

Research Evidence on Regional Government
Contribution to Healthy and Sustainable Food Systems:

A Systematic Review of International Literature

This discussion document was coauthored by Fabio Cabarcas, Senior Policy Analyst and Jessica Mackay, Public Health Dietitian, in collaboration with Lynn Garrison, Public Health Nutritionist, Chronic Disease Prevention Team. Library support was provided by Heather Kemp, Information Specialist, Communication Division. Supervision was provided by Helen Ross, Manager of Chronic Disease Prevention, Health Department, and Gena Ali, Manager of Sustainable Planning, Legislative and Planning Services, Regional Municipality of Halton

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Glossary of terms

Community Food System – A community food system is a food system in which food production, processing, distribution and consumption are integrated to enhance the environmental, economic, social and nutritional health of a particular place. A community food system can refer to a relatively small area, such as a neighbourhood, or progressively larger areas—towns, cities, counties, regions, or bioregions. There is an emphasis on strengthening existing (or developing new) relationships between all components of the food system. Four aspects distinguish community food systems: food security, proximity, self-reliance and sustainability (Department of Nutritional Sciences, Cornell University).

Food Access – In general, food access refers to people's ability to obtain healthy and nutritious food via grocery stores and markets. As part of the policy process, food access also refers to specific programs that are designed to ensure that all residents of a community can eat well. This includes things like emergency food programs, meal programs, food banks and buying clubs (Food Policy Council, City of Vancouver, 2009).

Food Council – A food policy council can link groups from nutrition, sustainable agriculture and anti-hunger to share perspectives and experiences and create actions to build a food system that can be relied upon to feed a community in an appropriate way now and in the future because it includes all the elements 'from land to mouth' (Kalina, 2001, as quoted by Halton Food Council, 2010).

Food Distribution – Food moves from seed to farm, from field to market and from market to table. Different distribution channels and venues come into play at every step of the way. These might include things like Community Support Agriculture (CSA) programs, good food boxes and delivery services and on-line shops and services (Food Policy Council, City of Vancouver, 2009).

Food Processing – Processing food means transforming it from its raw state into something that is eaten. This can be as simple as peeling a carrot, or as complicated as making a fine pastry. It can also include things like canning and preserving food or extracting and refining constituent parts from one raw food product for use elsewhere, e.g., the way sugar is processed from cane or tofu from soya (Food Policy Council, City of Vancouver, 2009).

Food Production – Refers to the farming and gardening practices that produce the raw food products—fruits and vegetables, meat and dairy products—that form the basis of our diet. Sources of food production can include local, national and international farming, and, closer to home, urban agricultural initiatives such as community gardens, green roofs and school yard food plots (Food Policy Council, City of Vancouver, 2009).

Food Security – Food security is when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life (World Food Summit, 1996).

Food System – all processes involved in growing, marketing, consuming, and disposing of food and food packaging; operates within and is influenced by social, political, economic, and natural environments. The food system is an interconnected network of practices, processes and places that cover all aspects of food. The six components of the food system are food production, food processing, food distribution, food access, food consumption, and waste management (See Gates and Ross, 2009, Briefing note, Attachment 2; Department of Nutritional Sciences, Cornell University; Food Policy Council, City of Vancouver , 2009).

Food Waste Management – Refers to the way authorities and citizens deal with the material remains of food: the waste and compostables, packaging, effluents and pollution that are produced by the various components of the food system. Far from being the “last” stage of the food cycle, good waste management actually lays the groundwork for more and better food (Food Policy Council, City of Vancouver, 2009).

Sustainable Development – Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (The World Commission on Environment and Development, 1987).

Sustainable Food System – is one that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment. A sustainable food system also encourages local production and distribution infrastructures and makes nutritious food available, accessible, and affordable to all. Further, it is humane and just, protecting farmers and other workers, consumers, and communities (APHA, 2007; Halton Food Council, 2010; See, Gates and Ross, 2009, Briefing note).

Introduction

This document aims to provide a backdrop for further discussions across Halton Region departments on the role of a regional municipal government in supporting a local sustainable food system. It was developed by the Chronic Disease Prevention Program of the Halton Region Health Department in collaboration with Sustainable Planning, Legislative and Planning Services at the Regional Municipality of Halton. This document is an early step in a long-term process to identify opportunities for concerted action across Halton Regional departments.

In this report, the goal is to assess and summarize evidence from the research literature to inform what regional and local municipalities could do in terms of policy, services and programs to positively impact the sustainability of the local food system and enhance community food security. The terms local and regional municipal governments are used interchangeably in this document as a consequence of the diverse structure of local and regional jurisdictions in the international literature that was reviewed. This systematic review of the evidence is not prescriptive but is, instead, an early articulation of some opportunities for collective work.

