficiency payments to producers, which were later replaced with quotas to allocate deficiency payments, followed by quotas to limit production. As dairy policy evolved in Canada, it drew away from direct subsidies and relied more heavily on producer-controlled marketing boards and the CDC (est. 1966) to match supply with demand (White, 1971). By the early 1970s, marketing plans and legislations were in place for the modern national supply management system in the dairy sector; not long after, poultry (chicken and turkey meat), egg, and hatching egg industries followed suit.

The Canadian supply management framework consists of three interdependent pillars: controlled production, price setting, and import restriction. Controlled production refers to the monitoring and allocation of production quotas, administered by national and provincial marketing boards. The process of establishing and allocating quotas differs among the

commodity groups. According to Larue and Lambert (2012), the national marketing board responsible for administering the chicken production quotas have used a ‘bottom-up’ approach since 1995, incorporating buyer input into quota levels in order to allocate increases in national supply. In the dairy sector, national quota is divided into two markets: Fluid milk includes milk processed for beverage use, including table milk and cream; industrial milk refers to milk utilized for other products such as butter, cheese, and milk powder. The fluid milk market is regulated provincially and allocated by provincial marketing boards, while the industrial milk market is regulated nationally. Quotas for industrial milk products are determined by the Canadian Milk Supply Management Committee (CMSMC), which sets a national production target under the National Milk Marketing Plan. This industrial milk quota is calculated based on estimates by the CDC, and measured in terms of kilograms of butterfat. The national quota is then divided into provincial shares, which provincial marketing boards further divide and allocate to respective producers according to their own policies and agreements. Each province has an obligation to fill their quota, and individual producers are subsequently penalized for prolonged periods of over- or under-production.

The second pillar, price setting, refers to the determination and implementation of set payments to producers through marketing boards. In the dairy sector, all producers receive equal payment (a blended price for both industrial and fluid milk sales) for the constituent products in their milk, with butterfat yielding the highest return. Industrial milk prices are determined by the provincial marketing boards according to target prices developed by the CDC, and vary depending on the end use of the product (for instance, ice creams and yogurts receive higher prices than cheeses or butter). Fluid milk products are more lucrative than industrial products; these prices are determined by provincial marketing boards based on a formula developed by the

CDC. This formula accounts for changes in two categories – the national cost of production (COP) and the consumer price index (CPI) – each given 50% weighting. The COP formula is calculated annually and includes feed costs, capital costs (not including quota), labour costs, and cash costs. Cash costs are derived from a survey approximately 200 producers across Canada, chosen randomly to be representative of the Canadian dairy farm population (CDIC, 2014b). The CPI is calculated monthly by Statistics Canada and measures the ‘rate of price change for goods and services bought by Canadian consumers’ (Statistics Canada, 1996).

Import restriction, the third pillar of supply management, refers to the use of tariffs and tariff rate quotas (TRQs) to limit imports of supply managed products for domestic consumption. Originally, imports were regulated by quotas; however, following the 1995 Uruguay Round of multilateral trade negotiations, quotas were replaced by Tariff-Rate Quotas (TRQs) which allow a small volume (5% in dairy) to be imported for domestic consumption at low tariff rates. Any imports beyond this are taxed 201-298%, essentially prohibiting additional imports for domestic consumption (Doyon, 2011; Larue & Lambert, 2012). Through these pillars, the objective of supply management is to ensure the availability of high quality Canadian products for the Canadian public, match production to consumption and control milk surpluses, protect market access and equity for Canadian producers, and provide fair producer returns at manageable public costs (Skogstad, 2008a; White, 1971).

Supply management: A food sovereignty policy?

Canadian food sovereignty working groups and farmer advocacy groups defend supply management’s objective to support domestic agriculture and ensure stable livelihoods for family farmers (Canadian Federation of Agriculture [CFA], n.d.; Food Secure Canada [FSC], n.d.; La

Vía Campesina, 2015; NFU, 2012a). Unlike Canadian farmers working in the non-supply managed sectors (e.g. beef and pork), advocates claim that farmers in the supply managed sectors are guaranteed a regular income, have avoided income volatility associated with global economic crises, and have observed increases in average total income (Doyon, 2011; Muirhead, 2013). Conversely, many non-supply managed producers have seen decreasing incomes over the past decade; from 2004 to 2010, slaughter hog prices fell 28.3%, resulting in the creation and expansion of government support programs (Statistics Canada, 2013). Many argue that a stable income contributes to the survival of Canadian farms operating within the supply managed umbrella, as well as benefiting associated rural communities (Bélanger-Gulick, 2013; Kelly et al., 2014). For instance, supply management has retained production and processing facilities in remote regions, which in turn mitigates distribution costs to consumers in those areas (de Schutter, 2012). Furthermore, import restrictions have effectually localized dairy and poultry food systems, in alignment with a key food sovereignty principle (Blouin et al., 2009; Windfuhr & Jonsén, 2005). At a global scale, production- and price-setting pillars preclude the need for subsidies, which in turn, may curtail dumping of surplus products in foreign countries – another important element of food sovereignty (McMichael, 2011; Pimbert, 2009).

Politically, supply management entails a governance structures arising from corporatist policy networks (Skogstad, 2008a), in which farmers are represented by a single organization and share political decision-making power with both state actors as well as representatives of normally adversarial industry groups. Considered ‘the most conducive to long range planning in the public interest’, these relationships legally authorize the state to monitor agricultural production and intervene in self-interested behaviours of stakeholder groups (Skogstad, 2008a, p.158), while also ensuring that farmers retain a fair amount of market power (de Schutter, 2012;

Schiavoni, 2014; Sparling et al., 2005) as well as a significant share of the final retail price. For instance, Canadian dairy farmers earned between 30–50% of the retail value of dairy products in 2010, compared to a farm share of only 17% when averaged for all agricultural commodities (Kelly et al., 2014). With high degrees of concentration in the dairy processing sector – dairy processors are the most concentrated subsector of all Canadian food processors with the top four dairy processors accounted for 66% of sales in 2008 (AAFC, 2011) – producers might be subject to powerful external control over market share from oligopolistic purchasers. For instance, in the Canadian hog industry following liberalisation of agricultural policies in the 1990s, significant vertical integration took place within the industry. In contrast, supply management in the dairy sector has provided producers with sufficient market power to prevent such integration (Sparling et al., 2005; Tamilia & Charlebois, 2007).

Challenges to supply management

In theory, supply managed industries are obligated to balance the needs of all stakeholders, including producers, processors, consumers and other participants in the food system (BCMA, 2004; de Schutter, 2012). Yet critics claim that in practice, supply management policies benefit some stakeholders substantially more than others. For instance, some argue that price-setting policies excessively inflate retail costs of dairy products for consumers, to the benefit of a small group of farmers (Goldfarb, 2009; Hall-Findlay, 2012; Lippert, 2001; Sarlo & Martin, 2012). According to Cardwell et al. (2015), the regressive costs of supply managed products may indicate that consumer stakeholders are not being considered in the development of supply management policies. In response, the industry and other defendants of supply

management claim that Canadian dairy retail prices are comparable to those in other countries⁵ and that in the absence of government subsidies, Canadian retail prices reflect true costs of production (Dairy Farmers of Canada [DFC], n.d.; Muirhead, 2013, 2014a; NFU, 2012a).

Advocates of food sovereignty also recognize inequities within the supply management system, often attributed to the monetization and marketization of production quotas (Andrée et al., 2011; de Schutter, 2012; Desmarais & Wittman, 2014; Girouard, 2014; Young & Watkins, 2010). While production quotas were historically identified as an economic rent with no true value, they are routinely sold or traded through provincial quota markets, and are used as equity to acquire bank loans (British Columbia Milk Marketing Board [BCMMB], 2014a; Schmitz 2008). The value of quotas within the Canadian dairy sector has tripled over the last three decades (Cairns et al., 2010). Ideologically, the buying and selling of quota at competitive prices has been criticized as exemplary of the free market economic philosophy, contradictory to the logic of a supply managed system, and responsible for supressing small-scale production and entry into supply managed industries (Andrée et al., 2011; Girouard, 2014; Larue & Lambert, 2012). Some individuals and researchers have pointed to self-interested behaviours and ideological platforms resulting in internal political preferences within the provincial marketing boards that appoint quota (Jacobsen, 2009; Lewington, 2010; Tamilya & Charlebois, 2007), which may hinder the ability of supply management to promote food sovereignty principles (Girouard, 2014).

⁵ The validity of these price claims are difficult to measure, as dairy prices fluctuate across regions and over time (Schmitz, 2008). Even across Canada there are discrepancies between dairy prices; the cheapest market for fluid 2% milk, located in Ontario, is 100% more expensive than the most expensive market in Newfoundland (Field Agent Canada, 2014). Other variables affect the cost of milk besides supply management policy, including region-specific costs of production, international markets, and processing fees.

External pressures have also shaped the evolution of supply management and its capacity to contribute to food sovereignty. From the mid-1980s onwards, a political economy of regional and multilateral trade agreements and pressure to respond to competitive market conditions have driven incremental adjustments in supply management policies. Skogstad (2008a) argues that this consequent ‘second generation’ of supply management features new characteristics of supply-managed industries, such as: shifts in market power to the benefit of those downstream from producers, increased consolidation, worsened interprovincial tensions, and challenges to producers’ abilities to supply the domestic demand for supply-managed products. Furthermore, despite adjustments to become more market-oriented, the fundamental concept of matching domestic supply to domestic demand faces opposition in the current neoliberal food regime, and the value of supply management is still hotly debated both within and outside of Canada (Doyon, 2011; Muirhead, 2013; Skogstad, 2008a, 2008b; Wiebe & Wipf, 2011). For instance, its price- and production-setting pillars are criticized for stifling competitiveness and innovation in the sector, preventing quick responses to market demands, and hampering producers’ efficiency and motivation to maximize their business potential (Doyon, 2011; Goldfarb, 2009; Tamilia & Charlebois, 2007). In a comparative study between Ontario and New York dairy farms, Slade et al. (2011) concluded that supply managed farms make poorer allocative decisions than those in competitive environments. For instance, they argue that Ontario dairy farms rely too heavily on homegrown feed, which requires additional inputs and is not economically efficient.

At a global level, the most pressing criticism of supply management relates to its impact on international trade; the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) and the Trans Pacific Partnership (TPP) trade negotiations have placed supply management in the spotlight. Many economists and politicians consider Canada to have

potential for significant dairy sector growth via exports, particularly into developing regions of the world, and argue that a closed market limits the potential for economic gains through international trade (Abassi & Larue, 2012; Goldfarb, 2009; Grant et al., 2014; Lee, 2012). According to the Canadian federal government, ratifying trade deals such as the TPP will ‘secure new market access opportunities to Canadian dairy, poultry and egg exports’ (Department of Foreign Affairs, Trade & Development [DFATD], 2015). As negotiations increase access to foreign markets, however, supply management’s import restrictions are also affected; ratification of the CETA agreement in 2014 gave the European Union (EU) an additional 18,500 tonnes of tariff-free access to the Canadian cheese market. The recent tentative TPP agreement in 2015 suggests further increased international access to Canada’s supply-managed markets. Family farming advocacy organizations such as the National Farmers Union (NFU) and industry groups such as the Dairy Farmers of Canada (DFC), have disputed these trade deals, arguing that CETA and TPP undermine food policies that protect and promote localized food systems and Canadian farmers (NFU, 2014; Smith & Doyle, 2013).

In summary, supply management as a policy framework may present both opportunities and challenges to Canadian food sovereignty. In this chapter, I report on the perceptions of supply management’s influence on producers’ economic, political and socio-cultural capacities as related to the concept of food sovereignty, from the perspective of a group of diverse British Columbia (BC) dairy industry stakeholders. I asked participants a series of open-ended questions to address the following research objectives: 1) How do dairy industry stakeholders perceive the implications of supply management on economic, political and socio-cultural features of a sustainable BC dairy industry? and, 2) How does supply management affect the development of food sovereignty within the BC dairy industry?

