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"GOING THE DISTANCE SO OUR FOOD DOESN'T HAVE TO": CASE STUDIES OF CREATIVE PUBLIC PROCUREMENT AT CANADIAN AND UK UNIVERSITIES

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by

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DISSERTATION

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at Canadian and UK Universities

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Abstract

This dissertation explores three efforts to develop sustainable local food systems at public universities in Canada and the UK. One is a partnership between the Canadian non-profit, Local Food Plus (LFP), and the University of Toronto (U of T). The other two are partnerships between the UK non-profit, the Soil Association (SA), and two British universities – Nottingham Trent University (NTU) and the University of the Arts London (UAL). In all three cases studies, a formal certification program to support the transition to more sustainable local food systems was a central feature. The author of this dissertation was the founder and president of Local Food Plus for almost a decade, and brings a perspective informed by both theory and practice.

The theoretical framework is a prominent tool of Sustainability Transition Theory, known as the multi-level perspective (MLP). The MLP is a model for conceptualizing the process of sustainability transitions, using the notions of niche, regime and landscape. By applying the MLP to sustainability transition in the food system, this dissertation suggests a number of ways in which the MLP can be strengthened, modified and refined. The dissertation also makes an empirical contribution to documenting and understanding sustainability transition in institutional food practices through analysis of 67 detailed semi-structured interviews conducted with food sector practitioners. These interviews focus on the operationalization of sustainability transitions. The dissertation argues that sustainability transition in foodservice is inherently disruptive to the existing regime, and requires on-going mobilization. As well, the research indicates that human agency is essential. This dissertation argues that operationalization deserves to be both problematized and theorized.

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"Thoughts are but dreams till their effects be tried"
(William Shakespeare)

CHAPTER 1

Dissertation Introduction

1. Dissertation Overview

This dissertation explores three efforts to develop sustainable local food systems at public universities in Canada and the UK. One is a partnership between the Canadian non-profit, Local Food Plus (LFP), and the University of Toronto (U of T). The other two are partnerships between the UK non-profit, the Soil Association (SA), and two British universities – Nottingham Trent University (NTU) and the University of the Arts London (UAL). These universities were chosen because they worked with civil society organizations that had formal certification schemes to support transitions to more sustainable local food systems. NTU was the first university in the UK to achieve the SA Food for Life Catering Mark in the silver category, while UAL was the first to achieve the gold Catering Mark. In Canada, the U of T is the only university to have incorporated a formal certification program (LFP's Certified Local Sustainable mark) in order to work towards the university's sustainability goals in foodservice.[1]

Although there is a growing body of literature about the potential of "creative public procurement" of food, pioneered by Morgan and his colleagues at Cardiff University (Morgan, Marsden, & Murdoch, 2006; Morgan & Morley, 2014; Morgan & Sonnino, 2007, 2008), this dissertation makes an empirical contribution to understanding sustainability transition through analysis of 67 detailed semi-structured interviews conducted with food sector practitioners between 2013 and 2016. There is much to be gained by qualitative research based on primary

[1] McGill University also worked, although to a lesser extent, with Local Food Plus and its certification scheme.

sources, including interviews. This is especially germane to the study of daily operations, the centrality of which is an important theme in this dissertation. However, this research was not examined with a view to gathering or providing quantitative data which can be statistically analyzed, and is therefore limited in that regard.

The theoretical framework for this dissertation is a prominent tool of Sustainability Transition Theory (STT), known as the multi-level perspective (MLP). The MLP is a model for conceptualizing the process of sustainability transitions, developed at the turn of the 21st century. This dissertation, one of the first to apply the MLP to food system transitions, indicates at several points how the MLP has proven to be a tool which can be usefully adapted for the analysis of food systems. It is a mid-level theory and heuristic device, still being refined by its primary author, Frank Geels, as well as by many other scholars. The central premise of the MLP is the identification and interaction of three levels of analysis within sustainability transitions – the niche, the regime and the landscape. In this dissertation, I suggest a number of ways in which the MLP can be strengthened, modified and refined to better address food system change. Through this work, I hope to shed light on the following research question: In what ways does the MLP contribute to our understanding and theorization of how sustainable food advocates, supported by civil society organizations, can work with universities in Canada and the UK in the initiation and development of more sustainable local food systems?

"Sustainability" in this dissertation is interpreted through the lens of what can be practicably achieved through institutional food procurement policies and practices. Therefore, the working definition does not include elements of sustainable food systems such as sustainable diets, poverty reduction, waste management, packaging, or food security and food sovereignty in general. For the purpose of this study, sustainable local food systems refers to food systems that

foster increased consumption of whole foods, usually produced within the region in which they are consumed, and grown and processed with practices that reduce pesticides, conserve soil and water, and treat workers fairly and animals humanely. The sustainability transition in food is presented as a journey rather than a destination. As a consequence, beginnings of progress deserve recognition alongside awareness of limitations during the process of continuous improvement.

I have chosen the Multi-Manuscript Option (MMO) for this dissertation. In its traditional form, a dissertation is designed to be "a structurally unified body of work, with each part contributing to the development of a coherent whole" (Wilfrid Laurier University, 2012). While a MMO dissertation must also be a unified whole, each paper submitted for publication is also a unified whole unto itself. As a result, each discrete paper explains the methodology used and sets the research context. Each discrete paper also develops a thesis and comes to a conclusion. Since readers of one journal article will not necessarily have read another journal article, some repetition of background is essential. Overall, as a set of papers, the dissertation must be coherent and unified, with a literature review, methodology chapter and conclusion.

Several chapters of the dissertation have been written as discrete papers, three of which have been submitted for publication, with two of those already published. The two published articles are Chapter 4 – **The Food For Life Catering Mark: Implementing the Sustainability Transition in University Food Procurement**, which is part of a special issue of the journal *Agriculture* on "Distributed, Interconnected and Democratic Agri-Food Economies"**,** and Chapter 6 – **A Typology of "Infrastructure of the Middle" in University Food Procurement in England and Canada: Elaborating the "to" in "Farm to Cafeteria"**, which is part of a special issue of the Brazilian journal *Raizes* on "Revaluing Institutional Food Procurement". The

Raizes paper was originally presented at the Agriculture in an Urbanizing Environment conference held in Rome, Italy in September 2015. An earlier version of this paper received the conference award for Best PhD Paper.

Chapter 7 – **Can Values-Based Food Chains (VBFCs) Advance Local and Sustainable Food Systems: Evidence from Case Studies of University Procurement in Canada and the UK** is an invited submission to *The International Journal of the Sociology of Agriculture and Food.* It has undergone peer review and has been accepted with revisions. This paper was originally written for the International Rural Sociology Association conference, held in Toronto in August 2016. Chapter 5 – **Agency and Operationalization in Local and Sustainable Food Systems: The Case of Local Food Plus** is an invited submission to *Canadian Food Studies/La revue canadienne des études sur l'alimentation* for a special issue on food procurement. I have been asked to be a guest co-editor for this issue.

2. Contributions to Theory and Analysis

This dissertation proposes seven contributions to theory and analysis:

Contribution to theory 1: Affirmation of the importance of "landscape" in the MLP as illustrated in Chapter 4 (about the Food For Life Catering Mark) and Chapter 5 (about Local Food Plus). The conceptualization of the landscape is of fundamental significance. My research on the Food For Life Catering Mark and Local Food Plus shows that two equally capable organizations had differing impacts and outcomes, in part due to landscape factors, beyond the boundaries of niche and regime.

Contribution to theory 2: An enhancement of the role of agency, and the addition of a role for operationalization, at all three levels of the MLP.

My research demonstrates the need to enhance the role of human agency and "champions", along the lines accepted by Geels in his recent articles, where he discusses how "cultural legitimacy" is created in sustainability transitions (Geels & Verhees, 2011). However, this dissertation goes beyond Geels' acknowledgement of agency (Geels & Verhees, 2011; Geels et al., 2016; Turnheim & Geels, 2013) and proposes that agency and operationalization be fully integrated into food system analysis of all three levels of the MLP. Furthermore, this dissertation argues that MLP analysis of sustainability transition in food is incomplete without the integration of human agency and operationalization.

Contribution to theory 3: *A confirmation of Geels' recent amendments to the MLP indicating that the process of sustainability transition is not one of "alignment", but of struggle, mobilization and disruption, because sustainability initiatives disrupt existing practices and norms.*

Geels himself saw the need to modify his views on this point in light of power struggles he observed within the energy industry (Geels, 2014; Geels et al., 2016). In the food sector, scaling up and out (by which I mean moving from a small percentage of market share to a majority of market share) requires direct and on-going engagement with a resistant dominant food system. Therefore, conflict, not alignment, is the norm.

Contribution to theory 4: *A revised conceptualization of the role of the niche in the MLP -- not as an uncontested, non-competitive or protected space that allows for innovation, but as a "beachhead", a place of contestation and disruption, and possibly transformation.*

This dissertation argues that the Food for Life Catering Mark and the Local Food Plus program did not occupy protected spaces, but instead established "beachheads" that had to be defended in a resistant foodservice regime and a hostile neoliberal landscape.

Contribution to theory 5: *The centrality of infrastructure, and an argument that infrastructure needs to be consistently emphasized in assessments of transitions to sustainable local food systems.*

Infrastructure should be understood as a dynamic and determinative factor, not simply the "to" in "farm to fork." It is not temporally contingent, but must be continually renewed. Like sustainability, building and maintaining infrastructure is a continually evolving journey.

Contribution to theory 6: *A typology of "infrastructure of the middle".*

This typology presents infrastructure for sustainable local food systems as a composite of elements, which, ideally, should all be present for sustainability transition within the food system.

Contribution to theory 7: *A confirmation of the importance of "creative public procurement"* (Morgan et al., 2006, p. 196) *in scaling up and out local and sustainable food systems.*

Creative public procurement is necessary to identify multifunctional benefits of food to the purchasing institution, and to help identify and build nodes and modes in a new supply chain. In

short, the public purchaser is not a passive consumer divorced from the producer, but an active co-participant in the process of building infrastructure and practices for sustainable food transition.

These seven contributions are presented in different ways in various chapters. Sometimes a major portion of a chapter is devoted to a particular point. Sometimes specific points are echoed in several chapters. Therefore, this introduction offers a reader's guide to the overall dissertation, identifying which contributions are in which section.

Chapter 2 presents the research context. These are the books and articles that started me on my exploration of public food procurement as a tool for the transition to sustainable local food systems.

Chapter 3 addresses methodology. It explains the methodological framework I have employed in this dissertation, and why I have chosen it. This dissertation employs a case study approach, with data obtained through 67 detailed semi-structured interviews with key informants. While the research context helped me to define over-arching questions, the primary research conducted through the interview process is a significant determinant of the contours and content of this dissertation.

Chapter 4 presents a published paper about two case studies of the implementation of the Soil Association's Food For Life Catering Mark in UK universities. In this chapter, I attempt to enrich the conceptualization of the MLP, and its application to food, in several ways. 1. I confirm the importance of the landscape level of the MLP; 2. I argue that studying the operationalization of foodservice offers many insights, and that operationalization itself must be theorized; and 3. I argue that, in many cases, the niche must be reconceptualised, not as a protected space, but rather

as a "beachhead" disruptive of an established regime. This article has been reformatted in the APA 6th Edition Style to be consistent with the rest of the dissertation. Otherwise, it appears here as it was published.

Chapter 5 presents the case study of the Local Food Plus-U of T partnership. This chapter adds further confirmation to the importance of the landscape level of the MLP, and argues that operationalization should be integrated into analysis of all levels of food system applications of the MLP. The chapter also emphasizes that the relationship between the niche and the regime is one of contestation, not alignment – a perspective that reflects Geels' later work, where he identifies the role of power and politics in the MLP. Contestation means that sustainability transition will sometimes lead to transformation, but will sometimes fail as a consequence of resistance. The importance of appropriate infrastructure in the transition to sustainable local food systems is also introduced in this chapter.

Chapter 6 is a published paper that presents the typology of "infrastructure of the middle" that I have developed. "Infrastructure of the middle" is a term I have coined, which adapts Kirschenmann et al.'s concept of "agriculture of the middle"(Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2008). The typology refers to the composite of elements required by the transition to sustainable local food systems. This paper explains how "infrastructure of the middle" is an outgrowth of the concept of short food supply chains (SFSC), developed by Marsden et al. (Marsden, Banks, & Bristow, 2000) and Renting et al. (Renting, Marsden, & Banks, 2003), who were among the first scholars to explicitly recognize the importance of infrastructure in sustainable food systems. The paper concludes by applying the typology of "infrastructure of the middle" to the case studies presented in this dissertation. As with Chapter

3, this article has been reformatted in the APA 6th Edition Style. Otherwise, it appears as it was published.

Chapter 7 deals more deeply with issues of infrastructure in the transition to sustainable local food systems, and contrasts "infrastructure of the middle" with values-based food chains (VBFCs), another term which has gained popularity in recent years. This chapter argues that "infrastructure of the middle" is a typology which more accurately describes the infrastructure required for a transition to sustainable local food systems.

The dissertation concludes with Chapter 8. This chapter confirms the potential of creative public procurement, and discusses how it is an example of purposive collective action, which is much more impactful than individual "voting with one's dollars" in support of sustainable local food. This chapter emphasizes the potential of public universities as important sites of activity for collective expression of and commitment to sustainable local food system development. The potential impact of public universities flows from their position as anchor institutions, as well as their ability to harness the multifunctionality of food to address multiple problems. Rather than "voting with one's dollars", such institutions are capable of voting with millions of dollars of public money. The conclusion argues that public sector food procurement in the service of sustainable local food systems is understudied, and warrants greater attention from scholars and policy analysts.

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CHAPTER 2

Research Context

1. Introduction

This dissertation would not have been possible without the work of a great many food scholars who have written wisely and well about local and sustainable food systems. These scholars have identified the crisis in the modern food system, noted the rise of alternative initiatives, struggled to define "local" and "sustainable" in the context of food systems, argued for the public purpose of food, and theorized the sustainability transition. I have learned a great deal from all of them. I agree with much of what has been written, disagree with some points, and see gaps where I believe I can make a contribution to the literature. However I have come to regard specific writings, they have all helped me refine the broad question that originally motivated me to write this dissertation: How can creative public procurement in universities contribute to scaling up and out sustainable local food systems? From this broad question, I have chosen to work with the multi-level perspective (MLP), a well-known framework within Sustainability Transition Theory, and have narrowed my focus to the following: In what ways does the MLP contribute to our understanding and theorization of how sustainable food advocates, supported by civil society organizations, can work with universities in Canada and the UK in the initiation and development of more sustainable local food systems?

This chapter provides the research context for my dissertation, and identifies five broad areas of food scholarship that have influenced me. These are: 1. literature that identifies problems with the current food system and review emerging alternatives; 2. literature that struggles with definitions of and relationships between "local" and "sustainable" food systems; 3.

literature on public food procurement; 4. literature that identifies infrastructure and supply chains issues; and 5. literature that theorizes sustainability transitions, specifically the multi-level perspective (MLP). The following four paragraphs briefly introduce these discussions. Sections 2-5 of this chapter then delve into debates and corresponding sets of literature in more detail.

Scholars frequently describe the food system as broken and in crisis. This system is not meeting the food needs of many of the world's people, yet it is a major factor in the degradation of our planetary life support system (Clapp, 2012; Cohen & Clapp, 2009; McMichael, 2005; McMichael & Schneider, 2011; Nestle, 2007; Weis, 2013). Scholars in this field are increasingly focused on the potential of local or community-based food systems that integrate environmental, social and economic sustainability. While there has been much discussion about meanings of the two words "local" and "sustainable"(Andrée, 2006; DuPuis & Goodman, 2005; Feagan, 2007; Hinrichs, 2003), there is a gap in the literature about how to integrate the two concepts. I make an effort to address this gap in my dissertation.

One proposed tool to promote a transition to more sustainable local food systems is public sector procurement (Heiss, Sevoian, Conner, & Berlin, 2015; Morgan, 2008, 2014; Morgan & Morley, 2014; Morgan & Sonnino, 2008; J. Smith et al., 2016; Sonnino, 2009). The significance of this tool is said to be that it can harness collective purchasing power to achieve scale, and thereby facilitate movement toward food system transformation (Morgan, 2008). Extending this discussion, Morgan and others have flagged the need to identify "creative public procurement" in food (Morgan, Marsden, & Murdoch, 2006, p. 196). Creative public procurement re-thinks and re-makes the supply chain to focus on sustainable local food systems, and take advantage of food's multifunctional possibilities to achieve multiple goals, Morgan and his collaborators argue. As Morgan writes, "while nutrition is second to none in importance, food

is more than a nutritional issue: it has social justice, economic, ecological, non-human, cultural, sexual, psychological dimensions. It is a truly multifunctional and multidimensional issue" (Morgan, 2014, p. 254). My research supports this literature.

There is a modest amount of writing on infrastructure for sustainable local food systems. The work that has been done to date on the conceptualization of "short food supply chains" (SFSCs) has been most useful to me, because it was one of the first discussions on local food to draw attention to the need for a unique supply chain (Aubry & Kebir, 2013; Kneafsey et al., 2013; Marsden, Banks, & Bristow, 2000; Maye & Kirwan, 2010; Renting, Marsden, & Banks, 2003). However, the early studies presented few details about what a SFSC looks like and how it works. My research suggests that while SFSCs may be short, they are not easy to construct. They require champions and operationalization.

I have found the MLP to be a useful framework which provides a checklist for analysis of initiatives that move toward more sustainable local food systems. My dissertation addresses several gaps in this framework. First of all, the dissertation focuses on food, an area that has not been widely covered by MLP analyses, and that varies significantly from areas that inspired the development of the MLP, where the focus was initially on transportation and public hygiene (Geels, 2002, 2004, 2006). Second, I have attempted to strengthen the MLP conceptualization by confirming some aspects of the analysis, disputing others, and suggesting some new terms and concepts.

2. The Emergence of a Modern Food System and Responses to It

The modern food system which has evolved since the end of World War II is credited with bringing abundant food choices to many people, at a very low price, primarily in the Global

North. But this food system is also widely acknowledged to be ecologically and socially unsustainable. It is increasingly common, for example, for scholarly accounts of food to point out that one in nine people suffer from serious food deprivation, while one in three are susceptible to chronic diseases related to overconsumption of calorie-, salt- and fat-intensive foods (FAO, 2016; Patel, 2012). As well, the scholarly literature identifies a range of problems associated with industrial food production, including degradation of soil and water, pollution resulting from use of synthetic pesticides and fertilizers, and undermining of critical ecosystem services provided by forests and biodiversity (De Villiers, 2003; Millstone, 2008; Smil, 2013; Weis, 2013). As a result of these and other significant problems, many analysts argue that the dominant food system is unsustainable (Blay-Palmer, 2008; Patel, 2012; Roberts, 2013; Weis, 2007).

The first years of the current century have seen a growth in alternative food projects, networks, businesses and movements which promote more sustainable local food systems (Ackerman-Leist, 2013; Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013; Feagan, 2008; Levkoe, 2014). These projects, networks, businesses and movements have been part of an iterative process of both responding to and leading the way on a growing awareness of emerging food system problems and opportunities. Over the last 15 years, farmers' markets, community-supported agriculture, food boxes, and restaurants that specialize in food from local and sustainable farmers have mushroomed across North America and Europe (Blay-Palmer, 2010, 2010; Blay-Palmer et al., 2013; Feagan, 2008; Feagan & Henderson, 2008; Goodman & DuPuis, 2011; Hinrichs, 2003; Ladner, 2011; Landman et al., 2009; Morgan et al., 2006; Mount et al., 2013; Wittman, Beckie, & Hergesheimer, 2012). As part of the increased attentiveness to personal health and the provenance of food, a wide range of characteristics broadly understood

as sustainable have gained traction with some consumers -- including fair trade coffee and cacao, sustainable seafood, grass-fed beef, and fair labour practices, among others. This shift in consumer interest and preferences has been described as a "quality turn" in food (Goodman, 2003, 2004; Ilbery & Kneafsey, 2000; Watts, Ilbery, & Maye, 2005), a move away from quantifiable issues such as price.

The "quality turn" coincides with the time frame elaborated by Marsden for understanding movements towards greater food system sustainability (Marsden, 2011, 2012). Marsden identifies the period after World War II as the productionist phase – characterized by the rapid mechanization of agriculture, as well as the unquestioned use of new technologies such as synthetic pesticides and fertilizers, with little regard for potential lifecycle impact. This phase was followed by what Beck et al. call "reflexive modernism" during the mid-1980s (Beck, 1994), a period characterized by the rise of globalization[1] on one hand, and a new more sceptical attitude towards science and technology, and the relationship between society and nature, on the other. Perhaps the most famous term to come out of this reflexivity was "sustainable development", coined in the Report of the World Commission on Environment and Development in1987 (*Our Common Future*, 1987). From a food system perspective, this was a period which witnessed the expansion of transnational food corporations (Clapp & Fuchs, 2009; ETC Group,

[1] Globalization, as a term and a concept, will enter this dissertation at many points, not least in discussions of the global corporations that dominate institutional foodservice, as well as in discussions about government concerns regarding specifying “buy local” or “buy sustainable” language in public service contracts. For purposes of this brief synopsis and theoretical overview, the major characteristics of post-1980s globalization as it relates to food are identified as: 1. A period when world trade patterns in agricultural products, agricultural inputs and processed food and foodservice have been managed and dominated by oligopolistic global corporations, 2. A period when the power of many national governments has been reduced relative to the power of leading global corporations, 3. A period when the global division of labour, sourcing, sales, financing, distribution and packaging permeates entire economies, not merely a select range of exotic foods from the Global South, 4. A period when a globalization ethic dominates the thinking and culture of economic elites, and 5. A period dominated by mass global immigration of workers involved in agriculture, food processing and foodservice. (Barndt, 2008; McMichael, 2000; Weis, 2007; Wittman, Desmarais, & Wiebe, 2010)

2013; Howard, 2016; Martin & Andrée, 2012; McMichael, 2005), as well as early glimmerings of realization that our food system was neither sustainable nor equitable (Garnett, 2011, 2013, Weis, 2007, 2013). For example, this was the period when major cities across North America first opened food banks (MacLean & Tarasuk, 1990; Riches, 1986, 2002).

Marsden argues that a third phase began in 2007-2008, a time of dramatic food price surges and increased food insecurity, as well as a time when the realities of climate change and resource depletion demanded attention. Marsden argues that the looming scarcity of this phase is leading to a reversion to productionism, albeit with significant contestation from the sustainability perspective. Indeed, during this third phase, local and sustainably-produced foods sold through alternative networks have increased in volume.

3. Defining Local and Sustainable Food Systems

There has been significant discussion in the scholarly literature about the concepts of both "local" and "sustainable" -- and indeed, much discussion of the need to be more thoughtful and reflexive about them (Allen, 2010; Allen et al., 2003; Born & Purcell, 2006; Cleveland, Carruth, & Mazaroli, 2014; DuPuis & Goodman, 2005; DuPuis, Goodman, & Harrison, 2006; Feagan, 2007; Hinrichs, 2003; Mount, 2011; Smithers, Lamarche, & Joseph, 2008; Winter, 2003). However, there has been little work on how the two concepts can be integrated, especially in a public procurement setting. This dissertation attempts to link concepts of "local" and "sustainable" within an evaluative framework linked to a robust sense of the public interest (Morgan, 2008).

Each of the terms has its own complexities, quite apart from the complexities of bringing the two terms together. "Local", for instance, remains a contested term. For example, does local

mean the distance between the farmers and the eater, or between the fertilizer company and the farmer? Does it refer to food from the region, the province, or the country? Does it restrict farmers from selling into long distance systems or differentiate them when they sell in a market close to home? There are clearly conflicting meanings associated with definitions of "local", including urban-rural tensions, and the role of the city-region, as well as the relevance of the city-region to the development of programs around local and sustainable food (Blay-Palmer, Renting, & Dubbeling, 2015; Born & Purcell, 2006; Donald, 2008; FAO/RUAF, 2015; Feagan, 2007; Grewal & Grewal, 2012; Lefebvre, 2006; Morgan, 2009; Roberts, 2014; Steel, 2008).

Food is intrinsically connected to place and space because of its materiality and the impossibility of disconnecting it from nature (no matter how hard some may try!) (Marsden, 2011). As Whatmore says, "food is a ready messenger of connectedness" (Whatmore, 2002, p. 119) and food "complicates the clean cut spatialities of local/global, inside/outside, and public/private and forces us to engage in rather different geographical imaginations" (Whatmore, 2002, p. 119). As such, the term "local" when applied to food, must be problematized and deconstructed into multiple meanings.

Born and Purcell warn against falling into the "local trap" (Born & Purcell, 2006). They argue that 'local' is strictly a scalar concept and that "the meaning of a local scale […] only comes alive in relation to other, larger scales" (Born & Purcell, 2006, p. 198) Local food systems "are equally likely to be just or unjust, sustainable or unsustainable, secure or insecure", and the key is to analyze which scale is most appropriate for achieving specific goals (Born & Purcell, 2006, p. 195). As Albo notes, the environmental movement has been particularly susceptible to coupling localization with socio-ecological transformation. He writes that "The industrial drive for scale without limits – whether in terms of capital equipment, consumption, trade or corporate

and political governance – is seen as an assault on the limits of nature" (Albo, 2007, p. 9). Albo cites a manifesto from the British Green Party that presents localization as a panacea for society's ills: "Economic localization…will increase community cohesion, reduce poverty and inequality, improve livelihoods, promote social provision and environmental protection and provide an all-important sense of security" (Albo, 2006, p. 2). This uncritical thinking about localization opens the door for a problematic conflation of the concepts of "local" and "sustainable" as they apply to food. As Hinrichs writes, "Making 'local' a proxy for the 'good' and 'global' a proxy for the 'bad' may overstate the value in proximity, which remains unspecified, and obscures more equivocal social and environmental outcomes" (Hinrichs, 2003, p. 35).

Local in the context of social and economic sustainability might be understood to encompass local ownership. It has been argued that a local food system dominated by transnational distributors or an oligopoly of large retailers that choose to carry local products for a niche market is fragile and non-resilient, presenting few opportunities for food democracy (Hassanein, 2003) or community food security (Bellows & Hamm, 2002; Hamm & Bellows, 2003). DeLind writes that as Wal-Mart has grown to become the largest food retailer in the United States (and indeed in the world), "there is little to suggest that this David and Goliath relationship will grow into anything other than a classic economic rout with a globally dominant corporation dictating standards, varieties, quantities, growing conditions and ultimately purchase price" (DeLind, 2010, p. 277).

As Morgan points out, it is important not to fetishize the local. Fair trade, for example, can offer an opportunity to grow sustainable food systems by connecting producers and consumers around the globe in a sustainable food chain. He suggests that "sustainability is globalization with a human face" (Morgan, 2010) and we should embrace "a *cosmopolitan*

[author's emphasis] conception of sustainability in which locally-produced seasonal food and fairly traded global food are given parity of esteem, otherwise the new social movement could degenerate into a parochial form of green localism" (Morgan, 2009, p. 345). Allen and others express similar concerns in what they refer to as "defensive localism" or "unreflexive localism" (Allen, 2010; DuPuis & Goodman, 2005; Hinrichs, 2003; Winter, 2003). As well, of course, it must be acknowledged that not all foods can or even should be localized. For example, it makes more sense from an ecological, land-use and energy standpoint for Ontario eaters to purchase hard wheat that grows well in the prairies, and to use southern Ontario's fertile soil and warmer climate to produce vegetables. Such discussions are needed to inform "local" with sustainability notions, rather than allowing sustainability to be defined by "local".

However, Marsden et al. make the powerful case that a focus on the local and regional is "the beginning of a process of rebuilding more agro-ecological systems which begin to integrate space and nature into production processes," adding that "new ecological (spatial) concerns are central to any progress towards sustainability" (Marsden, Murdoch, & Morgan, 1999, p. 299). The fact that the mainstream food system is 'aspatial' makes movement towards an agroecological approach more challenging, but essential. As Clapp notes, an increasingly complex food system separates eaters both geographically and mentally from where and how their food was produced (Clapp, 2015).

The term "sustainable" presents yet another challenging series of definitional problems because sustainability embraces multiple values in multiple sectors. Therefore a narrow focus on food miles prevents a more profound understanding of what is encompassed by the term "sustainability". Whether researchers are focusing on food production methods (Altieri, 1987; Pretty, 2002), or wrestling with issues of food consumption and access (Agyeman & Evans,

2004; Bellows & Hamm, 2002), the literature indicates that it is now commonly accepted that sustainability includes ecological, economic, social and cultural equity, as well as citizenship engagement and democratic processes (Levkoe, 2006).

Many scholars and commentators are pushing the conceptual boundaries of sustainability beyond harm reduction, and towards a new and positive relationship with the earth. This sensibility has led to notions of "deep sustainability". Dahlberg argues that sustainability as it relates to food needs to be about "regenerative food systems" (Dahlberg, 1994) and that "any actual movement towards regenerative systems will still have to be based on a shift to health criteria and on a fundamental respect for biodiversity and cultural diversity as sources of life and social viability" (Dahlberg, 1994, p. 174). Dahlberg makes a direct connection between the unsustainability of industrial agriculture and the unsustainability of industrial societies, both of which are highly dependent on the intensive use of fossil fuels, contribute to the loss of biodiversity (both natural and cultural), and exacerbate economic inequality.

Kirschenmann suggests that sustainability is not an end point, but a process: "Since nature is full of emergent possibilities, sustainability is always an emerging concept" (Kirschenmann, 2008, p. 113). Sustainability includes being able to adapt to changing circumstances, and this will take "a food system based on relationships" (Kirschenmann, 2008, p. 118). As the natural resources which an industrial food system relies on – such as water, soil, energy and climate – go into rapid decline, the adaptations required will be ecological, social and economic, Kirschenmann says. Such awareness of the interactions among a wide range of elements essential to food production is part of the deep questioning and looming sense of scarcity identified as central to this time period (Spaargaren, Loeber, & Oosterveer, 2012).

Friedmann and McNair suggest that experiments to integrate space and nature, local and sustainable, are happening in the interstices of the dominant food system. They argue that the emergence of Slow Food in Italy, Cojote Rojo in Mexico and Local Food Plus (LFP) in Canada are all examples of attempts to integrate "local" with a broad definition of sustainability (Friedmann & McNair, 2008). For example, as Friedmann notes, LFP attempts to use "local supply chains – proximity – as a pivot of sustainability" (Friedmann, 2007, p. 392).

There is a large and expanding literature which attempts to define the contours of a sustainable local food system (Allen, 2010; Blay-Palmer, 2010; Blay-Palmer & Knezevic, 2015; DeLind, 2010; DuPuis & Goodman, 2005; DuPuis et al., 2006; Hinrichs, 2000, 2003; Hinrichs & Allen, 2008; Kloppenburg, Jr, Lezberg, De Master, Stevenson, & Hendrickson, 2000; Koc, MacRae, Desjardins, & Roberts, 2008; Morgan et al., 2006; Mount, 2011; Wiebe, Desmarais, & Wittman, 2011). However, definitions of sustainable local food systems can quickly become unworkable by virtue of being all-encompassing. For example, Kloppenburg, Jr. et al. present the findings of a conference that brought together 125 people across a broad spectrum of the alternative farm/food community. The group identified key descriptors of a sustainable food system which included "decentralization", "independence", "community", "harmony with nature", "diversity" and "restraint" (Kloppenburg, Jr et al., 2000), a veritable shopping list of attributes that are far from actionable in a policy process.

Ultimately, when "local" and "sustainable" are embedded in a process of participatory democracy, the results can be community-based food systems, which "unite(s) people in a place or through space" (Blay-Palmer, 2011, p. 747) and involve "stable production [that] can only take place within the context of a social organization that protects the integrity of natural resources and nurtures the harmonious interaction of humans, the agroecosystem, and the

environment" (Altieri, 1987, p. x). Given the urgency of addressing challenges such as global climate change, the modest market share of alternative food networks in both North America and Europe is concerning for food advocates focused on sustainability issues. This has led some food analysts to look for new solutions that can scale up and out sustainable local food systems for greater impact. Creative public procurement is one solution being explored (Campbell & MacRae, 2013; Friedmann, 2007; Lappe, 2009; Mero, 2012; Morgan, 2008; Morgan & Sonnino, 2008).

4. Creative Public Procurement

As a tool for scaling up and out (or normalizing) sustainable local food systems, creative public sector food procurement is still new and under-theorized. A few scholars, notably Kevin Morgan and colleagues at Cardiff University, have made significant contributions to the understanding of the "public plate" (Morgan, 2008, 2014; Morgan & Morley, 2014; Morgan & Sonnino, 2007, 2008). As a field of scholarship, there are many opportunities to contribute – empirically, analytically and theoretically.

One area that scholars have identified as ripe for expansion is public sector procurement of local and sustainably produced food (Conner, 2013; Friedmann, 2007; Morgan, 2008, 2014; Morgan et al., 2006; Morgan & Morley, 2014, 2014, Morgan & Sonnino, 2007, 2008; Sonnino, 2009). The public sector, including government departments and the services they provide – such as child care centres, seniors' residences, prisons, as well as the so-called "MUSH" sector of municipalities, universities, schools and hospitals – comprise significant volumes of on-going purchases of food. As of now, for most of these institutions, the primary factors determining

purchases have been issues such as price and convenience, not quality issues such as fresh, nutritious, local or sustainable (Preuss, 2009; Walker & Brammer, 2009).

Increasingly, however, public sector procurement in general is being recognized as a tool to achieve broader public policy goals (Brammer & Walker, 2011; Heiss et al., 2015; Lagane, 2015; McMurtry, 2014; Preuss, 2007; Thomson & Jackson, 2007; Walker & Brammer, 2009; Walker & Preuss, 2008). For example, the purchase of Forest Stewardship Council (FSC) certified paper, which has expanded significantly in recent years (Auld, Gulbrandsen, & McDermott, 2008; Marx & Cuypers, 2010; McDermott, 2012), is designed to reduce the pressure on old growth forests by incorporating recycled paper or pulp from second growth stands. As well, many municipalities and universities have policies that reject products made with unfair labour practices (City of Toronto, 2006, City of Toronto, 2013; City of Vancouver, 2005; Thomas, 2007; Wells, 2004). For example, the City of Toronto has a purchasing policy that all garments, such as uniforms, must be from "No Sweat" manufacturers, who pay fair wages, enforce maximum hours of work, and do not employ child labour (City of Toronto, 2006).

Using food as a tool to achieve policy goals related to environmental and social sustainability is a relatively new area, which has remained beyond the purview of most public procurement initiatives. However, this is starting to change, especially in the education sector (Bagdonis, Hinrichs, & Schafft, 2008; Fitch & Santo, 2016; Heiss et al., 2015; Izumi, Wright, & Hamm, 2009; Joshi, Azuma, & Feenstra, 2008; Joshi et al., 2008; Morgan & Morley, 2014; Morgan & Sonnino, 2007, 2008; Mulik, 2016; Ng, Bednar, & Longley, 2010; A. Smith, Voß, & Grin, 2010; J. Smith et al., 2016; Stein, 2012). One of the most recent examples is the designation of Wilfrid Laurier University as a fair trade university (Wilfrid Laurier University, 2017). Although most of the work to date in the US and the UK has been at the elementary and

high school level[2], increasingly universities are responding to student and other pressures to shift towards more local and sustainable food (Barlett, 2011; Doherty, Cawood, & Dooris, 2011; Mero, 2012; Park & Reynolds, 2012; Pothukuchi & Molnar, 2015). As broader public sector institutions, universities in both Canada and the UK are expected to address public interest goals. As such, universities are well-positioned to play a role in using the tool of procurement to open "more sustainable spaces of possibility" (Marsden & Franklin, 2013).

"Creative public procurement" (Morgan et al., 2006, p. 196) draws on intervention and agency in order to shift away from conventional procurement based on acquiring the greatest volume at the lowest price, standards set during the production phase of modernism (Marsden, 2011; Roberts, 2013). Campus foodservice, while essential to the health and well-being of the student body, has not been viewed as a core activity of the university. Food is classified as an "ancillary service" which operates on the sidelines of the core mandate of education and research. As a result, foodservice must be self-financing, or even revenue-generating. Little attention has been given to the role of food as contributing to the university experience, the mental health or intellectual performance of students, or to the learning process itself, let alone university corporate performance in terms of sustainability and university relations with the broader community. Consequently, university food procurement practices have generally been based on price, times of service, and other similar considerations.

By contrast, the shift to sustainable local food procurement requires new approaches and rethinking the context of university food procurement, as well as a critical analysis of transnational corporations active in university and public sector foodservice. Foodservice is dominated by three transnational corporations – Sodexo, Aramark and Compass. Their rise to

[2] Canada does not have a national school meal program, so efforts at the school level have been limited to what can be accomplished by charitable organizations.

prominence can be traced to the 1980s, as part of what is often considered the beginning of a "third food regime" (McMichael, 2013). These corporations emerged during a period of neoliberal capitalist expansion characterized by the "unprecedented market power and profits of monopoly agrifood corporations, globalized animal protein chains, growing links between food and fuel economies, a 'supermarket revolution', liberalized global trade in food, increasingly concentrated land ownership, [and] a shrinking natural resources base" (Holt Giménez & Shattuck, 2011, p. 111). Food regime theory provides a useful insight about the broader set of connections and ramifications of the first productionist phase following World War II identified by Marsden (Friedmann & McMichael, 1989; Marsden, 2011; McMichael, 2013). Creative public procurement offers the potential to fundamentally challenge the role of third food regime corporations.

Morgan and Morley have identified a central paradox of institutional food procurement -- although public procurement of food has enormous potential to achieve multiple social, environmental and economic goals, public sector decision makers resist it (Morgan & Morley, 2014). Marquand argues that declining appreciation for the public domain, which has accompanied the rise of neoliberalism, diminishes the importance of the public interest within government service. Marquand defines the public domain as "the domain of citizenship, equity and service whose integrity is essential to democratic governance and social well-being" (Marquand, 2004, p. 1). Further, he argues that it is, and must remain, separate from being corrupted by both market and kinship power. In the case of food, recovering this sense of public interest will require a widespread understanding that food is about more than either corporations making money or consumers getting cheap food. If public sector food procurement is to

contribute to the development of sustainable local food systems, it must be premised upon the primacy of the public interest.

Food is not just a matter of public policy; it is also intensely personal. Whatmore offers another explanation for the institutional procurement paradox based deeper in the human psyche. "Food is one of the most potent vectors of the 'bodily imperatives' that enmesh us in the material fabric and diverse company of 'livingness'", she writes (Whatmore, 2002, p. 162). Winson's classic "The Intimate Commodity" argues along similar lines that food is a commodity unlike others, in that it has an intimate connection with the inside of our bodies and the inside of our customs and memories (Winson, 1993). This insider presence of food provides a space of resistance to flat-out commodification, and a basis for claims that food must serve human purposes.

Other factors intrinsic to food stimulate an ethic of public care and responsibility. Eating, digesting and defecating are messy and visceral functions that everyone must engage in every day, young and old, men and women, rich and poor. They are also functions for which we need care at certain times of our lives – when we first come into the world as babies, when we're ill, as we grow old. Tronto argues that the human need for care has been neglected by philosophers and economists alike (Tronto, 1993). She defines care as "a species activity that includes everything that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web" (Tronto, 1993, p. 103). Tronto writes that care has been relegated to lowly status, as something done by women (and increasingly in North America, by immigrants). She makes the argument for a new "ethic of care" underpinned by a political theory of care that requires a new conception of justice and democracy. At the core of

this investigation is the question of how we treat "distant others" (Tronto, 1993, p. 13). Tronto's thinking is relevant to the study of food procurement because institutional food procurement is essentially about "distant others" – those who produce and handle our food – and an "ethic of care" immediately calls into question price as the only variable of importance in food purchases. These concepts affirm the focus of this dissertation on the importance of public sector food procurement as a lever for the development of sustainable local food systems.

Many other elements contribute to the paradox of public food procurement. These include food's classification as an ancillary service, irrelevant to the central mandate of the institution; the existence of transnational foodservice contractors which impose their needs to maintain a global structure on individual institutions; a lack of understanding of the multifunctional potential of food to solve multiple problems of the institution; deeply ingrained supply chain issues; and a lack of capacity within current staff to manage change.

In this light, a useful framework for explaining how sustainability transition occurs, and especially why certain transitions are resisted by relatively powerful groups within organizations, is Christensen's concept of "disruptive innovation". Although the concept of "disruptive innovation" was first developed more than a decade ago, it remains relevant to scholars, and continues to be discussed and applied in recent scholarship (Kaplan, 2012; Klenner, Hüsig, & Dowling, 2013; Yu & Hang, 2010). Christensen defines a "disruptive innovation" as "offering a different package of attributes valued only in emerging markets remote from, and unimportant to, the mainstream" (Christensen, 2003, p. 6). There are two key dimensions of a disruptive innovation – 1. It disturbs the existing operational model and upsets the privileges of powerful groups that benefitted from that model; and 2. As a consequence, it comes from outside the organization. A classic example is the personal computer, which almost drove IBM out of

business. The personal computer disrupted the IBM business model of selling expensive mainframes to highly-placed corporate clients, by making relatively inexpensive desktops directly available to individual employees and the average person. This is central to the analysis presented in Chapter 5 of this dissertation, which presents the sustainability procurement initiatives promoted by the Canadian non-profit Local Food Plus as a deeply disruptive innovation. Far-reaching changes in foodservice operations required by sustainability transition are reviewed in this dissertation. They illustrate a process of disruption taking place on so many levels and in so many ways that Christensen's work on this subject may be seen as a starting point in understanding the disruption unleashed by sustainability innovations in institutional food procurement. Indeed, the depth of disruption caused by a transition to greater sustainability in food procurement may well represent a level of disruption so profound as to warrant description as a sociotechnical revolution, requiring new social and technical practices at every level.

Sustainable and local food procurement disrupts the mainstream foodservice business model in numerous ways, as this dissertation will argue. Sustainable and local food procurement has the potential to elevate food procurement decisions to the level of senior management, give more money to farmers and reduce or eliminate vendor agreements between foodservice companies and their preferred suppliers. But most of all, it establishes new criteria and puts new obligations on foodservice beyond providing cheap but filling food that meets food safety regulations.

The rise of the transnational industrial food system has distanced food from its social and human purpose (Buttel, 2006; Feagan, 2007; Kirschenmann, 2008). Indeed, the industrial food system has been relatively successful at characterizing food as an economic commodity. But because food is essential to survival, and because it is so central to ritual, celebration and

commensality (and so firmly embedded in the social sphere), there has been ongoing resistance to its complete commodification. Creative public procurement to advance sustainable local food systems is a tool for re-embedding food in a social and environmental nexus, and subordinating it as an economic commodity to social and environmental purposes.

There is a need for an expanded exploration of creative public procurement, and how it can contribute to social and political transformation towards sustainable local food systems. There are two aspects to creative public procurement. The first is that it works backwards through the supply chain, and helps to create the supply chain it needs through new infrastructure. Rather than simply purchasing and consuming, those involved in creative public procurement work on improving the supply chain. Secondly, creative public procurement conceives of food as having broader multifunctional purposes, what might be called "embedded notions of value" (Feagan & Morris, 2009), which can include social, environmental, health and reputational considerations that offset the higher price of sustainable food,

5. Infrastructure and Supply Chains

Kirschenmann et al., have developed the term "agriculture of the middle" to describe those farms and ranches that "operate in the space between the vertically-integrated commodity markets and direct markets" (Kirschenmann et al, 2008, p. 3). Kirschenmann et al. note that our food and agriculture system is increasingly bifurcated, with mid-size farms being squeezed out. In the last two decades in the United States, sales have increased for small farms and large farms, but have declined significantly for mid-size farms between 260 and 500 acres. (Kirschenmann et al., 2008). According to them, this is the most vulnerable farm size in North America, "too small to compete in the highly consolidated commodity markets, and too large and commoditized to

sell in the direct markets" (Kirschenmann et al., 2008, p. 3). It should be noted that these are also pivotal farms for supplying institutions and mainstream markets because they can provide both volume and quality. Kirschenmann et al. argue that this polarization will destroy the viability of agriculturally-based rural communities by eliminating jobs and eroding their tax base, leading to a "hollowing out of many parts of the rural United States" (Kirschenmann et al., 2008, p. xii).

Kirschenmann's insight is rooted in the productionist paradigm of mid-20th century modernism. This paradigm emphasizes agricultural production, rather than the vast middle ground separating farmer from eater and eater from farmer in an increasingly urbanized world. The connective tissue that can bring the two sides together is community-based infrastructure. It is significant that much of the discourse about local and sustainable food systems relegates infrastructure to the little word "to" in such phrases as "farm to school", "farm to cafeteria", "farm to fork" and "field to table" (Heiss et al., 2015; Izumi et al., 2009; Izumi et al., 2010; Ng et al., 2010). This language seems to imply a direct relationship, assuming that sustainable local food can proceed directly from the farm to the end user. As a result, discussions of infrastructure are often missing from scholarly articles analyzing food value chains and the rise of organic agriculture (Ikerd, 2011; Youngberg & DeMuth, 2013). The growing literature on food hubs is beginning to change this by putting more emphasis on the aggregation, processing and distribution aspects of infrastructure (Berti & Mulligan, 2016; Blay-Palmer et al., 2013; Morley, Morgan, & Morgan, 2008). This dissertation emphasizes the importance of infrastructure, including infrastructure that creates and maintains relationships that are critical to fostering local and sustainable food systems.

One term that is increasingly used to describe alternative food networks is "short food supply chains" (SFSCs). This term gained traction over the last decade among policy makers and academics, especially in Europe, as a way to describe emerging alternative food networks which feature local food with some distinctive ethical, social or ecological association. In a comprehensive report for the European Commission, Kneafsey et al. define a SFSC as follows: "The foods involved are identified by, and traceable to a farmer. The number of intermediaries between farmer and consumer should be 'minimal' or ideally nil" (Kneafsey et al., 2013, p. 13). They point out that, unlike the term "local food systems", which is focused on distance from farmer to eater, SFSCs are about reducing the number of hands that food passes through from farmer to eater. Kneafsey et al. acknowledge that, in and of themselves, SFSCs do not guarantee a commitment to environmental principles or a reduction in GHG emissions, yet "it is clear that ethical, social and environmental concerns, in addition to quality aspects are the key drivers of consumer interest in this sector" (Kneafsey et al., 2013, p. 14).

Kneafsey et al. credit Marsden et al. (2000) and Renting et al. (2003) for shaping the early discussions around SFSCs. Both of these sets of authors identify proximity between the producer and the consumer as only one of several attributes of SFSCs. As Renting et al. point out,

> SFSCs on the one hand 'short-circuit' the long, anonymous supply chain characteristics of the industrial mode of food production. On the other hand, producer-consumer relations are 'shortened' and redefined by giving clear signals on the provenance and quality attributes of food and by constructing transparent chains in which products reach the consumer with a significant degree of value-laden information. Lastly, SFSCs are an important carrier for the 'shortening' of relations between food production and locality, thereby potentially enhancing a reembedding of farming towards more environmentally sustainable modes of production (Renting et al., 2003).

As Marsden et al. point out, one of the contributions of the term SFSC is that it allows an examination of how supply chains are "built, shaped and reproduced over time and space", a

conceptually richer approach than simply a measurement of the physical distance of product flows (Marsden et al., 2000, p. 424). The introduction of the term SFSC shifted the framework of the discussion towards recognition of the importance of the supply chain, a more comprehensive and multi-dimensional way of thinking about food systems. This shift has opened the door to a broader discussion of infrastructure, and enabled the conceptualization of infrastructure presented in this dissertation.

The term SFSC highlights the central role of the food chain and the producer-consumer relationship, as distinct from the physical location of food production. As such, it can embrace fair trade and diaspora-based foods, essential in multicultural societies. This acknowledges that, in the foreseeable future, a just food system could include a global exchange of many products (coffee, tea, chocolate, sugar, bananas and rice are prime examples) which can be traded ethically. "Short" also implies a more direct route. In this sense, SFSCs indirectly exclude "ultra-processed foods", a term developed by Monteiro et al. coined to describe "a vast range of palatable products made from cheap ingredients and additives (Monteiro, Moubarac, Cannon, Ng, & Popkin, 2013, p. 22). Monteiro et al. developed this term to describe food that is typically high in fat, sugar and salt, made with processing aids and highly refined ingredients, and often aggressively marketed by transnational corporations. Ultra-processing is fundamentally a process of distancing food, independent of the actual geographical distance, because it distances food from nature and holistic health. The term "short" opens the door to inclusion of nutritional needs and benefits as part of the definition of sustainability.

Another term which has been used to describe emerging alternative food networks is "values-based food chains" (VBFCs). This term was developed by Stevenson and Pirog, who state that VBFCs are "distinguished from traditional food supply chains by the combination of

how they differentiate their products (food quality and functionality, and environmental and social attributes), and how they operate as strategic partnerships (business relationships)" (Stevenson & Pirog, 2013, p. 3). These authors contend that VBFCs are supply chains that are mutually supportive, collaborative, cooperative and community-engaged, with value distributed along the chain. This dissertation argues that the VBFC concept of market differentiation as a way to address sustainability issues in the food system is insufficient because it limits major environmental and social issues around food to a matter of purchasing decisions.

The literature has made headway in defining both key attributes and dysfunctions of the dominant food system (Blay-Palmer, 2008, 2010; Clapp, 2012; Hinrichs & Lyson, 2007; Nestle, 2007; Patel, 2012; Pollan, 2009; Roberts, 2013), as well as the need for an alternative vision. However, it is weak in understanding how the transition from one system to another might occur – the capacity-building that must take place to make the transition, the role of human agency, and other dimensions of operationalization. Twenty years ago, Michael Redclift, in considering how societies arrive at sustainable levels of resource exploitation, noted that, "The much less obvious issue, which scarcely plays any part in most of the literature debate, is not about what constitutes 'sustainable levels', but about how they might be *achieved* [author's emphasis]…environmental action has proved difficult in practice" (Redclift, 1997, p. 335). This point remains true today. In particular, with rare exceptions, there is little appreciation of the significance of operationalization, and the richness of the practitioner experience in addressing measures that contribute to sustainability transition. Practitioners are the agents of change. They are involved in a complex and interactive endeavour that is itself worthy of being theorized, and that can contribute to understanding of how and whether local and sustainable food systems can and should be scaled up and out. A central theme of this dissertation is the importance of studying

operationalization as a crucial source of information about the transition to sustainable local food systems. An elaboration of the infrastructure required – "the missing middle" of place-based producers, processors, aggregators and distributors – as well as many champions and relationships, to address the size and scope of public procurement contracts is needed (Morley et al., 2008). The term "champions" in this usage is akin to the concept of "norm entrepreneurs" (Finnemore & Sikkink, 1998). Finnemore and Sikkink argue that new norms (such as those required for sustainability transition) "do not appear out of thin air; they are actively built by agents having strong notions about appropriate or desirable behaviour in their community" (Finnemore & Sikkink, 1998, p. 896). They add that "new norms never enter a normative vacuum but instead emerge in a highly contested normative space where they must compete with other norms and perceptions of interest" (Finnemore & Sikkink, 1998, p. 897).

6. Theoretical Framework

The theoretical framework for this dissertation sits under the umbrella of Sustainability Transition Theory (STT) – an area of scholarship that offers a generative conceptual framework for food system assessment. This section begins by briefly discussing the origins of Sustainability Transition Theory, including an introduction to the multi-level perspective (MLP), an approach which is useful for analyzing creative institutional food procurement. The major critiques of the MLP, and how they have been addressed in the literature, will be discussed. The section concludes by discussing briefly how the MLP can be enriched by Christensen's concept of "disruptive innovation", as well as incorporating a social practices approach – which will be explored in more detail later in the dissertation.

Sustainability transitions are defined as "long-term, multi-dimensional and fundamental transformation processes through which established sociotechnical systems shift to more sustainable modes of production and consumption" (Markard, Raven, & Truffer, 2012, p. 956). Sociotechnical systems are conceptualized as "a broad variety of elements [which] are tightly woven and dependent on each other" including "(networks of) actors, (individuals, firms and other organizations, collective actors) and institutions (societal and technical norms, regulations, standards of good practice), as well as material artifacts and knowledge" (Markard et al., 2012, p. 956). Systems can be understood as "a cluster of elements, involving technology, science, regulation, user practices, markets, cultural meaning, infrastructure, production and supply networks" (Geels & Kemp, 2007, p. 442).

STT first emerged in The Netherlands during the late 1990s. With much of the country consisting of land reclaimed from the sea, Dutch scholars grew up with a deep understanding of the need for sustainability transitions management to cope with flooding and other problems flowing from the new realities of climate change (Hinrichs, 2014, p. 145; Rip & Kemp, 1998). In 2012, Markard et al. conducted a review of sustainability transitions literature, in light of growing international scholarship, (Markard et al., 2012) and a recognition that we are facing many deep-seated sustainability challenges related to loss of biodiversity, depletion of natural resources, water scarcity, pollution, and greenhouse gas emissions – all of which will have an impact on agriculture and food systems (Markard et al., 2012). They reviewed 540 journal articles related to the field of sustainability transitions, and identified multiple theoretical strands being explored.

One of the approaches that has gained prominence, as well as been the subject of much critical reflection, is the MLP. This perspective was initially elaborated by Geels (Geels, 2002,

2004, 2005; Geels & Kemp, 2007), who used case studies of the transition from sailing ships to steamships, from carriages to automobiles and from cesspools to sewers, among others, to explore his conceptualization of transition. The MLP has its roots in sociological work on technology, which focuses on the interplay of three dimensions – sociotechnical systems, groups in society who maintain these systems, and regimes or sets of rules that guide the social groups (Geels & Kemp, 2007). The MLP identifies three components in the process of transition or sociotechnical "regime shift" – niches, regimes and landscapes. The central point of the MLP is that it is the interplay of these three components at different levels and in different phases that enable sociotechnical system change.

According to the MLP, niches are protected spaces where innovations can be nurtured and tested. Theoretically, when protected from the regime and managed strategically, niches of innovation may accumulate to the point where they can challenge a regime. Geels acknowledges that "management" is a relative term, as the process of niche creation is inevitably messy and complex (Geels, 2002). Regimes are defined as the meso level, and include practices, policies, infrastructure and interests that the innovation can disrupt. The landscape is the broader context – social, technical and environmental – that can influence the relationships between niches and regimes. The landscape level represents the material context of society (how cities, roads, energy infrastructure, etc. are configured), as well as a mix of additional heterogeneous factors such as climate change, wars, oil prices, water availability, emigration, and cultural values (Geels, 2002). Landscape-level factors may be path dependent or "locked-in", the result of legacies of previous decisions and technology adoption (Spaargaren et al., 2012; Westley et al., 2011).

The MLP has benefitted from critiques and refinements in the academic literature (Farla, Markard, Raven, & Coenen, 2012; Genus & Coles, 2008; Lawhon & Murphy, 2012;

Meadowcroft, 2011; Shove & Walker, 2007, 2010; A. Smith, 2006; A. Smith & Stirling, 2010; A. Smith, Stirling, & Berkhout, 2005; A. Smith et al., 2010; Wiskerke, 2003). Geels himself has refined and reformulated it significantly in recent years, by acknowledging power and politics in the MLP, and by conceptualizing how incumbent regimes actively resist change (Geels, 2014; Geels et al., 2016; Turnheim & Geels, 2013). In a 2011 article, Geels identifies and addresses seven specific criticisms of the MLP, while acknowledging that the MLP can be enriched theoretically in many ways. These seven criticisms are: 1. Lack of agency, 2. Operationalization of regimes, 3. Bias towards bottom-up change models, 4. Epistemology and explanatory style, 5. Methodology, 6. Sociotechnical landscape as residual category, and 7. Flat ontologies versus hierarchical levels (Geels, 2011).

In addressing criticism #1 (lack of agency), Geels argues that the MLP is "shot through with agency because the trajectories and multi-level alignments are always enacted by social groups" (Geels, 2011, p. 29). My reading of Geels is that "agency" refers to the ability of individuals and groups to act independently, and attempt to exert influence over their environment. Although Geels agrees that the MLP could benefit from ideas from social movement theory and discourse theory, among others, Geels argues that there can be little doubt that agency is identified in the MLP. In later articles, however, Geels gives agency significantly more weight (Geels, 2014; Geels et al., 2016). This dissertation moves to confirm and accentuate Geels' maturing viewpoint by proposing that agency needs to encompass operationalization, and that both agency and operationalization should be integrated into analyses of niche innovations.