Examples from the Region of Halton were intentionally excluded. The Region of Halton is already working on a number of policies, programs and services that contribute to healthy and sustainable food systems. The identification of Halton-specific strategies is to be developed in consultation with stakeholders. An inventory of initiatives is a subsequent phase of the process.

What is a healthy and sustainable food system?

The American Public Health Association describes a sustainable food system as one that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment. A sustainable food system also encourages local production and distribution infrastructure and makes nutritious food available, accessible and affordable to all. Further, it is humane and just, protecting farmers and other workers, consumers, and communities (APHA, 2007; Halton Food Council, 2010; See, Gates and Ross, 2009).

A food system approach seeks to address multiple interconnected problems affecting sustainability of a community. For instance, from a human health perspective, the total number of Canadians affected by food insecurity must approach, if not exceed, 3 million. Vulnerable populations such as aboriginal people and homeless are among the most affected (Tarasuk, 2010). In parallel, an epidemic of overweight and obesity is threatening Ontario and other regions of North America (Basrur, 2004). From an environmental perspective, millions of acres of productive land are lost worldwide each year to desertification or urbanization. Toxic pollutants, pesticides and nitrogen-based fertilizers are further threats to biodiversity (Speth, 2008). The prospect of oil scarcity

and price hikes is likely to impact a food system that is reliant on fossil fuel for fertilizers, mechanized production and extensive just-in-time delivery systems (Polack, Wood, & Bradley, 2008). In addition, an excessive reliance on imported food leads to a vulnerability to breaks in the food distribution chain (Metcalf Foundation, 2008).

A local food system approach seeks to build a sustainable, healthy community. The Food System is an interconnected network of practices, processes and places that cover all aspects of food (see glossary of terms). The six components of the food system are food production, food processing, food distribution, food access, food consumption, and waste management (See Gates and Ross, 2009; Department of Nutritional Sciences, Cornell University; Food Policy Council, City of Vancouver, 2009).

Halton Region is conducting research to identify the Region's role in supporting a community food system that improves health, promotes economic development in the food sector, promotes social justice in the food system, protects the environment, and reflects and celebrates food as part of our culture and our cultural diversity. While most elements of the food system are directed and regulated by provincial and federal governments or the private sector, municipal and regional governments have a significant role to play.

This research could contribute to the development of a Halton Regional Sustainable Food Systems Strategy which supports the Regional Official Plan's vision as stated in the Amendment No. 38 to Regional Plan (2006), Official Plan for the Halton Planning Area:

Regional Council supports the concept of 'sustainable development', which meets the need of the present without compromising the ability of future generations to meet their own need. (Our Common Future, The World Commission on Environment and Development, 1987) Planning decisions in Halton will be made based on a proper balance among the following factors: protecting the natural environment, enhancing its economic competitiveness, and fostering a healthy, equitable society. Towards this end, Regional Council subscribes to the following principles of sustainability: that natural resources are not being over-used; that waste generated does not accumulate over time; that the natural environment is not being degraded; and that this and future generations' capacity to meet their social and economic needs is not being compromised. The overall goal is to enhance the quality of life for all people of Halton, today and into the future. (Policy 25)

How was this document developed?

This document is based on a systematic review of academic literature (see appendix 1 for a detailed description of the methodology). The goal was to identify what regional/municipal governments are currently doing in terms of policy, services and programs to positively impact the sustainability of the local food system and enhance community food security. To this goal, the following methodological approach was adopted. First, three initial searches were conducted by Halton Region Health

Department's Chronic Disease Prevention team. Two additional web scans were done to identify examples from selected public health units and municipalities in Ontario. Second, a selection of articles was conducted to identify best practices for regional government contribution to healthy and sustainable food systems. Third, a critical appraisal of the selected literature was conducted (see appendix 2 for a summary of selected articles and critical appraisal notes). A preliminary analysis according to levels of evidence was conducted. The documents were classified according to the criteria suggested by the Chronic Care Clearinghouse (CCC) (adapted from VNAA, 2010):

Use in this report	CCC Category	Type of evidence
• Strong	• Level 1	• Systematic reviews and repeated studies
• Good	• Level 2a	• Experimental (Single or Quasi experimental study)
• Moderate	• Level 2b	• Non-experimental (Exploratory or qualitative study)
• Weak	• Level 3	• Recommendations of respected, experienced authorities (when not supported by levels 1, 2a or 2b)
• Not included	• Level 4	• No evaluation methodology (e.g., opinion articles)

Four, a synthesis according to emerging categories and levels of evidence was carried out. The literature clustered in 6 emerging themes that are described in the next section. For each theme, the level of evidence and the consistency of the message were reported. Emphasis is made on consistent messages from strong to good evidence. However, regardless of the level of evidence, inconsistent messages were made explicit in the final emerging themes. Level 4 (opinion) documents were not included in the final synthesis; however, when relevant, their theoretical perspective was quoted in the text.

