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FOOD PROCUREMENT

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IN THIS ISSUE

Food procurement involves the acquisition of food, often through a tendering process, whether in the public, private, or third sector. Within the public sector, food procurement covers a range of institutions, such as schools, universities, hospitals, and prisons. In the private sector, large corporations such as Google purchase food for on-site cafeterias. And in the third sector, non-profit organizations such as FoodShare and The Stop buy food for meal programs and cooking classes. The leveraging capacity of procurement is supported by the fact that public-sector catering in a country like the UK represents seven percent of total food expenditure, with the National Health Service being the single largest purchaser of food. The history of public food procurement can be seen as "a story of untapped potential." Private and third-sector procurement share this potential to unleash what has been termed "the power of the public plate." The sheer volume of food purchased through food procurement programs carries enormous possibilities for the evolution of food systems. As Morgan and Morley (2014) observe, food procurement is a powerful instrument for creating social, economic, and environmental change.

guest editors: Jennifer Sumner, Lori Stahlbrand

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Guest Editorial

Introduction to the special issue on food procurement

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Food procurement involves the acquisition of food, often through a tendering process, whether in the public, private, or third sector. Within the public sector, food procurement covers a range of institutions, such as schools, universities, hospitals, and prisons. In the private sector, large corporations such as Google purchase food for on-site cafeterias. And in the third sector, non-profit organizations such as FoodShare and The Stop buy food for meal programs and cooking classes. The leveraging capacity of procurement is supported by the fact that public-sector catering in a country like the UK represents seven percent of total food expenditure, with the National Health Service being the single largest purchaser of food (Thatcher & Sharp, 2008).

The history of public food procurement can be seen as "a story of untapped potential" (Morgan, 2008, p. 1239). Private and third-sector procurement share this potential to unleash what has been termed the power of the public plate (Morgan & Morley, 2014). The sheer volume of food purchased through food procurement programs carries enormous possibilities for the evolution of food systems. As Morgan and Morley (2014) observe, food procurement is a powerful instrument for creating social, economic, and environmental change.

Many forms of food procurement involve transnational distribution and foodservice corporations, such as Sysco or Aramark. In particular, large public institutions have come to rely on the low cost and convenience offered by these global corporations, making it difficult for more localized small and medium-sized enterprises to gain or maintain a foothold in the world of procurement. This reliance means that, currently, much of the power of procurement is directed toward supporting the deeply unsustainable industrial food systems in which these corporations are embedded, "with their 'placeless' and 'nameless' supply chains encircling the world" (Goodman, Dupuis, & Goodman, 2014, p. 65). The consequences of such food systems are well documented

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(see, for example, Albritton, 2017; Kimbrell, 2002; Weis, 2007; Wiebe, 2017; Winson, 2013) and can be understood as leading to an evolutionary dead end (Sumner & Llewelyn, 2011).

Using the power of procurement to move toward more sustainable food systems is key to avoiding this fate. The papers in this special issue provide a glimpse of some of the challenges and opportunities such a transformation would entail, and cover both public and third-sector procurement. On the public side, Michaela Bohunicky, Annette Aurélie Desmarais and Meghan Entz investigate food procurement at two universities in Manitoba: the University of Winnipeg, which has a self-operated food service, and the University of Manitoba, which mainly has a corporate contract for its food services. Using Holt-Giménez and Shattuck's (2011) framework for reformist, progressive, and transformative change, they examine current developments and the potential for food system transitions at these universities.

In her article, Shawna Holmes looks at the changes to procurement in Canadian school food environments in response to new nutrition regulations imposed by the provinces. Based on extensive cross-country interviews and document analysis, her findings suggest that some schools were able to improve the nutrient content of products offered and include local producers and school gardens as part of the procurement process, while other schools struggled because of geographical location or logistical difficulties, and require support to improve student nutrition.

Jennifer Sumner and Hayley Lapalme investigate the tensions involved when public institutions are caught between conflicting policies regarding food procurement. These tensions create barriers to effecting food system change, while simultaneously creating opportunities to "think outside the box". The authors argue that these tensions are symptomatic of a time of transition and offer a fresh values perspective for intervening in a system to steer the transition toward more sustainable outcomes.

Creating a community of practice around local food procurement for public institutions is the subject of the paper by Mary Beckie, Leanne Hedberg, and Jessie Radies. Knowing that scale is necessary to generate significant impact on the food system, they focus on the social infrastructure necessary to achieve this scale and describe an innovative community of practice—the Alberta Flavour Learning Lab—aimed at getting more local food on more local plates. They describe the accomplishments of this community of practice, as well as the challenges they encountered and their strategies for overcoming them.

Jennifer Reynolds and Beth Hunter explore how public institutions can optimize local sustainable food purchasing by reporting on the results of several case studies set up across the country by Food Secure Canada and the J.W. McConnell Family Foundation. They offer lessons learned from seeking to change foodservices and procurement practices, and identify barriers and levers to change. Participants found common ground in the challenges and opportunities they faced, and gained insight by sharing knowledge and learning from each other about how to scale local sustainable food procurement up, out, and deep.

On the third-sector side, Jennifer Marshman and Steffanie Scott give an old concept new meaning when they investigate gleaning in terms of urban food recovery and community food security. Modern gleaning takes many forms, and one primary motivation of gleaners is to

donate the produce to local organizations that work to reduce food insecurity. Using both interviews and an online survey, the authors found that this innovative type of food procurement contributed positively to community food security and should receive ongoing policy and community support.

In Canada's Arctic, Angel Chen and David Natcher explore local food procurement strategies for combating food insecurity by taking inventory of community gardens and greenhouses as part of a circumpolar research project. This research provides an initial baseline of data that will help to determine how much community gardens and greenhouses are meeting the food needs of northern residents, with the ultimate aim of contributing to knowledge regarding the unique potential and opportunities for the Artic to become a self-sustaining food-producing region.

Lori Stahlbrand presents a case study of the University of Toronto-Local Food Plus partnership to bring sustainable local food to the St. George campus of Canada's largest university. As the founder and former president of Local Food Plus, Stahlbrand identifies some of the community assets and communities of practice that must be in place, and highlights the role of civil society organizations in initiating and supporting shifts in conventional procurement. She makes the case that operationalization is worthy of serious academic research in order to understand the sociotechnical transitions necessary for a sustainable local food system.

Together, these papers open the door to the complex world of food procurement, both from an institutional perspective and from outside of institutions. The papers that focus on institutional procurement address the problems that large public institutions face when dealing with food system change and supply chain transformation. Those involved in this type of food procurement are working to effect change from inside the system, whether imposed from above or inspired from within. In contrast, the papers that deal with third-sector procurement address problems associated with communities outside of large institutions. Those involved in this type of food procurement are working from outside the system—seeing the system as creating problems and trying to find community-based solutions.

Both types of procurement found in this special issue can be understood as forms of social procurement, which involves "the use of purchasing power to create social value" (Barraket & Weissman, 2009, p. 3). Such procurement aims for social impact in the goods or services being purchased, with the potential to promote positive change in communities and vulnerable populations (Revington, Hoogendam, & Holeton, 2015). Addressing food insecurity in urban areas or underserved communities, and providing healthy food for school children and university students, showcases using the power of procurement to create social value.

Both types of procurement can also encompass what is known as environmental or green procurement, which has been used as a policy tool to promote change toward sustainable consumption and production (Larsen & Svane, 2005). Green procurement involves the purchase of any product or service that results in a lower environmental impact while performing a similar function and "has been increasingly recognized as an effective means of addressing and reducing negative environmental impacts related to product production and consumption around the

world" (Ho, Dickinson, & Chan, 2010, p. 24). Sourcing sustainably grown produce for schools, hospitals, universities, and municipalities exemplifies using the power of procurement to create environmental value.

There is no guarantee that either type of procurement will contribute to more sustainable food systems, for a number of reasons. First, as Kloppenburg and Hassanein (2006, p. 420) explain, "we are embedded in an overarching neoliberal structure that shapes and constrains action in various ways." This raises the question of whether ethical procurement or other market-based movements can actually achieve progressive social change in societies where neoliberalism has become hegemonic (Goodman et al., 2014). Sonnino notes that we are never wholly determined by neoliberalism, and "neo-liberal values and governance contexts do not necessarily disempower and immobilise the local" (Sonnino, 2010, p. 28). As Antonio Gramsci (in Coben, 1998) observed, hegemony is always contested. While neoliberalism can indeed narrow the 'politics of the possible' and frame solutions within a neoliberal purview (Guthman, 2008), it is clear that some of these papers portray forms of procurement and purchasing policies that can be understood as "struggling to articulate an alternative to capitalism while working within capitalist contexts" (McMurtry, 2014, p. S26). Using the third sector to procure food for precarious communities, sharing gleaned food, and setting standards that go way beyond so-called 'best value' illustrate possibilities outside the realm of neoliberal capitalism.

Second, as Morgan (2008, p. 1248) warns, sustainable public procurement can be hampered by a "pious and self-referential localism in which the local is always extolled over the global." In contrast, he proposes, a sustainable food strategy would involve "a judicious combination of 'local and green' and 'global and fair'." While all of the papers in this special issue mention procurement projects that are striving to increase local sustainable food purchasing, none of the papers mentions engaging in fair trade or making alliances with organizations outside the region or the country to exchange sustainably produced food. Setting up links with other like-minded organizations and creating regional and global networks of fairly traded and sustainably produced foodstuffs is the next frontier for food procurement.

Third, and relatedly, local is not inherently sustainable. Such an assumption simply conflates spatial relations with social relations (Goodman et al., 2014). Following Born and Purcell (2006), whether local procurement can support sustainable food systems depends on the agenda of those who are empowered by the local scale. If their agenda is endless capital accumulation above all else, then the local food system will mirror the unsustainable global food system. But if their agenda is to change the food system and transform supply chains in a more sustainable direction, then local will become more sustainable. The agenda of those involved in the food procurement studies for this special issue does not entail using local as a vehicle for capital accumulation, but as a vehicle for community development, public health, and environmental integrity. Such procurement opens the door to more sustainable food systems.

And, fourth, institutional food procurement highlights one of the biggest problems in our current food system–cheap food. Patel and Moore (2017) describe cheapness as a set of strategies for temporarily fixing the crises of capitalism that are used to manage the relationships

between capitalism and what they describe as the web of life. For these authors, cheap is not equivalent to low cost. Although it includes low cost, it is essentially "a strategy, a violence that mobilizes all kinds of work–human and animal, botanical and geological–with as little compensation as possible" (22). Roberts (2013) describes cheap food as an elaborate 'buy now, pay later' sales scheme with hidden costs: crippling world cultures, contributing to poor health, inducing poverty in farmers and food workers, damaging the environment, and wasting and adulterating food. In the words of Jane Goodall (2005, p. 169), "we just cannot afford this 'cheap' food much longer." In terms of food procurement, as long as institutions (including hospitals, drop-in centres, and places that serve the disadvantaged) are not properly funded so as to be able to purchase food that is nutritious and produced in ways that support justice for all, they are forced to buy cheap food produced through the exploitation of people, animals and the environment.

All of the papers in this special issue broach the 'politics of the possible' within neoliberal capitalism for procurement that aims to contribute to more sustainable food systems. Although most of the cases operate within the market, in practice they disrupt existing power in the food system and point toward a more sustainable path. Those cases that are not market-based offer glimpses of a not-for-profit food system, where food is no longer a profitable commodity in a deeply unsustainable global food system, but a human right that everyone can exercise.

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Review Article

From contracts to culture: Exploring how to leverage local, sustainable food purchasing by institutions for food systems change

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Abstract

In recent years, certain hospitals, schools, and campuses across Canada have shown that they can transform their practices to serve more local and sustainable food. These changes have often been led by visionary champions, and in some cases aided by supportive public policies or programs. Yet the presence of these isolated success stories has so far not proven sufficient to tip a critical mass of institutions towards sustainability. There is great potential in leveraging institutional foodservices, with an estimated $8.5 billion market sales in Canada in 2016 (fsStrategy, 2016), to shift systems towards greater sustainability. In 2014, Food Secure Canada and the McConnell Foundation launched an action-research project and embarked on a learning journey to explore two key questions: how can food service operations and procurement practices be changed to increase local, sustainable institutional procurement; and how can this work be scaled. In 2014–2016, eight institutional food projects across Canada came together as a national Learning Group. Drawing from their experiences working in different contexts and scales, our action research project identified program and policy innovations to leverage systems change. This article explores how institutions currently buy food, and reveals the systemic barriers to increasing local, sustainable food procurement. We share lessons learned about the interplay of menus, food service operations, contracts, institutional demand, and food culture that helped to overcome these barriers. We identify enabling, peer-based learning and support as particularly relevant in a national context for the scaling out, up, and deep of local, sustainable food procurement.

Keywords: Institutional food procurement; sustainable food

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Introduction

In recent years, certain hospitals, schools, and campuses across Canada have shown that they can transform their practices to serve healthy, local, and sustainable food. These changes have often been led by visionary champions, and in some cases aided by supportive public policies or programs. Yet the presence of these isolated success stories has so far not proven sufficient to tip a critical mass of institutions towards sustainability.

In 2014 Food Secure Canada and the McConnell Foundation joined forces to address the question of local, sustainable food purchasing by institutions. Food Secure Canada is a pan-Canadian alliance of organizations and individuals working together to advance food security and food sovereignty through three inter-locking goals: zero hunger, healthy and safe food, and sustainable food systems. The McConnell Foundation engages Canadians in building a more innovative, inclusive, sustainable, and resilient society. It works to address complex social, environmental, and economic challenges through innovative approaches and solutions, and collaboration with the community, private, and public sectors. Together, we organized an action-research project and embarked on a learning journey to explore two key questions: how food service operations and procurement practices can be changed to help shift systems towards greater sustainability, and how this work can be scaled. The Foundation supported eight Institutional Food Fund projects through grants that totaled $450,000 over two years (2014-2016), and project leads participated in a Learning Group, which engaged with many stakeholders throughout the supply chain and food system.

This article identifies barriers to change in the larger systems these institutions are a part of and explores lessons learned about changing food services and procurement practices within the participating institutions. Shifting institutions' significant food spending towards ingredients that are locally and sustainably produced will have wide-reaching impacts both inside and outside of facilities. This food systems work is embedded in the emerging concepts of anchor institutions (Birch, Perry, & Taylor, 2013), whereby hospitals, universities, and schools can strategically leverage their purchasing power to generate greater health and wealth in communities and more fully achieve their missions.

The Learning group

The Institutional Food Fund projects worked with a range of institutions—health care facilities, schools, campuses, and an event centre—to increase the sourcing of more local, sustainable food using different strategies and approaches. Project leaders came together as a Learning Group with two in-person meetings, as well as regular videoconferences, online exchanges, and updates on projects via mentoring calls and written progress reports.

Each project was required to track changes in local, sustainable food spending and a prototype tool was developed so projects were not tied to one strict definition of local or sustainable in their reporting, but instead were able to use a continuum to define local (ranging from their surrounding region to the wider province) and a range of criteria to identify sustainability. Some of the challenges associated with defining and tracking local and sustainable are discussed below in more detail.

Over the two years, for those projects able to track their spending, the Learning Group projects collectively sourced $3.1 million of local or sustainable foods (with a small percentage being both local and sustainable), defined using the agreed-upon range of criteria. Almost all projects were able to increase local and/or sustainable food spending for institutions from baseline, with most achieving a 20 to 25 percent range of total food spending on local or sustainable food. Le Réseau des cafétérias communautaires, a unique food service model in the Learning Group, directed 60 percent of their annual food spending towards local suppliers. Full details of the projects can be found in the report *Purchasing Power: 10 Lessons on Getting More Local, Sustainable and Delicious Food in Schools, Hospitals and Campuses* (Reynolds & Hunter, 2017).

We discovered, however, that significant challenges exist for people—eaters, food service managers, senior leaders, non-profit organizations, and producers—seeking to shift institutional purchasing that stem primarily from the complexity of food services, procurement, and supply chains. Few actors have a complete view of the system, and often much of the information about the food that institutions purchase is hidden behind contractual arrangements that do not allow disclosure of food purchasing data or existing systems that do not audit what local foods are available. Nonetheless, a key finding was that institutions do, in fact, have a great deal of latitude to leverage their demand in the marketplace to shift supply chains towards greater sustainability but are often unclear on the specific ways they can begin to do this.

Several reports authored by non-profit organizations and provincial governments provide information, analysis, and tools about institutional food systems (see Conseil des Industries Bioalimentaires de l'Île de Montréal, 2015; Food Matters Manitoba, 2016; Knight & Chopra, 2011; MAPAQ, 2013) but little exists in peer-reviewed literature about how institutions actually make decisions about buying food, and all of the components and feedback loops in these systems. This article aims to contribute to addressing this gap by sharing what we have learned from our action-research around the interplay of menus, food service operations, and institutional food culture to effect change.

How do institutions buy food?

Institutional foodservice market sales in Canada in 2016 were estimated at $8.5 billion (fsStrategy, 2016). Health care food service spending is just over half of this total, with the rest being spent by institutions such as campuses and schools. Institutional food services can either be self-operated or contracted out to a food service management company (some institutions use both models) and this significantly determines how institutions buy food. While a national breakdown of self-operated vs contracted institutional food services is not publically available, research by the Québec Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ) provides a provincial snapshot in 2012 of self-operated vs contracted food services in various institutional settings. Correctional services (both provincial and federal) and health care facilities had the highest percentages of self-operated food services (79 percent and 77 percent respectively), in comparison with educational

institutions that had only 28 percent of food sales being generated by self-operated food services (MAPAQ, 2013, p. 10).

Self-operated food services are managed by institutionally staffed positions. Contracted food services are managed by a food service management company, often using a variety of arrangements that blend staffing and management positions between the company and the institution. The three major multinational food service management companies in Canada are Compass (parent company of Chartwells for education and Morrison for health care), Sodexo, and Aramark. Smaller independent contract caterers also operate in many institutions across Canada.

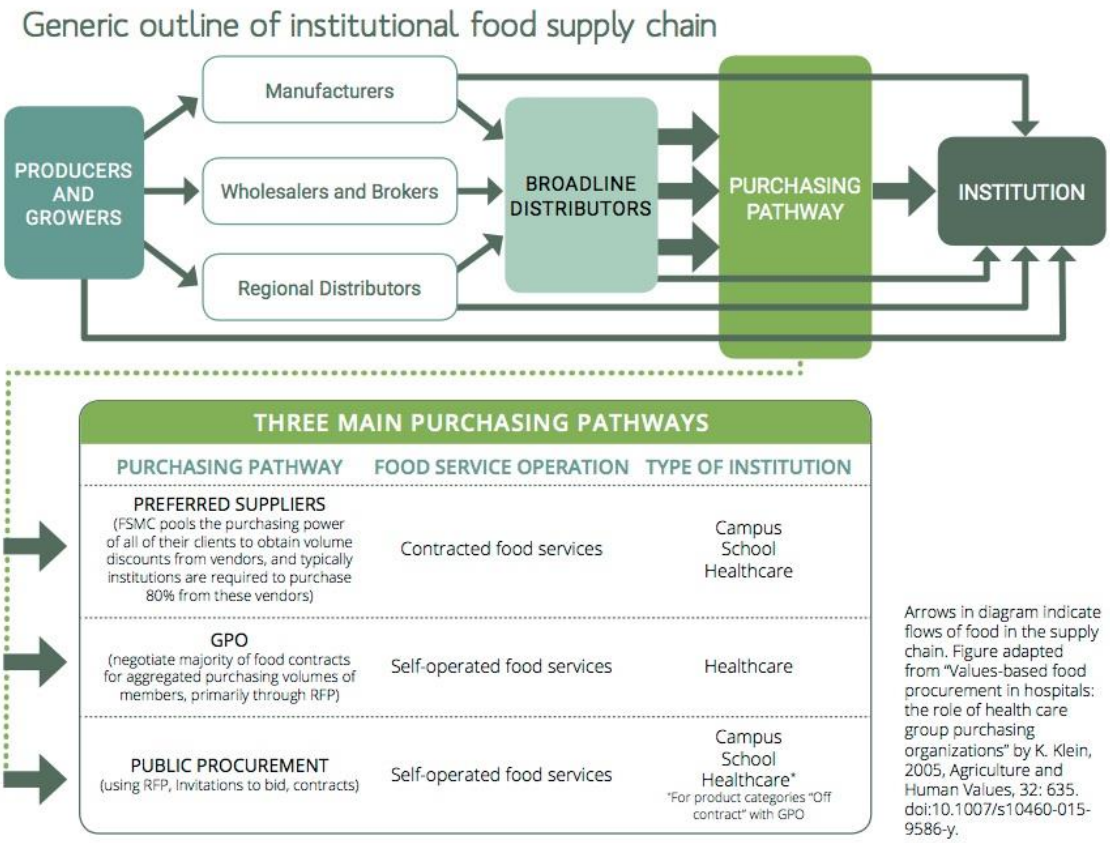
Contracted food services typically seek to consolidate their supply-chain volumes among their preferred vendors, so their institutional clients often cannot simply choose their own suppliers. In contrast, self-operated food services generally have the latitude to tender bids for suppliers. Much depends on the scale of food services, with small feeding programs like school snack programs typically shopping at grocery stores and larger institutions like campuses typically purchasing food through broadline distributors (which purchase large volumes of food that are held in inventory, offering a broad line of products).

The health care sector is unique in that it primarily uses Group Purchasing Organizations (GPO) to pool buying power for all types of products, from medical supplies to equipment and food. Institutions commit to purchasing volumes as members of a GPO, which then aggregates these volumes and negotiates supplier contracts. Most food categories are purchased via the GPO, but typically fresh produce is not included and is purchased "off contract". Ontario and Québec each have regional public sector GPOs: MEALSource in southwest Ontario, and three GPOs cover the province of Québec (Sigma Santé, GACEQ, GAQOuest). Health authorities and facilities in other provinces and territories predominately participate in national GPO HealthPro.

Figure 1 provides a generic outline of the institutional food supply chain and purchasing pathways for both contracted and self-operated food services across a range of institutional settings: healthcare, campus, and schools. Institutions that manage their own food services can have more latitude with food purchasing, but in practice they frequently purchase food through global supply chains via GPOs or broadline distributors. As discussed later in this paper, often there are significant barriers to institutional food services accessing local and/or sustainable foods from their existing suppliers and establishing new supplier relationships requires additional work they often do not have the resources to carry out.

Decision-making about food is typically distributed amongst a number of institutional staff roles. Reviewing a menu planning cycle can help to visualize it: dietitians create menus from which food volumes are forecasted; procurement officers negotiate contracts for food suppliers; inventory, ordering, and budgeting is done by an executive chef, or, in health care, by a food and nutrition manager; and reports on food service spending are prepared for upper management who forecast budgets available for the coming year.

Figure 1: Generic outline of institutional food supply chain (Reynolds & Hunter, 2017, p. 7)



Systemic barriers to local, sustainable food procurement

Our action-research project revealed four systemic barriers for institutions when they try to procure local, sustainable food, which are discussed below: the lack of a shared definition of local across the supply chain; how many dimensions of sustainability are not reflected in third-party certifications; the structure of broadline supply chains and institutional food purchasing practices; food service menus and institutional culture.

1. Lack of a shared definition of local

To implement local food procurement, and track the results, the definition of local food is obviously important. The legal definition of "local," outlined in the Local Food Claims Interim Policy of the Canadian Food Inspection Agency (CFIA), is food produced in the province or territory in which it is sold, or sold across provincial borders within 50 km of the originating province or territory. However the CFIA provincially bound definition of local food is challenging because not all individuals, institutions, retailers and distributors share this definition and instead identify many different facets to "local", with many defining local along a continuum. For example, this can start with a preference for food produced in their

community, then when this is not possible, move up to ever-larger geographical areas—a county, a region (e.g., Niagara), a province, or even the whole country.

To add to this complexity, distributors' existing systems often have difficulty providing transparency on—and traceability for—local foods and do not share the same definitions amongst themelves or with the institutions purchasing from them. In some regions, this is starting to change, but it is far from mainstream.

Defining local processed food is full of nuances as well. Does the main ingredient need to be local or all of the ingredients? Should the processing location contribute towards a local definition? Does the company need to be "locally" owned? Several Canadian provinces have local food definitions that provide specific criteria both for a minimum percentage of food ingredients that are provincially produced in addition to processing within the province, namely British Columbia, Québec, and Ontario. Alberta and Manitoba define local more broadly as food that is grown, raised, produced or processed in their respective provinces.

Another complicating factor in defining "local" food is that many of the reasons why people seek out local food—such as freshness, taste, supporting small producers or seeking to know more about how their food is produced—are not included in a strictly geographic definition of local food.

2. *Many dimensions of sustainability–social, economic and environmental–are not reflected in third-party certifications*

In supply chains, sustainability is usually identified by third-party certifications and label claims. Third-party certifications provide independent verification that certain standards have been met, for example, Certified Organic, Certified Humane Raised and Handled, or Fair Trade Certified. Food label claims are regulated by the Canadian Food Inspection Agency (CFIA, 2014) with specific criteria for production claims such as "Raised without antibiotics" or "Grain-fed. No Animal By-Products".

However, many aspects of sustainability do not fit easily onto a label, with many small farmers and fishers generating positive sustainability impacts from their practices related to their regional context. Many university and college campuses are beginning to evaluate the sustainability of the food they source using multiple criteria, including production practices, where food is produced, and the nature of ownership. Two existing schemes for assessment are Sustainability Tracking, Assessment & Rating System (STARS) and the Real Food Calculator.

3. *The structure of broadline supply chains and institutional food purchasing practices*

The structure of broadline supply chains and institutional food purchasing practices themselves can pose a number of barriers to the procurement of local, sustainable food. For example, as already mentioned, distributors often cannot identify local food products in their listings and/or provide traceability because their inventory and ordering systems are designed to consolidate purchases for a product category from a number of suppliers. Additionally, broadline distributor requirements for suppliers such as required sales volumes, discounts,

food safety traceability, and insurance often preclude smaller local food suppliers from selling to them.

On the institutional side, practices such as requiring regulations that are not scale appropriate for smaller local food suppliers (e.g., federal meat inspection) have also become embedded. Procurement practices such as the use of "bundled" contracts are often also barriers, requiring bidders to supply many products at volumes beyond what one producer can provide. Additionally, contracts are typically awarded based on lowest cost without any consideration for other qualities such as freshness, product quality, or food miles.

In seeking to align efforts of institutions to implement more values-based procurement for food, Klein's (2015) research explored the tensions that emerge when looking to engage with existing supply chains "deeply rooted in industrial and commercial norms, in other words, price competition, economic efficiencies, and forces of standardizations through adherence to technical and quality standards" (p. 635). This raises fundamental questions about scaling institutional procurement of local and sustainable food, which potentially cannot be reconciled via sourcing from broadline supply chains "without losing the robustness of the original values and goals [of seeking to source local, sustainable food] that brought them into being" (p. 635).

4. Food service menus and institutional culture

Often the first systemic barrier for institutions that seek to start buying local food involves navigating complex supply chains, creating alignment amongst existing systems for food service menus and ordering, and encountering an institutional culture that seeks to maintain the status quo and does not see sustainable food efforts as linked to its mission.

For example, many food service operations rely on processed ingredients that can be a major barrier to purchasing local, sustainable ingredients predominantly available only in whole, unprocessed form. Institutions typically use cycle menus, by which the menu changes every day for a time (generally two weeks to a month) and then repeats itself. While this standardizes purchasing, it also limits flexibility. Food service operations have usually been optimized around the "one stop shopping" that broadline distributors can provide (e.g., 24-hour order times, etc.) and often lack space to store food, which limits the potential for weekly food orders that are more convenient for smaller suppliers.

Change makers also confront a significant barrier of institutional culture and hierarchies that help maintain the status quo; many people have to be engaged to affect change. Food is not seen as being linked to the institutional mission (for example of health or education) and those leading change in their institutions are often not well networked, particularly in health care, to other innovators.

Lessons learned

This section presents lessons learned about changing institutional food purchasing and food services, stemming from the experiences of the eight Learning Group projects. These lessons

range from changes that are more immediate and concrete to those that are more fundamental and require time.

1. *Identify local food in existing supply chains*

A low-hanging fruit for institutions is to identify local food already available in their supply chains. By doing so institutions can establish baselines of current local food spending and identify local products that could easily be substituted into existing menus without changes to other systems (for ordering, payments, etc.) already in place. However, as simple as it sounds, this approach is not without its challenges. This information is often unavailable from distributors, and institutions, as early adopters, may need to invest resources to do their own identification of local foods. One Learning Group project demonstrated the efficiency of combining efforts with other institutions to do this work.

2. *Pool institutional demand to bring in new suppliers*

Even though some local and sustainable foods exist in current broadline supply chains, new suppliers of local food will be needed to meet growing demand. Groups of institutions can pool their purchasing power to pull in new suppliers that are ready to scale into broadline supply chains. Or they can develop direct purchasing relationships. However, to develop value chains for local, sustainable food systems, institutional demand is an important but insufficient factor on its own to generate all of the resources local producers need to scale up. Support is needed to establish new systems for scale-appropriate aggregation, distribution, marketing, processing, and food safety traceability. Food hub projects working to scale local food supply are active in many regions of Canada but more investment in this area is required.

3. *Level the playing field by rewriting "the rules" of food procurement*

Institutions can help to level the playing field by changing their bid tendering processes, which often create significant barriers that prevent small producers from bidding. For example, requiring federal meat inspection has become the default standard for institutional purchasers because broadline distributors require it in order to facilitate shipping products across provincial borders. Institutions could simply accept provincial meat inspection, which is equivalent in terms of food safety, and broaden the base of suppliers they could purchase from. Institutions can also change how they assess bids, as demonstrated with a case study of MEALSource, which changed how a meat protein bid was assessed, from cost per serving to cost per gram of protein. They found it a more useful measure of product quality for their health care purchasers and awarded the bid to a local, sustainable beef producer (Lapalme, 2015). "Grow to order" contracts are another tactic institutions could use to commit to future purchases that enable producers to scale up, potentially using the contracts to obtain financing for their businesses.

4. Leverage food service management contracts

Food service management contracts have an important bearing on how much of a decision-making role an institution may be able to play during the life of the contract around food purchasing. Clarifying local, sustainable benchmarks in contracts and how institutions can help to identify and select new suppliers can be very impactful. As with any relationship, it is critical to establish in contracts clear processes for ongoing two-way channels of communication.

5. Track food spending

Tracking changes in food spending helps to engage institutional stakeholders (eaters, food service teams, other institutional staff, leadership, boards of directors) by sharing how foodservices are making progress. Having the capacity to demonstrate impact to institutional stakeholders, funders, and policy makers is key to encouraging greater buy-in and resources to meet short- and long-term goals. Ensuring access to purchasing information (e.g., volumes or aggregated spending for product categories) is also an important issue for institutions to address in their future contracts with food service management companies. Other industry practices such as off-invoice rebates used by food service management companies often do not provide adequate transparency for public spending and require further examination.

6. Redesign menus

Menus are critical in supply chain innovation in that they can create new alignment between supply and demand. Sharing institutional food needs—types of products, preferred level of processing, required product performance in recipes, needs for portion and pack sizes—can help identify opportunities for producers. Conversely, institutions can also adapt their recipes to increase their use of local food, for example, instead of specifying a vegetable side, menus could call for seasonal vegetables, which would give foodservices the flexibility to use the best seasonal produce available and the additional benefit of often lower in-season pricing.

7. Cook from scratch

Many institutional food service operations seek to reduce labour costs by relying on processed ingredients and meals. As most local sustainable foods are predominantly available as whole, unprocessed foods, a lack of adequate kitchen facilities and/or budgets for labour is often an initial barrier to local food sourcing. Food service models that shift to a focus on cooking from scratch can stay on budget by balancing their increased labour costs with lower food costs from sourcing seasonal, whole ingredients. A case study of Diversity Food Services at the University of Winnipeg describes their cooking-from-scratch model, with 32 percent of revenues going towards food costs, 34 percent towards labour and the remaining 34 percent towards profit and other expenses (Food Matters Manitoba & Diversity Food Services, 2015). Diversity Food Services developed a seasonal menu to adapt to the

availability and pricing of local, sustainable, and seasonal ingredients. As prices tend to ebb and flow, being slightly higher in winter and lower in summer, institutions can process and freeze fruits and vegetables when they are in season and available at their lowest prices and thus have them available for an extended period of time.

Cooking from scratch also provides better control over ingredients such as sugar, fat, and salt, and facilitates the development of menus that are culturally appropriate. Currently the "health" of menus is related to servings of food groups in Canada's Food Guide and not evaluated in terms of fresh whole ingredients vs. processed foods. However, the reduction of highly processed foods is increasingly being looked at as an important measure of healthy diets.

8. Build a food culture that leads to change people will believe in

"Culture eats strategy for breakfast", it is famously said. It is essential to engage and get buy-in not only from food services staff, but also from the eaters, leadership, and community of an institution in order to facilitate change along hierarchical decision-making chains, and to transform embedded practices. Celebrating small wins, validating hard work and building new partnerships can help to break down silos, develop buy-in, and garner more resources for change. Developing a food culture that prioritizes local, delicious, sustainable food systems facilitates institutions' ongoing investment in the hard work of change and ensures it will continue even if initial champions move on, or reorganizations occur. New norms, practices, and policies need to be embedded.

A vital first step to changing procurement practices is to engage with food services staff about their concerns and the challenges they encounter when asked to increase the use of local, sustainable food, often without any additional resources to develop the new systems required to do so. Farm visits, skills development, and food education for food services staff can increase buy-in and knowledge about local, seasonal food and its many benefits for health, environment, and local economies. Initiatives should be designed with flexibility and oversight in mind: flexibility to allow for institutions and staff to start where they are at, and oversight that involves overarching goals and accountability so that the responsibility to act does not fall on one individual alone.

Conclusion

Although institutional food procurement systems are complex and difficult to change, the initial impacts from this work and the potential for more change have been inspirational. Institutional demand for local, healthy, delicious, sustainable food remains relatively untapped, and harnessing its power will create significant systems-wide change. This paper concludes with some thoughts about opportunities to support scaling local, sustainable food procurement in schools, hospitals, and campuses across Canada.

In some ways, the institutional procurement projects described here represent the seeding stage: a scattering of projects working in different contexts to create isolated change.

Policies, support, incentives, and learning opportunities are needed to embed shifts into mainstream procurement practices towards local, sustainable food purchasing. The concept of *Scaling Out, Scaling Up, Scaling Deep: Advancing Systemic Social Innovation and the Learning Processes to Support It* (Ridell & Moore, 2015) describes the different strategies for change needed.

Scaling Out – Impacting greater numbers

Scaling out is a strategy of "replicating or spreading programs geographically and to greater numbers" (Ridell & Moore, 2015, p. 4). Scaling out by leveraging the purchasing power of many institutions is an effective way to pull local, sustainable food into existing supply chains and to develop new value chains. However, this work must be done with awareness of a significant existing tension, with the predominant supply chain systems for institutions being large-scale broadline distribution and the predominant supply chain for local and sustainable food being small-scale distribution. Institutions and smaller producers face similar challenges of time, resources, and limited awareness of each other's needs and resources to establishing new relationships. Both institutions and smaller suppliers need support to resolve issues related to aggregation, distribution, light processing, and food safety traceability requirements, often referred to as "rebuilding the middle". In particular, direct purchasing relationships between producers and institutions offer a promising area for innovation.

To scale out changes in food services, institutions also need useful information about how others have changed their models and purchasing so they can adapt it to their own contexts. Creating opportunities for peer-based learning and networks can support those who are leading change in their institutions, as they are often not well connected, and was found to be invaluable to participants in the Learning Group.

Scaling Up – Impacting laws and policy

Transforming institutional food services and procurement will require more than change in individual or even groups of institutions, as they will inevitably confront structural barriers to the change they want to make. Policy change must therefore be carried out at a number of levels and sectors. Such change will require collaboration between institutions, governments, and supply chains. Policies and strategies must account for a number of food service variables, including the size of the institution, who is being fed and how often, available kitchen infrastructure, staff cooking skills, decision-making over menus, revenue models, management (self-operated or contracted), and institutional goals.

Sectoral (e.g., school district and health authorities), provincial, and federal leadership is needed to establish institutional procurement policies such as:

- Set benchmarks for increasing local, sustainable food spending.
- Develop procurement policies that 'level the playing field' and encourage small businesses to bid on more public-sector contracts.

- Establish criteria for sustainability in procurement of food and food services. A potentially good practice is offered by the Department for Environment, Food and Rural Affairs (DEFRA) in the UK, which developed a Balanced Scorecard for Public Food Procurement (Department for Environment, Food and Rural Affairs, 2014).
- Establish quality standards for institutional food (currently regulated with a patchwork of policies so institutions often default to meeting requirements for food groups and servings outlined in Canada's Food Guide).
- Resource food services adequately to deliver fresh, local, delicious, healthy meals.
- Install policies that acknowledge the complexity of this work and provide a framework within which individual institutions can start where they are at and take action on their potentially different place-based values.

The current window for national food policy mandated for development by the Minister of Agriculture and Agri-Food Canada (Trudeau, 2015) provides an excellent opportunity for scaling up. Local, sustainable institutional procurement bridges the national policy themes of health, food security, environment, and sustainable growth of agriculture and food sector.

Scaling Deep—Impacting cultural roots

"Based on the recognition that culture plays a powerful role in shifting problem domains, and change must be deeply rooted in people, relationships, communities and cultures" (Ridell & Moore, 2015, p.4), scaling deep is a strategy to change norms and beliefs. Learning Group members identified the importance of engaging, celebrating success, and communicating results with all institutional stakeholders. Demonstrating the impacts of changes to food services is particularly vital, as they are often not seen as central to institutional strategic priorities. Initiatives also need to engage eaters and gain their support.

A significant trend was observed that while institutions themselves remain relatively stable, the management structures overseen by governments are in an almost perpetual state of restructuring, particularly in health care. Four of the eight projects in the Learning Group were impacted by major institutional reorganizations that made it difficult to advance in their work as planned. Momentum and continuity were affected when individuals with whom relationships were developed left or were reassigned, and when food services were left (again) with having to do more with less. If there were a culture shift to prioritize and resource food services adequately, it would help to establish the shift to local, sustainable food purchasing in the long term.

Final thoughts

This article has shared lessons learned about changing food services and procurement practices by institutions to increase their spending on local, sustainable food. Projects observed the importance of shifting the current narrow institutional understanding of "best

value" as buying food based only on lowest price to a broader understanding of value that includes where food was sourced from, how it was grown, and how it is served to students, patients, families, and staff where they go to learn, heal, and work every day. Institutional demand is a key leverage point to create local, sustainable value chains—using tools from contracts to culture change. With climate change, growing rates of diet-related disease, and economic challenges facing the agricultural sector, we cannot afford any longer to overlook the opportunity to leverage the food purchasing power of schools, hospitals, and campuses to stimulate innovation and long-term growth of the Canadian economy, benefit our health, protect the environment, and generate high value for society.

