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Climate Change, Work and Employment in the Agri-Food Sector: Is the Ontario Food System Sustainable?

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Abstract

The alternative food movement is growing and consists of local groups that advocate for a sustainable, secure, affordable and safe food system that is distributed primarily through local or regional community markets. It has grown in response to consumer demand as more people search for high quality, often organic, food products. As the amount of this food increases, the jobs and labour processes are also changing. This paper seeks to analyse the current food system in Ontario – both the industrial system and the growing alternative, often organic, local food system. We also will examine the interrelationship between the industrial and alternative food systems, because organics are influencing management decisions at grocery stores, and government policy is evolving. Our research is taking account of the growing theoretical literature that covers food and climate change and we link this material to issues of work and employment. We will focus on jobs and employment in the food system as well as analyse how best to make the food system in this province sustainable in the face of climate change. With increasing extreme weather events, the need to adapt the food system to climate change, the need for food security and the necessity of having a sustainable food system in Ontario all become more urgent concerns. We also suggest ways of mitigation and adaptation to ensure future food security. Some of this information is known, while some requires more research which we are undertaking, so this is very much a working paper.

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> In Jonathan Franzen's novel *Freedom,* Walter an environmentalist goes into a restaurant 'plastic to the core' and peruses the menu. "Between the horrors of bovine methane, the lakes of watershed-devastating excrement generated by pig and chicken farms, the catastrophic overfishing of the oceans, the ecological nightmare of farmed shrimp and salmon, the antibiotic orgy of dairy-cow factories, and fuel squandered by the globalization of produce, there was little he could ever order in good conscience besides potatoes, beans and freshwater-farmed tilapia" (Frantzen, 306).

This sentence pretty much describes the industrial food system and the choices consumers have today (Laidlaw, 2003; MacDowell, 2012). We seek to examine the food system in Ontario: how it works, its producers and employees, its impact on consumers, livestock and the environment, and the regulatory environment. We examine how and why an alternative food community grew up, its ideas, approaches and products, and the public demand for alternative food. Finally we want to gauge how these two different approaches to food will adapt to climate change to ensure future food security in Ontario.

The food system is the largest employer in the world, and any efforts to adapt to, or mitigate, climate change in the sector will have implications for workers and the work processes in food production. In Ontario, where it is a large sector, we analyze how food production is structured, who works in the various subsectors and consider how increasing concern about climate change is creating new approaches to producing accessible, healthy food in an environmentally sustainable way. In this process, we take into account how these developments are altering employment and work practices globally and within Ontario's food system.

Conceptual Frameworks

Before beginning a discussion of the food system, we briefly outline some key conceptual frameworks pertaining to climate change, food production and food security that we consider particularly important to understanding how work and workers engaged in growing, distributing, retailing and marketing food are being affected by a changing environment. The review begins with broad analyses grounded in global perspectives of climate change and/or food and ends with more detailed analyses of local food systems including Canada and Ontario. Specifically, we discuss risk and climate change, the right to food within a human rights framework and food regime perspectives.

The notion of risk or 'risk society' (Beck, 1992) as a descriptor of late modernity is often associated with climate change because of its profound significance for understanding contemporary society and because of the recognition that human conduct is a factor threatening the environment. Within the social sciences, risk discourse is linked to "the social construction of reality" and is understood to contribute to ways of organizing and transforming society (Strydom, 2002:5). According to Beck, "society is founded and administered on the basis of ambiguity of risk;" (Beck, 2009:6). Risk is creating new paradigms and re-jigging the organization of society as new institutional forms emerge to regulate or manage risk (the risk calculus). Risk management is a global encompassing

issue of climate change and financial crisis but it also affects a broad range of institutions that may operate nationally such as public health (e.g. risk of food contamination, obesity, pandemics), energy regulation (e.g. risk from nuclear power), and public security (risk of terrorism). Beck also argues late modernity is deepening and encouraging individualization as traditional norms and institutions break down thus requiring individuals to become increasingly self-reliant; this rationale is accompanied by the social expectation that people will become knowledgeable of risks and learn how to manage them rationally. At the same time, the risk society is generating hazards and uncertainties that cannot possibly be individually predicted or controlled (Beck, 2009:8):

> Among other things, the world can no longer control the dangers produced by modernity; to be more precise, the belief that modern society can control the dangers it itself produces is collapsing – not because of its omissions and defeats but because of its *triumphs*. Climate change, for example, is a product of successful industrialization which systematically disregards its consequences for nature and humanity.

The hazards of climate change are global, and affect everyone, initiating new ways of thinking about alternative approaches to organizing society to manage anticipated global risks. How the risks are dealt with, whether the solutions will benefit the rich and the poor, is subject to political contestation. When it comes to food, questions arise as to how climate change will affect agricultural production; one global food challenge will be increasing the food supply to feed the world's growing population (Charles, et. al, 2010). Beyond meeting global food needs are issues of agricultural sustainability and food risks (e.g. mad cow disease, genetically modified food) associated with industrial food production. Such concerns are creating alternative food movements focused on food security and the need to produce healthy, accessible (local) food for populations in the North and South. The matter of food security is recognized as a fundamental human right.

A human rights framework is important in analyzing the food system for a couple of reasons. First, the right to adequate food is upheld under international law and both state and non-state actors, including agrifood corporations, are obligated to abide by standards constituted by human rights instruments (e.g., UN, 1948; declarations, covenants, ILO conventions). Governments and non-governmental actors are required not only to protect the human right to food but to ensure that proper action is taken to realize this right (De Schutter, 2009). The second reason a human rights analysis is important is the connection between rights violations and food production. A recent analysis of global hunger reveals that over half of the world's hungry are food producers (De Schutter, 2009); an estimated half billion people who live without adequate food work in the food system, many as small independent producers or waged agricultural workers on farms in the formal or informal agricultural sectors. Many people, including children, working in the food system are vulnerable to severe exploitation and this is apparent throughout the global food chain. Workers employed by global food retailers, fast-food chains, food processing/manufacturing and in food production (e.g. migrant agricultural workers) are often paid wages below the cost of living. That many food workers earn less than a living wage violates their right to food for themselves and their families. Further, basic labour protections are often weak in the food sector. In many places, including Ontario, the

ability of some food workers to engage in collective bargaining (Faraday, 2012) or gain adequate protection from occupational health and safety regulations is absent (Tucker, 2006). Food insecurity remains a problem for many workers in the global food system due to the lack of labour rights but also because of recent structural developments in the food system. Corporate (retail) concentration that advantages companies in buying markets means food producers are unable to achieve adequate prices in commodities markets. As a consequence, waged food workers and food producers are at risk of experiencing violation of their right to adequate food.

Protecting the right to food however needs to be understood within a broad policy framework that extends beyond labour protections. Ideally, the right to food involves a comprehensive policy approach incorporating agricultural and social policy such as measures to reduce poverty, public health programs that promote healthy diets, and agricultural policy that supports local sustainable food systems including, for instance, the protection of agricultural land from urban development. In Canada a national (and provincial) food strategy that could create the basis for food security has yet to be formulated (Wittman et. al, 2011; Conference Board of Canada, 2011; De Schutter, 2012). Consequently, over seven percent of Canadian households report "experiencing moderate or severe food insecurity" (De Schutter, 2012: 2). In March 2012, 412,998 individuals accessed Ontario food banks; the majority were women and children. Moreover, the quality and quantity of food consumed by Canadians has led to high rates of obesity (one in four adults) creating health problems such as diabetes and hypertension. Many marginalized groups, such as Aboriginal peoples in the North, are unable to obtain nutritious (traditional) healthy food. The right to food incorporates a broad agenda: one that includes protection of vulnerable workers within the food system but also wider policy aims that promote sustainable food systems and social policy that will ensure food security for everyone.

Any discussion of food policy at the global level invariably involves conflicts between developed and developing countries. Such discussions arise because the "green revolution" emanating from the United States had profound effects (both positive and negative) on agriculture in less developed countries, and huge environmental effects. Following the Second World War, the developing countries became dependent on the developed world for energy, technology and food, as they directed their economies toward industrialization and manufacturing exports. Eventually, the developing world lost its capacity to produce its own food. Self-sufficiency in food declined around the world (except in planned Asian countries China, North Korea) in large part because agricultural technologies, involving hybrid seeds and chemical fertilizers aimed at producing high grain yields, were exported to developing countries. This "petro farming method", as it is known because of its dependency on the petrol sector, produces high yields but has negative ecological effects. "The hybrid seed ruptured the ecological cycle of natural regeneration and renewal, replacing it with linear flows of purchased inputs [chemical fertilizer] and commodified outputs [processed foods]; and incorporating farmers into the 'chemical treadmill'. Long-term economic and ecological impacts have been blamed for as many as 100,000 farmer suicides in India between 1993 and 2003" (McMichael, 2012: 75). In addition to exporting chemical farming, the green revolution implemented the US Food Aid program that channeled American agricultural surpluses to the Third World,

providing urban populations with cheap food subsidizing the wage bill. Third World food dependency on imported food usurped local food production because it was cheaper than developing domestic agricultural programs that supported (non-industrial) local foods. As people became accustomed to "wage diets" composed of wheat and meat protein, traditional and more nutritious peasant diets receded (McMichael, 2012: 67- 71). This "food-aid regime" spawned the development of commodity food chains, such as the hamburger commodity chain, because surplus grain offered animal feed and because more consumers began to consume meat protein.