Fifth, a panel of experts reviewed a first draft of the document. Subject matter experts with experience in both food systems as well as working within municipal/regional/local governments were identified to comment on our findings. Seven experts from experiences in Vancouver, Toronto and Waterloo Region joined 2 teleconference panels and provided subsequent feedback by e-mail. The subject matter experts were asked to provide feedback on: 1) consistency of the emerging themes and summary of evidence with their experience; 2) suggestions for modification; 3) the potential of the emerging themes to have a positive outcome on community food security; 4) gaps that should be addressed; and 5) additional examples to be included. The overall assessment was very positive and supportive of the findings. Additional references and suggestions were incorporated where possible.

This review is not exhaustive. Some examples and initiatives are included as examples for future discussion. However, the range of possibilities is broad. Although our review used several strategies to identify existing information, we are aware that many practices

and potential roles of regional governments were not included given the wide range of opportunities. As the discussion advances, the intention is to build on the experience across the Region's departments to identify and confirm best practices for regional government contribution to community food security and the sustainability of food systems.

Overview of key themes from the literature

The review of research literature identified 6 roles for regional government on healthy and sustainable food systems. A seventh theme was identified by the panel of experts. Overall, the emerging themes are overlapping areas with multiple interconnections. When relevant, subcategories are identified as follows:

Key evidence-based themes on the role of government on healthy and sustainable food systems

1. Working Together: the need for coordination and collaboration

A need for coordination of local food systems strategies

The importance of early public engagement in the decision making process

2. Supporting programs and initiatives based on multiple benefits, including sustainability and food security

Food system initiatives can produce multiple benefits

Avoid sustainability at the expense of social equity

3. Addressing locally the root determinants of food insecurity while supporting short-term access to healthy, local sustainable food by low-income and priority populations

The importance of addressing social determinants of food insecurity

Mitigating factor of social assistance programs

4. Supporting local food production, processing and distribution to promote the sustainable development of food systems

5. Municipal planning and policy development to support local agriculture

Potential of municipal planning to protect agricultural land and promote healthy and sustainable food systems

Opportunities for urban agriculture

6. Promoting the availability of healthy food outlets in proximity to residents

Distance to sources of healthy food

Explore further implications re: the Canadian context of distance/proximity to healthy foods as a barrier

Additional categories emerging from the panel of experts.

7. Support data collection/management and the analysis of evidence to inform action in food systems development

In each section, a summary of evidence from the literature is included. In addition, examples from other jurisdictions are provided. All examples have been classified according to the level of food system they address. In the examples, underlined text identifies hyperlinks to access the original sources, which are included when possible.

The need for coordination and collaboration emerged as the most consistent message from the evidence. This includes the importance of early engagement in the decision-making process by all relevant public and government stakeholders. The lack of coordination has been identified as one of the key barriers for achieving sustainable food systems.

From a general perspective, the assessment of initiatives, programs or policies should be based on the multiple benefits that they could offer. This includes sustainability, food security and social benefits. In any given context, there needs to be a balance.

From a food security perspective, there is consistent evidence on the importance of policies and programs to address the root causes of food insecurity among vulnerable groups. Driving forces such as persistent income and education gaps, growing urbanization, and export-oriented trade policies are mentioned in the literature. Better understanding what can be done locally is fundamental for the benefit of local communities. In parallel, the promotion of access to healthy, local, sustainable food by low-income and priority populations can act as a mitigating factor. However, its capacity could be limited if the social context determining food insecurity is not approached.

In addition, the development of local food production, processing and distribution are important areas in the sustainable food systems literature. In particular, the integration of local food production and processing and new and existing local markets is highlighted as a key factor for sustainability. The role of municipal government in its promotion is also highlighted in a number of examples and it is also relevant for other categories in this document.

Municipal planning and policy development to support local agriculture also emerged as a potential tool for food system sustainability. This includes, but is not limited to, the protection of agricultural land and the assessment of opportunities for urban agriculture. The promotion of the availability of healthy food outlets in proximity to residents is also suggested by the literature. This is particularly important for communities with low socio-economic status. However, its relevance to the Canadian context needs to be considered or further explored.

