W3 | Work in a Warming World

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Bill 24, Climate Change and Farming in the British Columbia Interior

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Abstract

In 2014 the Liberal government of British Columbia introduced into law Bill 24. This bill re-defined aspects of the province's Agricultural Land Reserve system and deregulated the original policy of the ALR introduced into law in 1973. The ALR has been discussed and analysed in economic and political terms. In this paper we examine the climate change implications of Bill 24 for farmers and communities in the Okanagan Valley and in the Kootenays. Our research reveals the contentions around the Bill and the means by which it will accelerate climate change aspects in those communities rather than curtail them. The research interviewed farmers, community activists, local officials and politicians.

Acknowledgements

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Introduction[i]

This research raises the issue of climate change and Bill 24[ii] in order to ascertain the consequences of the introduction of this bill for climate change practises and impact on farming in British Columbia (BC). The following questions govern this study: What is the climate change impact of the changes to the Agriculture Land Reserve (ALR)[iii] through Bill 24? How is climate change defined and how is the tie between it and the bill articulated? What organizing is being done to protect the ALR, and how much of this organizing centers on climate change arguments? Of course this does not mean that issues of climate change and farming haven't been raised and discussed. On the contrary, there are several studies outlining farming impacts on climate change, and we outline these below. Our concern is more specific: how might the changes to the ALR affect climate change or how is climate change likely to impact policy such as the ALR? Historically, the ALR has been interpreted through the prism of economics and its maintenance of farming activity to enable food security for future generations by promoting farmers' livelihoods. This study, however, focuses on the overlooked importance of the ALR to climate change. Our contribution is to examine the ALR's impact on climate change via a discussion of Bill 24 with research participants. This is a unique perspective on the ALR.

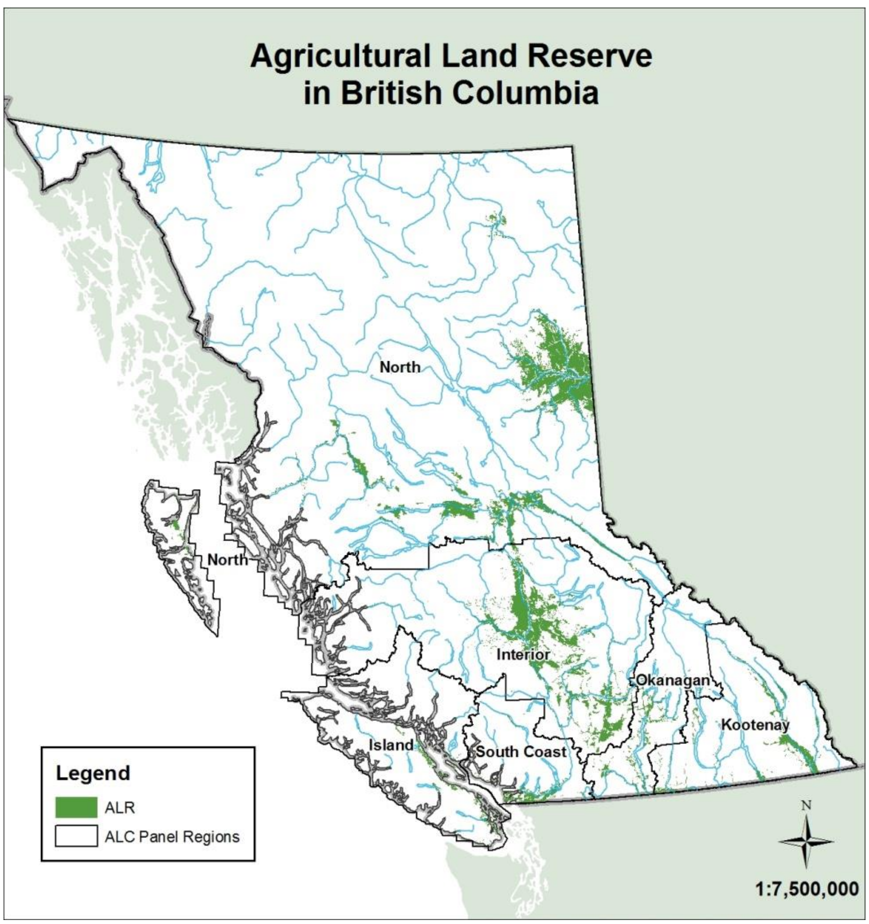
We pursue this research in the Okanagan Valley which, after the Fraser Valley, is the most important agricultural region in BC. Our research also takes us to the Kootenays since 90% of the land in this region of British Columbia is now in zone 2 in the deregulating Bill 24. This new designation of land in the Kootenays has raised the ire of many locals object to the re-classification on the grounds that the Minister of Energy and Mines[iv] misconstrues land use in the region, by "belittl[ing] the importance of agriculture in the Kootenay's" (sic) (http://michellemungall.ca/news/why-is-bill-bennett-so-full-of-hay-asks-mungall-in-bcs-legislature/, accessed 20 November 2015) in remarking that only hay grows there. Locals also argue that Bill 24 deregulates the ALR and so is a step towards the removal of protected farmland for other economic activities other than farming. We term this initiative "farm grab" to indicate the way by which the introduction of the Bill releases previously protected farms into the marketplace for land use other than farming[v]. Much of the opposition to the bill has roots in the Kootenays and below we present why this is the case. Through primary research on Bill 24 and climate change we argue that this topic gives rise to debates about the future of farming, the growing season, and the future of farming in a neoliberal deregulating policy context.

Data collected for this study stems from various sources including: interviews with key actors and stakeholders including farmers, government officials from different governments and community activists; documents produced by different levels of government on agriculture and climate change or more specifically land and climate change; a review of media reports on farming and climate change. We examined the provincial media (e.g., The Vancouver Sun and The Tyee) as well as the regional Medias of the Okanagan Valley (e.g., The Daily Courier and The Capital News) and the Kootenays (e.g., The Nelson Star and The Creston Valley Advance). We also reviewed social media sources like the Young Agrarians (http://youngagrarians.org/, accessed 10 October 2014) and Save Summerland's ALR (http://savethesummerlandalr.com/, accessed 10 October 2014). Our final methodological strategies entailed fieldtrips to both locations to interview farmers, community activists and officials, as well as to visit farms and see firsthand how some farmers are addressing the challenges of climate change by developing a different and unique relationship to the land. Fieldwork enabled an appreciation of the topology of the land in and outside of the ALR.

This paper begins with a discussion of the contemporary context of the pressure on the ALR for change. This is followed by a description of climate change crisis and its implications in agriculture. We then pay particular attention to practices putting a check on or accelerating climate changes in the farming industry. The final section presents an analysis of what various farmers think of climate change, Bill 24, and what they are doing about it.

The ALR Then and Now…

Map 1: Agricultural Land Reserve in BC



The six regional panels are:

- the North
- the Interior
- the Kootenays
- the Okanagan
- the South Coastal
- the Island

Source: The Agriculture Land Commission. 2015. Maps and GIS. http://www.alc.gov.bc.ca/alc/content/alr-maps/maps-and-gis, accessed 3 December 2015.

The ALR system was set up to protect farmland in BC. It encompasses approximately 4.7million hectares of agriculturally suitable land in the province (Agricultural Land Commission 2015, http://www.alc.gov.bc.ca/alc/content/alr-maps, accessed 3 December 2015). Introduced as part of the Land Commission Act of April 1973, the then newly elected New Democratic Party (NDP) provincial government included the ALR bill as response to farmers and citizens' complaints alike about the quick pace and sizable land chunks lost every year to developers, real estate firms, land speculators and urban sprawl (Evans 2013; Petter 1985). The Act was a political initiative to address economic land use practices, as well as a response to pressures from citizens with a "new land ethic" (Rawson 1976) re-defining citizens' relationship to the land.

The Commission's objectives were threefold: 1) to preserve agricultural lands; 2) to encourage farming in collaboration with other communities of interest; and 3) to encourage local governments, First Nations, the government and its agents to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, bylaws and policies (http://www.alc.gov.bc.ca/assets/alc/assets/library/audits-and-surveys/message_from_chair_october_4_2013.pdf, accessed 6 December 2015). Armed with the Act, the Commission designated land from across BC into the ALR, and non-agricultural development of these lands became prohibited. "British Columbia's response to this apparent province-wide condition of agricultural land base erosion (B.C. Land Commission, 1972) has been to designate provincial lands with high agricultural potential as a provincial resource" (Maguire 1979: 105). Then, as now, the rationale for the ALR was to preserve, protect and promote farmland so local farmers can produce for the local market and grow their consumer base.

The bill's raison d'être was primarily economic, and set-up to ensure land use for farming for future generations, especially in the face of depleting farmland and over-reliance on importing expensive goods from California (Petter 1985: 6). It was also to promote farming activities in perpetuity by encouraging the industry to grow and feed residents of BC. And while since 1973 a significant amount of land has been released from the umbrage of the ALR,[vi] the integrity of the policy remained, as did the protection of substantial farm land in the province. Today, however, the integrity of the ALR no longer appears to be intact.

As recently as 2013, arguments about threats to the integrity of the ALR due to the bill's Core Review were common in the media (Pfeiffer 2014; Hume 2013). The Core Review, conducted between August 2013 and December 2014, was a probing of all government spending to assess efficiencies to better position the province for emerging economic growth opportunities (https://news.gov.bc.ca/stories/core-review-terms-of-reference-release; accessed 30 November 2015). The review examined spending by all ministries and their agencies, boards, commissions and all Crown agencies schools, universities, colleges and hospitals. This process was overseen by the Cabinet Working Group on Core Review headed by Bill Bennett, Minister of Energy and Mines portfolio (https://news.gov.bc.ca/stories/core-review-terms-of-reference-release; accessed 30

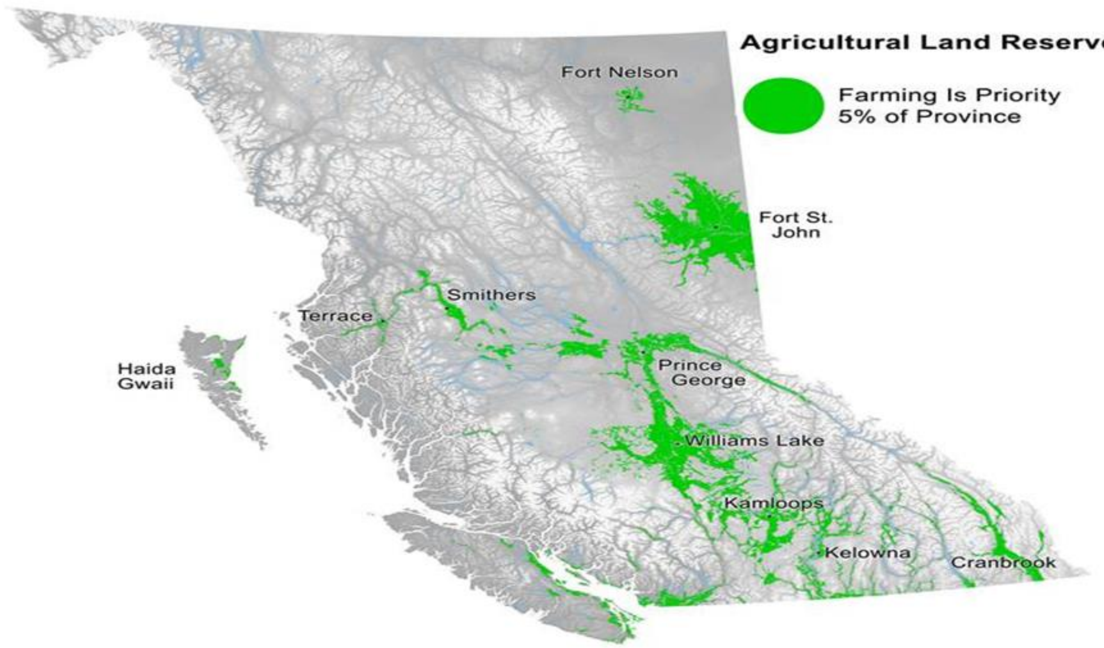
November 2015). Its objectives were: 1) to ensure that ministry programs and activities are focussed on the government's "vision of a strong economy and secure tomorrow"; 2) "to ensure that government operation is as efficient and effective as possible"; 3) to confirm government's core responsibilities and to eliminate programs that could be better delivered through "alternative service delivery models"; 4) to ensure budget targets are adhered to and achieved; 5) to identity cost-saving measures; and 6) to ensure that compensation levels are appropriate (https://news.gov.bc.ca/stories/core-review-terms-of-reference-release; accessed 30 November 2015). It is interesting to note that no mention of climate change or the implications of a warming planet were made in the government's core review objectives or analyses. The reality of a warming planet and the climate change implications accompanying it are simply ignored. The absence of these issues in the review suggests that the BC government, while concerned with program efficiencies and deliverable, sees the latter as inconsequential to climate change or vice versa.[vii]