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Original Research Article

The public plate in the transnational city: Tensions among food procurement, global trade, and local legislation

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Abstract

Local food systems are crucial to sustainability, and one of the most effective ways to develop them is to harness the buying power of large public institutions, such as hospitals and universities. Steering public funds toward local food systems, however, is not as easy as it might appear. Institutions must navigate a maze of regulations that can become significant barriers to effecting change. In Ontario, for example, public institutions are squeezed between two contradictory policies: the Broader Public Sector Directive, which mandates a level playing field and prohibits preferential buying based on geography, and the Local Food Act, which aims to increase the consumption of local food (with a specific focus on procurement in Ontario public institutions) and to foster successful and resilient local food economies and systems. Adding to this tension, global trade treaties are drilling down to the local level, proscribing preferential procurement of local food as 'protectionist' and a barrier to trade. Public institutions are caught in the middle, wanting to purchase more local products but unwilling to risk reprisals. This paper follows these tensions by reporting on a recent study of institutional buyers and government officials in the Toronto area to investigate the barriers to operationalizing a local food system, while recognizing that sustainable food systems require a judicious combination of values associated with "local and green" and "global and fair" (Morgan, 2008).

Keywords: food procurement; global trade; Local Food Act; local food systems; public plate

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Introduction

Institutional food purchasing has been identified as a key point of leverage in food systems (MacRae, 2011; Morgan & Morley, 2014; Reynolds & Hunter, 2017). The potential of the public plate to effect change is illustrated by the fact that in the province of Ontario alone, the public procurement of food and beverages deploys a budget of $1.8 billion per year (Sustain Ontario, 2015). Drawing on their curatorial powers as significant purchasers, those involved in institutional procurement can disrupt existing patterns of production and distribution to contribute to the emergence of local food systems.

> Steering public funds toward local food systems, however, is no easy task: Indeed, the barriers to undertaking strategic institutional procurement efforts can be overwhelming, particularly in the neoliberal context of global trade agreements, shrinking public sector budgets, the decoupling of food from the provision of care and education, and the challenge of creating a shared vision and measures of success (Lapalme, 2015, p. 2).

In particular, institutions must navigate a maze of regulations that can become significant barriers to effecting change. In the province of Ontario, for example, public institutions are squeezed between policies, such as the Broader Public Sector Procurement Directive, which mandates a level playing field and prohibits preferential buying based on geography, and the Local Food Act (LFA), which aims to increase the consumption of local food (with a specific focus on procurement in Ontario public institutions) and to foster successful and resilient local food economies and systems. Adding to this tension, global trade treaties are drilling down to the local level, proscribing preferential procurement of local food as a barrier to trade.

Public institutions are caught in the middle, wanting to purchase more local products but unwilling to risk reprisals. This paper will follow these tensions by reporting on a recent study of institutional buyers, food distributors, and government officials around the city of Toronto to investigate the barriers to operationalizing a local food system. It will begin by looking at procurement in general, followed by food procurement and local food procurement. It will then describe the study and discuss the findings. It will conclude by offering a values perspective on intervening in a system during a time of transition, which can provide a framework for understanding and operationalizing the public plate in the transnational city.

Procurement

Procurement is the action or process of obtaining equipment or supplies (OED, 2016). Public-sector procurement involves a competitive tendering process for goods and services that should adhere to the regulatory framework(s) of the public-sector jurisdiction, which prescribe the

parameters for fair, open, and transparent competition. McMurtry (2014, p. 537) adds to this understanding when he argues that although procurement is recognized as a key area of economic concern, it is "not often understood as reflecting *ethical* decisions." Olivier de Schutter (2014, p. 2), United Nations Rapporteur on the Right to Food, highlights these ethical decisions when he points out that including certain non-economic objectives in public procurement programs – what he refers to as "buying social justice" – is not new. Indeed, "governments have used their purchasing power to achieve important redistributive and developmental goals," such as promoting racial equality, gender equity, and the empowerment of Indigenous people (p. 2).

Over the last fifty years, however, the rise of neoliberal globalization has slowly squeezed ethical decisions into one set of values – economic values that rally around a mantra of continuous private-sector growth – through the penetration of the market into all aspects of human life, including procurement. At the same time, social and environmental values have been denounced as 'protectionist' and 'barriers to trade'. This marketization has been legitimized through the ideological rhetoric of trade agreements and enabled by lack of public awareness about the effects of these agreements and a climate of affinity with trade liberalization (McMurtry, 2014).

In spite of this conducive climate, resistance to neoliberal globalization has emerged in the form of a reconnection to the local. As increasingly powerful transnational corporations have targeted communities around the globe for the extraction of private profit, local agents have countered with 'buy local' campaigns, community economic development schemes, and social policy aimed at marginalized populations. In consequence, a general values struggle exists that pits local communities against the profit motive – a struggle that has become more focused with recent trade treaties, particularly the Comprehensive Economic and Trade Agreement (CETA) with the European Union, that "further restrict the democratic ability of communities to choose where and how they procure needed goods and services" (McMurtry, 2014, pp. 526-527). One of these needed goods is food.

Food procurement

Food procurement includes the purchase of food through a tendering process. Within the public realm, food procurement covers a range of public institutions. Public food procurement has been referred to as "the public plate," a term coined by Morgan and Sonnino (2013). Morgan (2014, p. 254) describes it as "shorthand, or a metaphor if you like, for public food provisioning whether delivered in the form of school food, hospital food, through care homes, kindergartens, prisons and so on." According to this author, these seemingly disparate settings share one important aspect – they all deal with vulnerable consumers such as pupils, patients, pensioners, and prisoners. He goes on to argue that reclaiming the public plate depends on two things in danger of being lost: reaffirming the right to good food and recovering our collective belief in the creativity of the public sector.

Morgan (2008, p. 1240) explains how the untapped potential of public food procurement in a country like the UK is due to a combination of lack of project management skills, a bureaucratic preference for policy design over project delivery, the restriction of the dissemination of good practice because of siloed government ministries, and lack of political confidence "to assert public sector priorities over private sector interests."

In spite of such barriers, food procurement carries enormous potential for the evolution of the food system. Morgan and Morley (2014) see food procurement as one of the most powerful instruments available to governments for creating social, economic, and environmental change, which they find paradoxical because policy makers have hitherto shown little or no interest in it. Recently, however, food procurement has moved to centre stage and begun to focus on the local, exhibiting the ethical decisions and values struggles associated with other forms of procurement.

Local food procurement

Local food procurement can use the tendering process to target the purchase of local food, however that term may be defined. For example, the Province of Ontario defines local food as "food produced or harvested in Ontario, including forest or freshwater food, and…..food and beverages made in Ontario if they include ingredients produced or harvested in Ontario" (Local Food Act, 2013). In addition to providing well-recognized environmental, social, and economic benefits, local food procurement addresses both supply and demand issues in the local economy:

> On the supply side, procurement offers market access for small-scale producers and cushions them from market shocks. On the demand side, the availability of local food not only increases consumer choice, but generates local economic activity as well (Wood, 2016, p. 32).

Like other forms of procurement, local food procurement reflects ethical decisions and thus exhibits a general values struggle. For example, local food procurement involves the formal acquisition of food defined as local (Sustain Ontario, 2015), which emphasizes difference. On the other hand, many trade agreements are based on similarities, expressed as according no less favourable treatment to imported products than that accorded to like products of national origin (see WTO, n.d.), keeping in mind that "pertinent instrument design features" could be implemented to allow governments to support local and sustainable food without triggering trade disputes (MacRae 2014, p. 103). To date, this issue has not been a large problem for Canadian communities even though many trade agreements applied to some extent at the provincial and even municipal levels. However, the lure of profits from provincial and municipal procurement has become more apparent in recent years and thus been more directly woven into trade agreements, in particular CETA. This trade agreement places restrictions on public procurement at the provincial, municipal, and MASH (municipalities, academic institutions, school boards and hospitals) sector levels (Wood, 2016). In particular, CETA prohibits these sectors from

"giving purchasing preference to goods or services from local companies or individuals if the contract exceeds 200,000 Special Drawing Rights (SDRs), which is about $315,500 in approximate 2012-13 Canadian dollars" (p. 33). Any contracts above this threshold could be vulnerable to trade disputes if they exhibit local preferences.

This penetration of the global market into local food procurement will have severe and long-lasting consequences for many communities across Canada. For example, the arrival of CETA restricts municipalities' right to use food procurement for sustainable development or job creation and risks reinforcing a paradigm based in competition where 'lowest cost' is mistaken for 'best value.' As a result, the economic benefits of procurement will not necessarily be retained within communities, but flow to transnational corporations, which can negatively impact community economic well-being rather than improve it (McMurtry, 2014). In essence,

> the Canadian state is bargaining sub-national procurement (which benefits communities, local governments, and the marginalized) to achieve European market access for corporations most aligned with those governments' political interests (resource extraction and services) (p. 535).

In other words, Canada is trading away the ability of Canadian communities to embed social policies in local food procurement and thus bolster themselves against the depredations of neoliberal globalization in exchange for the chance that some private Canadian corporations might be able to penetrate European markets (and thus potentially destroy the ability of communities in those markets to carry out their own forms of development).

The ethical differences between the aims of local food procurement and international trade agreements like CETA are reinforced at the national level by legislation that also reflects an ideological affinity with narrow neoliberal values. In Canada, the Agreement on Internal Trade (AIT) has a number of guiding principles that reflect these tensions: non-discrimination (i.e., establishing equal treatment for all Canadian persons, goods, services, and investments), right of entry and exit (i.e., prohibiting measures that restrict the movement of persons, goods, services or investments across provincial or territorial boundaries), no obstacles (i.e., ensuring provincial/territorial government policies and practices do not create obstacles to trade), and reconciliation (i.e., providing the basis for eliminating trade barriers caused by differences in standards and regulations across Canada) (Industry Canada, 2011). In terms of procurement, AIT establishes a framework "that will ensure equal access to procurement for all Canadian suppliers" (ibid.), which could restrict the opportunity to use local food procurement for local sustainable development.

Ethical differences are further reinforced at the provincial level. In Ontario, for example, the Discriminatory Business Practices Act (DBPA) prevents discrimination on a number of grounds, including geographical location. And the Broader Public Sector (BPS) Procurement Directive aims to "create a level playing field" and "achieve value for money" (Ministry of

Finance, 2011, 2), and helps to enforce the rules of the AIT. Both pieces of legislation are inimical to targeting local food procurement toward local sustainable development.

In seeming contrast, the Local Food Act (LFA) of Ontario proposes to foster successful and resilient local food economies and systems throughout Ontario, to increase awareness of local food in Ontario, including the diversity of local food, and to encourage the development of new markets for local food (Legislative Assembly of Ontario, 2013). A closer read, however, reveals that the Local Food Act does not counter the neoliberal imperative of market penetration, but assumes this penetration as a given and tries to make local players better competitors in the market. In addition, the LFA is aspirational, not binding, *unlike any of the other legislation pertaining to procurement*. In the words of the LFA, "The Minister of Agriculture and Food must establish local food goals or targets to aspire to in respect of the matters listed in the Bill" (Legislative Assembly of Ontario, 2013).

All of these pieces of legislation reflect the ethical decision to promote the narrow economic values of the global market over broader values involving community well-being. In practice, this pits recognized community need against private profit – a values struggle that plays out at the local level in day-to-day procurement activities. This struggle is reflected in the tensions we found in the study we conducted in late winter of 2016.

The study

This study was funded by a SSHRC Institutional Grant and involved sixty- to ninety-minute semi-structured interviews of nine key experts in the Toronto area who are involved in various areas of institutional food procurement (hospitals, municipalities, provincial government, law, food distribution, charity), plus document review and participant observation. The interviewees were chosen because of their experience with, and knowledge of, institutional procurement. Although not a comprehensive list of those working in the field of institutional procurement in the Toronto area, the participants provide an opening to explore some of the many complexities of food procurement.

The findings

Two major tensions and six minor tensions emerged from the data. Although presented separately, these tensions are interconnected and reflect some of the many complexities surrounding food procurement, global trade, and local legislation.

Major tensions

Two major tensions found in the study related to designed ambiguity and defining value. These major tensions highlight some of the many complexities of institutional food procurement.

1. Designed ambiguity

The major tension of designed ambiguity circles around three aspects: a murkiness with respect to legislation, a lack of specific targets, and an information deficit that flows from these first two aspects. To begin with, the Local Food Act is very murky, making it difficult for those involved in procurement to ascertain just what is allowed and what are the targets. This murkiness is intentional, given "OMAFRA's [Ontario Ministry of Agriculture, Food and Rural Affairs] long-standing focus on food exports, which downplays food for local populations" (Stahlbrand, 2019). In the face of growing consumer interest in local food and the increasing cachet of the local food movement, however, the government engaged in what can only be described as green washing – appearing to make an important shift while reinforcing the status quo. The fact that the Local Food Act is a non-binding piece of legislation means it lacks clear supports and does nothing to encourage an understanding of food systems or the importance of concepts like *terroir*.

In terms of targets, the Local Food Act stipulates that the Minister of Agriculture, Food and Rural Affairs will set aspirational targets in three areas: improving food literacy in respect of local food, encouraging increased use of local food by public-sector organizations, and increasing access to local food. In addition, an Explanatory Note to the Act states that the Minister may also set additional targets, but must engage in consultation before setting such targets (Local Food Act, 2013). These consultations have started but have not yet led to any targets being set. The first and the third targets have been proclaimed (OMAFRA, 2017), but not the second. As one of the participants [4] noted, the government is acting on the first target – food literacy – and beginning to act on the third target – increased access to local food (as seen by the increase in farmers' markets). But it is the operationalization of the second target – increased use of local food by public sector organizations – that the institutional food procurement field is waiting for.

Another participant [6] tentatively embraced the idea of targets, while having grave reservations. For this person, actual purchasing targets "would go a long way" to ensuring that small producers were doing the right things and still able to supply an institutional market (for example, developing tiered food safety that is more accessible for a small producer by accepting provincially inspected meat as an alternative to federally inspected meat). However, this participant also felt that pre-emptive targets would set up a system that is unattainable for the vast majority of producers.

> There will be many that can't get certified in time, and those people will be excluded right out of the gate. The capacity of those

> producers and processors would need to be built – from a volume and aggregation perspective but also from a food safety perspective – to bring them up to standard.

This participant added that there could even be a supply issue around targeting local procurement. For example, if such procurement dealt with 5 to 10 percent of the farms in Ontario, it would have to assess whether the supply could even be met (and have the appropriate food safety certifications) and that process could drive up the cost. He summed up by saying that there were a great many things to consider before the government tried to finalize the targets. One of these considerations was brought up by another participant [3], who saw targets as a challenge because availability or price point of local food could shift.

Another participant [5] contributed some ideas about hard versus aspirational targets. From his perspective:

> If the government set hard targets, the vast majority of institutions will do their best to hit the minimum requirement. But if you inspire them you could get them to do much more than what you could legislate. If I am told what to do I will do the minimum, but if I am challenged to do something, I will do much more. You will have more effect if you inspire than if you mandate. (5)

Yet another participant [2] seemed to concur, positing that "at the end of the day, I don't know if specific targets would work anyhow."

Deepening the tension around targets, one participant [9] argued that customers ask for local food, but they are not asking the hard questions: pushing institutions to do more, asking institutions how they can do more, how they can develop more, how they can raise their local percentage. In addition, he adds, everyone is waiting for the Ministry to put together specific targets. But they also expect it to do due diligence, so as time passes, the interest is fading away. In terms of local procurement, this person concluded that "institutions want to allocate their resources toward it, build their systems around it, but they want to know what to build for."

The targets that these institutions will aim for are currently vague and aspirational. One participant [2] advised that there is no appetite on the part of the government for a more regulatory approach. This means that the tensions around targets may not be resolved in the near future.

As a result of ambiguity in the legislation and a lack of clear targets, information about local food systems and local food procurement is in short supply, leading to an information deficit that is not being addressed. For example, supply chains are long, with many links between the public plate and the farmer. The end users of the public plate, and the purchasers who get the food to that plate, are disconnected from the system that produces the food. When it comes to local food procurement, one respondent [5] maintained that more information on how to procure local food would advance efforts in this area.

> This is directly in the food service manager's role. If the managers and chefs can't figure it out, it can't happen. So making it easier for them – making sure distributors can identify it, that there are recipes that makes it easier, all the work we're doing in the BPS Funding stream – that makes it easier. How can we make people more literate? How to source, cook, serve, and promote [local food]? How to promote it to consumers. This is important; that is, when the consumer is going to start to care and choose local, and to identify that. But the biggest frustration from consumers is they don't see the local option.

2. Defining Value

The second major tension found in the study centres on defining value. In its broadest sense, value is the worth of something (Lemos, 1995), and as such includes both individual and collective value. Under the influence of neoliberal globalization, however, the meaning has predictably narrowed to monetary value, as exemplified by Pass, Lowes, Davies, & Kronish's (1991, p. 541) definition of value as "the exchange or economic worth of an asset or product." This tension in values is evident in the field of procurement, where value is equated with the lowest price. In the words of one respondent [2], "price trumps everything," including the value of buying local, supporting community development and targeting marginalized populations. He explained that in the narrow terms of value for money, "It is hard to make the case that a California carrot that is half the price of an Ontario carrot is of less value." However, using a broader definition, "you are talking about putting money back in the local economy, and about the multiplier effect. And if the public sector were calculating that, that would make a difference." Using a broader definition of value allows us to ask, what impact does "the $2 carrot from Ontario have on the local economy that the $1 California carrot does not have?"

In the same vein, another respondent [6] referred to Jaco Lokker, Director of Food Services and Executive Chef, University of Toronto, when he wondered:

> Jaco Lokker kicked Aramark [a global food service provider] out of UofT. They are going to do it all in-house. I would be interested to hear from the client-side … and understanding their tension with their food service operator because it looks like Jaco got frustrated and cut them out. But I want to know what is driving them – is it student driven? What are the values behind it – how do they feel that tension between the caterer and their values?

In contrast, from another respondent's perspective [4], there is no tension between value for money and broader values. Looking at the BPS Directive, he argued that

> …it is really not incompatible at all. We can be protectionist on some files. We can argue that buying local has a slew of benefits that serve the tax payer – so when I look at the broad principles of

> BPS I see it aligned with the principles of the LFA. Things are murky, but all this legislation usually leaves space for the Minister to do what they need to do. I don't think they are out of line or conflicting.

Focusing on the BPS Directive, he added that: "So long as ministers take a more holistic view of what value for money means, then local food totally makes sense here." Then switching to the Local Food Act, he concluded that:

> The LFA is a conceptual piece to force us to explore what food should look like in institutions and municipalities… it would direct the Minister to ask in the back of their mind, 'is there a local food solution here?' And to work on the outcomes that the government is looking at.

These two major tensions are crosscut by a number of minor tensions.

Minor tensions

A number of minor tensions also emerged from the data: disempowerment, risk aversion, champion flight, the commodification of food, supply and demand barriers, and siloed thinking. These minor tensions reinforce some of the many complexities of institutional procurement.

1. *Disempowerment*

In the field of institutional food procurement, participants are disempowered to think creatively within the context of designed ambiguity. Sensemaking is difficult in the absence of clear regulations of what is permissible, which leads to a complacency concerning the status quo. In effect, participants are disempowered or stand back from creative thinking – or simply thinking outside the box – which is essential for navigating tensions. In terms of food procurement, creative thinking can entail initiatives like unbundling contracts, growing to order contracts or changing the makeup of a contract, such as crafting a contract around what local food producers can supply (keeping in mind that much creativity in tendering language is required to get around trade deals and that procurement officers need to know how local supply chains actually work and whether their interventions can improve how things function). And though there are some examples of this elsewhere in Canada, none of our participants discussed using these strategies, although some expressed a desire to have clear guidance on whether or not they could think creatively. In the words of one participant [7], "In order to truly encourage community benefit, sustainability, and economic benefit, policy needs to change to allow for this type of procurement."

This same participant identified her disappointment with the Local Food Act:

> Our understanding of the Act and how it would roll out is that it would require benchmarks and target setting and we haven't seen it yet. I thought targets were going to come out of this – or at least benchmarks. It has no teeth… I would like to see some metrics around measuring for community benefit and sustainability in food procurement. Then people will feel confident that they have the tools necessary to include this in their RFP [request for proposal] evaluations. As far as the conflict between the regulations, we have none because we have no requirements – there is nothing to answer to, sadly.

2. Risk aversion

Procurement managers tend to be risk averse. In the context of tight budgets and an imposing oversight from various regulatory frameworks and senior departments, there is little appetite for risk. This is particularly true in public institutions where employees are governed by the BPS Directive. As one respondent [5] explained:

> Most people are risk averse - they are worried they are going to do the wrong thing, especially in an environment where there are so many things to think about - especially in healthcare where there are few resources.

Another respondent [2] outlined the risk of favouring local food when choosing a food service provider. When big companies like Sysco start losing contracts, they have the means to fight back. If they go through the procurement process and they don't win, they can request a formal interview (known as a debrief) to understand why they were not successful. The company could then refer back to the contract, which falls under the BPS Directive, and point out that the public institution cannot prefer local.

Yet another respondent [7] explained:

> There is a strong desire on the part of institutions to explore regional alternatives in their food procurement. Often, the result is that the buyer finds themselves in a position where upon evaluation, awarding to the local player would put them at risk of non-compliance with the BPS Procurement Directive. There may be a slight increment in cost or a benefit that wasn't identified at the time of the Request for Proposal which now cannot influence the evaluation to tip the scale.

The same respondent [7] summed up her position with regard to risk: "our role is to facilitate a fully compliant, open, competitive procurement process for the purchase of food products." In

essence, she did not want to exploit loopholes in the legislation (i.e., take a risk), but "would like to see the ability to award evaluation points to local offerings."

3. *Champion flight*

Champions can make the difference between success and failure of a new initiative that challenges the existing practices or culture of an institution. A champion can be instrumental in helping others to leave old ways behind and to think innovatively. That said, when the champion moves on, the initiative can flounder. One respondent [6] described how he used to supply some local food to Ryerson University. But when the champion left Ryerson, "the will dropped off."

Champions are difficult to seed and to sustain in the context of the protracted murkiness in legislation. They are systematically eliminated by the inertia of the status quo – unless they are successful in shifting the institutional culture and building institution-level ownership across the institutional hierarchy for more progressive procurement policies that have a more expansive understanding of value. In the absence of deep ownership, 'champion flight' undermines the institutional change that might be possible.

4. *Commodification of food*

Although food is closely associated with such human interests as healing, culture, heritage, commensality, community building, and identity, it is just seen as a commodity by the global corporate food system. This perspective was evident in many of the interviews, but also challenged by some respondents. One respondent [7] explained this tension:

> It is difficult to honour your personal food buying beliefs in your professional space because the legislation doesn't necessarily support the responsibility to be mindful of the food system when making purchasing decisions with tax dollars. It should. … In a perfect world, the [BPS] Directive would not apply to food. It is not like purchasing equipment, band aids or legal advice. It is a different beast and a cookie cutter approach to regulation is awkward.

5. *Supply and demand barriers*

Some of the tensions are generated by barriers on both the supply and demand side of local food. On the supply side, barriers could include adequate volume, food safety accreditation, and the capacity to bid on contracts. For example, one respondent [5] argued that there were things the government could do to help small and medium-sized enterprises [SMEs] overcome supply barriers and gain access to the tendering process.

> If we could find a way to make it easier for SMEs to gain access to those processes, that would be something and I think the Directive does limit this. For example, saying that they have to apply for the full contract, not just a portion of it. Or if a contract was for a health centre and you had to supply all the products – that would be difficult if you only sell tomatoes.

Small and medium-sized enterprises can also find themselves being squeezed out in a global economic climate that favours consolidation and mergers. As mentioned above, government could help SMEs gain access to the tendering process. That respondent [5] went on to ask,

> What could you do to make it easier for SMEs to gain access to these contracts? And to help them scale up more quickly? That would create jobs, invest back in the local economy, and that is where you would see more change happening.

On the demand side, another respondent [7] felt that the future expectation that her organization benchmark and track their product of origin spending while having their hands tied regarding regional preference through the BPS Directive was going to create a barrier to success. Yet another respondent [6] pointed out that his organization did not provide ready-to-eat food, which is what health care cooking infrastructure is set up for, so he was locked out of that market. In other words, hospitals' food reheating systems were incompatible with increasing their demand for fresh, unprocessed food.

6. Siloed thinking

Like many people, those who work in the area of food procurement can become mired down in siloed thinking – understood as thinking strictly within the box when it comes to the day-to-day practice of food procurement. For example, regardless of the seeming contradictions between many pieces of legislation and the Local Food Act, some respondents did not change, or even reflect on, their longstanding procurement habits. When asked about such tensions, one respondent [1] briefly answered that "we haven't bumped into this," while another [8] offered that he hadn't run into that problem. Yet another respondent [6] described how a major hospital was trying to revamp its retail operations around local food, but when the purchaser got involved, everything ground to a halt: "they had their existing relationships and their way of doing things, and they didn't want to re-orient their job description around getting more local food into the cafeteria." He also reported that the chef at another hospital "just couldn't get organized to use us – he couldn't get used to our system, and cost was not even an issue." A final respondent [9] referred to the buying habits of those involved in institutional procurement. For example, he explained that

> people were used to buying the same chicken breast all the time … we could show them something else for the same cost; for example Maple Leaf grows something locally at the same price point … But you still get those large GPOs still bidding on the cheaper/best value ones.

Such siloed thinking creates an elemental tension between doing business as usual and steering the food system toward more local procurement.

One participant [7] also remarked that the same pattern of siloed thinking was visible in government:

> I would argue that the reason that these things happen [the confusion between these regulations] is because the different parts of government work in silos. Does another branch of government [Ministry of Government and Consumer Services] know how much OMAFRA is putting into local economic development? Lack of communication is the real problem. I've been trying to fire up OMAFRA to address the BPS Directive. They [OMAFRA] say, 'oh there are ways to get around it,' and there really isn't.

This combination of major and minor tensions alerts us to some of the many complexities of food procurement. What do these findings mean for developing local food systems and addressing community needs?

Discussion

These findings provide a window into some of the multiple complexities of food procurement. In many ways, the tensions we found are confusing and contradictory, like the terrain from which they emerge. Food procurement is a convoluted amalgamation of reduced funding, best practices, old habits, binding legislation, and aspirational targets. Within this context, fulfilling the potential of institutions to act as anchors of local food systems is made more challenging. And yet, a decision must be made to enable institutions to work toward this vision; failure to do so preserves a status quo that benefits global corporate food interests and undermines communities. In pursuit of this vision, we argue that the tensions revealed in this study reflect a general values struggle and result from being in a time of transition, not only for food procurement but also for food systems in general. In the view of Lang and Heasman (2015), we are in the middle of a paradigm transition as the Productionist Paradigm that governed food production throughout the 20th century collapses under the weight of its own contradictions. The outcome as yet is unclear, but they posit a paradigm shift to one of two emerging paradigms. The first is the Life Sciences Integrated Paradigm, which reduces biology to genetics and mines the life sciences. It "seeks control and improvement of nature," and at its core has "a mechanistic and fairly medicalized interpretation of human and environmental health" (p. 31). With this

paradigm, they argue, the long-term implications for both agricultural environments and the structure and power relationships in the food chain are not known. The second emerging paradigm is the Ecologically Integrated Paradigm, which "emphasizes working with and for eco-systems" (p. 31). It takes an integrative and less industrial approach to nature, recognizing "mutual dependencies, symbiotic relationships and the complexity of interactions" (p. 35). Examples include agroecology, agroforestry, permaculture, organic food systems and "some low impact, resource-conserving short food supply chains" (p. 35). Key factors associated with this paradigm include a high level of social inclusiveness, engaging with small-scale producers, and an overall commitment to low-impact living and food systems, backed by a view of sustainability that encompasses social, environmental, and economic criteria.

This time of transition between paradigms is marked on the one side by a growing public preference for greater transparency and reconnection to food, increased worry about climate destabilization, and unease about the exponentially growing gap between rich and poor, and on the other side by the ongoing consolidation of global corporations, a plethora of trade agreements that reinforce their power, and a concerted attempt on the part of global elites to frame the solutions to the chronic economic, social, and environmental crises in their own interests. One ironic example of the many contradictions of this transition involves global food corporations competing with each other to sell local food.

The tensions we uncovered through the interviews are a symptom of this transition. In the words of one respondent [2], we see "public perception leveraged against companies that don't buy local." At the same time an unending parade of trade agreements restrict buying local and proscribe protectionism. Lang and Hines (1993) disrupt this neoliberal interpretation when they maintain that interesting questions arise when we inquire into the meaning of protection, including: "Protection of what? For whom? For what ends? To whose benefit?" (p. 4). To answer these questions, they distinguish between old protectionism, used by big and powerful interests to pursue their own goals, and what they refer to as New Protectionism, which "seeks to protect *public* interests, like health or the environment or safety standards or reduction of poverty, against the interests of unrestrained trade" (p. 7).

Protecting the local, however, does not automatically result in protecting public interests or anything else. As Born and Purcell (2006) remind us, there is nothing inherent in any scale: global is not necessarily bad and local is not necessarily good.

> Scale is a means that may help achieve any of many different goals. Which goal is achieved will depend not on the scale itself but on the agenda of those who are empowered by the scalar strategy. Localizing food systems, therefore, does not lead inherently to greater sustainability or to any other goal. It leads wherever those it empowers want it to lead (p. 196).

If the agenda of those empowered at the local scale involves protecting public interests, then protecting the local can provide an opportunity for steering the current transition toward the

Ecologically Integrated Paradigm, keeping in mind Meadows' (2008) advice that one of the most effective places to intervene in a system is at the paradigm level. For Meadows, "The shared idea in the minds of society, the great big unstated assumptions, constitute that society's paradigm, or deepest set of beliefs about how the world works" (pp. 162-163). She goes on to provide examples of these paradigmatic beliefs, such as growth is good, nature's resources were created for human use or people can 'own' land.

In the next section, we briefly outline an intervention at the paradigm level for protecting the local in a time of transition – an intervention based on reframing conceptions of value. This intervention aims for a more ecologically integrated paradigm than the one we are leaving behind.

Intervening in a system at the paradigm level: Reframing value

The tensions associated with public-sector purchasing can reinforce a culture of cheap food that mistakes best value for lowest cost. This reductionist understanding of value in fact misses the positive externalities of food sourced from and with a system that is resilient and local. Reframing value to a more expansive understanding that extends beyond monetary value to a whole systems understanding of value could be transformational – enhancing value to the institution, its eaters/users, and the food system.

In Ontario, the BPS Procurement Directive sets out that "Contracting and purchasing activities must be fair, transparent, and conducted with a view to obtaining the best value for public money," (BPS, 2011, p. 6). The request for proposal (RFP) is the mechanism that codifies the values of buyers. A more expansive conception of best value beyond lowest cost is possible, but only if there is a way to account for value outside the existing paradigm. The dominant paradigm in institutional purchasing is one that sees value for money in the present, "discounts the future and discounts the impacts of procurement beyond the balance sheet" (Lapalme, 2015, p. 11). A more expansive conception of value that includes social and environmental wellbeing – or a whole systems understanding of value – would empower institutional procurement to leverage its RFP to better deliver greater social and environmental good through its purchasing and menu-setting decisions. Through strategic procurement that leverages the RFP, those who carry out institutional procurement could be curators in a "value constellation" (Normann & Ramirez, 1993) that seeks to optimize the value generated for the whole system. With this objective in mind, value is conceived in such a way that the pattern of extraction across a supply chain consciously transforms into a constellation of stakeholders whose activities increase the total value generated by their interactions. The mechanisms of the system, for example the RFP, are consciously used to affect the roles and relationships within the food system, to better align structural incentives with desired outcomes. For example, institutions can engage in a process of revising their RFP evaluation criteria to catalyze collaborations in the local supply chain that increase community wealth and achieve the desired outcomes of procurement.

Such an enhanced conception of value is encompassed by the work of philosopher John McMurtry (1998; 2002), who posits the life code of value, which reproduces or increases life by providing life goods, or means of life, such as clean air, food, water, and shelter. In the life code of value, life is the regulating objective of thought and action, and a higher quality of life is always better by definition, regardless of the money that can be made. In contrast, he argues, the money code of value increases money through such means as the sale of commodities or speculation in the stock market. In essence, it is the transformation of money into more money. In the money code of value, money is the regulating objective of thought and action, and a larger quantity of money is always better by definition, whatever happens to life. According to McMurtry (2002), we find ourselves in the midst of "value wars" – struggles between the two codes of value.

McMurtry's value theory can be mapped onto Lang and Heasman's (2015) theory of paradigm transition. Their Ecologically Integrated Paradigm expresses many life values, while their Life Sciences Integrated Paradigm (a term the reconstructed sector linking food with pharmaceuticals calls itself, which could more aptly be called the Money Sciences Paradigm (Sumner, 2017)) exudes money values. Public health attorney Michelle Simon (2006, p. 318) illustrates the general values struggle in a time of transition when she asks:

> Like water (and unlike most other commodities such as toys or electronics), food is indispensable and a basic human right. Why have we turned its production over to private interests? Shouldn't at least some aspects of society remain off-limits to corporate control?

In the best of all possible worlds, public institutions would operate within the life code of value. However, neoliberal pressures, expressed in trade agreements at the provincial, national, and international level, erode this code of value and insert the money code of value into public policy and decision making. In the area of food procurement, nowhere is this general values struggle more evident than in the phrase, 'value for money.'

Over 15 years ago, value for money was being touted in a sustainable value-adding model for procurement (Gershon, 2001 in Morgan, 2008, p. 1240):

> Our attention is firmly focused on value for money – not simply the lowest price. This means looking at quality and whole life costs, including disposal and packaging, which are areas where environmentally friendly products tend to score well.

In spite of this recognition that value for money should not be confused with low cost, Morgan (2008, p. 1241) observed that "the pressure to realize 'efficiency savings' often means that, in practice, these can easily become one and the same thing." This observation has been confirmed by Olivier de Schutter (2014, p. 5), United Nations Special Rapporteur on the Right to Food, who points out that since the 1980s, a number of countries have developed "cost-based contracting cultures that systematically favour 'low cost' options by stressing value for money in

a limited sense." He adds that this tendency has empowered traders, intermediaries, and large-scale corporate agri-food companies to lower the prices they pay to farmers. This tendency also plays out in public institutions, where "The measures of success in institutions where value is framed in terms of immediate return to the institution provide few incentives to conceive of value more broadly" (Lapalme, 2015, p. 11).

And yet, if we are looking to intervene in the system at the paradigm level, we need to broaden our conception of value. In the words of Fisher (2013), "the power of purchase must capture a paradigmatic shift from 'doing things better' to 'doing better things'." Doing better things includes replacing the narrow money values that reduce value to the bottom line with life values that open up the possibilities for protecting the local and supporting communities. Morgan and Morley (2014) provide an outline for such an intervention when they change the conversation by discussing "values for money."

In their chapter on harnessing the purchasing power of the public plate, Morgan and Morley (2014) observe that for many years "low cost was allowed to masquerade as 'best value'" (p. 95). In contrast, they emphasize that if the public sector is going to become a credible change agent and champion a more sustainable food system, then it must explicitly adopt a more expansive understanding of value, and measure it as such – embedding and measuring this new understanding in its menus, RFPs, engagements with supply chain actors, and key performance indicators. This paradigm shift on value reframes the service provided by the public institution – and adopts a more expansive understanding of the value that can be claimed or created by the public plate.

We propose that Morgan and Morley's (2014) concept of values for money represents the life code of value – values that reproduce or increase life (such as public health, social justice, and ecological integrity) and protect communities. Intervening in the food system with such a paradigmatic concept would help us to move through this time of transition toward a new paradigm, one that more closely corresponds to Lang and Heasman's (2015) Ecologically Integrated Paradigm rather than the Life Sciences Integrated Paradigm. The anchor institution movement (see, for example, Dubb & Howard, 2012; Birch, Perry, & Taylor, 2013) is one example of where we see this happening, and there are many other efforts across multiple jurisdictions, such as the work of MEALexchange to reclaim the student plate and the J.W. McConnell Family Foundation and its Nourish program to reclaim the health-care plate.

Conclusion

This study has revealed that food procurement is a complex process exhibiting tensions that reflect the confusion and uncertainty endemic in a time of transition. The tensions that characterize this transition are, in turn, a symptom of the general values struggle being waged in the food system. Intervening in the system at the paradigm level by reframing the concept of value toward a more expansive, whole system understanding of values for money would disrupt

the money values of neoliberalism and infuse life values into the procurement process, thus opening the door to serving up a more transformative public plate in the transnational city. To empower the shift of public sector procurement toward local food systems – a crucial step on the road to sustainability – the ambiguity around 'best value' must be resolved, with a more expansive definition supported by measures and evaluation criteria that are supported at the institutional level or broadly mandated at the policy level.

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Original Research Article

Self-operated vs. corporate contract: A study of food procurement at two universities in Manitoba

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Abstract

Public institutions are increasingly being pressured to demonstrate how they are meeting their responsibilities and obligations to sustainability. Yet there is little academic research on food procurement at universities in Canada. This article examines the factors that enable and constrain on-campus food system transformation at two academic institutions in Manitoba: the University of Winnipeg (UW) and the University of Manitoba (UM). This comparative case study presents findings from twelve qualitative interviews with key individuals, a student focus group, and a literature review. Following Brown, Kraftl, Pickerill, & Upton's (2012) call for transformational change, we argue that the experiences at each university demonstrate that a food system transformation can best occur by moving away from corporate food service contracts. The ability to do so depends on a number of other factors including, but not limited to, political will of the administration, student activism, and support from non-university sectors.

Keywords: university food procurement; student activism; food system transformation

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Introduction

With the exception of the multitude of students who grumble about it and have voiced their discontent, and generally held conceptions of inadequate university student diets, little is known in academia about food on Canadian campuses. Several studies have highlighted concerns over food insecurity among Canadian student populations (Entz, Slater, & Desmarais, 2017; Farahbakhsh et al., 2015; Frank, Engler-Stringer, Power, & Pulsifer, 2015; Silverthorn, 2016). There has also been research on the ongoing corporatization of the food that is provided on campuses (Martin & Andrée, 2012), and the emerging counter-movements and shifts to more local and sustainable food systems at academic institutions (Attfield, 2014; Friedmann, 2007; McBride, 2011; Park & Reynolds, 2012; Peters, 2015; Roberts, Archibald, & Colson, 2014).