In addition to the themes that emerged from the literature, our panel of experts highlighted the role of government in supporting data collection/management and the analysis of evidence to inform action in food systems development. This is illustrated by the good number of reports that support this document, many of which would not have been possible without a participation of government agencies.

Key evidence-based messages on the role of government on healthy and sustainable food systems

1. Working Together: the need for coordination and collaboration

There is consistent strong, good and moderate evidence for the need to support integrated approaches and coordination across multiple components of the food system and the range of public and private stakeholders embedded in them. The researched literature describes a number of strategies such as civil society councils and interdepartmental committees to promote coordination.

The role of local government ranges from providing support to initiatives from civil society, to partnerships, to leadership in coordination. Municipalities should support food policy councils and roundtables, which adopt food charters and food strategies (Barker, 2011). Local governments have also shown to be in a privileged position to promote and develop local food policies. Overall, regardless of whether an initiative is promoted by municipal government or civil society, the benefits of a democratic and consultative process are highlighted.

The benefit of coordinating actions across different municipal government sectors has been highlighted in the literature (Caraher, 2007; Yeatman, 2008; Desjardins, Lubczynski and Xuereb, 2011).

Summary of evidence:

A need for coordination of food systems strategies

- Results from a systematic review of food projects in London, UK, showed that a large number of food projects are probably doomed to failure if they are not supported by policy infrastructures. Macro-level issues of the food system were beyond the scope and reach of individual projects. The lack of coordination between individual projects was one of the major barriers to promote change. This was relevant for all projects, many of which had been initiated by public agencies. Projects tended to be isolated, focused on behavioural change, and not sustainable. The study found there was a need to coordinate efforts and include local food projects into larger policy frameworks [strong and moderate evidence] (Caraher, 2007). A valid study, the findings provided results that were helpful

locally and internationally. There was no focus on effectiveness. Purely school-based interventions were excluded.

- A study of the development of local food policy in Australia showed that the development of support within the local governments themselves over a period of time was more successful in the promotion of food policies than was the role of public interest groups or the media. In this case, the relationships between health services and local government staff were important [moderate evidence] (Yeatman, 2008).
- A case study in Belo Horizonte, Brazil described a central role by the local government in the creation of an alternative food system. The local government reached out to both the private sector and the civil society [moderate evidence] (Rocha and Lessa, 2009).

The importance of early public engagement in the decision-making process

- Evaluation of a 3-year obesity prevention program in California revealed that strengthened collaboration with local government was key to successfully changing community level policies and practices [good evidence] (Aboelata and Navarro, 2010).
- Critical engagement of citizens in discussion, reflection and action has been identified as one of the fundamental factors identified to scale up food system social economy and sustainability practices in case studies in Vancouver, BC, and Edmonton, AB [moderate evidence] (Connelly, Markey and Roseland, 2011; Markey, and Roseland, 2011).
- Community engagement from an early assessment phase can help facilitate the development of a comprehensive food systems strategy. For instance, in a case study in a community in a Northwestern state in the US, a participative Community Food Assessment process helped to combine community organizing, policy advocacy, research, coalition building, and community development [moderate evidence] (Jacobson, 2007).
- The importance of forming strong partnerships with local government was found to be an important step in creating supportive environments for healthy eating [moderate evidence] (Good, Hammond, and Martin et al, 2010).
- The health effects of community-based food movements were found to be amplified when public health professionals created opportunities for dialogue with food movement participants [strong evidence] (Freudenberg, McDonough, and Tsui, 2011).

Example 1: examples of regional governments contribution to working together on food systems

Level of food system: production, processing, distribution, access, consumption, and waste management