2.2 Methods

I conducted semi-structured, in-depth interviews with 27 members of the BC dairy industry between May and December 2014. Participants were selected through snowball as well as purposive sampling processes and were initially contacted via email, with follow-up occurring via telephone (see Appendix A for initial contact letter). Of 27 interviewees, 20 were dairy producers, 18 of which were actively producing within the supply management system⁶; the remaining 7 included processors (n=3) and non-farming representatives of industry-related organizations (n=4). Of 20 producer participants, five were also board members of industry-related organizations. I selected producer participants that represented a diversity of production modes, husbandry practices and farm sizes, with herds ranging from approximately 40–700 cows. I also recruited participants such that we captured the current geographic distribution of dairy production in BC (Table 2).

I conducted interviews in two parts, the first of which involved an in-person interview (approximately 60-90 minutes). Food sovereignty language is not commonly used by individuals associated with the BC dairy industry and I therefore elected to use an indirect approach. To elicit a range of producer perceptions of the influence of supply management on theoretical elements of food sovereignty, I framed the interview questions in the broad context of social, economic, and ecological sustainability. I also prompted participants with specific phrases related to food sovereignty principles such as social welfare and political control (see Appendix B for interview guides). Many of the questions were redundant and reflexive, to encourage interviewees to develop and elaborate on their ideas. The second round of interviews were

⁶ The remaining two dairy producers included: one raw milk producer; one goat dairy producer who was on the GEP waitlist to enter the supply managed bovine dairy industry

conducted via telephone (15-30 minutes) and asked participants for clarification and elaboration on preliminary themes based on analysis of the first round of interviews.

Table 2. *Number of BC dairy producers interviewed categorized by region and production mode (n=20)*

	Conventional (n=15)	Certified Organic (n=2)	Other* (n=3)	Herd size**
Fraser Valley (n=13)	9	2	2	220.2 ± 187.3 (Range 40-700)
Okanagan (n=2)	1	0	1	42
Vancouver Island (n=5)	5	0	0	130.6 ± 47.2 (Range 73-185)
	197.7± 165.2	76± 22.6		183.4 ± 159.8
Herd Size**	(Range 40-700)	(Range 60-92)		(Range 40-700) Median: 150

*Other refers to: producers who also process milk on-farm through certified industry programs; non-bovine producers on the waitlist for milk production quota; or unregulated raw milk producers.

** Mean number of lactating cows. We did not include herd sizes from the ‘other’ category in our calculations. For producers with more than one farm, we used an average herd size.

I transcribed the interviews verbatim and analyzed responses through multiple rounds of thematic coding using Atlas.ti qualitative analysis software (Berlin, Germany). I coded for perceived benefits, problems and opportunities related to the supply management policy framework. To exemplify and characterize decision-making processes within the BC dairy industry, I also coded policies and industry documents relating to a provincial marketing board quota policy and governance consultation that took place from March 2013 to January 2014; this review included a series of seven consultation sessions with industry stakeholders, from which the marketing board identified and summarized key themes into a series of ‘Finding Solutions’ discussion papers. I also analyzed industry reports related to the review of a provincially-

regulated program called the Graduated Entry Program (GEP), developed in 2004 to help alleviate capital costs associated with dairy farm start-ups, and facilitate renewal of the BC dairy industry (BCMMD, 2013a). It offers new producers a small amount (13.7kg/day, the equivalent of approximately 11 cows) of free quota from the provincial milk pool; following the initial allocation, the milk board will match quota purchased by a new producer within five years of commencing production, up to 5.5kg/day. I coded for the degree of industry stakeholder input into decision-making and subsequent outcomes compared with objectives of the consultation.

2.3 Research context: The BC dairy industry

As Canada's first agricultural sector to adopt supply management, the Canadian dairy industry holds historical as well as economic significance, and is frequently used as the vehicle through which media and parliament debate supply management policies. Although Ontario and Quebec produce the majority of the nation's dairy products, British Columbia is the third largest provincial milk producer, representing 9% of national milk production in 2011 (PricewaterhouseCoopers LLP [PwC], 2013). There is very little movement of fluid milk into or out of the province, with only about 4% of the fluid milk consumed within BC arising from imports in 2014⁷. Small amounts of manufactured dairy products such as cheese, yogurt, and milk protein isolates are exchanged through the industrial milk market to other provinces and internationally (Ostry et al., 2011; PwC, 2013). Between 2002 and 2011, the BC dairy industry grew 12%, with this increase primarily reflecting human population growth in the province. During this same time period the provincial dairy industry underwent significant consolidation, resulting in a 27% decrease in the number of dairy farms by (PwC, 2013); of the 1,127 farms

⁷ This number was calculated using the following data: In 2014, BC imported 13,447,515kg of fluid milk, equivalent to approximately 13,055,840 litres (CDIC, 2015d). Per capita consumption of fluid milk in BC was 64.49 litres in 2014 (CDIC, n.d.), equivalent to 298,672,700 litres for a 2014 population of 4,630,000 (Statistics Canada, n.d.).

operating in 1980, only 493 dairy producers remain in 2015, with the majority of farms concentrated in the lower Fraser Valley in southwest BC (BCMA, 2011; Muirhead, 2013; Statistics Canada, n.d.) (Table 3). While the number of dairy farms has declined in BC, remaining farms have grown in size and productivity. BC is home to some of Canada’s largest dairy herds with an average of 120 cows, compared to a national average of 77 cows (BC Dairy Association [BCDA], n.d.; CDC, 2015). Herd sizes in BC have grown 12.5% since 2005 (CanWest 2015a, 2015b), comparable to the national increase in herd size of 13% (CDC, 2015)

Table 3. *Regional distribution of BC dairy farms, 2011*

	Vancouver island-coast (region 1)	Lower mainland-southwest (region 2)	Thomson-Okanagan (region 3)	Kootenay (region 4)	Cariboo (region 5)	North coast (region 6)	Nechako (region 7)	Peace river (region 8)
Number of farms in 2011 (% of BC)	64 (10%)	372 (70%)	101 (15%)	13	11	1	19	6
Farm numbers in 2006 (% change)	74 (-14%)	438 (-15%)	104 (-3%)	19 (-32%)	9 (+22%)	1	14 (+21%)	6
Number of cows	7298	51,413	10,570	1553	1304	9	1168	392

Source: 2011 Census of Agriculture.

BC is also home to some of Canada’s most productive herds; while the absolute number of cows in BC has remained between 70,000 and 80,000 since 2001 (CDC, 2015), milk production per cow has increased. In 2002 in BC, 74,500 cows produced 5,790,000 hectolitres of milk, while in 2011, 74,100 cows produced 6,770,000 hectolitres of milk (ibid.). This increase in

production is attributed to improved genetics and improvements and efficiencies in herd management (Capper et al., 2009).

Economic context

Dairy is the top grossing agricultural industry in BC, accounting for 20% of the province's farm cash receipts in 2011 (PwC, 2013). It accounted for 21.5% (5,635) of BC's agricultural jobs, including milkers, herds-people, general labourers, and specialty farm servicers (ibid.). According to PwC (2013), the dairy industry confers a relatively high degree of employment and reliable income for its employees, even in times of economic and market instability. Assuming an average yearly milk production for a Holstein cow in BC is 10,102kg (CDIC, 2015e), a dairy farmer in BC milking 135 cows would receive a stable income of over \$90,000 per month in milk sales. Producer wages, which are included in the national cost of production formula, are calculated at \$33.63/hour (equivalent to \$19.69/hectolitre milk) (CDC, 2014a). According to Living Wage Canada (2013), this hourly rate is over \$10/hour above the average 'living wage' calculated for communities across British Columbia, and is therefore considered sufficient to cover reasonable personal costs, promote social inclusion, provide a basic level of economic security and remove financial stress for families.

Dairy farms hold the largest net worth of all farm types in BC, as well as the largest debt levels: \$2,100,000 per farm in 2013, compared to an average BC farm debt of roughly \$750,000 per farm (AAFC, 2015b)⁸. This is due to high costs of production. Quota for dairy production in BC is the most expensive in Canada; whereas Ontario and Quebec have capped their quota

⁸ The average debt to net worth ratio for dairy farms (28%) is similar to the average BC farm (27%) (AAFC, 2015b).

values at \$25,000 per kilogram of butterfat per day, quota costs for BC have risen by nearly 200% since 1998, to \$44,000 per kilogram of butterfat per day in 2015 (CDIC, 2015f; Girouard, 2014). To put this into perspective, to start a 135 cow dairy farm in the lower Fraser Valley, a prospective dairy farmer would require a minimum of \$6,842,880 for quota (equivalent to \$50,688 per cow), with an additional \$4,100,000 needed to purchase 40 hectares of crop land (equivalent to approximately \$101,335 per hectare for forage) (BCMA, 2001; CDC, 2015; Remax, 2014). Note that this estimated start-up cost of more than \$10,000,000 does not include the cost of infrastructure, equipment, supplies, labour, or cattle. Furthermore, prices paid to producers for milk products are increasing at a slower rate than provincial inflation. The BC consumer price index has increased on average 3.3% per year since 1980 (7.1% for dairy products from 2010-2014), whereas producer prices have increased 1.9% to 2.4% yearly (PwC 2013; Statistics Canada 2015b).

Political context

Under the national supply management framework, the BC dairy industry is represented by two provincial organizations that are central to the production, distribution and marketing of provincial dairy products: the BC Dairy Association (BCDA) and the BCMMB. These organizations interact with provincial and national bodies that control provincial production both directly and indirectly. The BCDA is a not-for-profit producer organization involved in marketing and education initiatives, lobbying and policy development, and industry communication. The BCDA is a member and financial supporter of the Dairy Farmers of Canada, a national producer organization also involved in political lobbying, stakeholder communication and farm-scale industry development initiatives.

The BCMMB is the governing body for BC producers. The BCMMB receives provincial milk allocations from the federal CDC via the Western Milk Pool (WMP; representing the four most Western provinces in Canada) and distributes it amongst BC producers. Under supervision of the BC Farm Industry Review Board (BCFIRB), an independent administrative tribunal with legal authority to approve or revoke changes to policy, the BCMMB has provincial authority through the *BC Natural Products Marketing Act* to license dairy producers and processors, allocate production quotas, and ensure industry compliance with regulations and legislation. It is also the primary purchaser of milk, collecting and distributing pooled products from all BC dairy farms to one of 32 processors in BC; of these, three major dairy processors (Agropur, Saputo and Parmalat) purchase over 90% of the province's raw milk (PwC, 2013). The BCMMB therefore controls and regulates milk production and distribution in the province. Within the BCMMB, decision-making power is delegated to the 'Milk Board', comprised of four elected members who are dairy producers, and two non-farming members; one of which is appointed by the Milk Industry Advisory Committee, a sub-committee of the BCMMB, and one appointed by the Province of British Columbia.

Socio-cultural context

In their research on the dairy industry in the Netherlands, Boogaard et al. (2008) defined socio-cultural sustainability as a concept that includes both citizens' values and concerns for the future of production. In Canada, where international trade is a fundamental component of the national economic agenda, agricultural industry stakeholders' values and practices are consistently influenced by neoliberal economic objectives and principles of growth, efficiency and competition (Andrée et al., 2011; Edelman, 2005; Wiebe and Wipf, 2011). For example, the BC provincial government prioritizes growth and competitiveness of agricultural markets and

implicitly promotes these ideals through the Regulated Marketing Economic Policy (BCMA, 2004) under which the BC dairy industry operates:

The Government of British Columbia supports the participation of British Columbia producers in national supply management systems when the provisions of the national agreements are consistent with the growth and prosperity of the agri-food industry.