In 2013 The Globe and Mail (Hume 2013) reported that the Agricultural Land Commission, the body overseeing the functioning and observance of the ALR, was to disappear to be replaced by the BC Oil and Gas Commission. In this scenario, big oil would be put in place to make decisions on land use, presumably in line with market demands favouring oil interests, including the construction of pipe lines through agricultural land to be subsequently removed from ALR protection. In this way the future of the ALR would be compromised by multinational and neoliberal government interests ruling on cases regarding farmland, over and above the interests of farmers and citizens' in preserving farmland in the province (CBC News 2013). The fear was that changes to the ALR would lead to the removal of farmland from the protection of the ALR and so good arable land could be used for other economic purposes besides farming. In other words, a farm grab strategy seems to be afoot (Sassen 2014). Proponents of Bill 24 argued that secondary economic activities on farms were necessary for familial economic survival, and besides sizable chunks of land in the ALR made little sense since it was unsuitable for farming. From this perspective, farming alone is increasingly economically unsustainable and that much of the land in the ALR is really land un-conducive to farming. Landowners and ranchers in the East Kootenays and on the shores of Lake Kootenay pushed for changes to the ALR by lobbying Bill Bennett.[viii] According to one interviewee, Zone two will allow for more income on their (ranchers) farms, and enable more farm diversification options to subsidize their ranching/farming activities. Farmers supporting Bill 24 want to build farm gate sales, etc. (Interview 1, 27 April 2015). Defenders of the ALR organized pushbacks and perhaps succeeded in forcing the BC Minister of Energy and Mines to sound somewhat conciliatory: "I didn't say destroy [the ALR], dismantle, obliterate – I said, 'Look at'" (Austin 2014). The same minister, who had been pushing for changes to the ALR for close to a decade, boasted about the changes to the ALR at the introduction of Bill 24. (http://www.vancouversun.com/Vaughn+Palmer+Bill+Bennett+makes+with+Agricultural+Land+Reserve+changes+with+video/9670650/story.html; accessed 20 May, 2015).

The green areas in the map (#2) below shows the province's protected ALR farmlands from 1973-2014. The next map (#3), also in green, shows the land that remains protected in Zone 1 in Bill 24. The areas shaded in red are Zone 2 and designated as such by Bill

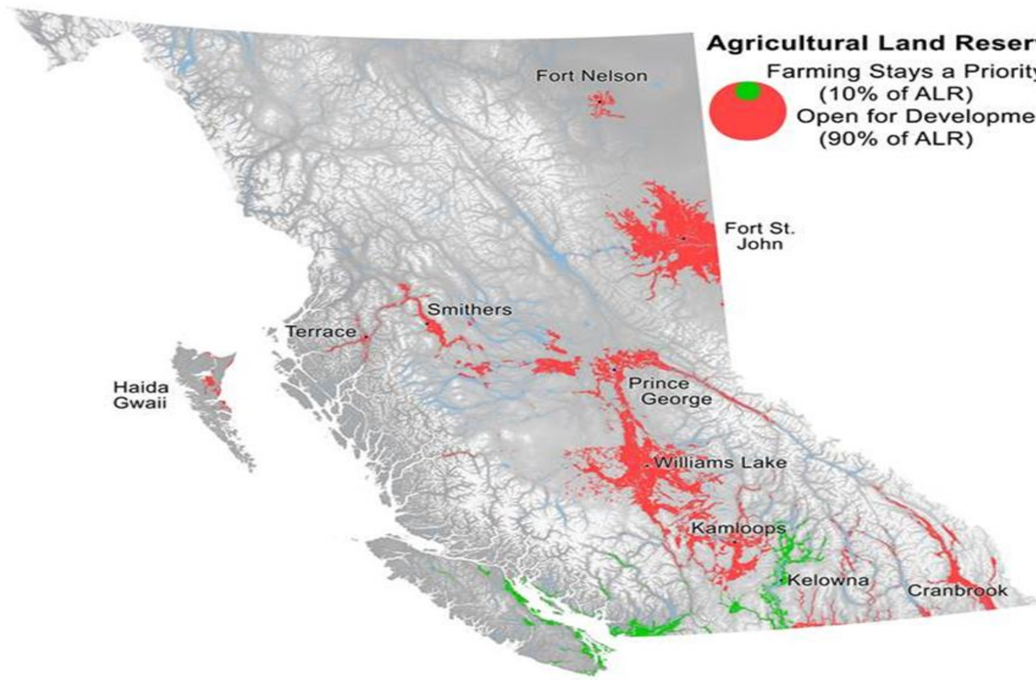
24. They are the lands opened for business development objectives in the new legislation, or the farm grab, as we call it.

Map 2: BC's Protected Lands, 1973-2014



Source: Young Agrarians. Let's get political. http://youngagrarians.org/post-your-felfie-farmers4alr/, accessed 3 December 2015.

Map 3: BC's Land Open for Development, 2015



Source: Young Agrarians. Let's get political. http://youngagrarians.org/post-your-felfie-farmers4alr/, accessed 3 December 2015.

The changes contained in Bill 24 were pursued and achieved by the newly elected Liberal government of BC and the leading roles of the Ministers representing the East Kootenays and Peace River. The bill was announced in a government press release on 27 March 2014 (http://www2.news.gov.bc.ca/news_releases_2013-2017/2014AGRI0008-000381.htm; accessed 22 May 2015). While the replacement of the ALC by an oil and gas cadre of business people was not entirely incorporated into the bill, there are sufficient changes in it to raise concerns for farmers and citizens' interested in farming in the province. Curiously, the changes were introduced in spite of the fact that British Columbians believe in the protection and maintenance of farmland through the ALR. In a recent survey conducted by the Vancouver Foundation and the Real Estate Foundation of BC (2014), it was found that 76% of residents support the ALR, and 73% believe that the ALR is key to ensuring food security for residents of BC (https://www.biv.com/article/2014/9/british-columbians-show-strong-support-alr/; accessed 20 May 2015). Critics of the ALR question that Bill 24 is in the best interests of farmers, farming and food security in BC. The arguments from both camps seem to remain tied to issues of economic feasibility thereby bypassing the crisis of climate change and the urgency to do things differently to preserve our food systems, the planet and the human species (Klein 2014). In the case of the ALR, instead of enhancing and strengthening its features with respect to climate change, Bill 24 deregulates permissible land uses on ALR lands and opens it up to exploitation for economic gains. Legislative changes to de-protected land is a phenomena occurring across the globe leading to massive land grabbing by powerful economic interests (Sassen 2014).

There are two outstanding and controversial issues arising from the introduction of this new bill. One is the divvying of BC land into two Zones. In Zone 1 farmland remains protected and secure for generations to come, so say the proponents of the bill.[ix] Zone 2, encompassing the remaining land, is said to remove from the policy land not always good for farming. Thus the re-commodification of the landscape for other economic activities than farming is to be pursued. In the latter case, it is the market that decides land use practices and activities on the basis of its viability to turn a profit for the individual farmer or landowner.

The second contentious issue is the restructuring of the ALC including the role of the Commissioner who must now share power with a new layer of bureaucracy composed of six regional panels from each geographical region[x] (within both zones) entrusted to make decisions on the "appropriate" use of agricultural land. In this change, the duties and decision making responsibilities of the Commission's Chair on farm land are significantly curtailed since panelists are given the authority, under the Bill, to make decisions on applications of the removed or re-designation of land use and practices in the ALR system. This downloading of authority to the scale of the region is a positive move, except that panelists' objectivity can be compromised as they are appointed to the panel by the government of the day and not by the Chair. As we know government appointments are often made on the basis of party affiliation, loyalty, and ideology first, and then expertise and experience second (http://rosslandtelegraph.com/news/oped-bc-government-patronage-appointments-mean-little-or-no-push-back-39409#.Vmh8nGcg8cA, and http://www.thestar.com/news/canada/2009/08/28/harper_dubbed_patronage_king.html, both accessed 9 December 2015). Needless to say, this change, if nothing else, makes the functioning of the Commission suspect and potentially compromised. The Chair of the Commission, who is also a farmer, has been an outspoken critic of Bill 24. His criticisms and the implications of such got him fired by the Minister of Agriculture with only six months left on his term (Moore 2015). In an interview, we asked him what the changes meant for the position of the Chair of the Commission, he replied with the following;

The [original] legislation [ALR] gave me [the Chair] a lot of power. This new piece of legislation [Bill 24] has taken some of it away. I cannot take part in decisions anymore, I am now a Chair. They have taken away my ability to put certain people on certain applications. I was able to draw from my team of people[xi] with particular skills in certain regions to have applications considered by those I thought had the best skills and knowledge to make the decisions. Now everything goes to the three-member panel, as per the new legislation. Prior to the new legislation, I could run the thing as I saw fit; and I always acted with the intent to save agricultural land (Interview 5, 8 December 2014).

The Chair has been replaced by the former mayor of Saanich, BC who prior to entering politics was in the car and tire business. Frank Leonard (the new Chair) is not a farmer but "was […] past co-chair of the Farm Assessment Review Panel, which looked at the farm classification process and regulations for municipal tax purposes." (https://news.gov.bc.ca/stories/new-chair-appointed-to-agricultural-land-commission, accessed 10 November 2015).