- Regional government staff (public health) are members of food security networks/councils: e.g., Peterborough Poverty Reduction Network, Peterborough Food Security Community Partnership Project, [Community Food Security Stakeholder Committee](#) (Hamilton), [Toronto Food Policy Council](#); [Ottawa Poverty Reduction Network](#). In the case of Hamilton, public health services staff members were directed to form a stakeholders committee by members of the Hamilton board of Health. In Toronto, the Food Policy Council and the Toronto Food Strategy has dedicated staff members and funding from Toronto Public Health (Pothukuchi and Kaufman, 1999; Roberts, 2010). In Ottawa, the Ottawa Poverty Reduction Network produced a [2008 report](#). On December 10, 2008, City Council approved the development of a Poverty Reduction Strategy, in consultation with the community.
- Durham Region's Finance, Admin, Health and Social Services, Planning and Works Committee re: adopting a Food Charter as a guide for developing an action plan of food security (e.g., [City of Kawartha Lakes](#)). In Durham, the Commissioner of Planning requested the consideration of policy amendments to support food security as part of Durham's Growth Plan Implementation.
- Public health staff write advocacy letters to Provincial Government for higher rates for Ontario Works and ODSP recipients etc.—a result of Nutritious Food Basket letters signed by Medical Officers of Health (e.g., [Grey Bruce Health Unit](#)).
- Public health departments conduct Community Food Security Inventory/Food Insecurity Needs Assessment reports: scan of the community, details of low income rates for the community, inventory of existing food security programs, directories list on health unit websites, profiles of food bank users (e.g., [York, Durham Region Food Insecurity Needs Assessment](#))
 - Inventories with emphasis on fresh food/ local food and/or ethnic food (e.g., [York, Peel's From Our Farm to You](#) –farm search engine, Hamilton)
- Regional staff write reports – e.g., Nutritious Food Basket assessments, City of Toronto Food Security and the Early Years report; reports from planning departments or written with planning departments: "Growing Durham Regional Official Plan Amendment, Food Security Policy; Healthy Communities Research and Policy Scan Report by Elgin/St Thomas; Waterloo Region Public Health Urban Agriculture Report mentions food security; York Region Social Audit "Behind the Masks; North Bay/Parry Sound annual report.

Example 2: example on transportation services and food systems

Level of food system: distribution (access)

Transportation services in any local jurisdiction deal with food. Road construction in rural areas needs to account for the preservation of agricultural land. Transportation (delivery and logistics) support systems have emerged as a critical need for small farmers, who have been marginalized by transportation approaches that favour large scale producers (Vallianatos, Shaffer and Gottlieb, 2002). Furthermore, the integration of transportation corridors, residential areas and food sources has gained increased attention by planning and transportation services. Cost-effective public transit relies on busy corridors with lots of pedestrian traffic. Food sources such as grocery stores, neighbourhood restaurants and food outlets are important destinations. The location of transportation corridors and transit routes near food sources where people can shop is important (Roberts, 2011, pp. 197-198). The following examples are described by Mark Vallianatos, Amanda Shaffer and Robert Gottlieb (2002, emphasis by the authors):

- **In Tennessee, the Intermodal Surface Transportation Efficiency Act funds a program that constructs community gardens along recreational corridors like bike and walking trails (p. 4).**
- **In Madison, WI, low-income gardeners working with the Community Action Coalition set up food gardens in highway rights of way, within cloverleaf intersections and by the side of roads (p. 4).**
- The Seniors Farmers' Market Nutrition Pilot Program (SFMNPP) is a USDA program that awards grants to States, U.S. Territories and Indian tribal governments to provide coupons to low-income seniors that may be exchanged for eligible foods at farmers' markets, roadside stands, and community supported agriculture programs. **Eleven current funded projects also incorporate transportation components, either partnering with senior centers to take seniors to and from markets, or arranging local farmers to bring their produce directly to senior housing. (p. 3).**
- **The Chelsea Farmers' Market and the Chelsea Area Transportation System (CATS) are partnering for the first time to bring senior citizens to the Chelsea Farmers' Market on Saturday mornings.** The CATS bus is an "on demand" service but on Saturdays it runs a scheduled route to three senior centers in town and drops them at the market at 9am and picks them up an hour later for the return trip. Serving this community in this way provides the seniors with more variety and choices, as opposed to setting up shop with a few vendors at one of the homes (p. 3).
- **For the working people of Hartford, CT, the L-Tower Avenue bus route plays an impressive role in increasing access to major supermarkets for transit-dependent residents.** The L-Tower Avenue route was designed as part of the Jobs Access program to link people who lived in the north end with jobs, shopping and medical service. Food shopping immediately surfaced as a major benefit of the new route. (p. 4)

2. Supporting programs and initiatives based on multiple benefits, including sustainability and food security.

There is moderate evidence suggesting that programs and initiatives should be supported based on health, social and sustainability criteria, in addition to their business cases (Connelly, Markey and Roseland, 2011; Markey, and Roseland, 2011). It is important to highlight that programs that may be important from one perspective, may require extra care to reach other objectives. For instance, some programs with a great potential for sustainability may leave some priority groups behind. In a given context, a balance needs to be sought as one benefit is not more important than the other.

The role of local government: ensure that the policies and programs they support include social, sustainable and food security objectives. Looking at all of these benefits has implications for the assessment and evaluation of initiatives.