More recently, a "second green revolution" in the developing world has emerged based on the growing of high value animal feedstocks and specialty foods for export. The second green revolution is attributed to a shift in agri-food policy beginning in the 1980s. "Third World states had borrowed from private banks to continue to import expensive oil and food, and within a decade verged on insolvency...As a result, Third World countries on the whole shifted from national agri-food policies (including export management) towards corporate-dominated exports (of non-traditional commodities such as counter-seasonal fruits, vegetables, and flowers, and of fish) and deepened their dependence on grain imports" (Friedmann, 2009: 338). High value foods such as offseason fresh fruits and vegetables are produced because they are some of the most lucrative markets for agribusiness. US agribusiness sources fruits, vegetables, meat (packing) and poultry-raising worldwide. Some countries, such as Chile and Thailand dubbed "Asia's supermarket," specialize in agriculture. The scale and profitability of Third World food exports increased because of the need by developing countries to meet IMF/WB conditionalities to pay back debt, but also because of demands by global food retail corporations servicing global consumers at supermarket chains (Friedland, 2010). These developments changed the role of supermarkets and the structure of commodity food chains.

Global supermarkets are transforming the "world farm" through the agri-food supply chain which is restructuring power relations within the global food system. While food manufacturers used to hold sway over food production in the post WWII era this power has shifted to supermarkets (Lawrence and Burch, 2007: 8):

> It is not the food manufacturers that have come to exercise control. Through innovative organizational and management regimes the global supermarkets, the fast food outlets, the food service industry, and other large players in the distribution system, are the firms exercising control within the agri-food supply chain.

Corporate concentration in the food retail sector that began in the 1990s has consolidated market share of global supermarkets. The entry of Wal-Mart, the largest corporation and the largest food retailer in the world, initiated structural changes in agri-food supply chains away from a "producer-driven to a buyer-driven system" assigning significant control to global retailers (Konefal, et al., 2007: 268-9). In the UK four supermarket firms dominate 75 percent of sales, in France four firms control 60 percent of sales; 80 percent of sales are controlled by three firms in Australia and in Canada three supermarket chains dominate with grocery chains representing 60 percent of food sales (Agriculture and

Agri-Food Canada, 2011; Lawrence and Burch, 2007; McMichael, 2012; Vorley, 2007). This level of corporate concentration permit firms tremendous buying power. "The most important factor in understanding the extent of supermarket power is that the retail sector has moved beyond its traditional responsibility for food *distribution*, and is now strongly influencing patterns of *production* and *consumption*" (Lawrence and Burch, 2007: 8-9). The influence of supermarkets on the food system is reorganizing commodity food supply chains creating complex changes in class relations and land use throughout the globe. "Increasing quantities of fruits and vegetables are being grown under corporate contract by peasants and agricultural labourers around the world" (McMichael, 2012: 103). For instance, in Latin America transnational firms such as Carrefour and Wal-Mart centralize procurement from farmers across the region and will only renew contracts with producers when quality standards are met. The demand by affluent consumers in the North and South for quality fresh fruits and vegetables, ready-made meals, safe, organic and fair trade food, in addition to supermarket "own brand" products, expand supermarket reliance on contract farming (McMichael, 2012: 158; McMichael and Friedmann, 2007). Private (sector) regulations or voluntary corporate codes regarding food quality, safety, and packaging alongside environmental and labour standards certification programs (e.g. GLOBALGAP, Good Agricultural Practices; ETI, Ethical Trading Initiative) reinforce outsourcing in the supply chain. Food standards and food quality lie at the heart of emerging contradictions within the global food order; as social movements challenge the industrial (cheap) food system around the politics of food (e.g. food scares, poor nutrition, GM, food miles etc.) corporations appropriate the politics of food quality to their own benefit (Jaffe and Howard, 2009; Friedmann and McNair, 2008; McMichael, 2009). Friedmann explains this dynamic as a conflict between the potential for democratic versus corporate governance of food regulation labeling it the "corporate environmental food regime". As consumer demand for organic and fair trade food grows, corporations successfully penetrate alternatives while also corporatizing and weakening the certification process (Jaffee and Howard, 2009: 394):

> …corporate actors reap profits from exploiting the niches that were painstakingly built by grassroots activist movements, appropriating or coopting both the discourse and the actual product seals generated by that activist labor….standards have been transformed from a mechanism with which to force the internalization of ecological and social costs, into a device that places its imprimatur upon production and trading structures that continue the externalization of those costs (e.g., non-unionized laborers of both organic and fair trade products).

In the case of organics and fair trade, the original transformative aspects of these movements have been co-opted and weakened by corporate interests; this is especially evident in the area of labour practices. Contract farming agreements badly affect producers who lose control over production due to the short term exclusive contract agreements with supermarkets. Supermarkets transfer risks of the costs of production to their suppliers "squeezing" them in various ways; for instance, suppliers are required to participate in reverse auctions (contract bids made on the internet in real time); hidden costs are passed on to suppliers; supermarkets impose sudden changes in contractual payments, demand product returns (without notice) and threaten to delist suppliers whose products do not meet high quality standards (Action Aid, n.d.). In an effort to meet

contract agreements suppliers will replace food crops grown for their own consumption with cash crops and recruit unpaid family members (often children) to assist with production (De Schutter, contract farming, 2011/12). The system of outsourcing is facilitated by trade rules which open access to cheap land and labour in regions such as Africa, India and Brazil. In this shift to an "economy of quality" food by global supermarket retailing, millions of small farmers are displaced, often through commercial land purchases, by agri-industrialization; many peasants turn to low wage labour in supply chain labour markets. In developing countries women represent 60 to 90 percent of the workforce in the garment and fresh produce commodity chains (Action Aid, n.d.). Moreover, corporate supermarkets are buying up local retail food chains in local markets in all areas of the world further reinforcing retail concentration.

Transnational commodity chains are deepening competition and exploitation and placing limits on the extent to which nation states can regulate food standards and safety; labour standards are undermined, while trade liberalization privileges corporate interests and agri-business wreaks havoc on the environment. Industrial food production, although extremely productive and profitable (Koc, 2010), is enormously harmful to the environment (McMichael, 2009: 153):

> "industrial agriculture is undermining conditions of human survival, through its intensive dependence on fossil fuels, its accounting for about a third of GHG, its degradation of soil (intensifying dependence on petro-fertiliser), its destruction of biodiversity, and ultimately its depletion of cultural and ecological knowledges about living and working with natural cycles by wiping out small holder diversified farming, shown to be more productive and more environmental than specialized industrial farming."

The contradictions and pressures inherent in the global food order are raising concerns about the economic and ecological sustainability of the current food system. Significant debate has arisen among researchers as to whether the world is experiencing food regime transition (e.g. Campbell, 2009; McMichael and Friedmann, 2007; McMichael, 2009; Friedmann, 2009). While there is general consensus that several historical periods representing separate food regimes can be identified, (U.K. hegemonic colonial settler food regime, 1870-1930; an interim period, 1930-1949; and U.S. hegemonic post-World War II, 1950-1970s), discussion continues to revolve around whether the world has entered a new phase in which a new food regime has materialized (e.g. McMichael's corporate food regime, 2009; Otero and Pechlaner's neoliberal regime, 2010); or whether the global food system is in a transitional stage with a new food regime yet to fully emerge (e.g. Campbell, 2009; Friedmann, 2009; Pritchard, 2009). Friedmann (2009) argues that a key criterion of food regime namely, "stability" is not apparent especially within the sphere of financialization, nor has consensus and stability been achieved among powerful actors in regard to the Agreement on Agriculture (AoA WTO) arrangements. McMichael contends that a new "corporate food regime" is evident in the neoliberal order defined by "a set of rules institutionalizing corporate power in the world food system" (2009: 153). It is beyond the scope of this paper to delve into the details of these complex debates, however, it is useful to point out that the debate on food regime transition addresses food alternatives, and the possible direction of the food system in the

face of climate change. Campbell asks, for instance, if it is possible using food regime analysis to envision sustainable food futures "a more sustainable set of ecological relations that can operate in a stable form and at a global scale" (2009: 309).

Food regime analysis emphasizes that the future of food is open to different possibilities from corporate control of transnational supply chains within a framework of monitoring and ecological controls via branding and auditing (Campbell, 2009) to "regionally organized, ecologically resilient agri-food systems nested into global systems able to monitor multiple ecological dimensions" (Friedmann, 2009: 340). Given that the current food system is seemingly on a self-destructive course "imagining sustainable food systems" (Blay-Palmer, 2010) is of utmost importance, and much discussion is devoted to constructing alternatives often in alliance with food movements that reject neo-liberal led industrial food production such as Slow food, food sovereignty (La Via Campesina) and the one hundred mile diet (i.e. locavore).

In Canada food movements and citizen opposition to industrial agriculture and the industrial food system is evident in food campaigns such as: resistance to genetically modified foods, the rejection of rBGH (bovine somatatropin) in milk production, the development of urban agriculture widely visible in community and rooftop gardens (Hansen, 2011; Nasr, 2010), the growth of farmers' markets (Elton, 2010) and the development of community food centres (Scharf et. al. 2010). Taken together these food initiatives support food sovereignty understood as "the right of nations and peoples to control their own food systems" (Wiebe and Wipf, 2011: 4). Food sovereignty broadly supports social justice goals toward ensuring a more equal distribution of wealth; it promotes greater economic, social and gender equality; initiatives that allow producers to control their own markets such as cooperatives and supply management systems; and its policy aims explicitly identify entrenching constitutionally the human right to food, implementing a comprehensive national food policy, and agricultural policy that is environmentally sustainable and supports local food systems (Wiebe and Wipf, 2011: 12).

Food sovereignty also recognizes the important role of women and gender relations in farming and sustainable agriculture (Desmarais et. al., 2011). That gender plays an important dimension in food systems is well established in the feminist literature especially in discussions of food in the developing world. There is far less analysis of gender and climate change in the global North but a literature is beginning to take shape (e.g. Cappello and Harcourt, 2009; Cohen, 2011; Hemmati, 2005; Terry, 2009 and see: Whiteside and Cohen, bibliography 2011). With respect to food, gender and climate change the literature is still evolving, however, there is some discussion of gender relations in regard to food supply commodity chains, sustainable agriculture and organic farming (e.g. Barndt, 2002; Hall and Mogyorody, 2007; McIntyre and Rondeau, 2011). The feminist concept of social reproduction is also incorporated in discussions of global food systems (e.g. Breitbach, 2007; Clark, 2007; Johnson and Baker, 2005; McMichael, 2003; Friedmann and McMichael, 2007). Food is central to social reproduction.