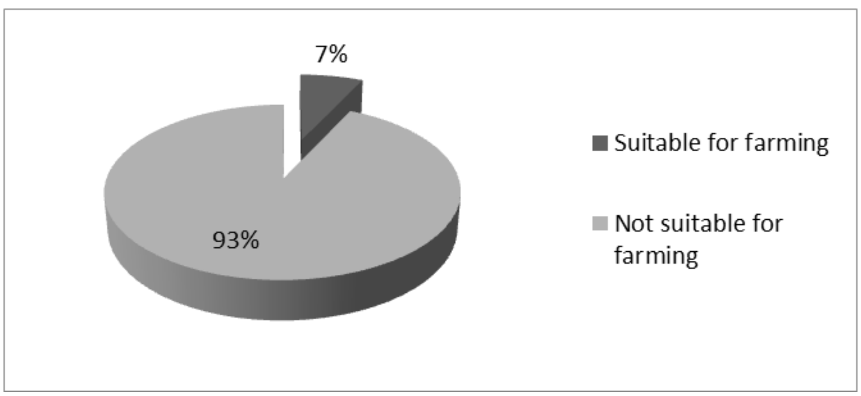
This debate on the pros and cons of Bill 24 and its impact on the ALR remains largely in the realm of the political and the economic. As a result, little foregrounding of issues like climate change are raised or addressed. It is this original focus on the ALR that we investigate and discuss in this paper. How does the deregulation of the ALR impact climate changes crisis? How do stakeholders interpret this impact likely to be? These are the two fundamental questions this project researches by interviewing key people and consulting and reviewing key documents relating to climate change, agriculture and the ALR. Policy change or integrity, we recognize, isn't sufficient to re-direct our actions regarding climate change and that a more fundamental, systemic re-foundation and re-direction towards land use and definition are what can have real impact in the way we deal with climate change (Klein 2014; Davis 2010; Wainwright and Mann 2013). However, in this paper we focus on an important piece of legislation that in its own way impacts climate change, but by recently being deregulated has amplified its implications for farming, farmers and the rest of us in the Okanagan Valley and the Kootenays.

Climate Change and Farming

Climate change is a two-fold recognition that, one, nature is constantly changing and emitting natural gases impacting the environment, and, two, that human activity and capitalist organizations of production and consumption (Parr 2013), in particular, accelerates not only the emission of gases in nature itself but the social organization of the human species produces its own sets of noxious gases detrimental to the environment, nature and disastrous to climate change. The sociology of climate change focuses largely on this second aspect of the definition of climate change by studying human's impact on climate change through the organization of work and production, for example. It also focuses on how climate change impacts communities and how social organization accelerates the impact of/on climate change even as some groups resist. In either case, it is human agency and capitalist relations of production that are investigated for their climate change practices and responsibilities (Sapinski 2016). Historically, addressing climate change would have had activists pressure the state for timely and expansive legislative initiatives, to sanction those who violate, disregard or abuse existing legislation (Young and Dugas 2012).[xii] But in our era of neoliberalism, a shrinking state is steadfastly dismantling, privatizing and deregulating departments, legislation and policy, as it downloads responsibility and protection of human beings and activity, including climate change, to economic and political agents with vested interests in the state's reduced role in social and economic spheres (Klein 2015). As a result, the process of deregulation has been hugely successful for corporations doing business that only marginally pay attention to climate change (Knuth 2015). A more radical sociology of climate change rejects the idea of mitigating climate change for analyses demonstrating capitalism as the major culprit of climate change and how society is organized to service the interests of the bourgeoisie and the accumulation of capital, which in doing so further accelerates the crisis of climate change (Parr 2013; Davis 2010). And while capitalists often jump on the bandwagon of the green revolution or the environmental movement, they do so largely to co-opt its discourses while continuing to produce and distribute goods and commodities enabling climate change rather than disabling practices that de-intensity the processes of accelerating climate change (Knuth 2015). The pursuit of profit is the most significant driver of climate change (Parr 2013), and as Naomi Klein (2014) writes, a proper focus addressing climate change cannot be seriously undertaken without tackling deregulated capitalism's organization of the economy and political elites' governance of their vested interests in profitability via the reproduction of capitalism, even by exacerbating the consequences of climate change. These are important and proper arguments since without tackling capitalism, climate change will never be addressed at root nor in a radically different way. And while this study only uses these arguments as undercurrents to the current investigation, we nonetheless seek out how farmers and community activists are responding to the climate change crisis in ways critical of the deregulation functions of Bill 24 and its meaning for the future of the ALR.

While Canada has a lot of land, only a fraction of it is deemed suitable for agriculture and farming, as the pie chart below shows; only 7 percent of the land is considered suitable for farming.

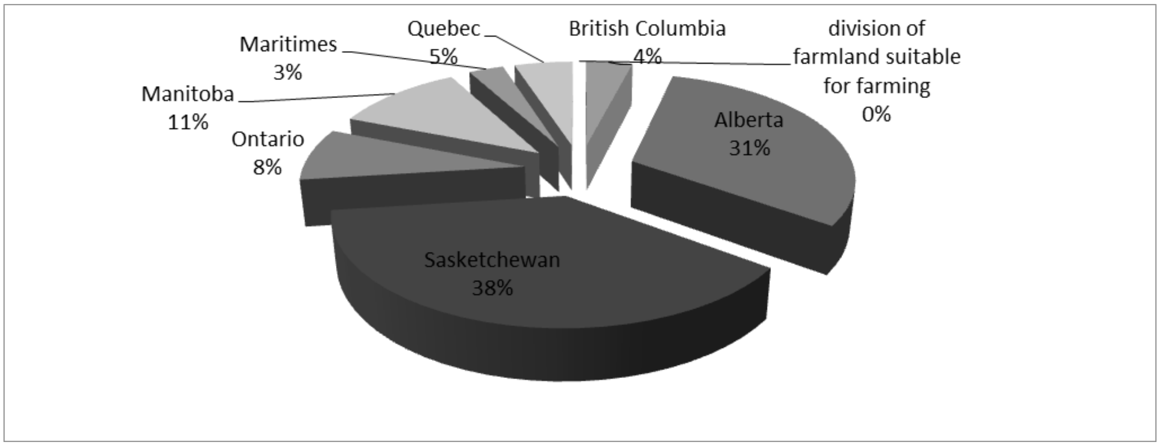
Chart 1: Canada: Land (not) suitable for farming



Source: Central Okanagan Economic Development Commission. 2015. Agricultural Profile of the Central Okanagan, p. 4, accessed 25 November 2015. http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf

Of this 7 percent only 4 is in BC, as chart 2 below shows. Most of the "productive" land in Canada is in the Western provinces of the country. Nevertheless, BC produces 6 percent of all Canadian gross farm receipts (Central Okanagan Development Commission 2015: 5).

Chart 2: Farmland by Province, 2015



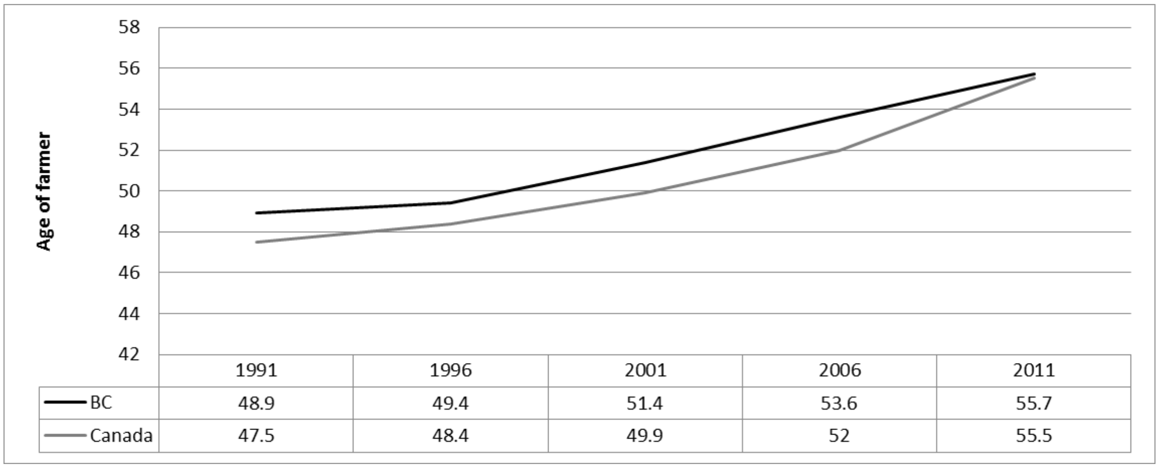
Source: Graph made by Tina Marten with information from the Central Okanagan Economic Development Commission. 2015. Agricultural Profile of the Central Okanagan, p. 4, accessed 25 November 2015. http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf

But agriculture in Canada, as elsewhere has been changing. We are in the era of post-modern agriculture whereby post-fordist methods of production (e.g., new technologies, and employment relationships) combine with values of lifestyle, land ethic and new relations between producer and consumer, to, on the one hand, erect massive farming enterprises by consolidating farming capital to compete and win in the global labour market of agriculture. And, on the other hand, the emergence of niche markets for small scale farming products often emphasizing organic agriculture through slow farming methods and a reinvigorated localism anchored in a regional consumer market. The organic food market was worth $28 billion in the United States alone in 2012 (Bourne 2015: 249). But questions are raised about postmodern farming as its "food with integrity" practices has made "little difference to those farther down the economic food chain" (Bourne 2015: 249). Further: "One of the biggest criticisms of organic food is that it is essentially feeding the well-educated and well-heeled, while leaving the poor to get their cheap calories from fast-food chains and convenience stores" (Bourne 2015: 249). Another is the fetishizing of the local in that the "near", usually places of relative prosperity, is privileged over the "far" which tends to be goods produced by global south farmers now facing market place protectionism by nouveaux riche values of localism and 100 mile diet. Others point out the limitations of localism as it "works" only at the edges of capitalism, and finds spaces of activity and profitability without critically engaging with the inequalities wrought by capitalism (see: http://www.yorku.ca/albo/docs/2007/sr-eco-localism.pdf, accessed 7 December 2015, Sharzer 2012; Parr 2013).

Canadian agriculture is changing in other ways (Basok 2002; Preibisch 2012). Today in Canada the number of farms is declining and the remaining ones are increasing in size. In 1991 there were 280,043 farms in Canada, twenty years later this number dropped to 205,730. At the same time, the overall farm area has increased from 598 to 778 acres, while the number of farm operators has declined by 25% or from 390,875 in 1991 to 293,925 in 2011. During the same time span farm operators have become older averaging now about 55 years of age (see graph 1).

(Statistics Canada 2014, http://www.statcan.gc.ca/pub/96-325-x/2014001/article/11905-eng.htm, accessed 24 November 2015).

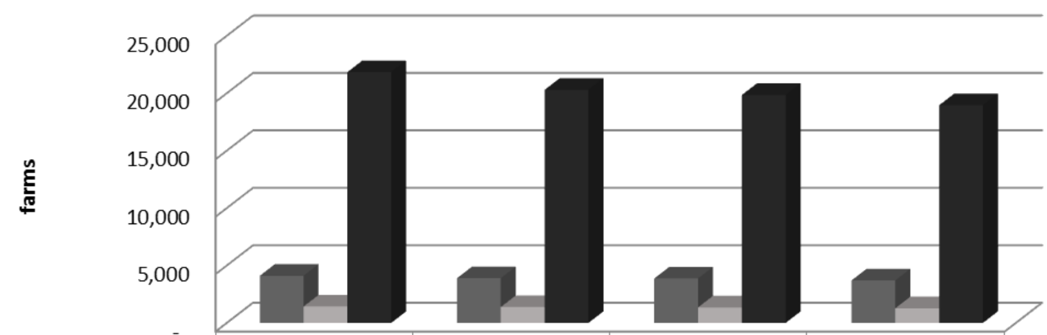
Graph 1: Age of farmer, in BC and Canada, 1991-2011



Source: Compiled by Tina Marten with data from BC Statistics (2011). 2011 Census of Agriculture: BC Highlights. Age of farmer. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/about-agriculture-and-seafood/statistics-agriculture-and-seafood/census/agricensus_2011_bchighlights.pdf, accessed 24 November, 2015, and Statistics Canada. (2014). Demographic Changes in Canadian Agriculture. http://www.statcan.gc.ca/pub/96-325-x/2014001/article/11905-eng.htm, accessed 24 November 2015.