Hinrichs (2014) argues that shifting the concept of food system *change* to food system *transitions*, allows us to "think more broadly and engage more boldly" and be reflexive to factors that enable and constrain within the evolving context of building food sustainability movements (p.144). This more process-orientated approach to transitions encourages innovation and inclusivity, while its plurality recognizes the need for diversity and locality in food system movements. Going one step further, Brown, Kraftl, Pickerill, and Upton (2012) distinguish transitions from *transformation*, contending that, increasingly, discourses of transitions are often used to reform, not transform "assumed neoliberal futures" in rather incremental stages (p. 1607). *Transformation*, on the other hand, is used to describe a profound, all-encompassing shift in economic, political and social structures.

This article examines the factors that enable and constrain food system transformation through shifts in food procurement practices at two academic institutions in Manitoba: the University of Winnipeg (UW) and the University of Manitoba (UM). Following Brown et al.'s (2012) call for transformational change, we argue that the experiences at each university demonstrate that a food system transformation can best occur by moving away from corporate food service contracts. The ability to do so depends on a number of other factors including, but not limited to, political will of the administration, student activism, and support from non-university sectors.

We are particularly interested in the factors that influenced shifts at the UW and UM, and in determining whether or not, or the extent to which, they contributed to food system transformation. Since changes at both universities did not happen in a vacuum, we begin by setting the context. To do so, we present a literature review of how various Canadian universities have addressed food provisioning, and then briefly present some recent developments in the small-scale farmers and marketers sector in Manitoba. Next, we describe our research methods followed by a presentation and discussion of the two empirical case studies. In this discussion we use Holt-Giménez and Shattuck's (2011) framework of reformist, progressive, and transformative change to examine current developments and future potential for food system transformation at the two Manitoba universities.

Before continuing, a brief clarification of terms is in order. For the purpose of this research, local is defined as produced within Manitoba. Defining sustainable, however, is much more challenging and is not restricted to third party certifications. When using the term sustainable, we are referring to criteria developed by Local Food Plus as well as the values and practices reflected in the Small Scale Food Manitoba working group report that together consider various environmental and social criteria regarding production systems, animal welfare, labor standards, biodiversity, energy, and community.[1] We use the term food system transformation when referring to change that, among other things, marginalizes corporate food providers in favour of in-house or self-operated foodservices; food system change and transitions are used interchangeably when the pace and extent of change is incremental and does not directly challenge the corporate food regime.

Setting the context: Food system transitions and transformation on Canadian campuses

In Canada, campus foodservices are characterized by transnational corporation models, defined by efficiency of scale (involving the dependence on large, corporately-controlled supply chains), low labor costs, elaborate marketing and branding tactics, and capital investments in exchange for long-term, exclusive contracts with institutional clients (Martin & Andrée, 2012). On Canadian campuses, food services are typically managed by the institution itself (self-operated) or by an outsourced company through a contractual agreement (contracted). While both arrangements often exist simultaneously on many medium and larger-sized campuses, approximately 70 percent of foodservices operations are contracted out at Canadian universities, compared to 30 percent in the US (Szabo, Koç, & Yeudall, 2013). Further, these contracts are highly concentrated among three companies: Compass Group PLC,[2] Aramark, and Sodexo (Martin & Andrée, 2012; Roberts et al., 2014). These "Big Three" are the highest grossing foodservice management companies in the world (Food Management, 2015) and are the primary expression of the globalized, corporate, industrial, and neoliberal food system on campuses today.

However, similar to what is occurring in broader society, there has been a burst of transformative action on campuses across the country that is resisting the conventional corporate-led food system and demonstrates a compelling need for more safe, healthy, just, and sustainable food systems (Attfield, 2014; McBride, 2011; Park & Reynolds 2012; Peters, 2015; Roberts et

[1] For a short description of LFP see http://www.yongestreetmedia.ca/features/localfoodplus02152012.aspx The work of LFP was taken over by the Land Food People Foundation in 2014 (Mann, 2014). Also see Stahlbrand, this volume. For information about the Small Scale Food Manitoba working group report see http://www.gov.mb.ca/agriculture/food-and-ag-processing/pubs/small-scale-food-report.pdf

[2] Chartwells is the higher education division of Compass Group PLC (and perhaps the more widely recognized name).

al., 2014). This action is pushing campus administrators to introduce changes in foodservices, whether this means switching from one corporate contractor to another, or moving away from contracts entirely to self-operated foodservices. While there is a growing body of criticism of the corporate foodservice model in terms of its ability to respond to demands for alternative food systems, "The Big Three", along with many smaller corporate foodservice companies, are paying more attention to, and in some cases participating in, campus food change—a test of their relevance and survival in what seems to be the beginnings of a shift in campus food systems.

Food system transitions and transformation on Canadian campuses

The literature on food procurement at Canadian universities has highlighted two cases in particular—the University of British Columbia (UBC) and University of Toronto (U of T)—for leading the way in food system transformation. The UBC Vancouver Campus has been engaging in institutional changes regarding food provisioning for over 15 years. Today, UBC Food Services consists of more than 30 outlets and is entirely self-operated (UBC Food Services, n.d.), and allocates 45 percent of food and beverage expenditures to sources within 150 miles of the campus, including the campus farm (Park & Reynolds, 2012). There is little doubt that the campus's well-established and unique applied research hub played an important role in reshaping food provisioning at UBC. Since 2002, the Faculty of Land and Food Systems, the Sustainability Office[3], and several other partners and collaborators have led the Campus Food Systems Project (UBCFSP), a network of "community-based action research" aimed at generating findings to guide sustainable food development on campus. According to Victoria Wakefield, purchasing manager for UBC Food Services, even though leadership may have originated with a few administrators, sustainability-related values are now reflected in decision-making in all departments, which means that "UBC's sustainability strategy is a living thing; it is embedded in UBC culture…As such, it is difficult to pinpoint a key stakeholder or event that continues to drive UBC's push towards sustainable food" (Park & Reynolds, 2012, p. 15).

The U of T's St. George Campus is an example of where changes to provisioning have been significantly driven by the involvement of a civil society organization with local, sustainable expertise. In 2006, a partnership between Local Food Plus (LFP) and U of T was formed; this was prompted by both an upcoming foodservice contract expiry and a conversation between a college administrator and an instructor (who was simultaneously developing LFP) about opportunities to improve the college's commitment to social justice and equity (Friedmann, 2007). LFP helped establish the language of the foodservice Request for Proposal that would mandate the winning provider (Aramark) to purchase a minimum percentage of local, sustainable food, certified as such by LFP (Friedmann, 2007). The contract incorporated a clause

[3] UBC's Sustainability Office (est. 1998) was the first campus sustainability office in Canada. UBC's sustainable development policy (est. 1997) was also the first of its kind among Canadian campuses (Rojas, Richer, & Wagner, 2007).

to procure 10 percent LFP-certified food with an increase of 5 percent each year (Szabo et al., 2013). LFP then worked with Aramark to operationalize those contract terms, along with several self-operated campus foodservice units who voluntarily agreed to participate (Stahlbrand, this volume). The U of T-LFP partnership yielded the largest contract for local and sustainable food in North America at the time and made U of T the first university in Canada to engage in such a contract (Stahlbrand, this volume). In August 2016, upon the expiry of Aramark's decade-long contract at U of T, the university reclaimed its foodservices by launching a self-operated model centered on affordability, sustainability, and nutrition (U of T Food and Beverage Services, n.d.). In some ways, the LFP-U of T partnership "paved the way" for this change in part by providing the administration with the confidence to make such a leap (Stahlbrand, this volume).[4]

Although the specific ways in which food system change occurred at UBC, U of T, and other Canadian campuses certainly differs, the literature reveals that in many cases, change is triggered and/or effected by any one or a combination of the six key strategies discussed below. We also provide specific cases (see boxes below), while noting that shifts to more local and sustainable food provisioning appear to be most often the result of collective action within and beyond the campus community, namely of students, faculty, administration, and non-university sectors.

Stipulating local, sustainable purchasing targets in foodservice contracts

As the box below indicates (Table 1), setting concrete measurable requirements for campus food providers was seen as an important step to altering practices in purchasing.

Table 1: Requirements for campus food providers

Ryerson University	A 3-5 year contract with Chartwells in 2013 stipulated 25 percent of food to be local, sustainable, increasing 2 percent each year (Chiandet & Dandar, 2014)
Concordia University	A 5-year contract with Aramark in 2015 stipulated 75 percent of produce to be seasonal and local in the summer, 50 percent in the fall and 25 percent in the winter and spring (Wrobel, 2015)
Mount Allison University	The university's 2006 contract with Aramark stipulated 33 percent of food to be local, increasing to 50 percent by the end of the contract (Park & Reynolds, 2012)[5]

[4] In 2009, LFP received funding to expand into other provinces, including Manitoba, where it partnered with Food Matters Manitoba (FMM) to develop the Local Sustainable Food Pilot Project, now known as Manitoba on the Menu. LFP's involvement, for reasons that we could not determine, ceased partway through the project (Food Matters Manitoba, 2016b; Government of Manitoba, 2014). LFP also worked with McGill University, the University of Guelph, and hundreds of producers, processors, distributors and retailers across the country (Land Food People Foundation, 2016).

[5] We were unable to obtain information about the length of the contract at Mount Allison. Trent's contracts with Aramark and then Chartwells in 2014, and Waterloo's contract with Chartwells (n.d.) also included commitments to local food purchasing (Meal Exchange, 2015).

Revising food safety policies to account for the unique realities of small, local, and sustainable farmers

Since food safety policies used by corporate foodservice companies are often designed for large-scale industrial supply chains, they tend to be inappropriate for, and restrictive to, purchasing from local sources (Atkinson et al., 2013; Knight & Chopra, 2011). However, these stringent policies—for example, the requirement of suppliers to have liability insurance as well as recall procedures (Knight & Chopra, 2011)—are slowly being adapted to allow the inclusion of more local and sustainable suppliers, including campus farms (see Table 2).

Table 2: Campus foodservice procurement of campus-grown produce

Waterloo, Trent, Ryerson (All Chartwells-serviced campuses)	All have amended their food safety policies to allow the procurement of campus-grown produce.
McGill	Food is serviced by both self-operated venues and Aramark (Szabo et al., 2013), and the campus farm sells 30,000 kilos of produce to self-operated foodservices each year (Peters, 2015). However, the farm struggles to connect with Aramark due to the company's policy requirement that the farm have a formal food safety certification (Wylie-Toal, 2014)
Mount Allison	Here, Aramark sources from the campus garden (McBride, 2011; Park & Reynolds, 2012), suggesting that these corporate policy adaptations *are* occurring, albeit unevenly.

Involving experts and leaders of local, sustainable food systems

As Table 3 indicates, harnessing the expertise and leadership of those involved in local, sustainable food systems appears to be critical in transitioning towards alternatives.[6]

Table 3: Position of campus foodservice experts and leaders

UBC	Hospitality and purchasing manager (Park & Reynolds, 2012)
Queen's University	Chef (Szabo et al., 2013)
Ryerson University	Executive Chef (Roberts et al., 2014)
University of Guelph	Purchasing Coordinator (Pitman, 2012)
McMaster University	Director of hospitality services (Meal Exchange, 2015)
Mount Allison University	Director of administration services (Park & Reynolds, 2012)

[6] The University of Winnipeg and the key individuals behind their transition were also mentioned in the literature for their leadership and influence (Donatelli & List, 2011; Park & Reynolds, 2012; Szabo et al., 2013). Bryan's (2007) study of the food services at Queen's University also emphasizes the importance of an individual who garners the support of both higher administration and other stakeholders.

Establishing strong applied research and curriculum

As Table 4 indicates, another key way that campus communities are actively changing their food systems is through applied research and curriculum (Park & Reynolds, 2012; Szabo et al., 2013).

Table 4: Contributions of applied research and curriculum to campus food systems

McGill University	Student research findings led the campus food provider to ask its distributor for Marine Stewardship Council Certified fish, which then became available to all of the distributor's clients in Montreal (Roberts et al., 2014)
Dalhousie University	Students have created seasonal menus and local food marketing plans that have been used by the campus foodservice providers Aramark and Sodexo (Knight & Chopra, 2011)
Trent University, Memorial University, UBC	These universities have established full-fledged community research hubs that coordinate and conduct studies on food systems: Trent's Community Research Centre (Meal Exchange, 2015), Memorial's Food Action Research Centre (Roberts et al., 2014), and UBC's the Food Systems Project (Rojas, Richer, & Wagner, 2007).

Harnessing the collective action of students

Students make up the largest population on campus and have recently been catalyzing change in their campus food systems (Cilliak & Schreiner, 2008; Meal Exchange, 2015; Park & Reynolds, 2012; Peters, 2015). Meal Exchange, a Toronto-based non-profit organization, has played an important role in student food activism by fostering, supporting, and connecting student food leaders on Canadian campuses since 1993. Among the various campaigns organized by Meal Exchange, most recently the Real Food Challenge supports students in establishing accountability in foodservices to shift more of their budgets towards local, sustainable, 'real' food (Meal Exchange, n.d.). To date, Meal Exchange has worked with students on 40 campuses across Canada (Roberts, Archibald, & Colson, 2014).

While no academic study has yet examined the impact of Meal Exchange, its activities on campuses no doubt have helped raise awareness among students about the significance of food. Bryan (2007) argues that students can be critical drivers of change. Using the University of Guelph as an example, he explains that as students gained a "deeper sense of ownership" and appreciation for foodservices after more meaningful involvement in foodservice decision-making, this then was expressed by more progressive, collaborative foodservice policies (p. 82).

Promoting student-led food production (i.e., campus farms or gardens)

Campus agriculture projects can bring about a multitude of benefits, including education around sustainability, capacity for critical thinking, and community building that can in turn influence the pedagogical approach of the institution (LaCharite, 2015) while supplying local, healthy, and

sustainable food to campus community members. According to Meal Exchange (2016)—which coordinates a Campus Garden Network that provides space for students across Canada to connect and share resources, and hosts regular conference calls—over half of all campuses in Canada now have gardens or farms. Short (2012) argues that community gardens at universities can often function as 'living laboratories', and thus be important agents in transitioning campus and urban environments to alternative food systems.

Persistent barriers to food system transitions and transformation

While there is evidence of a shift on some Canadian campuses, in many cases the change is very slow and minimal. Campus food system transitions and transformation appear to be constrained by a number of factors. Given space limitations, we will only address three that are highlighted in the literature: high costs, limited access to the local sector, and a dominant corporate structure.

The price difference of local and sustainable food compared to conventional depends on the region, but it is most often associated with a premium cost. Several studies, including at Manitoba's UM (Entz et. al., 2017), and media reports in recent years have confirmed this premium cost for local and sustainable food as a key barrier to campus foodservices and students' dietary 'choices' (Atkinson et al., 2013; Attfield, 2014; Berg, Ciotobaru, Mallari, & Pirri, 2014; Dehaas, 2012; Silverthorn, 2016; Vansintjan, 2011). However, recent student surveys at Mount Allison (Park & Reynolds, 2012), Waterloo and McMaster (Meal Exchange, 2015) demonstrate that overwhelmingly, students want and are willing to pay more for local, sustainable food. Also, many campus foodservices strategically offset the premium by creatively reducing costs in other operational areas such as waste reduction, in-house processing, and storage facilities (Donatelli & List, 2011; Park & Reynolds, 2012; Szabo et al., 2013).

Institutional buyers across the country report that inadequate access to the local food sector in their region is another major barrier to procuring more local, sustainable food (Atkinson et al., 2013; Donatelli & List, 2011; Friedmann, 2007; Knight & Chopra, 2011; Meal Exchange, 2015; Park & Reynolds, 2012). First, a food service operation must determine the current amount of local, sustainable food purchases to be able to set goals and track progress. Often this information is lacking on campuses due to poor product labelling and/or tracking systems. Corporate food providers' advanced tracking systems could easily address this, but only if provided with incentives and guidance (Friedmann, 2007). Donatelli and List's (2011) study on institutional purchasing of local food on Vancouver Island argues that the main obstacle to scaling up both supply and demand for local food is the underinvestment in the sector by institutional buyers. This is a 'chicken or egg' scenario, as an increase in institutional investment would fund infrastructure to help producers increase quantity and variety of their products, but insufficient quantity and variety are major reasons institutional purchasers will not buy from local producers in the first place (Donatelli & List, 2011).

Perhaps the most important barrier to food system transitions, though, is the persistent dominance of the transnational corporate food service structure on campuses. Considering the

attempts of Aramark, Chartwells and Sodexo to increase sustainability in their campus operations, there is a debate in the literature about the role of corporate foodservices in the shift to local, sustainable food on campuses. On one side, Martin and Andrée (2012) provide a reformist argument, suggesting that despite the resistance to local food demonstrated by many corporate-run foodservices on campuses, there exist opportunities within the corporate model to support this shift. They claim that inter-firm competitiveness (as The Big Three now compete against each other for contracts emphasizing local, sustainable purchasing), branding and partnership capacity (e.g., the upward trend of retailers developing 'house' brands creates space to partner with local suppliers), influence of progressive campus culture on policy and practice (e.g., the rapid uptake of free-range eggs and fair trade coffee and tea by transnational foodservice corporations in response to consumer demand), and a history of institutional foodservice responding to public policy all represent pathways for change.

On the other hand, Bennell (2008) looked at the potential to develop a farm-to-university program at Concordia University. At the time Concordia was serviced by Chartwells. Bennell suggested that inherencies of the corporate purchasing model (i.e., few, large-scale suppliers, centralized and time-advanced menu planning, menu cycling, and price-fixing) directly oppose the nature of local, sustainable food procurement, making it inconvenient, thus not profitable, for large corporate food providers like Chartwells. Bennell concluded that radical change, best reflected in a switch to self-operated foodservice, was needed for Concordia to fully engage in farm-to-university food services.[7] Similarly, Bryan's (2007) study at Queen's University determined that contracted services have less flexibility in their purchasing practices. The Director of Food Services at the University of Guelph, a self-operated service that has received sustainability awards and top rankings by the Globe and Mail (Szabo et al., 2013), argues that the sense of community and the congruence to a university's core values is lessened when food services are contracted out.

Local and sustainable food in Manitoba

Taking into account these limited and in some cases more successful experiences discussed above, the question is, does the province of Manitoba have the sufficient infrastructure and

[7] It appears that Bennell was correct in assessing the limited possibilities for change within corporate food services. In 2013, two years before the expiry of Concordia's 12-year contract with Chartwells, a network of diverse campus community members formed the Concordia Food Coalition (CFC) with a mandate to "actively support new, affordable, sustainable, student-run food initiatives on campus" (CFC, 2016); in other words, the CFC was established to present an alternative bid to corporate foodservice giants. The CFC's proposal aligned itself with the university's ask of 75 percent seasonal, local produce in the summer, 50 percent in the fall and 25 percent in the winter and spring, among other sustainability-related targets. Unfortunately, CFC's bid did not move forward due to the withdrawal of a key partner, but the CFC coordinator nevertheless commented that "The bidding process 'is just designed for a corporation'" (Wrobel, 2015). After Aramark was awarded the contract, replacing Chartwells, an opinion piece published by *The Link*, Concordia's newspaper, expressed frustration over the lack of innovation in foodservices (The Link, 2015).

community support necessary for transformative change towards local food procurement within its universities?

Manitoba maintains a long and rich history of a conventional, export-oriented agriculture industry. Manitobans consume only 3.8 percent of the food produced within the province (in total dollar value), compared to 29.3 percent in Quebec (Edge, 2013). Yet, the province has the third highest number of local food initiatives (per capita) as well as the third highest number (overall) of Community Supported Agriculture farms when compared to the other nine provinces (Egbers, 2009). Much remains unknown about the demand for, size, and capacity of Manitoba's local, sustainable food sector; but there are increasing efforts from various stakeholders, including some provincial government support, to build alternative food systems.

A number of reports released in the past five years shed light on this food movement. Of particular interest is the establishment of the Small Scale Food Manitoba working group that produced a report called *Advancing the small scale, local food sector in Manitoba: a path forward.* The report was the result of a joint initiative between the Government of Manitoba's Manitoba Agriculture, Food and Rural Development (MAFRD) and various representatives of the small-scale food sector including farmers, processors, marketers, distributors and chefs. The report presents the working group's findings from various consultations with hundreds of key stakeholders held across the province.[8]

Other studies are consistent with the Small Scale Food Manitoba working group report (Food Matters Manitoba (FMM), 2012; Laforge & Avent, 2013; Anderson, Sivilay, & Lobe, 2017). For example, there is agreement that the local, sustainable sector is compromised at many levels and requires action from a range of stakeholders, especially government, to address challenges. More support is needed to better access institutional supply chains and institutional food safety requirements need to be adjusted to accommodate local, sustainable production (FMM, 2012; Laforge & Avent, 2013; Small Scale Food Manitoba working group, 2015). Yet, Food Matters Manitoba (FMM, 2012) found that universities were seen as the most plausible institutional market for local, sustainable farmers because—unlike other public institutions like secondary schools and hospitals—they had or were in the process of developing a variety of procurement strategies to include more local, sustainable food.[9]

FMM (2016b) examined some of these issues more closely in their report entitled "2013-2015 Manitoba on the Menu project" that was also funded by the Government of Manitoba. This project supported eight volunteer institutions (including the UW and UM) to increase, and

[8] See the recommendations of the Small Scale Food Manitoba working group (2015) on pages 12-13 of the report available at https://www.gov.mb.ca/agriculture/food-and-ag-processing/small-scale-food-manitoba.html

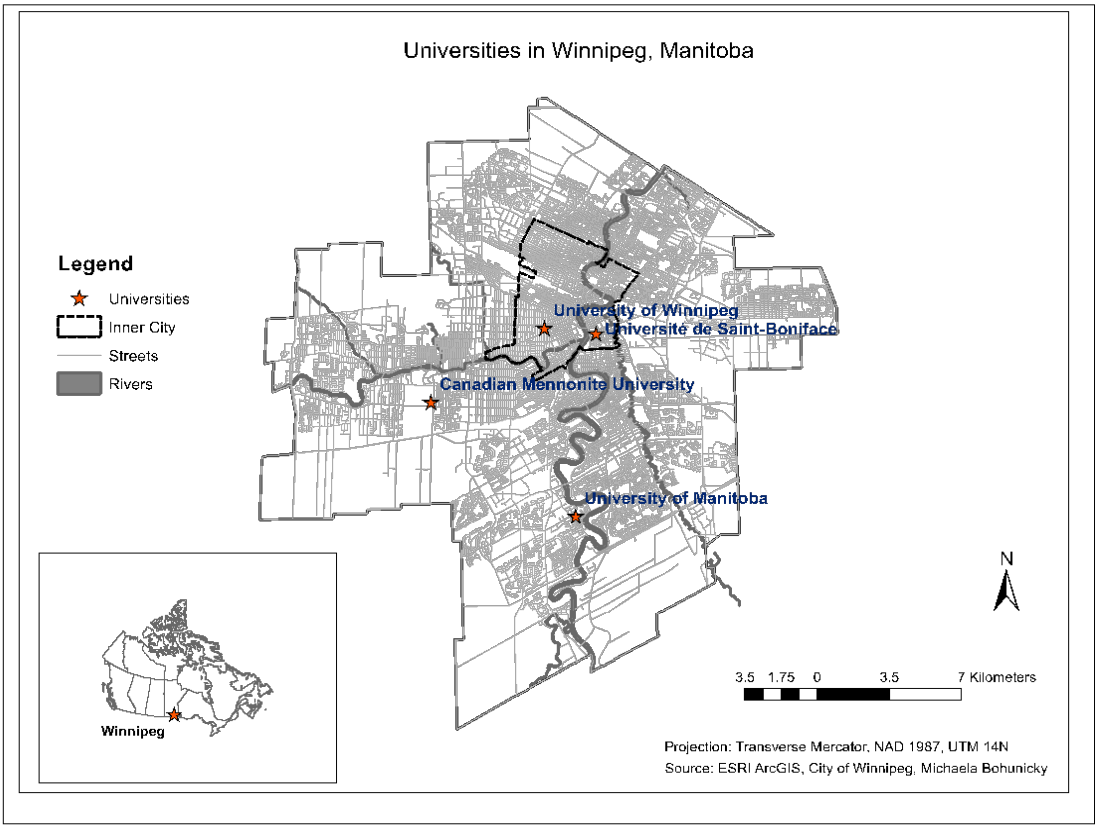
[9] FMM is a non-profit charity built from decades of work in connecting issues of food, health, social justice, and environment. Canada's first National Food Security Assembly, held in Manitoba in 2004, and the proceeding? development of the Manitoba Food Charter served as key catalysts in the establishment of FMM in 2006. The Manitoba Food Charter was drafted from the insights of over 70 public consultations; it calls for a more just and sustainable food system. The University of Winnipeg is one of its 75 organizational signatories (FMM, 2016a). Today, FMM has become a prominent NGO in the province promoting food security and local food systems. It convenes and collaborates with several other provincial food networks in Canada, advocates for policy reform, and is involved in over 40 community food projects (Levkoe, 2014).

identify barriers and opportunities for local, sustainable purchasing (FMM, 2016b). In essence, Manitoba on the Menu calls for institutional food service providers to expand their bottom lines beyond financial profit and adapt more socially and environmentally responsible purchasing models.[10] Likewise, it demands government support to strengthen the network of producers, distributors, and buyers, and include smaller-scale, local producers in these supply chains (FMM, 2016b).

Methods

We used a comparative case study method to examine factors that enable and constrain on-campus food system transformation at the two largest universities in Winnipeg. The UW is comprised of a student population just short of 10,000 (UW, n.d.) and is situated in downtown Winnipeg, while the UM is considerably larger, with three campuses and an enrollment of 29,000 students. The largest of its campuses, Fort Garry, where we conducted our research, is situated in the south end of Winnipeg, 11 km from downtown (Figure 1).

Figure 1: Map of universities in Winnipeg, Manitoba, Canada



[10] See pp. 35-39 of FMM (2016b) for the full list of recommendations.

Our qualitative research included twelve 30 to 60 minute, semi-structured interviews with key individuals with past and/or current involvement in on-campus activities related to local and sustainable food at one or both of the universities. The research participants were selected because of their different roles at the universities, either in administration, foodservices, faculty, students, or the non-profit sector. This included seven individuals situated at UM, four at UW and one person who had worked with both campuses. We also held a focus group with UM students as part of a Geopolitical Economy course. Finally, we reviewed the available secondary sources, both academic and non-academic (the latter consisting of media reports, organizational websites, non-governmental and government reports, and toolkits), concerning food on the two campuses.

The two case studies: The University of Winnipeg and the University of Manitoba

The developments discussed above provide evidence of a trend at Canadian universities of addressing (some more adequately than others) food system concerns, and in Manitoba, the existence of an active local, sustainable food sector and a certain level of interest on the part of the Provincial Government in supporting institutional procurement of local and sustainable food.[11] It is in this context that we now turn to examining how the UW and the UM approached institutional food procurement of local, sustainable food, as well as the particular factors and barriers each campus has faced in effecting changes to the food procurement policies and practices.

The University of Winnipeg

In 2009, the UW bought itself out of the university's corporate contract with Chartwells, to shift to its own self-operated social enterprise, Diversity Food Services. This section explores the factors that enabled this transformation.[12]

At the UW, collaboration and mobilization of various stakeholders paired with the interest and support of progressive institutional-level actors (university administration) enabled food system transformation towards locally sourced and sustainably produced foods. UW's bold move to opt out of Chartwells mid-contract and create a self-operated local social enterprise secured the university's place as a national leader in the alternative food system movement (FMM and Diversity Food Services, 2015; Park & Reynolds, 2012). This was not done impulsively. Since the signing of Chartwells' contract in 2004 (Aramark had held the previous

[11] Our study was conducted in 2016, prior to the provincial elections that led to a change of government in Manitoba. The NDP government that supported both the Small Scale Food Manitoba working group and the Manitoba on the Menu initiative was replaced by a Conservative Party government.

[12] Various elements of this process have been captured in the media as well as reports by civil society organizations and the government.

contract), student criticism began flowing through campus channels such as the student union (Klassen, 2004), the campus newspaper, student surveys and even national publications such as *The Globe and Mail* and *Maclean's* (Prints, 2007). In an interview conducted as part of this research, Dr. Lloyd Axworthy, who was president of the UW from 2004-2014, also spoke about widespread student discontent: "…What rankled me is that every time the *Maclean's* survey came out, we were at the bottom of the heap; our students basically said the food was crap and I was being hung in effigy outside the cafeteria". Axworthy also mentioned, however, that although students were certainly expressing their grievances around Chartwells, foodservice did not appear to be big issue on the student agenda. Despite multiple attempts to regain customer satisfaction, students voted with their feet causing Chartwells to lose about 20 percent in cafeteria traffic to the plethora of downtown venues surrounding the campus (L. Axworthy, personal communication, July 2015).

The UW Community Renewal Corporation (UWCRC) that Dr. Axworthy created early on in his ten-year presidency was an example of the UW's progressive institutional agenda. The UWCRC is a not-for-profit, charitable body with equal membership from both the university and community (UWCRC, n.d) that is mandated to make the university more accessible to the downtown community (L. Axworthy, personal communication, July 2015). Originally intended to help develop new campus facilities, as Axworthy went on to explain, the UWCRC board soon realized that it could help mitigate existing food issues by turning the foodservice management from an outside contractor over to the corporation. Subsequently, UWCRC partnered with Supporting Employment & Economic Development (SEED) Winnipeg to develop what is now known as Diversity Food Services (L. Axworthy, personal communication, July 2015).[13]

Diversity Food Services: an alternative foodservice model

Since 2009, Diversity Food Services has worked to "produce quality, nutritious, and flavourful food in an environment that champions all who contribute their energy and skill—from the farmer, to the chef, to the service staff" (Diversity Food Services, n.d.). Diversity's practices are quite unique in institutional foodservices. In particular, it purchases 65 percent local, sustainable food; nearly as much food is purchased directly from producers as is sourced through distributors, both small and large; no contracts are held with suppliers; increased investment in workers through training leads to slower/less turnover; and high training costs are offset through raw ingredient purchasing, in-house processing, and bulk-buying. Its budget is split among three major areas: 34 percent labour, 32 percent food ingredients, and 34 percent other business expenses and profits (FMM, 2015). There are no hard targets supporting Diversity's local, sustainable food procurement. Diversity General Manager, Ian Vickers, explained it to us like this:

[13] SEED Winnipeg is a non-profit organization that provides capacity building services to socially and economically disadvantaged individuals and groups (Diversity Food Services, n.d.)

> We feel that goal setting like this can lead to an acceptance of what is really underperformance… If we had looked at what was commonplace for institutional food service when Diversity was founded and doubled that, then told the kitchen team that the expectation is for them to purchase 20 percent locally - we would probably still be purchasing 20-25 percent locally. By instead telling the team, 'source seasonally appropriate foods as sustainably as possible and as locally as possible'...our small company is more able to respond to a shifting local procurement landscape. (I. Vickers, personal communication, July 2015)

Even in the absence of stated hard targets, Diversity purchases its local, sustainable food from up to 185 vendors, all of whom have no written agreement with Diversity. Axworthy and Alana Lajoie-O'Malley, Director of UW's Campus Sustainability Office, praised Diversity's staff for their level of cooperation with other campus departments that they felt greatly exceeded that demonstrated by Chartwells. Importantly, Lajoie-O'Malley acknowledges that Diversity's strong performance has allowed the UW Campus Sustainability Office to shift efforts that would normally be tied up in food matters to other key areas such as energy, emissions, waste management, and social responsibility as a whole (A. Lajoie-O'Malley, personal communication, September 2015).

The UWCRC's broad, institutionalized social mandate had a strong leveraging effect in transitioning foodservices, while high levels of support, trust and autonomy awarded to Diversity from the university's administration certainly helped contribute to the venture's success. The UWCRC "gave us a lot more flexibility to do things at the university than the conventional decision making through senates and boards of regents that just pile one committee on another," Axworthy reasoned (L. Axworthy, personal communication, July 2015). When interviewed, Kramer insisted that universities trying grassroots approaches to food system change will hit brick walls unless the administration first allows the space for it to happen.

Diversity's presence at the UW has had impacts both on and off campus. Contrary to near-bottom campus food ratings in *Maclean's Magazine* during Chartwells' contract (Prints, 2007), UW now has among the highest ratings for student perception of healthy food on campus. Whereas sales under previous providers rarely exceeded $1 million, Diversity's sales jumped to $2.5 million in its first three years (UWCRC, n.d.). In addition to students' pride in its services, Diversity has also captured significant attention from beyond its campus borders: "The food community in Winnipeg has really rallied behind what's happened here on campus…We've had really great support from external stakeholders," Lajoie-O'Malley added. According to *The Globe and Mail*, Diversity was Winnipeg's most in-demand caterer in 2011 (Agrell, 2011). In response to demand, Diversity has expanded its operations to FortWhyte Alive, a major environmental education and recreational center in the city, and the Winnipeg Folk Festival, and such growth in demand has helped to offset campus foodservice costs (B. Kramer, personal communication, July 2015; I. Vickers, personal communication, July 2015).

There are several other dimensions to the UW's success in engaging in food system change. Diversity Foods has created new opportunities within the province. In addition to helping support the local, sustainable food market through Diversity's purchasing priorities, Diversity spurred an increase in local production and a transformation of city menus (Agrell, 2011). Finally, representatives from at least a dozen universities—including University of Victoria, UBC, and McGill, and some international schools—caught wind of the innovative model and have visited UW to learn more about Diversity (Agrell, 2011; L. Axworthy, personal communication, July 2015). Although the UW clearly did take some important steps that have led to significant achievements, there remain challenges to food system transformation on campus.

The University of Manitoba

Food services at the UM differ considerably from those at the UW. Five foodservice providers operate on the Fort Garry campus: one at each of the three colleges, several student union venues throughout University Centre, and Aramark as the largest contract (for years 2014-2024) with locations throughout the campus (UM Today, 2014). This section focuses primarily on two service providers at the Fort Garry Campus: the most prominent, Aramark, and to a lesser extent, Degrees Restaurant, one of the student union's venues. Degrees is included as an on-campus point of comparison but also as an example of what sustainable foodservice efforts can (and do) look like at the UM.

Food service and beverage contracts at UM are not subject to broad or extensive discussion among members of the university community. The Foodservices Committee, chaired by the Director of Ancillary Services, shapes the Request for Proposal (RFP) for any new foodservice contract; Ancillary Services also coordinates the resulting bids and manages the resulting contract (I. Hall, personal communication, August 2015). According to professor and former chair of the Sustainability Committee Dr. John Sinclair,[14] past RFPs usually started one year in advance of the contract expiry. However, in 2013 when Aramark's contract was nearing completion, the RFP began only six months in advance (J. Sinclair, personal communication, September 2015). Additionally, a number of stakeholders felt they did not have any influence in shaping the RFP. For instance, Ian Hall, then Director of the Office of Sustainability, said that although he was invited to provide input, the process felt more consultative than collaborative and that ultimately, he doubted whether his input would have any impact on the RPF (I. Hall, personal communication, August 2015). The Sustainability Committee was also eager to be involved, but was never invited. Only by chance, Sinclair recalled, did one member of the Sustainability Committee stumble across the imminent expiry of the then-existing contract,

[14] The Sustainability Committee was created to help make all aspects of university activities more sustainable and developed its first sustainability strategy. The Office of Sustainability, an administrative department, was created in response to the resulting strategy. The Sustainability Committee remains separate to the Office of Sustainability and autonomous to the administration, but the relationships are continuously evolving (Sinclair).

allowing the committee a last-minute chance to submit unsolicited input (to which they never received a response) on the RFP that the university would soon make public. Later on, Sinclair was only able to view the sustainability sections of the bids and was obliged to sign a confidentiality agreement to do so. Even once Aramark had received the contract, Sinclair pointed out that he had to sign a confidentiality agreement to see their sustainability plan (J. Sinclair, personal communication, September 2015). Three years into the contract, the terms of agreement between the UM and Aramark remain inaccessible to the public, and despite pledging to develop metrics that better align the company's practices with the sustainability aspects of the University's Strategic Plan,[15] the company has yet to do so (Anonymous, personal communication, September 2015).

Various stakeholders in the UM campus community continue to criticize two additional characteristics of the Aramark contract. First, Aramark's separate contracts for both the major dining service and the sole catering service have created a near-monopoly of food on campus, which smaller campus food providers, professors, administrators, and students express as a concern (L. Dunne, personal communication, August 2015; Focus group; Entz, personal communication, 2015; I. Hall, personal communication, August 2015). Secondly, Aramark's contract spans ten years in length, over two generations of students. According to the former chair of the Sustainability Committee, this is worrisome: "Now that we have a long-term contract, the malaise just sets in…you have to work around the terms of the contract which you aren't allowed to see. . . The opportunity for strategic thinking is long gone" (J. Sinclair, personal communication, September 2015).

As we pointed out earlier in this article, the literature does shed light on how some universities are transitioning to more local sustainable food systems and Aramark too is responding to the increased demand for healthy and sustainable food on campus. For example, in introducing its national "I go local" program, the company (at a national level) declared a commitment to local and sustainable purchasing and indicated that it is providing up to 55 percent local products to their food service programs (Aramark, n.d.). On the UM campus, however, the company is far from reaching this level of local purchasing; UM Dining Services, for example, currently purchases only 19 percent local, sustainable food (D. Duff, personal communication, September 2015).

Degrees Restaurant, run by the University of Manitoba Students' Union (UMSU), is leading the way for UM food providers in implementing a more sustainable vision as it is regarded as being much more receptive to increasing local, sustainable purchasing (L. Dunne, personal communication, August 2015). It is the only restaurant in Manitoba to have achieved

[15] As outlined in the *University of Manitoba Strategic Plan: 2015-2020*, "The University will need to continue its efforts to promote institutional sustainability and to pursue the principles of environmental, social, and economic sustainability, defined by the World Commission on Environment and Development as meeting 'the needs of the present without compromising the ability of future generations to meet their own needs'" (University of Manitoba, 2015a, p. 6).

Level 3 Leaders in Environmentally Accountable Foodservice (LEAF) certification,[16] and Degrees is also a consistent collaborator with the UMSU Campus Garden, from using edible flowers for garnishes to hosting a harvest dinner with food grown on site. Interestingly, despite Degrees' openness and enthusiasm for sustainable practices, it faces challenges in scaling up local, sustainable purchases—some of which Aramark shares. The amount of local, sustainable food that Degrees purchases is not known.

Persistent challenges at UM

Earlier on, we reflected on the three constraints that hamper transitions to local sustainable food procurement based on a review of Canadian campuses (high-cost, lack of access to local sustainable supply chains, dominant corporate structure for food procurement). At the UM, managers of both Aramark and Degrees who were interviewed for this research identified two of these obstacles to purchasing more local and sustainable food: cost and lack of supply chains. Dean Duff, General Manager of UM Dining Services, identified cost as a key challenge in complying more fully with Aramark's "I go Local" campaign since the kitchen can only do so much to offset the premium cost internally. He believes that increasing the amount of local sustainable food would mean higher food costs for customers—something he doubts students would be willing to pay (D. Duff, personal communication, September 2015). Despite its break-even model, Ryan Woods, the General Manager of Degrees, also identified cost as a challenge: "More often than not we choose not organic, not local out of necessity…because if our menu was entirely local, sustainable, nobody could afford it". He went on to explain that there is a huge disconnect between the real and perceived cost of *good* food, largely due to the falsely low prices our conventional food system portrays as the *real* cost of food.