Criticism #2 (operationalization and specification of regimes) refers to how a sociotechnical regime should be defined in practical terms. "What looks like a regime shift at one level may be viewed as an incremental change in inputs for a wider regime at another level", it is

noted (Geels, 2011, p. 31). Geels argues that drawing boundaries is part of defining a research question. He acknowledges, however, that it is important to recognize that regimes are not homogeneous, and often have internal tensions that must be taken into account.

Geels addresses criticism #3 (bias towards bottom-up change models) by acknowledging that the early conceptualization of the MLP did indeed have a bottom-up bias, but that this weakness was addressed subsequently by an elaboration of transition pathways. This elaboration recognizes that the timing and nature of multi-level interactions leads to cracks in the regime that allow transitions to happen in different ways (Geels & Schot, 2007).

Regarding criticism #4 (epistemology and explanatory style), Geels argues that the criticism that the MLP is a heuristic device should be taken as a compliment in that the MLP provides a useful framework which can guide the researcher toward relevant questions. Geels calls the MLP a "process theory", in that the analyst "needs to trace unfolding processes and study event sequences, timing, and conjunctures" (Geels, 2011, p. 35). He argues that a conceptual framework or heuristic device is useful to track the narrative that emerges from allowing the process to unfold.

The fifth criticism deals with methodology, and the fact that the early MLP case studies were produced from secondary research. Geels simply notes that subsequent studies have used primary sources, and points out that no one has yet identified an error that arises from his lack of primary research.

The sixth point critiques the MLP for considering the landscape level as a residual category, a sort of catch-all for factors that are not part of the regime level. Geels accepts this criticism and argues that there is a need for more theorization, to which this dissertation contributes. In particular, Geels points to a need for a more dynamic and differentiated

conceptualization of the landscape, and the stabilizing influence it exerts on the regime. He addresses this shortcoming in later articles (Geels et al., 2016; Turnheim & Geels, 2013).

The final criticism addressed in Geels response article concerns flat ontologies versus hierarchical levels. He directly addresses the proposal that the MLP should be replaced by a social practices approach (Shove & Walker, 2007, 2010). A social practices approach highlights the role of human actors, and focuses on routines and relationships. It is closely related to the concept of agency (see criticism #1). Geels argues that while this approach can enrich the MLP, it is relational, and does not acknowledge the three levels of niche, regime and landscape identified by the MLP. Geels clarifies that he does not conceive of the three levels as hierarchical per se, but rather as illustrating different degrees of stability, a key concept in the MLP conceptualization of transitions. This dissertation both confirms and critiques the three levels of the MLP. It supports the notion that the three levels of the MLP represent different degrees of stability, but are not a "nested" hierarchy. It also confirms the importance of the landscape level in the transition to sustainable local food systems, and supports Geels' move towards recognizing active resistance to change from the incumbent regime. But this dissertation argues that the niche level of the MLP adapts poorly to food, and puts forward the term "beachhead" as a more accurate description of the actual process -- one which requires struggle, and where transformation is far from certain.

In subsequent years, Geels and other scholars have added refinements to the MLP, addressing issues such as the governance of transitions and the role of spatial specificity, and bringing insights from political ecology, geography and social economy (Coenen, Benneworth, & Truffer, 2012; Hansen & Coenen, 2014; Jørgensen, 2012; Murphy, 2015; Safarzyńska, Frenken, & van den Bergh, 2012; A. Smith & Raven, 2012; Weber & Rohracher, 2012). The

MLP is clearly a work in progress, an emergent theory that is of "high societal relevance, given the magnitude and pervasiveness of sustainability challenges we are facing today" (Markard et al., 2012, p. 965).

The MLP provides a framework for understanding the multi-factoral and multi-dimensional complexity of sustainability transitions. An essential concept underlying Geels' analysis of sustainability transition is that change is difficult, and there is inevitable resistance from incumbent regimes. As this dissertation argues, agency is essential, in the form of people who are able to develop and use policies and programs that construct sustainability initiatives in specific ways. Transitions are structural changes that lead to new power relations, and new players who embed their particular approaches and technologies.

In MLP analysis, transitions are placed in time and context. As Spaargaren et al. argue, "By using a historical perspective to social change, we are better able to discriminate between the lasting, essential, and the short-term, superficial changes" (Spaargaren et al., 2012, p. 5). Because of the three analytical levels of niches, regimes and landscapes, the MLP allows for consideration of both short-term and long-term underlying conditions, as well as both objective and subjective factors, affecting the transition to sustainability. For example, in university food procurement, an objective factor is that the school year does not correspond with the growing season, which makes seasonality in food purchasing a challenge in Canada and England, the two countries which are the focus of this research[3]. The role of a skilled and well-placed champion,

[3] Although this is currently so, this factor that could potentially be changed by the application of technologies such as improved post-harvest handling and storage, or greenhouses that extend the season. Indeed this is already starting to happen at some universities, including the University of Guelph in Ontario, where locally-grown fruits and vegetables are processed in the on-campus Creelman Produce Processing Facility and frozen for later use. The University of Guelph's Hospitality Services also produces a range of condiments, such as Niagara peach salsa and zucchini relish, to serve atop local burgers at the 100 Mile Grille (Kenny, 2014).

for example, could be considered a subjective factor. What is required of a champion and where a champion is placed within an institution may shift as concepts of sustainability shift in society.

The MLP is described as a middle range theory, developed specifically to address sociotechnical transitions to sustainability. It is not a grand social theory. This statement creates useful boundaries for the researcher. The MLP provides a heuristic framework that is useful for analysis of the narrative of creative public food procurement. MLP scholars have shown openness to the iterative process, and, as a result, the literature indicates that the MLP is actively evolving. Following from this, Geels and others bring a normative perspective to the study of sustainability transitions (Geels, 2004, 2010; A. Smith, 2006). Specifically, Geels identifies market failure as responsible for the lack of attention to sustainability and identifies the public sector as a crucial actor in remedying this market failure. He writes that "Sustainability is a normative goal and a collective good problem (associated with prisoner dilemmas and free rider problems). The former means that sustainability transitions will be full of debates about the relative importance of various environmental problems, which entail deep-seated values and beliefs. The latter means that private actors have no immediate incentive to address sustainability problems. Public authorities and civil society will therefore be crucial drivers for sustainability transitions" (Geels, 2010, p. 507). This understanding underlies the importance given to the public sector in this dissertation.

To date, relatively few scholars have applied this theoretical framework to food system analysis. In their assessment of peer-reviewed transitions literature, Markard et al. found that food system transition was featured in only 3% of articles (Markard et al., 2012). The majority of work in the field of transition theory has been devoted to transportation and energy redesign,

without an overall guiding framework that directs attention to food and its social practices and sociotechnical systems.

Marsden argues that this is because food is spatially embedded and "however globalized parts of the world food system become, food has and does have to 'come from somewhere', and largely be affected in its very nature by those spatial conditions" (Marsden, 2011, p. 149). This means that food issues are not easily compatible with the technical orientation of much of the current work on sustainable transitions which is focused on design, management and engineering solutions. Moreover, much of the work on sustainable food systems has been led by grassroots organizations focused on such issues as community food security, food sovereignty, and consumer empowerment, rather than on technical solutions that pertain to infrastructure. Despite such factors which have slowed down the application of Sustainability Transition Theory to food settings, there is much to learn from adapting transition theory to food system analysis. It is acknowledged widely that we live in a time of climate chaos and increasing degradation of planetary life support systems; many elements of this crisis are related to how food is produced, processed, distributed and consumed – exactly the conditions Marsden specifies as pushing food system issue management from a reform agenda of "reflexive modernism" to a transformative agenda of sustainability.

Hinrichs suggests that the MLP can be usefully applied to analysis of the food system. She applies it to the development of food hubs, particularly those that incorporate environmental sustainability and social equity into their design (Hinrichs, 2014). Hinrichs uses the definition of food hubs put forward by Blay-Palmer et al. as "networks and intersections of grassroots, community-based organisations and individuals that work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with

consumers as directly as possible" (Blay-Palmer et al., 2013, p. 524). Hinrichs notes that some food hubs "combine both technological and social innovations in their efforts to 'scale up' sustainable local and regional food systems" (Hinrichs, 2014, p. 149). She argues that these food hubs might be classified as niches of sustainability innovation. Allowing this to play out, she asks how a food hub's interplay with existing transportation and logistics infrastructure, food safety regulations and the like – in effect, the current sociotechnical regime – shapes the hub as a site of sustainability innovation and its potential to encourage sustainability transitions.

A growing literature on food hubs is relevant to this dissertation. For example, the articles in the June 2013 themed issue of the journal *Local Environment: The International Journal of Justice and Sustainability* attempt to map the relationships necessary for successful food hubs in Ontario (Ballamingie & Walker, 2013; Blay-Palmer et al., 2013; Campbell & MacRae, 2013; Hayhurst, Dietrich-O'Connor, Hazen, & Landman, 2013; Mount et al., 2013; Mount & Andrée, 2013; Stroink & Nelson, 2013). More recently, Berti and Mulligan have contributed a literature review of food hubs (Berti & Mulligan, 2016) The food hub concept is important to discussions of public food procurement because food hubs are increasingly being recognized as important tools in transitions to more local and sustainable food systems, and are a potentially powerful tool for enabling institutions to access sustainable local food. The growing literature on food hubs is an exception to the dominant pattern of food scholarship which neglects infrastructure. Local and sustainable food is no different from conventional food in that it requires considerable amounts of labour, energy and equipment to be brought from farm to table. The infrastructure needed by mid-size sustainable farmers is the missing link in conventional discourses about sustainable local food systems. The purpose of this dissertation is to examine three efforts on two continents that attempt to remedy this discursive and analytical shortcoming.

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CHAPTER 3

The Role of the Insider in Case Study Research

1. Methodological Framework

The purpose of this dissertation is to compare efforts to develop sustainable food procurement strategies at three universities. The comparison is designed to answer the following research question: In what ways does the multi-level perspective contribute to our understanding and theorization of how sustainable food advocates, supported by civil society organizations, can work with universities in Canada and the UK in the initiation and development of more sustainable local food systems? This is a topic with implications for both academic theory and public policy. Therefore it is essential to choose a methodological approach that works within an analytical framework, and that can be tested and built upon by other researchers in this field.

This dissertation employs a collective case study methodology (Creswell, 2013, p. 99). Through directed semi-structured interviews with key informants, it provides a detailed collection of data about university food procurement designed to achieve specific sustainability objectives at three institutions – the University of Toronto (U of T) in Ontario, Canada; Nottingham Trent University (NTU) in Nottingham, UK; and University of the Arts London (UAL) in London, UK. In the case of the University of Toronto, I am investigating the relationship between the university and Local Food Plus (and the LFP certification program). In the case of the two British universities, I am investigating the relationship between each university and the Soil Association's Food for Life Catering Mark. In all cases, I am also exploring the relationship between the universities and their suppliers, who provide local and/or sustainably-produced food. Data was gathered from multiple sources including interviews,

observation, audio-visual material, organizational documents and reports. In the case of the University of Toronto, I also made use of personal notes gathered over almost a decade as the founder and president of Local Food Plus.

Baxter argues that case studies can both test theory and generate or expand theory, and that these are not mutually exclusive roles within any given case (Baxter, 2010). I have tried to do both – by applying Sustainability Transition Theory **(**STT**)**, in particular the multi-level perspective (MLP), and by building on and developing the MLP to strengthen its applicability to food systems analysis.

2. Positioning Myself in This Research

This dissertation emerges from my work, spanning almost two decades, in the field of sustainable food systems, most of that time spent as a practitioner. The understandings emerging from my deep embeddedness in this work are a major contribution of this dissertation. Indeed, I developed my thesis and research question in part as a response to recurrent challenges in the transition to more sustainable food systems that I identified while working at senior levels in several non-profit organizations. As such, this dissertation will explore the implementation and potential of university food procurement through a critical reflection of my experience at LFP and research in the UK, inasmuch as that experience played a central role in the unfolding of events. This dissertation will also add to the application of STT, specifically the MLP, to food systems analysis. Therefore I believe it is relevant to provide some personal background to situate myself in this field before going into further detail about my methodological approach.

3. My Story

My story begins in an unusual place -- the pre-dawn mist of September 18, 1989, as I pulled my canoe onto a beach a short distance from the Red Squirrel Road in Temagami, Ontario. Within hours, the remote logging road would be the site of a major environmental struggle. I was a journalist with the Canadian Broadcasting Corporation (CBC), assigned to cover a campaign to prevent logging the last old growth pine forest in eastern North America. By the end of that day, Bob Rae (then leader of the Opposition New Democratic Party in the Ontario Legislature) and more than a dozen other protesters had been arrested, and my story was leading the news. A weekend assignment became a major news event that I covered for several weeks.

It is not an exaggeration to say that the Red Squirrel Road became my Road to Damascus, shifting the direction of my life. Temagami foretold how the polarizing struggle between jobs and the environment was going to shape public debate. It made me realize that addressing this polarization was critical to stopping the destruction of the planet. It led me to return to school to pursue a Master in Environmental Studies, where my final project was a one-hour documentary for CBC Radio's flagship current affairs program "Sunday Morning", about the conflict between commercial development and wilderness preservation in Canada's four mountain parks.

The connection between what I had learned in Temagami and food systems analysis came when I was breastfeeding my daughter, who was born as I was completing my Master's degree. The early 1990s were marked by economic recession, the pressure of which pushed wilderness preservation down the public agenda. The intimate connection I had with my daughter through breastfeeding showed me that food was the way to reach people where they were, which was rarely in endangered wilderness. Food gave people the power to act on

everyday activities and choices. As well, the food sector is a major economic driver and a job-rich sector. As such, I saw how this issue could be a force for a new green economy.

This stage of my life culminated with my decision to leave the CBC after 15 years (where I had become a nationally-recognized radio news anchor, current affairs host and documentarist), in order to work full-time on a book about the potential of food to change the world. "Real Food For A Change", co-authored with Wayne Roberts and Rod MacRae, was published in 1999, just as industrial organic was emerging. It was one of the first books to make the link between the food system and climate change, to recognize that organic had to be about more than eliminating synthetic toxins from food production, and to identify "local" as a component of sustainability.

My first attempts to put the concepts of "Real Food For A Change" into practice were as a consultant for World Wildlife Fund (WWF) Canada, helping farmers reduce their environmental impact. My WWF years confirmed that "working landscapes", rather than wilderness preservation, was where I wanted to put my effort. Working landscapes allow a broad range of positive environmental, social and economic issues to be addressed, including conservation of natural resources, preservation of biodiversity, just treatment of workers and animals, protection of local economies, reductions in GHGs and increases in carbon storage.

My work at WWF-Canada included working with farmers on a set of farm-level standards that reduced reliance on pesticides and enhanced biodiversity by applying principles of Integrated Pest Management (IPM), and then marketing the products of these efforts to mainstream retailers. This proved to be a difficult sell. Despite significant communications and marketing support from WWF-Canada, including a campaign with the Boy Scouts of Canada to promote Ontario-grown IPM apples in their annual apple drive right outside Sobeys food retail locations which were selling the apples, Sobeys managers had difficulty figuring out how to

market "Integrated Pest Management", which they saw as an amorphous concept, and resisted a label that promoted another organization – WWF-Canada – in their stores.

In 2003, I produced a report for WWF-Canada entitled "Ecolabelling as a Marketing Tool to Support Sustainable Agriculture" (Stahlbrand, 2003). It proposed the creation of an ecolabel for sustainable agriculture that encompassed more than production practices (the model used by organic certification) to feature social and environmental concerns such as fair treatment of farm workers, biodiversity preservation, and energy use. This was a ground-breaking idea at the time, being pioneered by the US non-profit Food Alliance. I wanted to take the idea beyond social and environmental concerns to include community development goals related to local purchasing. I quickly realized that the scope of this work extended beyond what WWF-Canada saw as its conservationist mandate. Within a year I had left the organization, and went on to found Local Food Plus (LFP), the non-profit that I led until 2012.

LFP was the first organization in Canada, and one of the first in the world, to develop specific criteria for broadly-defined sustainability on working landscapes, and a model for linking sustainable producers with significant institutional purchasers. LFP certified food producers for a wide range of practices (including crop production, animal welfare, biodiversity, labour and energy use) and linked them with public sector institutional buyers in the same province in order to stimulate significant demand for local and sustainable food. The partnerships LFP developed with the University of Toronto and the City of Markham, Ontario, marked the first time that public sector institutions in Canada considered how and where they sourced their food. At its height, LFP had about 200 certified farms and processors producing a wide range of fruits and vegetables; dairy products including milk, yogurt, ice cream and cheese; meat and eggs, even popping corn. These farmers and processors were being linked by LFP to about 80

institutional, retail and restaurant partners. Although most of the farms and processing plants were located in Ontario, LFP chapters were in development in British Columbia, Manitoba and Quebec.

For almost a decade I was involved in the day-to-day details of the food business -- institutional contracts, delivery schedules, crop availability, transportation, warehousing, post-harvest handling and other quality-related issues, farmer-distributor relationships, mark-ups, SKUs (stock keeping units), PLU codes (price look-up codes), rebates, promotional events, and so on. I met with many farmers and processors -- as well as university administrators, restaurateurs, caterers, chefs, distributors, and small and large retailers -- both individually and in groups, to discuss the issues of most concern to them, to strategize on how they might work with LFP, and to work through unexpected challenges. I met on a daily basis with varied players, solving problems at they came up, wrestling with challenges around matching supply and demand, and managing a certification system to keep it rigorous and legitimate. I learned the value of teamwork, and came to a deep understanding of how partnerships can be defined as essential components of infrastructure in the food system. Business scholar Rosabeth Moss Kanter had coined the term "infrastructure of collaboration" to differentiate this form of infrastructure from hard infrastructure (Kanter, 1995), a concept that resonated with me and which I actively promoted.

In addition to these specifics of getting certified food from Point A to Point B, I was also increasingly called upon as a thought leader to answer media inquiries and give public lectures about the broader questions and policy implications of shifting towards more sustainable and local food systems. I gave an average of two presentations a month to groups as diverse as the Canadian Federation of Agriculture, the Ontario Ministry of Agriculture Food and Rural Affairs,

the Federation of Canadian Municipalities, Johns Hopkins Bloomberg School of Public Health, the Global Greenbelts Conference, the Ontario Hospital Association, and others. I was invited to speak at international conferences in England, Wales, Ireland, Mexico and India, as well as the United States and Canada.

The concept behind LFP -- that a relatively simple tool (a certification system) combined with an education and marketing program could start to shift the food system, was original and bracing. The LFP concept did not appear to require large amounts of capital or complex technologies. It made sense to many people and excited them with its simplicity and clarity. As a result, Local Food Plus as an organization, and I as its founder, garnered numerous awards for sustainability and market transformation – including the 2008 Gold Canadian Environment Award for Sustainable Living from Canadian Geographic, a 2008 Green Toronto Award from the City of Toronto for Market Development, a 2009 Tides Top Ten as one of the most innovative non-profits in Canada, and a 2010 Vital Ideas Award from the Toronto Community Foundation. Personal awards included being named a Green Leader by Toronto Life Magazine in 2007 and a "Woman of the Earth" Award from the Yves Rocher Foundation in 2008 for contributions to sustainable communities. In 2012, I was inducted as a fellow of the Ontario Hostelry Institute.

My growing expertise in sustainable food systems led to requests to be an advisor to numerous government and other bodies working on sustainable food system issues. I was a member of the Ontario Minister of Agriculture's Strategic Advisory Committee, and invited to attend the Premier's Summit on Agri-food. I was a member of the Toronto Food Policy Council, the FoodShare Board of Directors, the Greening Greater Toronto Advisory Committee of CivicAction (which describes itself as a "neutral sandbox, bringing together senior executives

and rising leaders from all sectors to tackle challenges facing the Greater Toronto and Hamilton Area" (http://civicaction.ca/who-we-are/)), the Environment Committee of the Laidlaw Foundation and the Stewardship Council of Food Alliance, among other community contributions. I was a founding member of Sustain Ontario, the umbrella group for sustainable food system advocacy in Ontario, modelled after the success of Sustain in the UK. My work also became a source for scholarly articles and books about sustainable food systems (Campbell & MacRae, 2013; Friedmann, 2007; Friedmann & McNair, 2008; Ladner, 2011; Levkoe, 2011; Louden & MacRae, 2009; Mount, 2011; Roberts, 2013; Sumner, 2015).

Yet despite these indicators of success, I failed at the biggest task – although I had raised more than $4 million over my years at LFP, I was unable to find on-going core funding for the work of developing sustainable infrastructure. Nor was I able to figure out why certain roadblocks to moving forward continued to exist. After years of wrestling with these challenges, I made the decision to return to school in 2012 with a desire to investigate the as-yet invisible deep background to the challenges Local Food Plus faced in achieving its mission of transitioning the food system to greater sustainability. This dissertation represents my attempt to link two things: my intense experiences with procurement as a tool of market transformation and sustainability transition; and the broader sustainability literature connecting agriculture, environment, health and economic and social development.

In particular, I wish to test the multi-level perspective developed by Frank Geels – a generative theory for food system analysis – as a theoretical framework that can help explain how transitions to more sustainable food systems occur, and how they might continue to develop. Just as Temagami galvanized my commitment to new values, my years in the food movement

galvanized my commitment to this research as a means of probing the necessary and sufficient system conditions for the transformative change that must accompany sustainable food systems.

4. Praxis

I recount my personal story to establish that I come to this research as a mature practitioner with a unique perspective. This perspective led to understandings that I believe cannot be gained without direct experience, and which continue to inform my methodology. Evered and Louis write about "inquiry from the inside", characterized by "the experiential involvement of the researcher, the absence of a priori analytical categories, and an intent to understand a particular situation" (Evered & Louis, 1981, p. 385). Although I am no longer formally linked with LFP, my years heading up the organization have provided me with a deep understanding of the inner working of both Local Food Plus and the foodservice industry, especially how it is organized at the University of Toronto. As well, I have had greater access to key players that an "outsider" researcher would have. I also currently teach food studies at the University of Toronto, and interact on a regular basis with colleagues with whom I worked in another capacity while at LFP. For all intents and purposes, I am still an insider, and remain a friend and confidante of many of the food movement's leaders across Canada.

I believe my work at LFP also gives me a deeper understanding of the two UK cases, and the daily experience of the various players through the UK supply chain. Dwyer and Buckle argue for an acknowledgement that researchers can occupy "the space between", in the position of both insider and outsider at different times in the research process (Dwyer & Buckle, 2009). This is the space which praxis can allow a researcher to fill.

I recognize the need to exercise care to ensure that any bias stemming from my position as a former participant is acknowledged and addressed. Subjectivity in research is inevitable, as even our choice of research subject reflects our values and beliefs. However, subjectivity does not invalidate qualitative research, as long as the researcher's relationship to the research is as self-conscious, transparent, reflexive and intentional as possible, and that the credibility of the study is demonstrated (Creswell, 2013; Creswell & Miller, 2000, 2000; Lewis, 2009; Morse, 2008; Srivastava & Hopwood, 2009; Tracy, 2010; Winchester & Rofe, 2010).

Thick description (providing in-depth detail about the environment, the situation and the setting) and triangulation (using multiple sources to corroborate findings) are two methods that I employed to this end (Lewis, 2009; Maxwell, 1996). As well, I note whenever a piece of information or an understanding is known to me as a result of my direct experience. This is essential for two reasons. First of all, the reader is entitled to know whether evidence is research-based with third parties or a result of direct participation. Secondly, I hope my attentiveness and sensitivity to my former role helps in the conceptualization of praxis. Specifically, I am attempting to reconfigure my experience as a practitioner into an understanding of the two-way relationship between theory and practice, thereby providing a fuller and deeper explanation of praxis than is currently available in the scholarly food literature.

Wakefield argues that "praxis is not only about informing action with theory, but also about how action can itself lead to the development of richer theory" (Wakefield, 2007, p. 334). In other words, praxis is an iterative process that is mutually enriched by constant feedback, an "endless moving-between" (Massey, 2002, p. 645), which develops a more nuanced understanding. It involves "a commitment to the continual and generative interplay between thought and action" (Niewolny & D'Adamo-Damery, 2016, p. 116). Praxis is inherently a

statement of humbleness that leads practitioners to be reflexive and self-critical. It is a recognition that knowledge often proceeds in increments and grows through collective contributions and dialogue.

I believe there are several strengths that I bring to my research as a result of my former years of practice in the field of institutional procurement. Every restaurant has a back-of-house. Every political party has a backroom. Every story has a backstory. It is by doing that we learn what's really going on "behind the scenes". As a former practitioner, I believe I bring insights to this project that come from knowing the backstory, from spending time in the back-of-house and the backroom. The details of these backstories must be identified and problematized in order to get at the core of an issue such as "infrastructure of the middle". Brannick and Coghlan argue that insider research is not only valid, but generates important knowledge that may not be gathered in any other way (Brannick & Coghlan, 2007).

As a former practitioner, I have found that my previous role gives me credibility when conducting interviews, and gains me better access or more time. Precisely because I am seen as a former insider, there is an expectation of a mutually beneficial give-and-take experience through the interview process. In other words, individuals working in the field – whether they are processors, distributors, non-profit leaders, etc. – begin an interview with the assumption that I will appreciate and understand the mundane details of their work, and help them see it better.

That this assumption exists has been confirmed throughout the interview process, beginning with the fact that I gained access to senior people who are very busy. For example, when conducting interviews for a project linked to my dissertation work, Wolfgang Pfenning of Pfennings Organic – one of the most important producers, aggregators and distributors of organic produce in Ontario, and an exemplary "infrastructure of the middle" organization – spent a full

day with me at his farm and processing facility. He showed me how he organized the production line, and spoke in depth about his experiences dealing with the conventional food system. Paul Sawtell of 100 KM Foods Inc. spent half a day with me to tour through his warehouse and to demonstrate his ordering system in great detail. Both of these key informants were former collaborators who knew that I could appreciate the effort, creativity and intricacy that went into developing new models within the current food system. I had similar experiences in the UK, where senior level staff of the Soil Association told me that they had taken an interest in and followed the work of Local Food Plus from afar, or where produce distributor Anthony Millward asked my advice on how to connect with more institutional purchasers, after the conclusion of the interview.

It is often said that lessons learned through mistakes are learned most profoundly (Harteis, Bauer, & Gruber, 2008; Watkins & Marsick, 1992). As a former practitioner in a completely new field in Canada, I made many mistakes from which I continue to learn. For example, because all of the people involved in setting up LFP, myself included, came out of the organic food movement, that movement set the invisible bar in our own mind's eye for how LFP's standards should be written and enforced. As well, because so many of the original LFP team came from backgrounds in agricultural production, there was an assumption that the food movement worked from "field to table", and that the correct starting place was transforming production on the farm.

More than a decade after the founding of Local Food Plus, with what feels like 20/20 hindsight, I realize that orienting LFP towards the organic end of the standards spectrum led to a certification program that was too complicated, time-consuming and expensive and, like organic certification, too focused on production alone. The institutions we worked with, including some

funders, didn't have a deep enough understanding of production practices to appreciate the complexities of our program. Nor did our collaborators have need for a program of such rigour during the first steps of their journey towards sustainability.

Likewise, although we spoke the words of "demand-pull" rather than "supply-push", our farmer orientation was premised on a "field to table" approach to the food system, which blinded us from fully understanding what "demand-pull" meant. We never understood at a gut level that food system change had to be largely driven by eaters and by customer-facing organizations, including universities. In other words, with some exceptions, procurement is a "table to field" movement, more than a "field to table" movement.

The above examples illustrate how learning from mistakes – something that can only come through practice – can deepen and enrich the development of theory. Praxis has many expressions, as Wakefield suggests, and one should not be privileged over another. Reflexive practice is one form of praxis. I argue that implementation can be a reflexive practice that requires innovation, adaptability and deep understanding of a broad range of issues, as well as technical know-how. It was only the experience of being challenged during implementation that pushed me to begin to understand what I now consider to be fundamentally paradigmatic issues in the development of sustainable local food systems.

Praxis is rich in analytical promise because it is at the edge of practice and thought. In ecology, the concept of "edge" refers to places where two habitats meet, as in forest and meadow, fresh water and salt water. Edges are known to be the most biological diverse and productive parts of ecosystems. Applying this metaphor to praxis contributes to a deeper understanding of the importance of reflexive practice as a driver of paradigm change, which in turn is the catalyst for the development of new theory.

5. The Case Study Approach

Baxter describes case study research as involving "the study of a single instance or small number of instances of a phenomenon in order to explore in-depth nuances of the phenomenon and the contextual influences on and explanations of that phenomenon." (Baxter, 2010, p. 81). Creswell defines case study as "a type of design in qualitative research that may be an object of study, as well as a product of the inquiry. Case study research is a qualitative approach in which the investigator explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information…and reports a case description and case themes" (Creswell, 2013, p. 97). Yin suggests that case studies are especially useful for "how" and "why" questions because they address operational links over time and can deal with a range of evidence. He defines a case study as an empirical inquiry that "investigates a contemporary phenomenon (the case) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (Yin, 2014, p. 16). VanWynsberghe and Khan see a wide application for the case study approach in social science and propose a broader definition of a case study as "a transparadigmatic and transdisciplinary heuristic that involves the careful delineation of the phenomena for which evidence is being collected (event, concept, program, process, etc.)" (VanWynsberghe & Khan, 2008, p. 84). They identify seven common features of a prototypical case study. These include the small N, i.e. an in-depth exploration of a specific unit of analysis; contextual detail; natural settings with much complexity; temporal or spatial boundedness; working hypotheses and lessons learned, multiple data sources to facilitate triangulation; and extendibility, i.e. extending the reader's experience in order to enrich

understanding of a particular phenomenon (VanWynsberghe & Khan, 2008). All of these definitions point to the case study being an intensive, rather than an extensive approach to research.

For this dissertation, I have written two chapters which use a case study approach to studying the work of two organizations – Local Food Plus in Canada and the Soil Association's Food for Life Catering Mark Program in the UK – in three different university settings. I am interested in what can be learned from comparing the different approaches of the two organizations in promoting more sustainable food systems. Both organizations are committed to the goal of scaling up sustainable and local food systems using public sector procurement as a tool (Leeder, 2011; Lewis, 2013; Orme et al., 2011). However, neither has worked exclusively with public sector institutions. Both organizations have developed standards, certification protocols and contractual tools to measure progress, both at the farm level and at the foodservice level. Both organizations are committed to the concept of "continuous improvement" as a way of moving the food system forward.

I chose to work in the two chosen countries – Canada and the UK – in order to explore the concept of embeddedness, which I see as central to my conceptualization of sustainability transitions. The importance of being embedded in one's society only becomes visible in comparison with another society where that is not the case. I argue that the UK has progressed more quickly in the transition to more sustainable public procurement because of certain embedded factors including the long-standing existence of a national student meal program, and the experience and existence over time of the Soil Association -- a large, membership-based national organization formed in 1946 to promote organic agriculture and respect for the soil in the broadest terms (Smith, 2006). Neither of these factors exists in Canada.

Nottingham Trent University and the University of the Arts London were selected as case studies in part because they each represent a different organizational structure – Nottingham Trent operates its own foodservice in-house, while UAL contracts its foodservice to an outside company. Because of its size and its decentralized foodservice structure, the U of T provides examples of both these organizational structures. I have also produced two other analytical papers (Chapters 6 and 7) flowing from the case studies in order to explore university procurement of sustainable local food as an expression of and contribution to the role of "infrastructure of the middle" in sustainable local food systems.

I take an inductive approach to research. Although I am beginning with a particular theoretical framework – the multi-level perspective – which I believe is a useful explanatory device, I remained open to being led in new directions that do not fit the framework. When using an inductive approach, having the necessary background to evaluate and respond to new directions is essential (T. Palys & Atchison, 2008:157). Although they are enough to challenge certain aspects of an established theory, three case studies do not provide the basis for grand generalization.

6. The Research Process

The central research tool used in this dissertation is the directed semi-structured interview with key informants. However, in order to prepare for the interview process, as well as to ensure the validity of the research, multiple data sources were used including scholarly articles, web pages, reports, standards protocols and other operational material, government documents, tours, tastings, attendance at events, observation and personal notes.

My knowledge of Local Food Plus was both deep and wide enough to allow me to begin the interview process with less time spent on background research. However, my UK research was a different matter. I began my research by reviewing the website of the Food for Life Program and the numerous evaluation reports that have been written since its inception. Because the Food for Life (FFL) Catering Mark is standards-based, I also reviewed the standards. The FFL Catering Mark is being applied in many foodservice settings including primary schools, high schools and hospitals. However, because of my interest in university procurement, I paid special attention to the web information about university procurement. I looked for universities that had achieved the Silver or Gold level of the FFL Catering Mark for most or all of their foodservice outlets because I wanted to focus on sustainability transition, and therefore examine universities that had gone through a transition process. I began by reviewing their websites to learn more about the size and range of their foodservice facilities. From this group, I looked for universities in or near the cities of London and Nottingham, for the pragmatic reason that I had accommodation in those two locations which would allow me to spend more time gathering data in the UK, given my limited research budget.

I then contacted the Catering Mark Program Manager, Suzi Shingler, for a lengthy Skype conversation. Serendipitously, she suggested that Nottingham Trent University, one that I was considering, would be ideal for a case study. Shingler also suggested the University of the Arts London, the first university to achieve the Gold Catering Mark. My criteria included examining both a self-operated unit as well as a facility run by an outside contractor, for the simple reason that both these forms of foodservice existed at the University of Toronto. They had to be fairly large institutions to have cafeterias that could be compared in size and scope to those at the U of T. Again for reasons of comparison, I was interested in urban universities, rather than those in

small towns. I evaluated which universities might be a good match with the U of T, by looking at how many students they served daily, whether it was a self-operated or contracted catering operation, and the size of the city in which it was located.

Foodservice at Nottingham Trent University is run by a dynamic man named Ivan Hopkins. He is clearly the champion who has motivated his team and put the effort into learning how to increase the sustainability of his facility. There were clear similarities with Jaco Lokker, Director of Foodservice for the St. George (main) campus of the University of Toronto and head chef at 89 Chestnut Residence (which houses more than 1000 students). Both men, through force of personality, personal connections and personal commitment, along with a great deal of experience, were able to drive sustainability forward. These interviews are representative of the types of people I chose to interview. All of my interviews were deliberately with leaders, trendsetters and ground breakers of the sustainability project.

I also knew that I wanted to speak with a variety of players in the supply chain of each university who represented an emerging "infrastructure of the middle". I deliberately used a snowball technique to find other key informants along the supply chain. Snowball sampling (or chain sampling) involves starting with one or two interviewees and then using their connections to select additional interviewees (Bradshaw, Stratford, & Hay, 2010; Palys & Atchison, 2008, p. 126). Snowballing can be a useful technique in case study analysis because it can help assess who are the best potential interviewees, although it has been noted that key informants are likely to suggest people who are similar to themselves (Palys & Atchison, 2008). This is a potential problem in some cases, but not in my research because I deliberately chose to interview those people along the supply chain who were most committed and excited to work with university foodservice, those who had gone above and beyond to achieve the standard required for the Food

for Life Catering Mark. I wanted to meet the champions in order to test out my ideas about the pivotal role of agency and operationalization in sustainability transition. This purposive sampling was guided by my interest in understanding the lived lives of the implementers.

Following an email introduction from Suzi Shingler, I contacted both UK universities to introduce myself and explain the project. I then asked them to suggest examples of companies within their supply chains who had co-operated and made changes to their operations in order to support the university in meeting the Catering Mark standard. Both universities made several suggestions and provided email introductions.

In order to cover the range of products and types of enterprises that supplied the two universities, I chose a produce distributor; a fruit farm that also sells to mainstream retailers; a meat processor; a bakery; and a farm that specializes in vegetables, with additional businesses of processing apple juices on its property from apples it grows, as well as aggregating organic produce from other farms in the region for its farm store and booths at farmers' markets, all in addition to supplying the university. I chose these producers/suppliers because, in my experience, they are all good starting points for institutional procurement. They carry a range of local products and can respond to sustainability criteria more easily than producers/suppliers of multi-ingredient processed products, for example. My data collection took me to Nottingham and the surrounding countryside, London, the agricultural region of Kent, and the City of Bristol.

I also made plans to interview key people at the Soil Association (SA) itself. In particular, I was interested in the origins of the FFL program and the Catering Mark, how it was being positioned at the Soil Association, how it was being funded, how the certification was carried out, how many staff were involved, and how the SA saw the larger policy implications of the work it was doing. In all cases, I deliberately chose people who are implementers and asked

questions about implementation. This approach is generative at a policy level because it deals with implementation details that policymakers must understand to create good policy.

Qualitative analysis is an iterative process, both at the data collection stage as well as the analysis phase (Palys & Atchison, 2008; Srivastava & Hopwood, 2009). Therefore I deliberately bookended my data collection with interviews with Soil Association staff, and interviewed the Program Manager, Suzi Shingler, twice. During the interview process I became aware of the importance of another organization central to the success of the implementation of the FFL Catering Mark – People and Planet, a non-profit that ranks all UK universities on their environmental commitments. I therefore went to Oxford to interview the staff person responsible for the University League (a rating of all UK universities for their demonstrated commitment to environmental and social sustainability) about the program and its relationship with the FFL Catering Mark. A similar set of interviews was conducted in Canada. The key informants included administrators and chefs at the U of T, staff at LFP, as well as farmers, aggregators, processors, and distributors.

In both the UK and Canada, interviews were followed by a detailed tour of the premises, whether it was a university cafeteria, a farm, a processing facility, or a distribution company. In the case of Chegworth Farm, which supplies the University of the Arts London with fruit, vegetables, and fruit juices, I toured the farm in Kent, as well as the farm store and one of the farmers' market booths in London. At each university, I studied the signage and how the food was displayed. I also had lunch in the cafeterias.

While I was in the UK, the Soil Association invited me to attend its annual Catering Mark Awards ceremony called "Recognizing Champions", held on June 19, 2015. This ceremony was the culmination of a process of nominations of foodservice providers who hold

the Catering Mark, coming from a range of institutions including schools, hospitals, universities, daycares and nursing homes. The 2015 awards ceremony was also designed to be a celebration of the landmark of one million Catering Mark meals served each day.

This invitation proved to be an excellent opportunity to meet more of the people involved with the Catering Mark. It was an elegant evening, with an awards ceremony attended by several hundred people, followed by a meal composed entirely of food from suppliers associated with the Catering Mark. Speakers included well-known British food figures such as cookbook author and television host Prue Leith and Jeanette Orrey, the woman credited with launching the Food for Life Program at a primary school in Nottinghamshire, and inspiring Jamie Oliver's work in schools. The attendees included Soil Association staff, foodservice executives, suppliers, public sector administrators and "dinner ladies", the colloquial term for the women who prepare and serve meals for British schoolchildren each day. During this event, I interacted casually with several dozen people, and took extensive observational notes.

7. The Interview Process

I conducted 31 interviews in the UK and 36 interviews in Canada. A total of 67 interviews were conducted, all but three in-person. The three exceptions were conducted by phone. Most of the interviews with Canadian farmers, processors and distributors were conducted during summer 2013. All of the UK interviews, as well as interviews with U of T administrators, were conducted during summer 2015. Several interviews, including those with former LFP staff, were conducted in 2016. Interviews averaged 2.5 hours in length, although specific interviews ranged from half an hour to more than four hours. Many interviews were also followed by a tour, which was also recorded.

Palys and Atchison argue that "few processes are as fundamental to social science as the person-to-person exchange of information" (Palys and Atchison, 2003, p. 153). Scholars have noted that the interaction between the interviewer and the interviewee in qualitative interviews can contribute to the quality of the data gathered in numerous ways. Yet it is rare for scholarly work or courses on methodology to delve into what constitutes good interviewing techniques for qualitative inquiry (Dilley, 2000; Palys & Atchison, 2008). Both Beer and Dilley consider the qualitative interview to be more of an art than a science. Dilley argues that it is most akin to artistic composition (Beer, 1997; Dilley, 2000). Although the interview has been criticized for being overly subjective, "in the final analysis, it is the subjectivity of the qualitative interview, its being influenced by and affecting both interviewer and respondent, that makes discovery possible in qualitative research" (Beer, 1997, p. 110).

My interview method is shaped by my fifteen years as a journalist and documentary-maker (1982-1997) with CBC Radio, recognized internationally for its leadership in documentary work. Dilley argues that academic researchers have much to learn from journalistic techniques. He says that although the qualitative research interview will be shaped by different frameworks and questions, the basic process of conversation between two people as a source of content for analysis is similar (Dilley, 2000). Dwyer echoes Yin's words about when to use case study methodology (optimally, when the researcher has "how" and "why" questions to answer) when he writes that the journalistic style excels in "eliciting information not only about what an individual does or thinks about but also about the how and why of behaviour" (Dwyer, 1996, p. 16).

I believe that the study of relationship-based food systems requires relationship-based interviews. Whenever possible, I conducted interviews in person at the interviewee's place of

work, or at a location relevant to the subject of the interview. Meeting at their place of work rather than at a coffee shop, for example, keeps their body in the same place as their mind needs to be, with their workplace assignments, obligations and surroundings immediately visible and visceral. In other words, the interview is not segregated from their work experience. Going to the place of work is important because I am able to take notes about the location, and how that location might influence the work that goes on there. In the case of a processor, for example, I see the working conditions, whether the facility is modern or needs renovations, and so on. I see the pride of place of the interviewee, and their willingness to be transparent. If possible, I requested a full tour in order to get a better sense of the capacity of the operation. I've learned that a tour can be worth a thousand words. I believe that many of the nuances that are important to an investigation of this sort are only revealed when time is spent and trust is built. There is a certain transparency of being taken on a tour – things cannot be hidden. Being on a tour can be compared to being invited to someone's home for dinner. It establishes a bond. We're meeting in their habitat. I'm inviting them to unlock memories and details that wouldn't be unlocked over the telephone. There is a spontaneity and humanity.

Conducting interviews in person also gave me the ability to use a crucial tool of the radio interviewer – reading facial expression. The facial expressions of the interviewee provide clues as to what aspects of their work they are most passionate about, and indicate when they may be holding back. As Dwyer notes, "A roll of the eyes or a shrug of the shoulders can alert you to areas where further probing might reveal important information (Dwyer, 1996, p. 18). Going to the location and speaking face-to-face means that I spend a great deal of time on each interview. However, as a social scientist, I believe it is critical to deep understanding.

Although each interview is driven by the agenda of my questions, it is conducted as a conversation rather than a formal interview that has been pre-scripted. This puts a premium on listening skills. As a current affairs host and documentarist at CBC, I was trained as a professional listener. Although broadcasters are known for speaking, they would be the first to acknowledge that their core competency is listening. Listening is arguably the most important skill of qualitative data collection and assessment (Beer, 1997; Dilley, 2000; Dwyer, 1996). Dwyer notes that "The best listeners think about what is being said. They consider the speaker's content in light of other things he or she has said and they listen between the lines for ideas and attitudes" (Dwyer, 1996, p. 18). Dilley provides a good explanation of the process I go through as the interview is taking place. He writes that interviewing is a mental challenge because there are five activities taking place at the same time: listening (and observing), comparing what is being said to what we know from previous interviews or background research, comparing what is being said to what other questions are on the script, being aware of time, and interjecting at appropriate moments to prompt reflection, clarification or further explication (Dilley, 2000).

An interview is not just a relaying of information; rather it is an exchange, a two-way conversation. This can sometimes elicit unexpected information. For example, while interviewing Bill Thomas of Thomas Canning in Maidstone, Ontario, and questioning him about why he was establishing a tomato processing plant in Nigeria, despite his stated commitment to local and sustainable food, he paused and then told me that I needed to know about his interest in yoga and his views on self-actualization. This information helped me to understand the spiritual and holistic motivation underlying his commitment to sustainable food systems.

I also believe that conducting in-person semi-structured in-depth interviews can bring depth and subtlety to my research findings, and provide an opportunity to reflect deeply and gain

useful insights from my own experience as a practitioner. All three case studies have been rich experiences for those involved. The key informants are articulate and thoughtful people who were willing to be open and frank about their experiences. Several interviewees told me that they could be more frank and open with me because they knew that I had been through similar experiences during my time as a practitioner.

I am interested in the lived lives of sustainability operatives and how their lived lives influence the shaping of local and sustainable food infrastructure. I pay close attention to implementation detail, both to ensure that my assessment is accurate from an academic viewpoint and will contribute to the literature, but also that I may share it with other implementers. I ask for a lot of operational detail in my interviews. That may seem far removed from policy, my major interest. But, in fact, it is central to my understanding of policy. I argue that good policy for local and sustainable food, to adapt a phrase from Thomas Edison, is 1% inspiration and 99% implementation. In short, good food policy needs to start with the understanding that implementation provides the supreme test and rationale for policy.

Unlike surveys or other approaches to gathering data that minimize variation in the respondent so that data can be assessed quantitatively, I deliberately optimized variation by letting people tell their story. Story-telling is one way to reveal truth. The assumption of a survey approach is that the interviewer knows what there is to know, what there is to ask about. My approach optimizes understanding unknown unknowns. We need answers that we don't know we need. For example, I noticed that several of the interviewees, without any prompting, brought up how big retailers demanded impossibly low pricing from them. As these stories accumulated, I came to understand that university procurement of local and sustainable food provided an alternative or complementary survival strategy for small and mid-size businesses.

The biggest disadvantage to this form of data collection is cost, both in terms of time and money (Palys & Atchison, 2008, p. 157). I was fortunate to have accommodation in both London and the Nottingham region, which significantly reduced costs. However, it was necessary to spend two months in the UK, with a significant travel budget, in order to be able to complete the interview process. Despite these costs, if I am correct about the value of the interviews conducted in this way, the time and money spent were good investments.

8. Analyzing the Data

Following each interview, I immediately made extensive notes, including observations about the interview process and content, as well as details of the location, the city, the region or the enterprise. I also took photographs. As I conducted additional interviews, my knowledge and insights grew. Upon returning to Canada, I transcribed the interviews. Because of the length of each interview, this was a very time-consuming process. However, I felt that there was value in it in order to ensure that my analysis was accurate and based on what was said, not on what I remembered from the interview.

I then coded all of the interviews manually, looking for what Creswell calls the "general lessons learned from studying the case" (Creswell, 2013, p. 99). I looked for explanations of motivation, challenges, successes and barriers. I examined similarities and differences among the different sets of interviews (university staff, suppliers, non-profit organizations, etc.) and looked for patterns and explanations. It is in the data analysis that the journalistic interview and the scholarly interview most diverge. Journalists are looking for "clips" that dramatize the story they are telling. By contrast, scholars are looking for patterns that explain phenomena. Journalists are

interested in the power of immediacy, whereas scholars are interested in the power of distance, detachment, and seeing the big picture.

Huberman and Miles argue that there is a place for counting in qualitative research, and that counting can help the researcher avoid bias, categorize information, and assess how representative certain comments are (Huberman & Miles, 1994). I analyzed the transcripts by counting how often certain themes emerged, and how often specific comments were repeated by more than one interviewee, both by using key word searches, and by simply immersing myself in the material, reading and re-reading. I constantly referred back to my theoretical framework to re-examine where and how each interviewee did or did not fit the MLP framework or my initial speculations about how the reality of university foodservice would deviate from the MLP construct.

For example, I began my research with the idea that the certification system and new purchasing criteria for sustainability represented the niche level in the MLP, within the sociotechnical system of the mainstream foodservice industry. As I reread my transcripts, I began to realize that, in many circumstances, university procurement itself represents a niche in the world of food procurement, and that institutional food procurement is part of a broader sociotechnical system which includes retail. This analysis evolved from noting how often interviewees along the supply chain independently mentioned that their contracts with the universities acted as a buffer against full exposure to the power of the mainstream food retailers. This comment was made spontaneously, without prompting from me. Indeed, I asked no questions about the retail sector. Srivastava and Hopwood emphasize the role of iteration in qualitative research analysis. They argue that iteration is not a repetitive task, but "as a deeply reflexive process, is key to sparking insight and developing meaning" (Srivastava & Hopwood,

2009, p. 77). I found that reading and re-reading my interview transcripts, in different orders and groupings, refined my thinking and helped insights to emerge.

9. Gaining Insight

In the keynote address to the II Congreso Iberamericano de Investigacion Cualitativa en Salud, Janice Morse argues that it is through active listening and observation in qualitative research that insight can be gained. She argues that insight is undervalued in qualitative work, but that without it, research can be mundane and obvious: "Insight is the neglected and overlooked mechanism, the Cinderella of qualitative inquiry, rarely consciously used, seldom boasted about, and almost never valued as one of the major processes in qualitative analysis" (Morse, 2008, p. 94).

In order for insight to occur, the background of the researcher is critical. Morse supports the need for praxis when she writes that researchers must have "much knowledge about what they are observing or hearing, know and be able to link it to relevant literature, and be able to think conceptually and to link seemingly unconnected events, representations, and ideas" (Morse, 2008, p. 95). She notes that qualitative research is more interested in meaning than measurement, and that insight can arise from a single example that is not always verified by other examples. Morse agrees with Srivastava and Hopwood that reflexivity is key to good qualitative inquiry, and that reflexivity must be applied at every stage of data collection and analysis in order to act as a self-correction mechanism that ensures rigour. Morse also introduces a framework for identifying qualitative data as direct, semidirect and indirect, and argues that there is much methodological work to be done to identify new ways of assessing validity in qualitative research.

One of the enduring benefits of the interview method I propose is that it harvests deep insights from people who are deeply engaged in the work and have been for years. This is central to my critique that the MLP lacks adequate recognition of human agency. When we see operatives as not only doing important work, but also having important insights, their full humanity and contributions can be recognized. The power of the interview is that it presents the doers as thinkers, and full actors in the sustainability project.

This chapter of my dissertation serves to explain why I believe that praxis, combined with finely-tuned listening skills, observation, and a reflexive attitude, can make an important contribution to knowledge creation and diffusion. My goal for this dissertation is that my background as a practitioner combined with the thorough and deliberate construction of case studies, and informed by the theoretical framework of the multi-level perspective and a systematic review of the scholarly literature, will stimulate new and important insights about sustainability transitions in the food system.

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CHAPTER 4

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The Food For Life Catering Mark: Implementing the Sustainability Transition in University Food Procurement

Abstract

This article presents a case study of the application of the Soil Association's Food For Life Catering Mark at two universities in England: Nottingham Trent University and University of the Arts London. This procurement initiative has had noteworthy success in the UK, with more than 1.6 million Catering Mark meals served each weekday. This article, based on 31 in-depth interviews conducted in 2015, is the first to examine its impact and significance at the university level. In particular, this article tests the concepts of the niche, regime and landscape in the multi-level perspective (MLP), a prominent theoretical approach to sustainability transition, against the experience of the Food For Life Catering Mark. The article confirms the importance of the landscape level of the MLP in the food sustainability transition, while adding additional considerations that need to be specified when applying the MLP to the food sector. By highlighting the essential role of civil society organizations (CSOs), public institutions and many champions, this article proposes that more room must be made within the MLP for the explicit role of agency, champions and the implementation process itself. Indeed, this article argues implementation – the daily practice – is deserving of both recognition and theory.

Keywords
public sector food procurement; sustainability; local food; sustainable food; university catering; Food For Life Catering Mark; sustainability transition theory

1. Introduction

The potential of public purchasing to foster sustainable food systems has aroused considerable interest in recent years, especially in Europe and North America. The power of what Morgan et al. call "the public plate" (Morgan & Morley, 2014), long overlooked as a public policy tool, is now winning support.

There are four reasons for this. First, public purchasing is significant. In the UK, more than £2 billion are spent each year on public sector food and catering (DEFRA, 2014). Second, public purchasing relates to a change in lifestyles. It is estimated that as much as 43% of all meals are eaten outside of the home (DEFRA, 2016; Lin, n.d.), often at schools, hospitals, universities and other public settings. At a time when this trend is growing, public purpose institutions need to be highlighted as sites of transition. Third, aside from the amount of money involved, public purchasing brings the power of public policy and public institutions to the foreground of sustainable thinking and strategy. This is a major departure from putting the onus of leadership and responsibility on individual citizens who are inspired to change the food system "one bite at a time" by "voting with one's fork". Fourth, from an economic development perspective, the increased attention to public food procurement is noteworthy because it identifies a unique opportunity to scale up the production of and demand for sustainable and local food (Friedmann, 2007; Morgan, 2008; Morgan & Morley, 2014; Roberts, Archibald, & Colson, 2014).

To date, much of the trend toward sustainable food purchasing has been happening within educational institutions. The greatest number and most publicized of these projects have been in primary and secondary schools (Bagdonis, Hinrichs, & Schafft, 2008; Conner, Izumi, Liquori, & Hamm, 2012; Feenstra, Allen, Hardesty, Ohmart, & Perez, 2011; Heiss, Sevoian, Conner, & Berlin, 2015; Izumi, Wright, & Hamm, 2009; Joshi, Azuma, & Feenstra, 2008; Morgan & Sonnino, 2007, 2008; Ng, Bednar, & Longley, 2010; Orme et al., 2010; Stein, 2012). Though lacking in profile, post-secondary institutions have also been doing solid work and offer a different understanding of the potential of public procurement. Action at the school level in the UK was motivated largely by a concern for the health and nutrition of British school children. At

the university level, the significant motivating factor has been to highlight sustainability efforts. This article investigates transitions to more sustainable and local food systems, and therefore, the university experience is more relevant.

This article presents information and analysis on two of these efforts, both associated with the British-based Soil Association and its Food For Life Program in London and Nottingham. The UK's Food For Life Program and the accompanying Food For Life Catering Mark are among the most prominent and successful of these initiatives. The Program and the Catering Mark are projects of the Soil Association (which calls itself "the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use" ("The Soil Association - About Us," n.d.)), in partnership with three other national charities. These projects have the potential to serve as a model for scaling up and out sustainable procurement for the entire public sector in the UK and elsewhere.

The Food For Life Catering Mark is a pivotal element of the offering. It is a self-financing, third-party certification system that supports the goals of the Food For Life Program. At the time of writing, 1.6 million Catering Mark-certified meals are served throughout the UK each weekday. These are offered in a variety of settings, including universities, hospitals and childcare centres. According to Rob Percival, a Soil Association Policy Officer, the Catering Mark represents a deliberate attempt to shift responsibility for sustainability transition in the food system away from individual consumers and towards the public realm (Percival, 2015). The Soil Association also identifies food culture as significant. Percival points out that the Soil Association's efforts are meant to transform not only the quality, but also the culture and discourse around food served on public plates.

The Food For Life Catering Mark is part of a "refreshed strategy" for the Soil Association, made public in a 2011 report entitled *The Road to 2020: Towards healthy, humane and sustainable food, farming and land use* (The Soil Association, 2011). In the introduction to the report, Helen Browning, Chief Executive of the Soil Association, emphasizes the need to reach out to people "to show the relevance of our work, even for those who are not eating or producing organically". She argues that "our role in public health should be as powerful as in the environment and farming." (The Soil Association, 2011, p. 3).

This article is the first to examine the agenda and workings of the Food For Life Catering Mark at the university level. The article presents the Catering Mark as a sociotechnical innovation, with potential to serve as an important site of the emerging sustainability transition in food. Since its launch in 2009, the Catering Mark has been taken up by 40 universities across the UK The article examines two English universities, Nottingham Trent University (a university of 27,000 in the Midlands city of Nottingham) and University of the Arts London (a multi-campus university of 26,000 students based in London), where the Food For Life Catering Mark has been adopted. These two universities have been among the most successful at implementing the program and achieving advanced standing in the certification. They were also selected because they represent two different approaches to foodservice common among public sector institutions: the self-catered model and the contracting out model.