Social reproduction is a broad concept and is applied in varying ways from analyses of women's work at the level of the household, to the role of public health in reproducing

healthy populations, to the landscape of social reproduction ("how we live"), and further, as socially necessary labour required to produce and reproduce human beings constituting one part of a unitary system under capitalist relations needed to sustain human life on a daily and intergenerational basis. The food system and the labour involved in growing, harvesting, processing, distributing, retailing, shopping and preparing (home cooked) food can be conceived as part of social reproduction. The concept is also understood at a more abstract level referring to social relations necessary and basic to sustaining the planet and all of human life, the collective (political) will and ethical stance to ensure that water, land, and habitat will be preserved to grow food necessary for animal and human reproduction. Broadly speaking social reproduction encompasses the organization of (gendered) social relations and community life, food discourses, and the value relations of the food system within the global capitalist order (McMichael, 2009). The effects of climate change on food production and how this affects workers and food communities is crucial to creating a sustainable food system.

The issues discussed above can be framed in terms of the fundamental need to support social reproduction that includes creating a viable and sustainable agricultural system supported by global and domestic public policies, local food communities, sustainable food industries, and opportunities for workers to obtain (meaningful) jobs with positive work conditions.

So far the focus on work and labour in the food system has been largely directed to the mainstream global food system, on the implications of trade relations for food production, and the operation of commodity supply chains and their impact on producers and workers in food production. If we are to move toward a "sustainability project" (McMichael, 2012) then it is important to consider how labour is integrated in alternatives that link the local with the global. In earlier food literature food alternatives were studied separately and in isolation from the global industrial food system but now researchers are suggesting locally-based food networks must be understood in alliance with the whole global food system. To date, however, the food literature is unbalanced in that significant attention is paid to "supermarketization" and the operation of corporate supply food chains but little thought is given to the importance of developing alternative ways of working in alternative food networks or in the mainstream food system. With the exception of Levitte (2010) and Schwind (2007) there are very few detailed studies examining work and labour conditions in food alternatives. Surprisingly, questions about who works in alternative food networks, the kind of work engaged in by workers (the labour processes); the numbers of people working, the proportion working full-time or part-time, or as unpaid volunteers, is not taken up in the food literature. These questions are important if we are to seriously consider building stable alternatives (i.e. green jobs in the food sector) that offer people livelihoods, especially youth who are pursuing new pathways such as farming and other (non-conventional) occupations in the sphere of economic alternatives. We aim to investigate these kinds of questions through case study analyses in Ontario.

Structure of the Food System in Canada

The Canadian and Ontario food systems reflect the changes made globally. The Canadian food system employs over two million people; one in 8 jobs reside in the agriculture and agri-food system (about 13 percent of all employment in Canada). Encompassing primary agriculture (300,000 people), food and beverage processing (272,000), retail/wholesale and food service and farmer service supplier industries), the sector contributes 8.2 percent of GDP (AAFS Report 2011; Conference Board Report 2011). The conventional distribution, retail and food service channels are controlled by a few vertically integrated oligopolies. Canada's large retailers are Loblaws (30 percent market share), Sobeys (18 percent share), Metro A&P (12 percent), Wal-Mart (6 percent) and Costco (6 percent) (MacRae, 2006, 33). The mainstream industrial food system is part of an integrated global food supply, production and distribution network connecting with consumers through supermarket chains that are "powerful transnational corporate forces in the world today" (Burch and Lawrence, 2007, 1). Assisted by market liberalization and pro-corporate regulation, the consolidation of this food system through mergers and acquisitions, a global market that sources more products from around the world has led to greater profits for corporations, resulted in diverse product lines (brand name foods, petrol and financial services), influenced regulatory regimes which favour their businesses. This system has influenced food safety and environmental standards, and affected consumption patterns by offering convenience foods that replace homemade meals. Some trends in this system have seen the increasing control since the 1980s by large corporations over farmers (the producers), the nature of food, and consumers. Through mechanization, use of fertilizers, use of hybrids, science and technology, and recently use of biotechnology, companies have gradually increased their control of what used to be natural processes, have transformed agriculture, food products and their distribution (e.g. Burch and Lawrence, 2007; Charles, et. al.; Hall and Mogyorody, 2001; Muller, 2012; Wittman, et. al. 2011, MacDowell, 2012).

Food has become a contested area and an alternative food movement, focused on the production and marketing of locally produced, organic food at the community level, has emerged (Blay-Palmer, 2008; Miller, 2008). This multifaceted movement questions the integrity of the food production and distribution system. It is concerned about food security (because of pesticides, chemical additives such as high PCB levels in farmed salmon), and cases of food contamination (mad-cow disease in 2003 resulting in the world ban on Canadian beef; the listeria outbreaks in 2008 resulting in the Maple Leaf recall, and the largest beef recall in Canadian history due to E.coli at the XL Foods Plant in Alberta in 2012). It opposes the use of biotechnology to produce genetically modified foods, which in North America are not labeled, as the risks of hormones and cloning to the human food supply and to the environment are unknown. It has raised questions about public health and safety (increasing obesity and issues concerning regulations and testing), the nature of food itself (non-food foods, fast foods), and the impact of the industrial food system on the environment, resulting in the loss of farmland, water quality issues associated with industrial farms (Walkerton), foods affected by chemical use, extensive monoculture that decreases biodiversity, and the reduction of species. "Phenomena like food scares, declining rural communities, rising cultural awareness, and growing public unease around the social and ecological attributes of food are having the

effect of motivating more people to eat "quality" foods" (Donald, 2009, 2). More recently, concerns about increasing global warming are raising issues about future food security, the sustainability of the agricultural system, and criticisms about the energy used and carbon produced by importing products from far away. The alternative food movement, though in a minority, nevertheless has stimulated many consumers to buy quality, local food, directly from farmers, and particularly organic farmers. As a result in Ontario, organic growers' share of the food market is growing.

But in the current policy environment in Ontario a few large farms have gained while most farmers, who produce most of the food most efficiently, are struggling. The National Farmers Union (formed in 1969) speaks of a farm crisis in Ontario and lobbies for a sustainable food system, with the development of economic and social policies to maintain family farms as the primary food-producers in Canada. Importantly, it also maintains that "food production should lead to enriched soils, a more beautiful countryside, jobs for non-farmers, thriving rural communities, and biodiverse natural ecosystems" (NFU Report, 2011).

The Ontario Food System

The American branch-plant food manufacturers, which took hold after World War II, produce convenient, cost-effective products that continue to dominate the Ontario food landscape today. That mainstream production process has grown 2 to 3 percent a year. Toronto's food processing industry with nearly 400 operations employs over 40,000 people. A substantial economic sector, it generates in excess of $20 billion in annual sales, which amounts to over half of all such activity in Ontario (City of Toronto Report, 2004). Two thirds of the companies (with production worth $5 million a year) focus on the Toronto market while "fewer large multinational subsidiaries" serve broader markets with "sales in the hundreds of millions of dollars". Exports to the United States have tripled over the last 10 years, and sales have grown by 5 percent annually for the past 15 years (International Food Processing & Innovation Centre, n.d.).

The Ontario Food Terminal (OFT) is the central distribution and wholesale hub for the province, the largest in Canada and one of the largest in North America, servicing producers and buyers of local produce for restaurants and food retail stores, and serving markets in the Prairies and the East Coast as well. About 2,000 buyers visit Canada's largest wholesale fruit and vegetable market daily. The increased interest in and demand for local food in Ontario has influenced what farmers grow and the quantity. Some farmers sell to large retail chains like Sobeys and Metro (A&P) and bring produce to the OFT as well.

"The Terminal was founded in the early 1950s to address the difficulty in distributing food throughout the city from the congested St. Lawrence Market (the former hub). The food system was not only struggling with distribution at that time, but pricing as well. Chain grocery stores had begun dropping prices to outcompete with mom and pop grocers and at the same time the US had completed construction of interstate highways, making it easy to dump low-priced American products onto the Canadian market. The

OFT was born of a time when farmers were a major voting force in Ontario; it was designed to protect farmers and small grocers by bringing them together and providing fair, transparent pricing competition. The Stockyards at Keele and St. Clair were opened at the same time to provide a similar venue for meat producers, but has since closed, the majority of meat production and commerce moving to Kitchener". The OFT receives no government funding, is an incubator for new businesses, encourages innovation, and runs a waste management system which sends compost back to farmers. At the end of each day, social service groups come in for a share of the produce, the Daily Bread Food Bank arrives for a pickup and a group of gleaners purchase and freeze dry food in bulk to send to hunger programs abroad (Talking food, 2011).

"More than two million kilograms of fruit and vegetables move through this 16-hectare wholesale terminal every day" and the outdoor market operates from May to October, with stalls for farmers 25 percent of what wholesalers pay to rent them (Simmons, *Hamilton Spectator*, 2011). Only about 25 percent of the vendors sell their own fruit and vegetables, as many farmers hire wholesalers bring their produce to the OFT. This is unlike many local markets with a policy of "grower-only" vendors, which allows customers to meet farmers and ask questions, ensures a short chain of accountability, and provides a venue for small-scale and niche farmers who do not produce enough for grocery stores, to sell their goods. At the OFT, merchants in the indoor warehouses operate year-round, selling both imported and Canadian products. With small independent grocers, food service distributors and restaurants requesting local produce to satisfy the demand from their own customers, the percentage of Ontario-grown fruits and vegetables has increased inside too. Wholesalers source food from family farms, from Niagara fruit growers, and Ontario greenhouses.