In BC the same trend of reduced numbers of farms with an aging farming population exists. This is evident in the graph below. In 2001, there were 20, 290 farms but in 2006 there were 19,844 farms, a 2.2% decrease (Statistics Canada, 2008).

__Graph 2: Number of farms in BC, Okanagan and Kootenay region, 1996-2011__

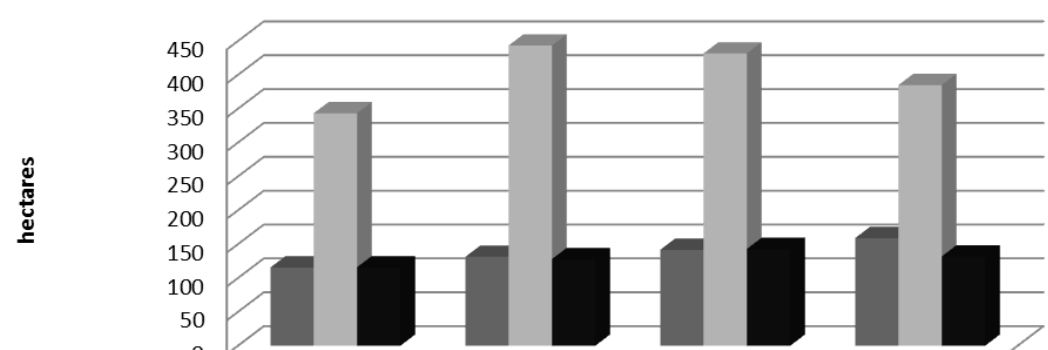


	1996	2001	2006	2011
Okanagan region	4,098	3,888	3,865	3,693
Kootenay region	1,425	1,380	1,349	1,273
British Columbia	21,835	20,290	19,844	18,949

Source: Compiled by Tina Marten with information from the Ministry of Agriculture, 2013. Regional District Agricultural Profiles of the North Okanagan, Central Okanagan and Okanagan Similkameen, and East Kootenay, Central Kootenay and East Kootenay Boundary. All accessible from http://www2.gov.bc.ca/gov/content/industry /agriculture-seafood/about-agriculture-and-seafood-in-bc/statistics/census-of-agriculture; accessed 5 May 2015.

The average size of a farm in BC also increased, as evident in graph 3.

__Graph 3: Average size of farms in BC, and the Okanagan and Kootenay regions, 1996-2011__

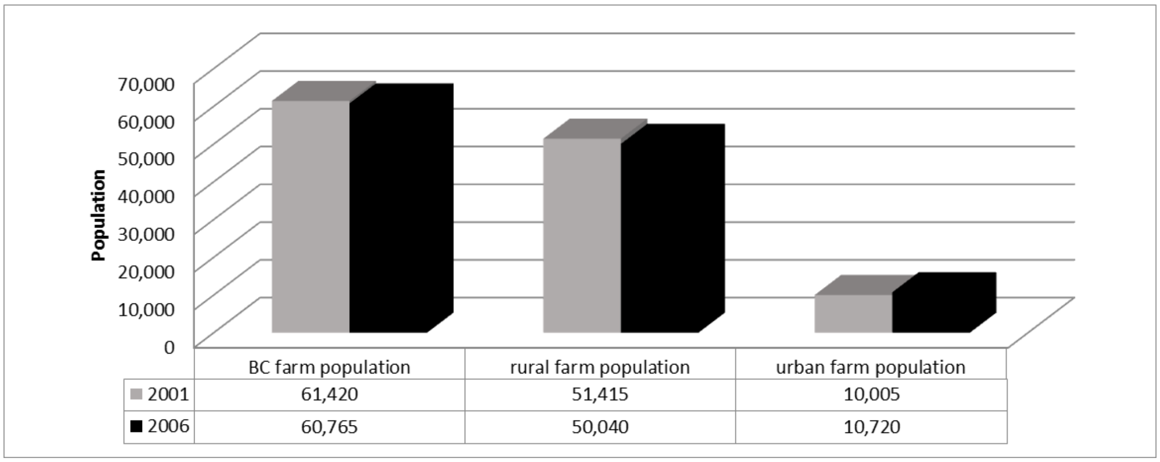


	1996	2001	2006	2011
Okanagan region	115.6	131.3	141.7	159
Kootenay region	343.4	443.4	431.7	385
British Columbia	116	128	143	132

Source: Compiled by Tina Marten with information from the Ministry of Agriculture, 2013. Regional District Agricultural Profiles of the North Okanagan, Central Okanagan and Okanagan Similkameen, and East Kootenay, Central Kootenay and East Kootenay Boundary. All accessible from http://www2.gov.bc.ca/gov/content/industry /agriculture-seafood/about-agriculture-and-seafood-in-bc/statistics/census-of-agriculture, accessed 5 May 2015.

In 1996 the average farm size in the Okanagan region was 115 hectares, in the Kootenays 343 hectares, with a BC average of 116 hectares. By 2011 the average farm in the Okanagan region had grown to 159 hectares, in the Kootenays slightly decreased after a decade of growth (in 2001 with 443 hectares to 432 hectares in 2006), and a BC average of 132 hectares (Statistics Canada 2008). The total population on farms also decreased, as illustrated by graph 4.

Graph 4: BC's farm population, rural and urban, 2001 and 2006



Source: Compiled by Tina Marten with information from Farm population and total population by rural and urban population, by province, (2001 and 2006 Census of Agriculture and Census of Population) http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/agrc42k-eng.htm, accessed 1 December 2015.

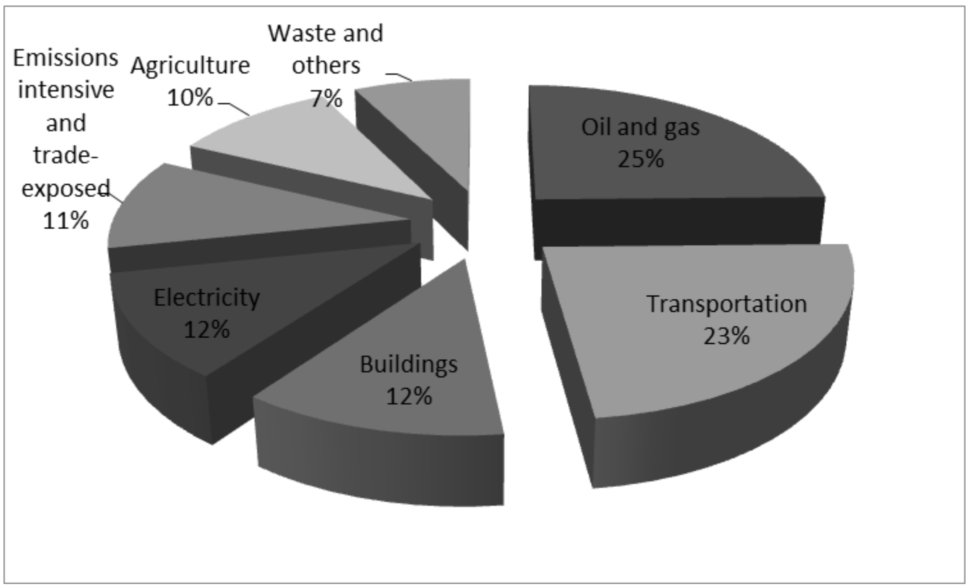
The farm population declined to 60,765 individuals in 2006 from 61,420 individuals in 2001, a slight decline of 1.1% (Statistics Canada 2008).

The last agricultural census also recorded an interesting and perhaps even surprising shift in that the rural farming population decreased by 2.7% from 2001 (51,415 people on rural farms) to 2006 (50,040 people on rural farms), while during the same period the urban farming population, those who garden in urban areas, increased by 7.1% between 2001 (10,005 individuals living on urban farms) and 2006 (10,720 individuals on urban farms) (Statistics Canada 2008). The increase in the size of farms in the urban setting is often smaller than in rural areas, and farming occurs in unconventional agricultural spaces with non-industrial methods, including on privately designated non-agricultural lands, meaning people farm wherever they find space (Stone 2015). For example, one of our research participants keeps chickens in her front yard, where she also grows vegetables. Urban farming is a trend to watch as BC's cities and municipalities "recogniz[e] and re-embrac[e] food production as an integral and vital part of the urban complex" (Rob

Buchan CAO, District of North Saanich in the Urban Farming Guidebook 2013: 2). And, if one believes the authors of the Urban Farming Guidebook (2013), then the number of urban farmers will continue to increase as more urban lands like front lawns and backyards are converted to agricultural activities and food producing spaces (Stone 2015).

Like elsewhere, the Canadian agricultural sector is neoliberalizing (Aguiar, Tomic and Trumper 2011). The evidence lies in post-fordist production methods and employment practices anchored in the production of vulnerable and precarious workforce to better control and exploit workers in a changing agricultural industry (Wong and Trumper 2007, Basok 2002; Preibisch 2012). Post-fordist methods are a significant climate change agent. For instance, in 2013 the agricultural sector was deemed responsible for contributing 10% to Canada's greenhouse gas emissions for the same year (Statistics Canada 2015). Chart 5 shows gas emissions by economic sectors in the Canadian economy.

Chart 5: Greenhouse Gas Emissions by Economic Sector, 2013



Source: Environment Canada. 2013. Greenhouse Gas Emissions by Economic Sector. https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=F60DB708-1, accessed 3 December 2015.

The numbers of the Intergovernmental Panel on Climate Change (2007) are more alarming. They argue that North America is one of the few developed countries which has consistently increased greenhouse gas emissions since 1990. This increase has been between 18% and 21% annually (https://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter8.pdf, p 8, accessed 3 December 2015). These increases are the result of agro-food production as well as suspect agricultural practices.

Many agricultural practices contribute to land uses detrimental to greenhouse gas impacts, like deforestation, loss of biodiversity due to inappropriate farming and grazing practices, accelerated soil erosion, loss of organic soil matter, salination of soils, pollution of coastal and ground waters and the acidification of oceans (World Future Council, n.d., http://www.worldfuturecouncil.org/2326.html). Animals reared on farms have recently come under scrutiny as producers of GHGs themselves, as some emerging research argues that livestock is the driving force in climate change (McAlpine, C.A., Etter, A., Fearnside, P.M., Seabrook, L. and W.F. Laurance 2009). There is no doubt that livestock plays a role, but the most significant aspect of Canadian food production is the turn towards agri-business in the industry, which mobilizes technology on larger farms and intensifies production releases of gases into the atmosphere. All of these accelerate greatly climate change (Aguiar 2012; Aguiar, Tomic, Trumper 2011; Klein 2014). The picture is even worse when the climate change impacts of agriculture are conceptualized through a global food system lens. In this case researchers from the Consultative Group on International Agricultural Research, a partnership of 15 research centres around the world, estimate that the impacts are closer to one third of all human-caused global greenhouse gas emissions. They challenge that in order to limit climate change, agriculture's carbon footprint must be reduced (Gilbert 2012), meaning current capitalist agricultural production and methods must be radically modified.