The richness of the Food For Life Catering Mark experience allows this article to present the dynamism, complexity, detail and nuance necessary for a robust analysis of sustainability transition theory as applied to food. In particular, this article uses the multi-level perspective (MLP), a prominent theoretical approach to sustainability transition. The MLP posits that transitions result from interactions among three levels – niches, regimes and landscapes – which

eventually lead to a sociotechnical "regime shift". According to classic MLP statements, niches are "protected spaces" where innovations can be nurtured, tested, and strengthened to the point where they can challenge a regime (Geels, 2002). Regimes are defined as the critical meso-level, including practices, policies, infrastructure and interests – "the specific rules of the game" that the innovation can disrupt (Spaargaren, Loeber, & Oosterveer, 2012). The landscape is the broader context – social, institutional, technical and environmental – that affects developments within niches and regimes.

This article tests the MLP concepts of niche, regime and landscape against the experience of the Food For Life Catering Mark. The article confirms the importance of the landscape level of the MLP in the food sustainability transition, while adding additional considerations that need to be specified when applying the MLP to the food sector. Notwithstanding important insights of the MLP approach, the author's assessment of the Food For Life Catering Mark testifies to the central importance of human agency and champions, a notion still under development in the MLP. This article uses the word "champion" as defined in the Business Dictionary. A champion is a person "who voluntarily takes extraordinary interest in the adoption, implementation and success of a cause, policy, program, project or product" (Business Dictionary, n.d.). A champion might also be called a "change agent". Being a champion or change agent is distinct from similar terms, such as "leader" or "advocate", neither of whom are usually involved in day to day program implementation. The champion embodies agency, a major resource of the transition experience.

The article proceeds as follows. It begins by discussing the methodology used for this research and then provides background information as to the origins of the Food For Life Program and the emergence of the Food For Life Catering Mark. The case studies of

Nottingham Trent University and the University of the Arts London are presented. The article then applies the MLP framework, first by examining landscape factors and then by adding to the conceptualization of the niche. The article concludes by positing that the practice of foodservice deserves to be theorized.

The MLP has been criticized for neglecting the role of human agency in sustainability transitions (Grin, Rotmans, & Schot, 2011; Lawhon & Murphy, 2012; A. Smith, Stirling, & Berkhout, 2005; A. Smith, Voß, & Grin, 2010; Spaargaren, 2003). Geels has responded that agency is already incorporated, and claims that the MLP is "shot through with agency because the trajectories and multi-level alignments are always enacted by social groups" (Geels, 2011, p. 29). This article argues that the MLP would be enriched by foregrounding agency, a proposition that is germane to recent amendments made to the MLP model by Geels himself (Geels, 2014). The article argues that agency in food system work goes beyond a supporting or aligning role, and proactively initiates regime change. By highlighting the essential role of civil society organizations (CSOs), public institutions and many champions, this article proposes that more room must be made within the MLP for the explicit role of agency, champions and the implementation process itself. Indeed, this article argues that operationalization and implementation of the sociotechnical innovation – the daily practice – is deserving of both recognition and theory.

2. Materials and Methods

This article is based on 31 in-depth semi-structured interviews conducted in 2015. Administrators, chefs, and other staff at the two universities under analysis were interviewed, as well as farmers, distributors and processors who supply the universities. Interviews were also

conducted with staff from two civil society organizations central to the establishment of the Food For Life Catering Mark at the two universities – the Soil Association, and People and Planet, which describes itself as "the largest student network in Britain campaigning to end world poverty, defend human rights and protect the environment" ("About People & Planet | People & Planet,"" n.d.). In addition to the interviews, multiple data sources were used, including scholarly articles, web pages, reports, government documents, standards protocols and other operations material, as well as personal observations during tours, tastings and events.

There is a personal story behind the author's approach to information-gathering during qualitative interviews. First, the author is the founder and president for almost a decade of a Canadian civil society organization, Local Food Plus, which initiated a major procurement project at the University of Toronto featuring sustainable local food. Having wrestled herself with the cascade of operational challenges faced by interview subjects, she prompted interviewees for memories of their dealings of this oft-overlooked level of policy implementation. One example is the interview in this article with Food For Life Catering Mark Project Manager Jen Collins about sourcing free-range eggs (Collins, 2015). As a former practitioner, the author knows the complexity of egg supply chains and understood immediately why assessing the availability of free-range eggs posed a significant challenge. At a broader level, Catering Mark staff members were aware of the author's work as a practitioner in Canada. As a result, senior staff made themselves available for lengthy conversations, which they treated as exploratory discussions rather than scripted interviews.

Secondly, the author also worked for 15 years as a senior journalist and broadcaster with the Canadian Broadcasting Corporation (CBC). In the course of this work, she honed the skills of open-ended semi-structured interviews designed to draw people out of scripted or superficial

responses about formal policy decisions and to plumb the depths of insight and vivid details behind what happened. These interview techniques explored the lived lives of sustainability practitioners, and how their personal responses and insights influenced sustainable food practice. The resulting interviews reveal a lively sense of people rooted in an experience of food policy facing the test of implementation. A background of praxis in gathering information and analysis about sustainable food practice is valued by scholars in the field of methodology such as Morse, who recognizes the special need for qualitative researchers to bring "much knowledge about what they are observing or hearing, know and be able to link it to relevant literature, and be able to think conceptually and to link seemingly unconnected events, representations, and ideas" (Morse, 2008, p. 95).

3. Background

3.1 The Origins of the Food For Life Program

The Food for Life Catering Mark is closely linked with the Food For Life Program, a program led by the Soil Association that aims at "transforming food culture" in British schools to focus on health, sustainability and enjoyment (Orme et al., 2011). In 2003, the Soil Association produced a report entitled *Food For Life: healthy, local, organic school meals*, which focused on the poor quality of food – "muck off a truck" -- served in English schools (The Soil Association, 2003, p. 11). The report is a clarion call for change. It begins with this assertion: "For more than two decades, minimal regulation has meant that attractive, tasty and nutritious school meals made from quality ingredients have been sacrificed in favour of competition, convenience and cost" (The Soil Association, 2003, p. 3).

The report recommended that government develop and monitor standards for nutrition in primary school meals, and provide guidance and training for catering staff to meet targets of 30% organic food, 50% locally-sourced food, and 75% food prepared from unprocessed ingredients. In addition, the report called for a new food culture in schools, with specified curriculum changes so that children could learn where their food comes from and how it is produced and prepared. The report also included a call for an overhaul of the school food supply chain. "These changes will play a crucial part in helping to secure a sustainable future for British food and farming," the report concludes. "Above all, these changes are desperately urgent if we are to prevent the escalating, diet-related disease burden now threatening the well-being of an entire generation" (The Soil Association, 2003, p. 102).

This report is notable as an early example of a prominent organization identifying public food procurement as a critical tool in sustainability transition. The report is also prescient in its comprehensive integration of environmental health and cultural change, thereby opening the door to a wider analysis of the food system, beyond the particulars of organic certification. Such outreach also opened the door to a wider set of relationships, and flexibility in standards-setting – a decisive strategic decision, as will become clear later in this article.

The Food For Life Partnership was launched in 2007 with £16.9 million in multi-year funding from The Big Lottery Fund, "the largest distributor of National Lottery good cause funding" ("Big Lottery Fund - Food for Life," n.d.), an extraordinarily generous grant by international standards. The project explicitly recognized that issues such as obesity, chronic disease and climate change could not be addressed unless food culture was transformed, and individuals and communities regained food skills and knowledge. The partnership which emerged was a consortium of national charities, led by the Soil Association, conceived to

reconnect people with their food and "to revolutionise school meals, to ensure children can concentrate and achieve, and to inspire young people and their families to eat, cook and grow healthy and sustainable food" (Orme et al., 2011, p. 3). The program is based on a tiered award scheme that encourages schools to work towards bronze, silver and gold awards. Evaluation includes four sets of criteria: 1. Food leadership; 2. Food quality and provenance; 3. Food education; and 4. Food culture and community involvement.

The University of the West of England and Cardiff University were commissioned to provide an evaluation of the partnership. When the report was released in 2011, more than 3,000 schools had joined the program (Orme et al., 2011, p. 5). The evaluation results were impressive. They indicated increases in school meal uptake and fruit and vegetable consumption, as well as student involvement in gardening, cooking, visiting farms, and other experiential learning around food.

The program coincided with the publicity that celebrity chef Jamie Oliver brought to the poor quality of school meals in Britain. Jeanette Orrey, a "dinner lady" at a primary school in Nottinghamshire, is credited with inspiring Oliver to take up a school meal campaign. Orrey says the food she was being asked to serve was so vile that "none of my staff would eat the food. If we wouldn't eat it, why did we expect the children to eat it" (Orrey, 2015). In 2000, Orrey decided to start cooking from scratch with local whole ingredients. She "literally got into [her] car and went to see the farmers". The reaction from children and parents was enthusiastic, and Orrey went on to become one of the founders of the Food for Life Program. Today Orrey is the Soil Association's School Meals Policy Advisor, and a champion for ending food poverty in the UK.

An added benefit of the Food For Life Program has been its impact on local economies. In 2011, the New Economics Foundation issued a report which focused on the impact of the Food For Life Program in Nottinghamshire and Plymouth. The study reviews the positive impacts of the quality of food being served at school meals, but emphasized the significant impact on local economies, resulting from an increase in seasonal food procurement. The program yielded a return of more than £3 in social, economic and environmental value for every £1spent, the report says (Kersley & Knuutila, 2011, p. 3).

3.2 The Emergence of the Food For Life Catering Mark

It soon became clear that many school caterers needed guidance and resources on ways to transition their operations to meet the Food For Life Program goals – challenging goals which involved preparing food with more fresh, seasonal, local and organic ingredients, as well as sustainably-raised meat and fish that met animal welfare standards. In 2009, the Food For Life Catering Mark was launched to support this complex transition. This civil-society led procurement initiative, like the Food For Life Program itself, provides a ladder to move through bronze, silver and gold levels. The ladder is based on four principles: 1. Serve fresh food; 2. Source environmentally sustainable and ethical food; 3. Make healthy eating easy; and 4. Champion local food producers (The Soil Association, 2015). The standards are overseen by an autonomous Standards Committee housed at the Soil Association Charity. The third-party certification is managed by Soil Association Certification Ltd, a non-profit subsidiary of the charity, and financed through charges for inspections and licensing fees.

The bronze level is a fixed standard, with twelve compulsory elements covering a full gamut of requirements. The standards specify that at least 75% of dishes on the menu are freshly

prepared from unprocessed ingredients; that all meat, fish and eggs meet certain ethical and/or environmental standards; that no genetically modified organisms, transfats or artificial additives are used; that menus are seasonal and meet dietary and cultural needs; that free drinking water is available; that food safety protocols are in place; that staff receive training in how to prepare meals made from fresh foods; and that information about the food's provenance is on display (The Soil Association, 2015). There is no requirement to source any certified organic food at the entry (bronze) level, recognition that the work of implementing the Catering Mark was a major step for most caterers. As well, because of European Union regulations, there is no specific requirement to use local food, although Project Manager Jen Collins says an increase in local food is often an outcome when institutions purchase more fresh and seasonal food (Collins, 2015).

The silver and gold levels awards are points-based. Silver and gold caterers must meet all of the bronze requirements, and also go beyond these standards in three categories, including 1. Ethical and environmentally friendly food; 2. Making healthy eating easy; and 3. Championing local producers. Caterers can score extra points by encouraging lower meat consumption, minimizing salt, offering more fruit-based desserts, and related public health priorities. In addition, they must spend at least 5% of their food budget on organic produce to achieve the silver mark, and 15% to achieve gold.

There is also a Catering Mark Supplier Scheme. According to Suzi Shingler, Catering Mark Relationship Manager, the idea behind the Supplier Scheme is to make it easier for caterers to access food that meets Catering Mark standards and for suppliers who meet Catering Mark standards to take advantage of sales opportunities opened by the Catering Mark (Shingler, 2015). A designated staff member at the Soil Association provides support to these suppliers including

webinars, advice, training and marketing materials. There are currently more than 170 members of the Catering Mark Supplier Scheme. According to the Supplier Scheme webpage, members have reported up to 20% increases in sales after joining the scheme ("Great for suppliers and caterers," n.d.). Member companies supply a wide range of products including meat, dairy, eggs and produce, as well as an assortment of products as varied as stocks, marinades, flour, sugar, tuna, pesto, oats, pizza dough, granola, tofu and herbs and spices.

The distinguishing feature of the Catering Mark is its provision of what food scholar Kevin Morgan would call a "big tent where there is room for everybody" -- something Morgan deems essential if food is to exert its real power (Morgan, 2014, p. 255). This is achieved by recognizing a number of existing quality, sustainability, animal welfare and farm assurance (traceability) schemes in the UK, including Red Tractor Assurance, Freedom Food, Fairtrade, Organic and Marine Stewardship Council. Incorporating existing certifications and farm assurance schemes helped bring the conventional agricultural community onboard as allies, according to Policy Officer Rob Percival (Percival, 2015). As well, according to Project Manager Jen Collins, "one of the strengths of the Catering Mark is that it brings all of these best practice standards together" (Collins, 2015). However, Collins emphasizes that the Catering Mark is menu-based, with a focus on health and culture. For this reason, it does not address issues such as waste, energy or wages. Collins says caterers looking for guidance in these areas are directed toward expert organizations in the UK already working on these issues.

For the Soil Association, which runs the UK's largest organic certification program, the decision to develop a catering mark that did not insist on organic food at the entry level provoked turmoil within the organization, especially after the release of *The Road to 2020* in 2011, which stressed the commitment to "start where people are" (The Soil Association, 2011). This internal

conflict eventually led to resignations of several Board Members (Thomas, 2014; Vaughan, 2014). Policy Officer Rob Percival's words, echoed in several other interviews, emphasize that the Catering Mark is designed as a ladder for engagement, which deliberately reduces barriers to entry. Percival says "starting where people are" means "you draw them into a framework of continuous improvement. Organic may be the gold standard, but this is where people begin" (Percival, 2015). This might mean starting by shifting away from highly-processed food, or developing a direct relationship with a food producer. Project Manager Jen Collins says even achieving the bronze standard is a big leap for many caterers. "We see caterers going from a 35% freshly-prepared menu to 75%. It's a real change in how they're making the food, the sort of practices they're putting into play – it's completely different", she says. Collins uses the metaphor of a runner. "When you start running, you don't enter a marathon the week after you buy your first trainers. You have to work your way up and build your fitness. It's similar with the Catering Mark. It's making those changes and realizing that you can do it. That's why the bronze, silver, gold approach works so well" (Collins, 2015).

The development of the Catering Mark can be seen as an indication of the shrewdness and growing maturity of the Soil Association. The organization had come to the point where staff knew that they could no longer just proclaim goals or state a policy. They understood that they were breaking into a hegemonic food regime, and that they needed to develop momentum that could carry policy along an extended supply chain, set with many tripwires, in order to win ground. As *The Road to 2020* states, "Food For Life has demonstrated that 'starting where people are' and providing easy first steps to engage with people can be incredibly powerful. We need to listen to people, understand where they are coming from and find creative ways to engage them in our work and our ideas" (The Soil Association, 2011, p. 19).

4. Case Studies

Forty universities currently hold the Catering Mark for some aspect of their food offerings – be it a small campus pub, or a large full-service cafeteria. According to the Catering Mark website, 32,000 certified meals are served in UK universities each workday "Soil Association," n.d.). The case studies profiled here represent two types of university catering -- in-house (self-catered), as is the case with Nottingham Trent University; and contracted foodservice provider, as is the case with University of the Arts London, which contracts with BaxterStorey. BaxterStorey is a UK-owned catering company founded in 2004 with a commitment to fresh, local seasonal food, according to Operations Manager John Wood (Wood, 2015). Nottingham Trent was the first university in the UK to achieve the silver award, and consistently scores in the top five on the People and Planet University League table of university sustainability. University of the Arts London was the first university in the UK to achieve the gold award.

4.1 Nottingham Trent University

Nottingham Trent University (NTU) is located in the heart of the Midlands city of Nottingham, a community of about 500,000, surrounded by fertile farmland and quaint villages. The University does all its catering in-house, serving about 2500 meals each day, 1000 of which are certified by the Food For Life Catering Mark. Ivan Hopkins, the former Executive Chef who now heads Catering and Hospitality, has been the driving force behind the implementation of the Catering Mark at NTU.

"We just can't do that," was Hopkins' initial reaction, after speaking with a local hospital manager who used the Catering Mark. "But then I sat and thought about it, and I realized that we

were already doing many of the things required by the Catering Mark, but we weren't communicating it to customers. It seemed a shame not to get recognition for it" (Hopkins, 2015). Hopkins says the goals of the Catering Mark were akin to his own views that "it never made any sense to me to put asparagus on a menu in December".

Hopkins quickly found an ally in Grant Anderson, NTU's Environment Manager, who recognized that achieving the Catering Mark would mean extra points for NTU's ranking on the People and Planet University League table. Hopkins says the university takes great pride in consistently placing in the top five of the University League, and anything that could help it stay at the top was taken seriously. From his original skepticism, Hopkins moved to a bold decision to go for both the bronze and silver awards at the same time. In 2010, after a grueling seven-hour inspection, NTU became the first university to achieve the silver award. A recent rise in tuition fees across the UK has made competition for students more intense, and Hopkins believes the Catering Mark gives NTU an edge(Hopkins, 2015) (Hopkins, 2015).

Hopkins was also highly conscious of the need to create a new and different supply chain. To achieve his goals, he started to buy more food directly, rather than through a university bulk-buying consortium. He identified specific products that could come from local farmers, and worked with a local produce distribution company, Millside Barrowcliffe, to purchase local potatoes, carrots, strawberries, and so on. As well, he sources Fairtrade and organic coffee, organic eggs, milk and yogurt, and Red Tractor Assured meat from Owen Taylor and Sons Ltd, a regional butcher.

Using more fresh and seasonal products has meant re-thinking the menu. For example, Hopkins recalls being approached by a company offering to supply a burrito "kit", complete with frozen peppers and onions, frozen anonymous beef and chicken and processed salsa. Instead,

Hopkins replicated the kit with products that met Catering Mark criteria, including locally-sourced meat, fresh local vegetables and homemade salsa. "We are trying to meet high street trends," Hopkins says. "We can make a superior product by replicating these trends using the Food For Life Catering Mark guidelines" (Hopkins, 2015).

Hopkins made a serious commitment to using the Catering Mark, and he provides opportunities to educate students about food issues. Besides colourful posters and website information, "every day the staff get a briefing about all the dishes on the menu, so that they will know what's local and how to talk about the products with students. The best form of communication is person-to-person. If you're making a selection, and someone tells you that those carrots were grown near Newark just up the road, that makes a difference" (Hopkins, 2015). In addition, Hopkins offers a staff training package every year, and takes staff out to visit local suppliers. The author's interviews with chefs and serving staff confirmed these statements. Staff were knowledgeable about the Catering Mark, and proud and enthusiastic to share their knowledge (Barnaby, 2015; Chatfield, 2015).

Hopkins acknowledges that maintaining the Catering Mark takes work. There is a significant increase in paperwork. As well, the human side of the work, developing relationships with suppliers and educating staff and students, is time-consuming. However, he is convinced that NTU is on the right track, and he readily speaks with other universities considering the program. He says students are responding well, staff are better informed, and "I could quite easily take the Food For Life Catering Award certificate off the wall, but it wouldn't stop carrying on. The certificate is now a bonus for us really" (Hopkins, 2015).

The food supply chain is generally understood as unidirectional, a one-way trip moving from farm to table. Hopkins, in effect, created a two-way supply chain, where he works with

suppliers to manage and develop new sources of products. This requires collaboration every step of the way, and a new way of thinking about the relationships involved in the food system. As a result, the work that has gone into achieving the Food For Life Catering Mark at NTU has moved the sustainability needle not just on campus, but backwards, among NTU's food suppliers as well. It has not always been easy. Hopkins says he spent a lot of time nurturing a relationship with a small local egg producer, who eventually closed her doors. But other relationships are thriving. Suppliers have made significant changes to their product mix, and committed to farm assurance schemes, in order to hold onto, or gain, contracts with NTU.

Anthony Millward is the Managing Director of Millside Barrowcliffe in Nottingham. His medium-sized company, with 120 employees, sources and distributes fresh produce, and processes and vacuum-packs fresh cut vegetables. He's "excited and proud for Ivan for what he has achieved – he's done it for everyone" (Millward, 2015). Millward says he shifted his buying practices after starting to work with Hopkins, and now sources up to 40% of his produce from local farmers, which he defines as farms located in a 15-mile radius around Nottingham. He is especially proud of graduation days at NTU when 20,000 students and family members are fed strawberries and sparkling wine over a five-day period. "The berries are picked at 7 am. We process them in the morning, and they are at the university for graduation in the afternoon" (Millward, 2015). This is the pride of a champion and illustrates that agency exists at all levels of the food chain.

John Lupton is the Sales and Marketing Manager at Owen Taylor and Sons Family Butcher, located in Derbyshire, less than 20 miles away from NTU. The firm was established in 1922, and currently has 140 employees, who prepare beef, pork, lamb and poultry to customer specifications for the catering trade. Lupton sees universities as a valuable market with large

contracts that provide the company with financial stability, adding "If they all go onto a six-ounce rump steak, we'll be cutting something like three thousand six-ounce rump steaks for delivery in one day, and that's just one meal for that day" (Lupton, 2015). As well, because universities are closed during December, the university contract permits Owen Taylor to focus on other clients during the holiday season and thereby diversify the client mix.

Lupton says Owen Taylor has been approached to sell to major supermarkets, but has declined because "They end up owning your business. It's too many eggs in one basket. If they drop you, you have no business. But it's a very difficult decision to make because it's lucrative" (Lupton, 2015). Lupton calls Owen Taylor a "farm to plate" operation, which focuses on buying live animals from local farms (within a 40-mile radius), and having them slaughtered in a local abattoir. The company then cuts the meat to order, and sells it to local chefs at restaurants, hotels, hospitals, universities and schools. They serve up to 700 individual clients at any one time. Lupton says this has preserved skilled jobs in a region of the country that has experienced a significant economic decline after the closure of the coal mines.

Owen Taylor supplies meat to both NTU and the University of Nottingham, both of which use the Food For Life Catering Mark. Lupton says the company had been supplying NTU before it went for Catering Mark certification, and the fact that all of the products meet Red Tractor standards ensured that they could continue the relationship with NTU. He says university clients are a growing part of the business, and meeting Red Tractor standards has made it possible to tender for contracts with institutions using the Food For Life Catering Mark. He says the extra work and cost of certification are worthwhile because certification is increasingly becoming a requirement of institutional contracts.

4.2 University of the Arts London

University of the Arts London (UAL) is a multi-campus university with 26,000 students in the heart of London. Considered one of the world's top five universities for art and design (QS World University Rankings, 2016), UAL brings together six colleges, which feature visual art, design, fashion, communication and performing art, under one umbrella. Catering for 19 food outlets over the six locations is overseen by UAL's Head of Retail and Catering, Alastair Johns, and contracted to BaxterStorey, a domestic caterer with a focus on sustainability and provenance. In May 2014, UAL became the first university to achieve the gold Catering Mark.

The decision to go for the gold Catering Mark was spearheaded by Johns. Johns and his colleague Ian Lane, UAL's Head of Sustainability, positioned the changeover as part of an overall sustainability strategy for the university. This attitude is embodied in UAL's Sustainability Food Policy, authored by Johns, which begins with the statement that "The University will create a culture of social and environmental awareness in order to develop and integrate sustainable and ethical policies throughout every aspect of our life and work". The policy goes on to say that "Healthier, ethically sourced, more sustainable food may help to encourage lifestyle changes both inside and outside the university, leading to a positive impact on health and well-being, as well as the environment" ("Sustainability-Food-Policy-v2.pdf," n.d.). Johns says one of the challenges was to convince the university to spend a little more on catering (£60,000 in a £multi-million total budget). In addition, there was a 1% increase in prices charged at food outlets. Johns says students have reacted with enthusiasm, and the cafeterias are full every day.

The contract for catering was won by BaxterStorey, despite the fact that their bid was the highest, because Johns was confident that only an independent company with a reputation for

local, seasonal and fresh food could fulfill the university's mandate. Johns was also confident that BaxterStorey could be partners in implementing the program, rather than resisting it, essential to a collaborative relationship. BaxterStorey is the largest independent caterer in the UK, with several hundred clients, including other universities. Relative to the transnational foodservice companies, BaxterStorey is a midsized firm. However, within the UK market, they wield enough buying power that they have been able to influence their own supply chain to ensure that they can source sustainable products from UK suppliers, an important example of how university policy can diffuse change throughout the food chain.

Sustainable and organic meats have been the biggest challenge, according to Operations Manager John Wood. Bacon, in particular, was hard to find because low-priced bacon is widely available from other parts of the EU. Wood recalls that "we went to a farmer who could meet Catering Mark standards, and told him we wanted all his pork, to turn it into bacon." Wood says chicken was another challenge. "Free-range chicken is never really commercial, and rare to see within our business, because it's hugely expensive," he says. "But we went to the farmer, and we said 'we are ready to buy 800-1000 chicken legs a week, if you can supply them'" (Wood, 2015). Wood claims BaxterStorey has been able to create more sustainable supply chains for other products as well, citing free-range eggs and frozen peas as two examples. These are instances of how high-volume orders can affect the willingness of producers to change both their price points and their product quality level, a vivid example of how problem solving and collaboration can take place in a more sustainable system.

Johns says they have dealt with additional costs of higher quality meat by reducing the quantity of meat served. He credits Chef Garret Lynch for his enthusiasm and commitment, and his creativity in menu planning. "We're on the same wavelength, and we want the same results",

says Johns. Testifying to the importance of champions, Johns declares "you can easily get chefs who don't believe in it, and the whole thing will come to a shuddering halt. You need someone of Garret's level to actually drive through what we want driven through" (Johns, 2015).

Lynch understood two operational requirements for more sustainable food systems. One of his innovations was to simplify the menu offerings at smaller outlets with limited kitchen facilities. They serve just two options a day, one vegetarian and one meat-based. This seemingly simple measure has significant impacts. The limited menu controls cost and reduces waste, and it gives food staff time to prepare meals from scratch. Menus with many offerings usually rely on "heat and eat" prepared foods brought in by distributors. Limiting the menu is an operational necessity in the move to more fresh, seasonal and whole foods, an example of how seemingly minor foodservice changes can become pivotal to important changes further down the food chain.

Lynch also recognized the importance of educating staff so that they, in turn, can educate students. Like Ivan Hopkins at NTU, Lynch ensures that staff at all the outlets are briefed every day. He says students are asking more questions about the food, and he wants his staff to have answers (Lynch, 2015). This is a reflection of the change in relationships as the system becomes more sustainable, and catering increasingly requires relationship- and knowledge-based skills, rather commodity-handling ones.

Ian Lane, UAL's Head of Sustainability, credits Johns for initiating and driving the change at UAL, but stresses that champions were necessary at every level for the university to achieve the gold Catering Mark. The Vice Chancellor and the chair of the university's Environment Board, as well as operational staff, had to be onside before the go-ahead was given. Lane believes that the Catering Mark repositions the place of food in the university as a sort of

"Trojan horse" or wedge for other sustainability initiatives. "Usually universities think about energy or waste as areas for addressing sustainability and corporate social responsibility," Lane says. "But food is a great way to keep sustainability front and centre. When you're presented with a complex dynamic challenge like sustainability, I think you need to provide confidence that what you're doing is the right thing and can be easily achieved. Compared to a solar panel which you might see once and forget about, food is your most obvious opportunity to showcase sustainability because you eat food every day" (Lane, 2015). To this end, Johns ensures that the university's sustainable food achievements are front and centre, with plenty of high profile signage explaining why the university is committed to sustainability in food, how the gold Catering Mark was achieved, and exactly what ingredients are used in each dish.

Lane acknowledges that UAL hopes to move up to the top three universities in the People and Planet University League this year, and that "the university is quite keen to push itself up on that agenda". He says "everything we do under the banner of sustainability has to meet the needs of the university, but also deliver a reputational increase" (Lane, 2015). However, Johns insists that going for the gold Catering Mark was not just about ticking off a box, but that "we did it because we fundamentally believe in it." He argues that the gold Catering Mark helps them to achieve other goals such as contributing to local economic development and health. "I want to ensure that students have the opportunity to eat decent, healthy food", he says. "When they leave, they may take some of that with them". Johns intuitively understands the multifunctional potential of food when he adds that "offering decent hot food is also about the community and the social space – it's an important part of university life" (Johns, 2015).

An important supplier of vegetables and fruit that ends up in the meals served at UAL is Chegworth Valley, a Kent County organic farm and producer of award-winning farm-pressed

apple and fruit juices. The farm is less than 35 miles southeast of London, in a region known as the "Garden of England". The Deme family farms about 300 acres of fruit as well as vegetables and greens – more than 70 different items in all -- which they wholesale to independent stores, restaurants, hotels and caterers for institutional settings, including BaxterStorey. The Demes also run stalls at several London farmers' markets, three shops in London which feature organic and local products, and a home delivery box scheme which makes daily deliveries throughout London and Kent. The company epitomizes the proactive energy that midsize entrepreneurial firms bring to the food system and the role of agency in both the development and diffusion of sustainable practices.

Chegworth Valley Farm features heritage apple varieties, many of which are pressed into juice on-site, and often mixed with berries and vegetables for an array of flavours. Although the processing operation is tucked into a small corner of one of the farm buildings, it produces two million bottles of juice a year, and earns about half of the farm revenue, according to Marketing Manager Vikki Wright (Wright, 2015). Wright says hoop houses allow them to extend the growing season. At the height of the season, the farm employs 80 people. The farm is certified organic by the Soil Association, and is a member of the Catering Mark Supplier Scheme. This means that caterers working toward the gold award can buy products from Chegworth Valley Farm with full confidence that all products are Catering Mark compliant.

5. Applying the Multi-Level Perspective

The MLP is a sociotechnical approach to understanding large-scale innovations in both production and consumption associated with the sustainability transition (A. Smith et al., 2010). As Smith et al. write, the MLP has a certain allure because "it provides a relatively straight-

forward way of ordering and simplifying the analysis of complex, large-scale structural transformations in production and consumption demanded by the normative goal of sustainable development" (A. Smith et al., 2010, p. 441). In effect, the MLP offers a language and typology for analyzing a wide array of transitions.

The key components of the MLP analysis are the niche, the regime and the landscape. Niches represent the sites where innovations are nested. The regime represents the dominant sociotechnical system. Both the niche and the regime are located within the landscape, the macro-level context of social and physical factors. The landscape is the broader context – social, technical and environmental – which can influence relationships between niches and regimes. The landscape level represents the material context of society (how cities, roads, energy infrastructure, institutions, etc. are configured), as well as a mix of additional factors such as climate change, wars, oil prices, water availability, emigration, and cultural values (Geels, 2002). The interaction of niches, regimes and landscape come into play during the sustainability transition.

For purposes of this article, the niche is the Food For Life Catering Mark, and the regime is the industrial food system. The post-1980s industrial food system is a global force dominated by transnational corporations and their subsidiaries – what McMichael has described as the "third food regime" (McMichael, 2005). The landscape is British traditions, institutions and discourses.

5.1 Enriching the Conceptualization of the Landscape – The Importance of the Public Agenda

This article contends that the concept of the landscape in the MLP is a major contribution to understanding food system transitions, because the broad landscape has a telling impact on innovation in its own right, quite apart from the food regime. The argument here is that five

factors in the UK landscape "set the stage" for the development of the Food For Life Catering Mark. The first of these is the policy environment that prevailed at the time. The second is a forceful green movement among university students. The third is a long-established and well-funded lead civil society organization that pre-dated the rise of the wider food and sustainability movement. The fourth is the existence of a national school meal program at the primary and secondary level, a feature of UK society since the end of World War II which underwent a significant decline in food quality and nutrition as a result of government demands for cost reductions (The Soil Association, 2003). The fifth is the pre-existence of recognized food production standards relating to sustainability and traceability. The combination of these five factors brought the campaign for changing university meals toward a national discourse and galvanized sufficient attention to get action. In other words, the landscape allowed the Catering Mark to gain a niche, and break from the confines of the typically marginalized constituency for healthy and sustainable food issues.

5.1.1 The Policy Environment

There is currently a "warm policy environment" in the UK around issues relating to health and environment, says Rob Percival, Policy Officer at the Soil Association (Percival, 2015). Several elements unique to the UK contribute to this warm policy environment. To begin with, there is only one national government to deal with on issues related to food and the environment, rather than the fragmented mix of national and provincial/state jurisdictions found in North America.

Secondly, environmentally-based concerns about food have an automatic legitimacy in the UK because the government department in charge of food policy goes by the name of

DEFRA – the Department for Environment, Food and Rural Affairs. This is in contrast with North American agriculture departments which focus on agriculture as a commodity, and do not even mention the environment (for e.g. the USDA – United States Department of Agriculture and OMAFRA – Ontario Ministry of Agriculture, Food and Rural Affairs). As a result of the embedded mandate and duty of the UK's DEFRA, the Soil Association is regularly invited to participate in stakeholder consultations, and to air issues related to the environment. This is an avenue of engagement not available to North American environmental leaders. Consequently, the impact of the Food For Life Catering Mark can be found in several government documents providing guidelines for procurement in schools, the hospital sector and the public sector generally, all of which reference the Catering Mark as a tool to support good procurement practices (DEFRA, 2014; Department of Health, 2016; “School Food Standards - School Food Plan,” n.d.).

Percival also gives credit to organizations such as Sustain: The Alliance for Better Food and Farming, another civil society organization that advocates for better food policy. Prior to the establishment of the Catering Mark, Sustain led a high-profile national campaign to improve school meals. The existence of such strong civil society organizations is a significant factor in the landscape affecting sustainable food system development.

5.1.2 A Strong Student Movement

Another civil society organization that set the stage for university interest in the Catering Mark is People and Planet, a network of university student groups, which campaigns to "end world poverty, defend human rights and protect the environment" ("About People & Planet |

People & Planet," n.d.). Like Oxfam before it, People and Planet developed in the 1970s out of student activism at Oxford University. Today, there are chapters at universities across the UK People and Planet is supported by a permanent staff, albeit small, still based in Oxford.

The organization originally focused on global campaigns, such as sweatshops and climate change. However, in 2003, People and Planet decided to launch a domestic campaign to green university campuses as a response to climate change. Thus was born the University League (formerly the Green League), which rates all universities in the UK for environmental and ethical performance, including food procurement. Hannah Smith, the Co-Director of Campaigns for People and Planet, says the University League enjoyed immediate uptake. "The university sector responded very fast and very obviously", she said. "Some universities really threw resources into achieving." (H. Smith, 2015).

The University League was launched in 2007, with rankings of every publically-funded institution of higher education in the UK. The first table was published in the *Times Higher Education* supplement. A partnership with *The Guardian* newspaper was later established. Publication in two of the most influential newspapers in the English-speaking world attests to the impact and reach of this student organization, and its ability to shape a national discourse linking ethical and environmental issues with universities. The Food For Life Catering Mark is referenced in the University League and provides the basis for a positive rating of the food component.

The existence of an environmentally-friendly student movement with society-wide impact and a commitment to sustainable food systems has been a major landscape factor in encouraging universities to introduce the Food For Life Catering Mark. Evidence from many

interviews confirms that the desire to move up in the rankings of the People and Planet University League was an important pressure point for advocates of the Catering Mark.

5.1.3 A Long-Established and Well-Funded Lead Civil Society Organization

It is also a significant landscape factor that the Catering Mark is an initiative of the Soil Association, a highly capable and well-connected civil society organization focused on food and health in the UK Founded in 1946, the Soil Association pre-dates the current food and sustainability movements by several decades. Although the organization is well known for its work as an organic certifier, it is much more than a certifying body or a trade organization. It has a history of campaigning on high profile issues related to health and food quality, such as the overuse of antibiotics in livestock farming. According to the Soil Association Policy Director, Peter Melchett, it was "as much a health charity concerned about the quality of the food that the poorest people were having to eat as a farming charity when it started…and actually, the work we've done on school meals is probably closest to some of the earliest work the Soil Association did" (Melchett, 2015).

The fact that the Soil Association was established decades before the rise of the current food movement, has secure funding, and can attract staff of the calibre of Peter Melchett (a former Labour Government Minister in the Departments of Environment, Industry and Northern Ireland from 1974-1979, the former Director of Greenpeace UK from 1985-2000, and a member of the House of Lords) gives its work considerable weight.

5.1.4. A National School Meal Program

The UK's national school meal program is another important landscape factor. Introduced shortly after World War II, it has become a fixture of British society, and enjoys popular consensus. The national school meal program resonates with the general public because it represents society's duty of care for its most endearing and vulnerable citizens: children. One indication of its stature in the British psyche is the universal awareness of celebrity chef Jamie Oliver's criticism and call to action. The existence of a highly-valued national school meal program ensured that there was a space in the national discourse about school meal quality that could not be dismissed as a marginal concern of a narrow interest group. The limelight created by general discontent with school meal quality was a major background factor behind the establishment of the Food For Life Program, which led to the Food For Life Catering Mark.

5.1.5 The Pre-existence of Recognized Production Standards

The existence in the UK of a number of production standards for quality, sustainability, animal welfare and farm assurance (Red Tractor Assurance, Freedom Food, Fairtrade, Organic and Marine Stewardship Council) meant that those writing the Catering Mark standards did not have to start from scratch, but were able to draw on expertise from a variety of sources. This reduced research costs and added legitimacy to the standards. In addition, incorporating existing standards was a way to engage and build bridges with mainstream and other organizations that might not have been immediately supportive of the Soil Association's goals. Pre-existing production standards are a landscape factor because they created conditions for cooperation and better acceptance of the Catering Mark scheme.

5.2 Creating Space for Innovation through Conflict at the Landscape Level

The MLP's attention to landscape helps us appreciate variables capable of generating an environment conducive to food reforms, independent of both the regime and the niche. Landscape factors are especially critical in the food sector. Such is the power of global corporate control of the food system that niche challenges to the regime may not be viable unless space is created by conflict within the landscape. This is because transnational food corporations drive prices down by using their enormous aggregate purchasing power, and by externalizing social and environmental costs of cheap food (Appleby et al., 2003; Clapp & Fuchs, 2009; Constance, Hendrickson, Howard, & Heffernan, 2014; Howard, 2009; Lyson & Raymer, 2000; Martin & Andrée, 2012; O'Kane, 2011; Roberts, 2013).

Destabilization in the food landscape is critical for opening up spaces for niches. For this reason, it is essential to look beyond the food regime to the wider food landscape in order to understand how sustainability transition gained a toehold in a monopoly-dominated food system. In other words, if the Food For Life Catering Mark did not have a secure launching pad in public discourse, it was unlikely to gain a toehold in a university niche. This dependence of the niche on landscape factors may be especially pronounced in the food sector, where corporate power is so concentrated, and price and convenience are such defining competitive advantages. However, if the MLP is to be applied to food, it must take such factors into account.

Geels et al. acknowledge that the transition process is "open, uncertain and non-linear" (Geels & Verhees, 2011, p. 910). Elsen et al. refer to "transitions in the making" where "the initial impulse for change consists of normative contestation from regime outsiders" (Elzen, Geels, Leeuwis, & van Mierlo, 2011, p. 263). This means that in some types of transitions, sustainability being a case in point, the innovation process faces a rocky road, often requiring

conflict and mobilization. Geels himself anticipates this in recent radical amendments to the MLP (Geels, 2014), in an argument which supports the analysis presented here.

In earlier MLP iterations, Geels regards the interaction among levels as an "alignment process" (Geels & Verhees, 2011, p. 910) and argues that "increases in normative pressure are likely to have more effect on transitions if they coincide with and can become linked to other developments, leading to a particular 'package' that can be pushed through" (Geels & Verhees, 2011, p. 910). He summarizes the transition process this way: "niche-innovations build up internal momentum (through learning processes, price/performance improvements, and support from powerful groups); changes at the landscape level create pressure on the regime; and destabilization of the regime creates windows of opportunity for the diffusion of niche-innovations. The alignment of these processes enables the breakthrough of 'green' innovations in mainstream markets where they struggle with the existing regime on multiple dimensions ("economic, technical, political cultural, infrastructural" (Geels, 2014, p. 3). But Geels later goes on to critique his own conceptualization of alignment as minimizing the role of power and politics, and not recognizing that regime actors may actively resist transition by preventing the formation of effective niches.

The incumbent food regime is convenient and cheap -- two significant advantages for institutions. The offering of the global foodservice corporations includes a turn-key operation for institutional clients. This means that food can be designated an ancillary service to be offloaded to one of the global corporations. The president of the university doesn't have to worry about what students are eating, chefs don't have to worry about the supply chain and the availability of food, food safety criteria will be met, and prices will be acceptable. Unless there is a new way to

talk about food, what Morgan and Sonnino call a "new food equation" (Morgan & Sonnino, 2010), the old way will prevail because it is simply easier.

For a different paradigm of foodservice to take hold, there must be appreciation for the multifunctionality of food (Blay-Palmer, 2012), and its ability to address the landscape-related factors bearing on health, economic, environmental, social, cultural and reputational goals of the institution. Innovations such as the Food For Life Catering Mark become more viable when universities understand that these innovations will provide a competitive advantage on many fronts, sufficient to compensate for losses in convenience and price.

5.3 Enriching the Conceptualization of the Niche: the Role of Champions

A dominant element of the experience of introducing the Food For Life Catering Mark at Nottingham Trent University and University of the Arts London was the central role played by individual champions. Champions, or change agents, embraced the cause, became highly effective advocates, and went beyond their job requirements to see it through. Introducing the Food For Life Catering Mark meant more work, more cost, more intentionality, more engagement, more risk and more going beyond job definitions on the part of many champions at many levels of the institution, including among suppliers. Yet champions came forward. The MLP can be enriched by recognizing that niches are actually created by human agency. Human agency must be foregrounded in this analysis. Agency in the food sector takes a specific form: the champion or change agent who drives operationalization.

This article supports a new formulation of the relationship between the niche and the regime, arguing that values-based innovation in the food sector is disruptive and inherently involves conflict. Innovators construct new pathways. In other words, the change process around

sustainable and local food is not primarily about alignment, but about contestation, which requires proactive human agency. It is not simply a matter of harmonization in the adoption of new standards. Rather it is an active and on-going process of contestation, which requires skilled, intentional and proactive human agency.

A review of the history of the Food For Life Catering Mark confirms that it is not only the head of the university who must be on side, but also the head chef, who is willing to turn down the benefits of a turn-key operation and put time and energy into reconstructing a different supply chain. There must also be buy-in from individuals all along the chain. These might include anyone from the head of sustainability to the serving staff, as well as distributors, processors and farmers.

To appreciate the importance of the Soil Association's development of the Catering Mark, it must be recognized that the benefits gained from achieving the Catering Mark are distributive, not direct. Unlike the energy sector, where building insulation leads to direct reductions in energy costs and a calculable return on investment, the benefits of a more sustainable food system are diffused in many ways and directions. These benefits might include a healthier student population, more local jobs, a healthier environment, a stronger food culture and a favourable reputation for the institution. However, few of these benefits can be tracked directly to a balance sheet that delivers exclusive dividends to a specific person or department, the syndrome creating a "collective action failure", as outlined in the political science classic, *The Logic of Collective Action: Public Goods and the Theory of Groups* (Olson, 1965). Far from creating exclusive benefits for caterers, costs and workload are likely to rise. Therefore, there must be champions willing to fight for the principle of sustainability transition. This highlights the champion role of the lead civil society organization, the Soil Association, which had the

creativity, the insight, the commitment, the funding and the capacity to develop and carry the Food For Life Program and the Food For Life Catering Mark.

Besides initiating the sustainability transition, champions ensure its continuation. As Hannah Smith, Co-Director of Campaigns for People and Planet, notes, "the whole sustainability agenda is still vulnerable, still not embedded enough in the higher education sector, still precarious, still dependent on champions". Smith goes on to argue that "when there are cuts to funding, or when the government is not encouraging best practice in this area, we see it disappear from institutions. Where it doesn't disappear and continues to evolve in a positive way, even without those drivers, it's because there are champions at that university" (H. Smith, 2015).

These observations suggest that sustainability requires a driver willing and able to withstand pushback from the incumbent regime. Sustainability innovations such as the Food For Life Catering Mark are "disruptive innovations" (Christensen, 2003) which disrupt the existing business model and come from the outside. Innovations such as the Food For Life Catering Mark offer "a different package of attributes valued only in emerging markets remote from, and unimportant to, the mainstream" (Christensen, 2003, p. 16), and threaten privilege in the existing sociotechnical regime, a defining precondition of disruptive innovation.

6. Conclusions

Data collected for this article indicate that sustainability transition in the food sector is complex, difficult, labour-intensive and detail-rich. Recognizing this reality, this article proposes that operationalization and implementation of the sustainability transition must themselves be problematized and theorized. The same case can be made for understanding and integrating the role of the champions who manage the transition, from advocacy campaigns to implementation.

Close attention to operational detail in institutional food procurement can enrich the understanding of the logistics behind the dominant food system, as well as the challenges and barriers facing sustainability transition and the requirements of leadership. To adapt sustainability transition theory to the food industry, we must appreciate that the food sector is a sector of relentless deadlines. The food itself is perishable, and the customers demand immediate service. There is not much space for dry runs and dress rehearsals. Consequently, those leading change efforts have to think through and plan for hundreds of details. Practitioner-champions are fundamental sources of information about this, and studying their experience expands our understanding of the transition journey.

Appreciating implementation is especially important when analyzing sustainability transitions that involve continuous improvement. The complexity of this is not readily grasped by consumers or food policy analysts, few of whom understand the intricacies of logistical decisions. The Food For Life Catering Mark is a case study of the role of continuous improvement in the sustainability transition. Changes that make the certification more difficult to attain cannot be made lightly. If the infrastructure is not there, the whole program can unravel. As an example, consider the effort of the Food For Life Catering Mark team to include free-range eggs as a new requirement at the bronze level. Project Manager Jen Collins says before making this seemingly simple change, it was necessary to find out if an adequate supply of free-range eggs were available in the UK Specifically, they needed to know if both shell eggs and liquid eggs (for making large quantities of scrambled eggs and omelettes, for example) existed in adequate quantity. To do this, the Catering Mark team ran a public consultation and consulted with the egg industry and caterers using the Catering Mark. In order to accommodate concerns raised about cost, and availability, Collins says the Soil Association decided to give caterers an

18-month implementation period (Collins, 2015). Food practitioners learn through such experiences not to count their chickens before they are hatched!

On the surface, the Food For Life Catering Mark represents a "disruptive innovation" to the incumbent global food regime. By requiring freshly-prepared foods with seasonal ingredients, it challenges the global food regime that relies on volume purchases of standardized low-cost food without provenance. However, as this article points out, the university staff applying the Catering Mark are doing more than disrupting the existing food regime. They are also consciously constructing new supply chain mechanisms for a new regime, by pushing back through the supply chain to find the products and build the infrastructure they need. This detailed and complex process is at the heart of implementation, and is so central to sustainability transition that it deserves both recognition and deeper understanding. The Food For Life Catering Mark is a leading example of how this process can be managed.

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Conflicts of Interest

The author declares no conflict of interest.

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CHAPTER 5

INVITED ARTICLE. This paper has been submitted to Canadian Food Studies/La revue canadienne des études sur l'alimentation for a Special Issue on Food Procurement. I have been asked to be a guest co-editor for this issue.

Agency and Operationalization in Local and Sustainable Food Systems: The Case of Local Food Plus

1. 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 local sustainable food for selected residence cafeterias and retail outlets at its main St. George campus (Local Food Plus, 2006b; Thring, 2006). The launch was a high profile event, attended by 500 people and well-covered in the media (Alter, 2006; Girard, 2006; Roberts, 2006). The initiative arose from a partnership between the U of T and a newly-minted Canadian civil society organization – Local Food Plus (LFP)[2]. The LFP-U of T partnership was the first local sustainable food program at a world class university in Canada[3], and marked the first time that "public sector", "local" and "sustainable" were brought together in a single package around food. The story and thinking behind this achievement are reviewed in this paper.

The U of T's partner, Local Food Plus, attempted to create a full-service organization designed to transform the food system in North America. This was reflected in LFP's founding

[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 University of Toronto is ranked 1st in Canada and 19th globally in the 2015 Times Higher Education Magazine, 25th in the Academic Ranking of World Universities by Shanghai Jiao Tong University, 14th in US News and World Report's Best Global Universities ranking, and 4th in the National Taiwan University ranking (University of Toronto, 2015).

vision: "To foster vibrant local, regional economies by growing environmentally, socially and economically sustainable local food systems" (Local Food Plus, 2006a). In order to achieve this vision, LFP combined three functions in one organization: 1. the first comprehensive third-party certification system for regional farm products called "Certified Local Sustainable" (which included sustainable production methods, on-farm labour practices, animal welfare, biodiversity protection and energy use); 2. a market development program linking farmers with purchasers and end users to farmers, processors and distributors; and 3. a public education campaign promoting the integration of local and sustainable food. The fate of this organization permits an examination of major factors in Canada affecting the viability of local and sustainable food systems.

The high public profile of the LFP-U of T partnership set the stage for LFP's rapid growth over the next eight years. At its peak, LFP had more than 200 certified farmers and processors in its roster, about 80 "market partners", including the largest independent supermarket in Toronto, and a host of other retailers, caterers, restaurants, daycares, food-related civil society organizations, schools, municipalities and other public institutions. In 2012, LFP estimated that about 160,000 meals and snacks of Certified Local Sustainable food were eaten each week at 277 broader public sector institutions in Ontario, for a total annual value of more than $2 million (Local Food Plus, 2012).

At the height of its operations, LFP's 7.5 staff and 4 consultants, along with an array of interns and volunteers, worked at breakneck speed to deliver the program, and to keep the organization afloat financially. LFP's founder and president, Lori Stahlbrand, wrote more than 60 grant applications, raising more than $4 million. Senior staff gave more than 120 presentations at conferences and public events. Although LFP had no budget for paid media and no

communications officer, senior staff responded to media inquiries that resulted in more than 300 publications, as well as radio and television interviews.[4] LFP and Stahlbrand won seven awards related to LFP's work,[5] and LFP was profiled in numerous books and academic articles (Campbell & MacRae, 2013; Friedmann, 2007; Friedmann & McNair, 2008; Ladner, 2011; Levkoe, 2011; Louden & MacRae, 2009; Roberts, 2013; Sumner, 2015). However, by 2014, LFP was no longer able to raise enough funds to continue active operations. Staff was reduced to one part-time administrator while the Board of Directors endeavoured to determine the future of the organization (Mills, 2016). Subsequently, in 2016, the University of Toronto made the bold move to take over foodservice operations on the St. George campus for all venues previously run by the foodservice contractor Aramark, rather than enter into another contract with a global foodservice company[6]. Senior U of T foodservice administrators acknowledge that the LFP-U of T partnership paved the way for that game-changing decision, as will be discussed later in the paper (Lokker, 2016; Macdonald, 2016b).

This paper will probe the evolution of the LFP-U of T partnership in the context of the rise and fall of LFP. The co-evolution of LFP and the LFP-U of T partnership provides a rich opportunity to apply Sustainability Transition Theory (STT) to the food sector. In particular, this case study has benefitted from the theoretical framework of the multi-level perspective (MLP)

[4] Information about number of grants written, number of presentations given and number of responses to media inquiries is collated from the LFP server archive.

[5] LFP awards included a Gold Canadian Environment Award for Sustainable Living from Canadian Geographic Magazine (2008), a Green Toronto Award for Market Development from the City of Toronto (2008), a Tides Top Ten Award as one of the most innovative non-profits in Canada from the Tides Canada Foundation (2009), a Vital Ideas Award from the Toronto Community Foundation (2010). Stahlbrand's personal awards for her work at LFP included being named a Green Leader by Toronto Life Magazine (2007), a "Woman of the Earth" Award from the Yves Rocher Foundation (2008), and induction as a fellow of the Ontario Hostelry Institute (2012).

[6] 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.

developed and elaborated by Geels (Geels, 2002, 2004, 2005, 2007, 2010, 2011, 2014; Geels & Kemp, 2007; Geels & Verhees, 2011; Geels, 2014, 2014; Geels et al., 2016; Geels & Schot, 2007; Turnheim & Geels, 2013). Geels developed the MLP in order to analyze socio-technical transitions. Early articles focused on topics such as the transitions from sailing ships to steamships, from horse-drawn carriages to automobiles and from cesspools to sewers (Geels, 2002, 2006; Geels & Kemp, 2007). Increasingly the MLP has been applied to issues relating to environmental and food system sustainability (Geels, 2014; Geels et al., 2016; Gibbs & O'Neill, 2014; Hinrichs, 2014; Lawhon & Murphy, 2012; Smith, 2006; Smith & Stirling, 2010; Spaargaren, Loeber, & Oosterveer, 2012). This paper tests the MLP framework in public sector foodservice, with a focus on university food procurement.

The MLP is a mid-level theory and heuristic device for interpreting and presenting sociotechnical transitions. It identifies three non-hierarchical "levels" of activity that influence the process of sustainability transition – the niche, the regime and the landscape. Simply put, the niche is home to the sustainability innovation; the regime refers to the overarching relationships that the niche must deal with on an on-going basis; the landscape refers to the general background factors governing the environment in which the niche and regime operate. Sociotechnical transition takes place through interactions among these three levels. The delineation of each level is far from fixed, with many overlaps. Moreover, Geels' thinking evolved over time. In contrast to his early iterations of the MLP, in which he featured one pathway of change which was predominantly the adaptation of the incumbent regime to the innovative niche, Geels' later writings acknowledge at least four pathways to transition -- one of which features resistance, struggle and mobilization. In the case study presented in this paper, the niche is the LFP-U of T partnership; the regime is the world of conventional foodservice

dominated by three global firms (Aramark, Compass and Sodexo) and their supply chain relations; and the landscape is the social, technical, environmental, ideological and political context which frames relations between the niche and the regime.

This paper begins by presenting the methodology used in this research, and then reviews Local Food Plus, with a brief explanation of its standards and certification process. The case study of the partnership between LFP and the University of Toronto is presented. The paper then applies the MLP framework to the case study in three ways. First, it examines landscape factors that influenced the LFP-U of T partnership. Second, it argues that agency is an expression of operationalization, and operationalization is an expression of agency. Further, it proposes that operationalization itself be theorized and integrated into the MLP framework. Third, it probes that Geels' more recent assessment that power, politics and struggle must be introduced into the MLP, and suggests that regime resistance is more formidable than originally understood by either Geels or LFP (Geels, 2014; Geels et al., 2016).

Geels' re-evaluation acknowledges that his earlier conceptualization of "alignment" as the predominant pathway of transition was incomplete (Geels, 2014; Geels et al., 2016). This re-evaluation bolsters two arguments that I put forward in this paper. First, I argue that the term "contestation" (a term that Geels himself uses in later articles) is more appropriate than "alignment", because contestation acknowledges the disruptive pathway of innovation, and highlights the essential role of agency and operationalization in making a sustainability agenda viable. Second, by the same logic, I argue that although niches may often be tolerated by the dominant system, when a niche attempts to grow and be transformative, the term "beachhead" may be more appropriate. A "beachhead" refers to a place that must be defended in a hostile environment, rather than the "protected space" of Geels' original understanding. The paper

concludes with a brief discussion of the U of T's decision to become a self-operated foodservice on its downtown campus.

Adapting the MLP involves working with a fundamentally heuristic device, which, almost by definition, has been simplified. To the extent that it is a theory, the MLP relies on interpretation of patterns observed in a wide variety of distinctive industries. This study of foodservice at three universities adds another sector to the mix, and brings the potential for new insights. This paper argues that the value of the MLP is that it provides an opportunity to observe foodservice patterns against a checklist of factors pertinent to a wide variety of industries.