In the Ontario food system, there remains a shortage of professional food scientists and technicians as multinational corporations retain research and development in the U.S. As in other sectors, the amount and type of pay for employees in the food system is declining, as older full-time jobs give way to less secure positions with new workers, mostly recent immigrants, working often in non-union environments. Low wages contribute to the high turnover that characterizes the industry. More training will be necessary as a result of computer technology and while greater emphasis on food safety contributes to better training of employees handling food, government cutbacks have reduced inspections.

Employment in the Ontario Food System

People working in the Ontario food system are diverse, and include farmers, farm workers (often immigrants or migrants), and employees in processing, restaurant and grocery stores. Jobs in the food sector range from unionized employees in some grocery stores to some of the lowest paid, most precarious jobs of migrant workers on farms and of service employees in the fast food and restaurant sectors. In the food distribution system, some grocery store and truck drivers are unionized employees. Non-union employees include those in warehouses, most big box stores, most caterers and restaurants including all fast food places. In the alternative food movement, some new

jobs are being created, which need to be further evaluated. All sectors are experiencing different pressures making their working lives difficult, stressful and often precarious, but "organizing is possible, despite various social, cultural, political and logistical impediments" (Coulter, 2011, 91). Neo-liberal government policy generally views support for employees (through employment standards and collective bargaining laws) as a cost to business; governments have not assisted precarious or marginalized workers, many of whom work in agriculture and food service occupations.

In Canada, 300,000 people work in primary agriculture but food service employs the greatest number of people in the agriculture/agri-food system followed by food retail/wholesaling (AAFS report 2011). Below is some preliminary information about different categories of people working in the Ontario food system.

1. Farmers

Farmers make up about 1.5 percent of Ontario's population of 13 million. In 2006, Ontario accounted for about one quarter of Canada's gross revenues from agriculture, with around 25 percent of Canada's farmers and 8 percent of Canada's farmland. Ontario has a diversity of farms, which grow over 90 percent of Canada's soybeans, nearly all the tobacco in Canada, and nearly half of Canada's corn farms. It is strong in vegetable production, mushrooms, broilers, turkeys, pigs and sheep. While beef, grain and fruit are important types of farms in Ontario, other parts of Canada produce a greater portion of these products. Ontario's share of Canada's dairy and egg farms is in proportion to Ontario's population (NFU report, 2011).

According to Statistics Canada (2006), as a proportion of farms across Canada, Ontario reported the most farms at 57,211 (24.9 percent), a number slightly higher than in 2001. This is contrary to the national trend where the number of farms continues to drop (in 2006 the total was 229,373 in Canada). However in a longer term of the last 20 years, Ontario has lost 25,000 farms, particularly small and medium-sized farms. Since 1921 the amount of land farmed in Ontario has decreased 42 percent; Ontario has lost over 9 million acres of farmland and average farm size has nearly doubled to 233 acres from 114 acres. Despite these trends, the majority of Ontario farms are still between 10 and 400 acres in size (NFU report, 2011). Family farms decreased in numbers for economic reasons but also for demographic reasons as when many farmers retired, their children did not continue farming. While the agricultural land base remains fairly stable, the number of larger farms, with gross farm receipts of $250,000 or more (at 2005 constant prices), have increased 13.8 percent since 2001 while those with less than $250,000 in receipts declined by 10.5 percent (http://www.statcan.gc.ca/ca-ra2006/articles/finpicture-portrait-eng.htm).

Farmers in Ontario as elsewhere in Canada have been caught in a cost-price squeeze since the 1970s receiving low commodity prices while paying increasingly higher prices for inputs. These conditions have favoured the largest farms, which have become six times as numerous. Between 2001 and 2005 for example prices rose for fuel (up 35 percent), fertilizers (up 35 percent), pesticides (up 19 percent), seeds and equipment. The cost of seed approximately doubled between 1995 and 2008, despite the consolidation of

seed companies and because farmers do not save their own seeds as much as in the past. In the same period, the cost of feed climbed by about one-third. Some farmers bought or rented more land at high prices to move to larger-scale production to try to make ends meet. Others supplemented their earnings with non-farm work so that in effect, the cost of food production in Canada is subsidized by farm family members who live on money earned in other lines of work. Some farmers augmented their income by establishing specialized businesses serving niche markets to augment income. Improved efficiency, increased government program payments and higher production have helped some farmers survive. Such farms are large businesses. As the number of million dollar farms increases (2.6 percent in 2006), 62.5 percent of them were family corporations and 13.1 percent were non-family corporations. Farms making over $250,000 in receipts also grew between 2001 and 2006, while all other farms making less money decreased. Some types of farms (those raising livestock) are more likely to be viable businesses than those growing fruits and vegetables. But the greenhouse industry continues to grow in Ontario (NFU Report, 2011).

In general commodity prices remain low, unstable and unpredictable. To achieve some income security, many farmers contracted with large buyers to produce certain foods at set prices. In doing so, they lost much decision-making control over their farms. Ontario farms are increasingly export-oriented particularly since 1992 in grain products, vegetables, and red meat, which the government of Ontario encourages. Ontario imports food including fruit, vegetables, beverages, and other prepared food and grain products, partly because of seasonal needs but also because of grocery store policies. Both multinational food companies and Canadian governments support the globalization and free trade of food. This policy orientation has affected farmers. Though farm revenues are increasing, farm income is low and falling. Food prices for consumers as a percentage of household expenses have decreased, but retailers are profitable while many farmers are not. “Between the farmer and the eater stand the grain trade, the food processing industry and the retail grocery sector” (Donald, 2009).

Government payments to farmers go mostly to the large farms, which are sometimes not as efficient in the marketplace. “Between 1995 and 2008 the proportion of total market income adjusted for capital cost allowance obtained by the largest farms in Ontario fell from 15% to 5%, while the smaller operations increased their share of the value produced from about one-third to nearly half of all agriculture dollars earned in the marketplace”. During the same period, program payments shifted dramatically towards the largest farms. While they got 6 percent of program payments 16 years ago, today the largest farms receive 26 percent. In contrast, smaller farms’ share went from two-thirds to less than one-third of total program payments. At the same time, total program payments rose from just over $30 million per year to nearly $150 million – a five-fold increase. Looking at market income versus program payment income by sector, dairy, poultry and eggs, which are under supply management, obtain much larger proportions of their incomes from the market and rely less on support payments than other sectors such as grain and oilseeds, beef cattle and hogs (NFU Report, 2011). These payment programs require review as they seem unfair; they also support industrial agriculture over family farms and organic farms, which are more sustainable in the long run. The federal government, which recently undercut the Wheat Board, supports the international trade regime and is

biased against supply management mechanisms such as marketing boards, which greatly assist farmers, though there is need to improve the system to ensure smaller non-conventional (alternative organic) producers can benefit from such a system (FarmStart, 2010). As federal and provincial agriculture policies make increasing international trade a top priority, farm debt is increasing which is not the answer to the farm crisis.

2. Migrant farm workers

Previous research on Mexican and Caribbean farm labour in Canada was critical and it focused on labour relations (Satzewich, 1991; Wall, 1992). More current studies have concentrated on the limited rights of guest workers and their conditions of work (Basok, 1999, 2000; Preibisch, 2000; Smart, 1997), highlighted obstacles to the productive investment of remittances in their communities of origin (Basok, 2000), and demonstrated worker preference for the Canadian guest worker program to undocumented migration to the U.S. (Colby, 1997). In addition, government agencies have documented the importance of foreign workers to the survival of the horticultural industry (HRDC, 2002). This literature has neglected the economic and social impact of foreign farm workers on Ontario communities, which has been significant economically though limited socially. Community perceptions of migrant workers have been both positive and racist (Bauder, Preibisch, Sutherland and Nash, 2002).

After years of lobbying, Ontario farmers particularly the large corporate farms convinced the Canadian and Ontario governments of a shortage of agricultural labour in the fruit, vegetable and tobacco sectors and that Canadians would not do such work. In 1974, the *Seasonal Agricultural Workers Program*, first created in 1966 for Caribbean workers, expanded to include many Mexicans and South Americans arriving to work on contract. Today participating countries include Jamaica (joined in 1966), Barbados (joined in 1967), Trinidad and Tobago (joined in 1967), Mexico (joined in1974), and the Organization of Eastern Caribbean States (Grenada, Antigua, Dominica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent, the Grenadines and Montserrat) - joined in 1976 (UFCW Report, 2011). The agricultural industry in Ontario today utilizes temporary migrant workers as permanent additions to their human resources strategies. The larger context for this development is an immigration policy increasingly oriented to businesses' labour market needs and their wish for cheap labour so that "since 2006 the Canadian government has been shifting its immigration policy to expand temporary migrant worker programs. Statistics show that while in Ontario there were 140,525 permanent residents in 2005, the figure had been reduced to 106,840 by 2009. The statistics support an increase in temporary migration, and thereby temporary resident status, with 64,741 temporary residents in Ontario by 2005 swelling to 94,968 in 2009" (UFCW, 2011, 5). A large number of migrant workers are located in Leamington, Essex County — the agricultural heartland of southwest Ontario. In 2009 the majority of the CSAWP workers — about 18,000 — were employed in Ontario with its large concentration of industrial-scale agriculture operations and greenhouses.[1]

[1] It should be noted that the federal government is expanding the number of temporary workers coming to work in Canada beyond the food industry. It now allows Tim Horton's to hire fast food workers and some

Today migrant farm workers "are crammed by the dozens into makeshift shanties and unsafe transport vans. They are told not to report their injuries." If they do raise concerns, migrant workers typically are shipped out that day and "banished from ever working in Canada again" (UFCW, 2011). Since 2002 the Temporary Foreign Workers' (TFW) program has been made available to year-round Canadian industrial scale agriculture operations to draw on migrant workers mainly from South Asia, Central America, Mexico and Jamaica. TFWs must pay for their own housing, half of their return airfare — and often exorbitant fees to employment brokers which can equal half the worker's annual pay or more. This program provides even less protection and oversight than the CSAWP, but year-round industrial agriculture employers have increasingly turned to the TFW program as their preferred supplier. The lack of oversight leaves TFWs totally at the mercy of their employer. Despite this situation, the federal government has expanded the TFW program by over 500 percent since 2006.