Today, many agricultural practices contribute negatively to climate change (Aguiar 2012), especially in large-scale agricultural operations on animal factory farms (http://www.worldanimalprotection.ca/sites/default/files/ca_-_en_files/wspa_whatsonyourplate_execsummary.pdf, accessed 23 November 2015). On large agricultural farms, for example, the practice of tilling the soil releases carbon from the soil, depleting it (the soil) and contributing to accelerated soil erosion (Lal, Griffin, Apt, Lave and Morgan 2004). And, whence organic matter on the top of the soil is turned and ploughed into the ground, the benefits of that organic matter are lost, which many farmers in turn counteract by applying chemical fertilizers topically to the soil again. In the long run, the farmer ends up using more fertilizer and more water for irrigation, just as he/she expands labour in these processes. In no-till agriculture, on the other hand, the seeds are planted into the soil which has not been turned, and so there is less soil erosion because the soil remains stable. There are also fewer weeds because the seeds which lie dormant in the soil have not been exposed and, if coupled with mulching and other water conservation methods, can drastically reduce the crops water requirements (Lal, Griffin, Apt, Lave and Morgan 2004). But of course, these practices require different and more human labour intensity. Furthermore, many of the synthetic fertilizers used, pollute grounds, rivers and ocean water with nitrogen, phosphorus and other chemicals. In animal factory farming, for example, the use of antibiotics and hormones is being suspected of causing a myriad of health problems (in the animals and humans), including antibiotics resistance in both humans and animals. Alarmingly, exact information about the doses of antibiotics that Canadian animals are administered as they are reared is not available since this information is not tracked in Canada (World Society for the Protection of Animals 2012: 6). What is known, however, is that animals and humans often take the same antibiotics, and that cases of antibiotic resistant bacteria are not only on the rise but also more ubiquitous than ever before (World Society for the Protection of Animals

2012: 6). Disappointingly, many industrial agricultural practices that were heralded as revolutionary in the past have been debunked as actually unsustainable farming practices. "We must stop pretending that fossil based fertilizer and fuel is endless, [and that industrial farming practices are] sustainable, or environmentally justifiable. The Green Revolution is over!" (Allen 2009, http://www.alternet.org/story/139962/agriculture_is_one_of_the_most_polluting_and_dangerous_industries, 25 November 2015).

Climate prediction scenarios have demonstrated that Canada will be hit by its own specific set of climate change impacts, but comparatively speaking, to date, Canada might have fared better than many other areas of the world, because, as some suggest warming will occur to the south of Canada's prime agricultural lands (Mittelstaedt 2011). As the planet warms and climate patterns change, significant impacts of climate change are seen at the local level, on the farm. For example, a 1 degree increase in temperatures, explains a farm land investor, can decrease yields by 10% (Mittelstaedt, 2011). Eisenhauser (2011) concedes that while: "Higher amounts of carbon dioxide, the main greenhouse gas, do stimulate plant growth, [...] this benefit has been outweighed by the crop damage from higher temperatures" (Mittelstaedt, 2011). A recent poll by the Pembina Institute (2014) determined that British Columbians are ready to transition away from fossil fuels, and into technologies and industries developing to service a fossil-fuel free economy (http://www.pembina.org/media-release/2540, accessed 5 December 2015).

Climate Changes on the Ground: Selective Impressions from our Case Studies

How do the farmers interviewed interpret climate change in their regions? What evidence do they see as proof of climate change? These are the questions we answer below since they correspond with the discussion in the previous section of this paper.

The Chair (former) of the Agriculture Land Commission has his own vision of climate change and the role of policy (Bill 24) in relation to climate change. He agrees with other interviewees that once land is removed from the ALR, it will never again be used for farming. This scenario, which is likely to come to pass, is a short-sighted vision of land preservation and management in the province of BC. And in this regard, climate change would be impacted by the industrialization of land released from the ALR. Still, he remains somewhat ambiguous about the bill’s impact on climate change. We quote our exchange in full.

Question: Can you tell us what Bill 24 means for climate change.

Answer: I am not sure it means a hell of a lot for climate change per se. I do not think it is going to affect climate change one way or the other by itself. But what we do in this province will; if we dig holes and do all the rest, you know... My concern is that we lose a lot of good land that climate change would have made viable 150 years hence. I think the capabilities of the land will change, and we will be able to grow different crops. Just look at this [Okanagan] Valley. When I was a kid and people were trying to grow grapes, it wasn't going to happen. It never did. We couldn't grow peaches here, then, either. Today, you can grow whatever you want. The climate has changed in this Valley, whether you like it or not. And that is anecdotal evidence of someone who has lived it. We did not grow tender varieties of crops. And in regards to grapes only some table grapes, but none like they use for wines today. We can now grow things here that we couldn't in the past. We are now getting longer degree days in the Peace [Peace River is a region in the north east of the province] now. They're starting to play with corn up there. When I go to Fort Nelson, I can see the young farmers growing veggies and tomatoes up there along those river beds, with some of the most gorgeous land you will see. And it's in the ALR. And I have politicians saying what the hell are you doing with the land up there? And then I walk the land, and I see it perfect, the heat is there, the land is perfect. The area by Alberta there, it's the new [farming] frontier.

Q: So Bill 24 has an impact…

A: Yes, if we get rid of the land. And I think they're crazy as hell. People are saying one has to make a living at full-time farming. But that isn't happening. They work in the logging industry for five months of the year. During the summer, they raise cattle and vegetables. Farmers do that in the summer, and sell their products to the oil and gas company. So instead of trucking the food in, he grows the food there. But some little visionary like him has to start, and our government is not even taking that into consideration. And I talk to my friend Steve Thomson[xiii] and ask him why aren't you allowing people to do some of the settlements? Give them the land, allow them to use it for free. And if they're not, charge them. Like in a homesteading program. You know, if you use it, we will give it to you for reasonable figure. Cut the trees down, plant crops, like alfalfa, whatever you grow, or barley. The homesteading program is only continuing in Alberta. It is not going on here. It takes some vision and it takes some initiative, to see that there's more than oil and gas and timber in the Peace River. And the communities are growing up there. They have sunshine from June to September, which is the key ingredient for agriculture, water, and they have beautiful land. Why are we not using it? My concern with government is that it is a four-year vision of land use. (Interview 5, 8 December 2014)

The farmers we interviewed were quite versed in the literature on climate change and thus could articulate for us their own perceptions of climate change based on their experience on their farms. Some, while recognizing the impact of climate change as a serious societal issue, nonetheless argue that climate change is an opportunity to grow more diverse crops during a longer growing season. Climate change here seems both an opportunity and a curse. And as seasons change, they are already experimenting with different crops on their land. Though farming has always moved between opportunity (new crops, more land, new technology, etc.) and the threat of the unpredictable seasonal developments, climate change shifts everyone’s perspective in that it is now recognized as ingrained in practises and economic activities. If the latter are not systematically addressed and radically changed, damages and crisis will continue to be inflicted and experienced in farming and by human beings (Klein 2014). Our interviewees conceptualize the crisis in climate change in very stark ways. A researcher and small-time farmer in the Kootenays says:

Climate change increases crop diversity and extends the growing season. But there are also concerns about the dryness of land as we get less snow and the summers are longer and hotter. And, without water you cannot have agriculture. In addition, forest fires become a concern due to the dryness of the land and we have already seen their frequency increase. (Interview 1, 27 April 2015)

In other words, while climate change may provide opportunity to grow new crops in the region, it will deplete and devastate existing crops elsewhere, no longer able to endure climate change's impact on land and soil.

One interviewee points out some of the same concerns though with a slightly different emphasis. He says: "In the Kootenays precipitation is changing and so we have very wet springs with too much rain even into June. This is no good for crops given the erosion of nutrients by the rain, and landslides are much more frequently than they used to be" (Interview 4, April 30, 2015). In both cases, the growing season will be extended but this is at the risk of great frequency of climate change disasters such as forest fires and landslides. It doesn't help that real estate developers continue to build subdivisions in fire precarious areas (Davis 1998, Pacholok 2013). Finally, consistent heavy rain disturbs the structure of the soil leading to, amongst other things, disruptions in the soil's structure and integrity. Another interviewee, who is a politician and farmer in Creston, is alarmed by the rate of climate change and its impact on farming, and by extension the community of Creston – even those who do not farm. As evidence of climate change's impact on local farming, she says: "Cherries are blossoming three weeks earlier. This year, there are no blossoms at the Blossom Fest which was started 74 years ago. Some farmers can grow three crops per a year and this is a new development" (Interview 3, 29 April 2015). While this might seem innocuous or potentially even profitable for farmers to have extended seasons and the opportunity to introduce and grow new crops on their land and thereafter bring to the market, it comes with grave consequences. She states again:

There is now increased intensity to storm water as bigger storms no longer occur every 100 years or so, but every decade. This is frightening and also a serious issue of local governments and "assessment management." In other words, how do we prepare for this is a huge question for us. (Interview 3, 29 April 2015)

She continues by pointing out another alarming development in the region with respect to Kootenay Lake, one of the largest lakes in BC, where once upon a time the water was quite high but today "is frighteningly low" (Interview 3, 29 April 2015).

The recognition of climate change is organically recognized in a farmer's experience in the Kootenays and the Okanagan Valley. What is less recognized (i.e. by fewer farmers) and thus equally critical to contemporary societies is the how to manage a community's political and budgetary plans while also preparing for the increasing unpredictability of weather patterns and other unforeseen but climate change related developments (Interviews 3, 29 April 2015, and 7, 29 April 2015). The challenges are environmental, economic and political. It is a trifecta of challenges comprising the global crisis of climate change with dimensions and intensities felt locally (Klein 2014; Sapinski 2016).

Having described farmers' views of climate change, we turn now to understanding what they are doing about it.

Back to the Future

Petter's (1985) account of the origins of the Land Commission Act wherein the ALR is contained shows that the impetus for the Act was to preserve land to address concerns about dwindling farm land, urban sprawl, and urbanization at the cost of good farm land, especially in the Fraser Valley. These were key points in pushing for legislative change regarding the preservation of farm land in the province. And while there is some explicit concern about the future of farming relating to food security, especially with the goal of creating some autonomy from the global market of food production and distribution, the discussion and debate focuses on the economic and political of the legislation. Political in that other political parties challenging the policies of the NDP government, too, had plans for land preservation in BC, and had the NDP not acted quickly to address the issue of diminishing land, the other parties would have gained the platform to express their plans to implement changes to protect farm land (Petter 1985: 8). In addition, much of the NDP internal cabinet discussions were about conducting cost analysis of the ALR, and who and how the programme should be paid for and how to compensate farmers whose land was being "removed" from the marketplace (Petter 1985). What we're suggesting is that while there was a look to the future with regards to the introduction of the ALR, the immediacy of its design, details and procedures wherein the ALR was contained, precluded most politicians and others from articulating just how the ALR was a vision for the future. Where and when this was stated, it was usually done in a general manner with few specifics on what a future with farmland would look like integrated into the provincial economy. Today, the politics, economics and climate change aspects of the ALR remain strong, and as contested as ever (Campbell 2006). However, farmers and their supporters are much better able to articulate a future delineating the benefits of land preservation and its organic ties to food security and integrity (Bourne 2015). In fact, the "future" was the most powerful discourse in objections to Bill 24. This was the case in the Okanagan as well as in the Kootenays, as we show below. The objections to Bill 24 and articulation of a vision of the future of farming came from an unlikely source.