The mandate of the CDC itself – the federal coordinator for dairy supply management – states that its legislated objectives include ‘providing *efficient* [emphasis added] producers with an adequate return on their labour and investment’ (CDC, 2014b, p.23). In response, there has been a trend for milking facilities to increase efficiencies through growth (maximizing economies of scale) and incorporation of new technologies such as automated cow-sorting devices and robotics, and other labour-saving practices (CDC, 2015).

However, North American dairy production exists within a societal culture that values agrarian and pastoralist ideals of family farming and increasingly challenges the implications of industrialized animal agriculture (Fraser, 2001). The supply management framework may appeal to some of these societal values; a Maclean’s Magazine Web Poll recently reported that 78.8% of voters favoured supply management if it protects local farmers (Maclean’s, 2011). According to the BCDA, 98% of BC’s dairy farms are family owned and operated (BCDA, n.d.). BC is also the leader of the organic movement in Canada; 66% of British Columbians buy organic groceries weekly and more than half believe that organic farming is better for environmental and human health (MacKinnon, 2013). This is reflected in dairy production; although the majority of BC dairy farms contribute to conventional milk pools, there is a growing demand for organic dairy

products in Canada, supplied through a separate Specialty Production⁹ quota developed in 2006 (BCMA, 2007); in 2012, organic milk made up 2.84% of the total milk production in BC (CDIC, 2013). There is also a demand for niche products including artisanal cheeses, supplied in part through a provincial Cottage Industry Program, a provincial program that enables small-scale, on-site processing and sale of specialty and innovative milk products (BCMMLB, 2013a).

According to results from a lifecycle analysis conducted by Samson (2012), Canadian dairy farms have a positive socioeconomic impact through engagement with their local communities, as well as sponsorship and financial donation to local organizations; however, there is room for improvement of socioeconomic practices. At a farm level, Samson (2012) proposed that dairy producers pay greater attention to providing working conditions beyond labour standards, preserving natural and built heritage, and considering the social responsibility of their suppliers' practices in their procurement decisions. At an industry level, they identified animal welfare and promotion of social responsibility as two areas in which Boards could be more committed (Samson 2012). Recently, industry groups such as the BCDA and DFC have embraced these aspects of societal preferences through promotional campaigns highlighting local dairy production and socially responsible practices of the industry. For example, in response to public demand for socially responsible and transparent practices, DFC recently developed a mandatory national farmer program called ProAction which aims to promote sustainable production practices on all Canadian dairy farms by implementing standards for milk quality, food safety, animal care, livestock traceability, biosecurity and environmental stewardship (DFC, n.d.). Through their involvement in a provincial campaign called 'We heart local', the BCDA

⁹ In addition to following the Canadian Organic Standards (COS), organic dairy production (also known as 'specialty production' in British Columbia) is governed under slightly different regulations through the provincial marketing board's consolidated order (BCMMLB, 2013a).

highlights local milk and food systems more broadly, in an effort to show support for consumers' local food movement. Furthermore, processing and retail companies have increasingly incorporated environmental stewardship and animal welfare in their corporate social responsibility agendas, demanding standards of their suppliers to meet consumer expectations (Fulponi, 2006). Thus dairy production exists within a complex socio-cultural context with many, often contradicting, values and pressures from different actors in the system.

2.4 Results: Participant perceptions of the implications of supply management

All 27 participants mentioned both positive and negative implications of supply management on their ability to meet economic, political and socio-cultural goals for a sustainable BC dairy industry. All but one of the participants agreed with the sentiment that 'supply management has more advantages than disadvantages' (dairy producer) and that it should be maintained but adapted to better achieve these goals. The one outlier, a 70-cow producer, stated a preference for the removal of supply management. This participant argued that supply management prohibits entry and viability of small-scale producers, and that adaptation of the supply management system is unlikely given the culture of "greed" (accumulation of quota) amongst current producers. In this section, I report on the thematic analysis of my stakeholder interviews in relation to how participants perceive the influence of supply management on economic, political and socio-cultural sustainability. In the subsequent discussion, I assess the role of supply management as a potential enabling mechanism for food sovereignty in the Canadian context.

Economic implications

All 27 interviewees mentioned supply management as a valuable policy framework for meeting goals of economic fairness, viability and stability for producers, which participants identified as three features of an economically sustainable dairy production system. Most producer participants expressed satisfaction with the economic return for their product, asserting that dairy farmers receive fair remuneration for their work. Of the 18 farmers we interviewed who are currently producing within the supply management system, all felt economically capable of continuing production. In discussing the economic implications of supply management, one farmer stated, ‘Right now, I can continue to pay for my parent's retirement, I can continue to make all my payments, and you know, life's good’ (dairy producer). Eleven farmers also elaborated that a stable cash flow facilitates sustainable development on their farm and within the industry. For example, one producer stated:

Because we're stable financially, we can invest in things like manure separators, manure pits. Because we're not depending on the government to give us money, and we're not depending on not knowing where our next dollar's coming from, we can actually invest and borrow money knowing that we'll be able to pay it back to build things to improve our environmental sustainability on farms... We can invest in things for cow comfort... And we can actually afford to make improvements in our barns because we have financial stability (dairy producer).

All 18 producers attributed economic security within their industry to supply management; however, eight of these producers referred to having additional sources of income

within the industry besides dairy production¹⁰. While seven participants claimed that supply management ensures economic viability for (and survival of) smaller-scale operations¹¹, nine participants referred to smaller-scale producers as less capable of supporting viable production at the same quality of life as larger-scale producers, due to rising costs of production that favour efficiencies such as increasing economies of scale achieved through expansion.

It's go big or go home, right? ... you can't make a go at it with 40 cows. You're just not efficient enough. But you have to be able to afford efficiencies. In other words you have to have bigger farms... or do you want to be living on 20,000 bucks a year? No, I can't do it. I can't sustain my family on \$20,000 (dairy producer).

In addition to achieving efficiencies, participants identified low interest rates as incentive for producers to borrow capital to invest in more quota and build their business to a size which maximizes economies of scale. This cycle of economic growth has created high levels of debt for producers of all sizes. Yet participants viewed supply management as the only way to ensure that their loan payments are met. Without the economic return guaranteed through the supply management framework, producers expressed fear that they may not make payments and thus risk losing their farm business.

I have 3 million dollars of debt, which is pretty average. Plus money to my parents. So, you take away supply management, my equity is— I have nothing... My greatest worry in life is that supply management will be gone and I'll lose everything. And I would say

¹⁰ Additional jobs included input sales, vertical integration and other food processing. We did not count policy positions of the five producers on boards or committees of BCDA, BCMMB or DFC.

¹¹ Participants referred to 'small-scale' in terms of herd size. While exact numbers varied depending on the context, participants generally referred to small farms as those under 100 cows, medium farms as those close to the BC average of 155 (CanWest DHI, 2014) and large farms as those above the BC average, from approximately 200 cows upwards.

that's probably every dairy farmer, because you're so heavily invested in it (dairy producer).

The capacity for economic viability was also considered lower for new farmers than for established farmers. Despite existence of the GEP, 15 participants commented on the high cost of entry into the industry for new producers, including quota, land and infrastructure, as well as the availability of quota, as a major challenge within the industry.

Political implications

All but one participant referred to supply management as a valuable political tool that successfully protects localized control over dairy production and represents producers in policy making. Twenty participants stated that producers are given regular opportunities for political involvement and have power in industry decision making through delegated producer groups who lobby provincial and national government: 'producers do have an influence... we're very fortunate, we have very good producer organizations and lobby groups on our behalf' (dairy producer). Seven participants expressed explicit satisfaction with participatory processes and subsequent policy outcomes within the industry; for instance, one farmer referred specifically to the recent BCMMB consultation to express satisfaction with their ability to provide input into industry matters:

[The BCMMB does] these open-engagement things with producers and stakeholders, compile the data, take the suggestions. Like these last exercises [during the BCMMB review], producers have had every opportunity to be engaged. If somebody says 'that stupid milk board did this and that', I call bullshit, we've had countless opportunities. Those that choose not to engage, and write a response... we've had more than ample time (Dairy producer).

Producers indicated that not only did they have the ability to provide input, but they felt that industry representatives subsequently acknowledged it, if not always to the extent desired. This was evident in BCMMB consultation discussion papers, which acknowledged producer concerns relating to an issue called ‘double-dipping’. Double dipping is defined as ‘a situation where a new producer receives GEP quota from the Milk Board (at no cost) then shortly thereafter receives further quota from a family member where the quota transfer is excluded from a transfer assessment’ (BC Farm Industry Review Board [BCFIRB], 2014). Rather than starting new independent farms, double dipping consolidates quota and expands the size of existing farms. During our interviews, nine participants referred to double-dipping as a pressing problem that unfairly benefits sons or daughters of current farmers, exacerbates farm consolidation and threatens the long-term survival of smaller-scale dairy farms in BC. In the BCMMB’s first discussion paper, which listed outcomes of public sessions held during the policy and governance review (BCMMD, 2013b), the Milk Board acknowledged that, ‘participants agreed [double-dipping] was a growing concern both for individual farmers and the provincial dairy industry more broadly. Many attendees questioned whether the Board’s current practice of allowing the GEP to be used to facilitate the transfer of farms between generations of a dairying family should continue’ (p.19). In addition to acknowledging the interests of marginalized stakeholders (i.e., new entrants), the BCMMD also addressed double-dipping through in their final discussion paper, recommending parameters for a revised GEP that will prohibit next generation producers from merging or transferring quota for a period of 10 years (BCMMD, 2014b).

However, participants noted inconsistencies between the interests of the Milk Board and the underlying principles of the new entrant program, indicated in policy recommendations in the

final BCMMB discussion paper. The recommended parameters for a revised GEP was not intended to be implemented immediately; rather, prohibitions on double-dipping would be incorporated into a draft for a future GEP program, ‘while the current GEP wait-list is being depleted over the next 5 year[s]’ (BCMMD, 2014b, p. 22). Some participants were unhappy with this result and stated that it superficially addressed the issue, while still allowing a large number of waitlisted producers to continue benefiting from double-dipping. One producer attributed this unsatisfactory response to board members’ self-interests:

There was a review but they've done nothing to stop [double-dipping]... The Milk Board needs to get elected by farmers... and [the Board] knows [that farmers on the GEP waitlist are] not going to vote for them if they change it... they're scared that if they change it too drastically, there's going to be all these appeals, and they'll end up in court (Dairy producer).

The BCFIRB, who instigated the review, were also unsatisfied with the Milk Board’s final recommendations regarding double-dipping and demanded further action ‘to ensure that “double-dipping” is mitigated in clearing the wait list’ (BCFIRB, 2014, p.8). In a Notice to Producers, the BCMMD responded accordingly: ‘The direction from FIRB has been clear, the Board must comply with the FIRB directive to address double dipping in the current Graduated Entrant Program’ (BCMMD, 2015). Following this statement, the BCMMD revoked its earlier conclusions and confirmed that policy changes, beginning May 1, 2015 would prohibit family transfers within ten years of GEP allocation for all individuals, including those on the waitlist – thus immediately addressing the issue of double dipping as requested by producers.

Despite the capacity for producer input into policy-making, 11 participants remarked that there is unequal participation in participatory policy-making processes amongst producers. They suggested that many of their fellow farmers are either uninterested in politics, unsuited to the social nature of political organizations, or unable to contribute due to the commitments required to join committees and ongoing political discussions. The time requirements, many noted, are more difficult for smaller-scale farmers who do not hire additional labourers than for those who have larger operations and can afford to hire labourers, allowing them ability to pursue off-farm activities, including political action. Furthermore, 17 interviewees referred to BC dairy policies that either directly or indirectly benefit large farms over small-scale farms. This sentiment was reiterated by farmer participants with herd sizes below the sample median: of the eight producers who were milking less than 150 cows, six felt that they hold less power than larger-scale farmers and feel inadequately represented on producer boards and served by provincial policies.