2. Materials and Methods

This paper is somewhat unconventional in that I was the founder and president of Local Food Plus, and am therefore embedded in this case study, as well as an academic researcher and analyst. The primary research for this paper is based on 36 in-depth semi-structured interviews. In order to manage my positionality in this paper, I have only made use of personal notes, emails and memories that have been confirmed by interviews with key informants or publically-available documents. Interviews were conducted with administrators and staff at the University of Toronto and Local Food Plus, as well as farmers, processors and distributors engaged with LFP. Despite several requests by phone and email to interview LFP's key contact at Aramark, which held the main foodservice contract on the St. George campus, I did not receive a response. As already noted, in order to make a distinction between my role as a participant in events being described and my role as a researcher, I refer to myself in the third person when describing myself as a participant in past events, and I use the first person when referring to myself as an academic researcher. In addition to the research conducted specifically for this paper, the

analysis is informed by 31 interviews I conducted in the UK with key informants involved with the Food For Life Catering Mark -- another program aimed at transforming public sector food procurement (Stahlbrand, 2016c). This additional research provides comparative insights into the process of sustainability transition in university food procurement.

The time frame for this case study begins in 2004, when I started research on the LFP concept. The LFP program was officially launched with the U of T partnership in September 2006. At that time, LFP had 15 certified farmers and processors. In 2012, I left LFP to pursue a PhD examining university food procurement as a tool for scaling up and out sustainable food systems. In 2014, LFP ceased active operations due to lack of funding. In 2016, the U of T began to directly operate all foodservices on the St. George campus previously run by Aramark.

3. Understanding LFP's Challenge and Challenges

3.1 LFP as a Deeply Disruptive Innovation

The LFP-U of T partnership provided the young organization with stature and credibility. Working with Canada's largest and best-known university catapulted LFP into the limelight, thereby catapulting the challenge that LFP represented into the limelight as well. LFP was an amalgam of two provocative ideas. First, LFP combined the concepts of local and sustainable, arguing that a sustainable food system had to be primarily local, and that local is only relevant when combined with sustainability. Second, LFP identified food as a driver of transition in its own right, as a fertile centre of agency. As Don Mills, a former farm leader and senior staff member of LFP, argues, "food is a great solutions provider for a lot of ecological, social and economic challenges". Local and sustainable food, by its very nature is "a really solid change agent concept" (Mills, 2013).

Being a full-service organization created significant challenges for LFP's relationships with mainstream organizations it had to deal with on a regular basis. LFP was not only an advocacy group campaigning on behalf of certain beliefs. It was also an implementation organization that had to deliver its program to the University of Toronto and others, while finding a way to become self-funding. This full-service role is partly what made LFP a disruptive innovation. Christensen defines a "disruptive innovation" as "offering a different package of attributes valued only in emerging markets remote from, and unimportant to, the mainstream" (Christensen, 2003, p. 6). There are two key dimensions in disruptive innovations, as described by Christensen: 1. They disrupt the existing operational model, and upset the privileges of powerful groups that benefitted from that model; and 2. As a consequence, they come from outside established mainstream structures. Although Christensen's disruptive innovation model was designed to analyze business developments such as the personal computer's challenge to the mainframe computer, it can be modified to describe the role that LFP played relative to major players in the existing food polity. LFP represented a deeply disruptive innovation relative to four established groups in its environment: 1. the provincial government, and particularly the Ministry of Agriculture; 2. the dominant foodservice industry (including foodservice corporations and major distributors); 3. the organic sector; and 4. philanthropic foundations.

3.1.1 A Disruptive Innovation to Government

By championing a local and sustainable food system, LFP put itself in opposition to OMAFRA (the Ontario Ministry of Agriculture, Food and Rural Affairs), which is focused primarily on food exports rather than on producing food for local food systems. The Ministry's website highlights the fact that Ontario is strategically located within easy reach of 450 million

consumers across North America. The Ministry also operates an Ontario Food Export Office (OFEX) that "helps food and beverage companies identify and maximize their export opportunities" (OMAFRA, n.d.-a). Foodland Ontario, a government-run branding scheme that buys advertising and provides signage to promote Ontario food, has been in existence since 1976 (Government of Ontario, 2013). However, Foodland Ontario is strictly about increasing awareness. The Local Food Act of 2013, which also seeks to enhance awareness of local food and "to increase access to local food, and to boost the supply of food produced in Ontario" is aspirational, with no regulatory force (OMAFRA, n.d.-d).

LFP also confronted the Ontario government on sustainability. Although pesticides are federally regulated in Canada, the Ontario Ministry of the Environment and Climate Change regulates their sale and use (OMAFRA, n.d.-b). The very fact that LFP standards restrict the use of approved pesticides, for example, posed a challenge to the Ontario government, which considered that agriculture in the province was already well-advanced in sustainability (OMAFRA, 2016).

3.1 2 A Disruptive Innovation to the Dominant Foodservice Industry

LFP's approach was 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, agreements that give high volume vendors special access, and prepared meals. LFP's offering of more expensive local and sustainable food that often requires cooking from scratch was directly at odds with this business model. (The specific implications of LFP's role as a disruptive innovation in the dominant food industry will be explored in detail later in this paper.)

3.1.3 A Disruptive Innovation to the Organic Sector

Although most of LFP's staff came out of the organic movement and viewed their work as advancing sustainability principles in tandem with the organic movement, LFP's focus on local – as well as broader issues such as labour conditions, animal welfare, biodiversity and energy use – challenged the organic sector's domination of the alternative food market. While several leading organic farmers saw LFP as a welcome addition that highlighted their commitment to local sales, and recognized their humane animal and labour practices, dominant figures in the organic sector saw LFP as unwanted competition. LFP co-founder and former vice-president Mike Schreiner says "I think the organic movement saw LFP as a threat because the organic movement had owned the environmental sustainability piece. So people who would naturally be your allies weren't necessarily allies." Schreiner adds, "We never had anyone in society who could be our champion. There wasn't a natural constituency for what we were doing [in the farm sector], and so I think it became very difficult to create this new space without a constituency" (Schreiner, 2016).

3.1.4. A Disruptive Innovation to Philanthropic Foundations

As a full-service organization with an ambitious mandate that worked in both the public and private sectors, LFP posed a challenge to philanthropic foundations that typically funded charitable organizations featuring education, the arts and services for the disadvantaged. Despite their early and strong interest, foundations saw LFP as more of a business venture than a non-profit, and believed that it should become self-financing as soon as possible. (LFP's founders were also initially overly optimistic about the potential for financing the organization through certification fees and partnership agreements (Mills, 2016; Schreiner, 2016).) LFP also didn't fit

with the way that philanthropic foundations give grants, based on project funding in one- to three-year cycles. Building infrastructure to reform the food system was much more than a three-year project. Schreiner, who went on to lead the Green Party of Ontario, talks to environmental non-profit leaders frequently, and says that project-based funding sets impossible conditions. He says the non-profit sector in Canada is under-resourced compared to the US or the UK. "There's very little support in Canada for systems change, or even just creating institutional infrastructure for organizations to be successful. There is a lot of one-off funding for projects. That's fine if you are an established organization, and you have developed that infrastructure over time. But for new and innovative, cutting-edge organizations, the support is not there" (Schreiner, 2016).

In summary, LFP reframed many key issues around scaling up and out local sustainable food, and the ways that the government, public sector, business and philanthropy interact. Equally important, as a full-service organization, LFP not only talked about policy issues in the abstract, it campaigned to change the rules of the game, and moved to implement its sustainability program. LFP not only advocated for change; it assisted and guided implementation of practical measures that required profound sociotechnical changes in practices. In retrospect, the enormity of the task that LFP set for itself is clear. But at the time, it seemed exciting to many people, rather than daunting (Mills, 2016; Schreiner, 2016).

3.2 Establishing LFP

LFP came out of the gate at top speed in 2006, thanks to two years of planning, culminating in the partnership with the U of T. During those two years of planning, LFP laid the groundwork for several significant multi-year grants. The largest single grant was $1 million

CAD over three years from the Greenbelt Foundation[7], a government-endowed foundation designed to build support for the newly-created Greenbelt surrounding Toronto, and designed to limit urban sprawl within one of the largest urban corridors in North America. The Greenbelt Foundation funded LFP and others to open new markets for farmers within the Greenbelt who had just lost the prospect of selling their land to real estate developers.

Three years earlier, Stahlbrand had written an internal report for World Wildlife Fund-Canada (WWF-Canada) about the growing interest in ecolabels in North America which "help make the chain from the eater to the land shorter and more visible" (Stahlbrand, 2003, p. 3). Stahlbrand was taken by a Michael Pollan article arguing that "food that comes with a story…represents a not-so-implicit challenge to every other product in the supermarket that dares not narrate its path from farm to table" (Pollan, 2001). Stahlbrand had been part of a team at WWF-Canada working on a project to certify, label and market two crops – potatoes and apples – grown using Integrated Pest Management (IPM) techniques to reduce pesticide use. Stahlbrand saw an opportunity to expand this program beyond two crops and beyond IPM to embrace local and sustainable food generally, at a time when the majority of organic products in Canada were being imported from the US (MacRae, Martin, Juhasz, & Langer, 2009). As part of her research for WWF-Canada, Stahlbrand toured several US farms experimenting with eco-labels, and met with US non-profits promoting eco-labels. The most personally impactful of these, the non-profit Food Alliance, based in Oregon, had developed a certification for sustainable food that showed the possibility of including standards on labour, biodiversity and animal welfare. Food Alliance closed its doors in 2013, like LFP, due to a lack of funding.

[7] Although LFP received generous funding by Canadian standards, by comparison, the Food For Life Program in the UK received an initial five-year grant of £16.9 million, equivalent to more than $30 million CAD. When adjusted for population, this would be equivalent to $6 million in Ontario.

Stahlbrand knew that a WWF-Canada eco-label was not part of WWF-Canada's strategic direction, and that a separate Canadian non-profit was needed to bring these issues to the fore. Her first thought was to partner with Food Alliance, an effort that faltered when Stahlbrand insisted that local had to be a central feature of the Canadian organization. Food Alliance criteria did not include a requirement that food be locally sourced. Stahlbrand's commitment to and incorporation of "local" as a key component of sustainability was long-standing, dating from her collaboration with Wayne Roberts and Rod MacRae on *Real Food For A Change*, which they had co-authored in 1999 (Roberts, MacRae, & Stahlbrand, 1999).

LFP was the first organization in Canada to identify local and sustainable as part of the same package. Local is the first word that appears in LFP's name, expressing the temper of the time. In 2007, "locavore" was named the word of the year by the Oxford American Dictionary (Oxford University Press, 2007). In 2010, the Canadian Restaurant and Foodservices Association (now known as Restaurants Canada) launched an annual chef's survey of top trends, with locally sourced food, sustainability and organic produce taking the top three spots (Restaurants Canada, n.d.).

3.3 The LFP Certification Standards

LFP was conceived to be a hands-on organization engaged in food system change. For this reason, Stahlbrand and her team felt that they had to stand on more than an abstract philosophy. If they were going to promote foods from particular farms, they had to be able to explain precisely what they meant by the words "local" and "sustainable". They believed that this meant creating specific standards, and a way to measure these standards through an exacting certification process. The approach eventually adopted was heavily influenced by the fact that

all of LFP's senior staff had experience in and commitment to the organic movement. This led them to develop a crop production standard, rather than a catering standard, as the Food For Life Program in the UK did when it created the Food For Life Catering Mark (The Soil Association, 2015). The model of costly third party inspections and year-round intensive record keeping required for organic certification was also adopted by LFP. The LFP decision to focus on crop production with strict inspection proved to have profound financial and organizational implications for LFP.

LFP's standards and certification methods were developed by the founders of the organization working 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", he says. "I think a lot of standards that certain groups have written over the years have failed because they haven't got that balance right", he argues (MacRae, 2016).

The LFP standards award farmers points based on five sets of practices: 1. Employ sustainable production systems that reduce or eliminate synthetic pesticides and fertilizers and conserve soil and water; 2. Provide healthy and humane care for livestock; 3. Provide safe and fair working conditions for on-farm labour; 4. Protect and enhance wildlife habitat and on-farm biodiversity; and 5. Reduce on-farm energy consumption. Farmers must accumulate 75% or better overall, with at least half the available points in each category. Bonus points are available

for some practices that may not be available to all producers. MacRae recommended a points-based approach because "it acknowledges the diversity of every operation…and it gives you a lot of flexibility for continuous improvement because you can make a lot of changes that will advance the standard" (MacRae, 2016). Detailed production standards were developed for virtually every crop grown in Canada, with input from farmers and OMAFRA crop experts. LFP standards were set to be in line with Stage 2 IPM standards.

A processor standard was also developed that required processors and packers to implement a comprehensive plant management system with an audit component that struck "a balance between economic, social and environmental considerations, and must represent significant progress in the transition to more sustainable practices" (Local Food Plus, 2011b, p. 2). Senior LFP staff member Don Mills says the standards "pick up on a broad enough package of sustainable values that there's something for most people to find what's really important to them" (Mills, 2013).

LFP was the first eco-label in Canada to incorporate "local" into the definition of sustainable food. LFP defines "local food" as food that has been produced, processed and distributed within one province, or up to 200 kilometers within a neighbouring province. This way of thinking about local is unique to Canada, where distances are great, supply chains are long, there are relatively few regional food traditions, and there are few regions where a wide spectrum of crops are grown. As well, food and agriculture are mainly provincial jurisdictions in Canada. So defining local by provincial boundaries made sense.

LFP standards were developed to be flexible enough that they could be applied to any category of food – produce, dairy, meat, grains and processed foods – that was being wholesaled to any category of food establishment, including restaurants, retailers and institutions. But the

intention was to focus on public sector institutions – municipalities, universities, schools and hospitals – sometimes known as the MUSH sector. The founders of LFP saw institutional procurement as a way to leverage public power to foster a local and sustainable food system.

LFP standards were deliberately set to differentiate "local sustainable" from both conventional and organic food. Some standards were not as strict as organic (pesticides, for example), while others were more advanced (animal and worker welfare, for example). Schreiner explains that "we wanted to deal with institutional buyers, and we knew that the price of organic food was a barrier for a lot of institutional buyers because they are on very limited budgets. We also wanted to incorporate other issues around social sustainability, local energy use and labour." He emphasizes 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" (Schreiner, 2016).

4. The Case Study – The Local Food Plus-University of Toronto Partnership

4.1 Background

University procurement plays a more important role in fostering local and sustainable food systems in Canada than it does in most industrialized countries. Canada does not have a school meal program at the elementary or secondary level, as does the UK and most countries around the world (United Nations World Food Programme, n.d.). Improving the food offerings at these levels has been the focus of activity in other countries. In Canada, however, university procurement practices attract more attention. There are several reasons for this: The amount spent on food on campuses across Canada each year is estimated to be more than $500 million CAD (Roberts, Archibald, & Colson, 2014, p. 45). Campus foodservice operations provide

many opportunities to use the buying power of universities to promote "creative public procurement" (Morgan, 2014; Morgan & Morley, 2014; Morgan & Sonnino, 2007, 2008). There is also a national student organization 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.).

Before detailing events leading to the LFP-U of T partnership, it is important to understand the structure of the University of Toronto. The U of T is unusual compared to most universities in Canada, in that the downtown campus is made up of seven distinct colleges, each with a unique administration, culture, community and foodservice. Some of these foodservices are contracted out, while others are what are known as "self-operated" units. Because both contracted services and self-operated units took part in the LFP-U of T partnership, there was a unique opportunity to compare how these two types of foodservice operation responded to requirements for local and sustainable food procurement.

4.2 Initiating the LFP-U of T Partnership

The LFP-U of T partnership was initiated by a casual conversation in early 2005 between David Clandfield, then principal of New College, a residential college at the U of T housing 800 students, and Stahlbrand. Clandfield proved to be an effective champion in initiating the LFP/U of T partnership. He fits the definitions of a champion as "a person who vigorously supports or defends a person or cause" ("Oxford Living Dictionary," 2016) or one who "voluntarily takes extraordinary interest in the adoption, implementation, and success of a cause, policy, program, project, or product" (Business Dictionary, n.d.). 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 had pioneered an academic program in Equity Studies. Stahlbrand 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," he says. "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," he recalls (Clandfield, 2015).

Stahlbrand's students conducted a survey of College residents which indicated that residents would be willing to pay a premium for their food, if they knew that it was embedded with social and environmental values. By pure coincidence, the contract for foodservice at New College was coming up for renewal. Clandfield called a small meeting in his office in order to present the idea of a partnership between New College and LFP.

Clandfield believed the way to move any issue was to bring in decision-makers who would be open to an idea, and would see it through if they saw its merit. Clandfield acted strategically, seeing his job as "to find the right people to put together so an exciting idea could emerge." He uses two metaphors to describe this approach. "I believed that you must always sow your seed on the most fertile ground you can find," he says. "I also believed that you should push a door that's open, rather than hammering on the door that's closed" (Clandfield, 2015).

One of the people who attended that initial meeting was Anne Macdonald, Director of Ancillary Services, and responsible for campus housing, parking and foodservice. For Macdonald, another champion in this case study, the meeting coincided with efforts to improve communication about foodservice on campus. She was impressed by Stahlbrand's presentation

because it proposed incremental change. "I felt that there was a kind of business case for it," she says. "It was sufficiently compelling, and it wasn't asking us to buy completely into a huge costly program." Macdonald adds that "the idea of supporting local farmers and local businesses also resonated with me" (Macdonald, 2015). Macdonald says she had been dissatisfied with the quality of the food on campus, and hoped this might encourage the foodservice contractor to improve. She was also impressed with the sustainability element of the proposal. 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 says she saw the LFP-U of T partnership as a positive move. "It's a quality thing for me," she says. "I do care about sustainability, but I care more about being proud of the things I run" (Macdonald, 2015). Macdonald also knew that the program had to make financial sense because university ancillary services in Ontario are legally required to remain independent of the academic function of the university. Provincial grants to universities cannot be used for ancillary services, meaning that these services must be self-sustaining, or better yet, revenue-generating.

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 almost everyone he knew was involved in farming and food production. "I just understood where food came from and how important it was," he says. "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," Lokker explains (Lokker, 2015).

From the moment he was introduced to the concept, Lokker felt that partnering with LFP was the right thing to do for the sake of 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 buying sustainable, or just thinking in a responsible manner around food. Why wouldn't I take that opportunity?" asks Lokker (Lokker, 2015). He says LFP offered several things that he was looking for, including making LFP staff available for events on campus. As well, Lokker appreciated LFP's work to connect the U of T with farmers. But the major piece for him was the 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" (Lokker, 2015). It is testimony to the competence and capacity of such managers that the process of launching a partnership for local and sustainable food went off without a hitch.

4.3 The Request For Proposals

The timing for Stahlbrand'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. Stahlbrand 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% per year. To ensure variety and support

for a wide base of farmers and suppliers, a maximum of 35% 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. There was an acknowledgement that "there may be a premium paid for local and sustainable sourced products over the proponent's current wholesale distributor products" (University of Toronto, 2006, p. 29) The RFP included suggestions on how to fulfill the requirements, saying that "the University would be interested in having the Provider feature a campus signature food product that is made from sustainable ingredients and has a high perceived value" (University of Toronto, 2006, p. 29). In addition, there were clauses requiring the Provider to "furnish quarterly and annual reports to the University documenting the purchases of local and sustainable food and as applicable the sales and purchases of retail packaged goods and unit items" (University of Toronto, 2006, p. 29).

The RFP was tendered, with an expectation of bids from the three global giants of institutional foodservice – Aramark, Compass and Sodexo. These three companies serve more than 10 billion meals a year, and dominate the institutional foodservice sector. American-based Aramark, the smallest of the three, with annual revenues of about US $15 billion and a workforce of 270,000, won the University of Toronto contract to provide foodservices for the New College residence, campus catering, and retail outlets across the St. George campus. One requirement of the contract was to purchase a percentage of local and sustainable food. In addition to the Aramark contract, self-operated foodservice units, including University College and 89 Chestnut Residence, agreed to voluntarily participate in the LFP-U of T partnership. Several years later, another self-op, Victoria College, also joined the partnership.

Aramark signed a "profit and loss" contract with the U of T, the most common form of contractual arrangement in institutional foodservice. Under this type of contract, a foodservice company contracts to provide agreed-upon services and pay for use of the campus space. The contractor provides the services at no cost to the institution. The contractor is then free to operate the facility, hire labour and handle procurement in ways that cover costs and provide a profit.

4.4 Implementing the LFP Program

Macdonald says she worked hard to ensure that Aramark was meeting the contract requirements to buy from Certified Local Sustainable farmers. But at the same time, she was only willing to push Aramark so far. "When you don't self-operate, there's a limit to the number of people you can afford to supervise the contractor," Macdonald says (Macdonald, 2015). When Chef Jaco Lokker was promoted to Director of Foodservice for the St. George campus, supervising the Aramark contract was incorporated into his position.

Lokker's approach differed from Aramark's. He is a hands-on problem solver, and he wanted to see what he could do with the LFP program. Lokker says he was able to keep his food budget in line, despite buying a lot of fresh LFP products, because he cooks from scratch with whole foods, rather than relying on pre-prepared products. He says this means he works with a higher labour dollar, but a lower dollar on food. He also minimized food waste, especially the food that students left on their plates, through an educational campaign. The savings helped to offset the extra costs of the LFP program by allowing Lokker to reduce the amount of food he had to buy.

4.5 The Suppliers

Lokker and Aramark 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% of his total buy, with local getting up to 65% (Lokker, 2015). Comparable estimates from Aramark were not available. Lokker says the LFP-certified products that worked best for him were apples from the Norfolk Fruit Growers Association (NFGA) from 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 "muck" soil of the Holland Marsh, directly north of Toronto, and milk from Harmony Organic Dairy, about two hours due west of Toronto. In all 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 help 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," says Lokker (Lokker, 2015). For these producers, sales through the LFP-U of T partnership represented a small percentage of their market, but one they all regarded as an important entry point into institutional sales.

The Norfolk Fruit Growers Association is one of the oldest fruit producing associations in Canada. It has been collectively owned by local fruit growers since 1906. Consolidation in the industry means that there are now ten grower members who produce a number of varieties. The NFGA is one the top apple producers in Ontario, operating a modern packing house with multiple units for controlled atmosphere storage. O'Neill says until about a decade ago, the NFGA was selling a significant percentage of its product to Europe. To hold on to their

European sales, NFGA growers had to meet the standards for GLOBALG.A.P[8], a farm assurance program first developed in Europe. O'Neill says because his farmers were already used to record-keeping for the GLOBALG.A.P. program, they were in a good position to add LFP certification.

As interest in local food grew in Europe, the NFGA found it necessary to shift more of its market to Ontario. LFP offered both local market opportunities and a standard for sustainable production. O'Neill says today about 80% of NFGA fruit is sold within Ontario. He says although the business generated through LFP is a small percentage of total sales, it's worth it, "You never know when the next thing down the road is a guy who wants to buy a whole lot of fruit and decides that LFP is how he is going to differentiate himself, and we're the ones who can give it to him" (O'Neill, 2013). O'Neill adds that one result of the LFP-U of T partnership is that foodservice operators participating in the LFP program at the U of T made a complete shift to Ontario apples, and stopped carrying Washington fruit. Most apples in institutional settings in Ontario are from Washington State because Washington apples are usually cheaper than Ontario apples. Growing conditions make it possible for Washington farmers to have a better yield per acre than Ontario farmers. But the NFGA became the packer of choice for the U of T because of the LFP certification. "LFP went to U of T and talked them into buying local. Then we figured out how to get the apples to them," says O'Neill. "We were interested because there was already a market for Certified Local Sustainable apples before the growers certified". O'Neill says third party certification is important to his customers, so it's important to him. As well, he believes that third party certification makes a business better because "you can't look at your business that hard, and not make it better. To figure out what to record, you have to figure out what you're doing. When you figure out what you're doing, you're inevitably going to make your business better" (O'Neill, 2013)

[8] G.A.P. stands for Good Agricultural Practice.

Much like the NFGA, Jason Verkaik, president and operator of Carron Farms, had been focusing his sales on exports, and taking advantage of a low Canadian dollar. Verkaik grows a variety of vegetables, but his farm is known for multi-coloured carrots and onions. These vegetables grow well in the rich humus of the peat or "muck" soil of the Holland Marsh, just north of Toronto, where his family has farmed since 1934. The farm is located in Ontario's Greenbelt, two million acres of protected land encircling the Greater Toronto Area. Verkaik also runs an on-farm state of the art storage and packing facility. Despite the farm's proximity to the major market of Toronto, Verkaik says 80% of his sales were to the Eastern Seaboard of the United States until less than ten years ago. Today he sells up to 70% of his produce locally, and expanding local sales is the focus of his business. Besides retail sales, Verkaik offers a fresh produce box delivery program from June to October, which features Ontario vegetables and fruit.

Verkaik says he certified with Local Food Plus to help him open up new local markets, but he says there were other advantages. "What LFP did for me is it really helped me re-tune myself with my environment…When I make a decision, it [LFP standards] is always in the back of my mind, and that's a good thing" (Verkaik, 2013). Verkaik says he was excited to be part of developing a LFP standard for muck soils[9]. He adds LFP played a role in helping him reduce his reliance on pesticides, although he says he was already moving in that direction. But he thinks LFP's most important contribution was creating a more educated consumer and "getting society in general excited about local food and trying to reconnect with the farm" (Verkaik, 2013). Verkaik now sells about 30% of his produce to foodservice, including to the U of T. He says LFP's relationship- and network[10]-building role is especially important to farmers trying to shift

[9] "Muck" soil refers to soil with a high organic content created by plant residues preserved by a high water table. The Holland Marsh was literally a marsh until it was drained in the 1920s, exposing the rich soil (OMAFRA, n.d.-c).

to more local markets. "For me to start knocking on doors, it doesn't always happen that easily without someone else saying this is a good guy or this farm is a good farm", says Verkaik. "That's what LFP is doing, giving information at both ends and making those connections" (Verkaik, 2013).

Harmony Organic Dairy was founded by Lawrence Andres in 2001. Milk for the operation comes from fourteen organic dairy farms across southern Ontario. Andres and his wife Mathilde established the first organic dairy farm in Canada, when they moved from Switzerland in 1979, and bought land in central Ontario. They are known for high animal welfare standards, as the age of their cows indicates. The Andres farm has some cows more than 20 years old, some of whom nurse calves when their mothers are in full milk production. (The average productive lifespan of a conventional dairy cow is about five years (Farm and Food Care Ontario, n.d.)). The animals spend as much of the year as possible outdoors, but are kept in a large, airy, stall-free barn with straw bedding during the winter. There is even a massage machine that the cows themselves can turn on.

Andres is president of Harmony Organic Dairy, one of the first food processing operations to be certified by Local Food Plus, and one of the original suppliers to the University of Toronto in 2006. The dairy produces 6 million litres of milk each year. Andres says he decided to go for LFP certification because it reflected the extra steps he and his fellow Harmony farmers were taking to care for the animals and the environment, but for which they were not receiving any recognition, such as the fact that almost 90% of the dairy's milk is sold in the Greater Toronto Area. LFP's animal welfare standards, more specific than the requirements of the Canadian Organic Standard, were another draw. "I'm a founding member of the Animal

[10] The word "network" in this paper is defined as "a group of people who exchange information and contacts for professional or social purposes", and "to network" is defined as "interacting with others to exchange information and develop professional or social contacts" (“Oxford Living Dictionary,” 2016).

Welfare Task Force, a national task force dealing with animal welfare on organic farms" says Andres, "and LFP had a whole spectrum of things included in its certification which were actually better addressed than in the organic standard." In his view, LFP certification "was a more practical, less bureaucratic approach."

But for Andres, the greatest value of LFP certification has been LFP's networking ability to open the door to institutional procurement. "Although the initial volume wasn't huge", says Andres, "I think it [selling to the U of T] opens up a lot of doors in the future" (Andres, 2016). Echoing the words of Director of Foodservice Jaco Lokker, Andres says introducing university students to the milk is important because it allows his product to reach many people at once 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", says Andres. "That was what was visionary about LFP", he adds (Andres, 2016). Andres says the fees he paid for LFP certification were too low for what LFP delivered. "LFP was a huge plus for us," says Andres, "because it allowed us to demonstrate that we were committed to not shipping our milk thousands of kilometres" (Andres, 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, 2016). Andres says the decision paid off. He adds that he regards Lokker as a foodservice visionary, but says the program "needed LFP to develop the relationships and turn it into action" (Andres, 2016).

5. Applying the Multi-Level Perspective

5.1. Introduction to the Multi-Level Perspective

The multi-level perspective (MLP) is a mid-level theory and heuristic device that offers a language and typology for analyzing a wide range of sustainability transitions. As Smith et al. write, the MLP has a certain allure because "it provides a relatively straight-forward way of ordering and simplifying the analysis of complex, large-scale structural transformations in production and consumption demanded by the normative goal of sustainable development" (Smith, Voß, & Grin, 2010, p. 441). The MLP draws on a number of theories, including evolutionary economics, sociology of technology, structuration theory and neo-institutional theory, combining concepts from all of them. Early applications included analyses of such transitions as the shift from sailing ships to steamships, from horse-drawn carriages to automobiles and from cesspools to sewers – all transitions in which technology was the undisputed driver of change.

Initially, Geels conceived of transitions as "outcomes of alignments between developments at multiple levels", those levels being the niche, regime and landscape (Geels & Schot, 2007, p. 399). But more recent articles acknowledge that power dynamics are more important to the interplay of the niche innovation and the regime than originally conceptualized, and that regime actors have many ways to mobilize other power against change (Geels, 2014; Geels et al., 2016). Large-scale environmental factors such as climate change, shifting demographics, the rise of social movements, and broad changes in political ideology would all be considered landscape factors. These are processes that "span societal functions and unfold autonomously of particular socio-technical regimes" (Smith et al., 2010, p. 441). More recently, Geels has recognized that what he calls "societal deep-structures" should also be considered

landscape characteristics (Geels et al., 2016), an update of his analysis which is confirmed by this case study. Geels' understanding of landscape is robust because it is open-ended and non-hierarchical. In other words, it does not rate factors according to their degree of causality. As a consequence, Geels' conceptualization of the landscape level in the MLP allows for a discussion of factors as far-ranging as economy and culture, while leaving ample room for a discussion of agency.

The next section of this paper will apply the MLP to the LFP-U of T partnership, and the emergence of LFP itself as the animator of the partnership. The paper outlines landscape factors which influenced the partnership, and the potential of LFP to expand to other universities. This paper demonstrates why LFP was a disruptive innovation to the existing foodservice regime, and how that regime resisted, and continues to resist, innovations fostering local and sustainable food systems. The paper then proposes that the MLP framework can be enriched when applied to the food sector by integrating operationalization into analysis of the niche and regime levels of the MLP. The evidence gathered for this paper demonstrates that a robust understanding of the interplay between niche and regime can only happen when operational details are given prominence. The paper concludes by confirming the wisdom of Geels' shift away from his earlier references to "alignment" to describe the process of regime change.

5.2 Confirming the Significance of the Landscape Level of the MLP

Geels and Schot note that "changes at the landscape level usually take place slowly (decades)" (Geels & Schot, 2007, p. 400). But a regime can develop and change very slowly as well, and, in this sense, its stability becomes a landscape factor that makes the contestation of niches more difficult. The paper contends that the concept of the landscape in the MLP is a

useful tool for food system analysis because it helps to identify power relations and discourses – forces that are setting the parameters for efforts at operationalization at the niche level. But this paper also argues that some sociotechnical regimes are so stable and embedded that they warrant being conceptualized as landscape factors. For example, the dominant foodservice regime developed into its current form in the period from the 1970s to the early 2000s, as the three transnational corporations consolidated their business model (Martin & Andrée, 2012).

This perspective is confirmed in Geels' more recent work, where he compares low-carbon electricity transitions in Germany and the UK, and argues that there are deep societal structures which influenced the trajectory in each country which he classifies as "static landscape characteristics" (Geels et al., 2016). Geels notes that Germany has a more organized and entrepreneurial civil society sector, a more collaborative process for resolving disputes among stakeholders, a stronger environmental tradition, and a more flexible and adaptive manufacturing sector than the UK. By contrast, he argues that the UK has a weaker civil society (particularly since the 1980s, as noted by Marquand (Marquand, 2004)) and environmental tradition, more neoliberal economic policies, and a Westminster style of government which is more attuned to incumbent actors (Geels et al., 2016). This line of thinking about deep societal structures is affirmed in my study of the Food For Life Catering Mark in the UK. The study notes that landscape factors favouring the incumbent food procurement regime are even more embedded in Canada than in the UK (Stahlbrand, 2016c).

Four landscape factors played an important role in the emergence and evolution of the LFP-U of T partnership, and LFP's ability to penetrate the dominant food system with its "local sustainable" project. First, there was a dynamic "community of food practice" in Toronto, which created conditions supportive of the LFP project (Friedmann, 2007). Second, foodservice was

dominated by several deeply entrenched and powerful transnational corporations which resisted movement towards local and sustainable food systems. Third, there was an absence of mid-size infrastructure to support a local and sustainable food system. Fourth, neoliberalism was a comprehensive hegemonic force, with the result that such notions as public sector purchasing and market intervention by government were essentially off-limits (Mills, 2016; Schreiner, 2016).

5.2.1. A "Community 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, managed at that time by Stahlbrand's husband, Wayne Roberts), the food justice organization FoodShare (which provided early support for Stahlbrand's eco-label research), and other long-established players in the sustainable food arena. In other words, Stahlbrand 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. Stahlbrand approached Mike Schreiner, a food entrepreneur who had founded a home box delivery service and a company that sold prepared meals made with organic food. The two met at the TFPC when Stahlbrand was giving a presentation about her eco-label research, and Schreiner was receiving the TFPC's Local Food Hero award. By the end of their next meeting, Schreiner decided to join Stahlbrand to co-found a new organization. Other key collaborators included food policy expert and former TFPC co-ordinator Rod MacRae, long-time organic certification expert and inspector trainer Garry

Lean, and Don Mills, an organic farmer and farm leader with Canada's National Farmers Union, the country's most radical farm organization. Stahlbrand and Mills met when they were members of the Ontario Minister of Agriculture's Strategic Advisory Committee. Mills went on to replace Stahlbrand as president of Local Food Plus in 2012. Stahlbrand also recruited a Board that included Elbert Van Donkersgoed (a well-known farm commentator and policy advisor to the Christian Farmers Federation of Ontario), among others. The Board was chaired by Kim De Lallo, a leading figure in the organic and cooperative sector.

5.2.2 A Powerful Foodservice Industry

A major landscape factor is the 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, p. 162). This model, developed since World War II, relies on cheap anonymous food from anywhere in the world. 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, n.d.). Compass and Sodexho are ranked among the largest private sector employers in the world (Martin & Andrée, 2012). Oligopolistic domination of foodservice means that new entrants find it very 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; McMichael, 2013).

Food distribution is equally dominated by a small number of powerful players known as "broadline" distributors – multi-billion dollar global corporations which 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). Sysco, the world's largest food distributor, had global revenues of US $49 billion in 2015 (Sysco, 2015). Steve Crawford, a Category Manager with GFS in Ontario, says the company lists 17,000 different products. He describes broadline distribution when he says, "if you picked up a restaurant up-side down and shook it, whatever falls out, we usually sell" (Crawford, 2013). Besides both fresh and processed foods, this includes napkin holders, cutlery and staff uniforms.

For all their power, these firms are almost invisible to the consumer, partly because they operate under many different names in various parts of the world. As Martin and Andrée point out, in North America alone, Compass operates "Chartwells for education, Morrison for healthcare, Wolfgang Puck for Catering, Eurest for business and Canteen Services for prisons" (Martin & Andrée, 2012, p. 167). As well, companies often buy and operate franchises for popular brands such as Tim Hortons, as they did at the U of T.

5.2.3 Absence of Mid-Size Infrastructure

In other papers, I present a comprehensive definition of the infrastructure needed for a community-based sustainable food system, which I call "infrastructure of the middle" (Stahlbrand, forthcoming, 2016a, 2016b). This term is adapted from Kirschenmann et al.'s 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 et al., 2008). The concept of "infrastructure of the middle" was also influenced by food hub conceptualizations (Blay-Palmer et al., 2013; Morley, Morgan, & Morgan, 2008). I use the term "infrastructure of the middle" to emphasize the essential role of infrastructure in connecting mid-size farmers to regional public institutions. 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, 2016a). In other words, mid-size infrastructure must include 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.

Food infrastructure creates unique challenges and barriers for innovators. Innovators in the energy sector, wind or solar power producers for example, can access customers by feeding into the same public grid as conventional power producers. Likewise, transportation innovators can use the same public roads as other vehicles. In these cases, transaction costs of linking producers to consumers are underwritten by public services. But with food, where infrastructure is largely in private hands (the Ontario Food Terminal being an important and highly unusual exception), innovation can be suffocated without access to facilities for processing and distribution. Milk can't be processed without a dairy. Meat can't be processed without an abattoir. Even simple prepared foods such as canned tomatoes or frozen peas require processing plants, and all require serious capitalization. As well, food is highly perishable, so access to infrastructure and markets is time sensitive. A local and sustainable food system requires distributors, processing plants, warehouses and information technology that can segregate local and sustainable products from products without provenance, and work with smaller companies.

For this reason, the simplistic language of "farm to fork" is misleading because there is so much involved in that little word "to" (Stahlbrand, 2016a).

Food is, after all, fundamentally a logistics industry (Roberts, 2013), and the logistics involved in fostering a local and sustainable food system differ significantly from dominant food system logistics. For example, a distributor of local and sustainable products usually has to make stops at several smaller producers to get a full load, and mid-size producers require access to mid-size processors. However, mid-size processing plants have been disappearing in Ontario, and few distributors are oriented to meeting the needs of local and sustainable food suppliers (Baxter, 2008; Hall, 2013; Nolan, 2010; Sawtell, 2013; Sparling & LeGrow, 2015; Walkom, 2008, 2013). This absence of mid-size infrastructure was a landscape-based barrier to entry that LFP had to face in supplying its partners. It is also a barrier faced by the Soil Association in the UK in its development of the Food For Life Catering Mark (Stahlbrand, 2016c).

LFP founders recognized that creating new relationships was part of the infrastructure needed to foster local and sustainable food systems in Ontario, and they saw construction of social infrastructure as central to their mission. What was not immediately apparent was how weak existing mid-size hard infrastructure was in the province. In Canada, where the climate is daunting, the population is small, costs of infrastructure are high, and risks to investors are great, infrastructure has historically been built and maintained almost entirely with public money – as with canals, railways, radio and television broadcasters, universities and colleges, utilities and the Ontario Food Terminal, for example. The current lack of government support for the mid-size infrastructure needed for local sustainable and organic food systems is a landscape factor of major import.

Schreiner agrees that the lack of mid-size infrastructure continues to be a major roadblock for the development of local and sustainable food systems. "There is no mid-scale infrastructure in the whole system. For the most part, it is either mass scale or small artisans", he says. "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," he notes (Schreiner, 2016).

Standards for certification are also part of infrastructure. In the UK, the Food For Life Catering Mark was able to incorporate existing standards, developed by other organizations, for animal welfare, sustainable seafood and traceability (Stahlbrand, 2016c). By contrast, such standards are largely absent in Canada, and LFP had to carry the expensive burden of developing new ones.

5.2.4 Neoliberalism

Although the first major mobilization to raise awareness of food system issues in Canada dates from the 1970s[11], food movements in Canada are largely post-1990 creations, with organic being something of an exception (Levkoe, 2014). As a consequence, most organizations associated with the modern food movement, including LFP, have always laboured in an environment where neoliberalism has been hegemonic. This hegemony ranks as a landscape factor in the LFP-U of T partnership. Neoliberalism means a downgrading and downloading of certain state functions, so that the dominant market players are given maximum freedom

[11] The People's Food Commission (PFC) was created in 1977 to stimulate a discussion about food system issues in Canada. The PFC's final report, "The Land of Milk and Honey" was released in 1980. The report, which emphasized growing corporate control of the food system, was the result of input from thousands of participants across the country (Levkoe, 2014).

(Harvey, 2006; Moore, 2010; Peck & Tickell, 2002). Geels adds that "the power of firms to shape specific policies and wider political debates has increased since the 1970s, first because of the emergence of a pro-business, neoliberal discourse, which highlights free markets, privatization, and de-regulation, and second, because of the political mobilization of corporate interests in response to social and environmental regulations" (Geels, 2014, p. 7). Geels writes that business and government elites both agree about basic direction and solutions, and he cites a metaphor from Lindblom that: "If the market is a dance, the state provides the dance floor and the orchestra" (Lindblom, 2001, p. 42). Neoliberal ascendancy has had a profound impact on Ontario's food system. Sumner echoes other critical scholars (Roberts, 2013; Weis, 2012; Winson, 2013) when she writes that "neoliberal policies have resulted in a global corporate food system that is economically, socially and environmentally unsustainable" (Sumner, 2015, p. 124).

Every element of LFP bumped up against one or another construct of neoliberalism. The original concept behind LFP identified state actors and the transformative power of public purchasing by post-secondary institutions. LFP advocated for using the massive powers of purchase of these institutions for achieving goals of sustainability and public good (M'Gonigle, 2006). LFP promoted price premiums for local and sustainable food to reflect the true cost of production and the benefits to the public of food security and sustainability, benefits that the market does not value. In a highly privatized sector such as food, LFP's mission, focused on public institutions and public benefit, ran against the neoliberal grain, which was ascendant during the period of LFP's existence.

Aside from this, the broader university landscape also proved to be much less amenable to the LFP concept than was the case at the U of T. Spurred on by their U of T experience, LFP

staff invested significant time and energy working with several universities in Ontario and Quebec. Although some showed interest, only McGill University in Montreal formally signed a pledge to partner with LFP. McGill also certified its university farm, and sent a letter to its suppliers explaining the program and requesting that they also certify with LFP. However, few Quebec farmers joined the program. Schreiner notes that the U of T partnership "probably created false expectations. On the other hand, without it, I don't think LFP would have ever been able to attract the kind of financial resources it did from foundations, because the U of T partnership provided the leverage we needed to sell the concept" (Schreiner, 2016).

5.3 Enriching the MLP –Theorizing Operationalization and Operationalizing Theory

Food procurement is more complex and operationally intensive than most procurement decisions. It's not a simple matter of a contract which specifies delivery of a specific product at a specific time. Rather, it's an agreement for a service and a commitment to relationships and networks, which must be developed, implemented, maintained, and indeed nurtured over many years. This paper argues that operationalization – the implementation process – must itself be problematized, analyzed and theorized as an essential factor influencing the formation of the niche and the interplay of the niche, regime and landscape.

Several scholars have argued that the MLP has not paid enough attention to the role of agency and operationalization in sustainability transition, especially in the food sector (Genus & Coles, 2008; Rauschmayer, Bauler, & Schäpke, 2015; Shove & Walker, 2007, 2010; Smith, Stirling, & Berkhout, 2005; Stahlbrand, 2016c). Although Geels has insisted that agency has always been an important aspect of the MLP, he has recently re-conceptualized regime stability "as the outcome of active resistance by incumbent actors" who use their power and politics as

tools of resistance (Geels, 2014, p. 3). In other words, path dependence is not only an inheritance from the past; its power is equally due to many actors actively working on maintaining stability by resisting change. However, this appreciation of the power of actors and agency cannot be complete until operationalization, the core skillset of agency, is fully acknowledged.

Sustainability has often been conceptualized as a journey, rather than a destination (W. C. Clark, Kates, & Frosch, 1999; Kirschenmann, 2008; Lee, 2000). A journey implies the passage of time, and on-going – perhaps never-ending – changes and improvements along the way. These activities require the agency of many actors, referred to in this paper as champions. (See also Stahlbrand, 2016b.) The transition to a more local and sustainable food system does not happen spontaneously. It is made to happen through the daily practice of such actors. Operations have to work within the parameters of the landscape and the regime. These parameters create operational challenges which force champions to respond and adapt and innovate. Such adjustments highlight power relations, and locations of both strength and vulnerability within the dominant regime. "It's not just about making the connection," says LFP senior staff member Don Mills. "It's about fostering that relationship and supporting that relationship, because there will be bumps and challenges along the road. One of the things we learned… is that it's not just a matter of making an introduction and saying 'Hey Fred, here's Mary. Fred, you need to buy food from Mary, and Mary, you need to grow the food that Fred needs. There you go. Problem solved. Away you go,'" says Mills. He emphasizes that LFP staff "learned that you have to be in there working at helping to maintain that relationship and solve problems over a long time, a long time being years. The food business is largely a relationship business and if you just kick a relationship off and then walk away, other players are going to come back week after week trying to push their product or their business. So I think it's naïve to think we're so right that it's

just enough to make an introduction to local sustainable food, and the problem is solved, that we can walk away and everyone will now get it. There's a lot of pressure to continue on the status quo path" (Mills, 2013).

U of T's Chef Lokker confirms the importance of on-going and persistent work at relationship-building. "It's all well and good to say 'okay, we connected you and now we're going to walk away'. But when you have issues, you need to go back to that third party to bring it back together" (Lokker, 2015). Lokker adds that he wouldn't have been able to manage this process without the support of senior staff such as Anne Macdonald, the Director of Ancillary Services. "I saw something that was right, and I had a boss who felt that it was right, and said 'yes, you can do it.' That makes a difference…having people understand that this is going to cost us more, but we're going to do it because it's the right thing to do. That's huge! I tried pitching this to God knows how many chefs. I remember one event where we were all standing around talking and the other chefs are saying 'I can't do that. My controller will say 'what the hell is the matter with you – spending 30% more on dairy?'" I looked at them and said, 'It's the right thing to do, and at some point your clients will ask for it'" (Lokker, 2015).

The following section outlines some of the operational challenges faced by LFP as the partnership with the U of T developed. LFP was, above all, an operational organization – what staff proudly called a "roll-up-your-sleeves organization" – although its agenda was grounded in policy. 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 notes, most local and sustainable food programs limit themselves to smaller endeavours,

but LFP had nothing less than food system transformation as its mission. MacRae contends that "Everybody is overly optimistic about what the small stuff can deliver." He says, "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" (MacRae, 2016).

But a commitment to operationalizing food system reform also turned out to be LFP's Achilles heel. LFP was an expensive operation to run, but was too young to have developed a base of core funding to sustain the grinding work of operationalization. It was striving to achieve progress in the most ambitious program of its sort ever attempted in Canada. By contrast, other post-secondary institutions experimented with buying local food, but seldom, if ever, dealt on the system level required by the LFP-U of T partnership. For example, the University of British Columbia has a farm which, by 2014, was providing $20,000 in sales to UBC Food Services (University of British Columbia, 2014). Similarly, the University of Guelph in Ontario buys much of its food from local farmers, processes it in-house, and features a "100 Mile Grille" (Kenny, 2014; Peters, 2015). A 2013 survey by Farm to Cafeteria Canada, a national umbrella organization with a focus on institutional food procurement, claims that 92% of 36 universities and colleges that responded offer some local foods (Atkinson et al., 2013). However, the LFP-U of T partnership was the first to implement a full program which included certification, marketing and public education for local and sustainable food procurement. The U of T was not only buying local and sustainable foods, it was buying into a localized and sustainable food system.

Needless to say, operationalization at this system level is intense and intensive. 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 and intransigence of the barriers blocking sustainability transition in the food system. That is why this case study concludes that operationalization must be integrated into the MLP, and woven into the analysis of niche, regime and landscape factors.

In the section that follows, three of many operational challenges will be reviewed. The three examples were chosen because they illustrate the importance of understanding operationalization in sustainability transition. They are: 1. operational challenges related to defining "local"; 2. operational challenges related to defining "sustainable"; and 3. operational challenges relating to the rebate system in the dominant foodservice industry.[12]

5.3.1. Operational Challenges Related to 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; DuPuis, Goodman, & Harrison, 2006; Feagan, 2007; Mount, 2011; Smithers, Lamarche, & Joseph, 2008). The concept of "Short Food Supply Chains" (SFSC) begins to unravel some of the complexity involved in local food system development (Marsden, Banks, & Bristow, 2000; Renting, Marsden, & Banks, 2003). Defining local 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.

[12] There are many other examples of operational issues that impact the interaction between niche, regime and landscape in local and sustainable food system development. 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.

Foodservice of any kind 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 began by defining local food as "food that has been produced, processed and distributed within the province in which it is consumed" (Local Food Plus, 2011a, p. 4). As large an area such as Ontario may seem, this definition of local quickly became unworkable. Farmers often have little or no control over what happens to the food they grow after it leaves the farm. Nor can they control whether the food they produce is co-mingled with non-local ingredients during processing. Processors cannot control which of the ingredients they need are actually grown and processed in the province, even when geography permits it. In other words, 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 could often not meet LFP's definition of local.

A case in point is Mapleton Organic ice cream and yogurt. Martin de Groot and Ineke Booy established Mapleton Organic Dairy in 2000. The processing facility is located on the farm, where they have been raising dairy cows since they moved to Canada from the Netherlands in 1980. All of the milk for their premium quality organic ice cream and yogurt comes from their own 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 not able to source Ontario processed strawberries and blueberries for their ice cream and yogurt recipes. Despite their best efforts, they had to buy berries from out of province. "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," says De Groot (De Groot, 2013). De Groot and Booy's experience, and the experiences of other processors, caused LFP to re-think its definition of local, and develop a policy for multi-

ingredient products that allowed up to 50% non-LFP-certified ingredients by mass or fluid volume (Local Food Plus, 2007). In other words, operational realities of multi-ingredient products forced LFP to modify its goal of 100% Ontario food.

Requiring farmers and processors to sell all of their products in Ontario was another challenge to LFP's definition of local. While De Groot would prefer to sell all of his ice cream and yogurt in Ontario, the market in Ontario alone is not large enough for his premium products. "At the end of the day, the bills have to be paid," he says. De Groot tries to strike a balance between his belief in local food systems and the needs of his business. "You want to make progress. You want to make new investments, not necessarily to get bigger, but to be more efficient. You want to do some public education," he says. But he adds "Philosophically, in my heart, if we could sell everything in a radius of 100 miles, I would be perfectly happy" (De Groot, 2013).

5.3.2 Operational Challenges Related to Defining "Sustainable"

Another major challenge that LFP faced was wrestling with issues associated with genetically modified organisms (GMOs). Most advocates for local and sustainable food systems, including LFP, exclude GMOs from their definition of sustainability. GMOs are not permitted in the Canadian Organic Standard, and were not permitted by LFP. Unlike much of Europe, however, genetically-modified crops are permitted in Canada. GMO corn, canola and soy are grown widely, and there are no laws requiring segregation from non-GMO corn and soy (CBAN, 2015). As a result, most corn and soy are co-mingled, making access to non-GMO corn and soy virtually impossible for non-organic farmers. Beef farmers who wished to certify with LFP were forced to purchase organic feed, but could not recoup the organic premium in 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" says Don Mills, who ran LFP's certification program (Mills, 2016).The beef farmers petitioned LFP to be permitted to use co-mingled corn and soy until a segregated non-organic supply could be established. After a great deal of thought and consultation, LFP senior staff agreed, and wrote a policy that would temporarily allow co-mingled feed (Local Food Plus, 2008).

In making the decision to temporarily allow co-mingled feed, LFP senior staff were attempting to balance three factors: 1. A realizable yet comprehensive definition of sustainability; 2. The need to grow the supply of local sustainable food, and provide a full range of products to market partners such as the U of T; and 3. The inability of LFP to influence Canadian regulations around GMOs which permitted co-mingling. Working through this issue took a great deal of the organization's time and energy, and led to a fierce backlash from some parts of the organic community, which required crisis management. It is significant that some of the harshest critics of LFP's decision on GMOs were produce growers, who had never faced the challenges of the beef sector. 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 (MacRae, 2016).

Such policy constraints only become visible in the course of operationalization. For example, some non-practitioners argued at the time that there should be zero tolerance for GMOs in LFP meat production. However, they did not have to face the reality that the only way to achieve this was by raising prices above what the market for local sustainable meat would bear. This would have meant that LFP would not have certified meat as part of its product offer and beef farmers interested in moving to more sustainable practices would have to be turned away. In

the world of operationalization, trade-offs are negotiated on an on-going basis, and many shades of gray emerging from the shadows appear black and white to non-practitioners. This is why an analysis of operationalization has to be included in the MLP. Practitioners see the world from a different vantage point. Operational considerations bear heavily on the relationship between practitioners and the imperatives of food. It is interesting to note that appreciation for the importance of operationalization has been recognized by the Basque Country of Spain in recent efforts to create partnerships linking government, private companies and cooperatives around regional manufacturing innovations. In his study of the highly-regarded Basque model of innovation, Morgan observes that the key challenges involve two governance questions, one relating to politics and the other relating to operationalization (Morgan, 2016).

5.3.3 Operational Challenges Related to the Rebate System

Perhaps the most difficult 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 blocks small and mid-size farmers from selling to foodservice contractors, while generating hundreds of millions of dollars for the global foodservice corporations (Fitch & Santo, 2016). Rebates and other 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. The rebate system is central to the operationalization of cheap food, especially in a system dominated by oligopolies at key points in the distribution chain.

There are many different kinds of rebates in foodservice, and they can be unimaginably complex, cunning and creative. For example, there are "volume discounts" (discounts when a target sales volume is met); "off-invoice rebates" (a price per unit discount returned to the distributor off invoice, allowing the distributor to price on an inflated invoice), "earned income" (an off-invoice rebate based on sales volume), "bill backs" (an accounting method used by distributors to invoice manufacturers for distribution services), and "direct operator rebates and promotions" (deals between the manufacturer and the end-use customer which cut out the distributor entirely). Finally there are "pay-to-play" marketing programs, "in which manufacturers pay marketing funds directly to the distributor without a firm volume commitment in exchange" (Neal, Pierce, Freimer, & Verma, 2015, p. 17).

All of these programs are standard under neoliberal regimes, where predatory competitor practices are not strictly regulated. Yet few scholars of local and sustainable food systems have noted them. When products are sold at a loss as part of a rebate scheme, manufacturers make up the difference by pushing down on the farmers, who are in the unenviable position of being price-takers.

Lokker explains the process in simple language: "Let's say produce comes from company A, and company A agrees to give ten points on every dollar spent to the foodservice company. Now company A needs to make those ten points back. So that goes onto the cash price. A box of apples that would have cost $10 now costs $11. The foodservice company needs to make back that dollar on every box, so the rebate automatically gets pushed onto the end user" (Lokker,

2015). Lokker says one of the most important positions in a foodservice company is the procurement agent, because he or she is the one who is able to generate the most value to the corporation by negotiating rebates. Macdonald adds that a foodservice company "is not really a foodservice company. It's a procurement company. They run these operations at the campus level, but behind the scenes they've got all these procurement contracts with big vendors, such as [fast food companies]. That's what funds the big engine" (Macdonald, 2015). Lokker says a distributor will typically only list a product if the vendor pays a marketing or promotion fee, which can run into the thousands of dollars. LFP ran headlong into this operational issue when it tried to get certified farmers and processors listed as vendors with Aramark's preferred distributors and with Aramark itself. On the other hand, Lokker, as the executive chef of a self-operated foodservice unit, did not demand rebates when he bought from LFP-certified farmers and processors.

5.4 Enriching the MLP – Striking the Right Balance between Alignment and Contestation, Niche and "Beachhead".

Geels sums up his original conceptualization of the interplay within the MLP when he writes that:

> niche innovations build up internal momentum (through learning processes, price/performance improvement, and support from powerful groups); changes at the landscape level create pressures on the regime; and destabilization of the regime creates windows of opportunity for the diffusion of niche-innovations. The alignment of these processes enables the breakthrough of 'green' innovations in mainstream markets where they struggle with the existing regime on multiple dimensions (economic, technical, political, cultural, infrastructural) (Geels, 2014, p. 3).

As he refined his conceptualization, however, Geels injected an emphasis on power and politics, and acknowledged that these were under-theorized in early versions of the MLP. In an article

about resistance from the UK coal, gas and nuclear sectors to the introduction of low-carbon energy options, for example, Geels identifies four types of power relations which incumbent regimes use to hold onto power and resist transition: instrumental, discursive, material and institutional. 1. Instrumental power includes resources such as money, personnel and positions of authority. 2. Discursive power is about setting and shaping agendas, often by using media access. 3. Material power refers to how regimes may make small innovations in order to silence critics and ward off possible regulation. 4. Institutional power is the power embedded in government structures and political culture whereby "policymakers sympathize with business and often identify with their goals and problems" (Geels, 2014, p. 14).[13]

This paper welcomes Geels' re-conceptualization of "alignment" as a process of resistance and disruption, not just harmonization. Certainly the LFP experience with the dominant foodservice industry was one of resistance and disruption in a way that few civil society organizations ever encounter. This is because many alternative food entrepreneurs and civil society organizations sidestep direct confrontation with the dominant forces in the food economy by operating on the fringes of the food system. (Farmers' markets, Community Supported Agriculture (CSA) and natural food retailers are examples of this.) By contrast, with its standards and certification process, combined with an active engagement with foodservice, LFP met the dominant regime on its own turf. As Sumner writes, "private agri-food standards provide a fruitful site for examining this hegemonic struggle" (Sumner, 2015, p. 125).