We live in an instantaneous culture whereby deferred gratification has been replaced by immediate and impulse gratification. Little else defines our contemporary culture than our discarding of commodities for newer ones with more appealing features (Beamish 2010). It appears that the future is now incorporated into the repeatedly recycling of the present. In other words, the future has been co-opted into the present whereby a vision of what is to hope for is now forever delayed in an incorporated present (Jameson 1984). This moment of historical rewinding and bricolage is more readily identified and attributed to the era of the Millennials (Jameson 1984; Turrow 2015). The latter is a social group defined as self-centred, egotistical, narcissist, living in the moment with no concept or interest in the future. (http://www.slate.com/articles/technology/future_tense/2014/12/you_don_t_hate_millennials_you_hate_21st_century_technology.html, accessed 1 December 2015). And yet, when it comes to farming, this cultural era and social group definition does not seem to apply since there is evidence of a return to the land by young people. Millennials are the most recent group of back to the landers movement (Gould 2005; Turrow 2015). For instance, in the city of Creston in the East Kootenays, it is the Millennials who are moving to the land and bringing a vision of a farming future. Interviewee 3:

The town of Creston has about 5300 people; the largest demographic group growing currently are 20 to 29-year-olds, young people returning to the land. These people are concerned with food security and are engaging in modern homesteading. They have some sort of connection to the Valley. They get involved in farming. While they are newcomers who come for slower pace of life, move onto plots of land or engage in the backyard gardening. (Interview 3, 29 April 2015)

Others have also noticed young people moving onto the land. A former Minister of Agriculture in British Columbia living and farming in the Kootenays, tells us about this demographic change in an amusing way:

When I was the Minister of Agriculture and I would go to a meeting, I was often the youngest person in the room; Farmers were aging. People in the room would often say I love what I do, tell me what I can grow to make money. Wise, experienced people could not figure out what the marketplace would pay for. Now I go to meeting, and the average age in the room is thirty-five (Interview 6, 28 April, 2015)

He sees this generational change in farming tied to a lifestyle focusing on healthy food and living (Turrow 2015):

My generation was raised to eat TV dinners and buy food on sale. There are new, young farmers and young people interested in food and its production. Younger people have somehow become interested in animals, land and food and farming. They get it that the industrial food system is poison. They want to eat something that is good for them. That is what I think (Interview 6, 28 April 2015).

Young people are moving either into family plots of land, or investing in land with saved funds or other sources of financing. According to several interviewees, there are many young people trying to get onto the land, but it isn't easy (Interview 3, 29 April 2015 and Interview 8, 30 April 2015).

A consultant and researcher in the agricultural industry with expert knowledge on the agricultural industry in the Kootenays sees the movement of young people to the land as

Another (the latest) cycle of back to the land, especially of young people with graduate degrees. Many of them have worked on other people's farms and so have experience. They are also not naïve; they are realistic about farming for a living (Interview 8, 29 April 2015).

But this insertion onto the land is costly as land prices for farming or otherwise are exorbitant. For example, a farm of 40 acres in Creston costs approximately CAN$580,000 (Gold 2015). So while young people are moving to the land, it is a very selective group given the price of farms. One of the most significant groups moving to farming are the "Young Agrarians." (http://youngagrarians.org/; http://youngagrarians.org/tag/kootenays/; accessed 1 December 2015). They are young, agrarian, and with intimate knowledge of the land and a business degree in their back pockets to boot. We refer to them as "cerebral farmers".

Cerebral Farmers

There is indeed a return to the land as local politicians told us during interviews. But land is not only expensive, but in the case of the Okanagan Valley even scarce (Smart Growth BC, http://www.smartgrowth.bc.ca/aboutus/issues/agriculturalland/tabid/111/default.aspx, accessed 9 December 2015). Some have, nonetheless, managed to make inroads into agricultural economy of the province. In previous back to the landers movements, where the purpose was not only to grow one's own food in a cooperative manner and consume it communally (Jacob 1997), but also to experiment in restructuring social living and relations. In other words, the return to the land movement of the 1960s and early 1970s was not just to grow and consume one's own food, but also to re-create a more equitably, caring and socially organized society where boundaries between self and other became fuzzy and even porous (Gould 2005: 151). In this case production was for use value and social relations where to be of different kind along the lines of communal living free of exploitation. Most of the activists then had an inkling of farming but their expertise was learned on the job, so to speak. In this quest for equality, security and alternative living off the land, young people were idealistic in the modernist sense in that they held on to a vision of progress and change for the better. In this movement, social relations experimentation corresponded to economic independence from the capitalist labour process and the marketplace. Interestingly, the "[b]ack to the land gestures of yesterday and today continue to have a social location that tends to be that of the more economically privileged classes or of the intellectual life" (Gould 2005: 149), And, we would add, whiteness prevails in both the social characteristics of the back-to-the-landers identities and the places they construct now and then (Vanderbeck 2006).

"Our" cerebral farmers have a more intimate connection to the land and farming than the previous groups of homesteaders of the 1960s and 1970s. This is partially because they have studied farming or spent some time working on farms as wage labourers. It is also that "a flight from the materialism of the city into the rural idyll of US and Canadian countryside became the setting to connect and rely on nature for "daily needs" whilst "pursu[ing] means of interaction with nature [with] minimum impact" (Gould 2005: 149). But at the same time young farmers nurture a new relationship between producer and consumer in that both are visible to each and interaction between the two takes place at the point of purchase rather than in some geographical distance away from the market in the fordist set-up of farming. In farming differently and in establishing new relations between producer and consumer whereby frequency and intimate interaction occurs between the two at the point of purchase, this connects with processes associated with post-fordist agriculture. That is, not only has the restructuring of agriculture grown large and impersonal farms but it has also given rise to fissures and spaces where small time farming can take place for niche markets and new bourgeois consumers with new tastes (Turrow 2015). And while some of the above seems like a romantic view of developments in the interior of British Columbia, post-fordist agriculture can be as abusive as any other form of production for consumption (Aguiar, Tomic and Trumper 2011).

One interviewee from Creston is one example of a cerebral farmer. Prior to owning his own farm, he worked on a farm close to his property and gained valuable experience. He learned about the landscape, the soil, weather patterns and the slopes of the land most conductive to crop planting contingent on weather conditions. If this isn't impressive enough, he studied farming from a physiological organic perspective. He told us that farming for him was putting into practise what he had studies for a number of years in graduate school:

I studied philosophy, in particular the ethics of food and had the desire to live it out. For me farming is not an economic activity but a lifestyle. It is about growing one's own food, to grow enough for food. But it is also to engage in 'regenerative farming'[xiv]. The lifestyle of farming is ideal. It is intense and small-scale farming requires a lot of manual labour. But it is about feet on the ground and the literal connection to the earth through my respect for the soil, practices and the capacity to hold a mental picture of the farm in my (the farmer's) hands (Interview 9, 29 April 2015).


4 Tine Broad Fork

In this view, this farmer is not so distinct from the past land movement cycles where a concept of nature and how to live within it was fundamental in escaping the city for the beauty and serenity of rural living (Gould 2005).

The evidence of a cerebral farmer seems clear in the passage above. This farmer also mentions the idea of "regenerative farming" by which he means practising farming that has a philosophical understanding of the soil and land, and with a goal of minimal disruption of the integrity and balance in the structure of the soil itself. How then does he respect this understanding and yet farm? He does it very deliberately and with intense manual labour, and expert use of tools that frankly seem like relics from Middle Ages farming technology. For instance, he does not use a plough or a hoe to till the ground to plant crops requiring a deeper hole in the soil. Instead, he uses a broad fork, like depicted on this page.[xv] He grabs the top end and pushes the fork's tines into the ground.

There is no digging nor turning of the soil. It is the rotating of the tines by his expert hand and shoulder movements that loosen the soil. The practise is physically demanding and one cannot but admire the dedication and respect he has for the soil. His care and unique way of farming is a committed enterprise so much so that when we offered to help prepare some of the soil in exchange for the interview time he was giving us, he declined not wanting our inexperienced and rough movements to disturbed his approach to the soil and farming. We were in awe watching him perform his work. However, the intensity of the practices means that he cannot plant crops over a large plot of land, and surely the produce is expensive in the market place (local farmers' market) given the time invested in farming it. And yet, he assures us that all his produce finds customers, even though he (and his partner) subsidizes his farming with consulting work, which constitutes the main source of household income.

Perhaps, it is tied to the nostalgic slower pace of farming ("slow farming") or to an unpredictable and unforeseeable future history of farming, that the idea of the future and its relationship to farming is pronounced in the arguments for and against the contents of Bill 24. There are different dimensions to this argument. For some, it is both the need to protect farm land for the future with the goal of developing self-sufficiently and a looser reliability on global food baskets like California, Florida, and the central valley of Chile and so on. There is here an implicit protectionism from globalization of food sourcing from elsewhere, since it is often at the cost to local farmers, citizens and consumers. That is, a call to the local state to play a key role in protecting aspects of the common good amongst which is farm land (see earlier survey on BCers and ALR). While the original proponents of the ALR in 1973 introduced the policy more as a sort of protection on green farming areas encumbered by developers and based on the idea of a seemingly romanticized of the return to the land, today Bill 24 is said to be about two defining versions of the future. One where farming is sacrosanct, untouchable, but evolving as a practise and lifestyle, and the other purports that economic interests assessed through the viability of farming as determined by the market, is secured or disregarded and replaced by a profitable enterprise. In this context, it seems that two implicit definitions of land are at play. One sees land as an asset in itself, while the other views land as a constantly renewal and re-invented only meaningful as a commodity fluctuating with market shifts and demands (Sassen 2014; Harvey 2007).

Climate change and farming intersect in important ways. Farmers and other experts believe that climate change will mean: a longer growing season, which is already happening to farmers in the Kootenays and the Okanagan; and practice of growing crops at slightly higher elevations than previously possible. Experts argue that with warming trends in climate change, new and different crops will also be planted in the Kootenays, for example. Finally, farmers object to the bill and its designation of non-farming land (and thus usable as something else) as if proponents of the bill can predict where and when farming will occur in the future. In other words, what is today un-farmable land or land restricted in crop production, may in the future develop farming potential, as the past Chair of the ALC reminded us about the changing patterns and crops harvested today in the Okanagan Valley (Interviews 6 and 9).

Opposition to the Bill

The original bill spoke to the need for economic autonomy from American agricultural regions as one impetus for the preservation of farmland (Petter 1985). This justification was especially important relating to issues of autonomy, but also cost as transportation and ”middle person” operations added to the costs of the products brought to market. Today, proponents of the ALR make these same arguments but add on ongoing and repeated droughts in California, as climate change warnings behooving the provincial government to be even more, not less, stringent in protecting farmland by hardening the processes required to remove land from defined farming activities. As a result, some interviewees are dumbfounded by the changing policy which they see as a step toward deregulation of the Act and the first step towards facilitating the elimination of land for the preservation of farming. This initiative is “ludicrous”, says a farmer in Creston:

It seems to me at this time in history that we would have a better idea why it is important to preserve farming. To use land for other purposes for short term gains seems ludicrous.

He continues:

It’s [land in ALR protection] something that you can’t get back once it is gone. And there are so many signs that it [land] is something we would want to hold on to for our own security and safety. That’s the biggest part for me. (Interview 9, 29 April 2015)

This view is reinforced by others who point out re-curing drought calamities in California and warn that the frequency of “natural” disasters will rise, affecting food security for British Columbians. Given this scenario, preserving land for self-sufficiency through food security takes an even greater importance in the farming areas of BC (Interview 2, 5 November 2014).

Another interviewee worries about the irreversible road of Bill 24 and the sidelining of the importance of keeping land for agriculture. She explains: “People are recognizing that food system chains are insecure; as seen in world events of disaster and extreme weather events” (Interview 8, 30 April 2015). And for her the new legislation means a

Loss of province-wide mandate to preserve agricultural land and long-term vision for the ALR. This is disturbing for the future since the development language in the bill is insane and that we are currently lead by politicians and corporate vested interest in government, who are steering away from the importance of food security and the future (Interview 8, 30 April 2015).