Socio-cultural implications

Participants considered supply management to be a valuable framework for the development of socio-cultural sustainability, which they defined in three parts: high quality of life for farmers and farm families, positive public perception of farming practices and social accountability, and continuation of agrarian culture. Fifteen participants claimed that the economic stability and viability achieved through supply management enables farmers to afford production practices that are more environmentally and socially beneficial, such as those associated with improved animal welfare.

Supply management provides security to farmers. It allows them to invest in new equipment. It allows them to pay their employees better. And that's a good thing for

animal welfare. It allows them to plan for the future without instability. That's a really good thing for animal welfare (Farm animal welfare expert).

Some participants also suggested that as a public policy, supply management inherently necessitates accountability to the public – as both citizens and consumers – through a social license, and promotes inclusion of multi-stakeholder interests in decision-making. Participants referred to the governance framework of supply management as supporting transparency and accountability to the public by empowering the BCMMB to enforce production standards through non-compliance mitigation actions, such as suspension of milk pick-up. Participants also referred to specific provincial regulations that promote social and environmental goals; for example, one producer mentioned a BCMMB policy that caps production by limiting any one farmer to a maximum quota share of 5% of all provincial milk shares (BCMMB, 2013a, p. 20). This cap directly influences farm size and limits consolidation, which participants claim to be an important component of the industry's social license.

Yet other participants referred to specific regulations – or a lack thereof – which do not support the social license and contradict social objectives of supply management, such as a lack of legislation preventing 'double dipping'. Likewise, participants referred to the decline in number of farms and a degradation of agrarian culture as a major challenge to socio-cultural sustainability of the industry. Eleven out of 17 producers with children commented that while intergenerational succession of the family farm would be favourable, they would be similarly satisfied if their children pursued successful non-farming careers; in this case, they would either hire employees to maintain the family farm, switch crops, or sell off the farm altogether. Amongst current producers, 13 participants mentioned a growing 'culture of entitlement' within the dairy industry, which they defined as the expectation of ensured financial wealth through

dairy farming. Participants characterized this culture as: prioritizing profitability through growth, efficiency and productivity, and rewarding good business skills and ventures – such as the corporatization of family farms – through economic measures of success. While many participants described their experience of dairy farming as a way of life, they also frequently referred to a pervasive conceptual shift of farming from a lifestyle to a business. Unlike their parents' generation, in which farmers were expected to dedicate their lives to the farm, one producer commented that 'my generation does not want to be married to the farm' (Dairy producer). Another described the connections between a business-oriented concept of farming and cultural values of growth and productivity:

In the dairy industry, the people who are left, they all want to grow. They all want to get bigger. They always complain, 'I can't get more quota, I can't get more quota'. Even I have a bid to try and get more quota. Do I need it? Not really... There's just this fear that if you aren't growing, you're going to be left behind. And it's just kind of like that in business. If you're a good businessman, you're probably not happy just kind of maintaining and sustaining your business. And I think a lot of it's the same thing. You go to these meetings, and you talk to other farmers, and you have these farmer groups, and everybody's doing new things, and you don't want to be the guy left behind. So everybody just has this drive to keep getting bigger (Dairy producer).

While some participants noted the negative implications of this culture for the social license, most identified with its values; this was evident through participants' comments regarding supply management policies. For instance, nine participants expressed concern that supply management enables inefficient producers to remain economically viable without striving for increased production, improved practices, or innovation. It was suggested that these

inefficient farmers ‘should exit the industry’ (dairy producer) for the sake of a more productive and viable industry.

2.5 Discussion: Implications for food sovereignty in the BC dairy industry

Results of this study indicate that supply management as a policy framework may both help and hinder the implementation and development of food sovereignty principles in the BC dairy industry. Some aspects of supply management in the dairy industry align with food sovereignty; for example, supply management’s price-setting mechanism facilitates what producers see as a fair and viable living wage and a high quality of life – an important element of food sovereignty (Edelman et al., 2014). Politically, supply management may exemplify the unique relationship between the state and society that Schiavoni (2014) and others call for in the development of food sovereignty policy: cooperative engagement between industry and the state, principles of transparency to the public and effective government oversight, and close producer involvement in decision-making processes. Lastly, the economic and political environment in supply managed sectors enables practices and developments at farm, industry and community scales that protect social and environmental sustainability, also viewed as key pillars of the food sovereignty paradigm (Desmarais & Wittman, 2014).

However, there are also contradictions. Within the supply management framework, the results suggest that ongoing adjustments to national and provincial policies tend to prioritize and fiscally reward current, larger-scale producers who aim to maximize economies of scale, while marginalizing new producers and those who are smaller-scale, alternative or geographically isolated from the majority of producers. The resulting economic and political inequities mimic those within a neoliberal food regime, progressively disempowering the marginalized and

weakening food sovereignty. Furthermore, participants noted a producer culture within the industry that does not entirely align with the food sovereignty agenda. Attachment to market-oriented principles of growth, efficiency and productivity were seen to compromise democratic information-gathering and policy-making processes. For instance, despite GEP policies that waive the cost of quota for new BC dairy producers, political preferences oriented towards current producers have interfered with policy-making and hindered routes for entry into this industry. Political influence has been present since the inception of supply management. In 1967, the Canadian Dairy Commission proposed to eliminate all quotas less than 50,000 pounds (~22680 kilograms); dairy farmers lobbied successfully to retain quotas from 12,000 pounds (~5443 kilograms), but during this debate many small farmers left the industry. As of 1968, Canada's smallest dairy producers were excluded from benefits of CDC programs and encouraged to quit, while the largest producers were discouraged from expanding (White, 1971). Considering the current 5% quota cap that prevents unfettered growth, middle-sized producers have long been the primary beneficiaries of the program.

The structures and policies controlling BC dairy production are inextricably linked to economic, political and socio-cultural environments and pressures at broader scales. Rising farm debts, for instance, affect food sovereignty to the degree that they influence farmer decisions (Holtlander, 2015). While BC dairy farmers may have a greater economic capacity to manage debt than farmers of non-supply managed commodities, they are nevertheless influenced by decisions made by national and international banking institutions (e.g. prime lending rates). Similarly, Cairns et al. (2010) note that increasing quota values are driven by external economic factors, notably banking institutions' easing of credit constraints in providing loans for quota purchases. As economic forces including rising costs of production – exacerbated by the quota

market – impact dairy producers, the economics of production align less with a food sovereignty model defined by Pimbert (2009) as a ‘right of rural peoples’, and more with a dominant neoliberal model of food production, ‘an option for the economically efficient’ (Pimbert, 2009, p.9). Thus, supply management does not in itself assure autonomy for local farmers, nor sovereignty within the industry.

From the perspective of food sovereignty, the results of this study support the argument that supply management should not be abolished, but rather ‘strengthened for its advantages’ and reformed so that it remains true to its original goals of protecting family farmers (de Schutter, 2012, p.10; Desmarias & Wittman, 2014; Girouard 2014; Young and Watkins, 2010).

Participants in this study identified opportunities and avenues that warrant exploration regarding the development of food sovereignty in the BC dairy industry. One avenue is through internal policy change in a direction that aligns with food sovereignty principles, which would require modifications to BCMMB policies and governance to ensure equitable representation of diverse production sizes and orientations. For instance, increasing the amount of free quota offered to new entrants through the BC GEP could provide a fairer economic arena for new producers and mitigate inequities in the system. More fundamental policy changes within the industry would focus on reversing market-driven adjustments to the three pillars of supply management. Internal policy changes are, however, dependent on the capacity of stakeholders who are currently in power (Skogstad, 2008a); therefore, forming alliances and connecting with current industry policy-makers to identify mutual goals, accommodate, and make incremental progress may be an important strategy for developing these policy changes (as suggested by Aerni., 2011; Andrée et al., 2011). Alternatively, there may be opportunities to demand internal policy changes through niche markets. Since production is directly linked to consumption in a supply management

system, BC's consumers may hold significant power to develop specialty markets that better align with food sovereignty principles. The development of a separate quota for organic products in BC in 2004 demonstrates this relationship and suggests opportunities for other niches.

In contrast, many food sovereignty proponents are wary of green capitalism and doubt whether market principles can drive change towards food sovereignty without a more radical, epistemic reorientation within both local farm culture, as well as the cultures held by consumers and other stakeholders (Burton & Paragahawewa, 2011). They advocate for a social movement that transcends niche markets or political practicalities and focuses on redesigning the structure and of agricultural systems (Akram-Lodhi & Minkoff-Zern, 2013; Altieri, 2009; Friedmann, 2005; McMichael, 2009, 2011). From this perspective, supply management, as a stand-alone policy framework, independent of broader socio-political and economic changes, may be insufficient in securing socio-cultural criteria necessary for food sovereignty in the BC dairy industry. Another avenue for advancing food sovereignty in the BC dairy industry may therefore focus on reorienting socio-cultural values within the BC dairy industry away from a paradigm characterized by neoliberal ideologies and towards those that support food sovereignty. One opportunity for doing this may actually be through embracing niche markets; Sayre (2011) noted that organic farmers who initially transition from conventional dairy farming for economic reasons often become convinced of ideologies (e.g. ecological) associated with organic methods of production. Once internal values and priorities are aligned with food sovereignty, supply management could provide a framework to implement those values – so long as it the current neoliberal environment refrains from adjusting policies too quickly or dramatically. Ultimately, a supply management policy framework has the potential to develop food sovereignty in the BC

dairy industry, but requires attention to broader socio-cultural values and objectives both within and outside of the system.

2.6 Conclusion

Theoretically, food sovereignty embodies utopian principles of ecology, democracy and equity. In practice, these principles – either aided or hindered by history and culture, agri-food policy, social mobilization, and physical environment – may or may not manifest in a given locale. Results from this study indicate that supply management is a valuable yet insufficient policy framework for the implementation and development of food sovereignty in the BC dairy industry. The majority of interviewees supported supply management as a political framework on the basis of economic, political, environmental and socio-cultural criteria for a sustainable dairy industry, but their responses also identified challenges within the industry – many of which may be intensified by external pressures. Economically, participants felt that supply management policies and pricing mechanisms ensure fair, viable and stable wages for farm owners and workers; however, they also felt that the economic advantages of supply management do not benefit all producers equally. Smaller-scale and new producers are considered less capable of sustaining viable production due to rising costs of land, quota, and inputs, along with increased debt encouraged by liberal institutional lending policies. Thus, these producers face pressure to expand or consolidate to increase efficiencies, or otherwise exit the industry.

Politically, participants generally commended supply management for its capacity to assure local, democratic control. There was evidence that supply management's governance structure in the BC dairy industry allows producers to provide input into industry governance decisions while holding marketing boards accountable to government officials for transparent

and fair policy. Yet participants also mentioned political partialities and inequitable representation of certain farm sizes and types on marketing boards, indicating that policy-making processes are more accessible to large-scale producers than to smaller-scale, new or alternative producers. Socio-culturally, some policies promote outcomes that align with social food sovereignty principles, such as controlling unfettered consolidation of farms; however, the overarching economic and political support does not guarantee the inclusion or support of marginalized stakeholders nor the development of socially beneficial food sovereignty principles. Influenced by ideological pressures at local, regional and national scales, producer culture is a product of broader neoliberal economic agendas and sociocultural pressures that are manifest in local policies, challenging localized dairy production and inherently contradicting food sovereignty. While supply management may therefore be an important policy framework for some local producers, results from this study indicate that it cannot, in itself, ensure the capacity for food sovereignty without systemic changes to values and agricultural goals at higher scales of government and within the industry.