Geels based his original concept of niche-regime-landscape alignment on his early studies of sociotechnical transitions – from sailing ships to steamships and from horse-drawn carriages to automobiles. These examples illustrate what the business literature refers to as

[13] Many scholars have developed frameworks to describe and explain power and power relations. Since this analysis focuses on MLP propositions, I have limited this discussion to the power framework that Geels uses in the MLP.

industries following "blue ocean" strategies, i.e. technological innovations that entered wide-open and uncontested markets (Kim, 2005). In his later articles on the British coal industry and on a comparison of transitions to low-carbon energy in Germany and the UK (Geels, 2014; Geels et al., 2016), Geels focused on what could be termed "red ocean" sectors where transitions were rife with contestation and resistance. Analyzing transitions in "red ocean sectors" apparently gave him an understanding of power and conflict that he lacked in earlier articles. The metaphor behind the "blue ocean strategy" is that in "red oceans" fish are plentiful, but so are predators, whereas in the blue ocean the fishing is harder, but there are fewer predators. In other words, by fishing in the blue ocean, direct confrontation is avoided.

By going into the waters of the dominant foodservice regime, LFP was swimming in the red ocean from the outset, and therefore confirmed Geels later conceptualization of alignment as often involving struggle and disruption. What brought LFP into the red ocean was its commitment to scaling up and out sustainable local food systems, which LFP understood as "normalizing" the purchase of sustainable local food in public sector foodservice contracts generally, thereby shifting purchases of sustainable local food from a tiny percentage of food sales towards a majority of food sales. By focusing on scaling up and out the market share for local and sustainable food, LFP challenged the business model of the dominant foodservice industry at one of the largest campuses in North America. LFP's experience suggests that sustainability transitions in institutional food procurement are inherently disruptive because they take place in the red ocean of the large-scale and mainstream food system.

6. Conclusion

The conclusion of this paper is that after ten years with Aramark, the University of Toronto decided to take back its foodservice and become a self-operating campus at all the venues previously run by Aramark. The Aramark contract signed in 2006 was scheduled to end in July 2016. In the years before that date, U of T foodservice senior administrators, led by Anne Macdonald, consulted widely on the best approach, and settled on a decision to bring the operation of foodservices on the St. George campus previously run by Aramark in-house. The mission statement of the new operation is "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.). The university plans to achieve this through six goals including "Hiring, training and investing in an enthusiastic team; Ensuring that delicious, nutritionally sound food is available everywhere; Creating comfortable and welcoming places on campus where the community can gather; Connecting with academic colleagues and students interested in food and nutrition; Engaging with Toronto's culinary community and bringing the best of the city to the campus; and Working directly with farmers and food producers to develop mutually beneficial relationships" (Macdonald, 2016a).

As of August 1, 2016, 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, who has the new title of Director of Culinary Operations and Executive Chef. Macdonald says "We believe that [self-operating the foodservice] will improve the quality of our operation on campus. We believe that having great food and wonderful spaces to be in that serve food is really important to students, and we think we can do a much better job with the self-

operated model, which is a very different model". Macdonald adds that "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" (Macdonald, 2015). Macdonald says she hopes to "increase the use of local products and reduce the use of pre-prepared and processed foods" (Kurts, 2016).

About 250 former Aramark employees are now directly 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 says he hopes that the new arrangement will provide more opportunities to integrate foodservices with academic programs and opportunities for applied learning. (Lokker, 2015). Macdonald agrees, "I think connecting foodservice more closely with academic programs definitely has legs" (Macdonald, 2015). Lokker says the processing kitchens will also 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 (Lokker, 2015).

For the Certified Local Sustainable farmers already selling to Lokker, such as Harmony Organic Dairy, the Norfolk Fruit Growers Association and the Carron Farms, the change means a potential significant increase in sales, and an indication that joining the LFP program was a good decision. "I don't think we would have got into [university sales] without LFP," says Andres of Harmony Organic Dairy. "LFP really was the catalyst that initiated the whole development. LFP was instrumental to say the least," he says (Andres, 2016).

Both Macdonald and Lokker say the experience with LFP gave them confidence to make the move towards a fully self-operated foodservice (Lokker, 2016; Macdonald, 2016b). Macdonald says the partnership with 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 also helped to make visible some of the problems associated with working with a global foodservice contractor, such as national deals and rebate programs that made the implementation of local and sustainable food more difficult. 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 much easier and smoother (Macdonald, 2016b).

LFP co-founder and former vice-president, Mike Schreiner, believes 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* . We were never able to carve out a space for local sustainable. Even if we were selling a product, it would have been easier, but we were trying to sell a whole new market segment, a whole new concept, a whole new way of thinking about something" (Schreiner, 2016).

This case study of the LFP-U of T partnership suggests that sustainability transition in the food sector is by no means assured, and niche contestation of the incumbent regime does not inevitably lead to transformation. For example, U of T's Director of Culinary Operations, Jaco Lokker, no longer has a way of verifying the environmental and social sustainability of new local farmers from whom he might want to buy because the LFP certification program (or any equivalent) is no longer operating. Barring the re-entry of LFP (or an equivalent), over time U of T Food Services will serve primarily local food, without the sustainability component. Without diminishing the importance of the U of T decision to take back its foodservice, sustainability goals cannot be continually renewed or strengthened, and the sustainability journey is cut short if

there is no verification program for environmental and social sustainability on working landscapes.

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" (Schreiner, 2016). Mills adds that "the food system is brutally efficient in many aspects, and there are only a couple of things that are needed. It doesn't have to taste great. Strangely enough it has to look good, it has to be cheap, and it has to be safe, in the sense that if I eat it today, it won't kill me tomorrow. Our food system has delivered this in spades" (Mills, 2013).

Clandfield, now retired from New College, went on to join the Board of Directors of Local Food Plus, and has witnessed its rise and fall. He believes in the power of public procurement and he says there is a policy role for government to support local and sustainable food systems through public sector purchasing by "fram[ing] a target or a set of principles, and ask[ing] every institution to come up with its own implementation plan, timetable, special characteristics, even room for innovative practice". Clandfield adds, "You want to enable and recognize institutions that do some of the development work for you. You can build in change if you want to" (Clandfield, 2015). Although there has been no movement of this kind in Ontario, the approach that Clandfield suggests is now being applied in the UK, where the Food For Life Catering Mark is being referenced in government procurement guidelines for public sector institutions (DEFRA, 2014; Department of Health, 2016).

This case study of the LFP-U of T partnership makes the argument that public sector institutions, such as universities, must take back control of their foodservices, rather than

outsourcing them to global foodservice contractors. This paper argues that the structure of the transnational corporations that control foodservice, focused on centralized management and supply chains, rebates and volume discounts is contrary to the needs of community-based sustainable food systems, or anchor institutions that can use the multifunctionality of food to address a variety of challenges they face.

The case study also points the way to further research on the specific role of institutional foodservice in the economy and society, an area that has been referred to as a "sleeping giant" (L. Clark, 2016), and that would benefit from more critical academic research. The transition to in-house foodservices at the University of Toronto will provide an opportunity to witness a sustainability transition at the largest university in Canada. There will be a great deal to learn.

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INTRODUCTION TO CHAPTERS 6 AND 7

Chapters 6 and 7 both deal with different aspects of "infrastructure of the middle", a pivotal concept of this dissertation. Both chapters have been submitted to scholarly journals. Chapter 6 has already been published in the Brazilian journal *Raizes*. It is entitled **A Typology of "Infrastructure of the Middle" in University Food Procurement in England and Canada: Elaborating the "to" in "Farm to Cafeteria**". As the title suggests, it presents a typology of the ten elements of "infrastructure of the middle" that I identify in this dissertation. Chapter 7 has been accepted by *The International Journal of the Sociology of Agriculture and Food*. This chapter is entitled **Can Values-Based Food Chains (VBFCs) Advance Local and Sustainable Food Systems: Evidence from Case Studies of University Procurement in Canada and the UK.** Chapter 7 argues that the concept of "infrastructure of the middle" offers a more fulsome interpretation of the food supply and demand chains necessary for sustainable local food systems than the concept of "values-based food chains" (VBFCs).

Because both parts of this chapter are being published as stand-alone articles, there is some repetition, since readers of one article will not likely have read the other one. This was unavoidable, given my choice of the Multi Manuscript Option for my dissertation. The repetition can be found especially in the definition of "infrastructure of the middle" and the presentation of the specific elements of the typology. However, I believe that the articles build on each other and that each article adds something distinctive to the conceptualization of the typology.

The typology of "infrastructure of the middle" has ten distinctive elements, which all link to one another and interact with one another. My conceptualization of "infrastructure of the middle" requires an alignment of all these elements at various levels in order for the whole to

function effectively. I came to this understanding as a result of four experiences. As a practitioner with LFP, I saw the importance of anchor institutions, champions and civil society organizations. As a researcher conducting a literature review, the role of food hub functions and the importance of connectivity with community needs and environmental sustainability became clear. As an interviewer of key informants, the role of individual champions and innovative work practices became more apparent. As an analyst, I saw the importance of public policy and public education. The development of the typology of "infrastructure of the middle" is an example of praxis – theory and practice combining to create a new, and hopefully more penetrating, understanding.

CHAPTER 6

PUBLISHED ARTICLE. This article has been reformatted in the APA 6th Edition Style. Otherwise, it appears here as it was published in the journal Raizes: Revista de Ciencias Sociais e Economicas, Special Issue on "Revaluing Institutional Food Acquisition", Vol. 36, No. 2. July-Dec 2016. The articles in this issue were all presented in a working group of the 2015 Agriculture in an Urbanizing Society Conference at Roma Tre University. An earlier version of this article won the award for Best PhD Paper at the conference.

A Typology of "Infrastructure of the Middle" in University Food Procurement in England and Canada: Elaborating the "to" in "Farm to Cafeteria"

Abstract

This article introduces a new term – "infrastructure of the middle" – to help understand sustainability transition in the food system. The evidence comes from 67 interviews with leaders of university food procurement initiatives in England and Canada. As founder and former president of the civil society organization which played a central role in the Canadian example, I bring a perspective informed by praxis, both as a practitioner and as a scholar applying Sustainability Transition Theory. I adapted the term "infrastructure of the middle" from Kirschenmann et al.'s concept of "agriculture of the middle", which describes the mid-size farms and ranches most at risk in a globalized food system. "Infrastructure of the middle" refers to the resources and networks that create a critical mass, enabling mid-size sustainable food producers to meet the needs of foodservice clients, especially public sector institutions.

Keywords: "infrastructure of the middle", university food procurement, sustainability transition

1. Introduction

This article introduces a new term – "infrastructure of the middle" – to help understand sustainability transition in the food system. The evidence comes from 67 interviews with leaders of university food procurement initiatives in England and Canada. As founder and former president of Local Food Plus, the civil society organization which played a central role in the Canadian example, I bring a perspective informed by praxis, both as a practitioner and as a doctoral candidate writing about an application of Sustainability Transition Theory (STT).

I adapted the term "infrastructure of the middle" from Kirschenmann et al.'s 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, p. 3). They are big enough to meet the needs of large-volume purchasers, but not so big that they can supply the commodity chains of the global industrial food system (Kirschenmann et al., 2008).

In this article, the term "infrastructure of the middle" is used to emphasize the essential role of infrastructure in connecting mid-size farmers to regional public institutions. These institutions offer an opportunity for large-volume sales at prices that cover the cost of sustainable production. Usually, such institutions rely on global distribution and foodservice corporations, which typically exclude mid-size farmers and processors. "Infrastructure of the middle" refers to the resources, facilities and networks that enable mid-size sustainable food producers to meet the needs of high volume, high profile foodservice clients, especially public service institutions. Like mid-size farmers, "infrastructure of the middle" is disappearing (Constance, Hendrickson, Howard, & Heffernan, 2014; Nolan, 2010; Walkom, 2008, 2013), and needs to be strengthened if sustainable local food is to become the norm.

Infrastructure is commonly defined as "the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise" (oxforddictionaries.com). With food systems, this usually refers to "hard" infrastructure such as roads, warehouses, processing and distribution facilities. "Infrastructure of the middle", by contrast, also encompasses "soft" infrastructure such as relationships and

networks. In effect, "infrastructure of the middle" encompasses the full range of sociotechnical features needed to operationalize a transition to sustainable local food.

This article will present a typology for "infrastructure of the middle", and place it in the context of STT. I argue that public sector procurement – specifically at universities – is a critically important tool for sustainability transition. The STT framework used in this article modifies the multi-level perspective (MLP), an approach to sustainability transition elaborated by Geels (Geels, 2002, 2004, 2005, 2007, 2010, 2011). I have adapted the MLP with a "social practices approach", which puts greater emphasis on agency (Rauschmayer, Bauler, & Schäpke, 2015; Shove & Walker, 2007, 2010). I will first explain why universities could be deemed critical to sustainability transition in food, and then present the typology, with illustrations showing how the typology was essential to successful university food procurement in England and Canada.

2. The University as a Site of Sustainability Transition

Scholars have noted a recent flourishing of alternative food projects, networks, businesses and movements which foster more sustainable local food systems (Ackerman-Leist, 2013; Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013; Feagan, 2008; Goodman & DuPuis, 2011; Hinrichs, 2003; Morgan, Marsden, & Murdoch, 2006; Mount, 2011). However, alternative foods account for a tiny percentage of all food sales[1] (Agriculture and Agri-food Canada, n.d.; Elitzak, n.d.). University procurement is pivotal at this juncture precisely because it presents an opportunity for "scaling up" volume sales of sustainable local food across the food system (Barlett, 2011; Friedmann, 2007; Morgan, 2008; Morgan et al., 2006; Morgan & Morley, 2014;

[1] Figures drawn from Agriculture and Agrifood Canada suggest that food sold through alternative channels may account for about 1% of total food sales.

Morgan & Sonnino, 2008; Roberts, Archibald, & Colson, 2014), and for "scaling out" new procurement models that make scaling up viable.

To date, creative public procurement to advance sustainable local food systems is overwhelmingly based in the education field (Morgan & Sonnino, 2007, 2008). Universities provide a rich site for understanding creative public procurement experiences. Public purpose and public service are embedded in their mission, and consequently they have the potential to challenge the exclusive profit motive of a commodity-based food system. In addition, universities differ from other public sector institutions in that they have neither a monopoly over a service, nor a captive population (as is the case in prisons, hospitals or elementary schools). Thus, universities are subject to popular and client pressure in ways few public institutions are. Universities must respond to a client group – students – who increasingly demand values beyond price (including fair labour practices, environmental stewardship and animal welfare, among others) in food procurement and university policy generally (Grigg, Puchalski, & Wells, 2003; M'Gonigle, 2006; Park & Reynolds, 2012; Raynolds, 2002; Roberts et al., 2014). As a result, universities have more reasons to appreciate the multifunctional value proposition of sustainable local food.

Unlike many private and public sector institutions, universities are also uniquely place-specific and place-dependent. Frequently named after the city in which they are located, universities connect with the communities surrounding them in many ways (Shaw & Allison, 1999). Increasingly, universities are understood as "anchor institutions", which have been identified as "among a region's biggest employers and purchasers of goods and services" (Dragicevic, 2015, p. 5). Such institutions have economic power that can be converted into "anchor missions", defined as "the deliberate and strategic use of resources to benefit

communities" (Dragicevic, 2015, p. 5). With the decline of manufacturing in Europe and North America, such institutions play a pivotal role in local economies. In terms of food procurement, they can provide significant and stable markets for food businesses, showcase new options to the public, and open "more sustainable spaces of possibility" (Marsden & Franklin, 2013).

3. The Multi-Level Perspective

The multi-level perspective has its roots in sociological work on technological change, and focuses on the interplay of sociotechnical systems, social groups in society who maintain these systems, and regimes or rules that guide these social groups (Geels & Kemp, 2007). The MLP identifies three components in the process of transition or sociotechnical "regime shift" – niches, regimes and landscapes. The central point of the MLP is that the interplay of these three components, at different levels and in different phases, leads to sociotechnical system change.

According to the MLP, niches are protected spaces where innovations can be nurtured. Theoretically, if managed strategically, innovative niches may rise to challenge a regime (Geels, 2002). Regimes are defined as "the locus of established practices and associated rules that enable and constrain incumbent actors in relation to existing systems" (Geels, 2014, p. 24). The landscape is the broader context – social, technical, economic, ideological and environmental – that provides the backdrop affecting the relationships between niches and regimes. The landscape level represents the material context of society (how cities, roads, energy infrastructure, etc. are configured), as well as a mix of additional factors such as wars, oil prices, water availability, and cultural values (Geels, 2002). Geels calls the MLP a "process theory", in that the analyst "needs to trace unfolding processes and study event sequences, timing, and conjunctures" (Geels, 2011, p. 35).

An essential understanding of STT is that transitions require intervention to break the momentum of old patterns of "path dependence" and "sunk investments" (Geels, 2010). Agency – in the form of people who develop and use policies and programs that construct sustainability initiatives – is essential. Transitions are the result of structural changes that lead to new power relations, new players and new technologies.

4. Towards a Typology of "Infrastructure of the Middle"

The concept of "infrastructure of the middle" is anticipated by Renting et al. in their 2003 exploration of "short food supply chains" (SFSC) in rural development (Renting, Marsden, & Banks, 2003). SFSCs, they write, serve to "resocialize and respatialize food, thereby allowing consumers to make new value judgements about the relative desirability of foods based on their own knowledge, experience, or perceived imagery" (Renting et al., 2003, p. 398). They argue that the word "short" is relevant in three ways. SFSCs "'short-circuit' the long anonymous supply chain" of the industrial food system; they create transparency which can provide information about quality and values (environmentally sustainable practices, humane treatment of animals, and fair labour practices, for example); and they shorten relations between where food is produced and where it is consumed, thereby personalizing relations of responsibility between producers and consumers (Renting et al., 2003).

SFSCs arose from "the active construction of networks by various actors in the agrifood chain, such as farmers, food processors, wholesalers, retailers, and consumers" (Renting et al., 2003, p. 399). With this phrase, Renting et al. anticipate the human agency and social construction, both of which are key to "infrastructure of the middle", as presented in this article.

The concept of "infrastructure of the middle" addresses a deep-rooted problem in both the scholarly literature and the public discourse about sustainable local food systems. Both discourses understate the central roles of human agency and infrastructure in the transition to sustainable local food *systems*. Public discourse can be summarized by the titles given to typical programs featuring sustainable local food – "farm *to* school", "farm *to* cafeteria", "farm *to* fork" and "field *to* table", for example (Heiss, Sevoian, Conner, & Berlin, 2015; Izumi, Wright, & Hamm, 2009; Izumi, Wynne Wright, & Hamm, 2010; Ng, Bednar, & Longley, 2010).

In this discourse, an entire and complex set of tasks within the food system is covered by the one little word "to". While much of the early alternative food projects did feature direct producer to customer relationships[2], foodservice on any significant scale requires the inclusion of many intermediaries. Yet the notion of direct relationships imbues the mindsets of both practitioners and scholars. As a result, a discussion of infrastructure is often absent from scholarly articles (Ikerd, 2011; Youngberg & DeMuth, 2013).

Many discussions of infrastructure in recent scholarship highlight the central role of hubs (Blay-Palmer et al., 2013; Cleveland, Müller, Tranovich, Mazaroli, & Hinson, 2014; Horst et al., 2011; LeBlanc, Conner, McRae, & Darby, 2014; Lerman, Feenstra, & Visher, 2012; Morley, Morgan, & Morgan, 2008; Rogoff, 2014; Stroink & Nelson, 2013). I emphasize that food hubs are best understood as one part of the infrastructure necessary for a sustainable local food system, and that they must be supported and allied with other components with relevant capacities. Each of the elements in this typology of "infrastructure of the middle" refers to an actor or capacity. I suggest that the emphasis should be on the universe of relationships, rather than on the hub.

[2] Community supported agriculture (CSA) and farmers markets are examples of early forms of this direct producer to customer relationship which shaped the creation of these terms.

This article attempts to establish the centrality of "infrastructure of the middle" and identify its key elements. Each of these elements is a "disruptive innovation" within the existing regime, in that each presents "a different package of attributes valued only in emerging markets remote from, and unimportant to, the mainstream" (Christensen, 2003, p. 6). In effect, "infrastructure of the middle" refers to a new "nexus of practice" for food system transformation (Shove & Walker, 2007). This typology establishes the actors and capacities present in successful sustainable local food initiatives at the institutional level.

Based on my experience and analysis, I identify ten elements which together comprise "infrastructure of the middle" capable of food system transformation.

1. **Anchor institutions**. Anchor institutions, defined as "large public or nonprofit institutions rooted in a specific place, such as hospitals, universities or municipal governments" (Dragicevic, 2015, p. 5), are essential because they use the clout of their purchasing power to create long-term stable markets that attract mid-size farmers and processors. In addition, anchor institutions are respected players in society, and lend credibility to initiatives to scale up sustainable local food systems, thereby propelling these initiatives from the margins towards the mainstream.
2. **Civil society organizations.** Civil society organizations (CSOs) are prime movers. This is a major shift because the food sector is generally considered the purview of the private sector. However, evidence suggests that much work related to the development of sustainable local food systems has been initiated by civil society organizations. (Blay-Palmer et al., 2013; Campbell & MacRae, 2013; Friedmann, 2007; Morgan & Morley, 2014; Orme et al., 2011). Government has not invested significantly in infrastructure for sustainable local food. The heavy lifting

traditionally performed by government has been performed by CSOs. CSOs are essential connectors, facilitators and strategists. (Blay-Palmer et al., 2013; Fridman & Lenters, 2013). They also can provide the range of scarce professional skill sets around food procurement and sustainability that are not always easy to find in the public sector (Morgan & Morley, 2014).

3. **Tools to measure progress towards sustainability.** Scaling up means selling to people with whom there is no direct relationship, frequently through a third party aggregator or distributor. Tools, often in the form of certification schemes, offer a way to identify values and best practices beyond personal relationships, as well as protecting producers from greenwashing and dilution of their value proposition. Standards and certification schemes also establish guidelines that create opportunities for dialogue, learning, and continuous improvement among practitioners. They are a way to measure progress. These tools must be flexible, science-based, affordable, and relatively easy to explain, implement and modify.
4. **Individual champions.** Although alternative food networks have been underway since the 1990s (Goodman & Watts, 1997; Marsden, Murdoch, & Morgan, 1999), my practitioner experience, as well as independent scholarship (Morgan & Morley, 2014), indicate that the food movement remains at a stage where individual champions play an indispensable role in establishing and maintaining the relationships necessary for sustainable local food initiatives. Champions, for example, are the ones who break down silos within an institution to make a new approach to food procurement possible. In a university setting, they can initiate conversations among foodservice, waste management, student recruitment and fundraising – parts

of the institution that rarely talk to one another – to discuss how sustainable local food procurement can be leveraged to benefit them all. In addition to being committed to sustainability principles, champions must hold a position of some authority, and possess a range of social skills. They must also be collaborative, solutions-oriented, pragmatic and models of competency.

5. **Self-catered/self-operated foodservice or local, independent foodservice contractors.** (The term "self-catered" is more common in the UK, while "self-operated" or "self-op" is more common in North America.) In a mature system, "infrastructure of the middle" would usually feature self-operated foodservice units or mid-size, regional or local independent foodservice contractors. Currently, global foodservice contractors are the public sector norm. However, their business model -- based on volume purchases of standardized low-cost food from anywhere -- is incompatible with sustainable local food systems. This is because sustainability involves inserting other values into purchase criteria, and local food inherently restricts placeless purchases. Global foodservice corporations have rules and regulations that discriminate against mid-size producers. Minimum volume requirements or minimum insurance requirements, for example, can exclude mid-size farmers (Schreiner, 2016). Self-catered/self-operated foodservice is more open to mid-size producers and offers greater flexibility. Reclaiming foodservice also begins to displace the path dependent thinking which assumes that food is an ancillary, rather than an essential, service of the institution.
6. **Innovative suppliers.** "Infrastructure of the middle" is rich in business to business (B2B) relationships along the food chain – identified as fundamental to the growth of

local economies (Shuman, 2015). They include processors, distributors, aggregators, and other food businesses that interact with foodservice. Many are innovators, interested in reconfiguring resources, not just mobilizing them (Marsden, 2010; Marsden & Smith, 2005). Unlike global corporations, these "new food-economy SMEs" (Blay-Palmer & Donald, 2006) are regionally-based and independent. They must be collaborative, open to exploring new approaches, and interested in differentiating themselves in the marketplace.

7. **Public policy and public education capacity.** In pioneering scenarios, this role may be played by a CSO or an anchor institution. But in a mature system, the function of public policy development, public education, and the promotion of food literacy is performed by an actor with dedicated capacity, such as a food policy council. This is essential because it contests the hegemonic activities of global food companies, which include lobbying and public campaigns (the US campaign to prevent labelling of foods containing genetically-modified organisms is one example). Finding space in a food system increasingly monopolized by global corporations (Constance et al., 2014; ETC Group, 2013) requires "infrastructure of the middle" to make the case for a sustainable local food system, and for public policy that evens the playing field. This includes policies and legislation that support "multiscalar and multidimensional strategies for regional development" (Blay-Palmer & Donald, 2006, p. 394), such as sustainable local procurement. Food literacy which includes sustainability is a key component of food system transformation because an engaged and educated consumer is more likely to choose products that foster sustainable local food systems.

8. **Marketing and promotion capacity.** Few businesses of the middle have the capacity to do significant marketing and promotion, yet they are in competition with an industry that spent $4.6 billion in 2012 on fast food advertising in the US alone. Indeed, McDonald's advertising spend in the US was 2.7 times that for fruit, vegetables, bottled water and milk combined (Harris et al., 2013). Marketing and promotion capacity is essential to motivate alternative procurement initiatives, engage new actors, create transparency, and move towards normalizing sustainable local food products and values.
9. **Food hubs.** Blay-Palmer et al. argue that food hubs are "vehicles for sustainable transformation of the dominant food system"(Blay-Palmer et al., 2013, p. 524). They define food hubs as "networks and intersections of grassroots, community-based organizations and individuals that work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with consumers, as directly as possible" (Blay-Palmer et al., 2013, p. 524). Hubs are spaces of aggregation, transformation and collaboration. They offer opportunities to pool resources to provide hard infrastructure such as warehouses, loading docks, processing facilities and meeting spaces. But they can also be part of soft infrastructure, in that they are spaces for relationship-building, and clearing houses for innovation and information-sharing. Hubs are essential to the development of "infrastructure of the middle" because they can provide both hard and soft infrastructure that few mid-size businesses can fund alone.
10. **Connection to community and environment.** "Infrastructure of the middle" puts the culture back in agriculture, while challenging "agribusiness" at the level of its

fundamental presumption – that food is essentially a private sector activity which belongs in the private sphere, removed from public interest issues such as sustainability. Externalizing the costs of agribusiness onto society and the environment flows easily from this presumption. By contrast, the underlying assumption of sustainable local food systems is that food is a public policy matter. "Infrastructure of the middle" has the potential to respond to the demand for foods that reflect such public goods as identity, heritage, environment, and so on.

5. Two Examples of "Infrastructure of the Middle" in Action[3]

The next section will illustrate the typology of "infrastructure of the middle" using data collected in the UK and Canada between 2013 and 2016. It will examine two specific approaches to increasing procurement of sustainable local food in universities – both developed by CSOs – the Food For Life Catering Mark developed by the Soil Association in England and "Certified Local Sustainable" certification developed by Local Food Plus in Canada.

5.1 An Introduction to the Soil Association and the Food for Life Catering Mark

The Soil Association, which describes itself as "the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use", developed and manages the Food For Life Catering Mark. The Catering Mark was designed to support the work of the Food For Life Partnership, a program designed to transform food culture in British schools

[3] Prior to pursuing a PhD, I was the founder and President of Local Food Plus, and played a key role in the development of LFP's standards and their implementation at the University of Toronto. The initial connection with U of T foodservice came as a result of a course I taught in the Equity Studies Program at New College, a college of the U of T. New College operates a residence cafeteria which feeds more than 800 students a day. This cafeteria became one of the early sites for the implementation of the LFP program. I currently teach at New College.

through tastier, healthier and more sustainable meals, combined with an emphasis on food literacy, growing and cooking. The Catering Mark provides third party certification to foster increasingly sustainable and healthy food. It offers a ladder for improvement, with bronze, silver and gold awards to encourage progress. By moving through the three levels, foodservice operators demonstrate an increased commitment to four principles: 1. Food freshly prepared on-site; 2. Ingredients sourced sustainably and ethically when possible; 3. Ingredients sourced locally when possible; and 4. Healthy eating made easy. More than 1.6 million certified meals are served each day.

5.2 An Introduction to Local Food Plus and the "Certified Local Sustainable" Standards

Local Food Plus (LFP) certification encourages farmers to move toward more sustainable practices. The launch of the University of Toronto-LFP partnership in 2006 represented the first time that a Canadian university made a formal commitment to purchase sustainable local food. Participating cafeterias agreed to purchase 10% of the dollar value of their food in the first year from Certified Local Sustainable farmers and processors, with a 5% increase each year going forward.

LFP standards are based on five guiding principles – 1. Employ sustainable production systems to reduce or eliminate synthetic pesticides and fertilizers, and conserve soil and water; 2. Provide healthy and humane care for livestock; 3. Provide safe and fair working conditions for on-farm labour; 4. Protect and enhance on-farm biodiversity and wildlife habitat; and 5. Reduce on-farm energy consumption. LFP certification is unique in its effort to combine local with sustainable practices. Farmers must achieve a score of 75% or better to be entitled to call their operation "Certified Local Sustainable" and use the LFP certification seal.

5.3 Applying the Typology of "Infrastructure of the Middle"[4]

Both programs shift responsibility for sustainability transition in the food system away from reliance on individual consumer purchases and towards institutionalized collective purchases. For the universities involved, certification helped them set goals, and keep abreast of sustainability trends. For the farmers, processors and distributors, certification encouraged them to adopt more sustainable practices to gain and hold university contracts. For producers already Certified Organic, the programs opened significant and stable markets.

In both the UK and Canada, all ten dimensions of the typology of "infrastructure of the middle" were present.

1. **Anchor institutions.** Universities in both countries qualify as anchor institutions. The English case studies are Nottingham Trent University (NTU) and the University of the Arts London (UAL). NTU is a university of about 27,000 students in the Midlands city of Nottingham with a self-catered food service. UAL is a multi-campus university of about 26,000 students in downtown London with a regional independent foodservice provider. The Canadian case study is the University of Toronto, one of the largest universities in North America, with 85,000 students over three campuses. At the time of this research, it had both self-operated units and cafeterias operated by Aramark, a global foodservice company.
2. **Civil society organizations.** Entrepreneurial CSOs (the Soil Association in the UK and Local Food Plus in Canada) were actively promoting institutional procurement of sustainable local food.

[4] For a full discussion of the case studies, see my PhD thesis, forthcoming.

3. **Tools.** Both CSOs had sophisticated certification tools (Local Food Plus' "Certified Local Sustainable" program, and the Soil Association's Food For Life Catering Mark) to measure and ensure progress towards more sustainable local food.
4. **Champions**. Both the UK and Canadian cases studies feature champions in many key roles -- university administrators, heads of sustainability and foodservice, and chefs, for example. Participating food suppliers also had in-house champions.
5. **Self-catered foodservice or a local, independent foodservice provider.** In both countries, the facilities that achieved the best results were self-catered/self-operated units or independent regional caterers, rather than transnational foodservice corporations (Schreiner, 2016; Shingler, 2015).
6. **Innovative suppliers.** All three universities worked closely with innovative suppliers, including farmers, processors and distributors. Several of these organizations saw their university sales as part of a strategy to differentiate their brand (Stahlbrand, 2016).
7. **Public policy and public education capacity.** In England, the Soil Association has a public education function to present emerging research and policies that enhance sustainability. This was also part of LFP's mandate in Canada. LFP also benefitted from the existence of the Toronto Food Policy Council, established in 1991, with a specific mandate to address public policy around food.
8. **Marketing and promotion capacity.** In both England and Canada, universities had promotional capacity, as did the CSOs, through signage, mainstream and social media, trade show booths, participation in food celebrations and fairs, and public

speaking. The Soil Association also holds an annual Catering Mark Awards dinner to recognize champions who have contributed to the success of the mark.

9. **Food hubs.** The universities themselves acted as physical hubs, receiving and preparing food, and bringing together various actors in new ways. The CSOs acted as virtual hubs (Campbell & MacRae, 2013), forming critical relationships, providing tools, expertise and support. A hub function, aggregating products and services of local mid-size suppliers, was essential in both the UK and Canada.
10. **Connection to community and environment.** Public policy goals were explicitly recognized in both countries. Sustainability requirements, for example, were prominent features of both certifications.

6. Sustainability Transition Theory and "Infrastructure of the Middle"

Kirschenmann et al.'s insight expressed in the concept of "agriculture of the middle", while powerful, flows from the productionist paradigm of mid-20th century industrial agriculture – a paradigm that puts primacy on agricultural production, rather than on the supports and services necessary for a community-based food system. "Infrastructure of the middle" gives prominence to both production and the vast middle ground -- the metabolic, geographic, sociological, and indeed physical rift (Wittman, 2009) -- separating farmer from eater and eater from farmer.

"Infrastructure of the middle" acquires theoretical significance from the MLP's identification of sociotechnical systems as essential for transition. However, the MLP does not adequately capture the level of contestation involved in establishing niches and challenging the regime. A more appropriate term than niche might be "beachhead", which reflects the tenuous

and oppositional nature of the niche's relationship to the existing food procurement regime. As well, the MLP does not adequately recognize the key role of individual champions who establish the niche or "beachhead" in the first place, and protect it from a resistant foodservice regime. The narrative made explicit by "infrastructure of the middle" indicates that the transition to sustainability requires confrontation because it challenges the value system and path dependency of the mainstream foodservice regime.

7. Conclusion

The typology presented here attempts to elaborate the conceptualization of the MLP in particular, and STT in general, by challenging their supposition that transition arises from incremental niche expansions within a regime. The shift to sustainable local food procurement requires critical analysis of the dominant role of transnational corporations in contemporary university and public sector foodservice. Three global foodservice corporations – Sodexo, Aramark and Compass – and one global distributor, Sysco, have risen to prominence since the 1980s, during what food system analyst Philip McMichael describes as "the third food regime" (McMichael, 2013). This third regime is characterized by the "unprecedented market power and profits of monopoly agrifood corporations, globalized animal protein chains, growing links between food and fuel economies, a 'supermarket revolution', liberalized global trade in food, increasingly concentrated land ownership, [and] a shrinking natural resources base" (Holt Giménez & Shattuck, 2011, p. 111; cf. McMichael, 2013).

Using the language of the MLP, this article argues that when Renting et al.'s (2003) concept of SFSCs is re-conceptualized as "infrastructure of the middle", and linked with public institutions such as universities, niches or "beachheads" can be established that begin to offer

mid-size farmers the critical mass they need to challenge the existing global agro-industrial regime. However, the process is much more confrontational than classic MLP writings implied. As Blay-Palmer and Donald note, "large firms are reformulating the rules of the game for small suppliers, transforming traditional supply chains, making it more difficult for smaller players to maintain their presence in the market or for new players to enter it" (Blay-Palmer & Donald, 2006, p. 393).

This article argues that the missing link in scaling up and out sustainable local food systems is not the inability of farmers to produce food, but the weakness of the "infrastructure of the middle" – the connective tissue. As Senge notes, "transforming systems is ultimately about transforming relationships among people who shape those systems" (Senge, Hamilton, & Kania, 2015, p. 6), and involves embodying "an ancient understanding of leadership; the Indo-European root of "to lead," *leith*, literally means to step across a threshold – and to let go of whatever might limit stepping forward" (Senge et al., 2015, p. 2). The concept of "infrastructure of the middle" embeds public sector food procurement in communities, nature, and economies. As such, it has the potential to be the midwife of an emerging sustainable local food system.

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CHAPTER 7

INVITED ARTICLE – ACCEPTED WITH REVISIONS. This article was written for the Journal of the Sociology of Agriculture and Food: Special Issue on "Values-Based Food Chains". The papers in this special issue were all presented in a working group of the 2016 International Rural Sociology Association conference at Ryerson University.

Can Values-Based Food Chains (VBFCs) Advance Local and Sustainable Food Systems: Evidence from Case Studies of University Procurement in Canada and the UK

Abstract

This paper analyzes some key concepts and terminology associated with "values-based food chains" (VBFCs), based on perspectives from the author's research into university food procurement experiences in England and Canada. The author suggests modifications to the conceptualization of VBFCs to overtly include public institutions, public purpose and food system reform as crucial components of a sustainable food chain. The paper presents "infrastructure of the middle" as a conceptualization which offers a more expansive understanding of food supply chains in the context of reforms fostering food security and social, ecological and economic sustainability. "Infrastructure of the middle" features community-based mid-size infrastructure, and presents food supply chains as two-way relationships, including cafeteria-to-farm as well as farm-to-cafeteria. The paper includes a critique of market differentiation for mid-size farmers as an approach to growing sustainable food systems.

Keywords: "infrastructure of the middle", VBFC, local food, sustainability, university food procurement, foodservice, public sector catering, Local Food Plus, Food For Life Catering Mark

1. Introduction

This paper analyzes some key concepts and terminology associated with what are called "values-based food chains" (VBFCs), based on perspectives from the author's research into university food procurement experiences in England and Canada[1]. As a counterpoint to the original VBFC perspective, this paper emphasizes the central role of proactive public sector food procurement in the development of VBFCs. This paper also argues that public institutions and civil society can and do play a critical role in emerging alternative supply chains, on par with the role of producers. This and other arguments were investigated in the course of 67 detailed semi-

[1] Universities are public sector institutions in both Canada and the UK.

structured interviews with practitioners, conducted between 2013 and 2016. They suggest that we need to rethink the current conceptualization of VBFCs based on four points: 1. Infrastructure should be problematized so that public purpose and other food system reform objectives (e.g. environmental and social objectives) are included, alongside business functions; 2. Public sector food procurement, particularly by universities, needs to be seen as a critical tool for fostering sustainable regional food systems supporting small and mid-size farmers; 3. Food supply chains can be conceptualized as two-way relationships going from cafeteria to farm, as well as from farm to cafeteria ("demand-pull" as well as "supply push"); and 4. Community-based mid-size infrastructure needs to be identified as most appropriate to the needs of sustainability, as well as the survival of mid-size farmers.

This article reviews and compares two civil society initiatives in university food procurement – the Soil Association's Food For Life (FFL) Catering Mark in the UK, and the Local Food Plus (LFP) program in Canada. In England, interviews were conducted with Soil Association staff responsible for the Food For Life Catering Mark and staff at leading universities using the mark, as well as farmers, processors, and distributors taking part in the program. Interviews were conducted in Canada with staff from Local Food Plus, the University of Toronto, and a range of food suppliers. The author herself was a practitioner, as the founder and former president of Local Food Plus, which, in partnership with the University of Toronto, pioneered public procurement of sustainable local food in Canada. As such, this paper brings a perspective informed by praxis – insights gleaned from prolonged experience wrestling with supply chain issues – as well as by primary academic research.

This paper confirms the importance of the dialogue initiated by proponents of VBFCs. The VBFC conversation profiles the role of ethical values, already coming to the fore among

purchasers of food meeting fair trade, organic, ecological, local, cruelty-free and fair labour standards. "Values" are becoming part of everyday discourse about the need for new approaches to food, and the VBFC concept echoes that conversation among food scholars. Beyond the conversational level, however, the conceptualization and terminology of VBFC are problematic.

In their insightful review of food hub literature, Berti and Mulligan note that the widely-shared terminology associated with VBFCs conceals a deep division between two streams of thinking (Berti & Mulligan, 2016). One stream, which Berti and Mulligan call "values-based agri-food supply chains", is in alignment with business strategy thinkers Porter and Kramer, who interpret what they call "shared value" as a means of securing competitive advantage (Porter & Kramer, 2011). Porter and Kramer define "shared value" as "policies and operating practices that enhance the competitiveness of a company while simultaneously enhancing the economic and social conditions in the communities in which it operates" (Porter & Kramer, 2011, p. 66). This "shared value" analysis is notable for the absence of any reference to public policy, public purpose, public interest, government leadership, trade agreements, subsidies to agribusiness, deregulation, power relations, or externalities, be they negative or positive.

The second stream of thinking identified by Berti and Mulligan is the "sustainable food community development" approach, which is oriented toward building a more sustainable food system. An illustration of this approach is the definition of food hubs proposed by Blay Palmer et al. as "networks and intersections of grassroots, community-based organizations and individuals that work together to build increasingly socially just, economically robust and ecologically sound food systems that connect farmers with consumers as directly as possible" (Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013, p. 524).

The evidence from this research aligns with the second approach. This paper proposes another way of conceptualizing infrastructure than VBFCs, which the author calls "infrastructure of the middle". "Infrastructure of the middle" places public interest advocates, civil society partners, sustainability-minded food producers and public procurement champions at the centre of the new food logistics. "Infrastructure of the middle" is a way of visualizing the range of resources, services, capacities and networks that are required to connect mid-size farmers to regional public purpose institutions such as universities, which offer producers the stable, high-volume contracts they need to survive in a marketplace dominated by global oligopolies. Typically, public purpose institutions such as universities contract out their food service operations to global corporations which purchase from large distributors, excluding both small and mid-size farmers and processors. "Infrastructure of the middle" is adapted from Kirschenmann et al.'s 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 are said to be "too small to compete in the highly consolidated commodity markets, and too large and commoditized to sell in the direct markets" (Kirschenmann, Stevenson, Buttel, Lyson, & Duffy, 2008, p. 3). Like agriculture of the middle, "infrastructure of the middle" is also under threat (Constance, Hendrickson, Howard, & Heffernan, 2014; Nolan, 2010; Walkom, 2008, 2013), and must be strengthened if local food is to be produced in ways that are environmentally, socially and economically sustainable.

The concept of "infrastructure of the middle" is also influenced by the concept of "infrastructure of collaboration", articulated by Harvard business professor Rosabeth Moss Kanter in her book *World Class: Thriving locally in the global economy* (Kanter, 1995). Kanter argues that the "infrastructure of collaboration" is "the means by which people and organizations

can come together across sectors to recognize, value and leverage their area's assets for mutual gain" (Kanter, 1995, p. 363). She says "politics involve battles over distribution: who gets which slice of the pie. A community's social infrastructure, in contrast, offers the prospect for expanding the pie" (Kanter, 1995, p. 363).

This paper proposes that an expanded definition of infrastructure is needed to encompass these functions. Infrastructure is commonly defined as "the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise" (oxforddictionaries.com). With food systems, this usually refers to "hard" infrastructure such as roads, warehouses, distribution centres and processing facilities. However "infrastructure of the middle" pays equal attention to "soft" infrastructure – the relationships, civil society organizations and individual public sector, private sector and civil society champions who actively create "soft power" and "community capitals" (Flora, Emery, Fey, & Bregendahl, 2005; Nye, 2004), the main power sources of the food movement, which cannot currently compete against the economic might of global agribusiness.

Although the term "values-based food chains" is evocative and generative, this paper suggests that the concept of "infrastructure of the middle" can contribute to a more fulsome understanding of the complexity of the alternative supply and demand chains required for sustainable food systems. The paper concludes by arguing that a public purpose, manifested through a university or similar public sector institution, which enhances and harnesses the multifunctionality of food, is essential, and should be emphasized in thinking about sustainable local food. Public sector institutions – and their foodservice directors and chefs – can play a role in shaping the food system to respond to institutional, producer and societal needs. In other

words, if we accept that the overall project is about values-based food, not just supply chain reform, then the dialogue needs to be framed in terms of public values and purposes.

2. Two Case Studies

The Food For Life Catering Mark is a certification scheme for institutional purchasers of sustainable and healthy food. It was developed by the Soil Association, which describes itself as "the UK's leading membership charity campaigning for healthy, humane and sustainable food, farming and land use" ("The Soil Association - About Us," n.d.). The Catering Mark supports the Food For Life Partnership, a ground-breaking program designed to transform both meals and food culture in British schools. The program promotes tastier, healthier and more sustainable meals, together with curriculum on food literacy, growing and cooking. The Catering Mark is not an either-or proposition. It features a ladder for improvement, with bronze, silver and gold awards to encourage progress. This ladder is designed to engage as many foodservice operators as possible, and then move toward increasingly healthy and sustainable offerings. Foodservice operators can move through the three levels by demonstrating an increasing commitment to four principles: 1. Food freshly prepared on-site; 2. Ingredients sourced sustainably and ethically when possible; 3. Ingredients sourced locally when possible; and 4. Healthy eating made easy. At the silver and gold levels, there is also a requirement to purchase a percentage of organic food. More than 1.6 million Food For Life Catering Mark-certified meals are served each day (Stahlbrand, 2016b). In this case study, the supply chains of two universities using the Catering Mark were analyzed – Nottingham Trent University (NTU), a university of about 27,000 students in the Midlands city of Nottingham with a self-operated foodservice, and University of

the Arts London (UAL), a multi-campus university of about 26,000 students in downtown London, which contracts with a regional independent foodservice company.

In Canada, Local Food Plus (LFP) certification focuses on farmers, rather than foodservice operators, and encourages farmers to move toward more sustainable practices. LFP standards are based on five guiding principles – 1. Employ sustainable production systems to reduce or eliminate synthetic pesticides and fertilizers, and conserve soil and water; 2. Provide healthy and humane care for livestock; 3. Provide safe and fair working conditions for on-farm labour; 4. Protect and enhance on-farm biodiversity and wildlife habitat; and 5. Reduce on-farm energy consumption. LFP certification is unique in its effort to combine local with sustainable practices. Farmers must achieve a score of 75% or better to be entitled to call their operation "Certified Local Sustainable" and use the LFP certification seal. In 2006, LFP launched a partnership with the University of Toronto (U of T) to offer Certified Local Sustainable food in selected cafeterias and retail outlets, representing the first time that a Canadian university made a formal commitment to purchase sustainable local food. Participating cafeterias agreed to purchase 10% of the dollar value of their food in the first year from Certified Local Sustainable farmers and processors, with a 5% increase each year going forward. The U of T is one of the largest universities in North America, with 85,000 students over three campuses. It has both self-operated and contracted foodservice.

3. Values-Based Food Chains (VBFCs)

Stevenson and Pirog write that VBFCs – which they also refer to as "mid-scale food value chains" (Stevenson et al., 2011) -- are "distinguished from traditional food supply chains by the combined way they differentiate their products (food quality and functionality, and

environmental and social attributes), and how they operate as strategic partnerships (business relationships)" (Stevenson & Pirog, 2013, p. 3). Similarly, a USDA report defines food value chains as "business arrangements [are] distinguished by their commitment to transparency, collaborative business planning and exchange of market intelligence and business knowhow among chain partners, and their interest in developing business strategies and solutions that yield tangible benefits to each participant in the system" (Diamond et al., 2014, p. iii). In both definitions, the focus is on chain members who are primarily farmers and the downstream processors and distributors with whom farmers work – the "strategic partners".

Stevenson and Pirog adapted the concept of VBFCs from business literature on supply chains, particularly the automobile industry. Although they do not reference well-known strategic business thinkers Porter and Kramer, their terms and assessments are similar (Porter & Kramer, 2006, 2011). The emphasis of VBFCs is on farmer relationships with processors, distributors and retailers – people with whom farmers have "business to business" (B2B) relationships. VBFCs are different from conventional food supply chains, according to Stevenson and Pirog, because members of conventional food supply chains are competitive or even adversarial with each other. Price, not value, is the key competitive advantage each party looks to maximize. Anonymous upstream producers are interchangeable and exploitable in this relationship. Farmers receive the least income and profit, while dominant players operating at national and international scale do well because farmers outbid each other to meet the price point imposed by aggregators further downstream (Stevenson & Pirog, 2013).

By contrast, Stevenson and Pirog identify four characteristics of VBFCs. Values-based food chains, they say: 1. "have the capacity to combine scale with product differentiation, and cooperation with competition, to achieve collaborative advantages in the marketplace;

2. "emphasize high levels of performance and inter-organizational trust"; 3. "emphasize shared values and vision, shared information (transparency) and shared decision-making among the strategic partners"; and 4."make commitments to the welfare of all strategic partners in the chain, including appropriate profit margins, fair wages and long-term business agreements" (Stevenson & Pirog, 2013, pp. 3–5). In other words, the "value" in value-based supply chains comes from the social glue that helps producers hold fast against hard bargains driven by large players at the top of the chain. As theorized by Stevenson and Pirog, VBFCs are supply chains that are mutually supportive, collaborative, cooperative and community-engaged, in sharp contrast to conventional supply chains, which rely on cheap de-territorialized and amoral commodities produced in bulk by anonymous farmers who compete against each other on price.

VBFCs are in the tradition of collective self-help, and designed to protect producers from the challenges they face in a world where small independent businesses must buy from large oligopolies that sell inputs, and sell to large oligopolies that distribute or retail food. Stevenson and Pirog argue that farmers, ranchers and fishers – who usually receive the least financial benefit from conventional food supply chains – face particular challenges when attempting to construct VBFCs. These include identifying appropriate partners and building relationships of trust, distinguishing points of product differentiation, setting price, determining strategies to address quality control and food safety issues, finding adequate financing, sourcing research and development support, developing meaningful standards across the supply chain, and creating governance structures.

In the article often credited with introducing the VBFC term and concept, Stevenson and Pirog propose a pledge for VBFC actors, to encourage "the creation of economic value chains distinguished by a mutual commitment to sustainability, fairness, and food quality" (Stevenson

& Pirog, 2008, p. 138). The pledge asks that "all partners in the value chain pledge to make business decisions that will ensure the economic sustainability of all other partners in the chain" (Stevenson & Pirog, 2008, p. 138) and that "the success of values-based business chains will be measured by increases in the volume of food sold by companies that are committed to food-quality enhancement, environmental and resource stewardship, transparency, and the equitable sharing of power and economic returns across the value chain" (Stevenson & Pirog, 2008, p. 138).

The purpose of the VBFC concept is positive. It is designed to identify and support farmers applying ethical principles that differentiate them from the conventional impersonal and anonymous food system. By recognizing that farmers are usually price-takers, scholars writing about VBFCs argue that farmers have to articulate their visions, develop an identity and products that reflect their identity, and then collaborate, so they are not competing with each other on price. Diamond and Barham suggest that although the "value" in value chains usually refers to economic value, Stevenson and Pirog deliberately overlay a second meaning that highlights ethical or social values. The dual use of the word "value" expressed in the VBFC term "values-based" was developed in the first decade of the new millennium.

This discussion of values-based food happened at the same time as another global shift in thinking about the role of small and mid-size farmers and the infrastructure they need. McMichael and Schneider (McMichael & Schneider, 2011), in particular, point to the World Bank's *World Development Report 2008* (The World Bank, 2007), which proposes a "new agriculture" where "the private sector drives the organization of value chains that bring the market to smallholders and commercial farmers" (The World Bank, 2007, p. 8). McMichael and Schneider argue that the World Bank's agenda is "to incorporate small farmers into the World

Bank's neoliberal conception of a 'new agriculture'" (McMichael & Schneider, 2011, p. 125), and that on a global scale this has created a divide over "the question of whether agriculture is a servant of economic growth, or whether it is truly multifunctional and should alternatively be developed as a foundational source of social and ecological sustainability" (McMichael & Schneider, 2011, p. 129). In a more recent article, McMichael is even harsher about the design of value chains as applied to the Global South. He argues that "value chains serve to generate *value* that can be appropriated by agribusiness and its financiers – in the commodity form of food, feed and agrofuels for elite consumers, redistributing value from producers to corporate financiers (whether in agribusiness or any other economic sector)" (McMichael, 2013, p. 672).

Given this international context, the term VBFC can have different implications than those intended by Stevenson and Pirog, and their colleagues. The Stevenson and Pirog language is framed as a critique of conventional agriculture. This critique supports social and environmental values likely to arise from small and mid-size farmers, who are central to the vibrancy of rural communities. However, when rhetoric is converging but strategy is diverging, words must be carefully chosen. This paper proposes another conceptualization called "infrastructure of the middle", which fills out the VBFC concept with more operational details, and avoids the use of a word whose meaning can be appropriated.

4. "Infrastructure of the Middle"

A wide range of scholars are in general agreement about three major points: 1. Small and mid-size farmers are disappearing; 2. Small and mid-size farmers are vital to rural communities and a resilient food system; and 3. Small and mid-size farmers need to find ways to avoid competing on price. VBFCs, Short Food Supply Chains (SFSCs) and Alternative Food Networks

(AFNs) are all terms that have been used to characterize ways of organizing aspects of the food system to address these problems, as well as the social and environmental problems associated with the conventional food system (Aubry & Kebir, 2013; Cleveland, Carruth, & Mazaroli, 2014; Goodman, 2009; Goodman & DuPuis, 2011; Hardesty et al., 2014; Kneafsey et al., 2013; Lockie, 2008; Morris & Kirwan, 2011; Renting, Marsden, & Banks, 2003; Sonnino & Marsden, 2006; Stevenson & Pirog, 2008; Whatmore, Stassart, & Renting, 2003).

The term "infrastructure of the middle" is part of the same broad discussion and exploration. A conceptualization of "infrastructure of the middle" emerged from in-depth study of the workings of the Food For Life Catering Mark in England and Local Food Plus in Canada, as well as the author's experience of creating and applying models that use public procurement as a tool for food system transformation. As a result, it is grounded in operational details. "Infrastructure of the middle" is also firmly based in the "sustainable food community development" perspective identified by Berti and Mulligan (Berti & Mulligan, 2016), and provides the foundation to empower producers so they receive enough money to maintain sustainable practices.

A basic component of this conceptualization is the central role of the public sector and civil society in enlisting support for community-based food systems. The public sector presence in "infrastructure of the middle" serves two functions. It embeds public purpose in food system outcomes, while simultaneously bolstering the economic power of mid-size farmers currently put at risk by the price demands of private sector aggregators. This conceptualization also emphasizes the interplay of all the actors and capacities needed in a mature "infrastructure of the middle". (A more detailed discussion of "infrastructure of the middle" is presented in another article (Stahlbrand, 2016a)).

This article now proceeds to review the ten organizational characteristics present in the university-based sustainable local food initiatives that were the subject of study. These ten characteristics include both actors and capacities. The actors are anchor institutions, civil society organizations, champions, foodservice contractors and suppliers. The capacities are certification tools, public policy and education, marketing and promotion, aggregation and identification of public purpose.

1. **Anchor institutions** -- Anchor institutions, such as hospitals and universities, have the purchasing power to create stable markets for mid-size farmers and processors who can supply large cafeterias (Dragicevic, 2015). In addition to purchasing power, anchor institutions have societal heft which can arouse interest, attract media attention and create momentum in the larger community. They also manifest the place of public institutions as actual participants in the food system – not just as regulators, but as actors.
2. **Civil society organizations (CSOs)** – Much of the leadership in sustainable local food work has been initiated by public interest CSOs which identify both public policy goals and supply chain issues that are normally seen as the purview of for-profit businesses (Blay-Palmer et al., 2013; Campbell & MacRae, 2013; Friedmann, 2007; Morgan & Morley, 2014; Orme et al., 2011). CSOs are logical champions and members of any supply chain with public interest goals that involve partnerships bridging distinct communities. This manifests the role of civil society organizations as social entrepreneurs, not just charitable service providers.
3. **Tools to measure progress towards sustainability** – Farmers with enough volume to sell to people with whom they have no direct relationship need to have a certification

tool to vouch for their authenticity. Otherwise they risk having their value proposition diluted by charges of greenwashing. Certification standards can encourage continuous improvement among participants, as well as provide information that purchasers need to assess the value proposition offered by certified farmers.