A former Minister of Agriculture expresses his frustrations at the introduction of a piece of legislation that had little support from residents in British Columbia (Interview 6, 28 April 2015)

They fucking did it, they pulled the trigger! I did not think that one cabinet minister [Bill Bennet] could affect government in that way. The wording for the legislation is being worked on now; is being written by the Minister of Agriculture and his lawyers. How the fuck can anyone say anything? We do not know what it means! The ALR is a law that works and the world is admiring BC for it. There is little chance that the changes will be reversed because there is so much money at stake; so much money! (Interview 6, 28 April 2015).

Perhaps an even more powerful argument against Bill 24 and its changes are interviewees' arguments about age and their vision of the future. In this instance, farmers argue that young people interested in farming seek to access and retain farming in order to construct a future for themselves and their communities. So changing legislation that will potentially reduce the land available for farming will have unintended consequences for the long term viability of farming and young people's interests in farming. This is important since the future of farming must rely on young people entering the industry and also the latter's determination to ensure that land is plentiful and available for the practise of farming in its various forms and philosophies. The concern is that Bill 24 opens the door to quicker and easier avenues for the removal of land from the ALR, and for the reduction of farmland through the re-classification of much of the land into Zone 2. The farmer from Creston objects and remarks that it is an older generation with different economic interests and relationship to the land that are making decisions for his generation and farmers yet to come. He explains:

These changes [in Bill 24] aren't coming from the Millennials, basically. If more of us would vote we might make a difference. Or maybe if more of us didn't vote, that might make a bigger difference. The generation making those changes criticizes the younger generation for being selfish, but this couldn't be more the opposite. It's really frustrating. (Interview 9, 29 April 2015).

Another interviewee, a farmer and local politician in the Okanagan Valley, expressed her dismay at the short-sightedness and selfish nature of the policy and explained interest in making a living in farming (Interview 2, 8 November 2014).

These concerns about the future sometimes coalesce in place and in specific campaigns. This is the case in the campaign in a 2014 Summerland, BC, which we describe next.

Summerland, a small community in BC's Okanagan Valley, recently faced a controversy over an attempt by some local officials (including the Mayor) to swap a piece of land outside of the ALR into the ALR in exchange for a prime piece of ALR-designated agricultural land within the city for a commercial and housing complex. Opponents protested the proposed swap saying it was short-sighted, and objected to the push for industrial and urban economic development in the city's core at the cost of long term planning and development of a future for Summerland' economy including farming. Below is a bumper sticker, which was used to lend support to Stop the Swap.

Exhibit 1: Bumper sticker used by Stop the Swap, Save Summerland's Agricultural Land

Source: https://savethesummerlandalr.files.wordpress.com/2014/04/bumpersticker-final1.png, accessed 6 December 2015.

The heated and protracted debate went to a city referendum and was rejected by most residents and municipal council of Summerland. Interestingly, proponents of the urban development project argued that the building complex made sense from a climate change perspective since it would reduce Summerland's carbon foot print by having people shop where they live and walk to their place of work. Opponents dismissed this argument believing that the future of land for farming was key, and that people would continue to rely on their cars to get around Summerland. They further argued that young farmers with young families making a living in Summerland required land to sustain themselves and ensure the community had local produce to consume. In other words, removing prime farming land from the ALR would not only compromise the future of young farmers, but also turn the community to food sources from outside the area, thus creating an even bigger carbon foot print in Summerland as a result (Interview 2, 8 November 2014). Finally, opponents of the swap argued that at base the proposed swap was an economic land grab seeking to expulse future farmers from the city, and that the climate change angle of the pro-swap group was an anti-community vision and a ruse (Interview 2, 8 November 2014). In this case, the local population articulated a convincing argument that changing land use properties and practices would be environmentally reckless and short-sighted and that one could not jeopardize the future for potential short-term economic gains. That is, climate change had to be incorporated into an inclusive vision of a more equitable community development plan. Further, in the long run the carbon foot print would increase as the community of Summerland would have to rely on production and distribution of foodstuffs taking place far away and trucked in to the community (interview 2, 8 November 2014).

Conclusion

This paper examined changes to the ALR through the introduction of Bill 24. It did so by discussing what this bill entailed and what was new and challenging about it to farmers, their supporters and citizens concerned about farm grab through the deregulation of legislation. We focused on the connection between Bill 24 and climate change. Specifically, we investigated the question: how might the deregulation of the ALR through Bill 24 accelerate climate change in BC farming? Our investigation revealed that the Canadian agricultural industry is a significant climate change agent and that Bill 24 did nothing to arrest this noxious history. In fact, our respondents argued that the bill accelerates the climate change crisis by removing protected land for non-farming economic activities. The case of farm grab is an obvious intent of the legislation which the farmers interviewed see as a first step towards oil and gas companies buying land to build pine lines on. A case study example of a controversy on land swap from the community of Summerland in the Okanagan Valley revealed the arguments about climate change from both sides of the controversy concerning a proposal to construct a commercial and housing complex in the centre of the city. The research into this case shows that climate change can also be used as a ruse to try and get citizens to forgo land protection for quick economic gains for developers. The most vocal group objecting to Bill 24 were cerebral farmers who are part of the most recent back to the land movement in Canada. They are also highly educated both in a formal sense (some with post-graduate studies) and in an informal sense via their training and apprenticeship as farmers in waiting. Therefore, they saw Bill 24 as compromising farmland protection in the province and potentially their future in the industry.

Further research is needed to ascertain the longevity of Bill 24's impact on climate change. That is, how will this bill continue to perplex BC residents concerned about their food, transport and the reduction of the carbon foot print?

References

Aguiar, L. L.M. (2012). A Profile of the Greenhouse Industry in British Columbia and Clues to Climate Change. In *Working in a Warming World*, Carla Lipsig-Mumme, ed. Toronto: Fernwood Publishing.

Aguiar, L., Tomic, P. and Trumper, R. (2011). *Mexican migrant agricultural Workers and Accommodations on Farms in the Okanagan Valley, British Columbia* (11-04). Working Papers Series, Metropolis British Columbia. Vancouver, BC.

Allen, W. (2009). Agriculture is One of the Most Polluting and Dangerous Industries. *Alternet*. Retrieved from http://www.alternet.org/story/139962/agriculture_is_one_of_the_most_polluting_and_dangerous_industries

Austin, I. 2014. "Shrinking farmland: Advocates gather Sunday to discuss eating up of B.C.'s Agricultural Land Reserve." *The Province*. Retrieved from http://www.theprovince.com/Shrinking+farmland+Advocates+gather+Sunday+discuss+eating+Agricultural+Land+Reserve/9550836/story.html

Basok, T. (2002). *Tortillas and Tomatoes: Transmigrant Mexican Harvesters in Canada*. Montreal/Kingston: McGill/Queen's University Press.

Bourne, J. K. (2015). *The End of Plenty: The Race to Feed a Crowded World*. London, England: Scribe.

British Columbia: Provincial Agricultural Land Commission. (1995). *Response of the Agricultural Land Commission to the Auditor General's Recommendations*. Victoria: The Commission.

British Columbia: Office of the Auditor General, & British Columbia. Provincial Agricultural Land Commission. (1995). *Value-for-Money Audits: Provincial Agricultural Land Commission*. Victoria: The Office.

BC Statistics. (2011). 2011 Census of Agriculture - BC Highlights: Age of Farmer. *The Government of British Columbia*. Available from http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/about-agriculture-and-seafood/statistics-agriculture-and-seafood/census/agricensus_2011_bchighlights.pdf

Campbell, C. (2006). Forever Farmland: Reshaping the ALR for the 21st Century. *The David Suzuki Foundation*. Retrieved from http://www.davidsuzuki.org/publications/downloads/2006/DSF-ALR-final3.pdf

Canada Land Inventory (British Columbia). (1972). Climate Capability Classification for Agriculture. (No.1.; no.1). Victoria, B.C: British Columbia Land Inventory (C.L.I.), Dept. of Agriculture.

CBC News. (2013). "B.C.'s Agricultural Land Commission could be dismantled". *CBC News*.Retrieved from http://www.cbc.ca/news/canada/british-columbia/b-c-s-agricultural-land-commission-could-be-dismantled-1.2418524

Central Okanagan Economic Development Commission. (2015). Agricultural Profile of the Central Okanagan. *Invest Kelowna*. Retrieved from http://www.investkelowna.com/sites/default/files/uploads/agriculturalprofile_centralokanagan_2015-11-20.pdf, accessed 25 November 2015.

Clark, G and Hulchanski, D. J.. (1986, September 18). B.C. Premier's Land Dealings Go Barely Noticed. *Globe and Mail*. Retrieved from http://gw2jh3xr2c.search.serialssolutions.com.ezproxy.library.ubc.ca/?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQ%3Ahnpglobeandmail&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.jtitle=The+Globe+and+Mail+%281936-Current%29&rft.atitle=B.C.+Premier%27s+land+dealings+go+barely+noticed&rft.au=Clark%2C+Glen%3BHulchanski%2C+J+David&rft.aulast=Clark&rft.aufirst=Glen&rft.date=1986-09-18&rft.volume=&rft.issue=&rft.spage=A7&rft.isbn=&rft.btitle=&rft.title=The+Globe+and+Mail+%281936-Current%29&rft.issn=03190714&rft_id=info:doi/

Clifford, E. (1981, May 25). Farmland Preservation Still A Serious Dilemma. *Globe and Mail*. Retrieved from http://gw2jh3xr2c.search.serialssolutions.com.ezproxy.library.ubc.ca/?ctx_ver=Z39.88-2004&ctx_enc=info:ofi/enc:UTF-8&rfr_id=info:sid/ProQ%3Ahnpglobeandmail&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.jtitle=The+Globe+and+Mail+%281936-Current%29&rft.atitle=Farmland+preservation+still+a+serious+dilemma&rft.au=Clifford%2C+Edward&rft.aulast=Clifford&rft.aufirst=Edward&rft.date=1981-05-25&rft.volume=&rft.issue=&rft.spage=B21&rft.isbn=&rft.btitle=&rft.title=The+Globe+and+Mail+%281936-Current%29&rft.issn=03190714&rft_id=info:doi/

Cummins, R. (2013, January 21). How Factory Farming Contributes to Global Warming. *EcoWatch*. Retrieved from http://ecowatch.com/2013/01/21/factory-farming-global-warming/

Mayer, B. (2009). *Blue Green Coalitions: Fighting for Safe Workplaces and Healthy Communities*. Cornell: ILR Press.

Davis, M. (2010). Who Will Build the Ark? *New Left Review*, *61*: 29-46.

----. (1998). *The Ecology of Fear*. New York, NY: Metropolitan Books.

Eco Design Resource Society. (2013). *The Urban Farming Guidebook*. Retrieved from http://www.refbc.com/sites/default/files/Urban-Farming-Guidebook-2013.pdf

Environment Canada. (2013). Greenhouse Gas Emissions by Economic Sector. Retrieved from https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=F60DB708-1

----. (2013). Greenhouse Gas Emissions by Economic Sector. https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=F60DB708-1, accessed 3 December 2015.