The lack of supply chains offering local, sustainable products consistently and in sufficient volumes was identified as a barrier by UM Dining Services and Degrees, even though the latter operates at a much smaller scale. For both, purchasing a staple ingredient locally and sustainably would mean coordinating orders with dozens of farmers on a weekly basis (as Diversity does)—a cumbersome task that neither operation has the labor capacity to carry out (D. Duff, personal communication, September 2015; R. Woods, personal communication, August 2015). However, Duff recognizes the purchasing power that UM Dining Services holds, for example with its largest distributor Sysco. If UM Dining Services used this power to demand more local sustainable items, such products could then be made available to Sysco's entire client base, similar to what Manitoba Liquor & Lotteries has recently achieved.[17] Woods mentioned

[16] LEAF certification is a recognition program that helps foodservice operations reduce their environmental footprints in 10 key areas of sustainability (Leaders in Environmentally Accountable Food Service (LEAF), 2014). Diversity Foods at UW received a Level 3 LEAF certification.

[17] Manitoba Liquor & Lotteries manages liquor and gambling products in the province, primarily out of two casinos in Winnipeg. Recently, they signed an agreement with Sysco to increase local food purchasing. In six months, local food purchases were doubled to nearly 20 percent with a target of 25 percent. As a result, Sysco has been able to offer a larger volume and variety of local products to its client base (FMM, 2016b).

that Degrees' staff do push their purveyors for local alternatives, but find that some of the products made available to them in response are not always what they would consider truly local; instead, they are merely skewed as such for marketing potential.[18] Dunne is similarly skeptical of the use of "local" in marketing contexts; she considers much of the restaurant industry and national foodservices' highly publicized support of the local, sustainable food movement "lip service". Both experiences cast doubt on mainstream distributors' capacity to play a part in developing radically different supply chains.

The UM does have several policies and guidelines concerning the purchase of local sustainable food. But, these lack clear targets and mechanisms for implementation (I. Hall, personal communication, August 2015).[19] Apparently, the same can be said about much of the language within the university's contract with Aramark; so although its vagueness may be a justification for inaction, the University can also use it as an opportunity to discuss and perhaps clarify goals within the contract (Anonymous, personal communication, September 2015). The UM has included "Safe, Healthy, Just and Sustainable Food Systems" as one of its key research priorities in the university's 2015-2020 *Strategic Research Plan.* This could potentially be an important step toward achieving this transition. At this stage, while many are still debating what this research priority area actually means, it is a sign of hope that it has already catalyzed some action, such as the UM's first Sustainable Food Systems Workshop held in March 2015 to discuss current and potential collaboration (M. Entz, personal communication, November 2015; University of Manitoba, 2015b). For example, the Office of Sustainability is leading the first renewal of the *Sustainability Strategy* for 2016-2018 and then director, Ian Hall, was hoping this would lead to more real change including:

> …Some real structure around shaping our food system…something that would push us towards walking the walk when it comes to a safe, healthy, just, sustainable food system on this campus…it might mean booting franchises, it might mean changing the way we deliver foodservice, it might mean increased food prices...collectively, our foodservice providers have a lot of control.[20] (I. Hall, personal communication, August 2015)

There is, however, on-going criticism of the UM administration for not being supportive enough and proactive towards food system transition efforts. For instance, there is a sense that

[18] Ironically, UMSU generously uses 'local' and 'organic' to describe Degrees' food in its promotions, which Woods admitted made him uncomfortable (Woods, personal communication, 2015).

[19] For example, UM's first *Sustainability Strategy* (University of Manitoba, 2012) and its most recent edition (University of Manitoba, 2016), and the UM Students' Union's *Ethical Purchasing Policy* (UMSU, 2015) include supportive language around local, sustainable purchasing but are short on clear definitions, goals, and strategies.

[20] Ian Hall guided the development of the baseline study *Food at the University of Manitoba: A summary of current activities and programs, with additional notes on challenges and opportunities* (Office of Sustainability, 2015) that is perhaps the most comprehensive source of food system information at the UM to date and its contents helped inform our research. He left the UM in the Fall of 2016, and since then, judging from the Office of Sustainability's webpage, it appears to be less involved in food system work.

the Faculty of Agricultural and Food Sciences is driven by corporate funding interests and is consequentially teaching and practicing mainstream, conventional agriculture rather than adequately supporting more research on alternatives such as agro-ecology and organic agriculture (M. Entz, personal communication, November 2015). Dr. Martin Entz, a professor of Cropping Systems and Natural Systems Agriculture at the UM, explains that when he was working alongside students to establish the now-vibrant UMSU Campus Garden, he encountered "silly and unbelievable resistance [from the administration] …we had to steal the land to operate on weekends to get [the garden] going".

Despite these barriers, students at the UM have consistently raised concerns about food on campus, as well as a desire for change. Some students who participated in a focus group as part of our research stated they lack the awareness and opportunities to engage in food activism, including opportunities to participate in applied projects through course curricula. Others felt that the campus' reliance on the corporate food system—demonstrated by the long-term presence of Aramark, Coke, Monsanto, Starbucks and Tim Hortons on campus—presents a barrier to moving towards more socially just and ecologically sustainable food systems. In the focus group discussion, the students' union was perceived as a central source for greater advocacy and engagement concerning food system issues.[21] In a recent survey of food insecurity conducted by UM researchers over the 2015/16 school year, students voiced their disappointment over the quality and price of food offered on campus (Entz et al., 2017). In the comment section of the survey, one student stated, "the quality of the food Aramark provides at this University is terrible", while another mentioned that "Food is difficult [at] the university, and the UofM's good options are particularly terrible. It's both expensive and low quality." The coordinator of the Campus Food Strategy Group, who also ran on a slate in the student union elections, described food system change as being one of the most well-received themes of the campaign and that there seemed to be a growing opinion that Aramark's food is expensive and poor in quality (Anonymous, personal communication, September 2015).

Discussion

Our study of food procurement at the UW and UM highlights the factors that enable and constrain on-campus food system transformation. In analyzing these two cases, we found the comparative framework of global food movements developed by Holt-Giménez and Shattuck (2011) particularly useful. Their framework would view the campus counter-movements as one side of the "double movement" occurring in today's corporate food regime, whereby some institutions and civil society actors resist neoliberal food policies in different ways and to different extents. Holt-Giménez and Shattuck identify mainly three different types of food

[21] This focus group was conducted with the 2015 UM Summer Academy on "The Geopolitical Economy of Food Security and Food Sovereignty in a Multipolar World".

movements: reformist, progressive, and radical. While reformists prioritize food security and sustainable agriculture, their efforts and initiatives often help reinforce neoliberal structures (i.e., mainstream fair trade or organically produced foods); progressive actors, such as food justice movements, focus on localizing food provisioning and tackling labour and racial issues within food systems (i.e., some farmers' markets and food policy councils); and radical actors, commonly acting under the umbrella of food sovereignty, seek to democratize and transform food systems beyond the neoliberal regime (e.g., movements demand redistributive land reform, community-based production, and integration of Indigenous knowledge (Holt-Giménez & Shattuck, 2011). While reformist and progressive movements can establish alternative markets and challenge institutions to introduce some changes, Holt-Giménez and Shattuck go on to argue that *corporate regime change* depends largely on cooperation and building strategic alliances among progressive and radical movements.

While food movements at universities across Canada may not fit neatly into any one of these categories exclusively, the Holt-Giménez and Shattuck (2011) framework is useful. By categorizing the actions taking place, we are better able to understand how or if food system change can be institutionalized and, if so, what kind of movement trends are necessary for such change to occur. More precisely, in the context of campus food provisioning, what role, if any, can transnational corporate foodservices play in building alternative food systems? And, is such food system transformation possible when based on reforms that occur within existing neoliberal structures of food procurement?

Our research on food procurement at the UW and UM indicates that a key driver of food system transformation on campuses involves the support, coordinated involvement, and collaborative actions of multiple stakeholders. Of these stakeholders, students are by far the largest group within any campus community and often generate the greatest degree of change when they mobilize to make demands and their voices are heard.

While the UW supported and enabled the institutionalization of a food system transformation, at the UM there was much less support. At the UW, the participation of students enabled progressive change to occur, change that is compatible with more radical food movements. Both individual and collective student action contributed to pushing the administration to fundamentally change foodservices. First, students voiced discontent through the Student Union newspaper and various popular news channels. Second, they engaged in individual action by 'voting with their feet' and venturing off campus to purchase food from nearby downtown venues.[22] Consequently, students' dissatisfaction with Chartwells food negatively affected the company's reputation and resulted in a significant loss in profit at the UW. Finally, as part of broader efforts to make the UW more accessible and socially useful, the UW administration rejected the corporate food provider (Chartwells) and instead created a home-

[22] We want to acknowledge that there are certainly limitations to "voting with your feet". There is an important literature highlighting the ideological contradictions within this practice, producing what Johnston (2008) calls the "citizen-consumer hybrid", where goals of citizenship are superficially met while elements of consumerism are perpetuated.

grown campus food service that values a diversity of producers and conceded to student demands.

Although not found in the public narrative of the UW transition, there is a third way in which students contributed to food system change. Interestingly, in an article in UW's student newspaper, *The Uniter*, then-University of Winnipeg Students' Union (UWSA) president David Jacks argues that the Diversity model was inspired by a food service bid submitted by the UWSA when Aramark's contract was set to expire in 2004 (Jacks, 2011). This suggests that rather than engaging only in visible student activism they were also contributing to change at UW in subtler ways, by first imagining alternative food services on campus.

Since the successful transition away from Chartwells to Diversity Foods, UW students appear less engaged in food issues, except for their active food bank program. This may be an unintentional result of the foodservice transition in that students do not feel the need to focus on food issues because they trust things are well and good (A. Lajoie-O'Malley, personal communication, September 2015), and the UWSA can now concentrate more effort and energy in a myriad of other social movements such as LGBT, anti-austerity, Idle No More, Climate Justice, Consent Culture, Living Wage, Youth Vote, Divest and more. For example, since 2010, the UWSA has hosted *Grass Routes,* an annual festival geared towards envisioning a sustainable future (UWSA, n.d.).[23]

Comparatively, students at the UM face additional barriers that constrain their abilities to engage in coordinated efforts towards food system transformation. As a result, advocates for change may rely on reforms within the existing food procurement arrangements, rather than progressive shift away from corporate food servicing. First, UM students do not have the same ability to vote with their feet. Given its location in a pocket of the city's south end, half enclosed by a river, the Fort Garry campus is isolated from surrounding venues by over 1.5 km in all directions. In addition, Aramark holds a near-monopoly of food venues on campus, making it difficult for many students to differentiate between Aramark and non-Aramark venues.

Nevertheless, student activism remains alive and well at the UM. The UMSU Campus Garden is a vibrant and growing network of students who are acquiring more campus space to grow food and increasing funding to support coordinators. Harvests are split among volunteers and sold on campus once a week over the summer. The student-led Campus Food Strategy Group (CFSG) was established to promote campus food system change; it has done this through a number of projects—nearly all conducted in partnership with the Office of Sustainability—including participation in UM's first food system baseline report, the Campus Food Map featuring a sustainability-oriented legend, and the UM Food Challenge.[24] In addition, individual

[23] This is in no way to suggest that students at UW were not active in a variety of struggles earlier on. Instead, our point is that the creation of Diversity Foods freed up more time to focus on struggles other than food.

[24] The CFSG is an offspring of Meal Exchange's Campus Food Systems Pilot Project that ran from 2011-2013 while the Food Challenge is a student-centered competition sponsored in part by Guelph's *Feeding 9 Billion* initiative to develop and facilitate campus food system solutions. In the Fall 2016, CFSG's second annual Food Challenge addressed opportunities such as student-led enterprise models for organic waste management (another

students and student groups have organized more collectively around food issues. For example, a diverse coalition of students came together to host UM's first Green Week in March 2016, aimed at celebrating and building capacity around students' efforts in sustainability. Among its most successful events was a two-day farmers' market that spurred the hiring of a part-time coordinator to host more markets throughout the upcoming academic year. In a similar vein, UMSU formed a Student Sustainability Office and is restructuring their eco-oriented groups intended to enhance collaboration and thus enable more effective action. Importantly, CFSG, the Food Bank and Campus Garden are to be the "food" branch of this new office. All of this student activism is prompting the administration to pay more attention to food issues.

Lingering administrative barriers at UM

As other studies have indicated, university administrators play an instrumental role in either enabling, or constraining food system transitions and transformation on campus (Barlett, 2011; Park & Reynolds, 2012; Pothukuchi & Molnar, 2015). At the UW, key stakeholders agreed on the importance of administrative support. The UWCRC served as a conducive, legitimate space for campus and community members alike to move a social mandate forward through university activities, including the incubation and then oversight of Diversity.

The UM administration, however, does not appear to be providing the support necessary to move towards food system change. The lack of administrative will for more transformative change is especially evident when considering the 2013 Request for Proposal process that led to the ten-year UM-Aramark contract. Being neither inclusive nor transparent to the campus community, the administration prevented all but a small committee from being involved in choosing a major foodservice provider and still keeps the now active agreement entirely confidential. There is also concern over the slow, bureaucratic pace of change within administrative activities (M. Entz, personal communication, November 2015; I. Hall, personal communication, November 2015; J. Sinclair, personal communication, September 2015).

However, there may be potential for food system change since other administrative branches have engaged in greater consultative efforts. Among these, the Office of Sustainability held a series of public consultations in preparing the renewal of the Sustainability Strategy while the Campus Planning Office engaged similarly when developing the Visionary (re)Generation plan. It is worth noting that prior to U of T's recent decision to switch foodservices from Aramark to being self-operated, feedback was collected from students, faculty, and staff through focus groups that communicated the overwhelming interest to forgo the contract renewal with the corporate provider (Sagan, 2016, June 7). Would the UM community have voiced similar interests if there had been meaningful consultations in 2013?

priority action area in the UM's 2016-2018 Sustainability Strategy) and alternative food service models in light of Aramark's contract expiry in 2024.

The UM administration is beginning to recognize the significance of food through the determination of *Safe, healthy, just, and sustainable food systems* as a priority research area. This bears huge potential for change, except that there is yet no consensus on what constitutes safe, healthy, just, and sustainable food systems, and it is currently confined primarily to research rather than also including education and outreach. On a governance level, the administration endorsed, at least on paper, a commitment to food system change through the renewal of the *Sustainability Strategy.* The updated strategy emphasized the need to develop a "collaborative campus food strategy" and promote "safe, nutritious food that contributes to resilient local food systems" (University of Manitoba, 2016). This was accompanied by an unprecedented programming budget for the Office of Sustainability and its small team of staff and student interns involved in mobilizing a nascent campus food movement. However, since the departure of Ian Hall, the former director of the Office of Sustainability, who played a leadership role in engaging a broad range of stakeholders around sustainability and food, it is unclear what role this office will now play in promoting food system change. The loss of such leadership makes it all the more important for campus food movements to build capacity through the involvement and investment of a wide range of actors, including those situated off-campus.

Role of external drivers in campus food system transitions and transformation

Another stakeholder that has been important in successful cases of food system transitions and transformation on Canadian campuses is an individual expert and/or organization from the broader community that fosters important links between the university campus and local, sustainable producers (Chiandet & Dandar, 2014; Roberts et al., 2014; Szabo et al., 2013). For example, when U of T took its first major step towards scaling up local, sustainable purchasing, expertise was expressed by the non-profit, non-governmental organization, Local Food Plus (LFP). Previous to LFP, there were no obvious channels for large institutions to access the local, sustainable sector (Friedmann, 2007). At the UW, this stakeholder took the form of two individuals, Ben Kramer and Kirsten Godbout (who were sought out by the university specifically for their well-established ties to and participation in the local, sustainable sector), to better infuse the local, sustainable ethos into Diversity—and by extension the university.

The UM has yet to tap into this kind of expertise, but some recent promising off-campus developments among relevant provincial actors who seek progressive changes to food procurement practices could benefit UM food providers. As part of a series of actions geared to implement the recommendations of the Small Scale Food Manitoba working group (2015) report, the first Direct Farm Marketing Conference was held in Spring 2016, prompting the formation of the Direct Farm Marketing Association of Manitoba Co-op Inc. (Government of Manitoba, 2016; Stevenson, 2016). The new organization, along with other groups such as Sharing the Table Manitoba represent interesting opportunities for the UM to engage in alternative purchasing that better supports the local, sustainable food sector.

There is a significant piece missing in this, though, and that is the role of the government in supporting campus food system change. It is important to note that in 2011, the Government of Manitoba received a proposal for a provincial local food procurement policy (FTC, 2011), yet such a policy remains to be enacted. Additionally, a recent study that explored the feasibility of a food hub in Winnipeg, a financially self-sustaining facility that would create accessible supply chains for the local, sustainable market, concluded that further public investment was needed to establish the relationships, education, and demand for local, sustainable food before such a project could be put in place (Grant & Donkervoort, 2014). Interestingly, as a result of public pressure, the Small Scale Food Manitoba working group, and other developments discussed above, the former NDP Government of Manitoba created two staff positions for local food initiatives (Government of Manitoba, 2016) and it also committed to supporting local and organic food through *Manitoba's Climate Change and Green Economy Action Plan* (Government of Manitoba, 2015). Although the Conservative Party that was elected in 2016 does not appear at all interested in following in the steps of the former government, our point is that government actions can significantly help or hinder food system change.

The Small Scale Food Manitoba working group (2015) report clearly identifies the need for more institutional foodservice engagement while offering various pathways for institutions to begin doing so. By sourcing 65 percent of its food locally and sustainably, Diversity at the UW has had significant impact on the local, sustainable food sector in Manitoba (and perhaps beyond, given the many inquiries from other municipal, provincial, national, and international groups). If the UM—roughly three times the size of the UW and currently purchasing only 19 percent local, sustainable food—committed itself to sourcing more locally, the institutional investment would no doubt contribute to enhancing the local, sustainable food sector. The question is, would this best be done through Aramark or with an independent and self-operated entity? And, will the UM wait until 2024, the year that the contract with Aramark ends, to act?

Food procurement on campuses: sites of slow reform or transformational change?

How one answers these questions depends very much on what kind of change is desired. As Holt-Giménez and Shattuck (2011) remind us, if the aim is *corporate regime change*, then actions must go beyond the reformist and progressive, and instead be more radical. Doing so has much more potential to lead to the kind of fundamental transformational change described by Brown et al. (2012). As we pointed out in our literature review, Aramark has taken steps to adapt and collaborate with the local, sustainable sector and it is more involved in local purchasing at various universities across Canada.[25] However, since Aramark is a key actor in the corporate food regime, its business model dictates a very different supply chain and ways of working than

[25] While the specific results are unknown, in 2013, Aramark received $100,000 from The Greenbelt Fund in Ontario to run pilot projects at Trent, U of T, Wilfred Laurier, and York aimed at increasing local food procurement. Aramark also received two grants in 2011 and 2012, totalling $139,987.00 from The Greenbelt Fund for similar, locally-focused projects (Greenbelt Fund, 2016).

that of, for example, Diversity Food Services at the UW. Aramark's interest in using their buying power to leverage more local, sustainable options through their existing distributors raises some important questions: Will the involvement of transnational corporate distributors ultimately bear similar limitations as with the transnational corporate foodservice management companies? Does food system transformation involve severing ties with not only one corporate link of the supply chain (foodservice providers), but all?

U of T's recent switch at its main campus to self-operated foodservices (Kikulis, 2016) certainly does highlight concerns about the role of a transnational corporation like Aramark in campus food system transformation. As Sinclair stressed, the UM campus community's biggest task around Aramark is to continue to critically reflect and apply pressure through the remaining years of the contract. This is necessary to ensure that a new vision is developed by its expiry. Without such pressure, the next foodservice bidding process will differ little from the one held in 2013. We argue that it might well be in the best interests of the UM community and to the benefit of students and the small scale, local food sector in Manitoba to follow in the steps of UW, U of T, UBC and others that effected more radical change on their campuses. That is, take progressive action to opt out of the transnational corporate contract, and shift to a foodservice model that appears more willing and able to contribute to building alternative food systems.

Increasingly, universities are being pushed on their obligation to sustainability as part of their public mandate. Lori Stahlbrand (2016) argues that they should use their functions as "anchor institutions" to drive sustainable food system transitions and transformation by building infrastructure, conducting research, promoting food literacy, shifting bulk purchasing, and collaborating with community organizations with leadership and expertise to help scale up local, sustainable public procurement. She also stresses that food provisioning must be recognized as more than an ancillary service; indeed, it is a multifunctional and core part of a university's mandate (Stahlbrand, 2016). Similarly, one student leader at the UW emphasized:

> I feel that universities and student associations have a responsibility to try and engage in initiatives that are socially sustainable. The food service delivery that they support and select on campus is such an instrumental, organic expression of this. And it's been a great thing to watch here [at UW]… It would be terribly exciting if UM were to jump into that world… (Anonymous, personal communication, September 2015).

The question is, will the UM make the jump? And if so, when and how significant will the change be?

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Original Research Article

Food procurement in English language Canadian public schools: Opportunities and challenges

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Abstract

This paper examines the changes to procurement for school food environments in Canada as a response to changes to nutrition regulations at the provincial level. Sixteen interviews with seventeen people working in school food environments in seven provinces and one territory revealed how changes to the nutrition requirements of foods and beverages available on school property presented opportunities to not only improve the nutrient content of the items made available in school food environments, but also include local producers and/or school gardens in procuring for the school food environment. At the same time, some schools struggle to procure nutritionally compliant foods due to increased costs associated with transporting produce to rural, remote, or northern communities as well as logistical difficulties like spoilage. Although the nutrition regulations have facilitated improvements to food environments in some schools, others require more support to improve the overall nutritional quality of the foods and beverages available to students at school.

Keywords: procurement; school food environments; nutrition regulation; Canada

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Introduction

Each of the ten provinces and the Yukon Territory in Canada has recently developed or revised regulations (either policies or guidelines) that outline which foods and beverages can be made available to students while on school property. Formalizing the removal of, or restricting, the frequency with which less healthful foods and beverages are permitted in internal school food environments created a market for re-formulated products from large-scale food producers and processors and created an opportunity for those who procure for school food environments to purchase from less conventional producers.

The objective of this research was to identify the opportunities and challenges to procuring food for internal school food environments as a consequence of the nutrition regulations. The changes made in school cafeterias and other on-property school food and beverage vending across Canada as a result of the subnational jurisdictional nutrition regulations led to changes in how products for these spaces were procured. The research presented in this paper used semi-structured interviews with those involved with the development and the implementation of the school nutrition regulations to identify the objectives of the regulatory documents, as well as the opportunities and challenges that arose in terms of procuring for the internal school food environment under the new or revised regulations.

Procurement is often used in the literature without being operationalized (Morgan & Sonnino, 2008; Poppendieck, 2010; Winson, MacRae, & Ostry, 2012). Raine et al. (2018) define procurement specifically within the context of healthy food for public facilities as "the process of procuring, distributing, selling, and/or serving food to facilitate healthier dietary behaviours" (p.7). Adapting their definition for this paper, procurement refers only to the process of obtaining foods and beverages for the internal school food environment, as this meaning is most relevant to what the school nutrition regulations address.

The internal school food environment refers to those spaces on school property where food and beverages are purchased and/or consumed (Vine & Elliot, 2014). These spaces include but are not limited to cafeterias, canteens, vending machines, tuck shops, gymnasia, classrooms, and outdoor dining spaces on school property (e.g., quads). Vine and Elliott (2014) distinguish internal school food environments from external school food environments, the latter being those off of school property that are still accessible to students during the school day. Many studies have found students do access fast food outlets and convenience stores during the school day because they are close enough to schools to be accessed during breaks and lunch hours (Austin, Melly, Sanchez, Patel, Buka, & Gortmaker, 2005; Davis & Carpenter, 2009; Vine & Elliott, 2014; Winson, 2008). Although the external school food environment is not a significant factor in procurement for schools per se, recognizing an immediate challenge to implementing school nutrition regulations when research shows these unregulated spaces are used is important for context.

The current provincial and territorial nutrition regulations were implemented in an effort to align the messages about nutrition and health taught in the curriculum and the foods and

beverages that are sold on school property. Research has shown that many schools are obesogenic environments because of the proliferation of shelf-stable, nutrient-poor foods supplied by food service providers sold to students on school property (Winson, 2008; Winson et al., 2012). It is these calorie-dense, nutrient-poor products, or pseudo foods (Winson, 2013), that the new and revised school nutrition regulations from the various subnational jurisdictional governments across Canada are attempting to remove, or at least reduce, in school food environments.

These regulations do not, however, apply to food brought from home, purchased in spaces off of school property during the school day, and food given away (Alberta Government, 2012; BC Ministry of Health & BC Ministry of Education, 2013; Government of Manitoba, 2014; New Brunswick Department of Education, 2008a; Government of Newfoundland and Labrador, 2008; Government of Nova Scotia, 2006; Ontario Ministry of Education, 2010; Prince Edward Island Eastern School District, 2011; Quebec Ministère de l'Éducation, du Loisir, et du Sport (MELS), 2007; Saskatchewan Ministry of Education, 2009; Yukon Education, 2008). There have been examinations of the impact of school nutrition regulations in Canada; however, these studies tend to focus on one province or school district/division/board (Winson, 2008; Mullally et al., 2010; Taylor et al., 2011; Fung, McIsaac, Kuhle, Kirk, & Veugelers, 2013; McIsaac et al., 2015; Orava, Manske, & Hanning, 2016). This research seeks to provide a national perspective to procuring the desired products for these environments, highlighting the importance of institutional food purchasing in the larger agri-food sector while recognizing the need for subnational jurisdictional governments to provide adequate support to those implementing such regulations

School food and procurement of the products for schools in the United States (Levine, 2008; Poppendieck, 2010), United Kingdom (Nelson, Lowes, & Hwang, 2007; Vernon, 2005), and Italy (Morgan & Sonnino, 2008; Simonetti, 2012), among others (Holthe, Larsen, & Samdal, 2010; Perez-Rodrigo & Aranceta, 2001; van Ansem, Schrijvers, Rodenburg, Schuit, & van de Mheen, 2013) have been well researched. This is largely due to the research centering on the public school lunch programs offered to students. Canada, however, is an emerging area for research in this field, in part because lunch programs like those offered in other countries are non-existent or in a nascent stage. This is the case in Alberta, which expanded its school nutrition program pilot to all schools in the province for the 2017/18 school year (Alberta Government, 2017).

A key point of consideration from this body of literature is the politics of food procurement for a public program, like school lunches. The public plate–food procured for state-run institutions such as prisons, hospitals, and schools–are sites to further political agendas (Morgan & Sonnino, 2008). The scale at which these institutions purchase food means products compliant to regulations can have a significant impact on food production and distribution as producers and processors change to comply with regulations. (Morgan & Sonnino, 2008). Public institutions also lend themselves well to integrating support from multiple sectors, bringing together private, public, academic, and nongovernmental organizations to support health and

wellness initiatives (Carlsson & Williams, 2008). Initiatives for healthy and sustainable food procurement currently taking place do so on a smaller scale and would benefit from greater political and financial support (Carlsson & Williams, 2008). Where countries have a state-funded school lunch program, such as the United Kingdom, United States, and elsewhere, schools and school meals are sites for change as per the agenda of the government of the time (Morgan & Sonnino, 2008; Nestle, 2007; Pérez-Rodrigo & Aranceta, 2001; Poppendieck, 2010; Simonetti, 2012; Vernon, 2005). In Canada, without such a program, the influence of nutrition regulations is diminished.

Pseudo foods (Winson, 2013) are consumed by people of all ages across North America; this is not a problem exclusive to schools. The popularity of these products can be explained, in part, by challenges accessing fresh foods. Rural areas may not have access to the same quality and variety of fresh fruits and vegetables in grocery stores and supermarkets as their urban counterparts (Pouliot & Hamelin, 2009), although other research suggests that residents in rural Canada have ample access to fresh produce (McPhail, Chapman, & Beagan, 2013). Changes to global food production and distribution in the last fifty years have increased corporate concentration in the sector, pushing out local producers and/or alternative approaches to food procurement (McMichael, 2009). There are areas across Canada that struggle to produce their own fruits and vegetables, making importing a necessity, but it comes with logistical challenges. Research suggests these changes have contributed to high food costs and distribution issues in northern parts of the country (Rudolph & McLachlan, 2013).

Distribution aside, school nutrition regulations are attempting to remove pseudo foods from schools. The efficacy of the school nutrition regulations in Prince Edward Island (Mullally et al., 2010; Taylor et al., 2011), Ontario (Orava et al., 2016) and Nova Scotia (Fung et al., 2013; McIsaac et al., 2015) has been researched, although again, these studies do not address procurement. Instead, these investigations had a public health focus and attempted to learn what effects the regulatory levers were having on student health and success. Of these evaluative studies, only Taylor et al. (2011) discusses difficulty procuring compliant foods as a factor reducing the effectiveness of the regulatory lever. The results of this research also found procuring compliant foods as a challenge to effectively implementing school nutrition policy.

Public school meals have also presented opportunities to engage with, and support, alternative food networks in the United States and elsewhere. Morgan and Sonnino (2008) dedicated a book to looking at schools or school districts with programs that aim to participate in an environmentally sustainable food network in London, Rome, and New York City. Returning to Poppendieck's (2010) work, she highlighted the local heroes who, through hard work and innovation, have partnered with local producers to source for the school, begin school gardens, or make healthful school food more appealing in general. Farm-to-school programs are, perhaps, the most popular of the alternative food networks for schools since they are not only a way of obtaining fresher produce for students and providing a buyer for often smaller scale suppliers who do not always have access to large contracts like this, but also teachable moments for

students who otherwise may not be aware of the link between the food they eat and the farm it comes from (Allen & Guthman, 2006; Poppendieck, 2010).

While Morgan and Sonnino (2008) and Poppendieck (2010) laud the efforts of those who are improving the foods in their local schools, these alternatives are not without their challenges. The former concludes their examination of these sustainable school initiatives with an optimistic overview of what needs to be done in order to turn independent initiatives into regular practice (Morgan & Sonnino, 2008). Poppendieck (2010) does address the difficulties of having parents, teachers, school administrators, students, and community members organize and maintain these programs, and meet their typical responsibilities as well. It is easy to become burnt out trying to build and maintain a program while the conventional one receives systematic support (Poppendieck, 2010). Many alternative food networks struggle with finding adequate, sustained, financial support for enough time to become self-sustaining, in addition to other policy and infrastructure challenges (Carlsson & Williams, 2008; Mount, et al., 2013). Additionally, these programs tend to occur in more affluent areas where people have the time and resources to dedicate to an alternative lunch program, frequently leaving those most in need without the benefits of an alternative program (Poppendieck, 2010).

There is further suggestion that these well-intentioned programs support the increasing neoliberalization of schooling by relying on the strengths and resources of small groups of individuals, which demonstrates that it is possible to run these programs without institutionalized support (Allen & Guthman, 2006; Mount et al., 2013). The efforts made by community organizers to address the concerns are admirable; however, for a program providing school food the alternative needs to become the conventional to appropriately address the concerns related to the program. The only way to ensure that the benefits of such a program are available to everyone is to have government infrastructure to maintain it. Requiring a local group to run such programs means that only those who have the resources will be able to have one, and not every community has those resources.

Learning about the opportunities and challenges of procuring compliant foods and beverages in other countries provides a larger context for studying food procurement in English-language Canadian public schools. Discovering the opportunities and challenges for schools in each subnational jurisdiction of Canada required speaking with those involved in the development and/or implementation of these documents. The following section outlines the data collection process and analytical method for this study.

Methods

Data collection

Each of the ten provinces and the Yukon Territory had some documentation pertaining to the regulation of the nutrition of foods and beverages that can be made available by the schools

themselves. Yukon Territory, Ontario, New Brunswick, Nova Scotia, Prince Edward Island (PEI), and British Columbia have policies. Alberta, Saskatchewan, Manitoba, Quebec, and Newfoundland and Labrador have guidelines, although the amalgamation of the English-language public school boards in Newfoundland and Labrador has meant all schools in the province have adopted the guidelines as policy. This information is summarized in Appendix A. The Northwest Territories and Nunavut were excluded from this research because the territorial governments have not issued a policy or guideline pertaining to school nutrition.

To learn about the development, implementation, and impact of the school nutrition regulations, those responsible for such tasks in all ten provinces and Yukon Territory were invited to participate in a semi-structured interview. Permission to conduct the interviews was obtained from the Research Ethics Board of the University of Guelph. Recruitment was guided initially by contacting the department within the subnational jurisdictional government from which the document was obtained. In some instances, the author or authors of the documents were named in the document itself or on the website the document came from, providing the researcher with a contact to begin investigating potential interview participants.

Where authors were not given, the department was contacted by telephone or email, depending on the contact information given in the document itself or the document website, asking to be directed to the person with knowledge of the development and/or implementation of school nutrition regulations for that subnational jurisdiction. Some snowball sampling was also used when participants suggested people they were aware of who may be able to contribute to this research. Participants were not compensated for their participation. Ultimately, seventeen people agreed to participate in sixteen interviews: two from Yukon Territory, one from British Columbia, two from Alberta, two from Saskatchewan, three from Manitoba, three from Ontario, two from New Brunswick, and two from Newfoundland that participated in the interview together. Participants were sought from Quebec, Nova Scotia, and Prince Edward Island, however the researcher was unable to obtain participants from these provinces.

Two interview schedules were developed: one with questions about the development process for those who were primarily involved with the development of the regulations, and another one designed for those who are primarily involved in the implementation of the regulations in schools (Galletta, 2013). The primary difference between the two was the inclusion of questions specific to the position held by the participant.

The interview schedules included questions about changes to the internal school food environment and procurement that occurred as a result of the regulations. Examples include: “Have there been noticeable results since the regulations were implemented?” and “What changes, if any, have the regulations had on how food and beverages are sourced for schools?”. Although the participants were asked directly about changes to the internal school food environment as a result of the new or revised nutrition regulations, because the interviews were semi-structured, interview participants were able to discuss changes to the internal school food environment at any point during the interview.

Telephone interviews were conducted between April and September of 2015 and each one lasted between twenty and ninety minutes. The interviews were recorded and the recordings were deleted after being transcribed by the researcher.

Analytical strategy

With the assistance of NVivo 10 for Mac, a manifest textual content analysis of interview transcripts was conducted (Denscombe, 2010). The interview transcripts were initially open-coded, where each line was classified according to the idea contained within it, referred to as a node. Following the initial coding process, the nodes were reviewed and refined for consistency and validity by ensuring each unit of data categorized to the node represented the same idea (Charmaz, 2007). Any data that was inconsistent with the node it was initially coded to was uncoded and, where appropriate, recoded. Where a unit of data contained more than one idea, it was coded to each appropriate node.

Results

Those involved in the development of the regulations were asked about the rationale for the creation of the nutrition documents to provide context for the impacts on the internal school food environments they have been applied to. The semi-structured nature of the interviews meant that interview participants were able to discuss ideas or experiences without necessarily being prompted.

The spaces for food and beverage sales in schools vary tremendously across the country, which partially explains differences in the content of the regulations, recognizing that there are different facilities in different schools (Alberta Government, 2012; BC Ministry of Health, & BC Ministry of Education, 2013; Government of Manitoba, 2014; Government of Newfoundland and Labrador, 2008; Ministère de l'Éducation, du Loisir, et du Sport (MELS), 2007; New Brunswick Department of Education, 2008; Nova Scotia, 2006a; Nova Scotia 2006b; Ontario Ministry of Education, 2010; Prince Edward Island Eastern School District, 2011; Saskatchewan Ministry of Education, 2009; Yukon Territory, 2008). Schools are not required to sell foods or beverages, so any sales that take place do so at the discretion of the school administration. In many schools at the elementary level, food and beverage sales are restricted to one or two times a week, where the school partners with a restaurant to bring in outside food and beverages. Schools above the elementary level often have vending machines and/or tuck shops with a small selection of food and beverage items, and some have full service cafeterias with a range of hot and cold food items for students to purchase (British Columbia School Board Official, New Brunswick School Board Official, Newfoundland and Labrador two Provincial Officials, Ontario School Board Official).

Like the spaces themselves, the models for funding vary as well. Some schools operate dining services through a catering company, like Sysco or Aramark. In these instances the food services operate for profit, and often the school receives a portion of this (New Brunswick Provincial Official; New Brunswick School Board Official; Ontario School Board Official; Saskatchewan Dietitian). Other schools offer cafeteria services that provide foods and beverages at cost, and in some cases, using the sale of less nutritious foods and beverages to subsidize the cost of the more nutritious items (British Columbia School Board Official; Manitoba Dietitian; Saskatchewan Cafeteria Manager/Educator). These services are different from the school nutrition programs that are run by nongovernmental organizations within schools. These programs provide breakfast before school and snacks and/or lunch to students at no cost to them. These programs are typically excluded from the regulations because the foods and beverages are given away, though it is worth noting that because the objective of these programs is to provide nutrition to students who might not otherwise be getting enough at home or during the school day, they aim to provide nutritionally balanced meals and snacks (Manitoba NGO Director; Ontario NGO Director; Saskatchewan Dietitian).

Table 1 presents a summary of the topics discussed with interview participants that pertain to the opportunities and challenges that arose out of implementing new or revised school nutrition regulations with the intent of increasing access to healthful food. The squares filled in black indicate at least one participant from that subnational jurisdiction made reference to the category listed in the far left column.

As seen in Table 1, one of the few consistencies between subnational jurisdictions was that at least one participant from each subnational jurisdiction mentioned increasing access to healthful foods as being an objective of implementing the nutrition regulations (Alberta Provincial Official; Manitoba Dietitian; Manitoba NGO Coordinator; New Brunswick School District Official; New Brunswick Provincial Official; Ontario School Board Official; Saskatchewan Dietitian; Yukon Territorial Official). Some example statements from participants include:

> "The mission…at the outset, back in 2006…was to increase access to nutritious foods in school" (Manitoba School District Official)

> "I also work with our dietitian from the hospital who helps our centralized kitchen and our individual schools ensure that they are providing nutritious breakfast, nutritious lunches and that we meet the standards that the province put out for what can be sold in schools" (British Columbia School District Official).