The migrant worker programs are employer-driven, assisted by governments and exploitative of the workers; they deny seasonal and temporary workers the basic labour and workplace protections other workers in Canada enjoy (UFCW Report, 2010). The UFCW opened its first support centre (of 10 across Canada) for migrant agricultural workers in Leamington, Ontario in 2002; two more in Ontario are in Simcoe and Bradford.

The criteria for CSAWP workers is for agriculturally experienced, needy, not well educated, mostly male, married workers with children from small villages (Basok, 2002, 105). Today the 24,000 migrant agricultural workers come to Canada every year under this program and 90 per cent of them are destined for Ontario (*Toronto Star*, 8 Feb. 2012). Such workers arrive in Canada as a result of cooperation between the Canadian and foreign governments (notably Mexico). They are not permitted to bring their families. Each worker is assigned to work for a farmer for up to 8 months. The hiring farmer partly pays for the worker's flight, transports him to the farm, provides free housing (usually substandard), cooking facilities, pays less than the minimum wage and expects work for 12 or more hours a day 6 and a half days a week. Health and accident costs are theoretically covered but many workers who get sick or injured are sent home. Sometimes because of illness or if they raise any issues, workers' contracts are not renewed. These employees pay into CPP and EI (contributing $34 million annually) even though they cannot collect from them as they are not citizens or landed immigrants; they pay income tax and a work visa fee. In December 2012 the federal government eliminated the special parental benefits under EI for foreign migrant workers which permitted migrant SAWP workers to collect a small portion of their wages while caring for their newborn infants or ill children. This reform comes on the heels of another regulatory change that allows corporations to reduce migrant workers pay by 15 percent (*Toronto Star*, 2012). Migrant agricultural workers are exposed to pesticides and only recently in 2006 gained some protection under the OHS legislation as a result of union action. In 2010, CERIS (the Joint Centre of Excellence for Research on Immigration and

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companies are hiring accountants on this basis. The effect is to push down wages of Canadian workers. Wendy Stueck and Rod Mickleburgh, "Tim Hortons workers in disputed federal program file human rights complaint," *Globe and Mail,* 9 Nov. 2012.

Settlement) conducted research based on over 600 interviews during the 2009 season with migrant agriculture workers who were introduced to the project through the AWA (Agricultural Workers' Association). The results found that nearly half of the workers continued working while sick because they feared employer reprisal or repatriation; of those working with chemicals or pesticides, nearly half were not supplied with the necessary protection such as gloves, masks, and goggles. Most workers had received no health and safety training at all. Only 24 percent of workers injured on the job made claims to workers compensation. Workers who did not make claims typically cited fear of being docked pay, repatriated, or blacklisted from returning the next season (UFCW 2012). In Ontario, the general rules for overtime, vacation pay, rest periods, and maximum hours of work do not apply to agriculture workers.

When agricultural workers face problems, they are not free to change employers under the program, so they are "captive" and on hand whenever the crops are ready. They are isolated and the federal and provincial governments "pass the buck" and refuse to take responsibility for monitoring both working and living conditions of these vulnerable workers. Such an employer-driven program opens many possibilities for abuse. Each employee receives an evaluation from their employer which is passed onto their home government and is taken account of in distributing contracts the next year. Even workers coming to work in Canada for years have no possibility of gaining landed immigrant status
(http://www.hrsdc.gc.ca/eng/workplaceskills/foreign_workers/ei_tfw/sawp_tfw.shtml; Basok, 2002; UFCW Report, 2011).

The UFCW is the major union seeking to organize such workers, but it is difficult to unionize agricultural workers as there is no collective bargaining legislation, and "the battle to achieve collective bargaining rights for Ontario's agricultural workers has been a long struggle". In 2008 the Ontario Court of Appeal upheld a UFCW Canada challenge to the Ontario legislative prohibition of farm unions as a violation of workers' rights under Canada's Charter of Rights and Freedoms. That decision was appealed by Ontario to the Supreme Court of Canada which has twice before since 2007 upheld the Charter guarantee of collective bargaining rights. Although the Supreme Court ruled that collective bargaining is a constitutional right for Ontario's agricultural workers, the delay has been beneficial for farm owners and disastrous for workers. The legislation that now covers seasonal migrant workers is limited in that agricultural workers have the right to form an association but the statutory right to engage in collective bargaining (or strike) is not protected (Walchuk, 2009,160). The ILO indicted Ontario's ban on farm unions and found both Canada and Ontario guilty of discriminatory attack on the human and labour rights of farm workers in the province (UFCW Report, 2010). The situation has not changed for the better. In 2012 the Supreme Court of Canada's judgment (Ontario (Attorney General) *v.* Fraser 2011) upheld previous court rulings stating that while agricultural workers have the right to make representations to their employer concerning their conditions of employment, they are not granted protection under the Charter to collectively bargain. In its decision the Supreme Court stated: "The employer must give an association the opportunity to make representation respecting terms and conditions of employment and it must listen to those representations or read them" (AG v. Fraser, 6). As noted by Justice Abella in her dissenting commentary of the Supreme Court decision,

although the employer is required to acknowledge the written or oral presentation by the association, it is not obligated to respond, that is, to negotiate or bargain with the association.

Employees in processing plants

In 2010 there were 36 federally inspected slaughterhouses in Ontario. Of these, 9 kill cattle, 8 kill hogs, 8 kill sheep and 21 kill poultry. There were also 151 provincially inspected abattoirs in Ontario. Ontario has 92 federally-inspected and 32 provincially-inspected dairy processing establishments (NFU Report, 2010).

Ontario farmers sell nearly one-third of the fruit and over 40 percent of the vegetables produced commercially in Canada. The total amount of fruit and vegetables produced is declining however. As of 2009, Ontario had only 16 canning and 12 frozen food manufacturing establishments with over 100 or more employees. In 2008 CanGro closed its peach and pear canning facility – the last remaining one east of the Rockies – as well as its sweet corn, pea and other vegetable canning plant. According to Statistics Canada, the loss of processing capacity is responsible for most of the decline in production of sweet corn, green peas, tomatoes and cucumbers in Ontario (NFU Report, 2010). Sales of apples have also declined.

Supermarket Employees

Food stores accounted for 24 percent of all employment in retail service (more than department and warehouse stores); a disproportionate percentage of workers are women, young or immigrant workers and wages are low (Jacobson, n.d.). The United Food and Commercial Workers (UFCW) Canada is a food workers' union that represents members in every sector of the food industry from the field, to the processor, to the warehouse, to the store, to the dinner table. Its membership is made up almost equally between men and women, and both part-time and full-time employees. UFCW Canada represents employees of Sobeys, Price Chopper, IGA, Foodland and Loblaws' stores. Compared to other industries in the service sector, the union has stabilized the positions of retail employees, even though a majority of them are part-time. Their situation is threatened by the retail grocery industry's continued search for the lowest food prices possible, which implies cheap food imports and competition from non-union stores. The presence of non-union food retailers stimulated the UFCW to organize, a daunting task in the face of fierce opposition from large employers with deep pockets. As a UFCW union official noted, "[the supermarket employer] would rather fire people at the start of the campaign knowing they are going to pay $100,000 at the end of a long labour board hearing because they know even if those workers go back [to work], the campaign is dead" (Interview, UFCW official, June 6, 2011). In spite of the obstacles to organizing the UFCW remains committed to unionizing in the sector. At its constitutional convention in 2008 the UFCW passed resolutions and constitutional amendments requiring UFCW local unions to commit in 2010 10 percent per capita revenue to organizing, and raised it to 15 percent in 2012, and to 20 percent by 2014 (Kainer Interview, 2011).

Wal-Mart is a growing threat as it has expanded its retail products to food; it has tried to capitalize on the growing demand of consumers for organic food, by bringing in cheap "organic" foodstuffs from distant countries. As usual it is instigating a rush to the bottom and as it is vehemently anti-union, its type of competition is not good for the other grocery stores or for unions. Wal-Mart's definition of organic food differs from that of the alternative food movement, which not only supports organic agriculture but links it to *local* food to support Canadian farmers producing quality food, but also to cut energy, carbon and heal the environment.

Restaurant employees

Restaurants and bars in Canada employ more than a million employees making the sector the fourth largest private sector employer in the country. Many young Canadians obtain their first paid job in the hospitality sector; data shows for example, that one in five people under the age of 25 years of age work in the restaurant industry (CRFA, 2010). A substantial part of the retail food sector is the fast food industry, which along with the grocery stores, determines the inputs (French fries) in the outlets. It also operates on a workplace model that uses part-time and casual, low-paid employees, often students and seniors, with high turnover to market high calorie, low nutrition products. The business model is exploitative and the health impacts are poor (Reiter, 2006; Schlosser, 2004). Restaurant meals are increasing in number with 16 per cent of Canadians eating in restaurants regularly and 24 per cent of the household food budget spent at restaurants (Holroyd and Elliot, 2010).

From Field to Fork – Sustainable Agriculture and Alternative Food Systems

> "The natural food movement was the first great consumer rebellion in the modern food-system, arising in the 1970s from health and environmental concerns with pesticide residues and synthetic fertilizers. Early on, many dismissed the natural food movement as a passing fad. They were wrong. Thirty years later, the demand for natural foods continues to grow by 7-8% a year. The movement has attracted a new generation of farmers, established certified organic standards, and is fighting to maintain them" (Secombe, 2007, 18).