4. **Individual champions** – Champions break down silos within an institution, which is essential to make a new multifunctional approach to food procurement possible. In addition to advocating the use of procurement to leverage a wide range of benefits for both the institution and society, champions hold a position of some authority and possess a range of social skills and knowledge competencies that permit them to move the agenda. Typically, sustainable food champions are senior administrators, sustainability and foodservice department heads, chefs, and managers/owners of key food suppliers. Champions are essential in this phase of development because the functions they fill lack system-embeddedness, and therefore require unusual levels of personal courage, talent and creativity.

5. **Self-catered/self-operated foodservice or local independent foodservice contractors** -- Global foodservice contractors are the norm in today's public institutions. However, the business model of these foodservice companies -- based on volume purchases of standardized low-cost food from anywhere – leads them to resist cost increases associated with support for local food security and sustainability. Global foodservice corporations commonly discriminate against small and mid-size producers by requiring high volume purchases and/or high levels of insurance, both inappropriate and unachievable for smaller businesses (Schreiner, 2016). Consequently, foodservice departments committed to sustainable local food orient to

keeping ownership and management in-house, or contracting to local and independent providers.

6. **Innovative suppliers** -- Business to business relationships are fundamental to localized economies (Shuman, 2015). Many suppliers to foodservice companies are innovators interested in reconfiguring resources, not just mobilizing them (Marsden, 2010; Marsden & Smith, 2005), and therefore buy as much as possible from local suppliers. They include processors, distributors, aggregators, and allied food businesses. Support for such "new food-economy SMEs" (Alison Blay-Palmer & Donald, 2006) is both a boost to their sales and to their reputation in the larger community.
7. **Public policy and public education capacity** – Civil society organizations, anchor institutions, and food policy councils can educate the general public about public policy issues, and can challenge food oligopolies in the court of public opinion. This reaffirms the importance of public objectives in the way individuals, as citizens, evaluate food, and expresses a "whole of government/whole of society" approach to sustainability (Dubé, Addy, Blouin, & Drager, 2014).
8. **Marketing and promotion capacity** – As in conventional food systems, supporters of sustainable local food need to inform and influence individuals, as consumers, with a view to normalizing the decision to change buying and eating habits. Point of sale material, social media, trade shows, public food celebrations, public speaking, as well as consistent coverage in the mass media are essential to the visibility, value proposition and branding of all sustainable goods.

9. **Food hubs**. Like the hub of a wheel that brings the spokes together to share their collective strength, a food hub brings a variety of food producers and consumers together to share their collective strength and buttress their economic power. Hubs are places where food from small outlets can be aggregated, where unprocessed foods can be processed, and where food-based relationships and advocacy can be established. Within the "infrastructure of the middle" model, hubs are "vehicles for sustainable transformation of the dominant food system" (Blay-Palmer et al., 2013, p. 524).
10. **A connection to community and environment** – By its very existence, an "infrastructure of the middle" organization makes two transformative statements. First, food is a public interest issue relevant to the economy, environment, health and community – not just a matter for private decisions and for-profit corporations. Second, small businesses, public agencies and individual citizens all have important roles to play by choosing foods that support community food security, community heritage, the local environment, local jobs and the well-being of community-based food producers.

5. Advantages of the "Infrastructure of the Middle" Conceptualization

"Infrastructure of the middle" challenges some basic assumptions of VBFCs. In particular, as a proponent of "infrastructure of the middle", this author takes a different approach to two critical features of VBFC thinking about food supply chains: 1. the issue of product differentiation; and 2. the power imbalance within supply chains. Product differentiation commonly refers to the creation of a niche that adds profit by distinguishing a product from

mainstream offerings, avoiding direct competition on price. The VBFC approach emphasizes the contribution of values to product differentiation. However, the term "product differentiation", borrowed from business strategy, is problematic for two reasons. It sidesteps the need to correct the inevitable imbalance in power between oligopolies and mid-size producers. It also conflates the needs of producers for competitive advantage, as if that need were equivalent to the value of protecting the environment and society.

Addressing environmental degradation is a global obligation that needs to become the norm for all producers. The same holds true for equity issues. For example, no business in North America is entitled to use child labour to gain a competitive advantage. It is illegal to do so. Likewise, most organochlorine pesticides are banned from agricultural use in North America, and no producer can gain competitive advantage by using them. Yet we do not apply this approach of entrenching basic values in law to many aspects of animal welfare, pollinator protection, pollution abatement, GHG reduction, conditions for migrant workers, and other examples of environmental or social values in food production. Such issues are largely considered by neoliberalism to be matters that the market should address through product differentiation.

The paradox of the VBFC conceptualization is that small and mid-size farmers -- the least powerful and most price disadvantaged players in the food system – are increasingly the ones being asked to shoulder costs of environmental and social protection through their production practices. While small and mid-size ethical producers must charge prices that internalize many of the costs associated with sustainability, many large-scale producers maintain their price advantage by externalizing the cost of unsustainable practices. This puts small and mid-size ethical farmers at a competitive disadvantage within the mainstream food system. Even if they

are successful at creating niches for their products, their costs of production are higher. Leaving such critical choices about the future of the planet to marketplace differentiation is the ultimate commodification of sustainability, and completely at odds with the stated values of VBFCs.

The second organizational feature of most food supply chains addressed by "infrastructure of the middle" is how power relations are structured. Most food supply chains of any size are controlled by a handful of giant multinational foodservice companies, distributors and retailers. These corporations set terms and price. They can refuse to pick up smaller orders, or demand that food is packaged or labelled in certain ways that may pose an unnecessary burden on small and mid-size farmers (Schreiner, 2016). These corporations have the power to demand the supply chain relations that work best for them, whether or not these arrangements work for farmers, the community, or the environment.

An appendix to a USDA report on food value chains includes a "Sysco Partnership Charter" in which Sysco, the largest food distributor in the world with sales of $49 billion US in 2015, agrees to work "in a trust relationship, using sound business practices and open communication to ensure the realization of a fair return for effort and investment to all participants in the values chain – fieldworkers, farm owners, packinghouse operators, aggregators and shippers, distributors, foodservice operators, and the consumers they serve" (Diamond et al., 2014, p. 44). The power imbalance in this partnership is obvious, yet there is no mechanism for oversight or dispute resolution if one of the strategic partners fails to uphold the principles of the charter.

The concept of "infrastructure of the middle" attempts to redress the problem of the power imbalance within the food system by using the purchasing power of large public institutions during the initial phase of increasing the capacity of sustainable local food producers

and suppliers, before they venture into other sales areas. By including public purpose institutions as anchors in food supply chains, "infrastructure of the middle" emphasizes the importance of the public realm if the world is to move towards more environmentally, socially and economically sustainable local food systems. The VBFC concept, by contrast, focuses on strategic business partnerships, which can include transnational corporations. Yet these corporations, which have profit as their mandate and no formal public purpose, cannot be expected to ensure that social and environmental values are built into the food system. This is particularly so for global corporations which are not embedded in the communities in which they operate.

By contrast, public institutions -- including universities, schools, municipalities and hospitals – are embedded in their communities. These institutions can use creative public procurement to achieve multiple goals which support the growth of sustainable local food systems (Friedmann, 2007; Morgan, 2008; Morgan & Morley, 2014; Morgan & Sonnino, 2008; Roberts, Archibald, & Colson, 2014). The public sector is not a niche market; rather it is a significant market segment which supplies millions of meals a year in a variety of settings. Once this model is established, it may have the potential to become a stepping stone to other opportunities.

Recognizing food's multifunctional potential is a priority. It allows us to ask what food can do for the institution, not only what the institution can do for food. Multifunctionality recognizes that food (not just agriculture) can address health, economic, environmental, social, cultural and reputational goals of public institutions (Roberts, 2014, 2016). Without a multifunctional perspective, university food has been relegated to an ancillary service, rather than a core part of the university's mandate. However, recognizing the multifunctionality of food allows public institutions to be identified as pivots for food system transformation and enablers

in local economies. In terms of food procurement, they can provide significant and stable markets for food businesses, showcase new options to the public, and open "more sustainable spaces of possibility" (Marsden & Franklin, 2013, p. 639).

Marsden et al. develop this argument further in a report for the Public Policy Institute of Wales (Marsden, Morgan, & Morley, 2016). They make a case for "more proactive and reflexive food governance" that puts food at the centre of public policy (Marsden et al., 2016, p. 22). Furthermore, they argue for a more "demand led production arena" that creates a "far more public demand-oriented food system which delivers diverse sustainability and nutritional health benefits" (Marsden et al., 2016, p. 12), in order to address issues including the loss of independent farm businesses, rising food poverty and food inequality, and the need for food and farming to make a significant contribution to reducing GHG emissions.

6. Conclusion

At its most effective, "infrastructure of the middle" is a series of operational relationships, a co-learning system that includes dialogue and negotiation, and a set of community relationships. Indeed, "infrastructure of the middle" has the potential to embrace the entire food cycle including inputs and food waste, both of which are often excluded from discussions about food supply chains, because their costs are externalized to the environment.

Both the Food For Life Catering Mark and Local Food Plus certification represent conscious attempts to shift responsibility for sustainability transition away from individual consumer behaviour and purchases, towards collective and policy responses through institutional procurement. Key informants at universities stated in several interviews that certification helped them to set procurement goals, and remain current around sustainability trends. Farmers,

processors and distributors who supplied the universities confirmed that certification motivated them to adopt more sustainable practices, or source more local food, in order to get and keep university contracts (Stahlbrand, 2016b). This represents a breakthrough in the dominant discourse about sustainability, which puts the onus of responsibility on individuals, not institutions or governments, as prime movers. In effect, "infrastructure of the middle" is the operating system of a new framework for food system analysis based on principles of environmental, social and economic sustainability. It is not only about connecting farmers to a market. It is about connecting citizen-farmers to citizen-consumers who share a common vision of a food system that affirms values of sustainability, equity and health.

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CHAPTER 8

Dissertation Conclusion

1. Dissertation Overview

This dissertation began by asking what role university procurement might play in the transition to more sustainable local food systems. My interest stemmed from my experience as the founder and president of Local Food Plus, working in partnership with the University of Toronto (U of T) to bring Certified Local Sustainable food to U of T cafeterias and food retail outlets. That experience indicated that universities had an important contribution to make to sustainability transition in the food system, but that there were many challenges to be overcome. The obstacles became apparent to me as I worked on the day-to-day operation of implementing a sustainable local food program. Later, when I became an academic researcher, I found a useful framework for understanding my experience in the multi-level perspective (MLP). The MLP is a mid-level theory and heuristic device that has contributed to my understanding of the obstacles to sustainability transition in foodservice, and the conditions under which these obstacles may be overcome.

By highlighting the interplay of the niche, regime and landscape, the MLP helps to reveal both the context and structure of university foodservice stability, and the potential for a sustainability innovation to take hold. It is important to note that the conditions that make sustainability transition in foodservice challenging also exist in the broader context of food system change, and resistance to change. As Clapp notes, “over the past century, the forces of industrialization, globalization, corporatization and financialization have influenced the development of the global food system in ways that have built upon and reinforced each other” (Clapp, 2015, p. 306). Through an exploration of case studies and an elaboration of

"infrastructure of the middle", this research attempts to identify some of the community assets and communities of practice that need to be in place in order to begin to overcome the impact of these forces.

This dissertation presents three case studies of sustainability transition in university foodservice. The cases highlight the efforts of two civil society organizations – the Soil Association and its Food For Life Catering Mark, and Local Food Plus and its Certified Local Sustainable certification. Both the Food For Life Program and Local Food Plus have been the subject of other studies; however this is the first academic assessment to provide detailed empirical data about the day-to-day implementation of the two certification programs in university settings. While the Food For Life Catering Mark has been introduced in some form at several dozen universities in the UK, the Local Food Plus certification has only been fully implemented at the University of Toronto. A number of other Canadian universities purchase some local and/or sustainable food, but none other than the U of T (and McGill to a much lesser extent) has worked with a civil society organization and used its certification program in order to achieve the university's food procurement goals. Since the leadership role of civil society organizations in sustainability transitions in public food procurement is a central theme of this dissertation, I chose to focus on the one Canadian example where that role was decisive. At this point in time, all three universities profiled in this research have achieved varying degrees of success in implementing local and sustainable food procurement. I deliberately focus on examples of successful implementation because I am interested in discovering the commonalities shared by relatively successful sustainability transitions in university foodservice.

In this concluding chapter, I will review what this dissertation contributes to the scholarly conversation about the potential of creative public procurement for local and sustainable food

systems, assess the specific contributions to theory and analysis that I presented in the Dissertation Introduction, and also suggest ways that the research presented here can be built out, refined, revised and challenged.

Through an analysis of three case studies in university foodservice, this dissertation confirms Michael Redclift's observation, discussed in Chapter 2 (Research Context), that "environmental action has proved difficult in practice" (Redclift, 1997, p. 335). As Martin and Andrée have pointed out, an incumbent foodservice regime made up largely of oligopolistic transnational corporations has dominated the sector for several decades (Martin & Andrée, 2012). This dissertation also confirms Markard et al.'s definition of sustainability transitions (presented in Chapter 2) as "long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption" (Markard, Raven, & Truffer, 2012, p. 956). The sustainability transitions presented in the three case studies are all on-going and multi-dimensional, and require fundamental transformation in foodservice and in institutional culture if they are to endure and become permanent features of the universities. Sustainability is not a minor amendment or quick fix to today's food system. In this aspect, sustainability transition in the food system is akin to efforts in other fields such as energy or transportation, which also require fundamental re-thinking and transformation.

2. Major Findings

This dissertation adds to the general scholarly conversation about sustainable local food system development in two major ways – first, in terms of how the concept of "scale" can be understood, and second, in terms of how the concept of "local" can be understood.

As noted in Chapter 2 (Research Context), the concept of "scale" has been discussed widely in the literature. Mount notes that farmers operating at increased scale "may have difficulty delivering the set of intangible qualities that are expected to accompany local food – qualities including trust, authenticity, safety and confidence" (Mount, 2011, p. 116). Pitt and Jones argue that scholars of food system transitions "have been guilty of calls for scaling without explaining why this is desirable, or precisely what should be scaled: actors, programmes, practice or outcomes?" (Pitt & Jones, 2016, p. 13). As discussed in Chapter 5 (Local Food Plus), this dissertation defines "scaling up" as "normalizing" local sustainable food purchases, making them the rule, not the exception. Rather than requiring local farmers or processors to match their production to meet the needs of large-scale food purchasers, this dissertation posits that scale is a matter of infrastructure, and that "infrastructure of the middle" firms, such as mid-size aggregators and distributors which meet the needs of mid-size farmers, can provide a link to larger purchasers such as universities without requiring producers themselves to "scale up" at the risk of diluting their value proposition or sustainability. Chapter 6 ("Infrastructure of the middle") explores how expanding on the "to" in "farm to cafeteria" helps to break free from the binary of small direct local markets versus large anonymous markets to offer a third option, which can be facilitated by the creation of "infrastructure of the middle". Making infrastructure visible by studying the operationalization of the "to" in "farm to cafeteria" highlights that infrastructure is necessary at all scales, and that "scaling up" sustainable local food systems requires different kinds of infrastructure than that needed for monopolized and globalized food systems.

While this dissertation focuses on university procurement, there are many other areas where "infrastructure of the middle" might facilitate a transition to more local and sustainable

food systems, many of them overlapping. For example, "infrastructure of the middle" organizations have played an important role in the development of food retail outlets and restaurants that feature local and sustainable food. The Ontario Natural Food Co-op and 100 KM Foods are two examples of innovative "infrastructure of the middle" organizations in Ontario that are doing just that. These innovative distributors – one a cooperative and one a privately-owned company – sell sustainable products from Ontario to alternative retailers and restaurants. 100 KM Food also works with the University of Toronto.

As this dissertation presents, anchor institutions such as universities can play a critical role in creating robust, diverse and sustainable local food systems through their purchasing decisions. Indeed, anchor public sector institutions are arguably the basis of the "foundational economy", where 40% of jobs can be found (Bentham et al., 2013). Bentham et al. define the foundational economy as "that part of the economy that creates and distributes goods and services consumed by all (regardless of income and status) because they support everyday life" (Bentham et al., 2013, p. 7). Food, healthcare, education and transportation are all examples of sectors in the foundational economy. This is contrasted with the technology sector, which currently has a favoured place in government economic and industrial policy. In the foundational economy analysis, anchor institutions can be seen as "social franchises with explicit and implicit obligations to collectives including the local, regional and national state" (Bentham et al., 2013, p. 3). This dissertation argues that one of those public sector obligations is to support the transition to sustainable local food systems through their procurement decisions.

The second addition to the general scholarly conversation about sustainable local food systems made by this dissertation concerns the understanding of "local". As the case studies demonstrate, institutional procurement of local food is more challenging to the dominant food

system than some of the literature suggests. The challenging or oppositional nature of local procurement is made visible through an analysis of operationalization. Studying operationalization in university settings reveals the workings of mainstream distribution and foodservice, based on the rebate system, and its incompatibility with local procurement. The rebate system relies on a business model of large volume purchases and cheap food that is produced anonymously, and is therefore interchangeable. Although it is true that local farmers can use pesticides as intensively as distant farmers, as Born and Purcell have suggested in a well-known article (Born & Purcell, 2006), it is when the operationalization of distribution and purchasing are examined that the collective challenge of local becomes apparent. As Clapp argues, "distant agricultural landscapes" makes it easier for global corporations to externalize social and ecological costs and distance themselves from responsibility for them (Clapp, 2015, p. 305). As this dissertation argues, local food confronts the deeply embedded pricing mechanism of global foodservice corporations. This system – composed of a handful of large purchasers and many smaller sellers – also serves to drive down prices by allowing corporations to circle the globe to find farmers who will produce food at a cheaper price, while limiting farmers to just a few potential buyers. A focus on local food has the potential to become transformative because it offers farmers many more individual sales opportunities, and begins to right the balance between buyer and seller.

3. A Review of Seven Contributions to Theory and Analysis

In the Introduction to this dissertation, I committed to making seven specific contributions to theory and analysis of sustainability transitions in university food procurement

and in local food systems. In the next section of this conclusion, I review how I established these contributions.

Contribution to theory 1: Affirmation of the importance of "landscape" in the MLP, as illustrated in Chapters 4 (The Food For Life Catering Mark) and Chapter 5 (Local Food Plus).

These case studies add important details that stretch the boundaries of the existing MLP literature on landscape. The dissertation demonstrates how two organizations with equally talented and hard-working staff had different fates, in part due to landscape factors. These factors included the funding available to the two organizations (£16 million (approximately $32 million) of funding over four years from one large grant for the Food For Life program, versus $4 million over eight years pieced together from multiple sources for the Local Food Plus Program), the policy environment (concrete policy support from DEFRA in the UK, versus a largely aspirational Local Food Act in Ontario), and the existence of a well-established school meal program in the UK, versus no school meal program in Ontario. In other words, government policies, governance structures, institutions, cultural norms and programs matter, and are a critical part of a landscape that supports local and sustainable food systems (Blay-Palmer et al., 2013).

In a recent article, Geels acknowledges that structural landscape characteristics have generally been overlooked in transition research. Geels notes that examining the landscape is useful "to acknowledge deep-structural differences between countries in terms of constitutional structures, policy styles, ideologies, and economic structures. So, even when the same kinds of actors are involved, we should expect different enactment patterns between countries because static landscape structures create different affordances and action possibilities" (Geels et al.,

2016, p. 901). Geels comments that Marx's aphorism that 'men make their own history, but not in conditions of their own choosing' can be applied to landscape factors in the MLP. This dissertation, by providing a comparative analysis of university food procurement in both Canada and the UK, confirms Geels' expanded assertion about the importance of landscape in the MLP. Geels' recent emphasis on landscape factors is consistent with a significant theme in recent food system literature about the importance of place in the development of alternative food systems (Marsden, 2012; Morgan, Marsden, & Murdoch, 2006).

Contribution to theory 2: An enhancement of the role of agency, and the addition of the role of operationalization, at all three levels of the MLP.

This dissertation confirms that an understanding of operational details reveals many of the challenges and barriers in the sustainability transition, as well as the skill and work of individual agents involved in trying to overcome them. Foodservice includes a multitude of processes and procedures, many of them specific to particular locations and situations and impossible for any senior administrator to classify, which must be rethought in the transition to more sustainable local food systems. Sustainability transition is not possible unless foodservice workers take initiative on the ground and go beyond existing regulations and classifications. This also implies that organizations that wish to foster sustainability require new ways of thinking of human resources and how they can nurture a culture committed to sustainability transition (Milani, 2000). Civil society organizations such as the Soil Association and Local Food Plus play a critical role by providing knowledge and support to those who are taking the initiative to shift to more sustainable practices. For example, in Chapter 4 (The Food For Life Catering Mark) Chef Garrett Lynch at University of the Arts London explains how he was able to implement the

Food for Life Catering Mark in smaller outlets by completely rethinking and streamlining the menu – offering just two options a day featuring local and sustainable ingredients, rather than a long list of prepared foods. In the same chapter, Jen Collins of the Soil Association discusses the time-consuming and complex process she led to shift a requirement for free-range eggs from the silver standard to the bronze standard of the Food For Life Catering Mark. These are both examples of the central importance of personal agency, and how such on-going operational details reveal the complexity of sustainability transition. As Geels writes, "transitions are not teleological and deterministic, but continuously enacted by and contested between a variety of actors. Both technology deployment and institutions are continuous sites of struggle (Smith and Raven, 2012), as actors argue for or against the effectiveness, costs and desirability of certain technologies, policy goals and policy instruments" (Geels et al., 2016, p. 900). He adds that "transitions are likely to be non-linear; two steps forward may be followed by one step back (or steps in a different direction if actors change their beliefs and goals or if there is growing contestation of particular pathways)" (Geels et al., 2016, p. 900). Operationalization is, in effect, the study of enactment. Therefore this dissertation makes the case that agency and operationalization must be given prominence in analysis of all three levels of MLP, as well as in the interactions among them.

Contribution to theory 3: *A confirmation of Geels' recent amendments to the MLP indicating that the process of sustainability transition is not one of "alignment", but of struggle, mobilization and disruption, because sustainability initiatives disrupt existing practices and norms.*

Geels' acknowledgement in recent articles that sustainability transitions require struggle and mobilization is corroborated by Clapp, who identifies powerful global forces continually

pushing to expand the industrial food system, and notes that this expansionist bent makes scaling up sustainable local food initiatives especially challenging (Clapp, 2015, p. 306). For example, Chapter 5 (Local Food Plus) of this dissertation presents empirical research that demonstrates the entrenchment of the rebate scheme in foodservice, a key instrument of the industrial food system. The widespread use of this scheme requires mobilization by sustainability innovators in order to make space for small and mid-size farmers and processors. In Chapter 5, Lawrence Andres of Harmony Dairy explains how Aramark approached him with an offer to stock his milk at other sites where Aramark holds contracts, as long as he agreed to buy into the rebate scheme. The possibility of high volume sales is an enticement and pressure tactic used by global corporations to draw producers into a scaled up scheme. Such realities require reconceiving the MLP process of transition as one that disrupts the status quo, necessitating on-going resistance. Christensen's conceptualization of "disruptive innovation" (Christensen, 2003) only begins to describe the magnitude of the disruption wrought by the transition to more sustainable local food systems. As descriptions of operational changes in three institutions reveal, sustainable local food transitions represent a sociotechnical revolution requiring new social and technical practices – and new social metrics for evaluating these practices – at every level.

Contribution to theory 4: *A revised conceptualization of the role of the niche in the MLP -- not as an uncontested, non-competitive or protected space that allows for innovation, but as a "beachhead", a space of contestation and disruption, and possibly transformation.*

During the 1990s, the term "niche" began to be widely discussed in food marketing literature (Phillips & Peterson, 2001). A "niche" referred to a specialty food product that commanded a premium price, while niche marketing was defined as "a marketing strategy that

uses product differentiation to appeal to a focused group of customers" (Phillips & Peterson, 2001, p. 1). This type of niche is tolerated by the dominant food system because it is too small to pose a threat to the system, does not disrupt or otherwise require the dominant system to change its practices, and may even offer new additional opportunities for profit and control, as in the case of certified organic food (Guthman, 2004; Smith, 2006). However, if the MLP is to be understood as a framework for understanding *sustainability* transitions, not transitions in general, this dissertation argues that "beachhead" is a useful term which reflects the on-going market transformation necessary, rather than the market segmentation to which the term "niche" usually refers. Unlike Geels' original conceptualization of the niche as a "protected space", this dissertation proposes that the initial and limited efforts to introduce sustainability transition are better characterized as a "beachhead". The military metaphor of "beachhead" as "a defended position on a beach taken from the enemy by landing forces, from which an attack can be launched" ("Oxford Living Dictionary," 2016) is used purposefully to suggest how the "beachhead" innovation is at odds with the dominant foodservice regime. A niche becomes a "beachhead" when it tries to scale up and become part of the transformative process. In order to do this, it must confront the incumbent regime. Conflict, struggle, contestation and negotiation are everyday realities. Transformation is not assured.

In the case studies presented, the Food For Life Catering Mark and Local Food Plus did not occupy safe or protected spaces. Chapter 4 (The Food For Life Catering Mark) and Chapter 5 (Local Food Plus) both illustrate the difficulty of creating a niche that supports sustainability transition in foodservice. For example, Anne Macdonald, the U of T's Director of Ancillary Services, speaks about how ensuring that Aramark was meeting the contract requirements to buy from Certified Local Sustainable farmers required constant vigilance. Jaco Lokker, U of T's

Director of Culinary Operations, explains how one of the major advantages of working with Local Food Plus was the third party verification, which meant that he was not required to develop food sustainability standards for the university, and research each new potential supplier. With LFP's demise, there is no longer a straight-forward way to determine if a new farm supplier is meeting formal standards for environmentally and socially sustainable production. In this sense, the sustainability transition at the U of T suffered a setback with the folding of LFP, as well as taking a positive step forward by bringing foodservices in-house.

As noted throughout this dissertation, resisting the incumbent transnational foodservice and food distribution corporations requires a deep understanding of the need to mobilize. The incumbent regime offers many advantages to institutions because of its economies of scope (Chandler, 1990). As Gordon Food Service (GFS) Category Manager Steve Crawford explains in Chapter 5 (Local Food Plus), GFS is a one-stop shop providing fresh and prepared foods and condiments, as well as everything from cutlery to uniforms. When a university foodservice operator makes a commitment to an independently-run operation with a focus on sustainable local food, every item must be sourced separately. This requires extra work and inconvenience, which gives GFS and other "bundled" and full-service companies an enormous advantage that can repel competitors. Only those alternatives sponsored by organizations willing and able to press on and overcome resistance are likely to establish themselves.

Contribution to theory 5: *The centrality of infrastructure, and an argument that infrastructure needs to be consistently emphasized in assessments of transitions to sustainable local food systems.*

There is a growing literature on the role of infrastructure, and food hubs in particular, in sustainable local food systems (Berti & Mulligan, 2016; Blay-Palmer, Landman, Knezevic, & Hayhurst, 2013; Bloom & Hinrichs, 2011; Cleveland, Müller, Tranovich, Mazaroli, & Hinson, 2014; Horst et al., 2011; Izumi, Wright, & Hamm, 2009; Morley, Morgan, & Morgan, 2008; Rogoff, 2014). This dissertation confirms that there is a "missing middle" in local food infrastructure as Morley et al. have argued (Morley et al., 2008). But as Chapter 6 ("Infrastructure of the middle") proposes, the infrastructure required goes well beyond the physical creation of food hubs to include elements that could be considered "soft" infrastructure. As well, the infrastructure required for a sustainable local food system must be continually renewed and built out, as indicated in Chapters 4 and 5. For example, in Chapter 4 (The Food For Life Catering Mark), Ivan Hopkins of Nottingham Trent University speaks of the work he put into building a relationship with a local egg producer, who then went out of business. In the same chapter, Anthony Millward, a Nottingham-based produce distributor, speaks of how his work to source the products that Hopkins needs is on-going. This dissertation argues that infrastructure is not static or anonymous. Rather, it is created through the efforts of many individuals and teams working together and constantly refining and refashioning the requirements of their sustainability journeys.

Contribution to theory 6: *A typology of "infrastructure of the middle"*.

This dissertation argues that the infrastructure required for sustainable local food systems is not random, but is composed of ten distinct and interactive elements, all of which ideally are present for sustainability transition. This research adds to the work of scholars who have enumerated some of the best practices to create infrastructure for sustainability transitions in the food system (Blay-Palmer, Sonnino, & Custot, 2016; Landman et al., 2009). The dissertation describes the infrastructure suitable for building sustainable local university foodservice as "infrastructure of the middle", and in Chapter 6, the basic constituents of "infrastructure of the middle" are presented. The ten elements include: anchor institutions; civil society organizations with skills and knowledge dedicated to food system transformation; tools, such as certification systems, which measure progress towards sustainability; individual champions at many levels of the institution; self-operated foodservice and local, independent foodservice contractors; innovative suppliers; a public policy and public education capacity; a marketing and promotion capacity; food hubs as spaces of aggregation, transformation and collaboration; and a connection to community and the environment. "Infrastructure of the middle" is a way of understanding the range of resources, services, skill-sets, capacities, networks and communities of practice required to connect mid-size farmers to public purpose institutions such as universities, a market from which they have been largely excluded. While these ten elements may be enacted in different ways at different times, the data from the case studies presented in this dissertation, informed by a broad reading of the literature and my practitioner experience, suggest that all ten are necessary for a successful sustainability transition. No one institution has the complete set of skills, capacities and resources necessary for designing and delivering sustainable local food systems.

This dissertation also argues that "infrastructure of the middle" can begin to address the power imbalance in a food supply chain dominated by transnational corporations. For example, Ivan Hopkins relies on an "infrastructure of the middle" company such as Owen Taylor and Sons Ltd, the local butcher profiled in Chapter 4 (The Food For Life Catering Mark). By purchasing in significant quantity, Hopkins is helping to ensure that Owen Taylor will thrive without forcing the company to become dependent on mainstream retailers for a major portion of its sales. Jaco Lokker at the U of T buys directly from Carron Farms without requiring rebates. Partly because of regular purchases from Lokker, Carron Farms decided to shift its business strategy to primarily local sales, with institutional sales being a significant component of this.

Further research applying the typology to other cases of sustainability transition in the food system can test the usefulness of this typology. But I believe at least two points will be universally confirmed: 1.The central issue of scale in sustainable local food systems does not revolve around the scale of food producers, but rather around the scale of infrastructure which is adaptable to small and mid-size producers, and 2. A combination of hard and soft infrastructure is essential.

Contribution to theory 7: *A confirmation of the importance of "creative public procurement" in scaling up and out local and sustainable food systems.*

This dissertation argues that public purpose institutions such as universities are important sites of sustainability transition because of the power of creative public procurement (Morgan, 2008; Morgan & Morley, 2014; Morgan & Sonnino, 2008). Creative public procurement can shift the responsibility for sustainability transition away from the individual responsibility to "vote with one's dollars" towards a purposive response with "collective impact" (Kania & Kramer, 2011). This dissertation also argues, alongside many other scholars, that the

multifunctionality of food gives food the potential to address health, environmental, economic and social problems (Knezevic & Blay-Palmer, 2014; McMichael, 2011; Van Huylenbroeck, Vandermeulen, Mettepenningen, & Verspecht, 2007). As anchor institutions embedded in their communities and their community economies, universities are well-placed to take advantage of this potential. University food procurement may well be an effective way to move the needle on climate change abatement strategies, while contributing to local economic development.

4. The Vulnerability of Sustainability Transitions in University Foodservice

This dissertation confirms that "creative public procurement" has the potential to be more impactful on food systems than individual purchasing, that universities can be important sites of collective action for fostering sustainable local food systems, and that, as anchor institutions in their communities, universities have the potential to harness the multifunctionality of food to address a multiplicity of health, environmental, economic and social issues. As such, creative public procurement can be a midwife for sustainability transition in the foodservice industry.

However, sustainability transition in foodservice remains vulnerable. In November 2016, the student-led UK non-profit People and Planet released its 2016 University League ranking of UK universities for environmental and ethical performance. As Ivan Hopkins and his colleagues hoped, their efforts paid off and Nottingham Trent University was ranked Number One for the first time. However, in the news release issued with the league table, People and Planet expresses concern that the public policy landscape in the UK has changed in recent years, and sustainability is no longer high on the agenda (People and Planet, 2016). As well, the People and Planet website notes that since the end of the UN UNESCO decade for sustainable development in 2014, the Higher Education Funding Council for England (HEFCE) is no longer providing

funding to gather data on university carbon emissions or to "enable universities to equip students with skills and understanding for sustainable development" (People and Planet, 2016). This suggests that public sector food procurement cannot be the sole strategy for sustainability transition in the food system. Many approaches and initiatives at multiple levels of society are required.

In Canada, Meal Exchange, a youth-led civil society organization, is trying to build pressure for sustainable local food systems by developing a method for evaluating and monitoring university food procurement. However, as discussed in Chapter 5 (Local Food Plus), sustainable local food procurement represents a small portion of total university food purchasing, and its success is still largely due to the efforts of individual champions.

The success of the case studies presented in this dissertation point to some porosity in the existing system of university food procurement. There are opportunities and capable leaders in enabling circumstances who can move the agenda. But they must be supported by practices, policies, programs and funding. Cohen notes that changes to practices "do not occur merely as a result of aggregate choices of individuals. Rather, they result from changes […] made by policy makers, practitioners, advocacy groups and consumers who support new knowledge and competencies, reconfiguring material elements like infrastructure and increasing the acceptance of alternative practices by reshaping their meanings and helping them become normal" (Cohen & Wijsman, 2016, p. 217). In both the UK and Canada, it is still largely left up to civil society organizations to spearhead sustainability initiatives in foodservice. This makes these initiatives extremely vulnerable because civil society organizations do not have reliable revenue streams. They depend on charitable funding from a variety of sources, none of which is stable or

enduring. This means that the knowledge embedded in the skill-sets and communities of practice that CSOs develop can easily be lost if funding is lost.

5. Future Research Directions

As I write in the introduction to this dissertation, I interpreted "sustainability" through the narrow lens of what can be practicably achieved through institutional food procurement policies and practices. Furthermore, for the purposes of this research, I defined "sustainable local food systems" as systems that foster increased consumption of whole foods, usually produced within the region in which they are consumed, as well as grown and processed with practices that reduce pesticides, conserve soil and water, and treat workers fairly and animals humanely. Such definitions, of necessity, could not incorporate sustainable diets, waste management, packaging, or food security and food sovereignty in general. These and other elements of sustainability are included in the UN's 17 Sustainable Development Goals (SDGs), which have become a more prominent part of the conversation about sustainability transitions in the food system since I began this research. For example, the recent Agri-Chains and Sustainable Development 2016 Conference in Montpellier, France in December 2016 (where I presented) focused on the link between the SDGs and sustainability transition in the food system. This has also been an increasing part of the work of the Food and Agriculture Organization (FAO/RUAF, 2015). Therefore, future directions for research might investigate institutional food procurement impacts through the lens of the SDGs. For example, how might the development of public sector food procurement and the development of "infrastructure of the middle" affect sustainability variables such as poverty reduction, transportation, energy, water, waste and local job creation?

Another area for further research would be to collect additional empirical data through case studies similar to those presented here, which compare and contrast other universities and other kinds of institutions such as hospitals, child care centres and seniors residences in other cities and other countries. This would help to isolate what variables in universities have allowed them to move forward on sustainability transitions in foodservice.

I chose to research sustainability transitions which have had some degree of success. But it would also be useful to investigate cases where the sustainability transition didn't occur, or relapsed with the departure of champions. Such studies would all contribute to a deeper understanding of the processes of creative public procurement.

Still another area of potential research would be to investigate the role of certification schemes aimed at sustainability transition in other sectors. For example, how effective have Forest Stewardship Council (FSC) certification or the Leadership in Energy and Environmental Design (LEED) rating system for buildings been in comparison with similarly-inspired food initiatives. Researching a variety of institutions and certification schemes might contribute to understanding which variables are most decisive in sustainability transition.

An area of future research that is particularly compelling to me is to investigate the role of champions in sustainability transitions across different institutional food settings. Champions embody agency and demonstrate the importance of human creativity and perseverance in sustainability transition and the process of transformation. As I argue in this dissertation, the new infrastructure required for sustainability transition is both hard and soft. The pre-eminent role of champions and social innovators underlines the fact that sustainability transition requires human agency, not just technological fixes. This in turn requires workplaces ready to create learning communities where champions can be encouraged and nurtured.

When Local Food Plus launched at the University of Toronto in 2006, its slogan was "Let's go the distance, so our food doesn't have to". More than a decade later, human agency that can go the distance remains an essential ingredient in the transition towards sustainable local food systems.

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APPENDIX A

PHOTO GALLERY

The Food For Life Catering Mark

Ivan Hopkins, Head of Catering and Hospitality, Nottingham Trent University

Sample of Food for Life Publicity Material at Nottingham Trent University

Lori Stahlbrand and John Lupton, Sales and Marketing Manager at Owen Taylor and Sons Family Butcher

Anthony Millward, Managing Director of Millside-Barrowcliffe Produce Distributor, with Nottinghamshire strawberries

John Wood, BaxterStorey Operations Manager, and Alastair Johns, University of the Arts London (UAL) Head of Retail and Catering

Alastair Johns showing Point of Sale material for the Food For Life Catering Mark at UAL

Vikki Wright, Marketing Manager at Chegworth Valley Farm

Jeannette Orrey, former “Dinner Lady” (right) with a prizewinner at the 2015 Catering Mark Awards

Examples of Local Food Plus Certification Seals

Local Food Plus publicity material used at the University of Toronto (with the original LFP certification seal visible in lower left corner)

Local Food Plus launch at the University of Toronto, September 2006
(Chef Jaco Lokker is on the right)

Student being served at the LFP-U of T launch, September 2016, with Rod MacRae speaking in the background

Laurence Andres, President of Harmony Organic Dairy and LFP Board Member, Elbert Van Donkersgoed

Tom O'Neill, General Manager of the Norfolk Fruit Growers Association

Jason Verkaik of Carron Farms

Left: LFP Founder and President Lori Stahlbrand ,and LFP Co-founder and Vice-President, Mike Schreiner on the day of the LFP-U of T launch, September 19, 2006.

Right: LFP Certification Director, Vice-President and President as of June 2012, Don Mills

APPENDIX B

Soil Association
FOOD FOR LIFE
CATERING MARK

Handbook 2015

Universities

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Introduction to the Food for Life Catering Mark

The Food for Life Catering Mark is an independent endorsement, backed by annual inspections, for food providers who are taking steps to improve the food they serve.

The aim of the scheme is to encourage and reward caterers who:

- serve fresh food
- source environmentally sustainable and ethical food
- make healthy eating easy, and
- champion local food producers.

The Food for Life Catering Mark is available for all organisations who serve food. The fixed bronze standards apply to all caterers while silver and gold are assessed using a points based system. Points are achieved at silver and gold for sourcing environmentally friendly and ethical food, steps taken towards making healthy eating easy and championing local food producers.

The Catering Mark applies only to food. It does not cover drinks although you can achieve points at silver and gold for using organic milk (see section 2.1.1 for more information).

You can apply for the Food for Life Catering Mark using the form available on our website or call 0117 914 2406.

How to use this Handbook

All Catering Mark holders must have easy access to the Catering Mark Handbook for their area. There are individual Handbooks for:

- Schools and academies
- Early years
- Hospitals
- Universities
- Cafés, restaurants, workplaces and events catering
- Residential care and community meals

Hyperlinks to useful websites are included throughout each Handbook. The full web addresses are listed in the Web links section and on our website. If you find a link which does not work, please contact catering@foodforlife.org.uk. There is a summary of all the information you will need to prepare for your inspection in the 'How the scheme works' chapter.

Support and training

We can help you prepare for the inspection and provide you with the support you need. In addition to the general support on offer from the Catering Mark team to help food providers achieve the Catering Mark, we offer additional training opportunities. This can cover staff training to build organisation-wide understanding of the scheme, menu benchmarking, a pre-inspection assessment and marketing support. Find out more on our website or contact the Catering Mark team to discuss a package of support and to receive a quote: catering@foodforlife.org.uk 0117 914 2434

Principles of the Food for Life Catering Mark

Fresh food you can trust

Catering Mark menus are based around food that is freshly prepared on site or at a local hub kitchen from predominantly unprocessed ingredients. They are free from controversial additives and artificial trans fats.

Sourcing environmentally sustainable and ethical food

Catering Mark holders serve food which meets or exceeds UK animal welfare standards. Serving Catering Mark menus helps to lower carbon emissions and pollution and, at silver and gold levels of the scheme where organic ingredients are used, increases levels of biodiversity.

Making healthy eating easy

Catering Mark holders demonstrate compliance with national standards or guidelines on food and nutrition where these apply for their sector. They implement a range of steps to make healthy eating easier for their customers, in line with public health priorities.

Championing local food producers

Catering Mark holders champion local produce and local producers. This is an investment in the local community and local economy and is a way to reconnect people with where their food comes from and how it is produced.

Standards development

Catering Mark standards are set and overseen by the independent Food for Life Catering Mark Standards Committee.

The Standards Committee is made up of a range of independent experts, who are appointed by open recruitment on the basis of their individual experience and knowledge. You can find out more about the standards setting process and the current members of the Standards Committee on our website.

Changes to the Catering Mark standards always follow a public consultation, during which it is important that we hear your views. We publicise all Catering Mark standards consultations widely, including in Catering Mark e-news and on our website so do look out for them.

Email catering@foodforlife.org.uk or call 0117 914 2406 to sign up to Catering Mark e-news.

Bronze standards: Overview

To achieve the bronze Food for Life Catering Mark, caterers must meet the following standards:

1.1 At least 75% of dishes on the menu are freshly prepared (on site or at a local hub kitchen) from unprocessed ingredients.

1.2 All meat is from farms which satisfy UK animal welfare standards.

1.3 No fish are served from the Marine Conservation Society 'fish to avoid' list.

1.4 Eggs are from free range hens [NEW from 31st January 2015].

1.5 No undesirable additives or artificial trans fats are used.

1.6 No genetically modified ingredients are used.

1.7 Free drinking water is prominently available.

1.8 Menus are seasonal and in-season produce is highlighted.

1.9 Information is on display about food provenance.

1.10 Menus provide for all dietary and cultural needs.

1.11 All suppliers have been verified to ensure they apply appropriate food safety standards.

1.12 Catering staff are supported with skills training in fresh food preparation and the Catering Mark.

Silver and gold standards: Overview

The silver and gold Catering Mark standards use a points system and are assessed using the online points calculator which you'll find on our website.

To achieve silver and gold, in addition to meeting all bronze standards, caterers can achieve points for food served in three categories:

2.1 Ethical and environmentally friendly food

Points are awarded for sourcing organic, free range, Freedom Food, Fairtrade, LEAF, Marine Stewardship Council certified fish and Marine Conservation Society 'fish to eat'.

To achieve silver a minimum of 5% of the ingredient spend on your Catering Mark menu must be on organic food.

To achieve gold a minimum of 15% of the ingredient spend on your Catering Mark menus must be on organic food and at least 5% on free range pork or poultry meat.

2.2 Making healthy eating easy

Here caterers are rewarded for steps to make healthy eating easier for their customers. Points are awarded from a range of optional actions, in line with public health priorities.

2.3 Championing local producers

Caterers are rewarded for every penny spent on food produced in your region and for above average UK sourcing levels. Research into Catering Mark menus has demonstrated a social return on investment of over £3 for every £1 spent, mostly in the form of increased jobs and opportunities for local food producers. The Public Services (Social Value) Act places a duty on public sector institutions to have regard to the economic, social and environmental wellbeing of their relevant area in their food procurement.

Bronze Catering Mark standards


Soil Association
FOOD FOR LIFE
BRONZE CATERING
healthy soil, plants and animals = healthy food = healthy people
No nasty additives & at least 75% of our dishes are freshly prepared
FRESH
healthy
SEASONAL
traceable
SUSTAINABLE
eggs are free range
ingredients from local soil
meat that can be traced back to the farm

1.1. At least 75% of dishes on the menu are freshly prepared (on site or at a local hub kitchen) from unprocessed ingredients

At least 75% of the dishes you serve must be freshly prepared from basic unprocessed ingredients. A 'dish' is a main meal option or a dessert.

Food freshly prepared at a nearby catering facility is also acceptable. This allows the use of local hub kitchens within the local authority or 20 miles of where food is served where on-site kitchens are not available. Food can only be transported hot or chilled, not frozen.

Dishes may contain the following items and still be classed as freshly prepared:

- ✓ Fresh or frozen vegetables or fruit
- ✓ Canned sweetcorn or pulses
- ✓ Fresh, dried, canned fruit (no syrup), including tinned tomatoes
- ✓ Fresh or frozen meat (which can be pre-diced or minced) and ham
- ✓ Fresh or frozen dairy products including ice cream or yoghurt
- ✓ Sausages, burgers or meatballs (minimum meat content 62%)
- ✓ Pesto
- ✓ Cheese (unless processed, see opposite)
- ✓ Curry paste
- ✓ Pasta and rice
- ✓ Bread, rolls and wraps
- ✓ Stock cubes or bouillon (free from additives and trans fats as in standard 1.5)
- ✓ Bread mix, custard powder and gravy mix (free from additives and trans fats as in standard 1.5)

Dishes containing the following may not be counted as freshly prepared:

- ✗ Pre-prepared potatoes using chlorine-based whitening agents
- ✗ Reconstituted meat
- ✗ Pre-cooked meat (except ham)
- ✗ Packet mixes, with the exception of bread mix, custard powder and gravy mix (free from additives and trans fats as in standard 1.5)
- ✗ Pre-prepared sauces
- ✗ Bought-in baked beans
- ✗ Dried egg
- ✗ Dried milk products, such as skimmed milk powder (e.g. used for béchamel)
- ✗ Jelly cubes and crystals
- ✗ Sausages, burgers and meatballs with less than 62% meat content
- ✗ Processed cheese (cheese further processed to include additives, unfermented dairy ingredients, emulsifiers, extra salt or whey)
- ✗ Bought-in breaded or battered fish products

Why?

Preparing dishes from scratch gives catering staff more control over what goes into them, making it easier to provide a balanced meal.

Unprocessed ingredients are raw, basic and natural foodstuffs such as fresh or frozen fruit and vegetables, fresh or frozen meat or fish, flours, rice and pulses. Foods which have been subject to primary processing are included in our definition of unprocessed such as milk, good quality cheese, sausages, pasta and bread. This is in recognition of the practical challenges of making these items from scratch at the scale required for many commercial kitchens.

Guidance

- Assess your menu by calculating the amount of freshly prepared dishes as a percentage of the total number of dishes on your menu rotation. If this is below 75%, make changes to recipes and ingredients to increase the amount of freshly prepared dishes served.
- Use fresh and unprocessed ingredients wherever possible.
- Train catering staff in fresh food preparation.
- All dishes on the menu, whether freshly prepared or not, must be made with ingredients which meet the bronze standards e.g. all meat must comply with standard 1.2.
- Bought in sauces or those made using milk powder may be served as accompaniments to freshly prepared dishes because accompaniments aren't part of the freshly prepared calculation. For example, freshly prepared apple crumble, offered with custard containing milk powder, can count towards your freshly prepared percentage. However, a pasta dish made with a bought-in sauce does not count as freshly prepared, because the sauce is a main part of the dish.
- Making sauces from scratch, rather than buying in ready-made products, can often save money too.
- To check whether a dish you make would count as freshly prepared, have a look at Appendix 1 at the end of 'How the Scheme works'. For more help contact catering@foodforlife.org.uk or 0117 914 2406.

1.2. All meat is from farms which satisfy UK animal welfare standards

All meat and meat within products on the menu must be accredited by one of the following welfare schemes:

- Assured Food Standards (Red Tractor Assurance)
- Farm Assured Welsh Livestock (FAWL)
- Quality Meat Scotland (QMS)
- Farm Quality Assurance Scheme (FQAS) Northern Ireland
- EBLEX Quality Standard Mark (English Beef and Lamb Executive)
- Organic
- Freedom Food
- British Poultry Council Duck Assurance Scheme
- SAI Global/EFSIS Assured Farm Venison Standard
- British Quality Assured Pig Standard

Why?

Caterers using Farm Assured meat can claim with confidence that UK minimum standards on animal welfare are being met and that meat can be traced back to the farm. Without third party inspection, animal welfare standards have proven to be open to misinterpretation and occasional abuse. UK welfare standards prevent certain adverse practices in livestock farming still legal elsewhere, including sow stalls and higher stocking densities for indoor housed poultry.

Guidance

- Make a list of all the meat and meat products used in your Catering Mark menus.
- Make sure your suppliers can provide these products with assurance from one of the welfare schemes detailed above.
- Where necessary, choose new suppliers that are able to supply compliant meat products and supporting information. See our Catering Mark Suppliers here.
- Ask your suppliers to guarantee in writing or complete declarations that all the meat and meat products they supply for your Catering Mark menus comply with this standard.
- It is best practice to request that declarations are renewed annually, and current welfare certificates are held.
- Make sure that it is possible to establish the welfare status of meat from information on delivery notes and/or invoices (such as product codes linking with catalogues or by product description e.g. 'FA' for farm assured, 'RT' for Red Tractor, 'FF' Freedom Food etc).
- Ensure that the kitchen purchasing procedure only allows compliant meat and meat products to be ordered for Catering Mark menus.
- Periodically check invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.

1.2 Bronze Catering Mark standards

- This standard applies to all meat products e.g. pizza toppings, pasta sauce, pie and sandwich fillings, cooked and cured meats, sausage rolls and pasties.
- Any free range, outdoor reared or outdoor bred meat must also carry farm assurance certification under one of the welfare schemes detailed above.
- We can supply you with declaration templates, contact your Certification Officer.
- Think about your food ordering system from a Catering Mark Hazard Analysis Critical Control Points (HACCP) approach e.g. does the system ensure that if someone unfamiliar with the Catering Mark standards places the orders, they can't order non-compliant ingredients for the Catering Mark menu?

1.3. No fish are served from the Marine Conservation Society 'fish to avoid' list

You must not serve any fish that are on the Marine Conservation Society 'fish to avoid' list.

You must refer to the list when ordering fish.

Note – this list is updated regularly according to the latest research.

Why?

Over fishing has caused one third of all fish stocks worldwide to collapse, and scientists are warning that if current trends continue all fish stocks worldwide will collapse within fifty years.

Many thousands of dolphins, turtles and albatross are also caught by large drift nets or baited hooks. To be certain the fish you are using has been caught using sustainable fishing practices, you can buy fish certified sustainable by the Marine Stewardship Council which is now available from most suppliers.

Guidance

- Make a list of all the fish and fish products used in your Catering Mark menus. Check these against the MCS 'fish to avoid' list.
- Make sure your suppliers can provide fish that meets this standard, or find new suppliers that can.
- Ask your suppliers to guarantee in writing or complete declarations that all the fish and fish products they supply for your Catering Mark menus comply with this standard.
- It is best practice to request that declarations are renewed annually.
- Make sure that it is possible to establish species and source, or that fish is Marine Stewardship Council certified, from information on invoices (such as product codes linking with catalogues or by product description).
- Ensure that the kitchen purchasing procedure only allows compliant fish and fish products to be ordered for Catering Mark menus.
- Periodically check through invoices, specifications and certificates to ensure that they are in date and clearly link to the products used on your Catering Mark menus.
- Fish from the Marine Conservation Society 'fish to eat' list, Marine Stewardship Council or organically certified fish all comply with this standard. Your spend on these items can also earn points towards silver and gold.
- Check which fish are most sustainable when planning new menus.

1.4. Eggs are from free range hens [NEW from 31 January 2015]

You may only use eggs from free range hens, including liquid egg.

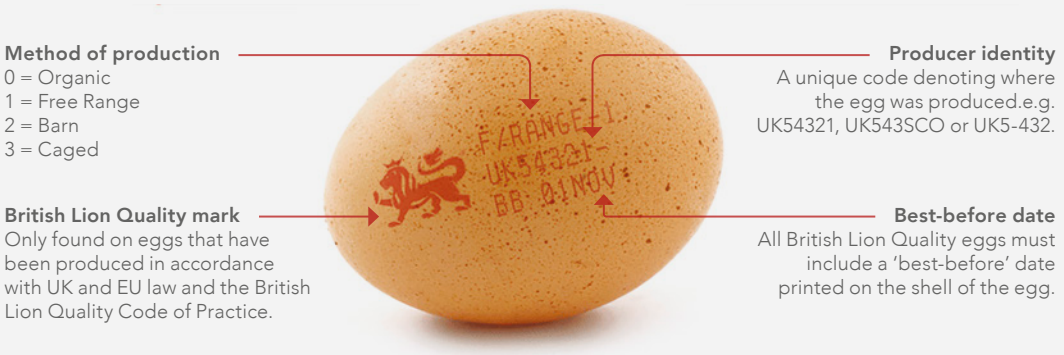
Why?

Although EU animal welfare regulations have banned conventional battery cages, they still permit the use of 'enriched' cages which do not allow the birds to express their natural behaviour and fall far short of acceptable animal welfare standards.

Free range hens have access to the outdoors and are not confined in cages. This allows them to benefit from daylight and carry out natural behaviours such as walking, wing flapping, dust bathing, perching and nesting.

Guidance

- Hold a contract with suppliers or ask suppliers to complete a declaration confirming they will only supply free range eggs. We can supply you with declaration templates, contact your Certification Officer.
- Make sure that it is possible to establish the welfare status of eggs from information on invoices (such as product codes linking with catalogues or by product description).
- Develop a purchase list for catering staff to use when placing orders. Ensure that only free range egg products are listed and delist eggs that do not meet this standard.
- Train catering staff to recognise egg labelling guidelines. See below.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the products used on your Catering Mark menus.
- If you obtain eggs from your own flock, please provide evidence that it is registered with the Animal Heath and Veterinary Laboratories Agency. Your Inspector will verify its free range status.
- Farm assurance or the Lion Mark do not guarantee that eggs are from free range hens.
- Organic eggs are from free range hens and also gain points towards silver and gold.
- Where bought-in products include egg as an ingredient e.g. mayonnaise, we don't require that to be free range.
- Free range eggs can be checked by using the code on each egg:



1.5. No undesirable additives or artificial trans fats

You must not use any products or ingredients which contain artificial trans fats or the following additives:

Colourings

E102 tartrazine

E104 quinoline yellow

E107 yellow 2G

E110 sunset yellow

E120 cochineal

E122 carmoisine

E123 amaranth

E124 ponceau 4R

E129 allura red

E131 patent blue V

E132 indigo carmine

E133 brilliant blue FCF

E151 black PN

Flavourings/enhancers

E621 monosodium glutamate

E635 sodium 5 – ribonucleotide

Sweeteners

E950 acesulfame K

E951 aspartame

E954 sodium saccharin

Preservatives

E211 sodium benzoate

Why?

There have been many different studies concerning the safety of these additives with mixed findings. Until their safety for human health and wellbeing has been scientifically proven, they are not permitted for use in Catering Mark menus.

Artificial trans fats or trans fatty acids (TFAs) are chemically altered vegetable oils, used to give processed foods a longer shelf life. They are produced artificially by a process called hydrogenation which turns liquid oil into solid fat.

The primary health concerns relating to trans fats are an association between increasing TFA intakes, coronary heart disease risk, and raised 'bad' cholesterol levels. The National Institute for Health and Clinical Excellence (NICE) guidelines call for trans fats to be eliminated from food in England.

Guidance

- Check your ingredients in stock and on purchase lists for these additives and trans fats (or 'partially hydrogenated oils') and delist any non-compliant products. We can supply you with declaration templates, contact your Certification Officer.
- Check labels or specifications of new products before adding to purchase lists.
- Communicate with your suppliers and make sure they can supply products that are free from these additives and trans fats.
- Hold a contract with suppliers or ask suppliers to complete a declaration confirming they will not supply products containing these additives or trans fats.
- Develop a purchase list for catering staff placing orders to use. Ensure that only compliant products are listed and delist products that do not meet this standard.
- Train all staff to recognise these ingredients.