> "There was a push from an outside group to…make it easier for kids to make healthy choices when they went to school" (Newfoundland and Labrador 2 Provincial Officials)

Acknowledging increasing access to healthful foods as a desired outcome of the school nutrition regulatory documents provides necessary context for understanding the opportunities and challenges experienced by schools in procuring compliant products. The new, or revised, regulations require schools to remove or restrict the frequency with which these products are sold to students on school property (Alberta Government, 2012; BC Ministry of Health, & BC Ministry of Education, 2013; Government of Manitoba, 2014; Government of Newfoundland and Labrador, 2008; Ministère de l'Éducation, du Loisir, et du Sport (MELS), 2007; New Brunswick Department of Education, 2008; Nova Scotia, 2006a; Nova Scotia 2006b; Ontario Ministry of Education, 2010; Prince Edward Island Eastern School District, 2011; Saskatchewan Ministry of Education, 2009; Yukon Territory, 2008).

The interviews with participants delved into many areas of the school food environment that were impacted in some way by the nutrition regulations and how the effects contributed or hindered student access to healthful foods.

Table 1: Summary of Interview Nodes Pertaining to Procurement

	AB	**BC**	**MB**	**NB**	**NL**	**ON**	**SK**	**YT**
Access to Healthful Foods	✓	✓	✓	✓	✓	✓	✓	✓
Alternative Food Networks			✓	✓		✓	✓	
Challenges to Success*	✓	✓	✓	✓	✓	✓	✓	✓
External School Food Environment (SFE)	✓	✓		✓	✓	✓	✓	
Impact*	✓	✓	✓	✓	✓	✓	✓	
Nutrition Criteria	✓	✓	✓	✓	✓	✓	✓	
Problems to be Addressed in SFE	✓	✓	✓	✓	✓	✓	✓	✓

*Indicates the node was analyzed further

Table 2 presents the impacts the new or revised school nutrition regulations had on procurement for the internal school food environments, as identified by the interview participants. When describing the impacts of the new or revised school nutrition regulations, some participants explained how they were opportunities to make positive changes to the school environment, while other participants identified negative changes to their internal school food environments as a consequence of the regulations, including challenges to becoming compliant. "Changes in Food and Beverage Options" was noted as a theme by participants in each subnational jurisdiction with interview participation, with the exception of Yukon Territory.

This result shows those who work in schools have observed changes to what is available to students during the school day since the school nutrition regulations have been implemented. This includes increases in healthful food and beverage options, "there's a been a huge increase in buying fresh produce" (Manitoba NGO Coordinator); decreasing the number of times less healthful food and beverages are offered, "let's say a cafeteria was offering hamburgers five days

a week, and then they might have reduced it to twice a week, and maybe with time then, reducing it even more to only being once a week" (New Brunswick Provincial Official); and removing certain food and beverage options, "we don't have chocolate bars or chips in our vending machines, they're gone. We don't have any sugared pop. We don't have vending machines at the elementary level" (Alberta School District Official).

Table 2: The Types of Impacts School Nutrition Regulations Have Had on the Procuring Food

	AB	BC	MB	NB	NL	ON	SK	YT
Change in Food Service Provision			✓	✓	✓	✓	✓	
Change in Food/Beverage Options	✓	✓	✓	✓	✓	✓	✓	
Change in External SFE Use						✓		
Positive Impact			✓	✓		✓	✓	

The changes to the food and beverage options made available to students at school and how they pertain to procurement will be discussed in greater detail in the next section. It has not been easy for all schools to make the necessary changes required by the new or revised school nutrition regulations. Many interview participants identified challenges they experienced, or are still experiencing, and some of them pertain to procuring the required food. Table 3 presents the challenges to successful implementation of the school nutrition regulations that pertain to procurement as indicated by interview participants.

Table 3: Challenges to Successful Implementation of School Nutrition Regulations Pertaining to Procurement

	AB	BC	MB	NB	NL	ON	SK	YT
Affordability		✓						
Appeal of Compliant Foods				✓	✓	✓	✓	
Availability of Compliant Foods	✓	✓	✓	✓		✓		
Costs		✓				✓	✓	
Food service providers	✓	✓		✓	✓	✓	✓	
Insufficient resources		✓	✓	✓	✓		✓	
Misconceptions				✓	✓		✓	
Rural/remote/north		✓	✓		✓	✓	✓	✓
Size of Jurisdiction	✓					✓	✓	

Most notably for procurement, "Food Service Providers" and "Availability of Compliant Foods" were nodes identified by interview participants as challenges to successfully making the necessary changes. Food service providers, including producers, manufacturers, and caterers who supply for school food services, are key to successfully implementing the changes to the food and beverages available to students at school.

The success of an internal school food environment's ability to continue to sell foods and beverages is largely dependent on the ability and willingness of food service providers to comply with the changes in nutrition regulations. As Table 3 shows, participants in Alberta, British Columbia, New Brunswick, Newfoundland and Labrador, Ontario, and Saskatchewan experienced reluctance, resistance, and inability to comply with the regulations from food service providers. "Availability of Compliant Foods" is similar to, but distinct from, the challenges presented by food service providers. This refers generally to difficulty obtaining compliant foods, with or without the assistance of an external food service provider. Finding compliant foods and beverages was a challenge experienced by participants in Alberta, British Columbia, Manitoba, New Brunswick, and Ontario.

Related to "Availability of Compliant Foods" is the node "Rural/Remote/North". Participants making references coded to this node indicated that schools located in areas that are rural, including those in the northern areas of their subnational jurisdiction, or that are remote, struggle to acquire foods and beverages that are compliant to the nutrition regulations set by their respective subnational jurisdiction. Schools in urban, or otherwise accessible, areas have also struggled due to insufficient resources. The participant from British Columbia specifically mentioned that their cafeteria could not afford some of the compliant products; however participants from Manitoba, New Brunswick, Newfoundland and Labrador, Saskatchewan, as well as British Columbia made reference to lacking the resources necessary to provide compliant foods.

Clearly, there are many challenges to successful nutrition regulation implementation identified by the interview participants. In the next section of this paper, the impacts highlighted in Table 2 are unpacked, as participants provide details of both the opportunities and challenges to successful regulation compliance relative to the new or revised school nutrition regulations and internal school food environments across the country.

Impact: Opportunity to improve nutrition within conventional food networks

The development and implementation of the school nutrition regulations in each of the ten provinces and the Yukon Territory enacted in the last ten years provided an opportunity for regulators and those who work in schools to consider what they would like to accomplish with regards to food and nutrition. Interview participants from each of the subnational jurisdictions that participated in interviews shared "increasing access to healthy food" as being the main objective of these regulations (Table 1). Because of this, it is logical that the changes in nutritional requirements in the provincial and territorial school food regulations required many

school administrators to re-evaluate the way the foods and beverages are procured for schools. The responses from the participants have suggested the items present in the internal school food environment have changed since the introduction or the revision of the school nutrition regulations.

According to the content analysis of the interview transcripts, "change in food and beverage options" was a theme found in interviews in each subnational jurisdiction. Given the emphasis placed on nutrition and health in the regulatory documents this is not necessarily surprising. One participant noted:

> I think the food retailers, like the pizza companies, the you know, the sub shops, … they all found other or created versions of their products that would be compliant so I think the school's food connection through that industry was important enough that they were prepared to do that [comply with the nutrient requirements] (Ontario School Board Official).

There may have been some assumption that the addition, or revision, of regulations would result in a need to change suppliers or caterers. Instead, the purchasing power of school boards/districts/divisions, combined with the implementation or revision of school nutrition regulations, resulted in changes to the products offered by food processors and caterers rather than school boards/districts/divisions needing to change suppliers. One participant explicitly mentioned the impetus for the nutrition regulations was to keep fast food out of schools (New Brunswick, Provincial Official), however many of the food companies responsible for fast food type items found in schools prior to the implementation or revision of the school nutrition regulations were more than willing to change their recipes to comply with them. Food processors and caterers are finding ways to keep favourite items like French fries and pizza on the menu by changing the cooking method or adding ingredients to meals to make them compliant with nutrition criteria (New Brunswick School Board Official; Newfoundland and Labrador two Provincial Officials; Ontario School Board Official). Food service providers have been more than willing to find alternatives to pseudo foods or to change their recipes so that the products comply with the nutrition regulations.

Having food service providers alter their recipes and change their offerings may not be the desired outcome of the school nutrition regulations, but it does mean that the products that students are buying from the internal school food environment are less unhealthful than previous versions. There are foods and beverages from these food service providers that are not compliant with the newly implemented or revised school nutrition regulations and are no longer permissible for sale on school property; however, by becoming compliant with the nutrition regulations, many offerings of processors and caterers became healthier.

Impact: Opportunity to engage with alternative food networks

Though school boards/districts/divisions were able to continue working with their existing food service provider, for others the nutrition regulations required changing suppliers. Within this group, the need to change suppliers was an opportunity to engage with alternative food networks by incorporating local products, producers, and processors in the school food procurement process.

There were at least two examples given of schools using the opportunity to embrace local suppliers. A school board official noted: "I do know that there are some schools that are looking towards [using] local foods and vendors, like local suppliers" (Ontario School Board Official). An official in the provincial government of New Brunswick observed schools across districts combining their purchasing power to create the Réseau des Cafétéria*s* to purchase from local suppliers at a cost that keeps food at a price point affordable to students (New Brunswick, Provincial Official).

A participant from an anglophone district in New Brunswick had further insight into the creation of the cafeteria network by the francophone district. In addition to including more local venders, this district opted to take control of its own school food provisioning. The "francophone district, the district that shares our [anglophone School District] boundary, had moved away from Chartwells and they set up their own company, a non-profit and there was starting to be great buzz about what they were doing" (New Brunswick School District Official). In Saskatchewan, an individual school was able to embark on a similar venture as the francophone school district in New Brunswick.

In conjunction with the hiring of a commercial cooking instructor for a course that supplies the school cafeteria with foods and beverages, more foods were now being made from scratch rather than from frozen, as was the case when it was supplied by a private caterer (Saskatchewan Cafeteria Manager/Educator). In addition to the educational opportunities afforded by bringing in this instructor, controlling what goes into the final products allowed the school to provide similar products to those sold previously, like hamburgers and sandwiches, but with more nutritional value (Saskatchewan Cafeteria Manager/Educator). Though local suppliers may not provide the products, the school nutrition regulations did provide an opportunity to move food production internally so less healthful products were removed; students can purchase more nutritious foods and receive education about nutrition and food preparation.

The change in nutrition regulations created opportunities for school administrators to go above and beyond what was required by the new or revised school nutrition regulations in their subnational jurisdiction. Returning to New Brunswick, inspired by the francophone district they share a border with, the anglophone school district in the province used the change in school nutrition policy, and the expiration of the contract with their food service provider, to request a "gold standard in district food services" (New Brunswick School District Official). In the request for proposals (RFP), in addition to needing to be compliant with the provincial school nutrition

policy, the school district also requested fresh, local, and/or organic products from the food service provider (New Brunswick School District Official).

Though the provision of foods and beverages for the internal school food environment did not move entirely in-house for the anglophone district, the implementation and revision of the New Brunswick school nutrition policy provided the opportunity for this district to find food service providers willing to consider farm-to-school procurement programs and even include an educational component for high school students (New Brunswick School District Official). At the time of the interview, the outcome of the request for proposals was unknown, but the participant was confident they would find a food service provider to meet most, if not all, of the requests (New Brunswick School District Official).

Moving food service provision in-house, where facilities exist, gives schools a significant amount of control over what is served and ensures that it is compliant with the nutrition regulations from their respective subnational jurisdictional governments. It also offers schools and school boards/districts/divisions an opportunity to engage with the alternative food networks in their areas and find local producers to supply their schools.

Impact: Challenge regarding the unavailability of compliant foods

There are food producers and processors willing and able to comply with the new or revised school nutrition regulations; some have also been willing and able to go beyond the immediate scope of the regulations and include local and/or organic products in what they have to offer school food environments. Other schools have used the change in nutrition regulations as an opportunity to move food service provision in-house. Many schools, however, have struggled to find foods and beverages that comply with the new or revised nutrition regulations.

According to several interview participants, the unavailability of compliant foods is the result of the lack of compliant products from food producers and processers, and the lack of infrastructure on school property. Where some schools have been able to take advantage of the reformulations of foods from food service providers, others lack the resources to do so. Many vending machines, tuck shops, and smaller canteens are limited to selling shelf-stable products, a large number of which contain high levels of sugar, salt, and fat, and do not contain significant amounts of nutrients. These products are no longer permissible for sale on school property according to the nutrition regulations (Manitoba NGO Coordinator; Newfoundland and Labrador two Provincial Officials; Saskatchewan Dietitian). For instance, a participant shared: “it’s much easier to get, like, soda pop and juice boxes than to get milk and storage and…it’s perishable, right? So it’s harder” (Saskatchewan Cafeteria Manager/Educator).

For schools with cafeterias and kitchens, many of these spaces are designed to deep-fry or reheat processed foods. The spaces for refrigerating fresh produce and meat and employing alternative cooking methods is limited, and making changes to the infrastructure is often too expensive to be undertaken. One participant observed: “the original concept for schools was not that they would be feeding kids and…ensuring they have a daily nutrient intake” (Manitoba

NGO Coordinator). Schools in Newfoundland and Labrador received financial support from the province to upgrade kitchens and dining spaces to support changes to the school food environment that came as a result of the school nutrition guidelines (Newfoundland and Labrador two Provincial Officials) but not all subnational jurisdictions have received this.

In other cases, the challenge has been finding a sufficient number of products to make maintaining the spaces that sell foods and beverages worth keeping. Many of the school nutrition regulations have 50/50 or 80/20 rules that allow for foods and beverages with higher fat, sugar, and salt contents to be sold as long they make up no more than fifty or no more than twenty percent (depending on the regulation) of the options available to students (Alberta Government, 2012; BC Ministry of Health & BC Ministry of Education, 2013; New Brunswick Department of Education, 2008; Ontario Ministry of Education, 2010). Several participants expressed difficulty procuring enough healthy options for their food and beverage vending spaces to balance the moderately nutritious items that make up half or the minority of options (Alberta School District Official, New Brunswick School District Official; Ontario School Board Official). Two participants spoke generally about the challenge of finding compliant foods, regardless of what else is sold (Manitoba Dietitian; Manitoba NGO Coordinator).

Each subnational jurisdiction introduced its school nutrition regulations at a different time, which means some schools previously struggled, but managed to overcome the challenges, while other provinces are still early in the adjustment phase. For New Brunswick, for instance, which first introduced their school nutrition policy in 2005, there has been time to make the necessary changes. One participant acknowledged that it took several years for food service providers to adjust their offerings, menus, and recipes so they were compliant with the requirements of the policy (New Brunswick School District Official). Recognizing that the challenges exist, but can be overcome, can be useful for those in subnational jurisdictions that have more recently begun implementing nutrition regulations to strategize solutions to the challenges being experienced.

Impact: Challenge regarding procurement in rural, remote, and northern communities

Over the course of the interviews, those with rural and remote areas in their jurisdictions shared issues they witnessed or experienced while attempting to procure foods and beverages that comply with the school nutrition regulations. A school in British Columbia that runs a lunch program most of the students participate in has experienced some difficulty procuring compliant foods (British Columbia School District Official). This program originally used the services of a food distribution company that specializes in institutional food procurement.

Although the food distribution service was well suited for the needs of the school's lunch program, the remote location of the school proved to be problematic for the service. The participant explained that, in addition to the expense of having fresh produce delivered, she also

experienced difficulties with suppliers delivering pallets of produce with multiple boxes of a product where:

> the top box looks great, but by the time you get to the fourth box, they're all rotten and the problem is they've already left. They will take it back and they will refund us, but on that day we need the food so then we're forced to go to the grocery store and pay higher costs because we're also buying it at the last minute (British Columbia School District Official).

This happened frequently enough that this school district stopped purchasing from this supplier and instead has arrangements with a local Safeway and Overwaitea, two supermarket chains with stores within a short distance to the school (British Columbia School District Official). The participant elaborated further on the partnership with Safeway. When Safeway first began supplying produce for the food program, it was still an American-owned grocery chain. Since being acquired by Sobeys in 2013, the grocer has been more willing to offer discounts and alert the program to when products are going on sale so they can be incorporated into the menu (British Columbia School District Official). Purchasing retail can still be expensive, even with sales, and the supermarkets are cautious in supplying the program as they want to maintain sufficient inventory for their regular customers, but the partnerships have helped the program survive (British Columbia School District Official).

Finding an alternative food distribution service was not an option because "you don't have the big companies" (British Columbia School District Official) to request services from. A school district in Alberta with schools in small cities also had difficulty procuring appropriate foods because "you can't find food contractors everywhere in the city" (Alberta School District Official). Access to companies that provide food services is limited in areas with smaller populations as these areas do not create enough business to support multiple food service providers. If the food service provider is unable to provide compliant products or is too expensive for the school to contract with, there are few alternatives for the school to maintain the school food environment.

The climate of Canada, as well as the school year typically ending as the growing season begins, makes school gardens unrealistic for most of the country. According to the interview participant, the location of their is not conducive to agriculture, which contributes to the difficulty obtaining fresh produce (British Columbia School District Official). Even those that are able to have school gardens are unable to grow sufficient produce to supply the school cafeteria with any regularity (Ontario School District Official).

A participant from Ontario who organizes nutrition programs for a school board expressed difficulty getting fresh foods to remote schools. She mentioned that it is more difficult for the schools "up north" to access the same fruits and vegetables at the same price as the schools "in the city" because the price is the same but the transportation costs are greater for the remote schools (Ontario NGO Coordinator). The organization was working with those schools to

develop a distribution program that would reduce the transportation costs for these schools; however, they are still at a disadvantage compared to their counterparts in the urban areas of the board.

Further, northern British Columbia and Newfoundland and Labrador also experience times of food scarcity, which impacts both personal and institutional food procurement. The majority of the provinces' fresh produce is shipped in and inclement weather can cause shipments to be missed (Newfoundland and Labrador two Provincial Officials). This results in empty store shelves, which in addition to the problems this causes for households purchasing food, also impacts food procurement for the internal school food environment (Newfoundland and Labrador two Provincial Officials). Since this is a province-wide issue, the Food Security Network in Newfoundland and Labrador is working with rural and remote communities on the island and especially the north shore of Labrador to create strategies to improve access to food (Newfoundland and Labrador two Provincial Officials). The participants in British Columbia and Newfoundland and Labrador indicated access to food is not a problem exclusive to procuring for internal school food environments. When food procurement is a problem elsewhere in the agri-food complex, it is unrealistic to expect school boards/districts/divisions to overcome this challenge internally.

Discussion

The implementation of school nutrition regulations has impacted how food is procured for these spaces. Many conventional food suppliers have made their products compliant to the regulations, making it possible for schools to make more nutritious foods available to their students. This means the school nutrition regulations are addressing the concerns highlighted by those who have studied Canadian school food environments (Winson, 2008; Winson et al., 2012; Vine & Elliott, 2014), including those who have been studying the impacts of the nutrition regulations on student health and wellness (Fung et al., 2013; McIsaac et al., 2015; Mullally et al., 2010; Orava et al., 2016; Taylor et al., 2011; Veuguelers & Schwartz, 2010). Additionally, conventional food producers, processors, and caterers supplying schools with reformulated products that conform to the nutrition regulations support the public plate as a way of influencing industry and furthering a political outcome, in this instance, improving the nutritional quality of foods and beverages available in schools (Morgan & Sonnino, 2008).

The nutrition regulations also acted as a catalyst for some schools to procure foods from alternative food networks, working with local growers and suppliers to provide the products for the internal school food environment. The opportunity to support local economies, while procuring fresh produce into schools in the interest of nutrition, has generally been received positively by those who were interviewed. It is important to consider that in most of the examples given by interview participants, procuring from alternative food networks has been done on a voluntary basis, and is not available at all schools. This requires the capacity building

of individual teachers, administrators, producers, and community members, which is not something that each school has access to. Further, it is difficult to find sustained funding and maintain the infrastructure to support long-term procurement arrangements. This would suggest that the schools that have been able to procure from alternative food networks may find that the capacity to grow is limited, and the programs unsustainable as the individuals involved experienced burnout, as has been the case for other similar programs (Allen & Guthman, 2006; Carlsson & Williams, 2008; Mount et al., 2013).

These changes in the supply chain have not necessarily been easy. Some interview participants shared that there was a difficult transition period before finding enough compliant products to sell in the internal school food environment. For schools that have only recently begun changing their menus, they are experiencing the challenges of procuring sufficient compliant products. In some cases, this is due to a lack of infrastructure to accommodate perishable items and schools do not have the resources to make those changes to accommodate fresh products. In other cases, location is a challenge to procuring compliant food and beverage products for internal school food environments. The results of this research showed schools in rural, remote, and northern locations are struggling to procure compliant foods and beverages for their cafeterias, canteens, tuck shops, vending machines, and special-occasion days. A limited body of research examines the contents of those retail outlets in rural locations and what they have to offer the people living in them (McPhail et al., 2013; Pouliot & Hamelin, 2009). When food distribution problems exist elsewhere in the retail sector, it is not surprising to see the same problems experienced in some schools.

Some schools have received financial assistance so the internal school food environments were better equipped for fresh products and others have found partnerships with nutrition organizations to improve distribution of products to their schools. But the research revealed there are many schools across the country that still require more support with implementing the school nutrition regulations to overcome the challenges faced when procuring compliant foods. Schools and school boards/districts/divisions that are not getting sufficient support from the subnational jurisdictional government could look to other examples such as those outlined in this research. In those countries with a state-funded lunch program, such as the United States, the infrastructure to provide those meals, for better or for worse, has to be available to all students. In Canada, where no such program exists, the infrastructure is lacking.

Conclusion

Introducing or revising school nutrition regulations for foods and beverages available on school property has led to changes in what is being procured for the internal school food environment. According to those working in school food environments, many of the changes have been positive. Large-scale producers have changed their recipes and offerings so their products comply with the regulations. In other cases, the nutrition regulations opened the doors for local

vendors to sell their products in the internal school food environment. In both situations, the nutrition regulation has had an impact on the nutritional quality of food procured for schools and changes have been made throughout the agri-food complex. The difficulties experienced by others in procuring compliant foods and beverages for schools indicate that many schools require additional support, financial or otherwise, to procure the same quality of foods being procured elsewhere and to have the infrastructure to do so. It also points to gaps in food distribution across Canada, something that needs to be addressed for household, as well as institutional food security.

There are several key areas for future research from these results. Where this research attempts to examine school nutrition regulation nationally, there is more to be done to add to the examinations of school nutrition that have taken place within provinces, and there are further opportunities to examine what the situation for school food in Canada looks like in terms of what is available, where it is served and what students are eating. More research can be done into how to make the most of the ability of the conventional food network to deliver reformulated products to schools at a price that schools can still afford to purchase and resell. Regulators can use the examples where provincial governments have provided financial support to schools to facilitate the building of infrastructure and how that, in turn, supports the nutritional changes. For those schools that are engaging, or wish to engage, with alternative food networks, research can also be done into how provincial, territorial, and federal governments can partner with nongovernmental organizations and producers to support these initiatives. Lastly, the logistical challenges that currently exist in Canada's food system need to be addressed, as they impact the ability of schools to procure nutritious food just as they do for households. Continued research into this area has value in terms of improving food security at all levels.

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Appendix

Table summary of the documents used for the content analysis

Region	Administrative Body	Document Title	Year Published	Policy/Guideline
Alberta	The Government of Alberta	Alberta Nutrition Guidelines for Children and Youth: A Childcare, School and Recreation/Community Centre Resource Manual	2012	Guideline
British Columbia	Healthy Families BC (Division of Ministry of Health) in conjunction with Ministry of Education	Guidelines for Food and Beverages in BC Schools	2013	Guideline from Ministry of Health mandated but not Legislated
Manitoba	Healthy Child Manitoba	Moving Forward with School Nutrition Guidelines	2014	Guideline
New Brunswick	Department of Education	Policy 711	2005 (Revised 2008)	Policy
		Healthier Eating and Nutrition in Public Schools: A Handbook for Policy 711	2008	Handbook for Policy
Newfoundland and Labrador	Healthy Students Healthy Schools (A portfolio under Departments of Education and Seniors, Wellness and Social Development)	School Food Guidelines For Administrators and Caterers	2009	Guideline has been adopted as policy

Nova Scotia	Department of Education and Department of Health Promotion and Protection	Policy Directives and Guidelines	2006	Policy
		Executive Summary	2006	Policy
Ontario	Ministry of Education	School Food and Beverage Policy: Resource Guide PPM 150	2010	Policy
Prince Edward Island	PEI Eastern School District	Eastern School District Administrative Regulation School Nutrition for all Grade levels – K-12	2011	Policy
		Policy Statement: School Nutrition	2011	
Quebec	Ministry of Education, Leisure, and Sports; Ministry of Health and Social Services	Going the Healthy Route at School	2007	Guideline
Saskatchewan	Ministry of Education (In partnership with the Ministries of Health and Social Services)	Nourishing Minds Towards Comprehensive School Community Health: Nutrition Policy Development in Saskatchewan Schools	2009	Guideline
	Saskatchewan School Boards Association (written by Kathy Berlinic)	Food for Thought: School Nutrition Policy	n.d.	Guideline
Yukon Territory	Yukon Education	School Nutrition Policy	2008	Policy

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Original Research Article

Gleaning in the 21st century: Urban food recovery and community food security in Ontario, Canada

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Abstract

Historic gleaning activities in Europe took place in farmers' fields where gleaners could collect the leftovers of the harvest. One of the primary motivations for modern gleaning in Canadian cities is to donate fresh food to local organizations such as food banks. As there is currently little research in this area, this study aims to explore how gleaning initiatives contribute to community food security. The study is based on interviews and surveys with volunteers from several gleaning organizations in Ontario and uses the Dietitians of Canada's Food Security Continuum as a framework for analysis. The study found that gleaning contributes to all three stages of the Food Security Continuum: initial food systems change, food systems in transition, and food systems redesign for sustainability. Respondents felt that the amount of food harvested could be scaled up. Moreover, there were benefits that augmented community food security, such as increased food literacy, food awareness, community cohesiveness, and a fresh food supply. Overall, this study improves our understanding of how gleaning initiatives can contribute to community food security. With better ongoing support from the community and on the policy agenda, such projects could further enhance their impacts.

Keywords: Community food security, food security continuum framework, gleaning, urban food recovery, urban agriculture

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Introduction

Gleaning unused field crops as a means of food procurement has been common practice for as long as there have been farmers' fields. The word "gleaning" conjures images of poor peasants hunched over fields holding sparse sheaves of grain. This interpretation is due, in part, to the way gleaning has been expressed in works of art. One of the most famous images of gleaning is by Jean-Francois Millet (1857). In this painting, three women are seen in an empty field holding a few stalks of grain. One of the women is painfully stooped, alluding to the backbreaking nature of the work. Hovering over them is a male figure on horseback—likely the property owner or his steward. It is an interpretation entrenched in a culture where inequalities are addressed by making room for charitable acts while still maintaining acceptable social, gender, and class boundaries.

This classic image of gleaning illustrates a historical perspective on food (in)security when field gleaning was an act of subsistence. The implication is that the arduous process of harvesting such scant pickings, piece by piece, would be done only out of necessity and not by choice. However, before the sixteenth century, gleaning was simply the final phase of the harvesting process when a person or group would follow the harvesters and collect fallen grain (Vardi, 1993). This changed during the 1700s when the French government became increasingly concerned with individual (private) property, primarily for taxation purposes. It was then that a new, theologically justified, delineation of who could glean (women, the poor, and infirm) and who could not (farmers, able bodied) came about. Gleaning ceased to be the final step in the harvest, and instead became an act of charity (Vardi, 1993).

Modern gleaning as a form of harvesting fresh food, when differentiated from other forms of food recovery such as dumpster diving[1], shares both similarities and distinct differences from these historical accounts. Gleaning has become a form of food recovery in which individuals and groups volunteer their time and donate a significant portion of the harvest to social service organizations. This suggests a shift away from allowing food-insecure people to fend for themselves towards a more community-based approach, and a larger participatory effort to reduce food insecurity. While historical gleaners could only collect the meagre leftovers in farmer's fields, today food recovery groups are driven by the bounty of unharvested food growing in and around urban spaces. Historical gleaning was very much farm and field oriented in rural spaces. Now, modern gleaning takes place in a multitude of contexts, in both urban and rural contexts.

This paper presents the results of a study that explores how gleaning initiatives may contribute to community food security (CFS), based on the perceptions of volunteer gleaners. This research addresses a gap in the literature on urban gleaning in Canadian cities, and how

[1] The term gleaning is used in this paper to refer to the harvesting of fresh, surplus, food from where it is grown. Similar gleaning activities include (but are not limited to) foraging (Mclain, Hurley, Emery, & Poe, 2014), dumpster diving (Haselwanter, 2014), food redistribution (Heynen, 2010), and food bank gardening (Food Banks Canada, 2016).

these activities contribute to CFS. Exploring the perceptions of volunteer gleaners provides important information for gleaning organizations that rely on volunteers for harvesting the food.

The first part of this paper reviews the benefits of gleaning in the form of urban gleaning groups in Canada. Next, we describe the concept of CFS with links to gleaning activities, followed by a description of the ways that gleaning activities contribute to CFS based on the perceptions of volunteer gleaners. We apply the Dietitians of Canada Food Security Continuum (FSC) framework (2007) to analyze volunteer perceptions, and conclude with directions for future research.

Setting the stage for food recovery

Food recovery has been taking place in different forms for centuries. There are several historical accounts of gleaning (Badio, 2009; King, 1992; Vardi, 1993), but this paper addresses a gap in research on modern gleaning initiatives, particularly in an urban, Canadian context (Bartlett, 2012). Since Canada's first formal fruit tree project[2] was founded in 1998 in Victoria, British Columbia (Lifecycles Project Society, 2003), more than 28 formal gleaning projects have emerged across the country (Hidden Harvest, 2012). The structure of food recovery groups varies but the primary reasons for their formation are consistent across groups: reducing food waste, community building, improved access to local foods, knowledge sharing, and addressing climate change. Each one of these issues has direct links to food security.

The first official urban fruit tree project in Ontario was the Hamilton Fruit Tree Project, founded in 2005. Other large urban centers also have formal gleaning projects including the Toronto-based group Not Far From The Tree, Hidden Harvest in Ottawa, the Appleseed Collective Revival in Guelph, and the Gleaners Guild in Waterloo Region. Available data indicate that more than 50,000 pounds of fruit was officially recovered in 2014 from these groups alone. This number indicates the potential of gleaning groups to contribute a significant amount of fresh food to food recovery efforts.

Gleaning contributes to CFS in a variety of ways. For example, volunteer gleaners are provided with instructions on how to safely and appropriately harvest the food they are gleaning. This contributes to food literacy[3] in several ways, including providing a basic understanding of how and where food grows. Seasonal and local food literacy is also improved by exposing volunteer gleaners to the kinds of food available in their region. Volunteers who choose to take home some of the harvest may also be exposed to new foods or ways of preparing or preserving those foods.

[2] Fruit is the focus of most of this discussion, however, many of these organizations are gleaning other fresh foods such as tree nuts, garden produce, and field crops.
[3] Food literacy has been described as proficiency in food-related skills and knowledge (Truman, Lane, & Elliot, 2017).

Urban gleaning can also contribute to CFS through waste reduction, improved access to local foods, knowledge sharing, and addressing climate change[4]. These are some of the ways that modern gleaning differs from historical gleaning when food was harvested for subsistence. Another benefit of gleaning is providing fresh, unprocessed food to emergency food providers such as food banks (Finn, O'Donnell, & Walls, 2014).

Gleaning has taken on different social meanings through the centuries. Vardi (1993) gives a detailed historical account of the perceptions of gleaning and the various iterations of field gleaning activities. This narrative includes a description of the shift away from the rights of the poor to glean in fields after the commercial harvest, to the emphasis on individual (private) property. Modern gleaning has taken on a new form once again, which remains understudied in food recovery literature; volunteer gleaners participate not necessarily to feed themselves, but to serve a variety of motivations from decreasing food waste to providing food to social service organizations that need it. Badio (2009) sums up the issue as follows:

> In an effort to reduce fiscal deficits, governments have, over the last few decades, slashed social programs that protect the welfare of low-income families in Canada. As a result, the responsibility for providing for the poor is returning to communities and non-profit organizations. Centuries after the undermining of gleaning, communities across North America are reviving and modernizing the ancient practice to tackle one dimension of poverty—food insecurity (p. 2).

References to gleaning generally refer to rural gleaning in farmer's fields: "[to] gather, pick up, after reapers in a cornfield" (Webster's, 1990, p. 179), "[t]he act of collecting leftover crops from farmer's fields after they have been commercially harvested or on fields where it is not economically profitable to harvest" (Glean Canada, 2015). To date, no context-specific definition for urban gleaning exists, indicating the need for further research in this area, and an updated definition to better conceptualize modern gleaning as a means of food procurement in urban spaces. The lack of a comprehensive definition stems in part from the wide variety of activities that can be considered a form of gleaning. A definition of urban gleaning should differentiate itself from other forms of (alternative) urban food procurement such as dumpster diving (which may include non-food items such as clothing), food redistribution (which includes collecting surplus prepared food from restaurants), and food bank gardening (which is gardening with the intention of donating to emergency food providers). These other activities are also ripe

[4] North Americans waste an estimated 168 million tonnes of food every year (CEC, 2016). Organic food waste contributes to the formation and release of methane gas, which has a global warming potential 25 times greater than carbon dioxide (EPA, 2018). The Environmental Protection Agency of the United States (EPA) has created the Food Recovery Hierarchy, which identifies feeding hungry people as one of the top two most socially, environmentally, and economically beneficial ways to prevent and divert food waste (EPA, 2018).

for exploration and further research. However, in this paper the term "urban gleaning" refers to the harvesting of fresh food in cities (from where it is grown) that would otherwise go to waste[5].

Community food security

Community food security (CFS) is defined as: "All persons in a community having access to culturally acceptable, nutritionally adequate food through local non-emergency sources at all times" (CFSC, 1997, p 4). The concept of CFS includes not only hunger relief, but also local, sustainable food production through the empowerment of marginalized people (Alkon & Mares, 2012). This conceptualization of CFS takes into consideration the environmental concerns of food systems (Brinkley, 2013; Dietitians of Canada, 2007). Environmental health has become one of the primary indicators of CFS, along with sociological indicators (Ontario Public Health Association, 2002). In these ways, CFS is both a refined and an expanded embodiment of the term "food security". It is refined in that it has become more focused on scale (i.e., community-based) and unites many previously distinct advocacy groups such as public health advocates, environmentalists, community development groups, farmers, church groups, and anti-hunger advocates (Fisher, 1997). It is an expanded definition because it addresses a wide range of issues associated with a healthy food system, beyond hunger (e.g., environmental, ecological, social, economic, etc.) with a common goal (CFSC, 1997).

There are many emergency food providers (food banks, soup kitchens, etc.) that rely on food recovery initiatives, such as gleaning, to provide a much needed source of fresh food to their clients (Hoisington, Manore, & Raab, 2011). The contribution of emergency food providers towards achieving nutritional adequacy for vulnerable citizens has been explored in past research, and researchers agree that the nutritional quality of emergency food must be improved (Bell, Wilbur, & Smith, 1998; Cotugna & Beebe, 2002; Gany et al., 2013; Hoisington et al., 2011; Wakefield, Fleming, Klassen, & Skinner, 2012). Gleaning fresh foods in urban spaces as a means of food procurement for emergency food providers is one way to help meet this need.

Food banking has met with criticism for depoliticizing poverty and providing a band-aid solution for food insecurity that places the responsibility in the hands of the hungry without addressing the root causes (Tarasuk, Dachner, & Loopstra, 2014). While food banks have become iconic symbols of welfare failure, it is suggested that they "can serve as potentially virtuous arenas of common life, in which social response to the phenomenology of need can lead eventually to political and ethical ruptures in the art of the possible within capitalist realism" (Cloke, May, & Williams, 2017, p. 721). Debating the (de)merits of food banks is beyond the

[5] A more conventional form of gleaning would be harvesting fresh food from rural farms, but with the growing number of farms located in urban settings (Mok et al., 2014), it is no longer sufficient to refer to agriculture as a rural activity.

scope of this paper, however, the glaring contradiction of providing food to emergency food providers to address food insecurity is addressed.

Emergency food providers offered food assistance to hundreds of thousands of Canadians and close to 350,000 Ontarians in 2016 (Food Banks Canada, 2016). The 2004 Canadian Community Health Survey was the first of its kind to use a standardized test to measure food security in the Canadian population (Tarasuk & Vogt, 2009). Results of the Community Health Survey indicate that 9.2 percent of Canadian households were food insecure in the previous 12 months[6]. Close to 900,000, or 2.4 percent of Canadians accessed food banks in March 2016 (Food Banks Canada, 2016). These numbers demonstrate the need for new and innovative measures to bolster CFS in Canada.

The Food Security Continuum Framework

The Dietitians of Canada FSC (2007), adapted from McCullum, Desjardins, Kraak, Ladipo, & Costello (2005), is used as a framework to help conceptualize gleaning as a tool for improving CFS. We have chosen this framework to analyze CFS because of the embeddedness of community throughout the continuum, which is comprised of three stages: 1) initial food systems change; 2) food systems in transition; and 3) food systems redesign for sustainability. Each stage includes evidence-based strategies and activities that can assist in the planning process of food security programs (Table 1).

Table 1: The Dietitians of Canada Food Security Continuum with selected strategies that gleaning groups are involved in

Stage of Continuum	Strategies
Stage 1: Initial Food Systems Change	i) Educate clients on healthy food and lifestyle options ii) Support existing charitable/emergency food outlets to provide timely service in a dignified manner
Stage 2: Food Systems in Transition	i) Connect charitable/emergency food programs with local urban agriculture, community shared agriculture projects, and other local food producers. ii) Create multi-sector partnerships and networks that work toward community food security iii) Facilitate low-income consumers' access to farmers' markets, community shared agriculture projects, and community gardens.
Stage 3: Food Systems Redesign for Sustainability	i) Work with governments, organizations, and communities to develop policies for (a) land use that facilitates urban agriculture and (b) increasing a community's food self-reliance. ii) Promote the development of community food charters.

Source: Dietitians of Canada (2007), and authors' fieldwork.

[6] This number did not include the territories, people living on reserves, or people without a fixed address. Inclusion of these populations would significantly increase this number.

Methods

This case study profiles volunteers from several gleaning organizations in the province of Ontario. Sixteen interviews were conducted with volunteer gleaners and group coordinators. An online survey was also completed by an additional 14 volunteers. Twenty-nine of the 30 respondents provided demographic data as presented in Figure 1 (age), Figure 2 (relationship status), Figure 3 (number of children living at home), Figure 4 (income status), Figure 5 (education completed), and Figure 6 (work status).