Chapter 3: Case study: Liberalization of agricultural policy and implications for dairy production in New Zealand

3.1 Introduction

History of liberalization in New Zealand

The history of NZ's colonial agri-food system closely aligns with that of the global food regime (McMichael, 2009). Until the 1970s, NZ was predominately interventionist in its economic management and policies, relying on ties to Britain for stable export markets. For example, NZ's federal government supported agricultural production through legislation, including controls over imports and exchange (Johnson et al., 1989), as well as establishing statutory producer organizations and favourable tax regimes for farmers (Lawrence & Campbell, 2014; Le Heron & Roche 1999; Willis, 2004). The New Zealand Dairy Board (NZDB) was established in 1923 and given exclusive, legislated rights as an export marketer, organizing services such as transport and market promotion for co-operative dairy processing companies across NZ (Nilsson & Ohlsson, 2007).

Economic crises throughout NZ in the 1970s, including high inflation and low economic growth rates, spurred a succession of interventionist responses such as price- and interest-rate controls, and taxation of export industries including pastoral agriculture – none of which proved effective short-term (Johnson et al., 1989). When the national Labour government was elected in 1984, they chose to address the crises through liberalization. The newly appointed Minister of Finance, Roger Douglas, immediately introduced a massive economic reform across NZ which shifted political emphasis away from direct participatory assistance, and towards market disciplines (Johnson et al., 1989; Le Heron et al., 1992). Later dubbed 'Rogernomics', this reform lasted throughout the 1980s and 1990s and involved both industry-specific policies and

macroeconomic policies, including: devaluation of the New Zealand dollar; reduction of government spending through Ministry of Agriculture and Fisheries; removal of tariff protection and agricultural subsidies; removal of controls on interest rates; privatization of state activities such as agricultural extension; and a review of statutory agricultural marketing boards, leading to the reduction in their power and operations (Johnson et al., 1989; Lawrence & Campbell, 2014; Sandrey, 1988; Willis, 2004). Although other countries have undergone liberalization since the 1980s, the extremity and totality of these reforms are considered unique to NZ (Lawrence & Campbell, 2014); according to the NZ Ministry of Agriculture and Fishers (MAF), ‘no other country in the world has reduced its subsidies for agricultural production to the same extent... from 34 percent of gross agricultural revenue in 1984 to almost zero in 1995’ (MAF, 1996).

These reforms mark the emergence of a complex and multifaceted globalization process that redefined NZ’s agri-food systems. Since 1984, NZ has progressively embraced structural arrangements at global scales, including agricultural production for international commodity chains; the imports and exports of goods and services now each account for nearly one third of NZ’s GDP (OECD, 2015). Furthermore, the NZ government has demonstrated commitment to multilateral initiatives, including the promotion of international agricultural investment regimes that favour private transnational capital over national cooperative capital (Le Heron and Roche 1999; Patman & Rudd, 2005).

Implications of liberalization for NZ dairy production

Liberalization had major implications for agricultural sectors as NZ strove to become a major player in the global food system (Le Heron, 2003). Without government assistance, producers faced the full economic impact of rising interest rates and declining farm sales.

Despite pastoral farmers' efforts to cut costs of production by reducing discretionary expenditures such as inputs, repairs and maintenance, producers' net incomes were significantly reduced (Johnson et al., 1989). Wool and meat industries were particularly affected, leading to a cultural and economic deterioration of traditional sheep farming; in its place, the NZ dairy sector emerged as a leading industry and competitor in the global dairy market (Gray & Le Heron, 2010; Johnson et al., 1989; Willis 2004). This was in part due to organizational and cost efficiencies of the NZDB, which retained legislated international market power until 1998 (Nilsson & Ohlsson, 2007). In an effort to retain this power in a deregulated environment, the *Dairy Industry Restructuring Act* (DIRA) in 2001 allowed the NZDB to merge with two of NZ's most prominent co-operative dairy processing companies (hereafter referred to as 'dairy companies') to establish a mega dairy company called Fonterra. Considering the extensive consolidation and concentration that NZ dairy companies had undergone as the industry had geared for export (from 86 companies in 1971 to three companies in 2001 [Willis, 2004]), Fonterra acquired the majority of dairy suppliers in NZ, effectively replacing the marketing board as a monopolistic exporter of dairy products. Today, Fonterra is the world's largest exporter of dairy products. Supplied by over 10,700 producer shareholders and exporting to over 140 countries, Fonterra accounts for roughly 89% of the country's total production (Fonterra, 2014a; 2015). In terms of governance and capital, Fonterra is a unique hybrid of co-operative and private company structures (Dana & Schoeman, 2010; Doyon, 2005).

The reform also affected NZ's dairy producers, with extensive consolidation taking place at the farm scale (Willis, 2004). As herd numbers decline, NZ's average herd size, farm size and production per cow have risen continually since 1984, with the 2014/2015 season seeing record levels of milk production and total land use for dairy production (LIC & DairyNZ, 2015).

Intensification was especially significant on the South Island of NZ, where lower land prices and improved irrigation allowed for expansion of dairy pastures into climatically marginal areas (Willis, 2004); although the South Island accounts for only 26% of national dairy farms, it holds 39.8% of the nation's cows (LIC & DairyNZ, 2015). In addition to consolidation, dairy producers responded to the reforms through changes in farm governance, including increased corporatization of family farms (LIC & DairyNZ, 2015).

Liberalization impacted not only the economic characteristics of the NZ dairy industry, but also the surrounding ecological and rural communities (Willis, 2004). Combined with the denationalization of environmental regulations, intensification of agricultural production increased pressure on ecological systems with dramatic consequences, including the decline of water quality in NZ rivers (Jay & Morad, 2006; Burton & Wilson, 2012). This prompted public campaigns against 'dirty dairying', which polarized industry and environmental stakeholder groups (Jay, 2007). Although the industry has attempted to standardize practices and mitigate environmental impacts, notable tensions remain. According to a survey conducted by Horizon Research (2014), 'some 2.34 million of the country's 3.19 million adults believe dairying has worsened water quality in the past 20 years'; of those surveyed, 73% considered dairy companies responsible for the environmental performances of their producer suppliers. Tensions are also present between producers of different agricultural sectors, as dairy farming challenges and competes with the cultural and capital dominance of sheep farming. These tensions have had negative consequences for familial and community well-being (Stock & Peoples, 2012).

The NZ dairy sector not only survived liberalization, but succeeded in terms of its development as a major exporter and competitor in the global market (Muirhead, 2014b; Willis,

2004); however, many challenges, including environmental degradation and economic volatility, persist today. For instance, the 2014/2015 production year saw the lowest farmgate milk price¹² in seven years; Fonterra shareholders received NZ\$4.40 per kilogram (kg) of milk solids (MS) in May, 2015 – a drastic turnaround from record highs the previous season at NZ\$8.40 kg/MS in May, 2014. This example of extreme price volatility is expected to have severe economic implications, costing producers NZ\$75,000–NZ\$225,000 in cash deficits as they adapt to tougher operating environments for an estimated 18 months (Lee-Jones, 2015).

I conducted this case study to explore the effects of liberalization on the capacity for food sovereignty in the NZ dairy sector. Considering that my interview period took place immediately following the 2014/2015 season, I hypothesized that producers would comment negatively on price volatility and other effects of liberalization, preferring government intervention as per pre-1984.

3.2 Methods

Data for this case study was collected through 10 in-depth interviews conducted with dairy producers in the South Island of NZ from May 13 to June 27, 2015. Similarly to the methods used for data collection in BC (Chapter 2.2), NZ interview participants were collected through snowball as well as purposive sampling processes and were initially contacted via email (see Appendix C for initial contact letter). Interview questions prompted participants for their perceptions regarding the role of dairy policy and the impacts of liberalization of dairy policy on sustainability of the NZ dairy industry (Appendix D). I transcribed interviews verbatim and

¹² Farmgate Milk Prices vary across dairy companies. Fonterra calculates Farmgate Milk Price through a methodology that, under DIRA, requires statutory review by the Commerce Commission – an independent, quasi-judicial regulatory agency. According to Fonterra, milk prices largely reflects global prices, minus operating and overhead costs (Fonterra, 2014b).

analyzed responses using Atlas.ti qualitative analysis software (Berlin, Germany). I coded participant responses and comments on their perspectives related to liberalized agriculture policy and its implications, including the 1984 reform and the low payout during the 2014/2015 season.

3.3 Results: Participant perspectives on liberalization for dairy producers

Of the ten participants, five were directly affected by the 1984 economic reform in NZ. Of these five, three participants discussed how their family dairy farms struggled economically during the transition, but endured because they were well established. One participant sold their sheep farm, which was no longer profitable, and bought a dairy farm on the South Island. One participant had bought a dairy farm just prior to 1984 but, with a sudden rise in interest rates, was forced to sell their share of the business; they decided to start over in the following years. The remaining five participants were interested or involved in pastoral farming at the time of the reform, but were not farm owners; all five bought a dairy farm soon after 1984, referring in their interviews to business opportunities in dairy – especially on the South Island – as sheep farms foreclosed.

In discussing liberalization of dairy production in NZ, participants predominantly referred to economic implications. Seven of ten participants expressed concern over the price volatility occurring in the 2014/2015 season¹³. One participant claimed that this volatility is ‘the hardest part’ of a liberalized dairy industry: ‘the fluctuations are very hard to cope with, it's feast or famine basically’ (NZ dairy producer). Seven participants mentioned that in order to cope with

¹³ Of the three participants who did not express concern over price volatility, one was receiving a higher price through Fonterra’s guaranteed stable income program; one did not discuss the 2014/2015 economic struggle at all; and one solely discussed the volatility as a positive feature of a liberalized agricultural policy framework.

low returns, farmers are forced to prioritize and cut costs on the farm in a number of ways, such as: reductions in the use of fertilizer, imported feed supplements (and return to grass-based models), and preventative medicine for cattle; discontinuation of discretionary spending on repairs and maintenance, environmental projects, or infrastructure; decreased production; and reduced wages or shifts in labour, from hired staff to farm owners or managers. Four participants mentioned that the 2014/2015 low payout will force some farmers to exit the industry. One participant explained:

Participant: A lot of New Zealanders are very economic farmers, and there's not a hell of a lot you can cut out of it. That's why we moved to high numbers as well. To become more efficient you have to milk more. So there's a lot done to keep our cost structure as low as we can, so there's not a lot we can cut. There's a few things that we can do but not major.

Interviewer: What would be the first thing that you have to do? In a year like this for instance?

Participant: Ah well, drop on your knees and start praying that the market will go up. Um, no this is- you will find that there could be some casualties. Some farmers that are not going to make it.

Furthermore, participants mentioned negative implications for input providers, the surrounding community, and the environment. One participant stated that many costs being cut are necessary for long term improvements to the farm business and environmental stewardship. This further strains the already-tense relationship between farmers, who struggle to remain economically profitable, and civic groups, including environmental organizations that pressure farmers to invest in environmentally-sustainable practices.

Yet the participants did not view price volatility as exclusively detrimental. Rather, six participants referred to price volatility and low returns as beneficial for the industry on the basis of good farm management. According to participants, ‘volatility exposes bad management’ (NZ dairy producer); it weans out farmers who are economically inefficient and provides opportunities for the economically efficient. Furthermore, prioritizing costs was considered an important business skill for farmers. According to participants, tough seasons such as 2014/2015 are all a part of ‘the nature of farming’ (NZ dairy producer), and will ultimately make for better, more profitable farmers.