As elsewhere, many Ontarians have become interested in food, "in the ingredients, in the quality, and in its health benefits. They are also interested in food's capacity to embed local jobs and shape a place's social, environmental and economic sustainability not only through local, organic and biodynamic farming, but through processing and distribution practices that reduce carbon footprints by reducing waste and conserving soil, energy, water, and farmland". The result is that "the creative food economy sub-sector (defined here as local, organic, specialty, and/or ethnic foods)" has grown at a fast rate, estimated at between 15 percent and 25 percent per year (Specialty Food Report, 2008; Donald, 2009, 1).

This emerging new food culture is international and is represented by the *Slow Food* movement which began in Italy as a local response against the fast food economy. Its

focus is top quality artisan foods, with regional character and unique flavours. It emphasizes the important social aspects of enjoying a good meal together with family and friends. Today, *Slow Food*, is a worldwide organization with over 80,000 members in 100 countries. It is committed to promoting the diversity of small-scale artisanal, local and regional quality food produced and marketed in ways that guarantee farmers a fair price while protecting the environment and the natural landscape. In Italy, Slow Food has joined with Italy's largest supermarket Coop Italy to market its certified Presidia products (Friedmann and McNair, 2008: 418). The movement is growing rapidly, with U.S. membership alone projected to reach 100,000 by 2010. In Ontario, adherents like Chef Jamie Kennedy have stimulated the spread of the movement in the province (Andrews, 2008). Indeed Ontario chefs have organized and become politicized and recently helped defeat the development of a mega-quarry in the heart of Ontario's best farmland.

Many innovative community models have emerged from local food movements. Direct marketing to consumers and alternative retail formats remain more important in the organic sector than in the conventional one, in part because the organic sector emphasizes local distribution. Historically, the cooperative sector also played a significant role in the evolution of organic production, processing and distribution (MacRae, 2006, 6). Informal and formal co-operative models are compatible with sustainable agriculture, and include unincorporated associations of people from buying clubs, farm equipment sharing groups, farm product marketing, and local bartering networks. When these nascent groups grow, many adopt the more formal legal co-operative structure. Worldwide, there are more than one billion members of formally incorporated co-operatives, making it the largest and fastest growing socio-economic movement in the world. Forty-three percent of adult Canadians are members of co-operatives, and Quebec accounts for forty-percent of all Canadian Co-operatives. A study performed by the Quebec Ministry of Industry and Commerce found that co-operatives have a survival rate of 46 percent over ten years, more than twice as high as private businesses (20 percent).

Community Supported (or Shared) Agriculture is another model. The CSA concept reconnects producers with consumers and provides members the opportunity to support ecologically sound, local agriculture. The CSA idea has existed in Europe and Japan for decades. Many Food Box programs that offer direct marketing to consumers exist and are expanding. One with a particularly innovative feature is the Good Food Box, a project of FoodShare Toronto; it has brought local quality produce to middle and low income people in the city. Today, there are 75 such projects across Canada, and hundreds in the United States.

Farmers' markets are one of the oldest forms of direct marketing from farmers to consumers, and billions of urban people in developed and developing countries worldwide purchase their food at these markets. One of Canada's first farmers' market was opened in Kingston over two hundred years ago. As pioneers settled the rest of the province, the popularity of markets grew, peaked and started to decline in the 1970s when shopping malls began to dominate in urban centres. In 1991, with the support of the Ontario government, Farmers' Markets Ontario was established and the number of markets has since doubled to 120, with combined sales of $600 million (http://www.farmersmarketsontario.com/AboutUs.cfm).

Local Flavour Plus (now called Local Food Plus) seeks to build and support local markets, and connect Ontario farmers to local institutions. The overall goal is to foster food systems that are environmentally, socially and economically sustainable. It certifies farmers and processors who produce food in environmentally and socially responsible ways and links them with local purchasers. In 2013, the University of Toronto will purchase some food in this way to supply local produce to the university's residences and cafeterias, which amounts to up to 10 percent of its total food purchases (Rundle, 2013).

The alternative food movement takes account of the environment and promotes **sustainable agriculture**. It is defined as: "both a philosophy and a system of farming" rooted in a set of values that reflect an awareness of both ecological and social realities. "It emphasizes design and management procedures that work with natural processes to conserve all resources and minimize waste and environmental damage, while maintaining or improving farm profitability" (MacRae, 1990). Alternative food groups promote local food partly because it means using less energy, and they promote organic agriculture, which means less pollution and more biodiversity. They view the industrial food system, particularly in this era of climate change as unsustainable. Sustainable agriculture implies a food system that is better for the environment, provides healthy food, and maintains food security. Of deep concern is the possibility of extreme weather events that could seriously disrupt the transportation of food, so that too much reliance on imported food is therefore a problem. Food retailers interviewed for a Toronto study on local food explained that "there are only three days worth of fresh food in the city at any time", warning that any break in the food distribution chain from factors such as climate crises could spell disaster (Metcalf Foundation, 2008, 10). The report argues Ontario is close to having a local sustainable food system and with proper policy a viable food-secure city is within the realm of the possible. Thus promoting local food is also a way to mitigate against climate change and adapt to severe weather events.

As more Ontarions participate in local food movements, the demand for organic food grows. In 2005, organic farms represented about 1.5 percent of all farms in Canada and just under 1 percent of the total area of farms. Organic food and beverage products in the retail market were estimated at $1.1-1.3 billion with growth rates likely in the 25 percent range (MacRae, Christianson, Martin, 2006, 2). Growth rates in other food categories are in the 1 to 4 percent range, so organic foods are increasing their share of the market and are a successful "niche market". About 37 percent of organic foods are sold through supermarkets, with the rest through health food stores, alternative distribution and direct marketing. The main categories of organic food sales are: fresh vegetables 25 percent of all organic food sales, beverages (excluding milk) 18 percent, fresh fruits 13 percent and dairy 11 percent. Raw meats represent about 3 percent of sales. At a sub-category level, the largest segments are: soya drinks, bagged salads, ready-to-eat cereals, refrigerated yogurt and bagged broad-leaf vegetables (MacRae, 2006, 6).

Dedicated organic shoppers represent about 5 to 7 percent of the buying public, and families with young children are a sizeable portion of this group. Those without children are motivated by income and education. This consumer-led phenomenon is changing perceptions of food, has impacted the mainstream industry and has the potential to create a new food economy. A growing portion of the population has strong concerns about the

environment, human rights and sustainability of natural resources, community development, fair trade, and spiritual and personal development. The impact of such consumers on the marketplace reflects their desire to integrate their values with the products and services they buy and use. These consumers represent a market conservatively estimated to represent more than $226 billion in annual sales in the US and more than $540 billion worldwide. As it relates to food, such consumers favour smaller scale, local organic production, processing and distribution. The entry of mega-retailers into organic is viewed with some suspicion by this group. They are less likely to enjoy the superstore distribution system and more likely to frequent alternative distribution outlets, such as farmers' markets, CSAs, and other forms of direct marketing and local supply chains (MacRae, 2006, 55). A growing number of consumers want to support local growers and purchase locally produced foods. The emerging use of local labels appeals to this group because it believes their purchases support family farmers trying to incorporate principles of sustainable agriculture and environmental stewardship. They are encouraging relationship building between consumers and farmers, shortening the distance from field to table, and keeping money and jobs in the community. As noted, such partnerships are needed to develop adaptive strategies to adapt to climate change.

Despite the strong demand for local food and a robust seasonal supply, the market is not yet delivering enough local food to satisfy consumers (Carter-Whitney, 2008). Organic production is relatively strong in grains and oilseeds, and gaining strength in vegetable and livestock production (especially beef and dairy). But there are a variety of systemic barriers. For producers interested in organic farming, the transition challenges are significant and the supports relatively few. Future organic farmers will be conventional farmers switching to organic production, as well as urban and suburban young people attracted to small scale organic agriculture who seek mentoring and apprenticeship programs that help them develop skills (MacRae, 1990, 10). Organic producers are small or medium producers, and manufacturers are reluctant to run small batches of organic product, even though their numbers are growing as is the shelf space in grocery stores for organic foods. In general, the further one moves along the supply chain, the smaller the number of dedicated organic firms.

Today organic products have a system of certification; organic producers are increasing as is the quality of their produce, so that the organic sector has greater capacity (MacRae, 2006, 3, 6). But all aspects of the organic system need strengthening: standards, accreditation, farmers' training, and support for organic processors and retailers. More government funding of varied kinds is needed; "consumer worries about food safety and corporate penetration of the organic sector" should be addressed, as should "confusion about the meaning of organic" (MacRae, 1990, 4). Most colleges of agriculture within the mainstream university system in Canada still do not offer degree programs in organic agriculture, although the University of Guelph recently has added courses in organic agriculture.

The retail sector (especially supermarkets) opposes the alternative local food movment in that its policies are going in the opposite direction. Supermarkets service domestic demand with only 20 to 40 percent of domestic products and rely heavily on imports, which have been boosted by the global free trade system supported by governments.

Since the mid - 1980s, the rate of growth in food imports has exceeded that of food exports. The large grocery chains mostly source their organic produce from large producers and processors, and set up obstacles for locally produced or processed products. These large firms apparently prefer to deal with other large companies, centralized warehouses, and a minimum of suppliers. This approach eliminates many domestic organic producers (MacRae, 2006, 28, 33). As organic foods are the only significant growth area in food retailing, with growth rates far exceeding other food categories, in response to consumer demand, all the main retail chains and several general merchandisers, now carry organic foods. An estimated 80 percent of organic produce sold in Ontario is imported, most of it trucked in from California (Secombe 2007, 19). As explained above, the consumer demand for organics can create contradictions within the food system as food retail corporations squeeze suppliers to produce high quality products at reasonable prices. Loblaw (supermarket) in its quest for its own brand products in the 1990s, for instance, made high demands on suppliers (Kingston, 1994). Canadian supermarkets have developed and sourced their own brand name products but unlike the U.K. and Europe, they have not developed organic or labour certification programs (Konefal, et. al., 2007). An exception to this trend is Fiesta Farms in Toronto which sources Ontario's Local Food Plus certified products (Friedmann and McNair, 2008:426). Mergers and acquisitions of smaller organic firms by large conventional food manufacturers has in many cases increased efficiencies and improved organic firm access to resources, but raised concern about organic standards.