Summary of evidence:

Food system initiatives can produce multiple benefits

- The criteria used by government partners to evaluate the support of initiatives should go beyond the business cases to include social and sustainability objectives. The lack of social and sustainability evaluation criteria was a barrier to local government in providing support to local food initiatives in Vancouver, BC, and Edmonton, AB. This limited the potential to scale up initiatives such as the Good Food Box and Community Food Hub initiatives [moderate evidence] (Connelly, Markey and Roseland, 2011; Markey, and Roseland, 2011).
- Community gardens in Toronto have shown social, health and community benefits such as increased social cohesion and mental health [moderate evidence] (Wakefield et al., 2007).
- A qualitative evaluation of 10 cases in Toronto, ON, identified that the redevelopment of brownfield sites into urban agriculture constitutes a valuable opportunity for increasing green spaces in urban areas. It described benefits such as soil quality improvement, habitat creation, recreational opportunity enhancement, and economic revitalization of neighbourhoods [moderate evidence] (De Sousa, 2003).

Balance sustainability with social equity

- A geographic information system study in Philadelphia found the local food and the urban agriculture movements target middle- and high-income populations (e.g., 53% of the farmers' markets are located in census tracts with income higher than \$30,000). Personal food production in community gardens was starting to fill the gap in low-income areas (50% of the foods producing community gardens were found within the

lowest income neighbourhoods with annual income of \$18,000 or less) [moderate evidence] (Kremer and DeLiberty, 2011).

- Edmonton's Good Food Box Program provides direct marketing options for local producers. However, it has a niche of high- and middle-class markets with prices that reflect those demographics [moderate evidence] (Connelly, Markey and Roseland, 2011).

Example 3: example about biofuels, food security and environmental concerns

Level of food system: production, processing, distribution, access, consumption, and waste management

Rising fuel costs and increasing concerns over the effects of climate change are reinvigorating policymakers' interests in renewable energy sources such as bio-energy, both from biofuels as well as biomass. The development of any of these sources has the potential to generate positive economic and environmental benefits, yet, at the same time, they can cause negative food and equity impacts (McCornick, Awulachew and Abebe, 2008). For instance, a report prepared for the Alberta Institute of Agrologists identified that an increased production of biofuels in Canada could lead to adverse effects for food production and distribution in the long term. "First, livestock producers will face much higher costs for feed, resulting in higher costs of supplying meats and meat products and, probably, a lower overall level of meat production and consumption. Second, new entrants into farming will experience much higher costs of entry as land prices and other farm inputs escalate in price. Third and perhaps most seriously, food prices throughout the world will rise. Increased demand for cereals and oilseeds to support a booming biofuels industry in the United States and Canada, two of the largest exporters of food in the world, inevitably will lead to higher food prices for everyone and increased hunger for many of the world's poorest" (Klein and LeRoy, 2007, pp. i-ii).

3. Addressing locally the root determinants of food insecurity while supporting short-term programs to alleviate food insecurity among priority populations

There is strong to moderate evidence highlighting the importance of addressing the structural factors that determine health vulnerabilities among priority groups. In Canada, food insecurity is more common in households with children and single-parent families. Furthermore, the social factors that can trigger food insecurity in Canadian families include the loss of a job, change in employment hours, declined health of a family member, the need to feed a new family member or a change in the number of parents or breadwinners (Mikkonen and Raphael, 2010, p.26). In addition, education and income levels are important determinants of food security (Tarasuk, Fitzpatrick and Ward, 2010).

There is moderate evidence to suggest that food supplementation programs have a moderating factor on food security. However, food supplementation programs have a limited short-term effect. The evidence shows the importance of addressing the root causes of food insecurity in addition to providing assistance to vulnerable groups as a mitigating factor for their food insecurity. Examples of these programs are: delivering Good Food Box programs; healthy food to school breakfast and lunch programs; markets and farm stalls in areas where fresh food is not otherwise available; community gardens; community kitchens; skills training in growing, processing, and preparing food; and access to additional social assistance to ensure a healthy diet (Metcalf Foundation., 2008). Many of these programs operate outside conventional market channels.

The role of local government in addressing the root causes of food insecurity is diverse. At a general level, local governments work with provincial and federal governments to promote structural change. At a local level, the scope of action is ample. For instance, municipal and regional governments can help identify vulnerable groups and neighbourhoods. Municipal and regional governments can also support the development of programs to address many of the root causes of food insecurity such as unemployment and housing needs.

In addition, the role of local government in social assistance programs varies from support to civil society organizations offering the programs to direct provision of services to reducing cost burdens to underserved, low-income residents (Roustit et al., 2010).