Compared to a subsidized or government-regulated system, eight participants mentioned a preference for liberalization. The reasons they gave for preferring a de-regulated dairy sector were both specific to the context of NZ and general to a neoliberal ideology. Participants viewed liberalized and export-oriented production as necessary for the survival of NZ’s agricultural sector, due to the small size of the country and limited domestic demand. One farmer compared the liberalized NZ dairy framework with Canada’s supply management system: ‘the world doesn’t need [NZ], we need the world...we couldn’t put [a supply management] system in NZ because we don’t have enough people. We don’t have enough population to actually support that model’ (NZ dairy producer).

Furthermore, participants considered their transition from a government-interventionist state to a liberalized state as beneficial for producer autonomy; that is, it was thought to provide producers with increased freedom from external control and capacity for self-governance. One participant explained how liberalization provides producers with greater control over their own

business, while expressing dislike for price stabilizing mechanisms that were put in place by centralized producer boards prior to the 1984 reform:

We've had [subsidies] in the past, and we went through some cold turkey to get rid of them, and it's never been better... You're in charge of your own decision making on your farm, in relation to how you see things happening locally and internationally... What [the pre-1984 centralized producer boards were] saying is, "you guys can't control your own businesses". So now what happens is, there's nothing like that: Fonterra will signal as closely as they can what the milk payout's likely to be and they'll pay it out in a particular year. So you go from \$8.60 to \$4.50 in a year. And you manage that. It's like any other business, you manage that. You manage the risk of doing that. So those [prices stabilizing mechanisms] – well, some people may have liked it, but I regard it as a bit of a Nanna state really (NZ dairy producer).

Another farmer considered the life of a liberalized producer to be more personally fulfilling than that of a subsidized producer:

You deal with [price volatility], and then you come out the other side. And then you live life far more... intense. And it's far more rewarding living it there than living in a secure, subsidized, country where nothing happens to you because you're- you complain and you get something, or they complain- that's not good. So sometimes it's scary to live on that line, but it's not bad to live there (NZ dairy producer).

Overall, the majority of participants aligned with the sentiment that a protected market 'takes away a lot of your opportunities... it promotes mediocracy all the way through' (NZ dairy producer) and preferred the economic, political, and social environment of a liberalized industry. Only one producer noted any preference for a different socio-cultural environment; they

preferred the cultural features of the pre-1984 sheep industry, which they claimed to be more laid-back and community-oriented than the business-minded dairy industry that followed. This participant explicitly noted that they switched to dairying out of economic necessity.

3.4 Discussion: Liberalization and food sovereignty in the NZ dairy sector

Participant accounts regarding the economic consequences of liberalization on dairy production in NZ align with those of the literature. Post-reform, a volatile economic environment and pressures to meet neoliberal objectives resulted in intensification of dairy production and changes to production practices. These changes resulted in both positive and negative consequences for the individual farmer; socially and ecologically at a broader community level, the changes were largely detrimental (Stock & Peoples, 2012; Willis, 2004; Wright, 2015). Both the literature and interviews highlight features of contemporary dairy production in NZ that exemplify what Holt Giménez & Shattuck (2011) describe as a period of liberalization within a neoliberal food regime. Characterized in part by intensification of agricultural production, corporate concentration, unregulated markets and monopolies, and deterioration of traditional agriculture, the neoliberal political framework of NZ's dairy sector is intrinsically inconsistent with food sovereignty discourse, which prioritizes the health of farmers, farm communities and environment through regulated markets and democratized food systems (Holt Giménez & Shattuck, 2011).

Participants considered liberalization as favourable for their ability to make strategic economic decisions as business owners, suggesting that their conceptions of autonomy and self-identity align with that of an 'entrepreneurial farmer', who deems commodity agriculture as a moral good and views authentic farming as productivist farming (Stock & Forney, 2014). For

instance, participants emphasized choosing economically efficient decisions following the 2014/2015 season low payout; this type of decision-making can be characterized as ‘neoliberal autonomy’, in which producers are “free” to choose whether to destroy, protect or enhance the natural environment according to the specific and wider costs and benefits of doing so’ (Stock et al., 2014, p.413). According to Stock et al. (2014), neoliberal autonomy, which privileges individualism, is not equivalent to true autonomy. Although producers are ‘free’ to make entrepreneurial decisions, in reality they are constrained by external pressures that affect their choices and inhibit their quests for freedom. An example of the separation between formal and real authority can be attributed to the neo-cooperative structure of Fonterra, where shareholders delegate more decision making power with a subsequent reduction in their own control as members (Chaddad & Iliopoulos, 2013). Although farmers are directly involved in governance through their delegation of representatives to a shareholder’s council (in charge of overseeing decisions made by the company’s board of directors) (Dana & Schoeman, 2010), Fonterra diverts from a ‘one person, one vote’ governance system of traditional co-operatives. Instead, it employs a proportional voting system that varies according to the volume of the voter’s supply (Nilsson & Ohlsson, 2007).

While some participants considered liberalization and its economic dictates to be challenging for dairy production in NZ, in general they aligned with the logics of a productivist ideology that supports capitalist interests and justifies market failures. Thus, this case study identified participants’ as ‘legitimators’ of neoliberalism (Borras, 2010), which also aligns with literature documenting producers’ responses to liberalization. According to Hunt et al. (2013), 40 years of neoliberal agricultural policy have given permission for farmers to ‘practice their farming as a business rather than a lifestyle’ (p.40) and choose management decisions that

validate neoliberal economic objectives (Le Heron, 2003). Similarly, Burton & Wilson (2012) suggest that dairy farmers' attitudes are either reflective of, or influenced by, an increasing number of non-New Zealander business experts on Fonterra's board of directors and a tendency to prioritize productivist characteristics in Fonterra's agricultural objectives. Rosin (2013) observed that these productivist ideologies persisted amongst NZ farmers following failures and distortions of the neoliberal logic such as the 2008 food crisis. Similarly, rather than challenging the neoliberal ideology in the face of economic volatility, participants' reactions to the economic challenges associated with the low payout of the 2014/2015 season rationalized the implications of liberalization as beneficial for the industry. This demonstrates the resilience of the neoliberal ideology in the face of market failures (Rosin, 2013), and in spite of NZ producers' knowledge of price and market risks (Melyukhina, 2011). While NZ has a limited and non-subsidized agricultural insurance market to mitigate these risks, one reason for this rationalization is vertical integration in the dairy industry, which has been identified as an effective form of farm risk management. According to the OECD, dairy farmers mitigate and outsource their market risks through their 'secured contract' with Fonterra (Melyukhina, 2011).

Evidence from this research suggests that producer identities are grounded in market-based principles and individual conceptions of autonomy aligning with neoliberalism. Producer identification with neoliberal politics has complex implications for food sovereignty. For one, NZ dairy producers may be making decisions as 'neoliberal subjects', rationally calculating costs and benefits to the detriment of social interests (Hamann, 2009). Neoliberalism inherently favours certain models of agricultural production, and shapes sustainability outcomes (Le Heron, 2003; Wright, 2015; Stock et al., 2014), in ways that are inconsistent with the social and ecological goals of food sovereignty (Buckland, 2006). Neoliberalism also transforms human

relationship to the environment through the capitalisation and commodification of nature (Arsel & Büscher, 2012; Castree, 2010). Furthermore, the capacity for state sovereignty is continually shaped by the actors of the system based on perceived costs and benefits of globalization processes (Patman & Rudd, 2005); therefore, the persistence of neoliberal farmer identities and the continued reliance on international relationships may ultimately self-limit the capacity of NZ and its citizens to develop food sovereignty initiatives.

3.5 Conclusion

The 1984 liberalization of NZ's economic policies had significant implications for its agricultural sectors. The NZ dairy sector effectively managed a liberalized policy environment through increased productivity and rapid organizational consolidation and cooperation to market dairy internationally; however, growing degrees of concentration, intensification and corporatization in the NZ dairy sector have also resulted in economic, environmental and social implications that are counter to food sovereignty principles. In particular, participant interviews and a review of literature suggest the presence of a dairy producer culture that values productivist ideologies and justifies a neoliberal food regime. These ideals are inherently contradictory to those of food sovereignty, and represent a barrier in the development of regional food sovereignty through either grassroots or political transformation.

Chapter 4: Concluding remarks

The research in this thesis prompts two points of discussion: 1) A policy framework that is conducive to food sovereignty is important, yet insufficient, to ensure food sovereignty in a given region or sector, and 2) The concept of food sovereignty should be evaluated in the context of non-marginalized producers.

4.1 Towards food sovereignty in a neoliberal era: The role of policy

Globally, agricultural producers and associated industries are facing common pressures of a neoliberal food regime. In response, the Canadian and New Zealand dairy sectors have implemented two distinct regulatory systems, both of which have been shaped by unique histories and local dynamics (Muirhead & Campbell, 2012). Canada's supply management framework involves public policy that provides domestic producers with market security and political protection from international competitors. In New Zealand, novel processor-farmer relations, including an aggregation of farmer autonomy, has resulted in the creation of a neo-cooperative monopoly capable of securing international markets without statutory producer board powers (Le Heron & Roche, 1999; Stock et al., 2014). These frameworks both rely on co-operation between producers, and both have been successful in securing markets and suppliers. Melyukhina (2011) has highlighted the importance of these types of farmer collective action as forms of market risk management; conversely, in countries like Australia that have functioned within a liberalized political economy since 2000 and do not have a single buyer and seller for dairy, producers have struggled to remain viable (Doyon, 2011). Yet while the supply management model is publically governed and prioritizes stability, the neo-cooperative model is privately governed and emphasizes growth.

Results from this research indicate that the Canadian supply management system is more conducive to food sovereignty than NZ's neo-cooperative system within a liberalized policy environment. As a government regulated policy framework, supply management legislates conditions for producers, such as price stability, that are not guaranteed through Fonterra's farmgate pricing mechanisms. BC data indicate that supply management provides opportunities for the democratic involvement of producers in decision making processes, government oversight to prevent self-interested decisions on producer boards, and transparent decision-making processes. In NZ, producers are represented through their delegation of shareholder council representatives to monitor Fonterra's practices; however, unlike a traditional co-operative, producers have reduced decision-making power compared to company executives, and the extent of their true autonomy is debated (Stock et al., 2014). Furthermore, the power of supply management is broader in scope than the market power of Fonterra; legislative limits on imports and exports reduces the dumping of excess product and may have significant implications for producer sovereignty in export nations. According to Muirhead and Campbell (2012), the Canadian supply management system has avoided the worst of a global trend of productivism, and is considered to be more resilient to future shocks than the New Zealand model of neo-cooperation.

Thus in principle, supply management provides more of an economically stable and politically democratic framework, and is more conducive to food sovereignty principles, than its liberalized counterpart. However, the results of this research illustrate that in practice, the expression of food sovereignty in a given agricultural sector is nuanced by factors that are either overlooked by, or transcend, its overarching governance structure. For instance, while supply management protects producers against certain consequences of liberalization, such as economic volatility, it is less successful at controlling social and environmental issues such as intensification. Despite the high level

of support for producers, the number of Canadian dairy farms has declined to the same degree as in the US and the EU – roughly 60% between 1992 and 2009 – while average herd size has increased between 83–149% (Informa Economics Inc., 2010). In comparison, NZ saw a 20% decline in the number of farms during that time period, with a comparable increase in herd size of 98% (ibid.). Without specific policies within a supply management framework that limit growth of herd size, for example, producers may be faced with increased competition and comparable pressures as those experienced in liberalized contexts, including the need to make substantial economic investments and improve cost efficiencies (Huettel & Jongeneel, 2011).

Additionally, supply management is not a systemic policy framework. Its key policy objectives are economic, and do not account for environmental nor social features of the dairy industry; food sovereignty is therefore influenced by broader national and international policy. For instance, food sovereignty is affected by socio-economic problems such as land markets, especially in Southwest BC as urban encroachment threatens agricultural development and inflates land prices (Condon et al., 2010). Also, supply management regulations do not prescribe ecologically sound production practices. Similar to NZ's liberalized system, the BC dairy industry is reliant on environmental regulations which are disjointed – and often contradictory – to the industry's productivist objectives. These industries are both reliant on market-driven incentive models to develop and enforce environmental standards, in order to meet their visions of sustainable environmental stewardship.