Figure 1: Age distribution of the 29 participants who provided demographic data

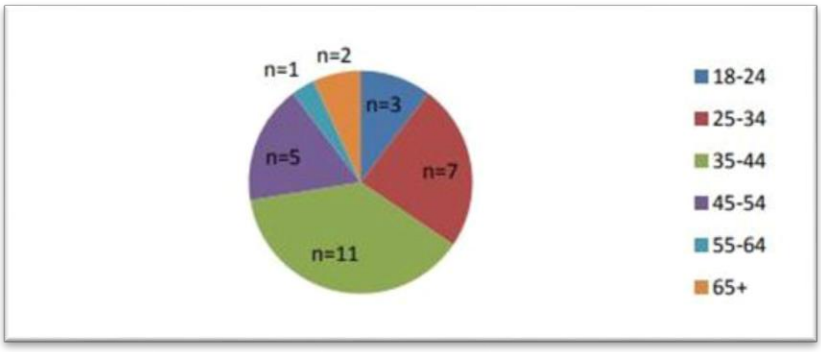


Figure 2: Relationship status of volunteer gleaners

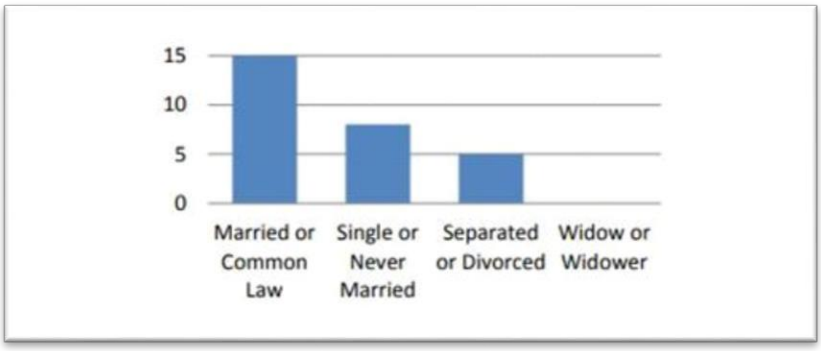


Figure 3: Number of children in the home of volunteer gleaners

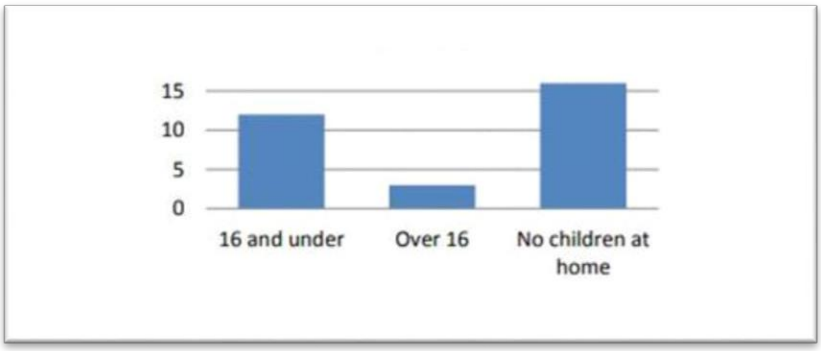


Figure 4: Number of volunteer gleaners in each category of 'yearly household income', in thousands

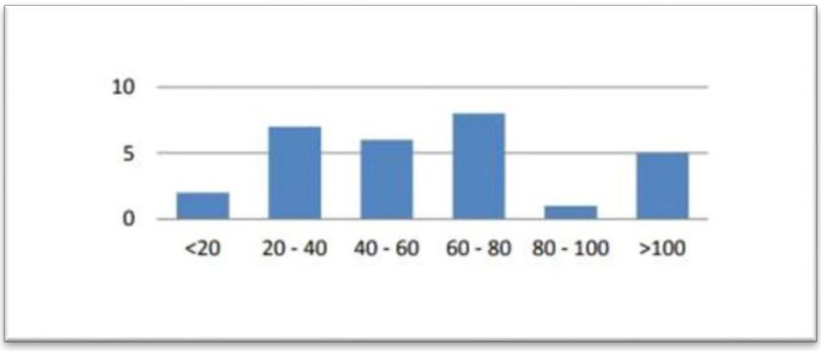


Figure 5: Highest level of education of volunteer gleaners

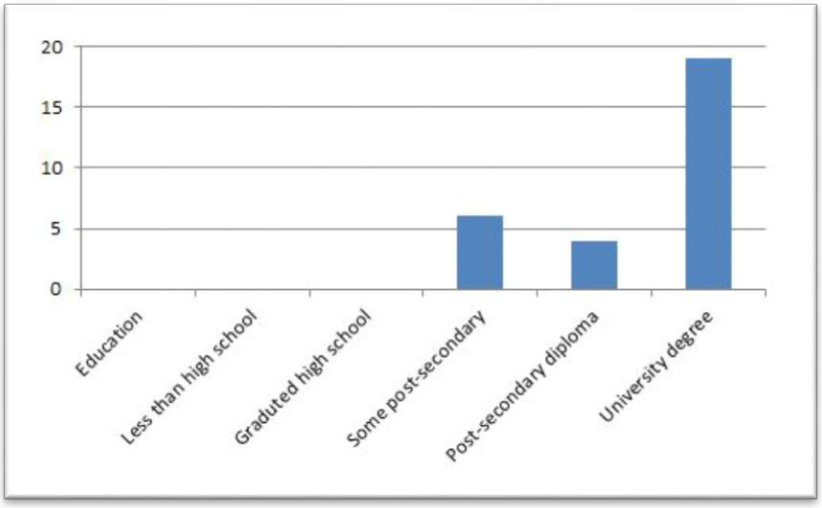
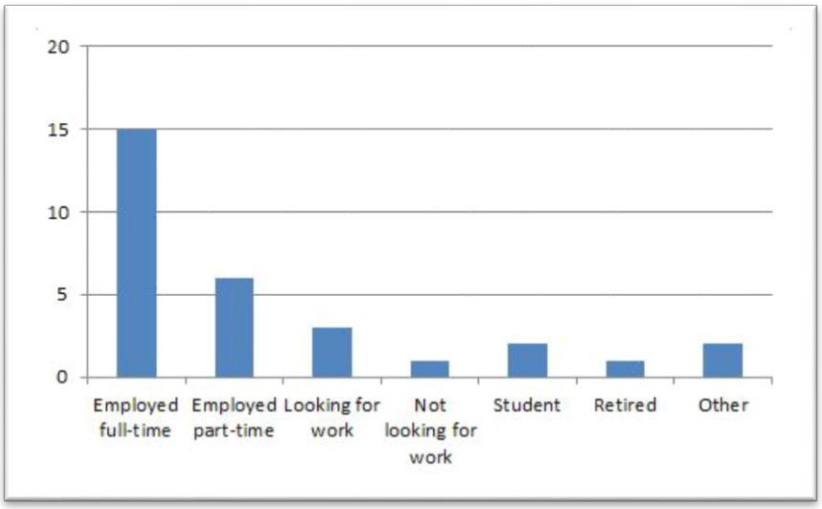


Figure 6: Work status of volunteer gleaners



Note: One respondent was both a student and working part-time and was recorded on this graph as a student.

Data collection took place from January 2015 to March 2015 through purposive sampling from the following six food recovery groups: The Appleseed Collective Revival, the Halton Fruit Tree Project, the Hamilton Fruit Tree Project, Hidden Harvest, Not Far From the Tree, and the Gleaners Guild of Waterloo Region. At the time of data collection, there were approximately 1995 volunteers registered with these organizations[7] (Table 2).

Table 2: Number of paid and volunteer gleaners registered with these groups[8]

	Not Far From The Tree (Toronto)	Hidden Harvest (Ottawa)	Appleseed (Guelph)	Hamilton Fruit Tree Project	Gleaners Guild (Kitchener)
Year established	2008	2011	2013	2007	2014
Number of registered volunteers	1200	~609	~75	50	~61
Number of paid staff	2 FT + seasonal PT	2 FT	0	1 PT	0

Results and discussion

This study revealed a number of contributions that gleaning makes to CFS. Following the FSC conceptualization, gleaning contributes to CFS in all three stages.

Stage one: Initial food systems change

In stage one there are two strategies in which gleaning groups are very active. The first is, "educate clients on healthy food and lifestyle options" (Dietitians of Canada, 2007, p. 6). Healthy food is inherent to gleaning efforts because gleaned food is fresh and unprocessed. When asked, several interview respondents specifically mentioned improved access to fresh foods, rather than canned or processed foods that dominate food bank shelves. One respondent said, "…from what I understand about the kind of food that's available to…food banks is that the food is typically highly processed or not fresh and that's the areas that most people are lacking." (A7) Another respondent said:

> It's helping people who have time to go pick the fruit and get a little part of it and enjoy maybe new fruit that they haven't tried before, and then the donation aspect of it is meeting the needs of people who don't otherwise have food. Especially fresh food. (A5)

[7] Data on the number of volunteers for the Halton Fruit Tree Project was not provided.
[8] These numbers have grown; however, this is to give an idea of the number of volunteers at the time of the research.

Gleaning also contributes to a healthy lifestyle for volunteers because it requires physical activity. Several respondents talked about the experience of being outdoors and how it helped with their mental health by providing an enjoyable and relaxing experience. One respondent said:

> …it's probably a combination of the colors of everything and the sounds that the plants make in the wind and just that whole kind of experience … being out in the sunlight it just calms you down and it's just this wonderful [laughing] experience…being just outside in general…outside where I can be kinda surrounded by plants,…I find it's just a really nice way to [pause] to calm down. (A4)

The second strategy that gleaning groups are active in is supporting "existing charitable/ emergency food outlets to provide timely service in a dignified manner" (Dietitians of Canada, 2007, p 6). Most gleaning initiatives donate gleaned food to emergency food providers and other organizations. Because the food is fresh, donations are made as soon as possible after they are harvested, making it more timely than most store-bought produce which can travel for thousands of miles before reaching its destination. A common donation practice is the "thirds model": one-third goes to the volunteers, one-third goes to the property owner where the food is harvested, and one-third goes to a local organization that can use the food.

In the first stage of the FSC framework, education is a key factor. Respondents indicated that they believe food recovery is a way to gain hands-on experience with food production. Along with learning about what grows locally, gleaners are in a unique position to learn from those with more experience, such as veteran gleaners and urban farmers. Hands-on experience with food can also inform consumers that good quality food does not necessarily have to look "perfect". As one respondent explained, "…we might get someone who says 'Oh, the [food]… had some bug holes in it' … and that's a teaching moment … and I think it's about having those points of access." (A16)

Another component of the education provided by gleaning is seasonal and local food knowledge building. Volunteer gleaners have the opportunity to learn about what kinds of food can grow locally and under what conditions. For example, one respondent said, "…I didn't know that you could grow certain fruits in [the city], I mean I'm from the prairies…who would think that you could have cherries and plums and pears and peaches in your backyard?" (A9)

This knowledge can translate into a greater understanding of the benefits of seasonal eating. For example, hyper-local fruit consumed fresh often has a much better flavour and texture than imported fruit. Also, eating seasonally can be more cost effective than purchasing imported fruits and vegetables. For another respondent, doing the hard work of harvesting food gave them a new appreciation for the amount of work that goes into getting food from where it grows, to the table. They said, "…years of gardening and volunteering…really made me appreciate how difficult it is to grow food effectively…and as a result to appreciate the food that I do get." (A17)

This kind of awareness and knowledge about how and where food is produced is an important step towards creating better connections between food producers and consumers. It is a

form of naturalist knowledge that can provide food directly to people. For example, there are fruit-producing trees and bushes growing throughout urban areas. Knowing when trees are fruiting and how to harvest them can result in a source of fresh, nutritious food.

Stage two: Food systems in transition

In stage two of the FSC framework, Dietitians of Canada recommend connecting emergency food providers with local food producers and urban agriculture initiatives. Food recovery groups are very active in this stage of the continuum. One of the primary activities of most food recovery groups is donating part of their harvest to community organizations such as food banks and soup kitchens. Several volunteers specifically mentioned the donation of fresh foods to emergency food providers that utilize a lot of canned and processed food. One said, "…the donation aspect of it is meeting the needs of people who don't otherwise have food. Especially fresh food." (A5) Another said, "…from what I understand about the kind of food that's available to…food banks is that the food is typically highly processed or not fresh and that's the areas that most people are lacking." (A7)

Not only are these food recovery groups well situated to provide fresh food directly to these organizations, but they also provide food directly to their volunteer harvesters, bypassing any third-party organization. Conceivably, this means that food-insecure people can volunteer their time in exchange for fresh food directly. As one respondent aptly pointed out, "…some volunteers…genuinely need to do this to eat." (A28)

And another said, "…if there are spots being opened up that are involved in the actual harvesting, so if the people who are picking the fruits are gaining access to food, then I think it is improving their food security." (A12) Yet another noted, "…you're giving that food to people in the community who are benefitting from it, so you're helping their food security as well as the volunteers in your group by giving them a share." (A15)

In fact, gleaning initiatives take this one stop further in addressing the "other local food producers" because volunteers will glean on municipal property, public green space, and in residential yards where property stewards do not necessarily consider themselves to be "producers", but where an abundance or fruit/food is growing.

Stage three: food systems redesign for sustainability

Stage three includes working with "governments, organizations, and communities to develop policies for increasing a community's food self-reliance". A 2012 study in the province of Québec showed that social deprivation and low social cohesion increased the likelihood of food insecurity by 45 to 76 percent, independent of other factors (Carter, Dubois, Tremblay & Taljaard, 2012). A lack of social networks can decrease access to resources such as food or information about local food programs. According to the 2012 Québec study, low social

cohesion can reduce neighbourly support that creates a reduced capacity to address food insecurity (Carter et al., 2012). One volunteer describes connecting with other gleaners as, "…with food, people just really want to get to know each other… I found food people that are more… personal." (A6) Another said, "…the work directly benefits [my community] in so many respects - nutrition and health, anti-poverty, connecting people now for resilience in the future." (A25)

A study in Toronto explored whether neighbourhood social capital, or "perceptions of social cohesion and trust in one's community", had any bearing on food insecurity (Kirkpatrick & Tarasuk, 2010, p. 1140). The study found that when social capital was perceived as being low, there was a greater chance of being food insecure. Walker et al. (2007) demonstrated an inverse relationship between social capital and food insecurity, and Martin, Rogers, Cook, & Joseph's (2004) data demonstrate that an increase in social capital is associated with a decreased risk of hunger. In this way, developing community relationships and fostering awareness and acceptance can contribute a great deal to increasing the capacity for CFS. Breaking down social barriers and bringing people together was explicit in volunteer perceptions. One respondent said, "… it was the first time that I had volunteered somewhere I felt like I was volunteering *with* who I was volunteering *for*." (A12) Another said, "… it broke down some of the barriers of what I thought volunteering was, like I always thought it was "us helping them", but … I realized it wasn't… it was more of a community thing…" (A13)

Developing policies for land use that facilitates urban agriculture is another strategy found in stage three. While none of the volunteers explicitly mentioned policy, some gleaning groups, such as Hidden Harvest in Ottawa, work closely with municipal governments to both plant and harvest fruit trees throughout the city. This group has a goal of hosting the largest urban orchard in Canada (Hidden Harvest, 2012).

Another example is helping to promote and develop food charters, which is also found in stage three. Food charters are descriptive statements of guiding principles for food policy, often with a prescriptive vision or statement of values led by an interdisciplinary group from the affected community. Food charters that promote local food initiatives and support for local farmers are indirectly supporting gleaning activities, since they can be sources of gleaning for food recovery groups. Active gleaning groups demonstrate an engaged community that is interested in local community-building food initiatives that can help to support and promote regional support for food charter adoption. Even though policy did not factor into any of the responses, gleaning and healthy food policies are mutually beneficial and there is room for gleaning groups to grow into this area of activism.

Food waste

Gleaning also contributes to a reduction in food waste, an area not covered by the FSC but nevertheless important to mention. Food waste mitigation needs to be underscored in every discussion about food procurement. In Canada, more than 40 percent of all the food we produce

is wasted each year (Gooch, Felfel, & Marenick, 2010). Global attention on the issue has sparked movements such as *Inglorious Food*, started by the third-largest grocery chain in France (Huffington Post Canada, 2014). In this campaign, misshapen or "ugly" food is sold at a discounted price with a message to consumers about not creating food waste for purely cosmetic reasons. It was not long before Loblaws, Canada's largest food retailer, followed with their own "ugly food" campaign, selling imperfect apples and potatoes in stores across Ontario and Québec. These new marketing techniques suggest that consumers are interested in changing their behaviours in a way that will help to reduce exorbitant, and unnecessary, food waste. Activities that help to prevent wastage at the source, such as gleaning, could prevent over $2 billion in annual food waste (Gooch et al., 2010; Gooch & Felfel, 2014). One volunteer said:

> … better for it to go to a food bank, even if the food bank isn't the best alternative, than go in the green bin where it would be wasted, because we're trying not to waste. [Food recovery is also] meeting the needs of the homeowners who, otherwise, what are they going to do with all that food? (A5)

Another respondent noted:

> I think it's a better way to spend [pause], it's not even spending a resource, it's a better way to redistribute a resource that is being wasted, and I think that's the piece that also spoke to me about food recovery programs, is that it's just wasted." (A7)

Scale and contradictions

Along with the contributions of gleaning to CFS, there are several problematic issues with food gleaning as a solution to CFS in Canada. To begin with, donating to emergency food providers contradicts the definition of CFS, which includes access to food through non-emergency sources. Even so, some volunteer gleaners feel that gleaning still positively impacts food security and mitigates food waste. One respondent said, "I think any group that's engaged in that sort of learning is contributing towards the overall trend. It might be small, but any little bit is…helpful." (A16) Another respondent observed, "…it's not like we're generating anything new…the food would be wasted otherwise, it's not like we're making more to fill a need, we see an abundance here, and the deficit here. (A7)

The relatively small amount of food recovered raises questions about the scale of the impact that is possible with these groups. One respondent felt that it is naïve to believe that these groups can make a big difference, but further observed that although food recovery groups may not provide vast quantities of food, there are other benefits provided through gleaning activities. The idea that the benefits go beyond the number of pounds harvested was raised by more than one respondent. They said, "…if you can get people to [eat fresh food] even once a month versus

not doing it at all the effect that you're having on their ability to get better nutrition into themselves is substantial I think." (A8) Another noted, "…I still think it's really valuable because it is community building, and it is teaching about sustainability and self-sufficiency, and also a love of nature… so I think it's valuable." (A3)

In terms of the degree of impact, there is a great deal of potential for these groups to scale up. Residential yards and municipal property are largely untapped resources. Fruit- bearing trees hidden in back yards and along boulevards and public trails are abundant. In Toronto, there is an estimated one and a half million pounds of fruit growing throughout the city and, yet, less than 17,000 lbs. of fruit was harvested in 2014 (Cole, 2015). This indicates that there is a great deal of room for scaling up that would not only provide the benefits discussed earlier, but also change the scope of the food assistance provided to social service organizations.

Scaling up in terms of the number of pounds harvested would not address food security issues during the off-season in many North American cities without the addition of specific food skills. For example, preserving fresh food by canning, freezing, dehydrating, or other methods requires knowledge, skill, and resources. This provides both an obstacle and an opportunity for food recovery programs. Food skills or a lack of *food literacy* referred to as deskilling "has reached a point where it is commonly assumed that the younger generation no longer knows how to manage in a kitchen" (Desjardins & Azevedo, 2013, p. 10). This deskilling is largely due to the changing food environment of the past half century that emphasizes highly processed foods. An overabundance of prepared and processed food on grocery shelves disguises what is essentially a "nutritional impoverishment" and has resulted in a loss or failure to develop food skills (Winson, 2013, p. 287).

A lack of food skills may be a barrier, but it also presents an opportunity for food recovery groups. For example, collaborating with local business and food agencies can help to connect community members and provide access to facilities such as certified kitchens. Hidden Harvest partners with various local food agencies, which allows for "access to kitchen facilities in which to run food preparation and preservation workshops" (Poitevin-DesRivières, 2018, p. 7). These partnerships provide the physical space to run workshops and teach skills such as canning and preserving, and they also provide economic benefits and a "decreased dependence on the cash economy through donation and bartering practices" (Poitevin-DesRivières, 2018, p. 12).

Although there are challenges and limitations, respondents felt that food recovery in the form of gleaning provides a positive contribution to CFS. Benefits include increasing food literacy and food awareness, bringing community members together, and supplying fresh food.

Discussion and conclusion

This study contributes a better understanding of how gleaning initiatives contribute positively to CFS based on the perceptions of volunteer gleaners and an analysis of gleaning activities using

the Dieticians of Canada Food Security Continuum as a framework. The contradictory nature of donating food to emergency food providers to improve CFS has also been addressed. Overall, volunteer gleaners felt that this contradiction can be mitigated by the benefits outlined above. In the absence of alternative uses for the abundance of fresh food growing in and around cities, the contributions of food recovery groups should be supported and encouraged to continue the important work of ensuring access to healthy food. In addition, food recovery in the form of gleaning can help to reduce food waste, facilitate community building, improve access to local foods, promote knowledge sharing, and address climate change, all of which have direct links to food security.

Access to volunteer gleaners for this study was limited to those with email access and/or social media accounts. Given that each of the profiled food recovery groups use email as their primary source of communication, this was not considered to be a significant limiting factor; however, relying on this type of communication can ultimately exclude some community members who do not have consistent access to, or knowledge of, computers or social media. The time of year that this study was undertaken was somewhat restrictive. A true ethnographic study spanning an entire harvest season would likely result in a richer narrative on the nature of gleaning activities and the perspectives of volunteer gleaners. Given the small number of respondents–16 interviewees and 14 survey respondents–this research cannot be considered representative of all volunteers or food recovery organizations. With that said, it does contribute new knowledge towards understanding the perceptions of volunteer gleaners and the contributions these groups make to CFS.

For future research, the number of volunteer gleaners who identify as food insecure, or use emergency food providers themselves, should be explored. While understanding how the connections are made between food-insecure people and these types of community initiatives could be a useful tool for food recovery program coordinators, one must be mindful of not creating a new form of neoliberal workfare. In other words, if people who are food insecure need to collect and harvest their own food through gleaning programs, this could be considered a form of mandatory work in exchange for social assistance. Instead, gleaning programs can aim towards "reframing relationships between 'givers' and 'receivers' to…build solidarity. In this reframing, people providing food and people receiving food are in respectful (and more equitable) relationship with each other, working together towards a state of holistic community food security" (Wakefield et al., 2012, p. 445). To help achieve this, it would be worthwhile to engage with people who are relying on emergency food providers that utilize gleaned fresh food donations to better understand their perspective as recipients. Future quantitative research should aim to measure the contribution of these groups to emergency food providers, as well as their contribution to meeting the nutritional needs of both participants and recipients of the harvests. It would also be useful to explore any changes to the diets of participants and recipients when engaged with these groups. Exploring the different approaches to gleaning taking place across Canada and identifying the successes and challenges faced would also provide new information.

The first National Fruit Tree Project assembly, called Cross-pollinating Canadian Tree Harvesting Organizations, was held in Toronto in November, 2014. The primary purpose of the meeting was knowledge sharing between food recovery groups. Of the twelve food recovery groups present, seven identified the various aspects of volunteer management as one of their main challenges, including recruitment, retention, engagement, coordination, and training (Siks, 2014). All of the food recovery projects profiled in this study have yet to exhaust all of the harvest locations in their respective cities. Meeting this need would require additional coordination and active volunteers. Support and assistance from municipalities could help to meet some of these needs, including mapping resources for existing fruit bearing trees and coordination assistance from city staff. More education about food donation laws is also needed as people are often still hesitant to assume any risk of liability. Finally, food policy councils and food advocacy groups are well situated to partner with food recovery groups to help tap into existing networks and information-sharing platforms.

Food recovery is intimately linked with urban food growing or urban agriculture (UA) activities. The benefits of UA have been widely documented in past research, most recently from a municipal planning perspective. In particular, studies have noted that urban green spaces can reduce the urban heat-island effect, reduce storm water run-off, and provide opportunities for increased physical activity (Knizhnik, 2012). The many benefits of UA activities are largely agreed on (Grewal & Grewal, 2012; Hale et al., 2012; Rydin et al., 2012; Golden, 2013). A study done in Toronto, Ontario, lists some of the economic, community, health, and environmental benefits in Canada's most populated city (Toronto Food Policy Council, 2012). Some of the benefits listed are economic benefits, community benefits, health benefits, and environmental benefits (Toronto Food Policy Council, 2012). There are some studies whose primary critique of UA is that people who are financially insecure cannot afford to participate due to limited access to the materials and space needed for many forms of food growing. Food recovery initiatives may address issues of exclusivity by utilizing fruit-producing trees on municipal property and in public green spaces. Food recovery can also help to connect those people who have the space with those who do not by offering harvesting events in residential yards. Overall, gleaning initiatives contribute positively to CFS improvement efforts, and these food procurement projects should be provided with ongoing support—both on the policy agenda, and in community action.

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Field Report

Disruptive innovation and operationalization in local and sustainable food systems: Examining the University of Toronto-Local Food Plus partnership

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Abstract

This paper traces the partnership between the University of Toronto and the non-profit Local Food Plus (LFP) to bring local sustainable food to its St. George campus. At its launch, the partnership represented the largest purchase of local sustainable food at a Canadian university, as well as LFP's first foray into supporting institutional procurement of local sustainable food. LFP was founded in 2005 with a vision to foster sustainable local food economies. To this end, LFP developed a certification system and a marketing program that matched certified farmers and processors to buyers. LFP emphasized large-scale purchases by public institutions. Using information from in-depth semi-structured key informant interviews, this paper argues that the LFP project was a disruptive innovation that posed a challenge to many dimensions of the established food system. The LFP case study reveals structural obstacles to operationalizing a local and sustainable food system. These include a lack of mid-sized infrastructure serving local farmers, the domination of a rebate system of purchasing controlled by an oligopolistic foodservice sector, and embedded government support of export agriculture. This case study is an example of praxis, as the author was the founder of LFP, as well as an academic researcher and analyst.

Keywords: University foodservice; institutional procurement; local food systems; sustainable food, Local Food Plus

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Introduction[1]

In September 2006, the University of Toronto (U of T), with more than 85,000 students on three campuses, became the first university in Canada to purchase certified local sustainable food (Local Food Plus, 2006b). The initiative at the U of T's main St. George campus arose from a partnership between the U of T and a newly-minted Canadian civil society organization, Local Food Plus (LFP)[2]. The U of T-LFP partnership marked the first time that three concepts—"public sector procurement", "local food" and "sustainable food"—were brought together in a single phrase and a unified project.

LFP aimed to create a full-service organization designed to drive the transformation of the food system in Canada through large-scale purchasing of local sustainable food. This was reflected in LFP's founding vision: "To foster vibrant local, regional economies by growing environmentally, socially and economically sustainable local food systems" (Local Food Plus, 2006a). To achieve this vision, LFP combined three functions in one organization: the first comprehensive third-party certification system for farm products labelled "Certified Local Sustainable" (featuring sustainable production methods, on-farm labour practices, animal welfare, biodiversity protection, and energy use); a market development program linking farmers with purchasers; and a public education campaign promoting both local and sustainable food.

At its peak, LFP had more than 200 certified farmers and processors in its roster, and about 80 "market partners" purchasing certified food. In 2012, LFP estimated that about 160,000 Certified Local Sustainable meals and snacks were served each week at 277 broader public sector institutions in Ontario, with an annual value of more than $2 million (Local Food Plus, 2012). The U of T-LFP partnership launched LFP, and marked the first major institutional foodservice contract to specifically include the purchase of certified local sustainable food.

Despite many successes, LFP was unable to raise enough funds to continue active operations beyond 2014. However, in 2016, the University of Toronto moved to take over foodservice operations on the St. George campus for all venues previously run by foodservice contractor Aramark, rather than enter into another contract with a global foodservice corporation.[3] U of T foodservice administrators acknowledge that the U of T-LFP partnership paved the way for this game-changing decision (J. Lokker, personal communication, August 2016; A. Macdonald, personal communication, August 2016). This review of the U of T-LFP partnership permits an examination of major factors affecting local and sustainable food initiatives in Canada. It reveals obstacles inherent in operationalizing a local and sustainable food

[1] Throughout this paper I refer to myself in the third person when I am discussing my previous practitioner role as the founder and president of LFP, and I use the first person when I am writing as an academic researcher and analyst.
[2] The original name of the organization was Local Flavour Plus. The name was changed to Local Food Plus in 2007 to avoid a potential legal battle over intellectual property with another organization.
[3] The total number of students living in residences now run by U of T Food Services was 2,112 in 2015-2016. U of T Food Services also sources food for retail outlets on the St. George campus which cater to almost 44,000 students, as well as faculty and staff. In addition, the St. George Catering Company, the catering arm of U of T Food Services, provides catering for meetings, events and conferences across the St. George campus.

system, and explores LFP as a "disruptive innovation" (Christensen, 2003) which posed a challenge to many dimensions of the food system.

Methodology

As the founder and former president of Local Food Plus, I am both a subject of this case study and an academic researcher and analyst. The primary research for this paper comes from 36 in-depth semi-structured key informant interviews. To manage my positionality in this paper, I have only made use of personal notes, emails, and memories which are confirmed by interviews or public documents. Ethics approval was obtained by the Laurier University REB and interviews were conducted with key figures at the University of Toronto and Local Food Plus, as well as farmers, processors and distributors engaged with LFP. Despite repeated efforts to interview LFP's key contact at Aramark, I was not granted an interview.

LFP as a Disruptive Innovation

Clayton Christensen developed the most famous articulation of "disruptive innovation" in his influential book, *The Innovator's Dilemma* (Christensen, 2003). There are three key dimensions of disruptive innovations: they disrupt the existing product offerings and operational model; they upset the privileges of powerful groups benefitting from that model; and they come from outside established mainstream structures (Christensen, 2003). LFP fits this understanding of disruptive innovation.

By coupling local and sustainable—maintaining that sustainable food systems have to be primarily local, and that local is most robust when coupled with sustainability—the LFP concept disrupted the operational model of the dominant foodservice industry, which is based on volume purchases of standardized low-cost food without provenance. By deliberately moving beyond advocacy to program implementation, LFP upset the privileges of the dominant food service industry, which benefitted from the existing model. By emerging from the alternative food movement, LFP was clearly outside established mainstream structures. However, perhaps the most disruptive aspect of the LFP program was that it articulated a public purpose to both food production and food procurement. This contested the idea that food is fundamentally a commodity, and thereby confronted and reframed established practices and understandings of business, government, and philanthropy.

Although Christensen's disruptive innovation model was designed to analyze innovations in the business world, it offers a useful way to describe LFP's role relative to four major players in the existing food polity: the provincial government, particularly OMAFRA (the Ontario Ministry of Agriculture, Food and Rural Affairs); the dominant players in the foodservice industry; the organic sector; and philanthropic foundations.

LFP and the Ontario Government

By championing a local and sustainable food system, LFP put itself in opposition to OMAFRA's long-standing focus on food exports, which downplays food for local populations. Foodland Ontario, a government-run branding scheme to promote Ontario food, has been in existence since 1976 (Government of Ontario, 2013), but is strictly about increasing awareness of local foods. The Local Food Act of 2013, which claims to "increase access to local food, and to boost the supply of food produced in Ontario" is aspirational, with no regulatory force (OMAFRA, 2015).

LFP also represented a disruption to the Ontario government's historic stance on sustainability. Although pesticides are federally regulated in Canada, the Ontario Ministry of the Environment and Climate Change regulates their sale and use (OMAFRA, 2016b). LFP standards, which restrict the use of certain approved pesticides, posed a challenge to the Ontario government, which claims that current agricultural standards in the province are already sustainable (OMAFRA, 2016a).

LFP and the Dominant Foodservice Industry

LFP's approach was also disruptive to the business model of the dominant foodservice industry, which is based on globally-sourced cheap, anonymous, and placeless food bought in bulk through centralized supply chains. As well, this business model features rebates that give high-volume vendors special access, and excludes smaller local farmers. LFP's offering of slightly more expensive local and sustainable food, often requiring cooking from scratch, was directly at odds with this business model.

LFP and the Organic Sector

Although most of LFP's leadership came out of the organic movement, LFP's focus on local—as well as broader sustainability issues, such as labour conditions, animal welfare, biodiversity, and energy use—disrupted the organic sector's domination of the alternative food market. While several leading organic farmers saw LFP as highlighting their personal commitment to local food systems, as well as humane animal and labour practices, dominant figures in the organic sector saw LFP as unwelcome competition. LFP co-founder and vice-president Mike Schreiner stated "I think the organic movement saw LFP as a threat because the organic movement had owned the environmental sustainability piece" (M. Schreiner. personal communication, July 2016).

LFP and Philanthropic Foundations

As a full-service organization with an ambitious mandate that worked in both the public and private sectors, LFP also posed a challenge to philanthropic foundations, which typically fund charitable projects featuring education, the arts, and services for the disadvantaged. Despite strong early interest, foundations conceived of LFP as more of a business venture than a non-profit. Foundations believed LFP should become self-financing as soon as possible. LFP's needs also did not fit with the way that philanthropic foundations make grants, based on project-based funding in one- to three-year cycles.

LFP reframed many key issues around scaling local sustainable food up and out, and the ways that government, public sector, business, and philanthropy interact. Equally important, as a full-service organization, LFP went beyond talking about policy issues in the abstract. It also worked to change the rules of the procurement game, in order to implement its sustainability program. In retrospect, the enormity of the task that LFP set for itself is clear. But at the time, it seemed exciting, rather than overly-ambitious (D. Mills, personal communication, August 2016; M. Schreiner, personal communication, July 2016).

The LFP Certification Standards

LFP was more than an organization with an idea; it was an organization that rolled up its sleeves for food system change. To promote foods from particular farms, LFP had to define precisely what the words "local" and "sustainable" meant. This entailed creating specific standards, and a way to measure these standards through a credible certification process. The labour-intensive model adopted—annual third-party inspections based on site visits and examination of detailed records of complex and varied practices and production methods—was influenced by the fact that all of LFP's senior staff came from the organic movement.

LFP's standards and certification methods were developed in collaboration with several key consultants such as Rod MacRae, a soil scientist and food policy expert. MacRae says guidelines for the LFP standards were like three legs of a stool:

> "One leg is creating something that differentiates you from the dominant practices, and actually causes positive change on the landscape, whether it is at the farm, processor, or whichever level you're focusing on. Another leg is what consumers can recognize as important. The third leg is to write a standard that enough producers can meet so that you have enough supply to create a new market". MacRae adds that "a lot of standards that certain groups have written over the years have failed because they haven't got that balance right." (R. MacRae, personal communication, July 2016).

That balance requires a deep understanding of both supply and demand, and a readiness to collaborate.

In keeping with evolving IPM standards[4], LFP awarded farmers points based on five sets of practices, which LFP defined as follows: employ sustainable production systems that reduce or eliminate synthetic pesticides and fertilizers and conserve soil and water; provide healthy and humane care for livestock; provide safe and fair working conditions for on-farm labour; protect and enhance wildlife habitat and on-farm biodiversity; and reduce on-farm energy consumption. Detailed production standards were developed for virtually every crop grown in Canada. A standard was also developed for processors and packers who would be handling and processing certified local sustainable food, in order to maintain the integrity of the products throughout the supply chain. The standards were based on MacRae's comprehensive research into best practices for sustainability, as well as input from farmers and OMAFRA crop experts.

LFP launched the first eco-label in Canada to couple local and sustainable food. LFP defined "local food" as food produced, processed, and distributed within one province, or up to 200 kilometres within a neighbouring province. This way of defining local is unique to Canada, where distances are great, supply chains are long, and most agricultural programs fall under provincial jurisdiction.

LFP standards were flexible enough to apply to all categories of food—produce, dairy, meat, grains, or processed foods—sold to all food establishments, including restaurants, retailers, and institutions. But the initial focus was on public-sector institutions because the founders of LFP saw institutional procurement as the way to leverage public power to foster a local and sustainable food system. Schreiner explained that "we wanted to achieve something that was meaningful in terms of change in farm practices, but yet was still affordable and accessible to the institutional purchaser. For me that was always the most challenging and difficult tension" (M. Schreiner, personal communication, July 2016).

The U of T-LFP Partnership

In Canada, university procurement plays a pivotal role in fostering local and sustainable food systems because Canada lacks a school meal program at the elementary and secondary levels. In countries that have school meal programs, initiatives to promote local and sustainable purchasing happen at all levels of the educational system. In Canada, however, university procurement practices have played a more prominent role. The amount spent on food on campuses across Canada each year is estimated to be more than $500 million CA (Roberts, Archibald, & Colson, 2014). Campus foodservice operations provide many opportunities to use the buying power of

[4] IPM or Integrated Pest Management is "an ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimize the use of pesticides" (FAO, 2018). LFP's standards define practices that are a meaningful shift away from conventional approaches to pesticide use, while including labour, animal husbandry, and energy components.

universities to promote "creative public procurement" (Morgan, 2014; Morgan & Morley, 2014; Morgan & Sonnino, 2007, 2008). There is also a national student organization, Meal Exchange, with a mandate to empower students "to take an active role in creating a just and sustainable food system" and a focus on university food procurement (Meal Exchange, n.d.).

The U of T-LFP partnership arose from a casual conversation in early 2005 between the author and David Clandfield, then principal of New College, a residential college housing 800 students at the U of T. Clandfield proved to be an effective champion in initiating the U of T-LFP partnership. He fits the definition of a champion as one who "voluntarily takes extraordinary interest in the adoption, implementation, and success of a cause, policy, program, project, or product" (Business Dictionary, 2018). Clandfield had learned how to act strategically to move an issue throughout his varied career as an administrator, an academic, a Board of Education trustee, and a provincial government policy advisor. Under Clandfield, New College pioneered an academic program in Equity Studies. The author was co-teaching the first course offering in food and equity while she was developing Local Food Plus. Clandfield saw a connection:

> "When we said we were going to pursue an equity emphasis based on all forms of equity, we decided that this should apply not only to the curriculum, but to everything we did in the College. We were looking for opportunities to embed in the College life, not just in the classroom, things that demonstrated this commitment to social justice and equity." (D. Clandfield, personal communication, May 2015).

The author's students conducted a survey of New College residents indicating that they were willing to pay a small premium for food if they knew that it came with social and environmental values. By pure coincidence, the foodservice contract at New College was up for renewal. Clandfield acted strategically, seeing his job as "find[ing] the right people to put together so an exciting idea could emerge" (D. Clandfield, personal communication, May 2015)). He called a small meeting in his office in order to present the idea of a partnership between New College and LFP.

One of the people who attended that initial meeting was Anne MacDonald, Director of Ancillary Services at the University of Toronto and responsible for campus housing, parking and foodservice. For Macdonald, another champion, the meeting coincided with efforts to improve communication about foodservice on campus. She was impressed by the author's commitment to incremental change and continuous improvement. "I felt that there was a kind of business case for it," she said. "It was sufficiently compelling, and it wasn't asking us to buy completely into a huge costly program" (A. Macdonald, personal communication, May 2015). She also appreciated the sustainability option. She says there was a lot of interest in sustainability generally at the university, but she knew that buying organic food to meet that interest was not an option because of cost.