Summary of evidence:

The importance of addressing social determinants of food insecurity

- A systematic review of the United States literature on food access and food desert research found that poverty is an important economic underlying factor in the limited geographical access to food in low-income areas. Furthermore, consumers in urban

and poorer areas paid more per unit of measurement than suburban and non-poor areas [strong evidence] (Walker, Keane, and Burke, 2010).

- A 50-year time series in several countries found the following drivers of food consumption: income (increased income resulted in increased fat consumption), urbanization (results in higher caloric intake and lower energy expenditure in urban jobs), trade liberalization (affects availability of certain foods, e.g., meat, dairy, processed foods) [good evidence] (Kearney, 2010).
- A 2005–2007, cross-sectional study across low-income families in Toronto found that the proportion of income used for housing was inversely associated with food insecurity [moderate evidence]. This was consistent with existing literature on the subject. In addition, the authors identified that, regardless of the type of housing, low after-shelter income was positively associated with food insecurity [moderate evidence] (Kirkpatrick and Tarasuk, 2011).
- Results from the 2004 Canadian Community Health Survey identified that a higher household income adequacy and (or) higher levels of education were associated with a healthier diet among both adults and children. The prevalence of inadequate nutrient intakes among adults was higher among adults with the lowest level of income adequacy or educational attainment, compared with others [moderate evidence] (Tarasuk, Fitzpatrick and Ward, 2010).
- A potential role for local government in reducing cost burdens to underserved, low-income residents was identified in a descriptive study of local markets in a rural setting in New York State. The government provided funding for farmers' markets, and incentives to set up farmers' markets in areas where food retailers were sparse [moderate evidence] (Schmit and Gomez, 2011).

Mitigating factor of social assistance programs

- A cross-sectional survey of the school food supplementation program implemented by the Quebec Ministry of Education, Leisure and Sport found that food supplementation was a limited moderating factor in the association between food insecurity and school-related outcomes [good evidence] (Roustit et al., 2010, p. 1178).
- A cross-sectional study in Toronto among low-income families identified that only a small percentage of these families had access to food banks, community kitchens or community gardens. Only one in five families used food banks and the odds of use were higher among food-insecure families. One in 20 families used a community kitchen, and participation in community gardens was even lower [moderate evidence] (Kirkpatrick and Tarasuk, 2009).
- A longitudinal study of a home-delivered meals program in Georgia, US, found alarming levels of food insecurity among the serviced population [good evidence] (Lee, Fischer and Johnson, 2010; Lee, et al. 2011).
- A multi-method descriptive study of food bank users in Toronto, ON, identified that low paying jobs did not reduce the reliance of respondents on food banks [moderate evidence] (Lightman, Mitchell and Herd, 2008).

Example 4: the importance of a comprehensive housing strategy in addressing food security

Food Security Level: distribution (access)

The Canadian Centre for Policy Alternatives (CCPA, 2010) highlights the need for integrated food, housing and health programming for vulnerable populations: Housing programs should incorporate flexible food options and infrastructure that meet the nutritional needs of their residents. It highlights programs by local governments, which aim to overcome silos between housing and public health policies. An example is the Joined-Up Food Security and Social Housing Policy, which includes Vancouver Coastal Health, BC Housing and the City of Vancouver's Social Planning Department, with participation of non-profit service providers and advocates.

The Canadian Policy Research Networks and Social Housing Services Corporation published a [2008 report](#) to help develop a food security policy (Friendly, 2008). The report focuses on social housing residents, who are more likely to face food insecurity amidst a low-income context. Some of the recommendations include:

- Social housing providers should advocate for income security, social program spending and other initiatives that affect household financial resources. These upstream policies are fundamental to any long-term strategy to tackle food security.
- Social housing providers should put into practice an organizational commitment to food security and support the development and maintenance of community food security programming.
- The approach to food security should be multi-pronged by linking several programs such as community gardens and community kitchens, coordinating with existing programs, integrating food programs with other non-food programming such as community economic development and youth programs, and recognising the importance of partnerships.

Example 5: examples of regional governments promoting access to healthy, local sustainable food by low-income or priority populations

Level of food system: distribution (access)

- Some public health units across Ontario support the coordination of Good Food Box Programs.
- Some public health units across Ontario support and implement the Canada Prenatal Nutrition Program.
- Some public health units across Ontario support the development of Community Gardens and Community Kitchens.
- Some public health units across Ontario provide funding for farmers' market vouchers to low-income populations.