- Purchase organic produce where possible – the undesirable additives are not permitted in organic products.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Some of the products which can contain these additives are soy sauce, gravy granules, bouillons and food colourings.
- Artificial trans fats can be found in partially hydrogenated vegetable oils used for frying and baking and in some processed foods, margarines, cakes and biscuits and readymade mixes for cakes.
- Low levels of trans fats occur naturally in some animal products such as meat and dairy produce. This standard applies only to artificial trans fats as explained above.
- Suppliers who are members of the Catering Mark Supplier Scheme (CMSS) should be able to tell you which of their products are free from all of these additives and artificial trans fats.

1.6. No genetically modified (GM) ingredients

You must ensure that none of the products you use are genetically modified or contain genetically modified ingredients.

Why?

Genetic modification is very different to traditional plant breeding techniques. It is a technology which allows scientists to take genes from one organism and put them into another. This changes the characteristics of the organism, or the way it grows and develops. The Soil Association, along with the worldwide organic movement, does not support genetic modification for a variety of reasons, including the potential risks posed to human health and the environment, and the social and economic impacts of the technology, particularly on smallholder farmers in developing countries.

Guidance

- Check current product specifications and labels of 'risk ingredients' and delist any products that do not comply with this standard.
- Check labels or specifications of new products before adding to purchase lists.
- Communicate with your suppliers and make sure they can supply products that are free from genetically modified ingredients.
- Hold a contract with suppliers or ask suppliers to complete a declaration confirming they will not supply products containing genetically modified ingredients. We can supply you with template declarations, contact your Certification Officer.
- Develop a purchase list for catering staff placing orders to use. Ensure that only compliant products are listed and delist products that do not meet this standard.
- Train all catering staff to recognise these ingredients.
- Purchase organic produce where possible. GM ingredients are not permitted in organic products.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Genetically modified products are required to be labelled, so please check product labels. Very few are available in the UK, but a significant proportion of catering oil is genetically modified.

1.7. Drinking water is prominently available

Free drinking water must be prominently available. This applies to all outlets covered by your Catering Mark. Drinking water can be available in jugs, refillable bottles, water dispensers or fountains, and must be sited close to purchase points or on tables.

You should promote the availability of drinking water to your customers.

Why?

Water is essential for good health and makes up about two-thirds of the weight of a healthy body.

Most of the chemical reactions that happen in our cells need water in order to take place. We also need water so that our blood can carry nutrients around the body and get rid of waste. Water is the healthiest choice for quenching thirst because it has no calories and contains no sugars that can damage teeth.

Guidance

- Provide jugs of tap water at point of sale or on tables.
- Actively promote the location of water dispensers and fountains.
- Demonstrate that you have a policy in place to promote the availability of free tap water.
- You can still sell bottled water and meet this standard, as long as you make it very clear that free tap water is available for everyone.

1.8. Menus are seasonal and in-season produce is highlighted

Your menus must make use of and highlight in-season fruit and vegetables. Alternatively, menus can use a broad term like 'seasonal vegetables' or state clearly that fruit and vegetables are subject to seasonal variation.

Note – seasonal produce is fresh produce that can be produced outdoors in the UK at that time of year.

Why?

Eating UK produce in-season is one of the best ways to reduce our carbon footprint, by cutting food miles and avoiding energy-intensive heated glasshouses. Currently, 90% of the fruit and 44% of the vegetables consumed in the UK are imported. Eating in-season also means you eat food at its best, and it is often more affordable too. If menus are seasonal it becomes far easier to source fresh produce locally (which can score you points at silver and gold).

Guidance

- Communicate with your suppliers and make sure they can supply seasonal produce.
- Develop a purchase procedure for catering staff placing orders to use and focus on seasonal items.
- Train all staff to use seasonality charts when ordering and menu planning.
- Using fresh, seasonal fruit and vegetables can save on costs.
- A number of good seasonality charts and examples of menu wording are available. Ask your suppliers, have a look online or contact us for further details.
- Menus need not be exclusively seasonal, but must show seasonal variation and ideally include seasonal meats and fish too.

1.9. Information is on display about food provenance

Information must be on display about where food comes from. For example, the names of farms and/or local food businesses supplying locally produced ingredients could be displayed on menus, blackboards, posters, or communicated to your customers through flyers, websites or newsletters.

Why?

Letting your customers and staff know about the origins of your food offers them more of a connection between what they are eating, where it comes from and how it was produced. It can also help them to feel proud of the food you source and the support you give local or British businesses.

Guidance

Where efforts have been made to source ingredients from a local producer with high welfare and other standards, you should display that information to raise awareness of your food sourcing policy.

- Provide information in the kitchen and dining areas about where ingredients are produced via menus, blackboards, table talkers, posters or at the point of sale.
- Update customers on the provenance of ingredients via newsletters or websites.
- Display information about producers, particularly where these have high animal welfare and other standards in order to raise awareness of your food sourcing policy.
- Ask your suppliers if they can provide you with displays – or pictures of – the farms or producers you use.

1.10. Menus provide for all dietary and cultural needs

You must ensure that:

a) The food offered reflects all relevant dietary and cultural needs.

b) You incorporate feedback from surveys into menu planning.

Why?

This standard aims to make healthy eating easier by ensuring that suitable meals are available to meet all dietary requirements and needs and that customer feedback is taken into account. It is important that all customers are able to choose food which is suitable for them to eat. The best way to find out if you are providing food that your customers want to eat is to ask them, and incorporate their feedback into your future menu planning.

Guidance

Plan appropriate menus for everyone you cater for by:

- Asking customers for feedback on menus.
- Using results of customer surveys to plan your menus.
- Understanding the cultural make-up of your customers.
- Ensuring there is sufficient choice available to allow every customer to enjoy a full meal.
- It will help you to meet this standard if you have balanced vegetarian and/or vegan dishes available, or your chefs are willing to make special meals to suit particular dietary requirements.
- If you serve any Halal and Kosher meat it must be farm assured to one of the welfare schemes listed in standard 1.2.
- Caterers are required by the Food Standards Agency (FSA) to provide information on allergens for all food on offer. To find out more about this, see the FSA's website.

1.11. All suppliers have been verified to ensure they apply appropriate food safety standards

You must ensure that all of your suppliers have an effective, documented food safety system in place, based on Hazard Analysis and Critical Control Points (HACCP) principles and have evidence to show this.

They must have been visited by a properly qualified individual to ensure appropriate food safety standards are adhered to on their premises.

You must keep written records to demonstrate each supplier has been verified.

Note – this is preferably assured by suppliers adopting the appropriate industry quality assurance standard (for example, the Safe and Local Supplier Approval scheme (SALSA), the British Retail Consortium (BRC) Global Standard). We will also accept other forms of evidence and verification, such as registration with the local Environmental Health unit.

Why?

Food safety is paramount. As a caterer and buyer you have an important role in verifying this by ensuring that all of your suppliers have an effective food safety system, based on HACCP principles, in place.

Guidance

- Specify compliance with relevant EU/UK legislation in supply contracts.
- Ask for quality assurance certificates or HACCP procedures from all new suppliers.
- Have declarations from each supplier on file or Supplier Self Audit Questionnaires (SSAQ).
- Hold copies of recent reports from Environmental Health or another food safety verifier.
- Hold copies of certificates from food safety and quality assurance schemes, for example confirmation of premises approval (Health Mark).
- If the Catering Manager or other member of catering staff is appropriately trained to assess food safety (e.g. in food hygiene) they can visit suppliers to check that satisfactory food safety standards are maintained.

1.12. Catering staff are supported with skills training in fresh food preparation and the Catering Mark

To meet this standard you must provide:

a) Practical training in fresh food preparation and seasonal menu planning to the heads of kitchen and other catering staff (according to need), as part of a programme of continuous professional development. This can be on-the-job training rather than course-based and if applicable specific training in meal regeneration methods to ensure food is appetising and served at the correct temperature.

b) To meet this standard you must also ensure that:

i. catering staff have been briefed about the Catering Mark;

ii. staff serving food can respond to enquiries about where food comes from and which animal welfare and environmental standards it meets; and

iii. the Catering Mark is communicated to your customers through displays or other means.

Why?

Many catering staff would benefit from an opportunity to refresh existing fresh food preparation skills and learn more about nutrition and seasonal menu planning. Catering staff should be encouraged to take advantage of opportunities to acquire relevant qualifications.

Guidance

- Provide staff training on fresh food preparation and the Catering Mark.
- Keep training records for staff detailing courses/events on file.
- Have information on display for staff about suppliers and ingredients.
- Consider giving catering staff the opportunity to visit local farms and suppliers to see how the food they serve is produced.
- We can provide support with staff training, contact us for more information: catering@foodforlife.org.uk or 0117 914 2406.

Silver and gold Catering Mark standards

Soil Association FOOD FOR LIFE
SILVER CATERING

Soil Association FOOD FOR LIFE
GOLD CATERING

Bee happy! healthy soil, people and planet

seasonal
ORGANIC
SUSTAINABLE
free range
LOCAL
traceable
healthy

Supports our communities

meat that can be traced back to the farm

freshly prepared food (and no nasty additives)

Silver and gold standards: Overview

To achieve silver and gold, in addition to meeting all bronze standards, caterers need to achieve points for food served in three categories:

2.1 Ethical and environmentally friendly food

Points are awarded for sourcing organic, free range, Freedom Food, Fairtrade, LEAF, Marine Stewardship Council certified fish and Marine Conservation Society 'fish to eat'.

To achieve silver a minimum of 5% of the ingredient spend on your Catering Mark menu(s) must be on organic food.

To achieve gold a minimum of 15% of the ingredient spend on your Catering Mark menu(s) must be on organic food (including at least one organic animal product) and at least 5% on free range pork or poultry meat.

2.2 Making healthy eating easy

Here caterers are rewarded for taking steps to make healthy eating easier for their customers. Points are awarded from a range of optional actions, in line with public health priorities.

2.3 Championing local producers

Caterers are rewarded for every penny spent on food produced in your region and for above average UK sourcing levels. Research into Catering Mark menus has demonstrated a social return on investment of over £3 for every £1 spent, mostly in the form of increased jobs and opportunities for local food producers. The Public Services (Social Value) Act places a duty on public sector institutions to have regard to the economic, social and environmental wellbeing of their relevant area in their food procurement.

The points system

To achieve the silver Catering Mark:

» Meet all of the bronze standards

Pick up **150 points in total by**:

» Spending at least 5% of your total ingredient budget on organic produce (this is required)	25 points
» Sourcing ethical and environmentally friendly food (organic, free range, MSC, MCS 'fish to eat', Freedom Food, Fairtrade or LEAF)	15 points
» Taking action from the making healthy eating easy steps	20 points
» Collecting another 90 points from any of the three categories	90 points

150 points in total

To achieve the gold Catering Mark:

» Meet all of the bronze standards

Pick up **300 points in total by**:

» Spending at least 15% of your total ingredient budget on organic produce, including one organic animal product (this is required)	75 points
» Spending at least 5% of your total ingredient budget on free range pork or poultry (this is required)	20 points
» Sourcing ethical and environmentally friendly food (organic, free range, MSC, MCS 'fish to eat', Freedom Food, Fairtrade or LEAF)	25 points
» Taking action from the making healthy eating easy steps	50 points
» Collecting another 150 points from any of the three categories	150 points

300 points in total

You can use the points calculator which you'll find on our website to help you calculate your points.

'Spend' is the total amount actually spent over a defined period of time, on the ingredients in the Catering Mark menu. The defined period is up to you and could be, for example, a menu cycle, a three month period or a full year. You must be able to provide evidence of your spend (invoices etc.) and show how it's maintained throughout the year.

The points are awarded as follows:

2.1 Sourcing environmentally friendly and ethical food

- 5 points per % of spend on organic (minimum 5% at silver; 15% at gold including at least one animal product)
- 4 points per % of spend on free range meat (minimum 5% at gold*, not including eggs)
- 4 points per % of spend on Marine Stewardship Council certified/Marine Conservation Society 'fish to eat'
- 3 points per % of spend on Freedom Food pork, poultry or fish
- 3 points per % of spend on Fairtrade food
- 2 points per % of spend on LEAF certified food

* If less than 5% of your spend is on pork and poultry, any pork or poultry products that you serve must be free range.

2.2 Making healthy eating easy

- 30 points: 25% or more meat-based meals, replaced by healthier plant-based main options.
- 20 points for steps to serve meat in moderation
- 20 points for steps to minimise salt
- 20 points for actions to cut plate waste
- 20 points for main meals accompanied by at least one portion of vegetables or salad
- 20 points if special offers, dish of the day and meal deals include at least one portion of vegetables or salad
- 10 points if more than 50% of the bread on offer is wholemeal
- 10 points for Real Bread
- 10 points for healthy vending
- 10 points if fruit or fruit-based dessert is cheaper than alternative dessert
- 10 points for fruit, not confectionery, cakes, biscuits or savoury snacks at till points

You can use the points calculator which you'll find on our website to help you calculate your points.

2.3 Championing local food producers

- 3 points per % of spend on raw ingredients produced in your region
- 2 points per % of spend over 59% on raw ingredients produced in the UK (as a proportion of total spend on raw ingredients)

2.1. Sourcing environmentally friendly and ethical food

2.1.1. Organic

5 points per %: organic (minimum 5% at silver; 15% at gold including at least one animal product)

Organic produce and ingredients must be certified organic to gain points in this section.

Many organic products carry the Soil Association logo and those from the EU must display the EU organic logo:

At gold:

- The 75 points required for organic spend (15% of total spend) must include at least one animal product (meat, eggs or dairy).
- If any of the organic spend is on organic poultry or organic pig meat this also counts towards the 5% free-range requirement at gold.

Why?

Organic food is produced using environmentally and animal friendly farming methods on organic farms. These methods are legally defined and any food sold as 'organic' must be strictly regulated. Organic farming recognises the direct connection between our health and how the food we eat is produced. Research published in the British Journal of Nutrition (2014) found that organic food has up to 60% more antioxidants than non-organic food, as well as fewer pesticides, less cadmium and less nitrogen.

Organic meat

All animals on organic farms live in free range systems and are encouraged to roam outdoors and express their natural behaviour. According to leading animal welfare organisation, Compassion in World Farming, organic farming has the potential to offer the very highest standards of animal welfare and the Soil Association welfare standards are leaders in the field. The Soil Association insists on higher welfare standards for organic poultry than most other organic certifiers.

Organic milk

Research has shown that organic milk has higher levels of an Omega-3 essential fatty acid (ALA, alpha-linolenic acid), vitamin E, vitamin A and antioxidants. We fully support and encourage the provision of organic drinking milk, particularly for the nutritional benefits that it provides.

Guidance

- Communicate with your suppliers, find out if they hold organic certification and if so, ask if they can supply organic products.
- Where necessary choose new organically certified suppliers that are able to support you by supplying organic products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that organic products are listed and delist non-organic lines.
- Train all staff to check organic status of products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- We can provide details of Soil Association organic certified producers and processors in your area. Contact us: catering@foodforlife.org.uk or 0117 914 2406.
- Because organic standards exceed free range welfare standards, if any of your organic spend is on organic poultry, organic eggs or organic pig meat you can also count this towards the 5% free range requirement at gold.
- Ensure that all suppliers in your supply chain hold relevant organic certification, including wholesalers.
- Under EU regulation, all suppliers (including wholesalers) of organic produce must hold organic certification.
- All certified organic suppliers will be able to provide you with their certificate and list of certified products and activities. Only accept certificates from your direct supplier.
- Because of the clear benefits to animal welfare and human health, your spend on organic milk, including when served as, or in, a drink, will count towards the points calculation. Your spend on other organic or Fairtrade beverages will not count towards the points calculation.

2.1.2. Free range

4 points per %: free range (minimum 5% at gold)

You can pick up points here by using:

- free-range poultry meat*
- free range*, outdoor-reared* and outdoor-bred* pig meat
- organic poultry meat or organic pig meat (for which you will collect double points: for organic and for free range meat)

*these systems must also be farm assured, which is a bronze requirement (standard 2.3). All meat and meat products must be farm assured, including meat from free range, outdoor-reared and outdoor bred pigs.

Why?

Animals reared in free range systems have opportunities to enjoy fresh air, exercise and express their natural behaviours.

Free range poultry

For poultry meat to be called 'free range', it must be produced to standards laid down by EU law, which specify that the birds must be provided with access to open-air runs.

Free range, outdoor reared and outdoor bred pig meat

There are no agreed, auditable definitions for these terms in pig production but there are accepted industry norms and a voluntary code of practice to which an increasing number of major suppliers have signed up: Pork Provenance.

In 'outdoor bred' systems, sows are usually kept outdoors for their productive lives (although there are some exceptions) and piglets are outside until weaning when they are bought inside for finishing. In 'outdoor reared' systems the piglets will be outside in fields for half of their lives. In both cases, the piglets are generally kept indoors for the latter part of their lives. We recommend you also specify a 'straw-based system' to ensure piglets are housed on straw not concrete.

Guidance

- Contact your suppliers to find out if they can supply free range pork and poultry products.
- Where necessary choose new suppliers who can supply these products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Train all staff to check free range products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.

- If you do not serve any poultry or pork products you are not required to meet this standard, which is designed to increase the welfare of chickens and pigs.
- To achieve gold if less than 5% of your spend is on pork and poultry, any pork or poultry products that you serve must be free range.
- Organic beef and lamb do not earn points in the free range category because the nature of beef and lamb production means these animals usually live in free range systems.
- All organic meat products earn points in the organic category.
- You cannot gain points for using free range eggs as these are a bronze standard requirement.

2.1.3. Marine Stewardship Council certified fish or Marine Conservation Society 'fish to eat'

4 points per %: MSC/Marine Conservation Society 'fish to eat'

You can achieve points for serving sustainable fish which is certified by the Marine Stewardship Council (MSC), or classified as 'fish to eat' by the Marine Conservation Society (MCS).

Marine Stewardship Council - you can buy MSC certified sustainable seafood which has been independently certified as sustainable and is available from most UK suppliers. It has the added benefit of being fully traceable – look out for the logo below.

Marine Conservation Society - the MCS 'fish to eat' list can be accessed online. This list is regularly updated according to the latest research on the sustainability of fish stocks. You will need to demonstrate how much 'fish to eat' you purchase.

Why?

Over fishing has caused one third of all fish stocks worldwide to collapse, and scientists are warning that if current trends continue all fish stocks worldwide will collapse within fifty years. Many thousands of dolphins, turtles and albatross are also caught by large drift nets or baited hooks.

Guidance

- Communicate with your suppliers, find out if they can supply MSC certified products or items on the MCS 'fish to eat' list.
- Where necessary choose new suppliers that are able to supply these products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Train all staff to check MSC certified status of products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Products which meet the MSC standards carry this logo:
- Use of the MSC logo and reference to MSC standards is optional under the Food for Life Catering Mark. The requirement is that you demonstrate how much MSC fish you purchase.
- For use of the Marine Stewardship Council ecolabel (above) or name in print or online, please contact the MSC for more information on obtaining certification and a Licence Agreement.

2.1.4. Freedom Food

3 points per %: Freedom Food (including fish)

Freedom Food is an assurance scheme devised and monitored by the RSPCA, particularly intended to provide assurance of higher animal welfare standards.

Why?

Fish

Worldwide, more farmed fish are now eaten than wild caught fish. The Freedom Food standard for farmed fish covers all aspects of fish handling, feeding, transport, management and slaughter. In the UK the main species farmed are salmon and trout.

Poultry

Freedom Food is not the same as free range, as some indoor systems are allowed under the Freedom Food standards. However, these standards are higher than traditional farm assurance schemes – for example, lower stocking densities are required for birds which gives them more room to move around.

Points are awarded for all Freedom Food poultry (ducks, turkeys and chickens) but not for Freedom Food certified eggs because using free range eggs is a requirement of the bronze standards.

Pigs

An estimated 60% of breeding sows and 93% of pigs reared for meat in the UK spend most or all of their life indoors, many on concrete. Farrowing crates used to confine sows when they have piglets are widely considered to be a serious welfare concern yet around 60% of sows still give birth in farrowing crates. The RSPCA Freedom Food certification restricts the length of time the sow can be confined in a farrowing crate.

Other animals

Points are not awarded for Freedom Food beef, dairy or lamb production because the aim of this standard is to enhance welfare for pork and poultry and to improve the nature of fish farming. Improving welfare for chickens and pigs is a priority because of the prevalence of more intensive systems in those two sectors.

Guidance

- Communicate with your suppliers, find out if they can supply Freedom Food certified products.
- Where necessary choose new suppliers that are able to supply these products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Train all staff to check Freedom Food certified status of products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Products which meet the RSPCA Freedom Food standards carry this logo:

2.1.5. Fairtrade

3 points per %: Fairtrade

Why?

Fairtrade standards, as guaranteed by the FAIRTRADE Mark, ensure that producers in the developing world are getting a fair deal.

Guidance

- Communicate with your suppliers, find out if they can supply Fairtrade products.
- Where necessary choose new suppliers that are able to support you by supplying these products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Train all staff to check Fairtrade status of products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Examples of Fairtrade products that can be used on a menu include bananas, pineapples, rice, quinoa, nuts, cocoa powder, sugar and snacks.
- You cannot gain points for Fairtrade drinks, including teas, coffees and juices.
- This logo appears on Fairtrade produce:-

2.1.6. LEAF (Linking Environment And Farming)

2 points per %: LEAF certified food

LEAF is a leading organisation delivering more sustainable food and farming.

Why?

The LEAF Marque is an assurance system recognising sustainably farmed products. It is based on LEAF's Integrated Farm Management principles. Caterers wishing to use the LEAF Marque logo must:

- be members of LEAF
- be part of the LEAF Marque Chain of Custody system, and
- adhere to the licensed process for the use of the LEAF Marque logo within the LEAF Marque Chain of Custody system.

Guidance

- Communicate with your suppliers, find out if they can supply LEAF certified products.
- Where necessary choose new suppliers that are able to support you by supplying these products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Train all staff to check LEAF certified status of products on arrival.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- LEAF produce carries this logo:

2.2. Making healthy eating easy

Points are given for a range of optional steps to offer healthier menu choices. In recognition of the variation across the sector some steps are only suitable for some caterers.

- 30 points: 25% or more meat-based meals, replaced by healthier plant-based main options.
- 20 points for steps to serve meat in moderation
- 20 points for steps to minimise salt
- 20 points for actions to cut plate waste
- 20 points for main meals accompanied by at least one portion of vegetables or salad
- 20 points if special offers, dish of the day and meal deals include at least one portion of vegetables or salad
- 10 points if more than 50% of the bread on offer is wholemeal
- 10 points for Real Bread
- 10 points for healthy vending
- 10 points if fruit or fruit-based dessert is cheaper than alternative dessert
- 10 points for fruit, not confectionery, cakes, biscuits or savoury snacks at till points

A minimum of 20 points is required in this category to achieve the silver Catering Mark.

A minimum of 50 points is required in this category to achieve the gold Catering Mark.

2.2.1. 25% or more meat-based dishes are replaced by healthier plant-based main options

30 points are only awarded if meat is replaced with vegetables, eggs, pulses, nuts, quorn, tofu or other meat alternatives – not fish.

Why?

The World Health Organisation and World Cancer Research Fund recommend eating meat in moderation, while eating more fruit and vegetables and starchy wholefoods, to reduce saturated fat consumption and to minimise bowel cancer risk. Serving less meat also enables you to invest in better quality meat such as free range or organic.

Guidance

- You could bulk out meat dishes with additional vegetables and pulses to encourage healthy eating.
- Use a small amount of a strongly flavoured meat such as bacon, or some meat stock, to add some meaty flavour to a dish which is mainly vegetable-based.
- Try putting vegetable-based dishes at the top of your menu to encourage people to choose them.

2.2.2. Steps to serve meat in moderation

20 points are only awarded if meat is replaced with vegetables, eggs, pulses, nuts, quorn, tofu or other meat alternatives – not fish or cheese.

At least two of the following steps are required to earn 20 points in this category:

- Reduce the meat used in some dishes and replace it with vegetables, eggs, quorn, tofu, potatoes or other starchy roots, pulses or wholegrain cereals.
- Reduce the total amount of meat and meat products used each week.
- Actively promote non-meat dishes.

Why?

The World Health Organisation and World Cancer Research Fund recommend eating meat in moderation, while eating more fruit and vegetables and starchy wholefoods, to reduce saturated fat consumption and to minimise bowel cancer risk. Serving less meat also enables you to invest in better quality meat such as free range or organic.

Guidance

- You could bulk out meat dishes with additional vegetables to encourage healthy eating.
- Use a small amount of a strongly flavoured meat such as bacon, or some meat stock, to add some meaty flavour to a dish which is mainly vegetable-based.
- Try putting vegetable-based dishes at the top of your menu to encourage people to choose them.

2.2.3. Steps taken to minimise salt

At least four of the following steps* are required to earn 20 points in this category:

- All recipes are tested to ensure the minimum amount of salt is used without compromising on taste.
- Vegetables, rice, potatoes and pulses are not routinely salted when cooking.
- Non-salted flavourings (e.g. homemade stocks, lemon juice and vinegars, spices, curry powder/paste or mustard powder, frozen, dried and fresh herbs, onions, peppers and tomato paste) are used to enhance the taste of food.
- No extra salt is added to any foods (e.g. chips) prior to service.
- Access to table salt is restricted.
- Only low-salt or unsalted savoury snack foods are available.

* Steps adapted from Catering for Health: a guide for teaching healthier catering practices, published by FSA Scotland and the Scottish Executive (2002).

Why?

Choice of ingredients is very important in controlling the salt content of dishes. A principal way in which you can do this is by replacing a number of high-salt processed food ingredients (such as ready-made, tinned and packet soups, sauces, flavoured dried rice or noodles, meat products, salted canned vegetables and bakery mixes) with freshly prepared alternatives.

You should also try experimenting with recipes to see how much salt reduction can be achieved without compromising on taste.

Guidance

- A good tip is to ensure that sauces are reduced first and then seasoned because gradual reduction cooking methods affect the amount of salt in the final dish.
- Remember that there are times when salt is essential for flavour if we want people to eat healthy options (wholemeal bread and many soups, for example).

2.2.4. Actions to cut plate waste

One of the following steps is required to earn 20 points in this category:

- Plate waste is regularly reviewed and the amounts of any frequently wasted items are changed.
- Portion sizes are measured to ensure they are suitable for the target audience.

Why?

Providing healthy food means little if it is left uneaten. Reducing plate waste reduces your ingredient spend and waste disposal costs and benefits your consumers by increasing their nutrient intake.

Guidance

- You can cut plate waste by cooking tasty, fresh food, engaging with customers about menu changes and controlling portion size.
- The Waste Resources Action Programme (Wrap) has a selection of useful information for reducing plate waste.
- The Love Food, Hate Waste campaign offers a helpful tool to plan suitable portion sizes.
- Customer surveys can help you find out which are the most popular healthy dishes so you can serve more of them.
- Try offering smaller portion sizes or light bites for people who have smaller appetites.

2.2.5. Main meals accompanied by at least one portion of vegetables or salad

20 points.

Chips do not count as an accompanying vegetable.

Why?

The World Health Organisation recommends that people eat at least five portions of fruit and vegetables each day, as part of a balanced diet.

Guidance

» Serving seasonal vegetables or salad can help you to meet standard 1.8.

2.2.6. Special offers, dish of the day and meal deals include at least one portion of vegetables or salad

20 points.

Chips do not count as an accompanying vegetable.

Why?

The World Health Organisation recommends that people eat at least five portions of fruit and vegetables each day, as part of a balanced diet.

Guidance

» Serving seasonal vegetables or salad can help you to meet standard 1.8.

2.2.7. More than 50% of bread on offer is wholemeal

To achieve 10 points you will need to guarantee that more than 50% of your bread is wholemeal by at least one of the following:

- Specify in contracts that there must be at least 50% wholemeal bread for sandwiches, rolls and wraps.
- Check when compiling menus that there will be at least 50% wholemeal bread on offer.
- Have a written procedure for making or purchasing at least 50% wholemeal bread to accompany meals.

This includes sandwiches, rolls, wraps and also bread served with soup or to accompany other meals.

Why?

Wholemeal flour is healthier because the whole of the grain is used, so it is higher in fibre, vitamins B and E and can help people to feel fuller for longer.

Guidance

- Try serving different types of wholemeal bread – such as seeded or rye bread – to encourage people to try different things.

2.2.8. Real Bread

To achieve 10 points for Real Bread you will need to:

- Serve Real Bread as part of a dish, in sandwiches or as an accompaniment (such as with soup) at least once a week;
- Have evidence that the bread fulfils the Real Bread definition above.

The Real Bread Campaign defines Real Bread as made without the use of any processing aids or any other artificial additives in the flour or dough. Real Bread can be unleavened flatbread or bread leavened with bakers' yeast (fresh or dried active) or sourdough culture.

Note – in the UK white flour must be fortified with calcium, iron, niacin and thiamine as per the UK Bread and Flour Regulation 1998. Examples of artificial additives we would not accept include E481 (sodium stearoyl-2-lactylate), E472e (mono- and diacetyl tartaric acid esters of mono- and diglycerides of fatty acids), E920 (l-cysteine).

Why?

The majority of loaves produced in the UK today are made using fat, salt and artificial additives - some legally undeclared on the label. High-speed mixing, high levels of yeast and enzymes are used to force the dough to rise quickly, rather than allowing the bread to ferment and 'ripen' in its own time. Real Bread is made with simple, natural ingredients and with natural fermentation methods.

Guidance

- The Real Bread Campaign can help you find out where to source Real Bread, or provide you with a range of information about how to make your own.
- Using bread mixes to make your own bread at least once a week will earn points in this section.
- At inspection your menus and supporting evidence will be checked.

2.2.9. Healthy vending as detailed in 'Standards for school food other than lunches'

To achieve 10 points you will need to guarantee that you are meeting these standards for healthy vending by having a copy of Standards for school food other than lunches easily available and by demonstrating you do at least one of the following:

- Specify only acceptable products in contracts with your suppliers.
- Check the products with the supplier when ordering.
- Have a written procedure for purchasing.
- Staff manually check products when reloading vending machines.

Why?

Vending machines can provide quick access to food when meals are not being served. Healthier vending means providing foods which will fill people up, rather than providing empty calories (e.g. cakes and chocolate), which are high in fat and sugar but low in nutrients and fibre. Although these standards were designed for schools, we consider them to provide essential guidance which can be applied to other outlets to encourage healthy vending.

Guidance

- Try adding two or three healthy lines to your vending machines at eye level to see how people react.

2.2.10. Fruit or fruit-based dessert cheaper than alternative desserts

To achieve 10 points you will need to demonstrate that fruit offered on the menu or fruit-based desserts are cheaper than alternative dessert options to encourage uptake of fruit and healthier eating.

Why?

Eating fruit as part of a dessert can help people to consume the recommended five portions of fruit and vegetables a day to support healthy eating and a balanced diet, as advised by the World Health Organisation.

Guidance

- Record your prices for fresh fruit and fruit-based desserts, which will also be checked at inspection.
- Using seasonal fruit can help you to meet standard 1.8.
- You could try making your own fruit pots or chopped fruit platters – making fruit look attractive can encourage people to choose it.
- Fruit desserts (such as crumbles), or salads can be a popular way to encourage people to eat five portions of fruit and vegetables per day.

2.2.11. Fruit not confectionery, cakes, biscuits or savoury snacks at till points

To achieve 10 points you will need to demonstrate that fruit is on display at till points.

Why?

The World Health Organisation recommends that people eat at least five portions of fruit and vegetables each day, as part of a balanced diet. Displaying fruit at till points can encourage people to choose it in place of less healthy snacks.

Guidance

» Offering fruit in pre-chopped portions can encourage people to pick it up.

2.3. Championing local food producers

Points are given for spend on UK and locally sourced produce:

- 3 points per % of total ingredient spend on ingredients produced in your local area (as defined by the map overleaf) includes fresh produce and any other locally produced item made with 50% or more local ingredients.
- 2 points per % of total ingredient spend on UK produced raw ingredients above the national UK average of 59%.
- Raw ingredients are defined as meat, fish, eggs, dairy products, fruit and vegetables, oil, sugar and flour.

2.3.1. Raw ingredients from your local area or adjacent county (as shown on the map overleaf)

- Score 3 points for every % of spend on food produced (grown) in your local area (or adjacent county) as a proportion of your total spend on raw ingredients.
- Multi-ingredient products which are made locally using 50% or more locally produced ingredients can also score points in this category.
- Raw ingredients are defined as meat, fish, eggs, dairy products, fruit and vegetables, oil, sugar and flour.

Why?

Sourcing produce locally helps support local farmers and local businesses. Research has shown that for every £1 invested in the local economy, there could be return of up to £3. In this instance, food produced within the country itself is counted as local for Scotland, Northern Ireland and Wales because we have found that for many caterers, sourcing products more regionally is not always a viable option.

Guidance

- Communicate with your suppliers to find out if they can supply information about where your products were produced or grown.
- Where necessary choose new suppliers that are able to support you by supplying products produced locally and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that locally produced products are listed and delist alternative lines.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Complete the spend analysis sheet (which your Certification Officer can provide you with) with details of spend on ingredients produced or grown locally.
- We have tools to help you with this - contact us for more information.

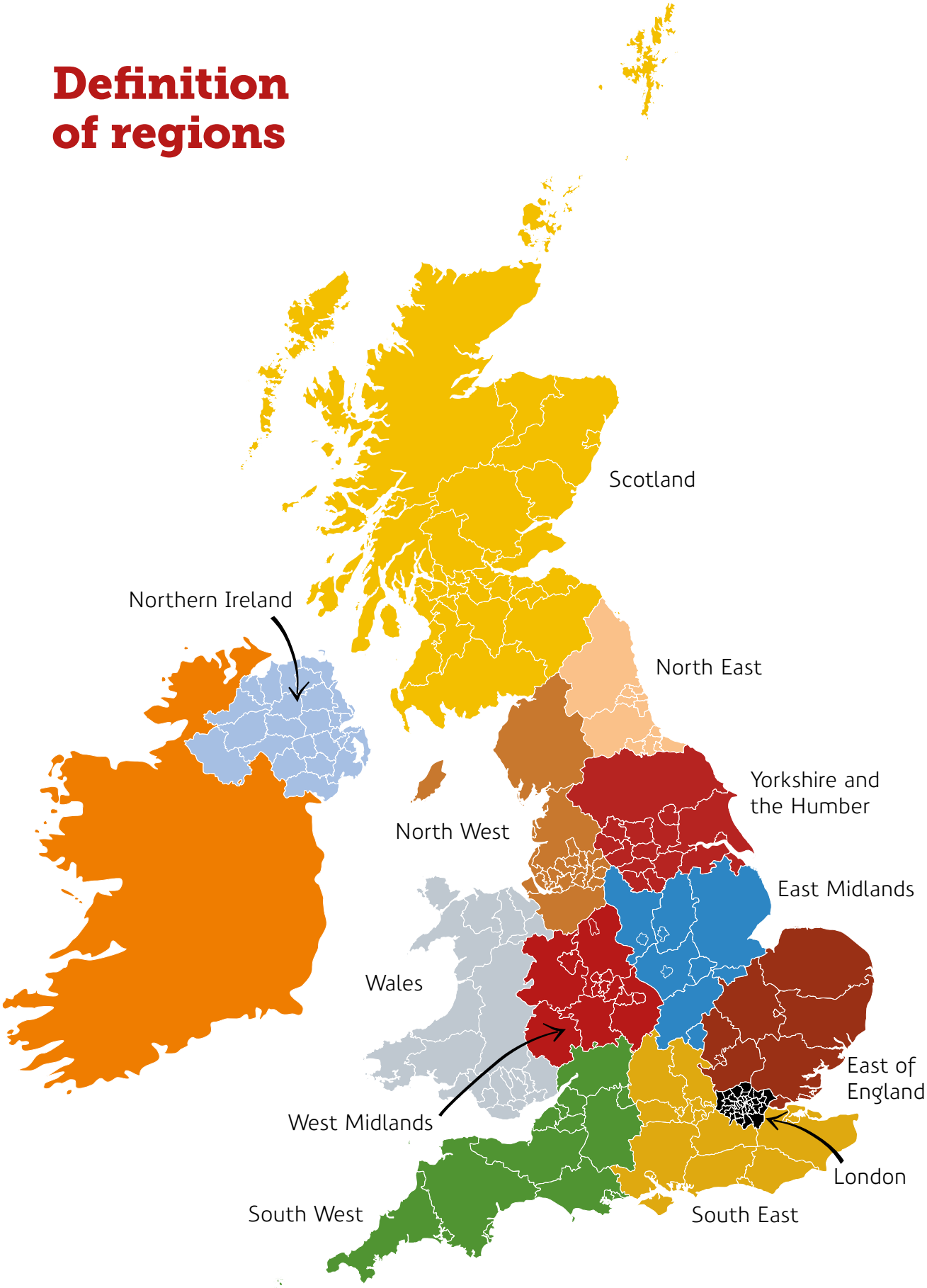
To calculate your spend on local ingredients:

1. Identify which ingredients on your menus are produced locally or in your adjacent county.
2. Calculate the amount spent on the local ingredients over a defined period.
3. Calculate this amount as a percentage of your total Catering Mark ingredient spend.
4. For each percentage point, score three points.

For example:

- If your menus are served in Devon, you can gain points in this category for any raw ingredient produced in the south west.
- If your menus are served in Wiltshire, because you are on the border of another local area, you can gain points for any raw ingredient produced in the south west or the immediately adjacent counties of Hampshire and Oxfordshire.
- If you are based in Dumfries and Galloway, you can gain points in this category for any raw ingredient produced in the adjacent county of Cumbria, or anywhere in Scotland.
- If you are based in Perth and Kinross, you can gain points for any raw ingredient produced in Scotland.
- If you are based in London you can score points for any raw ingredient produced in the South East or East of England.
- The Catering Mark Supplier Scheme (CMSS) can help you to find local suppliers.
- Promoting the local suppliers you use can encourage your customers to purchase from them directly, leading to an even bigger return for your local economy.
- Multi-ingredient products which are made locally using 50% or more locally produced ingredients can also score points in this category. For example, a pasty made using locally produced meat and vegetables.

Definition of regions



2.3.2. Raw ingredients from the UK

On average across the UK catering industry, 59% of raw ingredients used are produced in the UK. Score two points for each % of spend over the national average of 59% on raw ingredients produced (grown) in the UK as a proportion of total spend on raw ingredients.

Raw ingredients are defined as meat, fish, eggs, dairy products, fruit and vegetables, oil, sugar and flour.

Why?

Choosing ingredients produced in the UK helps to support UK farmers and the economy. Telling your customers about the British food you serve gives them a greater understanding of where their food comes from and connects people to the food they are eating. It can also help you cut down on your ingredient spend and allow you to use the savings to invest in higher quality ingredients such as organic and free range meat.

Guidance

- Communicate with your suppliers, find out if they can supply information about where your products were produced or grown.
- Where necessary choose new suppliers that are able to support you by supplying UK produced products and supporting information.
- Develop a purchase list for catering staff placing orders to use. Ensure that these products are listed and delist alternative lines.
- Periodically check back through invoices, specifications and certificates to ensure that they are in date and clearly link to the product used on your Catering Mark menus.
- Complete the spend analysis sheet (which your Certification Officer can provide you with) with details of overall spend on raw ingredients and spend on UK produced or grown raw ingredients.
- We have tools to help you with this, contact us for more information.

For example, if 72% of your raw ingredient spend is on dairy products, meat, eggs, vegetables and fruit, oil, sugar and flour produced in the UK, you would score 26 points (13% x 2 points = 26 points).

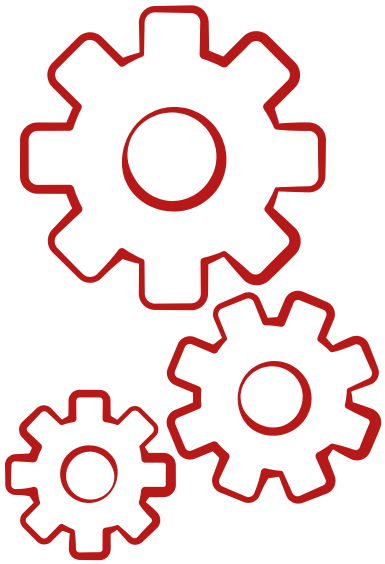
How to calculate your spend on UK raw ingredients over 59%:

1. Identify which of the ingredients purchased for the Catering Mark menu are raw ingredients.
2. Identify which are UK produced.
3. Calculate your spend on those UK raw ingredients across a defined period.
4. Assess the UK raw ingredients spend, as a percentage of total raw ingredient spend for that period.
5. Score two points for each percentage point above 59%.

» Ask your current supplier where the ingredients you already use are produced; you may be surprised at how much already comes from the UK.

» Fruit and vegetable suppliers may provide a newsletter to let you know where their produce comes from and what's in season in the UK.

How the scheme works



How the Catering Mark applies in universities

In universities, the Catering Mark award can apply to specified outlets or menus.

Breakfast menus can be exempt from the 75% freshly prepared requirement but all ingredients used must meet all other relevant standards (such as using meat which satisfies UK welfare standards).

An award can cover more than one of the university's outlets, if they are subject to the same management controls.

Note - drinks are not covered by the Catering Mark standards, but spend on organic milk for drinking can also earn points for silver and gold awards.

Step by step guide

Step one: Interested?

» The Catering Mark team is on hand to help you with your Catering Mark application. Contact us on catering@foodforlife.org.uk or 0117 914 2406 to make contact with a Catering Mark Development Manager. They'll explain how the Catering Mark can work for you, provide information on fees and support you through to the application stage.

Step two: Application

» Once you're ready, complete the short application form and contract of agreement, then send them through to catering@foodforlife.org.uk

Once we receive your application form, contract and fee, one of our designated Certification Officers will contact you to guide you through the next stage of the process, through to your inspection.

» We also ask you to complete a Catering Mark plan. This tells us about the procedures, systems and documentation you have in place to ensure you meet the standards.

Your Catering Mark Development Manager or Certification Officer will be happy to help you complete this.

Step three: Inspection

You're now ready for your inspection.

One of our Inspectors will contact you to arrange an appointment. You'll receive written confirmation of the date plus this 'Information required at Inspection' guidance sheet, which tells you what needs to be available on the day.

Your Catering Mark plan forms the basis for this inspection. Compliance with the standards is verified by the systems, procedures and documentation you have in place, which you will have detailed in this plan.

The day includes a kitchen visit, speaking with your cooks and catering staff – hopefully seeing preparation for a Catering Mark menu in action.

An inspection report is compiled as part of the visit - it includes any actions which need to be addressed before the Catering Mark can be awarded. These actions are identified during the visit and agreed with you.

Step four: Award

Once you've successfully addressed any actions required and these have been approved by your certification officer, we can award your Catering Mark.

You'll be sent your Catering Mark certificate plus the schedule of sites, outlets or menus that it applies to.

We'll also send you a Catering Mark plaque for you to display, and get in touch to offer communications and marketing support to help you share and celebrate your success!

Certification and inspections

Continued compliance with the Catering Mark standards is assessed through annual inspection, desktop reviews and additional site visits where necessary.

Renewing your Catering Mark licence

The expiry date on Catering Mark certificates relates to the 12 month annual invoice cycle.

To renew the Catering Mark award, payment of the annual fee is required and once received, a certificate valid for the next year is issued.

During the year the annual renewal inspection, as detailed below, is conducted to verify continued compliance with the Catering Mark standards.

Annual inspections

Once a year, a full inspection takes place – see step three above. The sites/kitchens to be visited will be agreed with you in advance.

At annual inspections, we review purchase invoices/delivery notes for your current Catering Mark menus, as well as for a random period in the previous year. This period and the site/menu it relates to will be agreed with you beforehand.

Inspection reports are generated from the inspections. You'll receive a copy of this and a summary of any resulting actions.

Compliance is categorised against each Catering Mark standard as follows:

- **Compliant**
- **Minor non-compliance** - the requirement of a standard has not been fully met, but the risk to the integrity of the Catering Mark is perceived as low.
- **Major non-compliance** - the requirement of a standard has not been met and the integrity of the Catering Mark may be compromised. May also result from not correcting a previous minor non-compliance.

Additional site visits

During the first year we may conduct an additional site visit, if recommended by the Inspector. The cost of this visit is included in the application fee.

Desk top reviews

Where a Catering Mark award covers more than ten sites, a 'desk top review' takes place during the year. We contact the Catering Mark award holder with a specified request for documentary information, relating to one or two of the sites, during a specified menu cycle. We ask for that information to be supplied within 30 days. Where the Catering Mark award covers 44 sites or more we will carry out two desk top reviews during the year.

High risk

Licences are classed as 'high risk' if four or more major non-compliances are raised against the Catering Mark standards, at the annual inspection. A chargeable, additional site visit would take place during the year to focus on the areas of non-compliance reported at annual inspection.

Extending and upgrading your Catering Mark award

Adding sites

It is possible to add sites to your Catering Mark award if sites:

- Cater for the same setting
- are subject to the same management controls, and
- are part of the same contract or are in the same area.

Before the Catering Mark can be extended you will be asked to provide:

- details of the new sites (including address and post codes)
- an amended Catering Mark plan to detail how you will meet and maintain the Catering Mark standards across the additional sites, and
- evidence where necessary to demonstrate that standards are in place.

If you would like to apply for sites which cannot be added to an existing award, get in touch on

0117 914 2406 or catering@foodforlife.org.uk

Upgrading your Catering Mark award

If you would like to upgrade your Catering Mark to silver or gold award levels, contact your Certification Officer who will be able to provide support with the process. Please call or email us on 0117 914 2406 or catering@foodforlife.org.uk

Upgrading your award from bronze to silver or gold requires an inspection. This is because these award levels introduce new elements which may not previously have been assessed at bronze award level. This can be done as part of your annual inspection or during the year for an additional fee – please speak to your Certification Officer.

Before the upgrade inspection you will need to:

- amend the Catering Mark plan with details of how you will meet and maintain the silver or gold standards, and
- complete a points calculation including analysis of your expenditure on ingredients earning points at silver and gold award levels.

You can upgrade from silver to gold before your next full inspection is planned to take place.

Before upgrading from silver to gold awards, caterers will need to:

- amend the Catering Mark plan with details of how you will meet and maintain the gold standards
- complete a points calculation including analysis of your expenditure on ingredients earning points at gold, and
- submit supporting evidence.

This information will be reviewed by a Certification Officer before your award is upgraded.

Complaints and appeals

Catering Mark licensees may appeal against a certification decision by submitting a formal appeal within one month of the original decision.

The appeal should be accompanied by evidence and information establishing grounds for appeal. The Certification Committee, responsible for making non-routine certification decisions, will review the appeal and inform the caterer of their decision as soon as possible.

Guidance for your Catering Mark inspection

The information listed below will be required for certification and inspection.

To demonstrate your compliance with the standards, please have this information available.

All information provided at your inspection will remain confidential.

Bronze standards

- ☐ Invoices/delivery notes (paper or electronic) which detail the products purchased during the period specified in your 'Inspection confirmation' email / letter
- ☐ Invoices/delivery notes for the current menu cycle
- ☐ List of your suppliers

Standard 1.0. 'Caterers can demonstrate compliance with national standards or guidelines on food and nutrition.'

☐ **Evidence required:**

» Demonstration of compliance with the specific standards or guidance relevant to your customers

» Appropriate food and/or nutritional standards available

Standard 1.1. 'At least 75% of dishes on the menu are freshly prepared (on site or at a local hub kitchen) from unprocessed ingredients'

☐ **Evidence required:**

» copies of your Catering Mark menu(s) and associated recipes

Standard 1.2. 'All meat (& meat products) satisfies UK animal welfare standards

☐ **Evidence required** – at least **two** of the following:

» Completed Catering Mark meat declarations from each of your suppliers, or contracts with them to provide meat products assured by one of the welfare schemes recognised by this standard

» Meat purchase invoices (showing assured status either by product description or code)

» Assurance certificates

Guidance for your Catering Mark inspection

Standard 1.3. 'No fish are served from the Marine Conservation Society's (MCS) 'Fish to avoid' list'

☐ **Evidence required** – at least **one** of the following:

» Contracts with suppliers or supplier declaration that none of the fish supplied are on the MCS 'fish to avoid list'

» Your fish purchase policy

» Fish purchases invoices

» Details of the species and source of the fish on your menus

Standard 1.4. 'Eggs (including liquid egg) are from free range hens'

☐ **Evidence required** – at least **one** of the following:

» Contracts with suppliers or supplier declaration (to supply eggs from free range hens)

» Egg purchases' invoices (showing production status)

Standard 1.5 and Standard 1.6. 'No undesirable additives, artificial trans fats or GM ingredients'

☐ **Evidence required** – at least **one** of the following:

» Contracts with suppliers (not to provide products containing these ingredients or additives)

» Completed declarations from your suppliers (not to provide products containing these ingredients or additives)

» Your purchase procedure

Standard 1.7. 'Free drinking water is prominently available'

☐ **Evidence required** - at least **two** of the following:

» Your policy to provide free drinking water

» How the location of water dispensers/fountains is actively promoted

» Jugs of tap water available on tables or point of sale

Standard 1.8. 'Menus are seasonal and in-season produce is highlighted'

☐ Evidence required:

» Menus from different times of the year (to show use of seasonal produce)

» Invoices/delivery notes (to show use of seasonal produce)

Guidance for your Catering Mark inspection

Standard 1.9. 'Information on display about food provenance'

☐ Evidence required:

» Examples of how information on food provenance is displayed (e.g. menus, display boards, table talkers, posters, point of sale information, newsletters or flyers, website information)

Standard 1.10. 'Menus provide for all dietary and cultural needs'

☐ **Evidence required:**

» Feedback requested on menus from parents/customers/patients

» Using outcomes of customer surveys to plan your menus

» Gathering information on the cultural make-up and dietary requirements of your customers

Standard 1.11. 'Suppliers have been verified to ensure they apply appropriate food safety standards'

☐ **Evidence required** – at least **one** of the following:

» Contracts with suppliers or supplier declaration specify compliance with relevant EU/UK legislation

» Copies of your suppliers' current certificates demonstrating compliance with relevant EU/UK legislation (e.g. BRC, Salsa)

» Copies of your audits of your suppliers, demonstrating compliance with food safety standards

Standard 1.12. 'Catering staff training are supported with skills training in fresh food preparation and the Catering Mark'

☐ **Evidence required** – at least **two** of the following

» Training records to show training in fresh food preparation (and regeneration methods if applicable)

» Evidence of how staff are briefed on the Catering Mark scheme

» Information on display for staff on suppliers & ingredients

NB. Catering Mark Supplier Declaration templates are available for:

» Standard 1.5 – Additives and trans fats

» Standard 1.2 – Meat

» Standard 1.4 – Eggs

» Standard 1.6 – GM ingredients

Please contact us for copies on 0117 914 2406 or catering@foodforlife.org.uk

Guidance for your Catering Mark inspection

Silver & gold standards

Standard 2.1 – **Sourcing environmentally friendly and ethical food**

Standard 2.2 – **Making healthy eating easy**

Standard 2.3 – **Championing local food producers**

To achieve silver or gold awards, you must show us how you achieved the required points:

150 points at silver

300 points at gold

Please refer to the beginning of the silver and gold standards for more details.

Standards 2.1 and 2.3 – achieve points from the amounts spent in the various categories.

Standard 2.2 – achieve points for best practice.

Standards 2.1. Sourcing environmentally friendly and ethical food and 2.3.1. Raw ingredients from your local area or adjacent county

- Calculate what you spent on all ingredients in your Catering Mark menu, over a representative period e.g. a complete menu cycle, a month or entire year.
- 2.1 - Use this base figure to calculate what was spent on organic, free range etc., as percentages.

NB Silver requires 5% organic spend; gold requires 15% organic spend (to include an animal product) + 5% spend on free range pork or poultry meat.

- 2.3.1 Use the total spend figure to calculate what was spent on local ingredients (as classified by the map in section 2.2.1) as a percentage.
- **Use the 'Spend analysis sheet' to calculate the percentages for you. Contact us for a copy.**
- **Use the 'Points Calculator' to turn these percentages into points.**

Guidance for your Catering Mark inspection

Standard 2.3.2. Raw ingredients from the UK

a) Calculate what you spent on all 'raw ingredients' in your Catering Mark menu, in the same period as above. See section 2.2.2 for the definition of raw ingredients.

b) Of these ingredients, identify which were produced in the UK.

c) Calculate the UK-produced ingredients, as a percentage of (a).

» Use our 'Spend analysis sheet' to calculate the percentages for you. Contact us for a copy.

» Use the 'Points Calculator' to turn these percentages into points.

☐ **Evidence required:**

» Contracts with your suppliers specify organic, free range etc. products.

» Invoices/delivery notes demonstrate organic, free range etc. status.

» Invoices/delivery notes demonstrate the origin of products (Std 2.3).

» Purchase policy.

Catering Mark logo use

A number of resources are available for you to use once you have achieved the award. These include posters, plaques, window stickers, press release templates, key messages, a regular Catering Mark e-newsletter and staff training.

Once you have achieved the Catering Mark you will be sent details of our resources webpage and login details, where you will be able to access these materials.

All Catering Mark holders receive the Catering Mark bronze, silver or gold logo upon achieving the award. We encourage you to use the logo as much as possible to demonstrate your success.

Logos may be used on any of the following materials or communications channels:

- Accredited menus
- Websites
- E-newsletters
- Email footers or letter headings
- Posters, plaques or any print out materials
- Press releases

Caterers should promote their Catering Mark on all menus covered by the certification but not on menus which aren't covered under the scope of the award.

Please also ensure that you only display the logo which represents the level of award you have achieved. If you have achieved different catering mark tiers (i.e. bronze, silver, gold) for different menus, please ensure the appropriate logo(s) are used on each relevant menu.

We're always happy to answer any queries you have about logo use. Please contact us: catering@foodforlife.org.uk or call 0117 914 2406.

Web Links

Catering Mark resources

For everything you need to apply for and achieve the Catering Mark please see our webpages: www.sacert.org/catering

- Points calculator: www.sacert.org/catering/standards/silverandgold/pointscalculator
- Information about standards-setting: www.soilassociation.org/whatisorganic/organicstandards/standardscommittees/cateringmark
- Catering Mark Supplier Scheme: http://www.sacert.org/catering/supplierscheme

Information to help you meet the standards:-

1.3 No fish are served from the Marine Conservation Society 'fish to avoid' list

- Marine Conservation Society 'fish to avoid' list: http://www.fishonline.org/fishfinder?min=5&max=5&fish=&avoid=1

1.4 Eggs are from free range hens

- Animal Heath and Veterinary Laboratories Agency: https://www.gov.uk/eggs-trade-regulations#registration-of-laying-hen-establishments

1.10. Menus provide for all dietary and cultural needs

- Dysphagia Diet Food Descriptors: http://www.thenacc.co.uk/assets/downloads/170/Food%20Descriptors%20for%20Industry%20Final%20-%20USE.pdf
- Food Standards Agency allergen guidance: https://www.food.gov.uk/science/allergy-intolerance/label/labelling-changes

Web Links

2.1.2 Free range

» Pork Provenance: www.porkprovenance.co.uk/index.asp

2.1.3 Marine Stewardship Council certified fish or Marine Conservation Society 'fish to eat'

» Any use of the MSC logo or reference to the standard may require additional accreditation from MSC, find out more here: www.msc.org/get-certified/restaurants

» Marine Conservation Society 'fish to eat' list: http://www.fishonline.org/fishfinder?min=1&max=2&fish=&eat=1

» Marine Stewardship Council: http://www.msc.org/

2.1.6. LEAF (Linking Environment And Farming)

» LEAF marque: www.leafmarque.com

2.2 Making Healthy Eating Easy

Meat-free day or equivalent (20%) number of healthier plant-based main options

» Meat Free Monday: http://www.meatfreemondays.co.uk/

Actions to cut plate waste

» Wrap: www.wrap.org.uk/content/less-food-waste-saves-money

» Love Food, Hate Waste: http://england.lovefoodhatewaste.com/portions/everyday?foods_list=1724%2C1763%2C1768&adult=2&child=10

Real Bread

» The Real Bread Campaign: http://www.sustainweb.org/realbread/

Other resources

WRAP Hospitality and Food Service Agreement

The Soil Association is a supporter of WRAP's Hospitality and Food Service Agreement, which provides practical advice for caterers to reduce food and packaging waste. We are encouraging Catering Mark holders to commit to WRAP's food waste reduction targets, and will be asking for examples of how you have committed to these targets at a corporate level or if caterers have signed up for this voluntary agreement. Read more and find tools, guidance and case studies.