While there are opportunities in building the capacity of the organic sector, there are also threats to it such as environmental chemical and GE pollution (GE contamination of canola, for example, is suppressing the Canadian organic canola sector), competition from lower cost international producers, internal disputes within the organic community, coordinated threats to discredit organic food, and global factors including ecological carrying capacity, and climate change (MacDowell, 2012).

Despite such pressures, growth in the number of organic farms and in organic processors remains driven by consumer demand and continues in most regions of the country, but Ontario is not a leader. Consumers are increasingly interested in non-retail shopping experiences, e.g., farmers' markets, buying groups, community-supported agriculture, U-pick operations, street-side food stands, farm shops, internet sales. "Buying directly from farmers has become a new form of consumer resistance to the modern food-system as it becomes more processed, homogenous, anonymous and remote" (Secombe, 2007, 18). There is significant support for farmers' markets through Farmers' Markets Ontario, but most other forms of non-retail food distribution lack coordination between buyers and sellers. There have been periodic community based efforts to facilitate linkages between local buyers and sellers in non-retail settings, with mixed success, in part because of challenges related to market skills and longer-term sustainability. There is steady growth in the horticultural sector and in all field crops and increased production of organic livestock. From 2004 to 2005 the beef herd increased by 30 percent; sheep numbers by 19 percent; chicken layers by 20 percent and broilers by 56 percent. Organic milk production by volume demonstrated major growth over the last few years with efforts to establish organic milk pools, which suggest milk production will continue to increase steadily (MacRae, 2006, 10, 27). "Sustainable local" is less vulnerable to mass market pressure as

a consumer preference and locally grown, farm-fresh produce has strengthened as a consumer preference in recent years (Secombe, 2007, 18). More organic food is used in restaurants, partly as a result of activism by chefs in Ontario and is used in some food service outlets at some universities as a result of student demands for better food.

Some organic fruits and vegetables are exported (mostly to the U.S.) but Ontario is not a leader in this market. In 2006, Ontario only had about 500 certified organic farmers and less than one percent of its agricultural acreage in organic production! (Secombe, 2007, 19) Regarding organic products, with the exception of supply managed commodities, the majority of organic foods sold in Canada are imported from the United States. In some Canadian supermarkets and in Wal-Mart lower prices for organics are achieved with imports from further afield, from China, India, and some African countries. These organic foods outside the local food movement are not addressing the energy issue. But "the organic sector is a prime candidate for a targeted import-replacement strategy. The rapid growth of organic growers could play a vital role in preserving small family farms close to the big cities on some of the best farmland in Canada" (Secombe, 2007, 19).

Policy

Much needs to be done to increase production in local organic agriculture, which is more sustainable, crop-diversified and labour-intensive, as a way to achieve sustainable agriculture, food security and to mitigate against climate change. More education and research is needed as well as more planning and policy development at all levels. Some cooperation and collaboration between conventional and organic agriculture is increasing as the public demands for organic food increase.

According to "An Overview of the Canadian Agriculture and Agri-Food System 2011" published by Agriculture and Agri-Food Canada "the Canadian agriculture and agri-food system" is "a modern, highly complex, integrated, internationally competitive and growing part of the Canadian economy. It is a resilient system, responding to the challenges and opportunities it faces by restructuring and adapting to changing consumer demands, advancing technology, North American integration and globalization". Unfortunately, it is not also adapting to climate change, although globally and in Canada, people are studying the issue. The language of the AAFC document encompasses language such as trade, competitiveness, growth, performance and profitability but not sustainability or security. It does acknowledge that some consumers are demanding "more environmentally-friendly and healthier food choices". In response the industry, today consisting of fewer larger farms, is seeing some farms diversify production to produce "niche products such as organics, adopting environmentally-friendly production methods and producing non-traditional products" (Agriculture and Agri-food Canada, 2011).

Both the federal and provincial governments support the agricultural sector; Ontario does not receive the most support from the federal government. All support has decreased somewhat as Canada has enthusiastically embraced the WTO agreements and in the agricultural sector subsidizes farmers less than the Americans or the Europeans; it

therefore uses language attributing this policy to "higher gross farm receipts and reduced market price support due to higher world commodity prices" (AAFC, 2011).

Canada has been lagging behind many other countries in the OECD on some key agri-environmental measures. Many intensively farmed regions of Canada are at relatively high risk of water contamination. Canada's handling of the northern cod stock was a case study in poor resource management, and the salmon fishery is also in trouble. Scientists and environmentalists criticize the domestic aquaculture industry for its negative impacts on biodiversity, and its use of chemicals as a result of its mostly industrial model of production, have recommended changes, but it retains the support of governments. Organic farming is now recognized as one of the production systems that can improve agri-environmental performance. Studies have shown that, on a full systems basis, organic production can reduce soil erosion, water pollution, and increase energy efficiency and biodiversity conservation (MacRae, 2006, 41, 42).

In Canada, the development of political strategies to support the transition from conventional to sustainable agriculture has been limited and institutional responses have been inadequate. The transitional phase for a farmer is crucial, requires planning, and government support in the form of technical assistance and short courses, field days, and the creation of on-farm research associations as the farmer begins to focus on systems more than individual crops. In 2007, the Toronto Food Policy Council proposed "far-reaching changes in the Ontario government's food-system priorities from a long-distance export orientation to a focus on replacing imports with home-grown produce and raising farmers' share of the retail food dollar." In supporting farmers, it argued for an agricultural policy that encouraged new Canadians to engage in farming. It commended the government for finally protecting farm land around cities, as between 1966 to 1996, Ontario lost over 1.5 million hectares of agricultural lands to non-agricultural uses. In the half century from 1951 and 2001, the Central Ontario region lost 49 percent of its farmland to the expansion of the Greater Toronto Area. It favoured programs to renew a new generation of farmers (Secombe, 2007, 1, 7). With 52 percent of the best farmland in Canada, Ontario is well positioned to grow food for its new immigrant populations, rather than importing such food from Mexico, California, Mexico and the Caribbean.

Many policies support mainstream agriculture and large retailers and create barriers to those striving to create a sustainable food system. Despite fewer people farming, agricultural has mass produced cheap food on huge specialized factory farms, but we have not preserved "the countryside's environmental integrity, economic vitality and the beauty of its landscape through conscientious land stewardship, efficient water management, and bio-diversified farming" (Secombe, 2007, 8). Ontario is experimenting with an Alternative Land Use Services (ALUS) program in Norfolk County, which pays farmers for ecological goods and services. If this program was extended nationally and government support payments to farmers were rationalized, it would be no more expensive than the present system and could contribute to reducing Canadian carbon emissions (Secombe, 2007, 9).

But more farmers are becoming more sustainable in their practices and even shifting over to organic farming. Institutions such as universities, credit agencies, government,

extension services have given some financial and research support to a more sustainable system (MacRae, Ecological Agricultural Projects, 1990). In 1989 Agriculture Canada reviewed how its programs, policies and regulations impact on the development of sustainable agriculture and since then has established one departmental branch on organic agriculture but it needs to work with other agencies. In addition, this type of agriculture results in more jobs as small diversified farms are more labour intensive than large factory farms and they "provide more support for community food retailers, farmers' markets and community supported agriculture projects. They also ensure biodiversity. Communities benefit from the environmental services supplied by smaller organic farms – filtering drinking water, reducing soil erosion, protecting insect pollinators, and so on". The energy use in producing local food is much less than bringing in imports, but large amounts of imported food continue to pour in because "the fuels used in international travel by sea and air are lightly taxed and not included in any state's Kyoto targets for greenhouse gas reduction" (Secombe, 2007, 15, 16).

Some researchers suggest an agro-ecological and community approach to promote sustainable agriculture in systemic ways. A range of policy approaches (supports, rewards, penalties) and programs at all levels could be used, if governments were receptive. While federal and provincial government programs and policies have been impediments to the diversification of farming systems, the OECD (1988) believes that removing constraints to diversification should be a primary strategy for solving agricultural problems, especially those that will improve environmental quality. Crop insurance programs could be changed in a number of ways to encourage diversification. The Conservation Council of Ontario (1986) has recommended that the concept of "good management" be broadened. In many instances, a farmer who does not use pesticides and fertilizers is regarded as a poor manager and is denied coverage and conservation practices are not acknowledged or rewarded. More research on the development of alternative fertilizers and easier registration of organic fertilizers is needed.

At the same time, commodity groups have increased in political strength at the expense of general farm organizations, so that governments focus on specific crops and make specific commodity interventions rather than develop general policy. Some programs, regulations and operating practices encourage production practices that are incompatible with organic, sustainable agriculture and limit the ability of farmers to market their organic products. AAFC staff should resolve such impediments. Consumer and Corporate Affairs completed its consultative process with the organic foods industry to develop a new definition for organic food and clarify certification. Many marketing agencies should be in a better position to establish organic food channels within existing marketing mechanisms (MacRae, 1990). Some European governments have recognized certified organic products. The Canadian Wheat Board, now weakened by the Harper government, has been assisting the marketing of organic grains. The demand for organic eggs and dairy products has resulted in a more comprehensive response to marketing them. But there is a problem with Canadian governments that do not support supply management (which helps farmers) and sign onto trade deals that result in legal challenges to it, particularly when countries challenging Canadian marketing boards support their farmers directly with subsidies.