Macdonald introduced the concept to someone who would become another key champion—Jaco Lokker, a former hotel chef, who had stayed at 89 Chestnut as Executive Chef

when the hotel was bought by the U of T and refurbished as a residence for 1200 students. Lokker had grown up in the Netherlands, where everyone he knew was involved in food production. “I just understood where food came from and how important it was,” he said. “In Holland, the milk man who came to the door was actually the dairy farmer. The vegetable farmer would come in his truck with a wagon behind it, and you would buy your vegetables off the rack in the wagon. That's how I understood food” (J. Lokker, personal communication, July 2015).

From the start, Lokker felt that partnering with LFP was the right thing to do for the students. “You're coming to school and starting your life as an adult. Now you're going to make decisions as an adult, and I can influence you on buying local and sustainable, or just thinking in a responsible manner around food. Why wouldn't I take that opportunity?” (J. Lokker, personal communication, July 2015). Lokker also appreciated LFP's work to connect the U of T with farmers. But the major piece for him was third-party verification. “One of the biggest values was making sure the farmers were vetted,” he says. “That's where I saw value in LFP because everyone says 'how do you know that farmer is responsible?' Well, now I can tell you how I know” (Ibid.). The competence and energy of such champions ensured that launching a partnership for local and sustainable food went off without a hitch.

The timing for the author's meeting with senior U of T managers was fortuitous, because the university was about to prepare a Request for Proposals (RFP) for a large foodservice contract. RFPs of this size are usually issued once every ten years. Macdonald brought LFP senior staff into the process. The author and Schreiner made suggestions for the RFP language requiring the purchase of local sustainable food. Wording was developed that specifically referenced the key principles of LFP certification. For New College Residence, the RFP required that:

> “a minimum of $80,000 net (excluding non-food charges) of annual food purchases (food cost) must be sourced from local and sustainable growers and suppliers. The annual minimum amount will increase at a compound rate of 5 percent per year. To ensure variety and support for a wide base of farmers and suppliers, a maximum of 35 percent of the total dollar amount can be allocated to any one commodity e.g. milk, meat, fruit, etc.” (University of Toronto, 2006, p. 28).

A similar dollar requirement was included for retail outlets on campus.

Aramark, an American-based global foodservice corporation with annual revenues of about US $15 billion and a workforce of 270,000, won the contract to provide foodservices for the New College residence, campus catering, and retail outlets across the St. George campus. In addition to the Aramark contract, self-operated foodservice units, including University College and 89 Chestnut Residence, agreed to voluntarily participate in the U of T-LFP partnership.

Macdonald said Aramark resisted the local sustainable program from the start, despite the fact that the company had agreed to the terms of the contract. “I was getting these phone calls from Aramark procurement saying ‘I don't think we can do this whole local thing’,” said

Macdonald (A. Macdonald, personal communication, May 2015). By contrast, Lokker was keen to see what he could do to advance the LFP program and was a hands-on problem-solver. He said he was able to keep his food budget in line because he cooked from scratch with whole foods, rather than relying on processed products. This meant working with higher labour costs, but lower food costs. He launched an educational campaign to minimize food waste, especially food that students previously left on their plates. The savings from waste reduction helped offset any extra cost of LFP-certified food.

Lokker and Aramark both bought products from a range of LFP-certified producers including produce, dairy, meat, and canned tomatoes. Over the years, Lokker grew the LFP program to about 17 percent of his total buy, with local getting up to 65 percent (J. Lokker, personal communication, July 2015). Comparable estimates from Aramark are not available.

Lokker said the LFP-certified products that worked best for him were: apples from the Norfolk Fruit Growers Association (NFGA) in Norfolk County, a major farming and food processing region on the shore of Lake Erie, about two hours from Toronto; carrots and onions from Carron Farms, grown in the rich soil of the Holland Marsh directly north of Toronto; and milk from Harmony Organic Dairy, about two hours due west of Toronto. In these cases, Lokker stopped buying conventional versions, and switched completely to LFP products. He proactively thought about how he could support LFP's work and foster change. “If you have two carrot farmers and one is connected and one is not, you buy from the one who is connected. That's the only way you will ever get them to stay in the program” (J. Lokker, personal communication, July 2015). For these producers, sales through the U of T-LFP partnership represented a small percentage of their sales, but one they all regarded as an important entry point into institutional markets.

Lawrence Andres, the President of Harmony Organic Dairy, said the greatest value of LFP certification was LFP's ability to open the door to institutional procurement. “Although the initial volume wasn't huge”, said Andres, “I think it [selling to the U of T] opens up a lot of doors in the future” (L. Andres, personal communication, August 2016). Andres stated introducing university students to their milk is important because it allows his product to reach large groups of people at one time who may become lifelong customers. “They are going to be consumers, and they are going to be informed consumers who are willing to do something for the environment” (L. Andres, personal communication, August 2016). Andres was willing to give Lokker a price below the usual organic premium because “we made up for it with significant volume, and the future looked promising”. Andres saw Lokker as a foodservice visionary, but said the program “needed LFP to develop the relationships and turn it into action”. This direct relationship between farmer and chef illustrates the disruptive innovation to the supply chain precipitated by LFP.

Background Factors Influencing the U of T-LFP Partnership

Three background factors played an important role in the emergence and evolution of the U of T-LFP partnership. First, there was a dynamic "community of food practice" in Toronto, which created conditions supportive of the LFP project (Friedmann, 2007), but which were situated entirely in the alternative food movement. Second, there was the existence of a small number of deeply entrenched and powerful transnational foodservice corporations, which resisted local and sustainable food systems. Third, there was little mid-sized infrastructure to support a local and sustainable food system.

These three factors operated within the larger context of neoliberalism, which is characterized by downgrading and downloading major public functions, so that the dominant market players are given increased freedom and control (Harvey, 2006; Moore, 2010; Peck & Tickell, 2002). In a highly privatized and commodified sector such as food, LFP's mission, focused on public institutions, public benefit, and food as a public good ran against the neoliberal grain.

Communities of Food Practice

Friedmann writes about the highly interactive "community of food practice" that existed in Toronto at the time of LFP's development (Friedmann, 2007). This included institutions such as the Toronto Food Policy Council (TFPC—a municipal body with citizen-members who advise the City of Toronto on food issues), the food justice organization FoodShare (which provided early support), and other long-established players in the sustainable food arena. In other words, the author was connected to a broad network that gave LFP a strong start. She was able to draw from this network to create an impressive team for LFP with deep experience in farming, food policy, organic certification, food sales, and marketing. This team included Mike Schreiner, a food entrepreneur who founded a home box delivery service and a company that sold prepared meals made with organic food; former TFPC co-ordinator Rod MacRae; long-time organic certification expert and inspector trainer Garry Lean; and Don Mills, an organic farmer and leader with Canada's National Farmers Union. The dynamism of this group made the LFP initiative possible, but the lack of representation from the dominant food system or government institutions was a handicap.

Foodservice Oligopoly

The second background factor was a foodservice sector dominated by three transnational corporations (Compass, Sodexo and Aramark). Their business model has been described as "based on centralized supply chains and management structures, with a reliance on prepared and 'ready to eat' food, intended to lower procurement and labor costs" (Martin & Andrée, 2012, 162). This foodservice oligopoly had combined revenues of US $80 billion in 2015. They employ

more than one million people at colleges and universities, schools, hospitals, sports facilities, workplace cafeterias, airlines, railways, remote mining camps, offshore platforms, the military, and prisons (Aramark, n.d.; Compass Group, n.d.; Sodexo, 2018). Oligopolistic domination of foodservice means that new entrants find it difficult to gain a foothold because the three main players drive prices down by using their enormous aggregate purchasing power and by externalizing any social and environmental costs of cheap food (Clapp & Fuchs, 2009; Martin & Andrée, 2012).

Food distribution is equally dominated by a small number of powerful players known as "broadline" distributors—multi-billion dollar global corporations that provide one-stop shopping to foodservice operations. Ontario's two major broadline distributors are Gordon Food Service (GFS) and Sysco. GFS is the smaller of the two, with revenues of more than US $12 billion in 2015 (Forbes, 2016). Steve Crawford, a Category Manager with GFS in Ontario, said the company lists 17,000 different products. He described broadline distribution this way: "If you picked up a restaurant up-side down and shook it, whatever falls out, we usually sell" (S. Crawford, personal communication, August 2013). Besides both fresh and processed foods, this includes napkin holders, cutlery and staff uniforms. Oligopolistic domination of the marketplace reduces the potential of any innovation from new and independent competitors.

Absence of Mid-Sized Infrastructure

The third background factor that influenced the U of T-LFP partnership was a lack of infrastructure appropriate for a community-based sustainable food system, which I call "infrastructure of the middle" (Stahlbrand, 2016a, 2016b, 2017). This term is adapted from the concept of "agriculture of the middle", which describes the mid-size farms and ranches most at risk in a globalized food system. These farms and ranches "operate in the space between the vertically-integrated commodity markets and direct markets" (Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2008). The concept of "infrastructure of the middle" was also influenced by food hub conceptualizations (Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013; Morley, Morgan, & Morgan, 2008). I define "infrastructure of the middle" as "the resources, facilities and networks that create a critical mass, enabling alternative food producers to meet the needs of high-volume, high-profile foodservice clients, especially public-service institutions" (Stahlbrand, 2016b). Mid-sized infrastructure includes both "hard" infrastructure such as warehouses and processing plants, and "soft" infrastructure such as communities of practice and structures for creating and maintaining essential relationships.

In Canada, where the climate is daunting, the population is small, and the costs of infrastructure are high, infrastructure has historically been built and maintained almost entirely with public money—as with canals, railways, roads, utilities, radio and television broadcasters, and colleges and universities. Food infrastructure, by contrast, is largely in private hands. A local and sustainable food system requires distributors, processing plants, warehouses, and information technology that can separate local and sustainable products from products without provenance,

and work with smaller companies. However, mid-sized processing plants have been disappearing in Ontario, and few distributors are oriented to meeting the needs of local and sustainable food suppliers (Hall, 2013; Sparling & LeGrow, 2015). For this reason, the simplistic language of "farm to fork" is misleading because there is so much hidden behind that little word "to" (Stahlbrand, 2016b).

While LFP founders recognized that creating new relationships was part of the soft infrastructure needed to foster local and sustainable food systems in Ontario, it was not immediately clear how little mid-sized hard infrastructure exists. Schreiner noted,

> "There is no mid-scale infrastructure in the whole system. For the most part, it is either mass scale or small artisans. It was very challenging for the partners we were trying to work with because they couldn't achieve the scalability of mass-scale. Though they didn't necessarily want to become big, there was no alternative, other than artisan production, which is a micro-niche with very high costs of production" (M. Schreiner, personal communication, July 2016).

As a result of the structure of the marketplace and political economy of food, LFP lacked a base within the food sector.

Operational challenges in the U of T-LFP Partnership

LFP's commitment to operationalization is what attracted funders and volunteers, and led to media attention. No-one in Canada had previously tried to systematically transform a university's food procurement strategy by linking with mid-size farmers and processors, who were not only local, but also met standards for environmental and social sustainability. As MacRae has noted, most local and sustainable food programs limit themselves to smaller endeavours, but LFP had nothing less than food system transformation as its mission. MacRae contended that "Everybody is overly optimistic about what the small stuff can deliver. Operationally [LFP] was out front, because hardly anyone before us had ever really struggled with these operational dilemmas, and really figured out how to make the operation side serve the concept."(R. MacRae, personal communication, July 2016).

Commitment to operationalizing food system reform also turned out to be LFP's Achilles heel. LFP was expensive to establish and run, but was too young to have developed core funding to sustain the grinding work of operationalization. It was striving to achieve progress in the most ambitious program of its kind ever attempted in Canada. As a result of being first, there were unforeseen operational issues every step of the way.

Understanding these challenges is essential to appreciating the magnitude of the barriers blocking sustainability transition in the food system. This section reviews three of many operational challenges. The examples illustrate the centrality of understanding operationalization

in sustainability transition: operational challenges related to defining "local," operational challenges related to defining "sustainable," and operational challenges relating to the rebate system in the dominant foodservice industry.[5]

Defining "local"

Scholars have noted that local food "can have multiple and conflicting meanings" (Allen, FitzSimmons, Goodman, & Warner, 2003, p. 63). Defining local food remains a challenge for scholars (Born & Purcell, 2006; DuPuis & Goodman, 2005; Feagan, 2007; Mount, 2011). It is even more challenging for practitioners who must develop meaningful standards that can be operationalized in places such as university cafeterias serving thousands of meals each day with a limited budget, and primarily during off-season for local agricultural production.

All foodservice relies on a wide array of processed products such as canned tomatoes, dairy products and meats. Therefore, LFP had to develop standards that defined what local means for both farmers and processors. LFP originally defined local food as "food that has been produced, processed and distributed within the province in which it is consumed, or up to 200 kilometres within a neighbouring province" (Local Food Plus, 2011a, p. 4). However, this definition quickly became unworkable. Farmers have little or no control over what happens to the food they grow after it leaves the farm. Nor can they control whether processors co-mingle their food with non-local ingredients. Processors with the best intentions may not be able to source all of their ingredients locally. It quickly became apparent that even those with the deepest commitment to local food systems often could not meet LFP's definition of local.

A case in point is Mapleton Organic. Martin de Groot and Ineke Booy established Mapleton Organic Dairy in 2000. The processing facility is on the farm, where they have raised dairy cows since coming to Canada from the Netherlands in 1980. All milk for their premium quality organic ice cream and yogurt comes from their herd. Both De Groot and Booy are deeply committed to local food systems, and were among the first farmers to certify with LFP. Yet they were unable to source Ontario processed strawberries or blueberries for their ice cream and yogurt. "If there were strawberries here, even if I had to pay a little more for them, I would buy them from Ontario. But there's nothing here," (M. De Groot, personal communication, June 2013). De Groot and Booy's experience, and the experiences of other processors, caused LFP to develop a policy for multi-ingredient products that allowed up to 50 percent non-LFP-certified ingredients by mass or fluid volume (Local Food Plus, 2007).

[5] There are many other examples of operational issues that impact the sustainability transition in food. Some of these include how to evaluate changing government pesticide regulations in a cost-effective manner in order to include them in a certification process, how to work with distributors to avoid "shrinkage" (food loss from decay) while the demand for local and sustainable food is still relatively low, and how to identify LFP-certified products on packaging when farmers and processors only print new packaging once every few years.

Defining "sustainability"

The unidentified presence of genetically modified organisms (GMOs) in many processed foods presented another operational challenge related to defining "sustainable". GMOs are not permitted in the Canadian Organic Standard, and were not permitted by LFP. Unlike most of Europe, however, genetically modified crops such as corn and soy for animal feed are grown widely in Canada, and there are no laws requiring segregation from non-GMO crops (CBAN, 2015). As a result, most corn and soy are co-mingled. Access to non-GMO corn and soy is thereby virtually impossible for non-organic farmers. Beef farmers certified with LFP were forced to purchase organic feed, but could not recoup the organic premium through their LFP sales. "That extra margin [of the organic premium on feed] compounds up through the value chain for a significantly more expensive product in the end analysis" said Don Mills, who ran LFP's certification program (D. Mills, personal communication, August 2016).The beef farmers petitioned LFP to be permitted to use co-mingled feed until a segregated non-organic supply could be established. After a great deal of thought and consultation, LFP wrote a policy to temporarily allow co-mingled feed (Local Food Plus, 2008).

In making this decision, LFP senior staff were attempting to balance four factors: a realizable yet comprehensive definition of sustainability; the need to increase the supply of local sustainable food, the need to provide a full range of products to market partners; and the inability of LFP to influence Canadian regulations around GMOs, which permitted co-mingling. This decision led to a fierce backlash from some in the organic community, which required crisis management. Despite these difficulties, senior staff involved in the decision believe they struck the right balance between an ethical stance on GMOs and the realities of operationalization (R. MacRae, personal communication, July 2016).

Such constraints only become visible in the course of operationalization. Some argued at the time that there should be zero tolerance for GMOs. However, they did not face the reality that the only way to achieve this was to raise prices above what the market for local sustainable meat would bear. This would have meant that LFP would not have meat as part of its product offer, and beef farmers committed to more sustainable practices would be turned away. In the world of operationalization, there are many shades of gray that may appear black and white to non-practitioners.

The Rebate System

The most formidable operational challenge LFP faced was the system of rebates—a defining feature of the dominant food system. Rebates are an entrenched system of price incentives that essentially block small and mid-sized farmers from selling to foodservice contractors, while generating hundreds of millions of dollars for the global foodservice corporations (Fitch & Santo, 2016). Rebates and related vendor agreements are the price of admission for farmers to be listed with distributors, and for distributors to get onto "preferred vendor" lists with foodservice

contractors, similar to slotting fees in the food retail sector, where suppliers pay for shelf space in supermarkets (Hendrickson, Heffernan, Howard, & Heffernan, 2001). Kaya & Özer argue that rebates are pricing mechanisms designed "to share two important operational risks in supply chains: inventory risk and capacity risk" (Kaya & Özer, 2011, p. 2). However, rebates have become a disciplinary tool of the cheap food system, because they force players to bid low and push the cost down through the supply chain onto farmers, and ultimately onto the land itself. LFP ran headlong into the rebate system. It is the business model that enforces the operationalization of cheap food in a food system controlled by oligopolies.

Conclusion

This article argues that the LFP project was a disruptive innovation that posed a challenge to many dimensions of the established food system. To illustrate this argument, it reviews the partnership between the University of Toronto and Local Food Plus to bring certified local sustainable food to cafeterias and retail outlets on the St. George campus. The research indicates that LFP did pose a challenge and that universities have a pivotal contribution to make to sustainability transition in the food system, but it also exposed many challenges to be overcome in terms of both background factors and operationalization.

This case study concluded with a significant development. After ten years with Aramark, the University of Toronto took back its foodservice and decided to self-operate all venues previously run by Aramark on the St. George campus. The mission statement of the new operation launched in August 2016 was "To ensure that the campus food services provide a wide range of affordable, sustainable and nutritious food options to our community through excellent service, commitment to our environment and celebration of food to reflect our diverse community" (U of T Food and Beverage Services, n.d.).

Under the new arrangement, about thirty locations across the St. George campus, including two residences, as well as catering for meetings and events, have come under the purview of Jaco Lokker, now the Director of Culinary Operations and Executive Chef. As Macdonald stated, "It's not simply that the managers change. It's that there's more cooking, and there's a shift from prepared ingredients and low-skilled labour to less prepared ingredients and higher skilled labour. It's just a completely different way of operating" (A. Macdonald, personal communication, May 2015).

About 250 former Aramark employees are now employed by the U of T. Kitchens at two residences, 89 Chestnut and New College, have become processing kitchens, preparing more dishes from scratch. Lokker said the kitchens will enable foodservice to work directly with more local farmers selling whole foods, making the U of T a de facto hub for local and sustainable food (J. Lokker, personal communication, July 2015).

Macdonald and Lokker said the experience with LFP gave them confidence to make the move towards a fully self-operated foodservice (J Lokker, personal communication, August

2016; A Macdonald, personal communication, August 2016). LFP gave the U of T the experience of controlling more of the foodservice on campus, because of the local sustainable requirements in the contract. Macdonald adds that the LFP partnership made visible some of the problems associated with working with a global foodservice contractor. This contrasted with what Lokker was able to do at 89 Chestnut, a self-operated unit since it opened in 2003, where implementing the LFP program was adopted more smoothly (A Macdonald, personal communication, August 2016).

LFP co-founder and former vice-president, Mike Schreiner, believed LFP played an important role in building public momentum and support for local food. But he says sustainability turned out to be a much more difficult challenge to embed in everyday food discourses and local food systems, "I don't think we succeeded in really having any enduring penetration around local *sustainable*" (M. Schreiner, personal communication, July 2016).

Schreiner acknowledges that the task that LFP set itself was mammoth. "Institutional foodservice is one of the most entrenched systems in the world. How do you change that? That's why people focus on farmers' markets – little pieces that chip at the edge of the system – because trying to actually go into the heart of the beast and change it is really hard".

The paper points to the need for further research on institutional food procurement, an area which has been referred to as a "sleeping giant" (Clark, 2016). The move to reclaim foodservices at the University of Toronto may provide an example of a countervailing power to the dominant oligopoly in university foodservice. This countervailing power may create space for organizations such as LFP to be treated as welcome, not disruptive, innovations.

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Field Report

Greening Canada's Arctic food system: Local food procurement strategies for combating food insecurity

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Abstract

Across northern Canada community gardens and greenhouses are being used as alternatives to imported foods that are often unaffordable, are of compromised quality, or are simply unavailable in local retail outlets. Community gardens and greenhouses are seen as part of the solution to lessen local reliance on costly nutrient-poor market foods imported from the south. In spite of their acknowledged benefits, research on community gardens and greenhouses in northern Canada, including their numbers and locations, remains sparse and anecdotal. The objectives of this research were to inventory and map community gardens and greenhouses in northern Canada, encompassing Labrador, Nunavik, Nunavut, Yukon, and the Northwest Territories. This inventory represents an initial stage of research that will determine the extent to which community gardens and greenhouses, as local procurement strategies, are meeting the food needs of northern residents. This research is part of a circumpolar research project supported by the Arctic Council's Sustainable Development Working Group, which is examining the opportunities for the Arctic to become a self-sustaining food-producing region.

Keywords: Community gardens, greenhouses, Northern Canada, food security, food procurement

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Introduction

Food insecurity in northern Canada has reached epidemic proportions. Long known by northerners themselves, this situation received international attention following the release of the United Nation's Report on the Right to Food (De Schutter, 2012) that made known the disproportionately high rates of food insecurity among Canada's Aboriginal population. These conditions are experienced most prominently among Inuit who have the highest rate of food insecurity[1] for any indigenous population in a developed country (Rosol et al., 2011). The impact on Inuit youth is particularly troubling as 90 percent of all Inuit children experience hunger on a regular basis (Egeland, Pacey, Cao, & Sobol, 2010). The health implications stemming from these conditions include increased rates of anaemia and delayed physical and social development (Pirkle et al., 2014), high prevalence of diabetes (CDA, 2012), and increasing rates of obesity (Butler Walker, Kassi, Friendship, Blottner, & Van Bibber, 2011).

While the factors contributing to food insecurity are complex, the Council of Canadian Academies (2014) identified a number of contributing factors. In particular the high cost of imported foods, poorly developed transportation networks, and inadequate storage systems have all been implicated for these crisis conditions. In terms of cost, it is estimated that the purchase of a healthy food basket in Nunavut is six times higher than the same food basket purchased in southern Canada (Action Canada Foundation, 2014). These cost differences are attributed to an additional 20 percent price increase due to transportation costs (Sorobey, 2013), high electricity rates (e.g., 74.9c/kWh in Nunavik compared to 11.8 c/kWh in Montréal) (CCA, 2014), and additional labour, storage, and building maintenance costs (Duhaime & Caron, 2013). When combined, these added costs result in residents of Nunavut needing to pay as much as $10/kg for celery (Action Plan Canada, 2014). Although the federal government subsidizes these costs through its Nutrition North Program ($68 million in 2016), including $21 million to subsidize the shipment of 7.4 million kg of fruits and vegetables, high food costs continue to be a formidable purchasing constraint. Yet even at these high prices, the quality of perishable foods is often compromised due to lengthy transportation distances and frequent delays in delivery times to the point of limiting consumer acceptability. Because of these constraints (cost, quality, and acceptability) perishable foods are often replaced by non-perishable and highly processed foods that lack equivalent nutritional value.

In his concluding remarks to the UN General Assembly, De Schutter (2012, p. 20) called upon Canada to enact specific measures to rebuild local food systems and find ways to support Aboriginal communities to secure their own food needs. Although generally critical of the De Schutter report, the Federal Government has nonetheless responded through targeted programming in northern agriculture, including Growing Forward, Growing Forward II, and

[1] Food insecurity is defined here as a condition where all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice (Boult, 2004).

significant financial investments in northern agricultural training (e.g., $2 million investment in the Northern Farm Training Institute in Hay River, NWT). These programs and targeted investments are being made to rebuild local food systems and provide sustainable access to fresh, nutritious, and affordable foods. While these programs do not address the root causes of food insecurity and are not considered a panacea to the food-related challenges northerners face, community gardens and greenhouses are seen as part of the solution to lessen the reliance on costly nutrient-poor market foods imported from the south (Ford, Lardeau, & Vanderbilt, 2012).

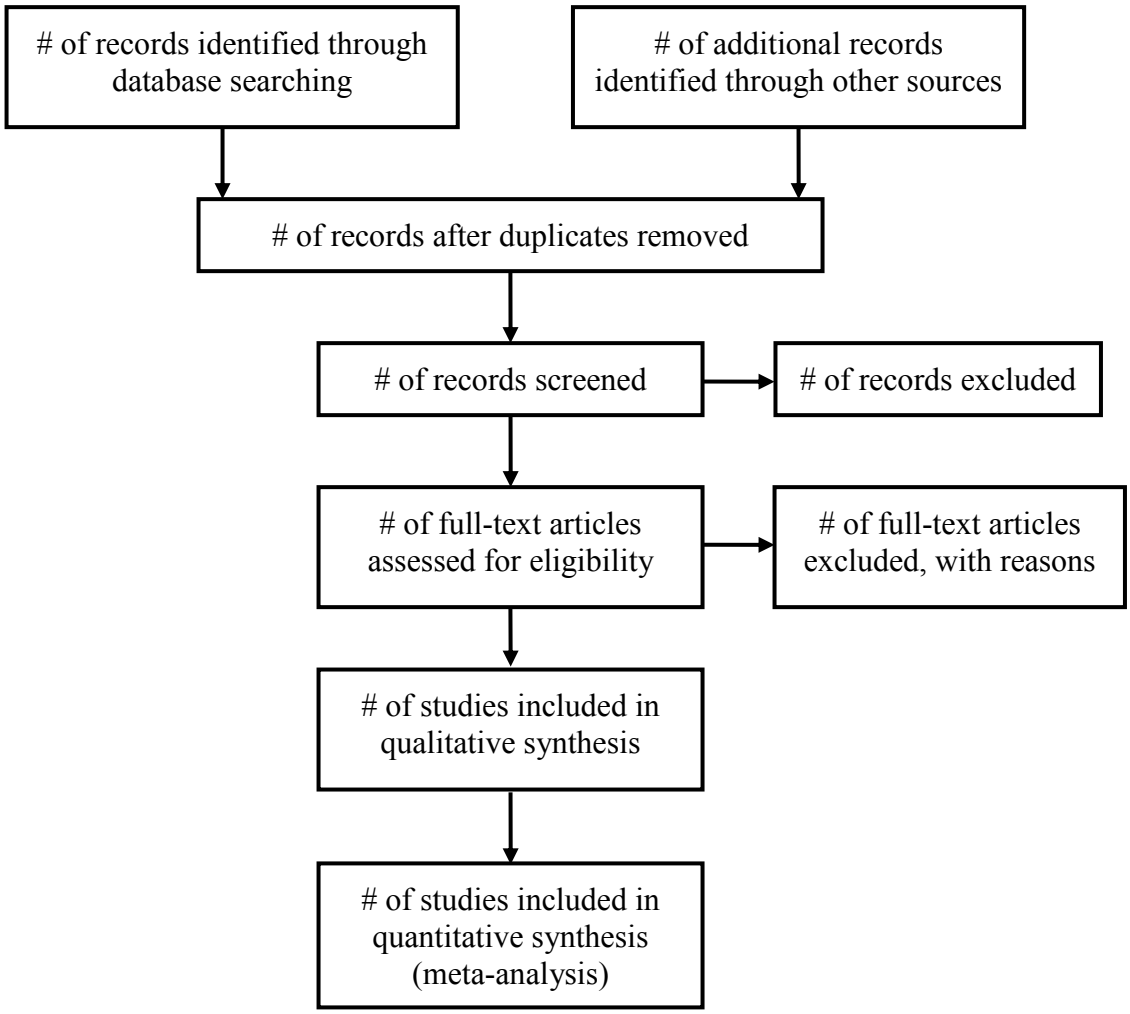
Despite the optimism surrounding community gardens and greenhouses, research on actual benefits remains sparse. Even our most basic understanding of the number and locations of community gardens and greenhouses has been largely anecdotal. Without this information it has been difficult to accurately determine the impact that community gardens and greenhouses have on alleviating food insecurity in northern Canada. This information is necessary, given the growing interest among northern communities to establish their own community gardens and greenhouses as local food procurement strategies for combating food insecurity, as well as to justify the significant financial commitments being made by territorial and federal governments in these types of initiatives.

The objectives of this research were to inventory and map community gardens and greenhouses in northern Canada and discuss their role in satisfying community food needs. This inventory represents an initial baseline of data (2018) that will help us to determine the extent to which community gardens and greenhouses, as local food procurement strategies, are meeting the food needs of northern residents. This research is part of a circumpolar research project supported by the Arctic Council's Sustainable Development Working Group, which is examining the unique potential and opportunities for the Arctic to become a self-sustaining food-producing region.

Methods

The geographical focus of this study included Labrador, Nunavik, Nunavut, Yukon, and the Northwest Territories. Secondary data were collected through an online query to identify locations of community gardens and greenhouses. Descriptions of garden and greenhouse initiatives were composited from a literature review, including primary and secondary sources such as peer-reviewed journals, government publications, news articles, social media pages, and community websites. These sources were analysed for content relating to northern Canada, community gardens, greenhouses, food insecurity, behavioural, and lifestyle change, health, community development, and local adaptation. Selected studies were included or excluded based on pre-defined criteria for screening. The authors screened all studies, resolving areas of disagreement by consensus. The identification and screening procedures used in our review are shown in Figure 1.

Figure 1: Steps followed in systematic literature and web-based review



The results from the literature and web-based review were then reviewed by the territorial research institutes (Labrador Institute, Nunavik Research Institute, Nunavut Research Institute, Aurora Research Institute, and the Yukon Research Institute), which identified other territorial initiatives known locally. Lastly, our project Steering Committee, with representatives from the Inuit Circumpolar Council, Gwich'in Council International, and the Arctic Athabasca Council, contributed their own regional knowledge of local food production initiatives.

Visualization of community gardens and greenhouses was performed on ESRI ArcMap[2] 10.4. The Microsoft Excel inventory was formatted to be read as XY data by ArcMap, added as

[2] ESRI ArcMap is a geospatial processing program that is used to view, edit, create, and analyze geospatial data. In the case of this research it was used to position and view the locations of community gardens and greenhouses in northern Canada.

an attribute table layer to the ArcMap workspace, and referenced by longitude and latitude decimal degrees of the communities where garden and greenhouse initiatives were located.

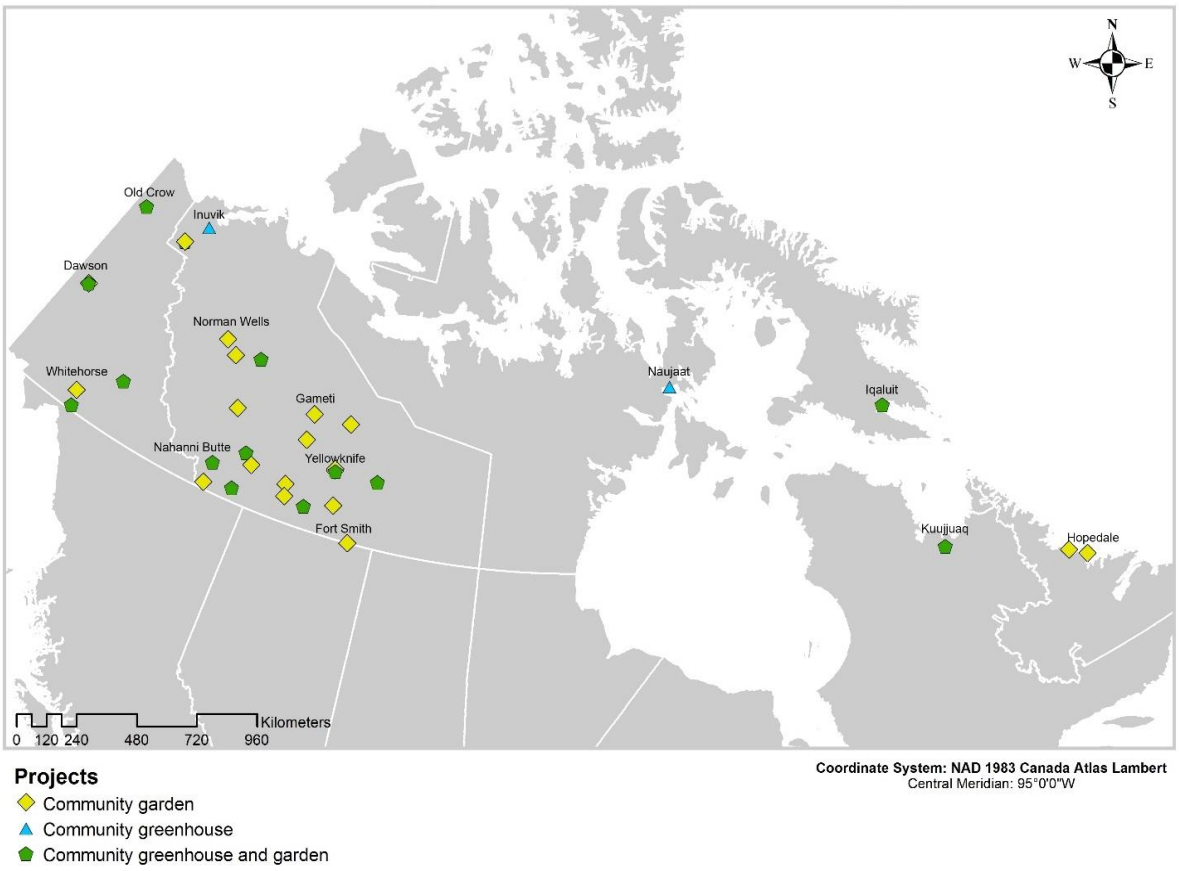
Results

Our inventory identified 36 community gardens and 17 greenhouses across northern Canada (Table. 1). Of these 53 initiatives, 36 are located in the Northwest Territories, 10 in the Yukon, three in Nunavut, two in Labrador, and two in Nunavik (Figure 2). Thirty-four (64 percent) of these initiatives were in communities with populations under 1000 residents. The largest projects, in terms of production space, were the Gameti Community Garden in the Northwest Territories (21,600 ft^2), the Tr'ondek Hwech'in Teaching and Working Farm in Dawson City (35 ha.), and the Inuvik Community Greenhouse in the Northwest Territories (4,000 ft^2). Greenhouses (ten) in the Northwest Territories account for 60,180 ft^2 of planting space. Community gardens tend to produce various root crops, including potatoes, carrots, turnips, beets, and onions as well as lettuce, sunflowers, berries, chives, and even rice. In addition to vegetable production, community gardens and greenhouses are also stimulating other forms of local food production. For example, the communities of Deline, Wrigley, and Gameti in the Northwest Territories, and Kuujjuaq in Nunavik, have incorporated poultry operations as part of their community gardens, as a source of organic fertilizer and meat production.

As local food procurement strategies, community gardens and greenhouses provide users with multiple benefits well beyond food production. Community gardens and greenhouses are being used as sites for the delivery of training and education modules on food utilization and storage, food preparation, food safety, nutrition and healthy eating behavior (Inuit Tapiriit Kanatami, n.d.a). Communities in the Northwest Territories (Jean Marie River, Fort Simpson, Nahanni Butte, and Sambaa K'e) and Labrador (Hopedale) also deliver community workshops on home gardening and food preservation techniques (Government of Northwest Territories, 2016; Inuit Tapiriit Kanatami, n.d.b). Having access to such programs enhances the wellbeing of participants by decreasing anxiety and feelings of helplessness, as well as providing a social environment and a safe communal space (Ford, Lardeau, & Vanderbilt, 2012). The development of community gardens and greenhouses in northern Canada also provides communities with a method of adapting to rapid climate and socioeconomic change being experienced by Northern communities (Government of Yukon, 2013). These multiple benefits are being explored by members of our research team and will be presented in more detail in our final report to the Arctic Council's Sustainable Development Working Group (spring of 2019).

The following section provides brief regional descriptions of the more notable garden and greenhouse initiatives in northern Canada.

Figure 2: Distribution of Community Gardens and Greenhouses in Northern Canada (Created by authors using ArcGIS)



Yukon

Tr'ondek Hwech'in Teaching and Working Farm

The Tr'ondek Hwech'in Teaching and Working Farm is located 15 km from Dawson City. The farm was established in 2014 and represents a unique partnership between the Tr'ondek Hwech'in First Nation and Yukon College (Windeyer, 2015). The Tr'ondek farm provides fresh produce for Tr'ondek members, with the surplus sold in Dawson City. Over 2,500 pounds of vegetables were produced in 2015, including potatoes, beets, and onions (Windeyer, 2015). The objectives of the Tr'ondek farm include preserving of ways of life based on connection to the land, securing year-round supply of fresh food, creating a healthy environment for working and learning, and creating opportunities and developing skills for agricultural operations (Yukon College, n.d.).

Northwest Territories

Inuvik Community Greenhouse

In 1999, the Inuvik hockey arena was repurposed to support the Inuvik Community Greenhouse. This 4000 ft^2 facility has 174 individual plots that measure eight by four feet. Individual plots are available for rent at an annual fee of $50 (Inuvik Community Greenhouse, 2015). The greenhouse receives funding support from the Government of Canada and the Government of the Northwest Territories, as well as corporate sponsors such as Conoco Phillips and Shell Canada (Public Health Agency of Canada, 2009). Membership in the Inuvik Community Garden requires a membership fee of $25, plus a minimum of 15 hours of volunteer time (Inuvik Community Greenhouse, 2015). Community Elders are exempt from the $50 plot feed and are not required to commit the fifteen hours of volunteering (Inuvik Community Greenhouse, 2015). The greenhouse's ground floor consists of individual plots available to community members while the second floor consists of a commercial greenhouse (Public Health Agency of Canada, 2009). The commercial greenhouse produces and markets bedding plants and hydroponic produce, which helps to offset operational costs (Public Health Agency of Canada, 2009). Beyond food and plant production, the Inuvik Community Greenhouse serves as a center for school groups, workshops, and is among Inuvik's top tourism destinations (Public Health Agency of Canada, 2009).