In particular, this research stresses the substantial influence of socio-cultural ideologies and objectives on dairy production and the capacity for food sovereignty. BC and NZ participants differed slightly to the degree to which they identified with productivist objectives; NZ producers overwhelmingly aligned with individual, neoliberal conceptualizations of autonomy, while many BC

producers embraced both individual wealth creation as well as stability and resilience within the industry – a conflicting combination of both entrepreneurial farmer and peasant conceptualizations of autonomy (Stock & Forney, 2014). This points to differences in farmer identity between BC and NZ, which may be a direct consequence of the agricultural norms associated with protectionist and liberalized policy frameworks. Ultimately, however, both BC and NZ participant populations included individuals who aligned with neoliberal cultures that currently characterize broader Canadian, NZ and global agri-food regimes. According to Hunt et al. (2013), neoliberal government policies have promoted the self-identification of farmers as business people; similarly, the research presented in this thesis suggests that neoliberal cultures have influenced farmer identity and behaviour, which has affected the definition and practice of food sovereignty at regional and national scales.

It is therefore critical to view the development of food sovereignty in a neoliberal era as both a political and cultural challenge. Although conducive policy frameworks such as supply management can be utilized as policy mechanisms towards the implementation of food sovereignty, it is a capitalist reaction to solely offer political processes and economic solutions for complex, systems-level problems (Arsel & Büscher, 2012). Additionally addressing socio-cultural factors influencing farmer behaviour and identity may require emphasis on cultural transformation, including both the cultivation of citizen-consumers and the reorientation of industry values, away from a paradigm characterized by neoliberal ideologies and towards those that support the social and ecological value orientations that underlie the concept of food sovereignty. Such a transformation will likely require both gradual phase-in of value-laden roles at the farm level as well as the incorporation of social and ecological costs into payment schemes (Burton, 2004). Rather than waiting for shocks to disturb neoliberal regimes, focusing on food utopias that promote qualities, as well as quantity, may assist this transformation (Rosin, 2013).

4.2 Who is sovereign in food sovereignty?

‘Designating sovereignty’ in an agricultural system has been a topic of deliberation amongst food sovereignty researchers (Schiavoni, 2014; Wittman 2011). Food sovereignty is defined not only as ‘the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods’, but also as the ‘right to *define* [emphasis added] their own food and agriculture systems’ (Nyéléni Forum for Food Sovereignty, 2007). Traditionally, the protagonists of food sovereignty studies are represented by marginalized food providers who are struggling and underrepresented within the current system (Schiavoni, 2014). However, in the case of the BC dairy industry, where producers receive a high proportion of the consumer dollar (Kelly et al., 2014) and where industry lobby groups hold political clout over national decisions, it may not be appropriate to label producers as marginalized stakeholders. Furthermore, results from this research identified producer participants who aligned with neoliberal values and ideals, inconsistent with food sovereignty discourse. By examining perspectives of non-marginalized producer populations, the results from this research highlights tensions around the conceptions of food sovereignty as an appropriate framework for understanding or transforming neoliberalized agricultural societies. In particular, there are two sets of tensions and questions that call for further attention by food sovereignty theorists:

- 1) Whose perspective is valid in defining food sovereignty in a given region; is this the job of the marginalized stakeholder? In BC, consumers (particularly those of low-income households), rather than producers, are often considered to be the marginalized stakeholders in the dairy system, unequally represented in policy-making groups (Cardwell et al., 2015). Yet Andrée et al. (2011) note that positioning food sovereignty policy demands from the perspective of the consumer may threaten regulated frameworks such as supply management, which may be beneficial to food sovereignty from

the producer's perspective. It is a circular argument; there are tensions between stakeholder values with divergent consequences for supply management, and it is not clear according to food sovereignty theory whose values should be prioritized.

If non-marginalized producers are facilitators of the corporate food regime by nature of their participation in the system, then what role do they have in defining food sovereignty, a political movement that aims to reform the current regime? Considering food sovereignty has certain ideological objectives, does that limit the types of stakeholders who should have a say in defining food sovereignty for that region?

2) If it is decided that all stakeholders – including non-marginalized producers – have the right to define their own food systems, what would a sovereign food system look like if stakeholders align with neoliberal ideologies? Could stakeholders promote neoliberal goals as a sovereign decision under the supply management framework? This is another circular argument; a contradiction in terms. In BC, for instance, supply management largely allows producers to control and define their own food systems, and yet results suggest that this producer control does not equate to food sovereignty as currently articulated in the international agrarian movement. Does food sovereignty, therefore, require fulfillment of a comprehensive set of conditions as defined by theorists? Or, if the political framework ensures democratic control, can a sovereign food system lack other critical pillars – such as ecological sustainability – if they are not deemed of importance to the population?

According to Windfur & Jonsen (2005), smallholder farmers are worthy decision-makers for the industry because 'they have been the main custodians of the environment for millennia' (p.8); it is assumed that the longevity of one's connection to place fosters ethics that align with food sovereignty principles. Yet in the case of the BC dairy industry, for example, smallholder producers have only

been ‘custodians of the environment’ since colonialism. Upon the arrival of European immigrants and successive push for export agriculture, traditional Indigenous food systems were marginalized and farming methods lost much of the place-based context that food sovereigntists consider essential to its definition (Wiebe & Wipf, 2011). Thus, one could posit that the true keepers of food sovereignty are Indigenous communities with long-standing, place-based connections to land and food; yet this in itself requires further contemplation and analysis, as Indigenous communities in Canada hold critical conceptions of the notion of sovereignty and separateness (Desmarais & Wittman, 2014) that may render the question of ‘whose sovereignty’ irrelevant.

4.3 Limitations and considerations for future research

In addition to the broad theoretical suggestion to re-evaluate participant stakeholders in food sovereignty research, there are limitations in the scope and generalizability of this study, and opportunities for additional research to address these gaps.

For one, this study is exploratory in nature and the conclusions presented in this thesis cannot be extended to other populations or situations. This includes other supply managed sectors in Canada or BC, as marketing board policies differ between provinces and between commodities; for example, while all BC dairy producers must obtain quota to produce and sell milk products to the public, BC poultry producers can request a small flock exemption from the quota system and purchase a permit for the production and farm gate-sale of up to 2,000 chickens per year. Additionally, dairy policies globally are known to be particularly complex and challenging in terms of meeting economic, social, economic and political sustainability criteria, receiving high levels of support compared to other commodities (OECD, n.d.) Therefore, it is not possible to claim specific advantages or disadvantages of supply management policies for food sovereignty, especially in comparison to unique dairy governance systems within liberalized economies, beyond the context of this research.

Furthermore, this research captured a narrow range of perspectives from BC and New Zealand dairy producers; there are undoubtedly others whose opinions were not represented in this research. In their study on farmer opinions on GE technology, Stone & Flachs (2014) argue that ‘claims about the “farmers’ voice” tend to obscure the complexities of agricultural decision making’; similarly, accuracy of the current study could be limited through its inability to account for biases in participant responses, and it is acknowledged that participant perspectives cannot be generalized to the rest of the population.

Owing to the breadth of values and characteristics associated with food sovereignty, my analysis was restricted in its ability to capture more nuanced implications of a supply management or liberalized policy framework for regional, provincial or national food sovereignty. In order to expand on this analysis and offer specific political opportunities for the development of food sovereignty, I recommend a narrowed analysis on specific food sovereignty characteristics. For instance, there are many economic, political and socio-cultural indicators and measurements (such as product price) missing from the literature, which could enable quantitative and comparative analyses between supply-managed and liberalized agricultural sectors. Modelling decision-making processes may be useful from a socio-cultural lens, to help identify relationships that warrant particular attention for the development of regional food sovereignty.

One opportunity for future research would to analyze the capacity of a critical pillar of the food sovereignty agenda: agroecological production practices. Environmentally, the dominant practices of the BC dairy industry have notable implications for regional agricultural sustainability; despite practices aimed at responsible water usage, soil conservation and manure management (Samson, 2012), dairy production and other forms of animal agriculture are significant contributors to environmental degradation in the Fraser Valley. Waste management-related issues such as the contamination of ground- and streamwater, soil, and air quality are increasingly pertinent as dairy

farms continually increase herd sizes and consolidate on smaller parcels of land (Berka et al., 2001; Dolberg and Hertgers 2003; Schreier et al., 2003). However, supply management policies themselves do not address environmental standards, and so to measure the implications of supply management on environmental health would require additional analyses of the relationship between supply management, concurrent environmental regulations, and indicators such as soil composition and water quality, and a subsample for comparative analyses outside of supply-managed borders, which was beyond the scope of this research.

An additional research opportunity, which would require a public health as well as food sovereignty framework, is that of the ‘raw milk’ movement developing internationally. In Canada, the *Food and Drugs Act* prohibits the sale of raw (unpasteurized) milk, and it is considered a hazardous food substance according to the BC Centre for Disease Control (Provincial Health Services Authority, 2015). Yet there is a growing consumer demand for access to raw milk (Canadian Consumer Raw Milk Advocacy Group, 2013) and raw milk advocacy groups such as the NFU (2012b) support the legalization and regulation of raw milk production as a valuable contribution to Canada’s food sovereignty on the basis of consumer choice. Additional studies could investigate the political and socio-cultural implications of raw milk production, either in conjugation or separately from supply management policy framework, for food sovereignty in BC.

In conclusion, the research presented in this thesis highlighted producer perspectives on the role of a supply management policy framework for food sovereignty in the BC dairy industry, and provided groundwork for further investigation to assess specific, practical developments that support food sovereignty. It also justified future comparative studies between Canada and NZ, specifically regarding the implications of a global food regime on producer culture in various political economies.

Finally, the research in this thesis addressed the need for more applied food sovereignty analyses through investigation of specific agri-food sectors, raising further questions that will need to be addressed as the food sovereignty movement evolves in theory and action.

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Appendices

Appendix A. Initial contact letter for BC participants

Dear *Name of Individual (Farm/Company name)*,

Hoping this finds you well! My name is Samantha Gambling and I am a graduate student from Faculty of Land and Food Systems at the University of British Columbia. I received your contact information (*/was recommended to contact you*) from (*name of contact or website*). As a (*producer/processor/policy actor*), I would like to inform you about a research project that I am conducting with my supervisor, Dr. Hannah Wittman, which focuses on sustainability in the BC dairy industry.

The main question that I am trying to answer in this research project is: **How does policy impact sustainability within the BC dairy system?** The supply managed dairy industry is an agricultural cornerstone in British Columbia within a unique political and economic framework. I will be studying how this political framework affects dairy production, from the perspectives of stakeholders who are most affected by the policies.

The objective of this research is to target policy change that encourages environmentally sustainable, economically viable, politically equitable and socially supportive dairy practices. As a major stakeholder in this industry, your opinion is important to ensure that a voice for producers is accounted for. Your contribution to this research would help me characterize sustainable dairy farming in BC and identify limitations to and opportunities for certain agricultural policies.

I am therefore writing to ask whether you would willing to participate in a two-part interview process. The first in-person interview will preferably take place on-farm and will consist of a 60-90 minute discussion regarding your vision of “sustainability”. The second interview will take place either over the phone or in person. This interview will take approximately 30 minutes and will focus on policy implications for your production system. Other issues and topics that may arise will be welcomed within the overarching theme of the BC dairy industry. Both interviews will take place at a date that is convenient to you sometime before August 31, 2014.