To advance organic agriculture, Agriculture Canada needs to shift its funding priorities, and sponsor more on-farm research. It should clarify certification to enhance the organic producers and thereby support for organic agriculture. Pollution taxes on agricultural chemicals have been implemented in a number of jurisdictions in the USA and Europe but not in Canada or Ontario. Academics researching basic ecological processes could be rewarded and agro-ecology training programs for scientists, economists and other professionals who work in all branches of the department of agriculture are needed. The great demand in the Canadian farming community for training in sustainable agriculture requires more trainers, technical and financial assistance, manuals and farm subsidies to cover tuition, travel and time to permit their participation in on-going courses (MacRae, 1990). An Ontario training program concerned with farm management and conservation covers farmers' expenses for courses offered by the Ecological Farmers Association of Ontario.

The federal government has used agriculture as a tool to achieve other objectives, particularly national economic objectives. It relies on the market as a vehicle for satisfying human needs, resulting in a disproportionate transfer of resources and power to large producers and corporations in the industrial food system. The resulting "western" diet of Canadians has led to obesity, certain diseases, other health problems and public expense as consumer choices often follow the suggestions of mainstream ads. Reliance on the Prairie grain economy for a favourable agricultural trade balance has placed undue economic and environmental pressure on a narrow range of production sectors and practices. Dependence on food imports has resulted in resource inefficiencies and a less nutritious food supply. It is important to design a sustainable food system to reduce our reliance on imports for food security reasons, to reduce energy use, to support farmers and employment in the food system, and to adapt to climate change. Though policies of self-reliance are controversial in our present free trade environment, a more self-reliant agricultural sector is essential for food security. Relying on imports results in a food supply vulnerable to disruption; energy inefficiency and costliness (transportation costs amount to 8 percent of consumer supermarket expenditures); less nutritious food (e.g., vine-ripened tomatoes have 25-30 percent more vitamin C compared to those ripened with ethylene gas); and a weakened local economy ($4 billion left Ontario in food import expenses in 1985, 80 percent of the amount spent - i.e., only 20 percent of consumer expenditures on imports remain in the province). Generally, self-reliance strategies in the food sector plug resource and monetary leaks; encouraging new enterprises which build on local strengths; and promote businesses that can build on underutilized resources (Rocky Mountain Institute, 1986). The challenge is to consciously redesign the organization and management of government departments to be more responsive to ecological realities and thus facilitate the emergence of a redesigned, sustainable food and agriculture system.

Adapting to Climate Change

Sustainable agriculture takes account of the environment; the restoration of a self-sufficient process of food provisioning is not harking back to the past but a "forward-looking vision for dealing prudently with two far-reaching changes" in the 21st century –

the acceleration of climate change and fuel shortages and high prices (Secombe, 2007, 16). The commodity orientation of many government programs are a barrier to a shift towards sustainable agriculture and food security.

In Ontario, climate change has already begun, and will present challenges for Ontario's ecological, social and economic systems (Chiotti and Lavender, 2008, 263). "Ontario's ecosystems are currently stressed by the combined influence of changing climate, human activities and such natural disturbances as fire and outbreaks of insects and disease" (Chiotti and Lavender, 2008, 229). Warmer winters could make it difficult to transport food to northern communities and are causing a decline in ice fishing in the southern part of the province. Warmer water temperatures are already causing a shift in fish species. Planning for climate change has started in conservation areas (storm water management) and public health departments (heat health alert systems). But Ontario remains committed to industrial food policy; Ontario farmers are adopting more ecologically sound management policies that should promote greater sustainability, but a worry is aging farmers. Despite warming and weather events, "projected changes in agri-climate conditions could be beneficial for production of many crops, including corn, sorghum, soybeans, maize and some forage crops and could lead to a northward extension of crop production. Fruit production could also benefit from a longer growing season and seasonal heat accumulation," although fruit was adversely affected in 2012 by severe shifts in temperature (Chiotti and Lavender, 2008, 250). Most studies do not include an estimation of the effects of more pests and diseases and fierce weather events; heat could also negatively affect livestock. But producers seem optimistic about the province's ability to manage risk, have perceived changes in climate and in some cases have adapted systems (more irrigation) to mitigate such changes. But farmers need to become more aware (Reid, Smit, Caldwell, Belliveau, 2007). To better understand climate change and adapt to it, increased monitoring is important. To better prepare for it, stakeholder engagement to do more research and prepare adaptation actions is necessary and this requires building partnerships (all sectors) to cooperate in developing adaptation measures (Chiotti and Lavender, 2008, 268).

An important way to reduce carbon, mitigate against climate change and ensure food security, is to promote more organic farms. Farmers shifting to organic production require financial assistance to make the change. Agriculture is "currently responsible for 20-30% of global greenhouse gas emissions (counting direct and indirect agricultural emissions)". But agricultural soils can sequester CO2 through building organic matter, and thereby mitigate against climate change. Sustainable agriculture through the expansion of organic agricultural systems is therefore important for future food security. The use of organic fertilizer and crop rotation and the avoidance of burning, synthetic fertilizers, reduce fossil fuel use. "Common organic practices also contribute to adaptation. Building soil organic matter increases water retention capacity and creates more stabile, fertile soils, thus reducing vulnerability to drought, extreme precipitation events, floods and water logging" (Muller, 2012). Biodiversity and decreased chemical uses on organic farms build soil and reduce production risks associated with extreme weather events. Consumer preference for organic foods, less meat, less waste, and seasonal and local production affects agricultural production and mitigates against climate change. To create a more sustainable agricultural sector (with more organic

agriculture) we need to promote in Canada a better understanding of organic agriculture; a way to calculate emissions to understand the impact of the agricultural sector production systems, identify and design adequate policy frameworks for supporting mitigation and adaptation in agriculture, pay ongoing attention to agricultural environmental issues such as pesticides, water eutrophication or acidification or soil erosion, and work to change consumer behaviour and consumption patterns to contribute to mitigation of climate change in the agricultural sector (Muller, 2012). It is worrisome that national accounting systems do not include CO2 emissions from sea and freight and therefore cannot be calculated in "food miles"; and it is equally troubling that sea freight costs have declined significantly (70% between 1980-2000) (McMichael and Friedmann, 2007: 305).

As climate change increases, Canada faces less predictable weather. Imports will be less available as other countries are disrupted by it. Both trends indicate that it is prudent to rely more heavily on locally produced food. Local communities (Waterloo, Haliburton) have initiated programs to grow nutritious food for the local population, to ensure food security and stimulate the local economy with job creation (Desjardins, MacRae, Schumilas, 2010; Abbey Gardens, 2012).

As the greenhouse business has expanded, become profitable, and creates a protective environment for plants, its expansion is likely. As a large, growing business sector, its employees should be able to join unions and bargain collectively like other workers to raise standards and in recognition of the importance of these jobs to future food security. With higher standards, it is likely more Canadians or landed immigrants would do such jobs and the current exploitation of poorly paid, foreign contract labour would lessen.

Food sovereignty emphasizes the right of each nation to protect and regulate domestic agricultural production and trade to achieve sustainability, guarantee a livelihood for farmers, and assure its citizens are fed. Food sovereignty implies the formulation of trade policies and practices that serve peoples' right to safe, healthy and ecologically sustainable production. Ontario and Canada need new policies, which encourage the budding local food movement to develop partnerships and increase food security in the face of climate change.

Conclusions

- The denial of human rights to migrant workers should not be a foundation of Canada's food supply system. We endorse the UFCW recommendations for farm workers, including representation, better pay, working and living conditions, independent monitoring of those conditions, access to health, accident, and OHS programs for support and the right to landed immigrant status.
- Since the 1980s Canada has supported the global free trade system, and it has enhanced large corporations in the agricultural sector but not people at all levels of the food system. That system has undermined family farms in Ontario, and devastated small farmers in the countries from which migrant

farmers to Ontario come in search of agricultural work. We support a future for family farms, organic agriculture and urban farming.

- With climate change upon us, Ontario needs sustainable agriculture and food security for its people. The industrial system is not sustainable with its long supply lines, enormous use of energy, and chemicals and pesticides, all of which add to carbon in the atmosphere, are harmful to the environment and result in limited types of food, thus hurting biodiversity.
- The food policy in Ontario needs to shorten supply lines, develop alternatives to expensive fertilizers and pesticides, "take precautionary steps to protect the key conditions of healthy agriculture in the face of more severe weather conditions: erosion-resistant cover-cropping, drought-resistant crop varieties, more efficient water use, flood-protected water courses" (Secombe, 2007).
- Farmers need to prepare for power outages from severe weather and high electricity prices and governments need to provide incentives for farmers to become more energy efficient and self-reliant by implementing on-farm renewable alternatives (Secombe, 2007, 17).
- The alternative and organic food movement's analysis of the problems with industrial agriculture have educated many consumers about sustainable agriculture. Consumer and community strategies of buying local food, thereby using less energy to ship imports, having shorter supply lines and marketing more organic food in diverse, often community based ways are good for farmers, the environment and for food security. The need to increase that approach and enlarge that alternative food system is crucial to future food security, improved health, and mitigation against climate change.
- The high level of imports in Ontario reflects a lack of political willpower.
- The growth of greenhouse use by farmers, companies and community based food producers seems appropriate in an approaching era of weather turbulence to protect crops from drought and storms, but the conditions of employees need to be improved and the jobs expanded.
- It is conceivable that the mainstream industrial food system and alternative food system will continue to coexist but cooperation between the two to increase local organic food in grocery stores and thereby meet growing consumer demand is important.
- It is conceivable that the local alternative food movement that has emerged from the ground up may be a model for other parts of the economy (energy), as the public comes to understand the need to act to reduce the effects of climate change.

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