Evans, C. (2013). Why BC's Agricultural Land Reserve Is Worth Saving. *The Tyee*. Retrieved from http://thetyee.ca/Opinion/2013/11/25/BC-Agricultural-Land-Worth-Saving/

Fraser, P. D. K. (2014). Conflict of Interest Commissioner. Government Caucus Opinion: Pat Pimm. Retrieved from http://governmentcaucus.bc.ca/wp-content/uploads/2014/09/Pimm-Opinion_Aug30-2014.pdf

Gilbert, N. (2012). One-Third of Our Greenhouse Gas Emissions Come From Agriculture. *Nature*. Retrieved from http://www.nature.com/news/one-third-of-our-greenhouse-gas-emissions-come-from-agriculture-1.11708

Gold, K. (2015). Retire to an Acreage? Try Valley Lifestyle in Creston, BC. *Globe and Mail*. Retrieved from http://www.theglobeandmail.com/globe-investor/retirement/retire-lifestyle/retire-to-an-acreage-try-valley-lifestyle-in-creston-bc/article22795307/

Gould, R. K. (2005). Back to the Land Movements. In Bron Taylor (ed.) *Encyclopedia of Religion and Nature*. New York, NY: Continuum. 148-151.

Harvey, D. (2007). *A Brief History of Neoliberalism*. New York, NY: Oxford University Press.

Hume, M. (2013). 'Sacrosanct' Agricultural Land Commission Eyed for Breakup. *The Globe and Mail*. Retrieved from http://www.theglobeandmail.com/news/british-columbia/sacrosanct-agricultural-land-commission-eyed-for-breakup/article15306864/

Jackson, A. (2014). The Art of the Impossible: Dave Barrett Change in British Columbia. *Broadbent Institute*. Retrieved from http://www.broadbentinstitute.ca/en/blog/art-impossible-dave-barrett-and-progressive-change-british-columbia

Jacob, J. (1997). *The Back-to-Land Movement and the Search for a Sustainable Future*. University Park, PA: Pennsylvania University Press.

Jameson, F. (1984). Postmodernism, or the Cultural Logic of Late Capitalism. *New Left Review, 146*: 53-92.

Klein, N. (2014). *This Changes Everything: Capitalism vs. The Climate*. Toronto, ON: Alfred A. Knopf.

Kelly, J. 2004. ‘Social Partnership Agreements in Britain: Labor Cooperation and Compliance’. *Industrial Relations*, *43(1)*: 267-292.

Knuth, S. (2015). “Seeing Green in San Francisco: City as Resource Frontier.” *Antipode*, 1-19. doi:10.111/anti.12205.

Lal, R., Michael, G., Apt, Jay, Ave, Lester, and M. Granger Morgan. (2004). Managing Soil Carbon*.* *Policy Forum*, *304*: 393.

Maguire, N. G. (1979). The Threat to Canada's Tree Fruit Lands: Perspectives on Land Use and Land Use Control in the North Okanagan. London, ON: University of Western Ontario.

McAlpine, C.A., Etter, A., Fearnside, P.M., Seabrook, L. and Laurance. W.F. (2009). Increasing World Consumption of Beef as a Driver of Regional and Global Change: A Call for Policy Action Based on Evidence from Queensland (Australia), Colombia and Brazil. *Global Environmental Change*, *19(1)*: 21-33.

Mittelstaedt, M. (2011). Warming Trend Could Prove Boon to Canadian Farming. *The Globe and Mail*. Retrieved from http://www.theglobeandmail.com/globe-investor/investment-ideas/warming-trend-could-prove-boon-to-canadian-farming/article4262691/

Moore, W. (2015). Bullock Firing Bashed. *Castanet*. Retrieved from http://www.castanet.net/news/Kelowna/140010/Bullock-firing-bashed

N.A. (1994). Seeking Assurances: Sustainable Agriculture Land & Water Use in the Okanagan Basin. Proceedings of Community Forum, October 28, 1994. Summerland, BC.

Pacholok, Shelley. (2013). *Into the Fire: Disaster and the Remaking of Gender*. Toronto, ON: University of Toronto Press.

Parliament of Canada. (2014). BILL 24 — 2014. Agricultural Land Commission. Amendment Act, 2014. Retrieved from http://www.leg.bc.ca/40th2nd/1st_read/gov24-1.htm

Parr, A. (2013). *The Wrath of Capital: Neoliberalism and Climate Change Politics*. New York, NY: Columbia University Press.

Petter, A. (1985). Sausage Making in British Columbia's NDP Government: The Creation of the Land Commission Act, August 1972-April 1973. *BC Studies 65*: 3-33.

Pfeiffer, D. (2014). Signs Vandalized in Summerland. *Castanet*. Retrieved from http://www.castanet.net/edition/news-story-109866-21-.htm#109866

Pimm, P. (2014). Peace River North MLA Pat Pimm has Issued the Following Statement. Retrieved from http://patpimmmla.bc.ca/newsreleases/statement-peace-river-north-mla-pat-pimm/

Preibisch, K. (2012). Migrant Workers and Changing Workplace Regimes in Contemporary Agricultural Production in Canada. *International Journal of Agriculture and Food, 19 (1)*: 62-82.

Rawson, M. (1976). Ill Fares the Land: Land-use Management at the Urban, Rural, Resource Edges. *Urban Affairs Canada.* Toronto: Macmillan Company of Canada.

Sapinski, J. P. (2016). Constructing Climate Capitalism: Corporate Power and the Global Climate Policy-Planning Network. *Global Networks, 16 (1)*: 89-111.

Sharzer, G. (2012). *No Local: Why Small-Scale Alternatives Won't Change the World*. Winchester, UK: Zero Books.

Sassen, S.(2014. Expulsions: Brutality and Complexity in the Global Economy. Cambridge. Mass.: The Belknap Press of Harvard University Press.

Save Summerland's ALR. (N.D.). Image retrieved fromhttp://savethesummerlandalr.com/

Smart Growth BC. (N.D.). Agricultural Land. Retrieved from http://www.smartgrowth.bc.ca/aboutus/issues/agriculturalland/tabid/111/default.aspx

Statistics Canada. (2014). Demographic Changes in Canadian Agriculture. *Statistics Canada*. Retrieved from http://www.statcan.gc.ca/pub/96-325-x/2014001/article/11905-eng.htm

---. (N.D.) Greenhouse Gas Emissions by Economic Sector. *Environment Canada*. Retrieved from https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=F60DB708-1

---. (2008). Farm Population and Total Population by Rural and Urban Population, by Province. *Statistcs Canada*. Retrieved by http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/agrc42k-eng.htm

---. (2014). Climate Change Scenarios: Effective Growing Degree Days. - British Columbia. *Agriculture and Agri-Food Canada*. Retrieved form http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate/future-outlook/climate-change-scenarios/effective-growing-degree-days-in-british-columbia/?id=1363017705131

---. (N.D.). Length of Growing Season - British Columbia. *Agriculture and Agri-Food Canada.* Retrieved from http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate/future-outlook/climate-change-scenarios/length-of-growing-season-in-british-columbia/?id=1363017811483, accessed November 9, 2015

---. (N. D.). Moisture deficits: British Columbia. *Agriculture and Agri-Food Canada.* http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate/future-outlook/climate-change-scenarios/moisture-deficits-in-british-columbia/?id=1363017940427

---. (N. D.). Impact of Climate Change on Canadian Agriculture. *Agriculture and Agri-Food Canada.* Retrieved from http://www.agr.gc.ca/eng/science-and-innovation/agricultural-practices/climate/future-outlook/impact-of-climate-change-on-canadian-agriculture/?id=1329321987305

Stone, C. (2015). *The Urban Farmer – Growing Food for Profit on Leased and Borrowed Land*. Gabriola Island, BC: New Society Publishers.

Talisman Projects, I., British Columbia. Ministry of Agriculture, & Canada. Department of Regional Economic Expansion. (1979). B.C. Land Inventory Report: Summaries of Agricultural Land Reserve Areas by Regional District and Agricultural Region, 1. Victoria; Ottawa: Province of British Columbia, Ministry of Agriculture.

---. (1979). B.C. Land Inventory Report: Summaries of Agricultural Land Reserve Areas by Regional District and Agricultural Region, 2. Ottawa: Province of British Columbia, Ministry of Agriculture.

Turrow, E. (2015). *A Taste of Generation Yum: How the Millennial Generation's Love for Organic Food, Celebrity Chefs, and Microbrews Will Make or Break the Future of Food*. New York, NY: Pronoun.

Vanderback, R. M. (2006). Vermont and the Imaginative Geographies of American Whiteness. *Annals of the Association of American Geographers, 96 (3)*: 641-659.

Wainright, J. and Mann, G. (2013). Climate Leviathan. *Antipode, 45 (1)*: 1-22.

Wong, L. and Trumper, R. (2007). Canada's Guestworkers: Racialized, Gendered and Flexible. In *Race and Racism in 21st Century Canada*. Sean Hier and Singh Bolaria (eds.). Peterborough, ON: Broadview Press. 151-170.

World Society for the Protection of Animals. (2012). What is on your Plate? *World Animal Protection*. Available from http://www.worldanimalprotection.ca/sites/default/files/ca_-_en_files/wspa_whatsonyourplate_execsummary.pdf

Young Agrarians. Homepage. Retrieved from http://youngagrarians.org/

Young, N. and Dugas, E. (2012). Comparing Climate Change Coverage in Canadian English-and-French-Language Print Media: Environmental Values, Media Cultures, and the Narration of Global Warming. *Canadian Journal of Sociology 37 (1)*: 25-54.

Endnotes

[i] This paper is supported by a small grant from the W3 research network.
[ii] This bill is discussed in pages 3-11 below.
[iii] See page three below for discussion of the ALR.
[iv] This Minister is an MLA representing the East Kootenays.
[v] Our "farm grab" term is inspired by Sassen's (2014) concept of land grab.
[vi] "Since 1973, the response to agricultural land zoning in the North Okanagan has resulted in 423 applications being submitted to the Regional District by landowners affected by agricultural land reserve designation. Of this total, an overwhelming 93% were requests relating to the provisions of the Act's [sic] Sections 9 and 11; that is, for non-farm use exclusion from the A.L.R. or for permission to subdivide the subject property." (Maguire 1979)
[vii] The Working in a Warming World research network focuses on deciphering how the labour process and the organization of the workplace across industries has implications for climate change processes. See - http://www.workinawarmingworld.yorku.ca/, accessed 9 December 2015.
[viii] Bill Bennett is a member of the provincial legislature representing the East Kootenays. In June 2013 he was appointed Minister of Energy and Mines and Minister Responsible for Core Review. For more on this MLA, visit his government website at: http://billbennettmla.bc.ca/bill/; accessed 1 December 2015.
[ix] The actual legislation of Bill 24 has not been made public yet, but is expected sometime in 2016.
[x] The six geographical regions are the South Coast, the Island, the Okanagan, the Kootenays, the Interior and the North (http://www.alc.gov.bc.ca/alc/content/about-the-alc/the-commissioners, accessed online 3 December 2012).
[xi] The Chair was able to have those who have knowledge of the area working on the proposal, instead of someone who has never been to the area under consideration, and might not have any knowledge or understanding of it.
[xii] Unfortunately, it is also true that the state created policy facilitating economic activities and practices, in the nature of progress, detrimental to climate change.

[xiii] Steve Thomson is currently serving as Minister of Forests, Lands and Natural Resource Operations. He was elected as MLA to the legislative Assembly of BC in 2009, and re-elected in 2013. In the past he served as Minister of Energy and Minister of Agriculture and Lands. He represents the Central Okanagan riding of Kelowna - Mission. (https://www.leg.bc.ca/learn-about-us/members/28, accessed online 4 December 2015).

[xiv] For a definition and discussion of this concept see - http://www.theguardian.com/sustainable-business/2015/mar/09/we-need-regenerative-farming-not-geoengineering, accessed 9 December 2015.

[xv] This 4-tine broadfork image is from the Meadow Creature catalogue, see https://meadowcreature.com/broadforks, accessed online 9 December 2015.