This research project is designed to incorporate participant suggestions. There are no “correct” answers for these interviews, and your individual opinion is greatly valued. All information will be collected confidentially and reported anonymously. Final results from this research will be used for my Master’s thesis. They may also contribute to academic journal articles, public media, or policy reports to the BC Dairy Association or other representative organizations.

Please let me know if you are willing to participate in the interviews. You can reply via email [removed] or telephone [removed] to arrange a date and time for the first interview.

Your time and participation will be greatly appreciated!

Sincerely,

Samantha Gambling

Appendix B. Interview protocols for BC producer, processor and animal welfare expert stakeholders. All interview protocols were reviewed by my supervisory committee and dairy industry experts before use.

Producer Interview Guide

Introductory & Background Questions

1. How would you describe your role in the dairy system?
2. How long have you been a dairy farmer/ how did you come into the dairy industry?
3. Demographic questions, eg: What is your daily production? What is the acreage of your farm? How many cows are you milking? What feed do you grow on farm vs. purchase off farm? What type of housing system are you using?

Sustainability Questions

4. Based on your own experience, how would you define sustainability?
5. If you could envision an ideal, sustainable farm, what are a few key components that this farm would include?
6. Based on your definition of sustainability, what are some areas where your farm hits the mark?
7. Where are the biggest challenges for your farm to achieve sustainability according to your definition?
8. In terms of BC Dairy system in general, what are some highlights of sustainability?
9. What are the biggest challenges for the BC Dairy system in general?
10. Other definitions of sustainability have included the following features. What is your opinion on:
 - a. Family involvement and inheritance of the farm
 - b. Reducing the environmental impact of dairy production
 - c. Generating a stable income
 - d. Minimizing off-farm inputs
 - e. Government support
 - f. Having access to technologies that increase productivity
 - g. Having a closed-loop system that recycles nutrients
 - h. Ensuring cattle health and well-being
 - i. Having income reflect living costs
 - j. Providing high-quality products
 - k. Interacting socially with the community
 - l. Transparency and acceptance by the public
 - m. Access to pasture
 - n. Input into provincial farm management policies
 - o. Input into federal farm management policies
 - p. Ability to grow in size and efficiency
 - q. Guidance and leadership from others
 - r. Paying living wages to employees
11. Currently, how can farmers be involved in decision making in the dairy industry?
12. As a dairy farmer, do you consider yourself to have moral or ethical obligations to the animals that you raise? If so, what are they?
13. What is your opinion on the “Code of Practice for the Care and Handling of Dairy Cattle?”

- a. Should the recommendations in the code be mandatory?
- b. If so, how should producers be held accountable?
- c. What should the consequence be if producers don't follow this code?
- d. Has this code affected or changed your management practices? If so, how?

Processor Interview Guide

Introductory & Background Questions

1. How would you describe your role in the dairy system?
2. How long have you been a dairy processor/ how did you come into the dairy industry?
3. Could you briefly take me through the main components of your facility and steps involved in processing raw fluid milk?
4. Other demographic questions not answered in #3, Eg: How much milk do you process per day? How many farms do you source from? What are the products being produced and where are they sent?
5. How familiar are you with the on-farm activities involved in milk production?

Sustainability Questions:

6. Based on your own experiences, how would you define sustainability?
7. In an ideal sustainable system, what do you think a sustainable BC dairy farm should look like/ include?
8. What would a sustainable processing plant look like?
9. Based on your definition of sustainability, what are some areas where your company/processing facility hits the mark?
10. Where are the biggest challenges for your company/processing facility to achieve sustainability according to your definition?
11. In terms of BC Dairy farms and the dairy system in general, what are some highlights of sustainability?
12. What are the biggest challenges for BC Dairy farms and system in general?
13. Some other important definitions of sustainability may include the following features. What are your opinions on:
 - a. Family involvement and intergenerational transfer of the production/processing facilities
 - b. Reducing the environmental impact of dairy production and processing
 - c. Generating a stable income
 - d. Government support
 - e. Having access to technologies that increase productivity
 - f. Ensuring cattle health and well-being
 - g. Having income reflect living costs
 - h. Providing high-quality products
 - i. Interacting socially with the community
 - j. Transparency and acceptance by the public
 - k. Access to pasture
 - l. Paying a living wage to employees
 - m. Input into provincial dairy policies
 - n. Input into federal dairy policies

- o. Ability to grow in size and efficiency
 - p. Guidance and leadership from others
14. Currently, how can processors be involved in decision making in the dairy industry?
 - a. What are similarities or differences between farmers and processors in their ability to direct policies or make industry-level decisions?
 15. Do you think dairy farmers have moral/ethical obligations to the animals that they raise? If so, what are they?
 16. Have you heard of the “Code of Practice for the Care and Handling of Dairy Cattle”? If so, what is your opinion of it?
 - a. Should the recommendations in the code be mandatory?
 - b. If so, who should ensure that producers follow this code? (Accountability?)
 - c. What should be the consequence if a producer does not follow this code?
 17. Are there any on-farm regulations or policies that notably affect your processing operations, and if so, what are they?
 18. What is dairy’s role within a sustainable BC food system?
 19. Based on your experiences, what aspects of the BC dairy system do you think will stay the same over the next decade, and what do you think will change?

Animal Welfare Expert Interview Guide

1. How long have you been interacting with farmers? With dairy farmers?
2. What role do you have in this industry? How are you viewed by farmers?
3. Based on your own experience, how would you define sustainability?
4. If you could envision an ideal, sustainable farm, what are a few key components that this farm would include?
5. Based on your definition of sustainability, what are some areas where dairy farms are fulfilling standards? Where are the biggest challenges?
6. Other definitions of sustainability have included the following features. What is your opinion on:
 - a. Family involvement and inheritance of the farm
 - b. Reducing the environmental impact of dairy production
 - c. Generating a stable income
 - d. Minimizing off-farm inputs
 - e. Government support
 - f. Having access to technologies that increase productivity
 - g. Having a closed-loop system that recycles nutrients
 - h. Ensuring cattle health and well-being
 - i. Having income reflect living costs
 - j. Providing high-quality products
 - k. Interacting socially with the community
 - l. Transparency and acceptance by the public
 - m. Access to pasture
 - n. Input into provincial farm management policies
 - o. Input into federal farm management policies
 - p. Ability to grow in size and efficiency

- q. Guidance and leadership from others
 - r. Paying living wages to employees
7. From your experience talking with dairy industry reps, how do individual farmers and the industry at large view the issue of ‘animal welfare’? (is it a moral issue? Public acceptance? Is it even an issue?)
 8. Is the “Code of Practice for the Care and Handling of Dairy Cattle” becoming mandatory?
 - a. How should producers be held accountable?
 - b. What should the consequence be if producers don’t follow this code?
 - c. Have you seen changes in animal husbandry based on this code or other standards?
 9. There is currently only one SPCA certified dairy farm. Do you have goals to increase this number?
 10. What potential does policy have in improving animal welfare?
 11. Based on your experiences, what aspects of the BC dairy system do you think will stay the same over the next decade, and what do you think will change? What do you hope will change?

Appendix C. Initial contact letter for New Zealand producer participants

Dear *Name of Individual (Farm/Company name)*:

Hoping this finds you well! My name is Samantha Gambling and I am a graduate student from the University of British Columbia in Vancouver, Canada. I received your contact information (*/was recommended to contact you*) from (*name of contact or website*). As a (*producer/processor/policy actor*), would like to inform you about a Canada-New Zealand research project that I am conducting with my supervisor, Dr. Hannah Wittman, alongside Dr. Hugh Campbell from the Centre for Sustainability, at the University of Otago in Dunedin.

The main question that I am trying to answer in this research project is: **How does policy impact the sustainability of dairy production?** In Canada, the supply management system provides a unique political and economic framework for dairy production. Conversely, liberalisation and export are key features of New Zealand’s dairy industry. I will be studying how these different political frameworks affect dairy production, from the perspectives of stakeholders who are most affected by the policies.

As a major stakeholder in the New Zealand dairy industry, your contribution to this research would help me characterize sustainable dairy production in New Zealand and identify limitations to and opportunities for certain agricultural policies. Through interviews and analysis, my objective is to understand different perspectives between Canadian and New Zealand dairy stakeholders, and promote policies that encourage environmentally sustainable, economically viable, politically equitable and socially supportive dairy practices. I also hope to share with you thoughts and opinions on dairy policy, from the perspective of Canadian dairy producers.

I am therefore writing to ask whether you would willing to participate in an interview. Ideally, the interview will take approximately 60-90 minutes, and take place in person (*on-farm or at a place of your convenience*). Questions will be centered on your visions for “sustainability” and the factors that either limit or enable these ideals. Other issues and topics that may arise will be welcomed within the overarching theme of the New Zealand or Canadian dairy industry. Both interviews will take place at a date that is convenient to you sometime before June 15, 2015.

This research project is designed to incorporate participant suggestions. There are no “correct” answers for these interviews, and your individual opinion is greatly valued. All information will be collected confidentially and reported anonymously. Final results from this research will be used for my Master’s thesis at the University of British Columbia. They may also contribute to academic journal articles, public media, or policy reports to the University of Otago, BC Dairy Association, or other representative organizations.

Please let me know if you are willing to participate in the interviews. I will be travelling around New Zealand by car, doing interviews from approx. May 10- June 10, 2015. You can reply via email [removed]; or telephone [removed] to arrange a date and time for the first interview.

Your time and participation will be greatly appreciated!

Sincerely,

Samantha Gambling

Appendix D. Interview guide for New Zealand dairy producer participants. The interview protocol was reviewed by my supervisory committee and dairy industry experts before use.

Introductory & Background Questions

20. How long have you been a dairy farmer/ how did you come into the dairy industry? What generation farming are you?
21. Could you briefly take me through your production process on your farm? (Farm type, number of labourers, etc.?)
22. Demographics (Farm size? Herd size (number milking cows & total cows?))

Sustainability Questions:

23. Based on your own experiences as a farmer, how would you define sustainability?
24. In an ideal system, what do you think a sustainable NZ dairy farm would look like/ include?
25. Based on your definition of sustainability, where are some areas where your farm hits the mark?
26. Are there challenges for sustainability on your farm? If so, what are they?
27. In terms of NZ dairy production in general, what are the biggest opportunities and the biggest challenges for sustainability?
28. Do you feel economically secure to continue producing?
29. (Prompts) Some elements that appear in other people’s definitions may include the following:
 - a. Family involvement and intergenerational transfer of the farm
 - b. Reducing the environmental impact of dairy production
 - c. Generating a stable income
 - d. Minimizing off-farm inputs
 - e. Government support
 - f. Having access to technologies that increase productivity
 - g. Having a closed-loop system that recycles nutrients
 - h. Ensuring cattle health and well-being
 - i. Having income reflect living costs
 - j. Providing healthy, nutritious milk products
 - k. Interacting socially with the community
 - l. Transparency and acceptance by the public

- m. Access to pasture
 - n. Input into provincial farm management policies
 - o. Input into federal farm management policies
 - p. Ability to grow in size and efficiency
 - q. Guidance and leadership from others
30. Has the NZ dairy industry changed since you began farming? If so, how?
 - a. Prompt: policy reform – how did it affect the industry and how did it affect your farm?
 31. Did the 1984 supply management policy reform impact sustainability (as you previously defined it) in the New Zealand dairy industry? If so, how?
 32. What do you think constitutes a good dairy farmer today?
 33. As a dairy farmer, do you consider yourself to have moral/ethical obligations to the animals that you raise? If so, what are they?
 34. How did introducing the 1999 federal farm Animal Welfare Act influence production in the NZ dairy industry? How did it impact your farm specifically?
 35. How can you, as a farmer, be involved in policy making in the dairy industry?
 36. Do you feel like you have control over the way you produce? Over animal husbandry?