Appendix I

Some things to consider in a Catering Mark menu

Freshly prepared – Std 1.1
Welfare friendly – Std 1.2
Not 'Fish to avoid' – Std 1.3
Free range eggs – 1.4
Additives, transfats and GM – Stds 1.5 & 1.6

Tip

75% of the main meal options must be freshly prepared.

E621 (MSG) gravy granules?
Can be used as 'freshly prepared'
Farm Assured meat?
Homemade or bottled sauce?
Bought-in or homemade
Bought-in or homemade
Homemade?
Not 'fish to avoid'
Free range eggs
Farm Assured meat?
Made on site?
Farm Assured meat?
Cooked on site?
75% of choices must be 'freshly prepared'
Can be bought in
Eggs in mayonnaise don't have to be free range
75% of choices must be 'freshly prepared'
Not 'fish to avoid'
Not 'freshly prepared'
Bought in? Could be part of 25% not freshly prepared
Homemade?

Monday	Tuesday	...	Friday
1.Vegetable soup	1. Pea & ham soup	...	1. Tomato soup
2. Chilli con carne	2. Slow roast pork	...	2. Battered fish & chips
3. Spinach & ricotta cannelloni	3. Quorn & vegetable curry	...	3. Frittata
4. Jacket potato with choice of: *Grated cheese* *Coleslaw* *Tuna mayo* *Baked beans* *Seasonal veg*	4. Pizza with choice of: *Vegetarian topping* *Meat topping* *Seasonal veg*	...	4. Salad bar with choice of: *Cold turkey* *Houmous* *Grated cheese* *Mackerel*
5. Chocolate sponge	5. Apple crumble	...	5. Cheesecake
6. Fresh fruit salad	6. Fresh fruit salad	...	6. Fresh fruit salad
7. Jelly		...	7. Flapjack

Not 'freshly prepared' if made with jelly crystals
Farm Assured meat?
Homemade?
Bread bases can be bought-in
Homemade?

Tip

If breakfast is served, the ingredients must comply with Catering Mark standards, e.g. welfare friendly bacon and sausages.

Appendix II

Sample points calculator

We have tools available to help you assess your expenditure and how it equates to points including a points calculator (see over). Please contact us for details.

Example of a completed online points calculator

"My total spend on ingredients for each Catering Mark menu cycle is £1040, £140 (13%) of this is organic, £50 (4.8%) is spent on free range pork and £30 (2.8%) is on Marine Stewardship Council certified fish. Out of the total spend, £140 (13%) is on ingredients produced in my region. My overall spend on raw ingredients is £600, £270 (45%) of which is produced in the UK.

I am also taking steps to reduce salt on the menu, taking action to cut plate waste and use Real Bread."

My online points calculator would look like this:

Section 1: Sourcing ethical and environmentally friendly food

	% of food ingredient spend	Points
Organic: 5 points for every % **(min 15% at gold inc 1 animal product, 5% at silver)**	13	65
Free range pork and poultry: 4 points for every % **(min 5% at gold)** Please tick if less than 5% of your total ingredients spend is on pork or poultry ☐	4.8	19.2
MSC fish: 4 points for every %	2.8	11.2
Freedom Food: 3 points for every %		0
Fairtrade: 3 points for every %		0
LEAF produce: 2 points for every %		0
	Total	**95.4**

Section 2: Making healthy eating easy

Points are given for meeting a list of optional steps, some of which are sector-specific.

Choose one of the following options and tick the boxes for the steps which you are meeting:

Menu-cycle based catering services ⦿

Menu-cycle based catering services	Tick if standard is met	Points
Meat-free day or equivalent (20%) number of non-meat dishes served (as main option) where meat is replaced with vegetables, pulses, wholegrains, quorn or tofu – 20 points per day (up to max 60 points)	◯ 1 day ◯ 2 days ◯ 3 days	0
Steps taken to reduce meat served and promote non-meat dishes – 20 points	☐	0
Steps taken to reduce salt levels – 20 points	☑	20
Actions to cut plate waste – 20 points	☑	20
Real Bread is served as part of a dish, in sandwiches or as an accompaniment once a week – 10 points	☑	10
More than 50% of bread on offer is wholemeal or wholegrain – 10 points	☐	0
Fruit is cheaper than a dessert – 10 points	☐	0
	Total	**50**

Section 3: Championing local food

	% of food ingredient spend	Points
From the region/Scotland/Wales/Northern Ireland or adjacent county: 3 points for every %	13	39
From the UK: 2 points for every % above the national average spend of 59% on raw ingredients	45	0
	Total	**39**

Your total is: 184.4 = SILVER

To reach gold standard you need to do the following:

✓ 115.6 more points overall

✓ 10 more points for organic

APPENDIX C

LFP General Standards for Farmers and Ranchers

LFP
LOCALFOODPLUS

LFP GENERAL STANDARDS FOR FARMERS AND RANCHERS

An introduction to LFP Standards

Local Food Plus (LFP) standards are designed to provide guidance to farmers on practice and system requirements to be verified as an LFP operation. These standards are designed to describe a different level of farm performance than occurs in conventional food production, consistent with LFP principles to:

- 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 biodiversity
- Reduce on-farm energy consumption

The standards strike a balance between economic, social and environmental considerations, and must represent significant progress in the transition to more sustainable practices. They provide farmers with the flexibility to utilize a range of practices, based on their assessment of what is most suitable for their operation. LFP requires a whole farm application of the standard, even if only some of the product is being sold as LFP approved (e.g., no parallel production[1] from the same farm). LFP standards address environmental and social sustainability; they are not designed for food safety certification.

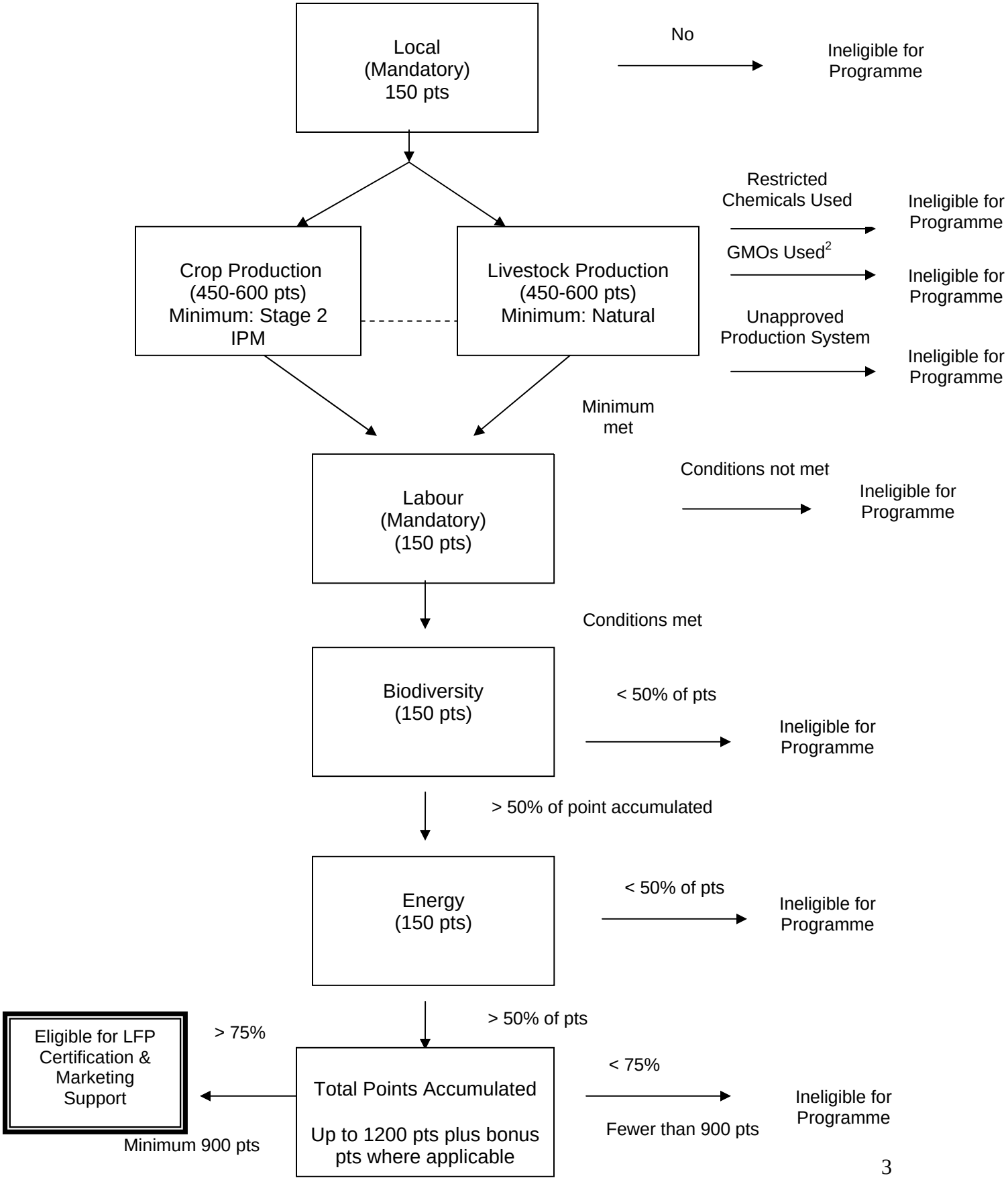
A visual overview of the standards is provided in Figure 1. The standards outline approved practices, with points associated with each practice. Operations employing prohibited practices or not meeting mandatory conditions are ineligible for the programme. In total, an LFP standard typically contains up to 1200 points. Farmers must accumulate 75% (900/1200) of the available base points from their practices for their operation to be LFP approved. In addition, farmers must receive at least 50% of available points in any other area where points are applicable (e.g., biodiversity, energy and packaging).

Bonus points are available for some practices that may not be achievable for many growers. Bonus points do not count in the total of available points, so there is no penalty for not using bonus point practices.

Not all practices are applicable to every operation, but there is sufficient flexibility in the standards to allow farmers to accumulate the necessary points. Growers must keep detailed records of all farming activities to verify that approved practices and systems have been used.

LFP standards were developed with input from farmers and other experts. In the spirit of continuous improvement, standards are reviewed and strengthened annually.

Fig. 1 LFP General Standards for Farmers -- Overview
To Become LFP Certified You Must Have A Minimum Of 900 Points Out Of 1200



100. Local Standard

Summary

Being local (within provincial boundaries) is a mandatory element of the programme (150 points awarded).

Rationale and details

A review of the literature reveals that local has no specific definition. The most common modern definition is by sub-national political boundary, e.g., state, province, region. Earlier definitions focused more on cultural boundaries or unique ecoregional features, e.g., terroir. With the possible exception of Quebec, Canada does not have a tradition of terroir.

Given this, LFP defines locally produced and processed as food that has been produced, processed and distributed within the province in which it is consumed. Foods that go outside of the provincial boundary during any part of supply chain transactions no longer qualify as local. Local is evaluated on a supply chain basis (i.e., the movement of the food from production to consumption). LFP focuses on raw and minimally processed foods and prepared foods with a minimal number of ingredients.

The exception to the provincial definition is for supply chain arrangements where consumption is in a provincial border town. In such cases, foods may be produced, processed or distributed in a neighbouring province (usually within a 200 km radius of the consumption point). Also, certain Northern communities are distant from a provincial border but much closer to a major food distribution centre in anther province than one in their home province. Based on the traditional distribution mechanisms of that area, a case by case determination of local is made, consistent with spirit of the LFP approach. An exception must be made for the US border. At this point, LFP has no legal status in the US, so is unable to link with growers who may otherwise fall within approved distances for local status.

The other important aspect of local is the ownership structure of the farm. Since a primary objective of LFP is to increase the circulation of money within local and regional economies, farms having non-resident owners living outside the province of sale or investors from outside the province of sale who control more than 50% of the share value of the farm (i.e., the majority of all voting shares are not owned by resident producers), are not eligible for LFP participation. LFP-eligible farms may rent land from non-resident farm owners.

Any farmer who does not meet these local requirements is not eligible for the LFP programme.

200-300. Production Standards

Summary

From 450-600 points are available when farmers are following recognized and approved environmental production systems. If farmers are not currently participating in a recognized programme, then they will need LFP's minimum crop and/or animal production standards, depending on what products they wish to certify in the LFP system.

Rationale and details

Because many performance standards are in operation, and many farmers are burdened by the paperwork associated with meeting multiple performance requirements, LFP wishes to minimize duplication in standard setting and inspection. LFP does have some unique requirements which we attempt to match with existing performance standards that meet LFP objectives. Similarly, wherever possible, LFP piggybacks on existing inspection processes by accepting inspection processes and reports for existing performance standards or by carrying out LFP inspections concurrently.

Our minimum environmental production standards are represented in the following:

200. Crop Production

- Stage 2 Integrated Pest Management (IPM)
- Stage 2 Integrated Fruit Production (IFP)
- Stage 2 Integrated Crop Management (ICM)
- Pesticide-free production (PFP)

300. Animal production

"Natural" animal production standards that prohibit feeding of animal by-products, use of prophylactic hormones and antibiotics (rather than to treat specific conditions), and treat and rear animals in ways that are consistent with the LFP Livestock Programme. Note that this standard is more stringent than that provided by the National Code of Practices published by the Canadian Agricultural Research Council (CARC)[3].

Accepted standards

The following standards are approved by LFP and we list the additional elements that normally have to be met for entry into the LFP programme. Points usually available for different elements are also listed. Farmers should request crop and animal-specific LFP standards if they are not currently participating in a recognized programme.

Standard	Additional LFP elements normally required	Inspector processes
Certified organic[4] Usually 600 / 600 points[5]	Local (mandatory) 150 Labour[6] (mandatory) 150 Biodiversity[7] 150 Energy[8]150	Organic inspector plus LFP inspector (farm visit first inspection, then paper inspection for next 2 years)
CHC apple IFP programme and equivalents (including ICM) in other commodities 450 points for stage 2, 500 points for stage 3) / 600 max	Local (mandatory) 150 Labour (mandatory) 150 Biodiversity 150 Energy 150 GMO and pesticide restrictions (mandatory)	No CHC audit, so LFP inspection required (farm visit first inspection, then paper inspection for next 2 years)
PFP-Canada[9] 450 points / 600	Local (mandatory) 150 Labour (mandatory) 150 Biodiversity 150 Energy 150 GMO restrictions (mandatory)	No PFP inspection so would require additional inspection by LFP inspector
ISO environmental standards (variable, standard dependent) Points out of 600	Determined on a case by case basis, as ISO standards are process standards and farm implementation will vary by farm[10]	Determined on a case by case basis

Standards not recognized by LFP

1. EUREP – in our view, EUREP base standards are insufficiently precise and essentially transfer liability down the commodity chain. Many growers may have EUREP-certification and exceed EUREP requirements. As long as this can be documented, they are eligible for LFP approval.

2. Food safety standards without environmental performance features – We encourage environmental performance standards to integrate on-farm food safety guidelines into their standard, but do not recognize food safety standards alone that do not contain environmental performance dimensions.

3. Other quality assurance schemes - identifying place, taste or style of production that do not include environmental performance components equivalent to those outlined above.

400. Labour Standard[11]

Summary

This element of the standards is designed to ensure that labour laws are respected. It does not impose conditions beyond those legally required (e.g., the standard does not require a unionized labour force, but does require that the conditions for organizing be respected, as the law requires).

The standard is of two parts, depending on the number of employees. This standard is mandatory (150 points allotted to each farm that complies with the elements listed below). Failure to comply excludes operations from the programme.

Under this standard, a worker is someone regularly employed and that includes: Permanent full-time staff, Permanent part-time staff, Contract staff, and Seasonal workers. Those who are regularly employed for a period that exceeds three months are counted in determining the number of workers, including managers and supervisors who work at the workplace. Farms with 6 workers or more are subject to OPTION A. For farms with 5 or fewer employees, a simplified LFP standard is in effect, OPTION B.

OPTION A – For farms with 6 workers or more

Elements
401. Overarching conditions
401.1 Operators should comply with all ILO conventions relating to labour welfare and the UN Charter of Rights for Children[12].
401.2 All employment conditions comply with all local and national regulations for: - wages - workers age - working hours - working conditions - occupational health and safety[13] - job security - unions - pensions - other legal and health requirements
401.3 If the operation has a seasonal worker programme, the workers must have a contract consistent with existing recognized programmes. An operation with violations in the past 12 months is not eligible for the LFP programme.
402. Plans and responsible persons
402.1 A risk assessment for safe and healthy working conditions has been carried out and used to develop an action plan to fix problems and create worker awareness.
402.2 An owner/manager is clearly identified as responsible for worker health, safety and welfare issues.
402.3 A worker health and safety representative has been identified. In cases where there are more than 20 workers, a joint health and safety committee has been established.

403. Training
403.1 A person (e.g. foreman, crew boss) is trained in First Aid and emergency procedures.
403.2 All relevant workers are trained/certified in operating farm machinery.
403.3 All workers that mix and apply pesticides trained and certified to provincial legislation standards.
403.4 Training records are kept for all workers.
403.5 Certification training under the Occupational Health and Safety Act will be required if you have 50 or more workers regularly employed on a dairy, beef, hog, poultry, mushroom or greenhouse operation.
404. Safety
404.1 All employees working with dangerous and/or complex machinery are provided with approved safety wear and equipment.
404.2 Proper protection equipment is always worn by spray applicator(s) during pesticide mixing and spraying.
404.3 Emergency and first aid procedures are posted in accessible areas, in languages reflecting the work force.
404.4 Approved First Aid kits are available in work areas, with workers trained on their use.
404.5 Hazards are clearly identified with warning signs.
404.6 Accident and emergency instructions clearly understood by all workers.
404.7 Clean toilet and washing facilities are available for all workers.
404.8 Workers applying pesticides receive annual health checks

OPTION B – For farms with 5 workers or fewer

401.2 All employment conditions comply with all applicable local and national regulations for: - wages - workers age - working hours - working conditions - occupational health and safety[14] - job security - unions - pensions - other legal and health requirements

500. Biodiversity Standard[15]

Summary

Up to 150 base points are available for enhancing biodiversity, with potential bonus points of 50. Mandatory elements must be met. Farmers must surpass 50% of the base points applicable to their operation. Some elements may not be applicable to your operation and these are not included in the base points calculation. Biodiversity elements must be closely associated with the part of the farm being certified for LFP production.

Element	Points available
501. Planning	
501.1 The most recent Environmental Farm Plan (EFP) version or equivalent is completed, or planned for completion within the upcoming year (farmer has registered for workshop and / or has timetable to submit plan for review). Upon completion, needed nutrition management and biodiversity improvements are scheduled for implementation and applications to cost-shared BMP programmes are planned, if appropriate funding provisions identified.	Mandatory, no points allotted
501.2 Species at risk identified and plan in place to protect them.	10 Base points, if applicable to farm
501.3 For farms with woodlots, timber extraction must follow a plan to minimize negative impacts on biodiversity.	10 Base points, if applicable
501.4 Farmer involved in regional activities to enhance habitat (watershed councils, corridor planning and maintenance, etc.).	15 Bonus points
502. Natural areas protection	
502.1 Clearing of primary ecosystems is prohibited and farmer must not have engaged in such clearing in the 3 years prior to application to LFP certification.	Mandatory, no points allotted
502.2 Farmers should maintain a significant portion of farm for biodiversity and nature conservation. (See Appendix 500A for options on how to calculate the amount of the farm protected for biodiversity purposes.)	10 Base points
502.3 Primary forests, well developed secondary forests and sites of environmental significance are conserved (as identified in EFP). Inappropriate recreational activity and rubbish dumping in forests is prohibited. Trees should only be replanted (of types appropriate to natural regeneration) to supplement natural regeneration. Animals must not graze forest understory.	15 Base points
502.4 Invasive exotic species must not be introduced to natural ecosystems. Those already there should be removed with biological, cultural or physical means, with pesticides only used if such measures fail, or create secondary complications.	10 Base points

503. Water protection	
503.1 Livestock do not have direct access to streams and natural water sources.	10 Base points
503.2 Abandoned wells filled and plugged.	5 Base points
503.3 Grassed buffers and runoff control structures around surface water Minimum 6-10 meter buffers, with additional area to comply with provincial regulations regarding slopes, pesticides, fertilizers, manure spreading and setbacks.	15 Base points
503.4 Drains stabilized and maintained to prevent erosion.	5 Base points
503.5 Spraying of non-crop vegetation and waterways is prohibited (see exotics exception) unless spot spraying to control alternate pest hosts.	Mandatory, no points allotted
503.6 Riparian areas[16] vegetated for water quality protection. There is a good canopy cover (>50%) of mixed multi-aged, native species to provide shade. Newly established plantings have a ground cover including a mix of grasses and shrubs with a second-story of cover and habitat, especially along stretches of streams or rivers needing stabilization.	15 Base points
504. Creating food and habitat for wildlife	
504.1 Plants that attract beneficial insects are established.	5 Base points
504.2 Bird perches are established on field edges to encourage predatory birds.	5 Base points
504.3 Windbreaks are established around fields.	5 Base points
504.4 Owl or bat boxes are established for predator populations.	5 Base points
504.5 Native vegetation is established along unused areas, fencerows, buildings, etc	10 Base points
504.6 Fallow fields are left with plant cover to provide food, water, and/or cover; this includes cover crops, or crop residue left on soil surface. Fallow is permitted in specific circumstances (e.g., nematode control for orchard replant).	10 Base points
504.7 Irrigation never disrupts habitats sufficiently to cause changes in species activity (e.g., water supplied to farm ponds to maintain habitat).	5 Base points
504.8 Wildlife habitat corridors maintained between natural areas or established where lacking. A corridor must be more than a roadway.	10 Bonus points
504.9 Leaves standing deadwood for raptors and woodpeckers.	5 Bonus points
504.10 Grass is unmowed and grain harvest delayed during migration or reproduction periods.	10 Bonus points
504.11 Vehicle traffic and activities around natural areas are limited during migration and reproductive times and/or when wildlife is present.	10 Bonus points

505. Closing nutrient cycles	
505.1 Since biodiversity is dependent on optimal energy, nutrient and water flows, farms minimize their export of nutrients, beyond that inherent to crop and animal product sales (e.g., manure and straw export would be minimized).	Mandatory

Appendix 500A – Options for protecting biodiversity

Choose **OPTION A** or **OPTION B**

OPTION A

The measure used compares the farm acres in “all other lands” (from 2001 Census) with the average for the census district, a proxy for land that could be habitat. Farm must exceed by at least 1 % point the census district average.

OPTION B

The farm must set aside at least 7% of their agricultural area to enhance biodiversity. Examples of countable areas: non-fertilized, species rich permanent meadows and pastures, fallow land (minimal period: 15 months), standard native fruit trees and isolated trees in suitable places (120 square yards per tree), hedges, copses and embankment copses, ditches, ponds and pools, marsh land, waste ground, piles and stacks of stones, drystone walls, non-made up natural paths.

For operations with multiple farms providing LFP products, each farm must meet this minimum requirement.

600. Energy Standard

Summary

This standard evaluates the extent to which farmers have plans in place to reduce energy inefficiency and packaging, and their implementation. It builds on elements of the Environmental Farm Plan process. Farmers receive up to 50 points for having a plan. If elements of the plan are being implemented, an additional 50 points can be acquired. Finally, if the farmer is going beyond the provisions of the Environmental Farm Plan, a further 50 points can be assigned. Total points available: 150[17]

601. Part I – Developing a plan

Farmer has signed up for an EFP workshop. --- 15 points
OR
Farmer has submitted plan for peer review. --- 25 points
OR
Farmer's plan has been accepted. --- 50 points
OR
Farmer has an equivalent plan with comparable detail to an EFP. --- 50 points

Total points for this section: 50

602. Part II – The EFP provisions are being implemented

Farmer has implemented his/her farm plan (or equivalent) and has done some of the following (10 points per item, up to 50 points) (taken from EFP worksheets #6, 7, 13, 14):

- reuse and/or recycle plastic film coverings
- reuse and/or recycle packaging containers
- recycling petroleum product packaging, where programmes available
- reuse and recycling building materials as much as possible
- recycle oil, fuel and anti-freeze, where possible
- reuse machinery parts and take unusable parts to scrap dealer
- have refrigerants removed by certified personnel
- reuse or recycle tires
- eliminate water leaks in house and on farm
- install water conservation fixtures in house and farm buildings
- do not dispose of solvents and cleaning agents in the household or farm plumbing
- install high-efficiency lighting in house and farm buildings
- properly insulate and seal house and farm buildings

603. Part III – Going beyond current EFP requirements

Farmer is going beyond current EFP requirements and has done some of the following (10 points per item, up to 50 points):

- Capturing heat from crop, animal and industrial processes
- Energy efficient motors, appliances and equipment
- Greywater reuse programme
- 3R Programme for house and farm office
- Energy efficient and low waste packaging (if required) from farm to processor
- Energy efficient transport to processor or end user

604. Part IV - Bonus points

Bonus points are available for the following activities:

- Bonus: Renewable fuels are purchased for use in equipment and vehicles or farmer belongs to a windmill coop (10 pts)
- Bonus: On-farm energy generation for on-farm use or sale, including windmill, biofuel (not from sources that compete with the food chain), methane generation and small scale hydro (up to 20 points)

End Notes

[1] Meaning that the same commodity can not be produced on the farm with different production standards, even if only part of the production is being marketed through LFP. However, different commodities can be produced under different production standards.
[2] Local Food Plus (LFP) does not permit in its programme plants or livestock destined directly for human consumption that are derived from genetically modified constructs. Site inspectors examine records to determine if any seed varieties, livestock semen, embryos, or other genetics intended for LFP Certification have been produced with genetically modified technologies.
LFP livestock producers are encouraged and assisted to source non-GMO feeds if and when they are available. LFP will continue supporting efforts to develop non-GMO supply chains for livestock feed and markets for livestock raised without feed containing GMOs. However, since government regulations do not currently require segregation or identification of GMOs, most livestock feed is formulated with co-mingled supply. Therefore LFP has found it unrealistic to require that all participants feed verified non-GMO rations at this time.
LFP will provide support in validating the claims of LFP Certified producers who feed verified non-GMO rations to their animals (including those who also carry organic certification) and wish to sell to buyers who want non-GMO product.
[3] This guideline is currently being revised.
[4] Certified organic receives higher points based on superior environmental performance across a number of areas. For a review, see MacRae, R. et al. 2004. "Does the adoption of organic food and farming systems solve multiple policy problems? A review of the existing literature." Report funded by the Canadian Agriculture and Rural Develop (CARD) Program of Agriculture and Agrifood Canada. Organic Agriculture Centre of Canada, Truro, NS.
[5] Certified organic systems may sometimes be marked down from 600 points in commodities where environmental knowledge is somewhat limited compared to more environmentally sophisticated and mature certified organic systems.
[6] LFP has prepared its own standard.
[7] LFP has prepared its own standard.
[8] LFP has prepared its own standard.
[9] It looks like PFP has formally ceased operations, though many growers may still be following its protocol.
[10] ISO 14001 is an international standard that specifies the requirements for an environmental management system that can be objectively audited for self-declaration or third-party certification. This standard does not specify absolute requirements for environmental performance beyond compliance with applicable legislation and regulations. The adoption of an EMS only requires continuous improvement rather than specific levels of performance, and for this reason an EMS does not guarantee that a business is ecologically sustainable.
[11] Sources consulted in developing this standard include: the IFP guideline for apple production developed by the Canadian Horticultural Council, the Social Standards developed for organic production by IFOAM, the EUREP guidelines, and government programmes for seasonal farm labour.
[12] The ILO conventions can be viewed at: http://www.ilo.org/public/english/standards/norm/whatare/fundam/index.htm. The UN Convention on the Rights of Children can be found at: http://www.unhchr.ch/html/menu3/b/k2crc.htm
[13] Since June 2006, farms are covered under the Occupational Health and Safety Act, with some exemptions. For details, see http://www.omafra.gov.on.ca/english/busdev/facts/qandaohsa.htm#employees
[14] Since June 2006, farms are covered under the Occupational Health and Safety Act, with some exemptions. For details, see http://www.omafra.gov.on.ca/english/busdev/facts/qandaohsa.htm#employees
[15] Sources consulted in the development of this component include: the IFOAM Basic Standard for Organic Production, the IFP guideline for apple production developed by the Canadian Horticultural Council, the biodiversity standard of the Food Alliance, BioSuisse biodiversity elements, and the guidelines of The Land Conservancy-BC.

[16] The riparian area includes the stream bank and the terrain around water courses and water bodies that is subject to flooding.
[17] For elements that are not applicable to the farm, those points are removed from the base score calculation.

APPENDIX D

LFP General Standards for Processors and Packers 2011

LFP
LOCALFOODPLUS
ALIMENTSLOCAUXPLUS

LFP GENERAL STANDARDS FOR PROCESSORS AND PACKERS

An introduction to LFP standards

Local Food Plus (LFP) standards are designed to provide guidance to processors and packers[1] on practice and system requirements to be verified as an operation certified to process and pack LFP certified food[2]. Processors and packers may also be processing and packing non-LFP certified foods, but these must be kept strictly separate from LFP certified foods. Processors and packers are only certified for the processing or packing of LFP certified foods. LFP certified foods have met standards consistent with LFP principles to:

- 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 biodiversity
- Reduce on-farm energy consumption

The processor and packer standards strike a balance between economic, social and environmental considerations, and must represent significant progress in the transition to more sustainable practices. They provide processors with the flexibility to utilize a range of practices, based on their assessment of what is most suitable for their operation. LFP standards address environmental and social sustainability; they are not designed for food safety certification.

If a facility has a comprehensive plant management system with an audit component that is recognized by LFP, upon further confirmation, no further certification is required to process or pack LFP certified products. If a facility does not have a Plant management system recognized by LFP, processors and packers must meet standards designed to describe a different level of facility performance than occurs in conventional food processing and packing, consistent with LFP principles to:

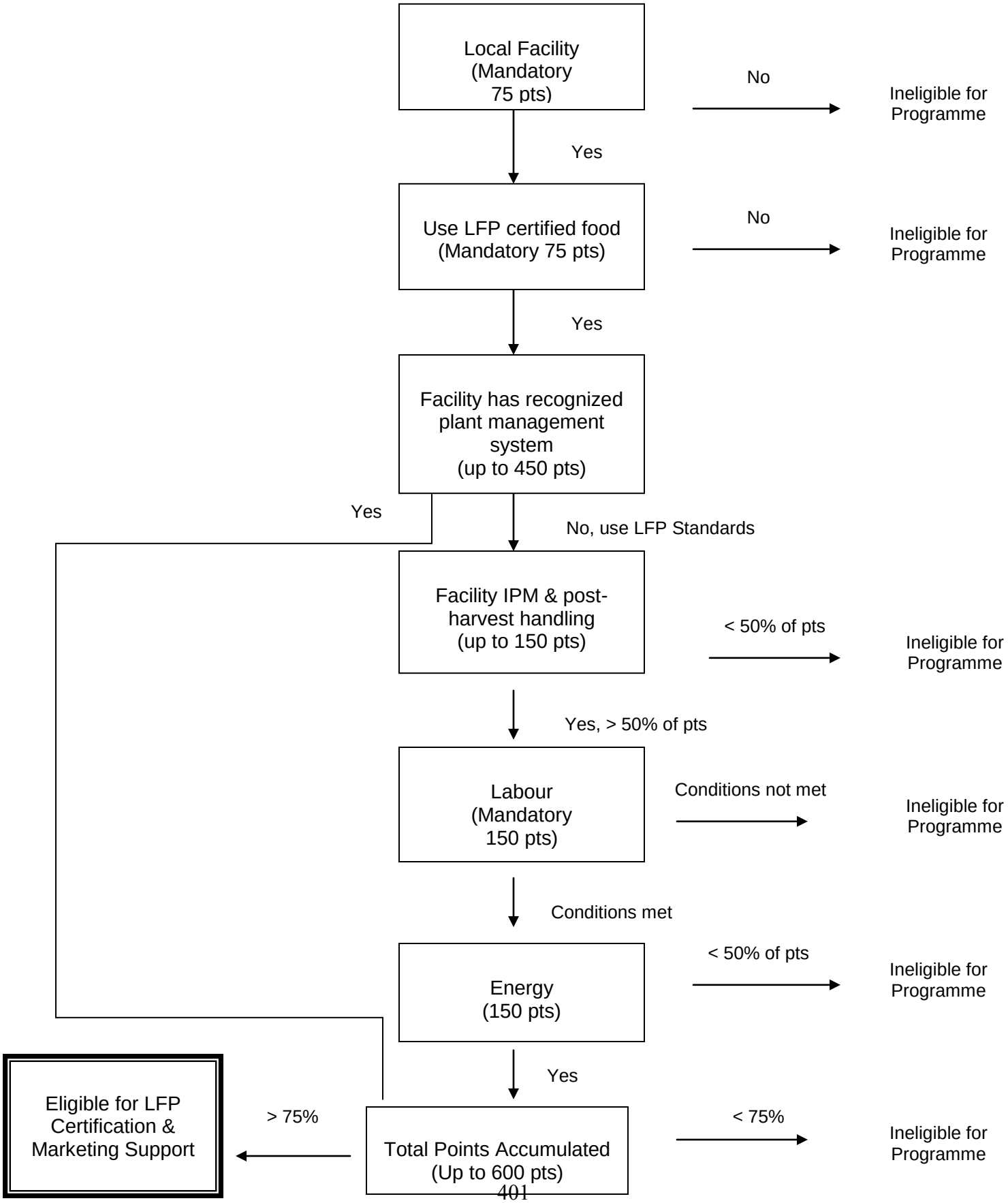
- Employ a facility IPM and post-harvest handling programme
- Provide safe and fair working conditions for workers in the facility
- Reduce energy consumption in the facility

A visual overview of the standards is provided in Figure 1. The standards outline approved practices, with points associated with each practice. Operations not meeting mandatory conditions are ineligible for certification. In total, the LFP processor and packer standard typically contains up to 600 points. Processors must accumulate 75% (450/600) of the available base points from their practices for their operation to be LFP approved. In addition, processors and packers must receive at least 50% of available points in any other area where points are applicable (e.g., LFP standard components facility IPM and post-harvest handling and energy).

Not all practices are applicable to every operation, but there is sufficient flexibility in the standards to allow processors to accumulate the necessary points. Processors and packers must keep detailed records of all activities to verify that approved practices and systems have been used.

LFP standards were developed with input from processors and packers and other experts. In the spirit of continuous improvement, standards are reviewed and strengthened annually.

LFP Standards Overview for Processors



1000. Local and LFP Certified Product Standards

Summary

Being a local facility (within the province where the LFP certified food is produced) and using LFP certified food are mandatory elements of the programme (75 points awarded for each for a total of 150 points)[3].

Rationale and Details

A review of the literature reveals that local has no specific definition. The most common modern definition is by sub-national political boundary, e.g., state, province, region. Earlier definitions focused more on cultural boundaries or unique ecoregional features, e.g., terroir. With the possible exception of Quebec, Canada does not have a tradition of terroir.

Given this, LFP defines locally produced and processed as food that has been produced, processed and distributed within the province in which it is consumed. Foods that go outside of the provincial boundary during any part of supply chain transactions no longer qualify as local. Local is evaluated on a supply chain basis (i.e., the movement of the food from production to consumption).

The exception to the provincial definition is for supply chain arrangements where consumption is in a provincial border town. In such cases, foods may be produced, processed or distributed in a neighbouring province (usually within a 200 km radius of the consumption point). Also, certain Northern communities are distant from a provincial border but much closer to a major food distribution centre in anther province than one in their home province. Based on the traditional distribution mechanisms of that area, a case by case determination of local is made, consistent with spirit of the LFP approach. An exception must be made for the US border. At this point, LFP has no legal status at in the US, so is unable to link with growers who may otherwise fall within approved distances for local status.

Any processor or packer who does not meet these local requirements is not eligible for the LFP programme.

2000. Facility Plant Management System

Summary

Up to 450 base points are available for the facility plant management system. Processing and packing facilities may be eligible for either Option A or Option B, as outlined below.

OPTION A:

If a facility has a comprehensive plant management system with an audit component that is recognized by LFP, upon suitable confirmation, no further certification is required to process or pack LFP certified products. Because there are significant differences in EMS, processors are advised to discuss their existing plan with LFP staff well in advance of an application for LFP certification.

Because many plant management systems are in operation, LFP wishes to minimize duplication in standard setting and inspection. Therefore LFP recognizes processors and packers who are certified by other systems that meet LFP standards. These systems are evaluated on a case by case basis, with processors receiving up to 450 points in recognition of the standards of the existing system. Some of the more well-known plant management systems recognized by LFP include:

- Organic
- ISO 9001
- ISO 14001
- ISO 22000
- HACCP (Hazard Analysis Critical Control Point)
- QMP (Quality Management Program)
- AIB Consolidated standards

OPTION B:

If a facility does not have a Plant management system recognized by LFP, the key elements of the LFP program described below are applied.

- Facility IPM and Post-Harvest Handling Standard
- Labour Standard
- Energy Standard

3000. Facility IPM and Post–Harvest Handling

Summary

Processors must follow a facility IPM (Integrated Pest Management) programme. Facilities must also demonstrate that IPM thinking has been applied to the use of post-harvest handling materials and sanitation. A documented facility IPM programme carried out by a third party may be acceptable if it is equivalent to that developed for the Pest Management Regulatory Agency (PMRA) programme on facility IPM (in anticipation of methyl bromide removal)[4].

The processor or packer must maintain the integrity of the LFP product from production, processing, storage, handling and labelling, to point of sale.

3001. Overarching conditions

Certain pesticides and post–harvest handling materials and processes, even as part of an IPM programme, are forbidden in the LFP programme. These include:

- Methyl bromide
- Phosphine
- Ionizing radiation for pest control, food preservation, elimination of pathogens or sanitation.
- Addition of GMO or GMO-derived materials to LFP food

In addition, the facility IPM/post-harvest handling plan must provide a clear IPM rationale for the use of the following materials:

- Organophosphates
- Carbamates
- Synthetic pyrethroids
- Diphenylamine
- Mertect

Facility managers are encouraged to consult The IPM Practitioners Directory of Least Toxic Pest Control Products[5] for making pest management decisions.

Points Allocation

3100. Stage 2 facility IPM programme typically receives 50-100 points of the 150 available.

3200. Stage 3 facility IPM and post-harvest handling programme typically receives 100-125 points of the 150 available.

3300. A programme that meets organic requirements, but the facility is not certified would typically receive 125-150 points.

4000. Labour Standard

Summary

This element of the standards is designed to ensure that labour laws are respected. It does not impose conditions beyond those legally required (e.g., the standard does not require a unionized labour force, but does require that the conditions for organizing be respected, as the law requires).

The standard is of two parts, depending on the number of employees. This standard is mandatory (150 points allotted to each operation that complies with the elements listed below). Failure to comply excludes operations from the programme.

Under these standards, a worker is someone regularly employed and that includes: Permanent full-time staff, Permanent part-time staff, Contract staff, and Seasonal workers. Those who are regularly employed for a period that exceeds three months are counted in determining the number of workers, including managers and supervisors who work at the workplace. Operations with 6 workers or more are subject to Part I. For operations with 5 or fewer employees, a simplified LFP standard is in effect, Part II.

OPTION A – For operations with 6 workers or more

Elements
4001. Overarching conditions
4001.1 Operators should comply with all ILO conventions relating to labour welfare and the UN Charter of Rights for Children.
4001.2 All employment conditions comply with all local and national regulations for: - wages - workers age - working hours - working conditions - occupational health and safety - job security - unions - pensions - other legal and health requirements
4001.3 If the operation has a seasonal worker programme, the workers must have a contract consistent with existing recognized programmes. An operation with violations in the past 12 months is not eligible for LFP programme.
4002. Plans and responsible persons
4002.1 A risk assessment for safe and healthy working conditions has been carried out and used to develop an action plan to fix problems and create worker awareness.
4002.2 An owner/manager is clearly identified as responsible for worker health, safety and welfare issues.
4002.3 A worker health and safety representative has been identified. In cases where there are more than 20 workers, a joint health and safety committee has been established.

4003. Training
4003.1 A person (e.g. foreman, crew boss) is trained in First Aid and emergency procedures.
4003.2 All relevant workers are trained/certified in operating machinery.
4003.3 All workers that mix and apply chemicals are trained and certified to provincial legislation standards.
4003.4 Training records are kept for all workers.
4003.5 Certification training under the Occupational Health and Safety Act will be required if you have 50 or more workers regularly employed.
4004. Safety
4004.1 All employees working with dangerous and/or complex machinery are provided with approved safety wear and equipment.
4004.2 Proper protection equipment is always worn by spray applicator(s) during chemical mixing and spraying.
4004.3 Emergency and first aid procedures are posted in accessible areas, in languages reflecting the work force.
4004.4 Approved First Aid kits are available in work areas, with workers trained on their use.
4004.5 Hazards are clearly identified with warning signs.
4004.6 Accident and emergency instructions clearly understood by all workers.
4004.7 Clean toilet and washing facilities are available for all workers.
4004.8 Workers applying chemicals receive annual health checks.

OPTION B – For operations with 5 workers or less

4001.2 All employment conditions comply with all applicable local and national regulations for: - wages - workers age - working hours - working conditions - occupational health and safety - job security - unions - pensions - other legal and health requirements

5000. Energy Standard

Summary

This standard evaluates the extent to which processors and packers have plans in place to reduce energy inefficiency and packaging. Processors and packers receive up to 50 points for having a plan. If elements of the plan are being implemented, an additional 100 points can be acquired. The total points available for the energy component are 150. A 50% minimum is required.

5001. Part I – There is a plan

Processor or packer has no formal or informal plan. --- 0 points
OR
Processor or packer has an informal plan that is apparent to the LFP inspector, but that is not written down in a coherent form but has generated improvements. --- 25 points
OR
Processor or packer has a formal written plan. --- 50

Total for this section: 50

5002. Part II – The plan is being implemented

The processor or packer has implemented his/her plan, including the following (10 points per item, up to 100 points).

Full implementation of a good system --- 7-10 points
Moderate implementation --- 4-6 points
No to low implementation --- 0-3 points

- Wastewater management and reuse system in place.
- Water use is efficient.
- Waste heat is captured from industrial processes.
- The building(s) has been audited for energy efficiency and improvements made.
- The processing plant uses energy efficient motors, appliances and equipment (including refrigeration).
- The vehicles used by the processor are energy efficient.
- A 3R programme (Reduce, Reuse, Recycle) is in place for facilities, equipment and supplies (including all solid, liquid and airborne waste products).
- The plant cleaning programme is energy efficient and low pollution.
- Energy efficient and low waste packaging is provided to the end user.
- Transport to the end user uses energy efficient vehicles and systems.

End Notes

[1] Note that other kinds of handlers, such as distributors who do not add substances or transform food products, are not required to be certified, but instead are subject to audit trail requirements to ensure the integrity of LFP products.
[2] If a processed product will contain ingredients that are not LFP certified, please refer to the document IDENTIFYING LFP-CERTIFIED INGREDIENTS IN A MULTI-INGREDIENT PRODUCT.
[3] For full details of LFP certification of farm products, please see LFP General Standards for Farmers and Ranchers – April 2007.
[4] See Integrated Pest Management in Food Processing: Working Without Methyl Bromide http://res2.agr.ca/winnipeg/storage/pubs/ipm-proc.pdf
[5] http://www.birc.org/products.pdf

APPENDIX E

Identifying LFP Certified Ingredients in a Multi-ingredient Product

LFP's Definition of a Multi-ingredient Product: A multi-ingredient product is a prepared or processed product composed of two or more distinct ingredients.

For Food Service (with kitchen preparation of product)

1. A multi-ingredient product can be identified as "LFP certified/certifie 50-95%" and use the LFP multi-ingredient certification mark, provided that 50% or more (by mass or fluid volume, excluding added water and salt) of the ingredients, are obtained from LFP certified production, and;

2. All ingredients comprising the basis for an LFP claim contained in the final composition of a product shall have also been certified by LFP beforehand.

3. Products containing less than 50% (by mass or fluid volume, excluding added water and salt) of ingredients that are LFP certified may have the ingredient(s) listed as LFP certified in the list of ingredients. The "LFP certified/certifie 50-95%" multi-ingredient certification mark cannot be used.

4. No LFP certified products or products made with LFP certified ingredients shall contain any ingredients derived from genetically engineered plants or animals.

5. All use of the "LFP certified/certifie 50-95%" multi-ingredient certification mark is conditional to a license agreement being in place.

For Processed Products in Retail or Food Service

1. A multi-ingredient processed product can be identified as LFP certified (e.g., LFP (place) -certified pasta sauce) and use the LFP certification mark, provided that:
   a) >95% (by mass or fluid volume, excluding added water and salt) of the ingredients, are obtained from LFP certified production, and;
   b) the non-LFP certified ingredients are allowed for use to within a maximum level of 5% (by mass or fluid volume, excluding added water and salt) of the total ingredients in the final processed product if they are not commercially available from LFP certified operations, and the cost is not to be used as a criterion for "commercially available."

2. All ingredients contained in the final composition of a processed product shall have also been certified by LFP beforehand.

3. Processed products containing 50% - 95% (by mass or fluid volume, excluding added water and salt) of ingredients that are LFP certified shall be identified with the "LFP certified/certifie 50-95%" multi-ingredient certification mark, and the LFP certified ingredients must be listed on the product label.

4. Processed products containing less than 50% (by mass or fluid volume, excluding added water and salt) of ingredients that are LFP certified may have the ingredient(s) listed as LFP certified in the list of ingredients. The LFP certification marks can not be used.

5. No LFP certified processed products or processed products made with LFP certified ingredients shall contain any ingredients derived from genetically engineered plants or animals.

6. All use of the “LFP certified/certifie 50-95%” multi-ingredient certification mark is conditional to a license agreement being in place.

APPENDIX F

Local Food Plus (LFP) GMO Policy

Local Food Plus (LFP) does not permit in its programme plants or livestock destined directly for human consumption that are derived from genetically modified constructs. Site inspectors examine records to determine if any seed varieties, livestock semen, embryos, or other genetics intended for LFP Certification have been produced with genetically modified technologies.

LFP livestock producers are encouraged and assisted to source non-GMO feeds if and when they are available. LFP will continue supporting efforts to develop non-GMO supply chains for livestock feed and markets for livestock raised without feed containing GMOs. However, since government regulations do not currently require segregation or identification of GMOs, most livestock feed is formulated with co-mingled supply. Therefore, LFP has found it unrealistic to require that all participants feed verified non-GMO rations at this time.

LFP will provide support in validating the claims of LFP Certified producers who feed verified non-GMO rations to their animals (including those who also carry organic certification) and wish to sell to buyers who want non-GMO product.

Background to LFP's GMO Policy

There is significant debate about the compatibility of current applications of GMO technologies with environmental sustainability. This debate rests primarily with cell fusion, microencapsulation and macroencapsulation, and recombinant DNA technology (including gene deletion, gene doubling, introducing a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology). Critics believe that the process by which a product is developed is as important to examine as the end product, and see unique problems with rDNA and related technologies. Many of these critics also challenge crops that result from mutagenesis or "traditional" plant breeding, but believe genetically modified technologies represent a significant departure from other approaches. The major difference between traditional and modern biotechnology lies with the ability to transfer genes between different species. Given this, Local Food Plus (LFP) does not use the novel food and crops conception employed by the Canadian government. LFP does not consider the use of traditional breeding, conjugation, fermentation, hybridization, in vitro fertilization, or tissue culture in its definition of modern biotechnology.

LFP's assessment is that there is a significant group of consumers and sustainability and health advocates who wish to avoid GMOs and are willing to support a market premium to ensure that the food they are eating is not derived from genetically-modified constructs. These are among the consumers LFP targets in order to expand higher value markets for farmers who meet standards for environmental and social responsibility and achieve LFP Certification.

Practical implications

Not permitted

Farmers

- planting genetically-modified seeds or transplants on lands designed for LFP Certification
- using livestock semen, embryos, or other genetics produced with genetically modified technologies
- rearing genetically-modified animals

Processors

- processing genetically modified crops and animal products

Permitted

Farmers

- using GMO-derived veterinary biologicals from industrial processes, provided they are applied in a manner consistent with LFP standards
- using GMO-derived pheromones from industrial processes for insect monitoring, provided they are used in a manner consistent with LFP standards
- feeding co-mingled (non-GMO and GMO) livestock rations

Processors

- using GMO-derived processing aids developed in closed industrial systems

APPENDIX G

Interview Guide

1. What is your role within [the organization]?

2. How are you or [your organization] involved with increasing the scale, efficiency and accessibility of sustainable and local food in your work? (i.e. aggregation, processing, procurement, distribution, foodservice or advocacy)?

2. a. How do you and your organization keep abreast of trends in sustainable and local food?

3. Do these efforts include infrastructure-building? (i.e. creation of food hubs or food centres, farmers' markets, incubator kitchens, distribution companies, mid-scale processors)

4. Why did you undertake these efforts? – What motivated you?

4. a. What did you anticipate would be your challenges and opportunities? Did you expect infrastructure to be a challenge?

5. a. How do you define your market? What does your ideal market look like?

5. b. How does sustainable and local food fit into your marketing plans, and in your thinking about long-term changes that need to be made for sustainable and local food to become more mainstream?

6. To what extent do you consider the following factors to be core components of sustainable and local food, and of a sustainable regional food system?

- food grown within your county, province, region or country
- food grown with reduced or no pesticides
- animal welfare
- conditions for food and farm workers
- increased biodiversity
- reduced carbon footprint
- viable farm income
- stable market for farm products
- stable long-term land tenure
- sustainable seafood
- fair trade standards
- waste reduction
- health
- other?
- And how does attention to these factors help your business / organization be successful?

7. What do you consider to be the most pressing issues or barriers relating to sustainable and local food aggregation, processing, procurement, distribution and foodservice (i.e. lack of infrastructure, municipal zoning, contractual obligations, taxation, regulations, access to space, access to capital or funding, political will, trade regulations, cultural acceptability)? How would you rate these in importance?

7. a. If you are a farmer, to what extent are you able to determine the price for your products? To what extent is it determined by distributors? By processors? By foodservice contractors? By trade agreements (i.e. price of imports)? By government regulations (i.e. supply management)?

7. b. If you are a farmer, to what extent are you able to determine the terms of the sale (size of order, delivery time, payment schedule, etc.)? To what extent is it determined by distributors? By processors? By foodservice contractors?

8. In my current research, I am looking at various alternatives that might allow farmers/foodservice to more easily engage with sustainable and local food markets, including:

- public / institutional procurement
- hub-building
- public subsidies
- sustainable and local processing
- sustainable and local distribution
- government extension services
- controlled atmosphere storage
- small and mid-scale processing kitchens
- post-harvest handling support
- food literacy among clients (to understand seasonality)
- existence of non-profit advocacy groups that promote sustainable local food systems

What are some models (municipal, institutional or private) that you are familiar with, that use innovative approaches to the aggregation, processing, procurement, distribution and foodservice of sustainable and local food?

8. a. Are you or [your organization] involved with the development of any of these approaches?

If so, what are some of the challenges you face in working on issues of efficiency, accessibility and scale?

8. b. Do you think that any of these models address questions of access for universities and other public institutions?

9. What is the role of universities in advancing sustainable and local food systems?

9. a. Are universities different from other public sector institutions in how they are able to advance sustainable and local food systems? If so, in what ways (more autonomous decision-making around food procurement than hospitals or schools, more demanding constituency around food issues, more likely to have complete kitchens, under greater pressure from stakeholders to achieve GHG reduction or other sustainability goals)?

9. b. Where does the pressure or support for sustainable local food in university foodservice come from (foodservice providers, individual chefs, residence managers, university administrators, faculty, undergrad students, graduate students, student organizations, alumni, external non-profit groups, other stakeholders)?

9. c. Are universities more likely to be centres of emerging trends than other public sector institutions? Why or why not?

9. d. Do universities provide a space where experiments in sustainable and local food can be tried more easily than elsewhere? Why or why not?

10. What models for aggregation, processing, procurement, distribution and foodservice do you think would be most relevant to Canada? Why?

10. a. What models for aggregation, processing, procurement, distribution and foodservice do you think would be most relevant to the United Kingdom? Why?

10. b. Which of the following would best support and advance appropriate models?

a. Local Food Acts

b. regional food hub feasibility studies

c. regional Food Charters and Food Policy Councils

d. government-funded incentives

e. DEFRA's "A Plan for Public Procurement"

f. other policy and/or program tools

11. How easy or difficult do you think these models are / would be to adopt and implement? Why?

11. a. Who are the key players that can collaborate to effect changes in this area?

11. b. What is the role of students in affecting change? Of university administrators? Of foodservice contractors? Of chefs? Of foodservice staff? Of external stakeholder or advocacy organizations? Of government actors?

11. c. What is the most effective venue for policy change?

12. What policies and incentives can be put in place to support the introduction and implementation of such strategies at local and provincial/regional levels?

12. a. Are there policies that effectively hinder progress in this area?

13. Do you think that 'third party' certification systems (such as Certified Organic, Local Food Plus (Certified Local Sustainable), Food for Life (Food for Life Catering Mark), Fairtrade, Marine Stewardship Council, or others) can support the development of food aggregation, processing, procurement, distribution or foodservice regionally?

13. a. What value would / does certification add (provides objective standards to refer to, educates your constituency, offers easier access to sustainable local food, provides a tool for making purchasing decisions, other)?

13. b. What prevents certification systems from gaining greater acceptance in the area in which you work?

13. c. What certifications (if any) do you use / rely on? What is required to become certified?

14. Who are the important players whose decisions most influence your organization's ability to carry out its mission? Are different kinds of players important in universities compared to other institutions?

14. a. What is the nature of your relationship with these decision-makers?

15. Do any tensions arise among stakeholders involved with aggregation, processing, procurement, distribution, and foodservice? And if so what kind of tensions?

- Governments (at all levels)
- Producers and processors
- Advocacy organizations
- Clients/Students
- Universities and their funders and other stakeholder groups

16. Are there any other important policies (not related to the above issues) that burden the work of your organization, or stand in the way of expansion of sustainable and regional food systems?

- Municipal/Regional (public health requirements, for example)?
- Provincial (labour issues or tax assessments for on-farm processing, for example)?
- Federal/National?

17. Do you think your organization's approach to improving and increasing the scale, efficiency and accessibility of sustainable and local food in your region is effective? Why or why not?

17. a. How could [your organization] improve the accessibility of the sustainable and local food that travels through your region's food chains (e.g. food hubs / centres, online 'markets', farmers' markets, mobile markets, incubator kitchens, mid-scale distributors)?

18. What is the size of your business/organization? How many employees? What is the size of your network? Approximately what are your annual sales? If you are a non-profit, how are you funded? Could you speculate on what the difference would be if your organization were bigger or smaller?

18. a. If you are a foodservice operator, what type of operation are you (self-op, social enterprise, regional caterer, transnational foodservice corporation, etc.)? Which organizational form do you think is best suited to increasing sustainable local food in universities? In society at large?

18. b. If you are a foodservice operator, what are the conditions of your contract (profit-loss, management fee, etc.)? What type of operation is best suited to increasing sustainable local food?

18. c. If you are a foodservice operator, do you work with preferred vendors and rebates? What restrictions and incentives are best suited to increasing sustainable local food at universities? In society at large?

19. Are you aware of any organizations or initiatives that have failed in the provisioning of sustainable and local food to a university? If yes, can you comment on the lessons learned?

20. Do you have any other thoughts or insights you would like to share?

21. Can I contact you in the future if I have any follow up questions?

22. Is there anyone else in your region you think we should try to interview about aggregation, processing, procurement distribution, foodservice, advocacy or policy issues?