Fort Simpson Community Garden Society

The Fort Simpson Community Garden Society operates multiple community garden sites in Fort Simpson. The main garden site has 51 garden boxes, a communal planting area, school planting area, and 34 active participating members (Government of Northwest Territories, 2016). Two agricultural businesses, Forest Gate Greenhouse Gardens and Dehcho Gardens, also operate out of Fort Simpson. Forest Gate Greenhouse Gardens opened publicly in the spring of 2016 and produces vegetables, herbs, and wild teas available for purchase. Dehcho Gardens sells root vegetables including potatoes, carrots, beets, and turnips (Government of Northwest Territories, 2016). The local elementary schools in Fort Simpson are involved with an in-class seed starting program, which allows students to plant, tend, and grow seeds. The students are also involved in a spring culture camp where they apply their seeding knowledge to planting potatoes, onions, cabbages, and various root vegetable seeds (Government of Northwest Territories, 2016).

Yellowknife Community Garden Collective

The community of Yellowknife has the highest number of community garden and greenhouse initiatives operating in northern Canada. The Yellowknife Community Garden Collective (YCGC) began in 1995, and now maintains four community gardens: Weledeh Garden, Kam

Lake Gardens, Niven Garden, and Old Town Garden. YCGC also maintains the Kam Lake Community Orchard where community members and visitors are able to pick berries at a volume fee (Yellowknife Community Garden Collective, 2012). The objective of the Kam Lack Community Orchard is to promote local production of berries and knowledge on the resiliency and yield of various berry species when planted in Arctic environments (Yellowknife Community Garden Collective, 2012). Participants are required to pay an annual $15 membership fee as well as a $10 plot fee. However, plots must be shared between a minimum of two people. The objectives of the YCGC are to provide a place for production of fresh locally-grown foods, provide education on gardening in northern environments, and to assist in meeting food security needs of the community through donation of food to local charities. Over 200 gardening members participate in YCGC locations (Yellowknife Community Garden Collective, n.d.).

Gameti Community Garden

At 21,600 ft^2, the Gameti Community Garden is the largest garden and greenhouse initiative in the Northwest Territories (Tlicho News, 2014). The garden was built in 2014 with the support of the Department of Industry, Tourism and Investment (ITI) and the Community Government of Gameti. Funding is used to maintain the garden and also employ four full-time summer staff (Zelniker, 2015). The primary goal of the garden is to grow crops locally in a sustainable and environmentally responsible manner (Tlicho News, 2014). The garden grows medicinal plants, berries, and various vegetables but has also experimented with lettuce, sunflowers, potatoes, chives, and rice (Tlicho News, 2014). In 2015, the garden expanded to include goat and poultry operations and also added a greenhouse (Zelniker, 2015).

Nunavut

Iqaluit Community Greenhouse

The Iqaluit Community Greenhouse is a 1000 ft^2 facility that was opened in 2007 and is maintained by the Iqaluit Greenhouse Society. Production is primarily focused on fast-growing plants such as kale, spinach, climbing peas, beans, and lettuce (Minogue, 2008; Varga, 2014). Annual costs to operate the Iqaluit Greenhouse are an estimated $6,000, which is mainly covered by donations and fundraising efforts (Varga, 2014). Seasonal memberships cost $75 and include all necessary gardening equipment and supplies. The greenhouse previously operated through individually-managed plots, but switched to a communal operation in 2014 to maximize efficiency and support crops that require larger growing space. Surplus produce harvested from the Iqaluit Greenhouse are distributed to the Qayuqtuvik Soup Kitchen, Uquutaq Men's Shelter, and Sivummut House, the Iqaluit women and children shelter (Varga, 2014).

Growing North Greenhouse

The Growing North greenhouse in Naujaat was launched by students from Ryerson University in 2016 (Gould, 2016). The hydroponic greenhouse can grow over 2000 plants at full capacity, including peas, carrots, turnips, lettuce, and tomatoes. The facility's heating and lighting technology allows year-round growing, and it can maximize space by growing plants vertically using hydroponic towers (Gould, 2016).

Nunavik

Kuujjuaq Greenhouse Project

For over 20 years, the Kuujjuaq Greenhouse Project has been operating from May to October. Vegetables grown include varieties of leafy greens, herbs, and root vegetables such as lettuce, parsley, radishes, and potatoes (Inuit Tapiriit Kanatami, n.d.b). The Kuujjuaq Greenhouse is comprised of two greenhouse facilities. Individual plots are distributed by a lottery system and may be taken out for personal use, with produce grown being distributed amongst family members and friends, or plots may also be maintained collectively by organizations or groups of partnering families (Inuit Tapiriit Kanatami, n.d.b). Surplus produce is distributed to those in need. The Kuujjuaq Greenhouse has also undertaken additional projects such as composting, which collects waste from grocery stores and other producers in the community. Other spin-off programs include instruction on how to build protected home gardens and cold frames, as well as youth educational programs in home gardening, composting, and horticultural therapy (Carry & Carfagnini, 2012). A potato field project is also under consideration. Funding for the Kuujjuaq Greenhouse is provided by the Kativik Regional Government, and the Nunavik Regional Board of Health and Social Services provides additional funding for gardening and educational programs (Inuit Tapiriit Kanatami, n.d.b).

Labrador

Natuashish Community Garden

The Natuashish Community Garden is a six-bed, 450 ft^2 garden in the Innu community of Natuashish. Funded by the Natuashish band council since 2010, the garden produces beets, kale, carrots, strawberries, lettuce, and swiss chard (Breen, 2016). Due to the success in Natuashish, the Innu community of Sheshatshiu has launched its own community garden (Breen, 2016).

Hopedale Community Garden

The Hopedale Community Gardening Program was launched in 2013. The garden produces potatoes, turnips, carrots, spinach, cabbage, onion, calendula, mesclun, and beets. In addition to food production the garden is used as a space for networking among community members where educational programs and workshops are held, and community members learn skills in keeping home garden containers, raised beds, composting, seed preparation, and strategies to optimize the short growing season in Labrador (Inuit Tapiriit Kanatami, n.d.a). The garden is managed and run on a strictly volunteer basis (Food First NL, 2015).

Discussion and conclusion

Community gardens and greenhouses are being introduced across northern Canada as a local food procurement strategy to improve local access to high quality and low cost vegetables (Inuit Tapiriit Kanatami, n.d.a). Communities that have traditionally harvested traditional food from the land, but have increasingly turned to commercial foods to meet their dietary needs, are recognizing the benefits of growing their own foods (Kwantlen Polytechnic University, 2014). Community gardens and greenhouses are seen as an alternative to imported foods that are often unaffordable, of compromised quality, or simply unavailable in local retail outlets. This recognition has motivated some northern communities to shift their food procurement strategies to local production with the hope of becoming self-sufficient and food secure in the future. Optimism in the health and nutritional benefits of community gardens and greenhouses is well-founded. We know from research conducted in regions outside the Arctic that community gardens and greenhouses have proven successful at promoting the availability and consumption of healthy foods. Castro, Samuels, & Harman (2013) found that those who participate in community garden programs consumed more vegetables than those who relied solely on commercial outlets. Algert, Diekmann, Renvall, & Gray (2016) similarly found that those who participated in community gardens often doubled their intake of vegetables to a level that met national dietary recommendations, while instilling healthy eating and lifestyle habits in children (Douglas et al., 2014).

Notwithstanding the purported benefits of community gardens and greenhouses as local food procurement strategies, there is limited research on the actual impact that community gardens and greenhouses have on alleviating food insecurity in northern Canada. The little research that has been conducted suggests that the value of community gardens and greenhouses rests not in their food production capacity but rather in providing community social services, such as serving as centres for community development or providing youth training and educational opportunities (Allen, 2014). It is well known that northern communities favor locally-grown produce over imported market foods, citing freshness, sustainability, and nutrition as reasons for preference, but the actual impact on nutrition and food security remains unknown.

While other research has addressed the costs and technological performance of northern agriculture (Stevenson et al., 2014), as well as innovations in greenhouse technologies (Agriteam Canada Consulting, 2013), we have little understanding of whether community gardens and greenhouses promote healthy eating habits or whether participants of community gardens and greenhouses consume more vegetables than non-participating community members. Nor do we know the ethnic and socio-economic characteristics of those who participate and benefit from community gardens and greenhouses. For example, are participants in community gardens and greenhouses those most in need or do they represent a more transient population (e.g., school teachers or government employees) who are either accustomed to having regular access to fresh foods or are drawn to the company of others with similar socio-economic standing? If the latter, participation in community gardens and greenhouses could be viewed negatively by permanent community members, or even considered elitist and used only by those who can afford membership (e.g., membership and plot fees) and have flexible schedules to volunteer their time. This situation could then result in those who are most vulnerable to food insecurity being excluded from any potential benefits. The answers to these questions are, at this point, beyond the scope of this paper. However, if community gardens and greenhouses, as local food procurement strategies, are to make any measurable impact on northern food insecurity, these types of questions will need to be addressed. The objective of this research was to compile an inventory of active community greenhouse and garden initiatives in northern Canada. This inventory will now serve as a starting point for answering the types of questions posed above, which we hope will be used to identify future food security programs that best meet the needs of all northern residents.

Table 1: Community Gardens and Greenhouses in Northern Canada

Initiative	Community	Territory	Initiative Type
1. Hopedale Community Garden	Hopedale	NL	Garden
2. Natuashish Community Garden	Natuashish	NL	Garden
3. Fort McPherson Community Garden	Fort McPherson	NWT	Garden
4. Fort Simpson Community Garden	Fort Simpson	NWT	Greenhouse and Garden
5. Fort Smith Community Garden	Fort Smith	NWT	Garden
6. Inuvik Community Greenhouse	Inuvik	NWT	Greenhouse
7. Old Town Garden	Yellowknife	NWT	Garden
8. Weledeh Garden	Yellowknife	NWT	Garden
9. Niven Garden	Yellowknife	NWT	Garden
10. Kam Lake Garden	Yellowknife	NWT	Garden
11. Deline Community Garden Greenhouse	Deline	NWT	Greenhouse and Garden
12. Enterprise Community Garden	Enterprise	NWT	Greenhouse and Garden
13. Fort Providence Community Garden	Fort Providence	NWT	Garden
14. Fort Resolution Community Garden	Fort Resolution	NWT	Garden
15. Gameti Community Garden	Gameti	NWT	Greenhouse and Garden
16. Hay River Community Greenhouse	Hay River	NWT	Greenhouse and Garden
17. Jean Marie River Community Garden	Jean Marie River	NWT	Garden
18. Kakisa Community Garden	Kakisa	NWT	Garden
19. Lutsel K'e Community Garden	Lutsel K'e	NWT	Greenhouse and Garden
20. Nahanni Butte Community Garden	Nahanni Butte	NWT	Greenhouse and Garden
21. Norman Wells Community Garden	Norman Wells	NWT	Garden
22. Sambaa K'e Community Garden	Sambaa K'e	NWT	Greenhouse and garden
23. Tulita Community Garden	Tulita	NWT	Garden
24. Weekweti Community Garden	Weekweti	NWT	Garden
25. Whati Community Garden	Whati	NWT	Garden
26. Wrigley Community Garden	Wrigley	NWT	Garden
27. Dettah Community Garden	Dettah	NWT	Garden
28. Ford Liard Community Garden	Ford Liard	NWT	Greenhouse and Garden
29. N'Dilo Community Garden	N'dilo	NWT	Garden
30. Iqaluit Community Greenhouse	Iqaluit	NU	Greenhouse and Garden
31. Growing North Greenhouse	Naujaat	NU	Greenhouse
32. Kuujjuaq Greenhouse Project	Kuujjuaq	QC	Greenhouse and Garden
33. Carcross Community Garden	Carcross	YT	Greenhouse and Garden
34. Dawson City Community Garden	Dawson City	YT	Garden
35. Tr'ondek Hwech'in Teaching & Working Frm	Dawson City	YT	Greenhouse and Garden
36. Whitehorse Community Garden	Whitehorse	YT	Garden
37. Vuntut Gwitchin Community Greenhouse and Garden	Old Crow	YT	Greenhouse and Garden
38. Ross River Community Garden and Greenhouse	Ross River	YT	Greenhouse and Garden

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Field Report

Creating a local food procurement community of practice: The Alberta Flavour Learning Lab

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Abstract

In order for local food initiatives (LFIs) to have a transformative effect on the larger food system, greater levels of economic, organizational, and physical scale are needed. One way for LFIs to reach the scale necessary to generate a more significant impact is through increased institutional procurement of local foods. But how do people and organizations come together to generate the social infrastructure required to shift food purchasing practices and processes? This field report shares the story of an innovative community of practice consisting of institutional food buyers, large-scale distributors, regional retailers, processors, producers, researchers, and municipal and provincial government representatives within the Edmonton city-region that formed for the express purpose of "creating a positive community impact by getting more local foods on more local plates". In describing the formation and first three years of the Alberta Flavour Learning Lab we examine the unique characteristics of this community of practice that has aided the development of a common framework for learning, understanding, and joint action. In addition to the accomplishments to date, we also discuss the challenges faced by the Learning Lab and the strategies used to overcome them.

Keywords: Institutional procurement; local food; community of practice; social infrastructure

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Introduction

Canada's agri-food system is embedded in, and shaped by, global market forces (e.g., transnational corporations, global trade agreements), and national and provincial policies (e.g., food safety, land use) that favour an industrial approach to production, processing, and distribution (Clapp, 2014; Clapp & Fuchs, 2009; Qualman, 2011; Winson, 1993). Concerns about the impacts of the dominant, industrialized food system on the environment, health, and local communities have shaped the emergence of a wide range of local food initiatives (LFIs) in Canada and elsewhere. LFIs can be characterized by their focus on locally controlled, shortened supply chains, responding to local supply and demand, and "conditioned by local community norms, values and culture" (Lyson, Gilbert, Gilespie, & Hilchey, 1995, p. 108). Re-localizing food can create opportunities for new and strengthened relationships to form amongst various actors along the supply chain. The networks formed by these dynamic and diverse interactions are creating spaces for "synergies to be built around food and environmental quality, social capital and the economic viability of producers" (Beckie, Kennedy & Wittman, 2012, p. 333). In this way, these LFIs are part of global social movements that are advocating for more locally embedded, environmentally sustainable, and socially just food systems (Hinrichs, 2003; Wittman, Desmarais & Wiebe, 2010).

Despite the growing number of LFIs in recent years, their overall role in the larger food system remains limited; economically, they represent only a small percentage of total food sales (e.g., Beckie, 2016; Beckie, Kennedy & Wittman, 2012). In order for LFIs to have a more significant and transformative effect on the larger food system, greater levels of economic, organizational, and physical scale are needed (Cleveland, Müller, Tranovich, Mazaroli, & Hinson, 2014; Mount, 2012). One potent way to stimulate the scaling up of LFIs is through institutional procurement (e.g., schools, universities, hospitals) of locally produced and processed foods (Friedmann, 2007; Morgan & Morley, 2014; Morgan & Sonnino, 2013; Reynolds & Hunter, 2017). Increasing the percentage of local food purchased by large-scale institutions can generate economies of scale that foster increased production, along with improvements in processing and distribution. There are, however, a number of challenges for institutions assuming this role and adopting new practices. These challenges present both within the organization and externally due to the nature of the dominant supply chains and other systemic barriers (Friedmann, 2007; Morgan & Sonnino, 2010; Reynolds & Hunter, 2017).

Recent research suggests that social infrastructure (referring to relationship, networks, values, and governance, etc.) plays an important role in addressing challenges related to the development of LFIs (Connelly & Beckie, 2016; Flora & Bregendahl, 2012). One approach for establishing social infrastructure is through the development of communities of practice (CoPs), in which groups of diverse individuals with similar interests meet, on an ongoing basis, for the purpose of shared learning and understanding, and for joint action (Lave & Wenger, 1998).

In this field report we describe an innovative and collaborative approach to scaling up LFIs. The Alberta Flavour Learning Lab was formed over three years ago as a local food

procurement CoP consisting of institutional food buyers, large-scale distributors, online-retailers, processors, producers, researchers, and municipal and provincial government representatives within the Edmonton city-region. The Learning Lab's express purpose is "creating a positive community impact by getting more local foods on more local plates". In describing the Learning Lab, we highlight the unique characteristics that have aided the development of a common framework for learning, understanding and joint action.

We begin by first providing a brief overview of the principles of Community of Practice (CoP) and social learning upon which the Learning Lab was established. Here, we also discuss the importance of social infrastructure to the development of LFIs. Next, we describe the initial years of the Learning Lab: establishment of the CoP (2014); collective goal setting and accomplishments (2015); collective goal setting and accomplishments (2016/2017). Next, we discuss lessons learned by reviewing the challenges of developing this CoP and how they were overcome. In conclusion, we reflect on the overall experience of developing the Learning Lab.

Communities of Practice: social infrastructure for learning and innovation

Scholars argue that a shift towards sustainable food system practices is only possible through profound personal and social changes (e.g., Kerton & Sinclair, 2010; Lankester, 2013; Tarnoczi, 2011). This view is bolstered by evidence suggesting that social infrastructure (e.g., relationships, networks, values, governance) is a critical, yet often neglected, aspect of LFI development (Connelly & Beckie, 2016; Flora & Bregendahl, 2012; Flora & Flora, 1993). Physical infrastructure (e.g., storage, processing and distribution facilities, retail space) is often associated with large capital investments and high financial risk; whereas social infrastructure generally requires significantly lower capital input, instead focusing on building relationships and creating a social space where participants can learn together, sharing knowledge, expertise, and resources, leading to a development and diffusion of innovations (Beckie et al., 2012; Connelly & Beckie, 2016). Engaging actors from different sectors and perspectives to participate in building social infrastructure can lead to more impactful collective efforts to transform the dynamics of existing systems (Smith & Seyfang, 2013). But how do people and organizations come together to generate the social infrastructure required to shift practices and processes? Communities of Practice (CoP) are one promising path. CoPs were conceptualized by Jean Lave and Etienne Wegner in the 1990s as part of their work on social learning theory (Lave & Wenger, 1998).

CoPs are formed by groups of people who seek to deepen their knowledge and expertise in a shared area of interest by interacting on an ongoing basis (Wenger, 2000; Wenger, McDermott & Synder, 2002). Through CoPs, people with diverse perspectives and experiences can come together to develop a common framework for learning, understanding, and joint action (Schusler, Decker & Pfeffer, 2003). CoPs facilitate critical reflection of one's own and others'

assumptions of the world, an important aspect of learning about and adopting practices that support more sustainable outcomes (Lankester, 2013).

Table 1: Timeline of Activities for the Alberta Flavour Learning Lab

February 2014	• First meeting; participants unanimously agree to continue to meet as a group
Summer 2014	• Northlands receives two-year grant from McConnell Foundation's Institutional Food Program to support development of a local food procurement community of practice
Fall/Winter 2014	• Members agree to overarching goal of "creating positive community impact by getting more local foods on more local plates" • Defined "local food" within the Alberta context • Began inventorying local food products currently available through distributors or being sourced directly from producers or processors • Learning resources made available: guest speakers, reports and online sources

Fall 2015	• Northlands receives additional two years of grant funding from Alberta Livestock and Meat Association (ALMA) to support the Learning Lab
	• Partnered with U of A on a five-year Measurement and Evaluation study as part of the FLEdGE (Food: Locally Embedded, Globally Engaged) research project
	• Began local food tours
	• Identify priorities for next three years:
	  o Annual measurement and evaluation of local food procurement
	  o Recognition and celebration of accomplishments
	  o Local food products familiarization
	  o Marketing
	  o Group expansion

Summer 2016	• Created one video on the Learning Lab and two videos on local food producers[1] • Northlands secures matching funding from Mitacs to hire two research interns
Fall 2016	• AB Flavour marketing toolkit created and made available[2] • First Mitacs PhD intern begins facilitating the Learning Lab and researching the development of the CoP • Northlands launches Alberta Flavour Twitter account and website • Measurement and evaluation baseline research (2015) begins • Economic impact assessment study contracted to a consultant • "Meet the Maker" added to meetings
Winter 2016/2017	• Second Mitacs PhD intern begins assisting with Alberta Flavour communications and online resources • Strategic planning and "strategic action map" created for 2017 and beyond • Measurement and Evaluation 2015 baseline study completed. • Members sign off on terms of reference and pledge of commitment and confidentiality

[1] https://www.youtube.com/watch?v=X8Odc-GDIEk; http://temp-albertaflavour.nationbuilder.com/downloads
[2] http://temp-albertaflavour.nationbuilder.com/downloads

Reflexive learning, through trial and error and collective problem solving, is a key characteristic of resilient food systems that can adapt to changing needs and circumstances (Braun & Bogdan, 2016). CoPs have been increasingly adopted by communities and organizations as a way to share and build knowledge that can address common issues and goals. In the following section we describe the formation and development of one such CoP, the Alberta Flavour Learning Lab.

Development of the Alberta Flavour Learning Lab (2014 – 2017)

The activities and accomplishments of the Alberta Flavour Learning Lab, from the first meeting in February, 2014 to March, 2017, are summarized in Table 1 and described further in the following sub-sections.

2014 - Establishing the Alberta Flavour Learning Lab

In February 2014, a number of representatives from public institutions, large-scale food distributors, local food retailers, and producers situated in the Edmonton city-region were invited to a meeting coordinated and hosted by Northlands Agricultural Society of Alberta. The purpose of the meeting was to scope out the level of interest in forming a group focused on scaling up local food distribution and institutional procurement in the Edmonton Capital Region. Northlands was looking for new ways to contribute to the region's agricultural sector and contracted the third author to provide expertise and leadership in developing strategies for Northlands to support the growing local food movement in the province. Institutional procurement was identified as an important strategy and one that Northlands could play a key role in leading. A senior planner from the City, who had been involved with the development of the Edmonton Food and Agriculture Strategy (Beckie, Hanson, & Schrader, 2013), co-facilitated the meeting.

The invitation to the meeting stated:

> Getting more local food on more plates . . . let's talk! The City of Edmonton and Northlands are bringing together local institutions and food service organizations that are buying local food or want to buy more local food. Please join us for an informal workshop, where we can get to know one another, explore what we collectively know, examine the challenges and successes of local food in Alberta.

Invitations were sent to food buyers, chefs, and foodservice managers from Alberta Health Services, the University of Alberta, the Northern Alberta Institute of Technology (NAIT), the Shaw Conference Center, and Northlands' Expo Conference Center. The third author understood

the importance of having other stakeholders from along the supply chain present, so invitations were also sent to Sysco and Gordon Food Services (GFS), two major food distributors, as well as to representatives from Alberta's Department of Agriculture and Forestry, local food retailers, and agricultural producers. The first author was also invited to take part in the meeting to determine the role research could potentially play in the development of this group. By the end of this first meeting, there was unanimous support for continuing to meet as a group focused on exploring ways to 'create a positive community impact by getting more local food on more local plates'(September 4, 2014 Alberta Flavour Meeting notes). The group was initially identified as the Local Food Working Group and was later named the Alberta Flavour Learning Lab.

With support for continued meetings, (the third author) applied for, and was awarded, a two-year grant by the McConnell Foundation to support Learning Lab activities. Throughout 2014, meetings were held approximately every eight weeks for two hours and continued to be hosted by Northlands. Because of the intent to foster the development of a community of practice, meeting agendas were fairly open-ended, allowing members to determine how to best to learn from each other and what resources were needed. Meeting facilitation drew on the Art of Hosting and World Café methods in order to create a welcoming and interactive social space.

Early in the first year, it was recognized that developing an agreed-upon definition of local food was critical. After lengthy discussions, members of the Learning Lab decided that, similar to the provincial government's definition, local food would be defined as "Alberta food". Three criteria were identified as important to fostering positive community impact through changes in food procurement practices: 1) ingredients – farm and rural community impacts; 2) processing – supporting business investment and jobs; and 3) business ownership – supporting local entrepreneurs and increased economic impact. It was then decided that, for the purpose of the Learning Lab, two out of three of the criteria – Alberta produced, processed, and owned businesses – were needed for a food item to be identified as "Alberta Food".

With a definition in place, the Learning Lab could begin to identify available local product. This was accomplished through two primary activities:

1. GFS and Sysco identified existing Stock Keeping Units (SKU)[3] that fit the shared definition of "local" and changed the structure of their inventory list accordingly.
2. Learning Lab participants provided a list of their local food providers through either direct or contracted relationships.

Over 1700 SKU's and 20 direct trade relationships were identified as meeting the criteria of local food and these were aggregated into a spread sheet and shared among the participants. An annual survey is being developed to ensure that new products and producers are captured.

Also during 2014, meeting agendas evolved to include time for participants to share their successes and challenges, which allowed the organizers to identify gaps in the group's understanding of the regional food system. These gaps were addressed through a variety of

[3] SKU, or Stock Keeping Unit, is a number assigned to a product by the company for stock-keeping purposes and internal operations.

resources and learning opportunities, including guest speakers, field tours, and relevant documentary and online information. Guest speakers presented on a variety of topics, such as Edmonton's food and agriculture strategy and Alberta's Department of Agriculture and Forestry resources on locally focused production and marketing opportunities. Field tours were offered to enable members to gain firsthand knowledge of a diversity of local food businesses in the Edmonton city-region (e.g., commercial greenhouse, commercial bakery, organic goat dairy and processing plant, vegetable processor). In addition to Learning Lab members, chefs, food service staff, and others are invited to attend the field tours.

Other important milestones in 2014 included the development of two draft documents: a Terms of Reference and a Pledge of Commitment. The third author modeled these documents after those developed by the Healthy Food in Health Care (HFHC) program based in New England. These documents articulated the purpose, scope, and commitment to participation and confidentiality for members of the Learning Lab. These documents were refined over time and signed by Learning Lab members for the first time in 2017.

2015 – Collective goal setting and accomplishments

With the foundation of the Learning Lab established during 2014, the group was able to begin identifying and accomplishing goals. In 2015 the following goals were developed:

- Recognize the successes of participants and of the group as a whole
- Measure the impact, on the local economy, of the group's purchasing
- Create shared marketing materials
- Develop clear, agreed-upon metrics
- Increase the percentage of local products purchased
- Make the supply chain more transparent
- Profile producers and vendors
- Address some of the logistics of getting products from small local vendors
- Help suppliers understand how to sell to institutions and distributors

These goals, recognized by the Learning Lab as a work in progress, support the purpose of the Learning Lab ("creating a positive community impact by getting more local foods on more local plates") by increasing local marketing channels for local producers and providing producers with opportunities to increase in scale. Development and marketing (e.g., website, social media) of the Alberta Flavour brand helps to raise the profiles of a number of local producers. Additionally, through achievement of the goals, shorter supply chain relationships are expanded and strengthened (i.e., producers – distributors – institutional and other buyers), particularly through direct sales.

In the fall of 2015, two additional milestones for the Learning Lab included receipt of additional funding and the initiation of measurement and evaluation on the Learning Lab's institutional procurement of local foods. The additional funding for the Learning Lab was awarded to Northlands by the Alberta Livestock and Meat Association (ALMA) and was used to support food tours and continued meetings. The measurement and evaluation was undertaken as a five-year project in partnership with the University of Alberta and FLEdGE. Baseline data on the institutional procurement of local foods was completed in 2016 and the Learning Lab will be monitoring progress of this and other impacts (i.e., accomplishment of strategic action items) over time.

2016/2017 – Collective goal setting and accomplishments

In the fall of 2016, the Learning Lab entered into a series of strategic planning sessions. These sessions were pivotal in establishing goals and a plan of action for 2017 and beyond. Three priorities were identified: 1) *story telling* (both internal and external to the Learning Lab); 2) *measurement and evaluation*; and 3) *coordinating demand for local food*. Although identified and agreed upon quickly, the goals were broad and needed to be translated into clear actions. A "strategic action map" was created over the next two meetings detailing the actions through which the broad goals would be accomplished. Team leads and team members for each action were listed on the action map, which serves as a "living document" used to structure subsequent meetings. Similar to the previous set of goals, these also support local producers in establishing new local market channels and increasing in scale. Storytelling, in particular, continues to raise the profiles of a number of local producers, processors, and institutional initiatives through multiple communication outlets (i.e., website (http://temp-albertaflavour.nationbuilder.com/), social media (https://twitter.com/albertaflavour?lang=en), and presentations). For example, the twitter account produces 1460 tweets per year and has close to 3000 followers.

The Learning Lab evolved in three other significant ways during 2016/2017. After the strategic planning sessions, members recognized the need to meet more frequently (from every eight weeks to every six) and for a longer amount of time (from two to three hours). Second, a "Meet the Maker" component was added to each meeting, during which two or three regional producers introduce their businesses and provide food samples. Unlike food tours, which require several hours, Meet the Maker is a convenient way for food buyers to connect with local food producers and processors, hear about the development of their businesses, sample their products, and learn of their current and future capacity to sell to institutions, as well as the challenges they face in doing so. This information was also important to government representatives from the Explore Local division of Alberta Agriculture and Forestry, who develop and deliver programs to assist farmers and processors working on local market development. Like the food tours, Meet the Maker was instrumental in building social infrastructure through both external and internal linkages.

The third way the Learning Lab developed was the addition of two research interns for two years. The internships were supported through matching funding from Northlands and Mitacs, a national, not-for-profit organization that partners universities, companies, and governments to support industrial and social innovation in Canada. One of the interns serves as the facilitator for the Learning Lab and is conducting research on the development of the CoP. The other Mitacs intern supports the development of the Learning Lab and of a broader regional food systems community of practice in Alberta by providing internal and external communications and online resources (e.g., website, social media, web-based community building). This intern will be conducting research on the network that is forming.

Challenges and lessons learned

In addition to the many activities and accomplishments of the Learning Lab over the past three years, there have also been a number of challenges, predominantly centering on members' participation, the development of the community of practice, and the tendency to focus mostly on the economic criteria and impacts of institutional local food procurement. In this section, we discuss some of these key challenges and the strategies used to overcome them.

The first few Learning Lab meetings were marked with a degree of tension, stemming from the caution and uncertainty about members' level of commitment given the competitive and confidential nature of the food business. One comment raised during interviews with members, conducted by the second author, reflects the feelings of many during the early stages: "I'll participate in these meetings but I am not telling anyone how much I pay for carrots." This was told in a light-hearted manner and was used to contrast with the comparative ease that members have come to communicate with each other.

When asked what had increased trust within the group, members unanimously responded that it was the way in which the meetings were facilitated, which enabled relationships to develop on a personal level as well as on a professional level. Expert and intentional facilitation of the initial meetings was identified as a critical factor in moving members from viewing one another as competitors to identifying each other as colleagues working together towards common goals. The Art of Hosting techniques – "opening the circle" and "closing the circle" – are simple but effective ways of building personal relationships. Opening the circle involves starting the meeting with a question that includes a personal component (e.g., What was the best part of your weekend? What are one or two things in your life that mean the most to you lately?). Closing the circle is similar in design but focuses more on the meeting itself (e.g., What are your thoughts on today's meeting? What are one or two words that convey how you feel we are doing as a group?). Taking into account members' professional perspectives, importance was also placed on acknowledging and respecting individual organizational or business goals. Rather than framing the group solely as a means to scale up local food systems in order to contribute to the common good, the concept was also presented as an opportunity for each individual organization to

support their own needs and interests. At one of the early meetings, members were asked to write those interests and needs down, and they were used to inform the development of the Learning Lab's goals. Despite the initial emphasis on individual corporate cultures and needs, members of the Learning Lab started to see, over time, an alignment of their institution's values and needs with those of other members. Members also began to realize that it was only through working together that they could make a significant impact on scaling up local food.

Developing a shared language (i.e., definition of local food) and a shared vision for this community of practice was time-consuming and challenging, given the different perspectives represented by members. But these were essential for framing the focus and intent of the group, for maintaining group cohesiveness, and for providing important reference points for the activities and actions of the Learning Lab. Group cohesiveness was also facilitated by the development of the Terms of Reference, the Participant Pledge, and a non-disclosure agreement that helped to alleviate concerns about confidentiality. These documents clarified the rights and responsibilities of the members; for example, that there would be no disclosure of pricing or volumes purchased outside of the group. Over time, there was enough trust established that members were comfortable sharing purchasing volumes, supplier, and vendor information with each other.

To support more consistent participation, the Learning Lab shifted to having membership by individuals rather than by institutions. This means that individuals, instead of organizations, join the Learning Lab. Another lesson learned was to encourage multiple individuals from each organization to participate in the Learning Lab. This has been important for continued information sharing despite employment changes (i.e., taking a new position, maternity leave).

After a few meetings it became apparent that there were some significant gaps in basic knowledge about which foods are grown and processed within the region. Foodservice managers and procurement managers are not connected to the food system in the way that chefs or restaurant owners are. For many procurement managers, food is just a portion of what they are responsible for sourcing. Having a granular understanding, for example, of who grows potatoes in the volumes that are needed and at a price that institutions are willing to pay was recognized as being critical to increased purchasing of local foods.

Recognizing and overcoming this lack of knowledge highlights the importance of members learning to move beyond a deeply rooted belief that "local food" is both unavailable and cost prohibitive. Efforts to advance learning and knowledge about the diversity of products available include inviting local businesses to the meeting (Meet the Maker) to profile their products and to talk about the challenges they face in scaling up production (e.g., finding appropriate processing facilities, meeting food safety requirements). Another effort to strengthen knowledge was through tours to local food businesses. These field trips provide Learning Lab members with opportunities to see a range of food businesses first hand and to ask questions of the people who provide or can provide local foods for their organizations.

A final challenge of the Learning Lab has been a tendency to focus on the economic aspects of the institutional procurement of local foods relative to the environmental and social

aspects. The definition of local foods adopted by the Learning Lab did not include these dimensions of sustainability, for example, or standards related to animal husbandry. The Report on Institutional Food Procurement by the Johns Hopkins Center for a Livable Future identified this challenge as being common to the institutional procurement of local food: "Notably, the emphasis of institutions (on the procurement of local food) has been on criteria regarding the distance food has traveled, and has not taken into account aspects of production such as the structure and size, treatment of workers, health and environment" (Fitch & Santos 2016, p. 2) This is anticipated to be an ongoing challenge for the Learning Lab and for the majority of initiatives aimed at increasing the institutional procurement of local foods. However, efforts have been made to increase awareness and critical reflection within this CoP on the broad set of values and goals associated with the local food movement and to encourage the use of suppliers that address socio-economic and environmental sustainability criteria.

Conclusion

Social infrastructure has been identified as playing a crucial role in the advancement of local food systems. This field report describes the development of social infrastructure through the establishment of a CoP consisting of institutional food buyers, large-scale distributors, on-line regional retailers, processors, producers, researchers, and municipal and provincial government representatives, who came together to "create positive community impact by getting more local foods on more local plates". Through the use of a CoP framework, Alberta Flavour Learning Lab has been successful in: creating a new community of local food learners and leaders; increasing awareness of local food available in Alberta; increasing procurement of local food; increasing public awareness of institutional purchasing of local food; and supporting the development of a place-based food system. A segment of the meeting notes from the first strategic planning session, which took place November 2016, are telling of the Learning Lab's progress as a group:

> The overall feel of the planning session was energetic and engaged. Although we spent more time than originally planned on sharing of each organization's activities and barriers related to local foods, this ended up bringing more value to the group than we had anticipated. This sharing time illuminated the agreed-upon goals for 2017 which centered on "story telling". Learning Lab member organizations have done, or are in the process of doing, quite an impressive array of activities related to local food. There is much that we can learn from one another and there is also much that would be good to communicate to audiences outside of the group. By the end of the meeting, it was evident that the hard work of creating a foundation for this group has been done and done successfully! Now the group is ready to really push forward the

> scaling up of institutional procurement of local food. (Meeting Notes, November 2016)

The Learning Lab has resulted in a number of systemic changes. Sysco and GFS now identify products in their inventory that are aligned with the Learning Lab's shared definition of "local foods". Working group members now view each other as colleagues that can support each other's success. Shifting from competitors to colleagues allows for cross-organization collaboration that would have never been possible without the relationships that have been developed through the Learning Lab. Another change, both individual and collective, has been increased understanding of the food system and the potential of institutional procurement to contribute to the scaling up of local food systems in Alberta. Participants are now able to articulate why purchasing more local food aligns with their organization's mandate and also creates benefits for local producers, businesses, and communities.

In addition to the Learning Lab achievements related to procurement, other developments have emerged through collaborations among the members that are contributing to local food system development more broadly. Alberta Health Services and Northlands have partnered to support the expansion of a local CSA by establishing a drop off for weekly produce boxes at one of the hospitals. Enrollment in the CSA has increased significantly through hospital staff membership. The Shaw Conference Centre has contracted Northland's beekeeper to add hives to their roof; the honey produced will be used by Shaw's chefs. These developments illustrate the ancillary benefits that emerge from the relationships that have formed in this CoP.

This field report contributes to the literature on social learning and CoP by providing evidence that participation of a diverse group of individuals in a focused and collective learning process can lead to the development of relationships of trust, the identification of common goals, and the creation and rapid diffusion of knowledge. This report also provides insights into the development of procurement practices that support the scaling of LFIs and their associated values and objectives. The Learning Lab provides an example of how economic transactions can be re-embedded in social networks (Seyfang, 2006; Larder, Lyons & Woolcock, 2014).

While acknowledging the achievements of the Learning Lab during its first three years, it is important to also recognize that, with this LFI still being in the early stage of development, the mission of "creating a positive community impact by getting more local foods on more local plates" has yet to be fully realized. In addition to incremental increases in local food purchases to date by the member institutions, there has been a tendency to focus on product price, availability and volume over social and environmentally sustainable criteria. Identification of this limitation during the recent measurement and evaluation study has led to critical reflection and dialogue about how to encompass a broader set of criteria when deciding upon local food purchases. While this challenge can be difficult and time consuming to address, the institutional members are open to finding ways to identify and incorporate social and environmental criteria. With the diversity of members involved in this CoP (institutions, academics, producers, retailers, distributors, and government representatives) it is hoped that the social infrastructure formed will

continue to provide fertile ground for learning about and increasing attention to all dimensions of a sustainable, local food system.

Changes in practice as a result of learning and innovation can shift the way participants interact with each other and with structures and institutions to transform the power dynamics of existing systems (Moulaert, Martinelli, Swyngedouw, & Gonzalez, 2005). Through their involvement in this CoP, public institutions have become aware of the role they can play, individually and collectively, in advancing local food systems through changes in procurement practices. Through learning and working together they have taken agency to do so. While these institutions are still predominantly dependent on large-scale distributors for most of their food purchases, they now have access to distributors' inventories that identify local food, as collectively defined, through collaborations formed within the Learning Lab. Additionally, through information gathered and exchanged within this CoP, institutions are pursuing and developing contracts directly with Alberta producers and processors.

Social learning has become a common theme of the food movement, as we seek to learn about and develop ways to improve the sustainability and resilience of the food system (Beckie, 2016). The relationship between learning and practice is an iterative one, and changes in practice taking place at the individual level are influenced by and can also influence communities of practice (Braun & Bogdan, 2016). By fostering the development of social infrastructure, through convening a diverse set of actors who have significant roles in shaping Edmonton's city-region food system, this initiative has seeded many relationships and activities that can contribute to influencing change in the food system in the years ahead.

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