4. Supporting local food production, processing and distribution to promote the sustainable development of food systems

There is moderate evidence suggesting a role for local governments in promoting local food production, processing and distribution. This includes the integration of the local food chain from production to consumption. For instance, governments can address food security problems by including rural infrastructure investment to support agricultural growth and establishing local and national markets for food and agricultural products (Pinstrup-Andersen and Herfort, 2008). However, there is moderate evidence to suggest that the following issues may occur: 1) efforts to emphasize local food production may be capitalized by large business at the expense of small and medium producers and retailers if adequate support is not provided; and 2) that the definition of local foods is a relative concept that does not always refer to food farmed, processed, and purchased all within a certain specified distance/radius, and may therefore not benefit a local food economy.

The role of regional government includes supporting rural infrastructure investment, supporting agricultural growth, establishing local markets for food and agricultural products, supporting the creation of community gardens, supporting adoption of by-laws to support urban agriculture, and supporting the exploration of innovative ways to connect food and farming systems to new and local markets.

Summary of evidence:

- A descriptive study in 2008 in a rural region of New York State, US, identified the need for establishing larger, centrally-located markets with public sector contributions

in order to support local farmers [moderate evidence] (Schmit and Gomez, 2011). This would include providing incentives to farmers to set up farmers' markets in areas where food retailers are sparse.

- The lack of coordination across the local food chain (e.g. production, distribution, access) and the lack of physical infrastructure to support increased food security across the region were recurring barriers to Good Food Box and Community Food Hub initiatives in Edmonton, AB, and Vancouver, BC. These initiatives were competing with mainstream economic activities that were heavily subsidized and did not account for negative social, economic and environmental externalities [moderate evidence] (Connelly, Markey and Roseland, 2011).
- Efforts by the Vancouver Food Policy Council to promote urban agriculture and local food production may face important barriers with regard to integrating into the mainstream distribution. The Vancouver Food Policy Council, which is a partnership between local government and non-profit organizations, promoted the creation of a number of 2,500 garden plots and the adoption of bylaws to allow urban agriculture. However, a survey in 28 supermarkets and grocery stores found that supermarkets tended to rely on few suppliers with a just-in-time system (continuous supply, no storage). This was true for local and organic and non-organic products. Small urban producers had difficulty to adapting to this model [moderate evidence] (Broadway and Broadway, 2011).
- A qualitative study of marketing and consumption strategies of local food in West Yorkshire in the United Kingdom identified that it might be easier for large firms with strong supplier networks to access food farmed locally for their consumers than it is for small independent retailers [moderate evidence] (Blake, Mellor, and Crane. 2010). In addition, it found that the term "local" was a relative concept constructed by both consumers and producers. To them, "local" involved diverse understandings of convenience, health and status. The term "local" should not be positioned as a social fact [moderate evidence] (Blake, Mellor, and Crane. 2010).
- A similar study from Grafton County, New Hampshire, USA, identified that local food may have at least two different meanings: a contemporary one, which is linked to a political agenda of sustainability and support for local farmers. Secondly, a traditional one, which is less political and focused on fresh and affordable foods [moderate evidence] (McEntee, 2010).

Example 6: Waterloo Region local market studies and the role of regional government in supporting support local food production, processing and distribution

Level of food system: production, processing, distribution, access, consumption, and waste management

In a [2005 study on the environmental implications of food imports to Waterloo Region](#), the Region of Waterloo Public Health identified that the imports of 58 commonly consumed foods that could otherwise be grown locally accounted for 51,709 tonnes of green house gas emissions annually. This entailed the equivalent of more than 16,000 motor-vehicles to transport food. There was therefore a great unused potential to reduce the environmental impact of food miles by promoting the consumption of local foods (Xuereb, 2005).

Similarly, in a 2006 report on Redundant Trade in Waterloo Region, Judy Maan Maidema (2006) identified that the region had a potential to supply a larger share of the local markets with local products. A total of 36% of imported products available in the Waterloo Region market corresponded to products that could be supplied locally in the same season. Furthermore, a total of 76% of the local offer of imported food corresponded to products very similar to the ones produced locally. The study identified that imported foods tended to be at an equal or lower price than the local equivalent. This could have been explained by factors such as government subsidies in other countries, differences in workforce cost, favourable weather or poor of environmental accountability. However, the study also identified that the local produce could compete in terms of freshness and many quality variables.

These reports were part of a comprehensive analysis led by Region of Waterloo employees (Public Health and Planning), Marc Xuereb and Ellen Desjardins (2005), who developed a complete report that highlights several initiatives to promote local food production and marketing, local food processing (in farms and post-farm), local food labels, urban agriculture, and other programs such as farm-to-school and incubator kitchens to food retail operations. Ellen Desjardins, John Lubczynski and Marc Xuereb (2011) summarize the list of other related reports as follows (p. 4):

- Growing Food and Economy Study 2003
- Rural Health Study 2003
- Diet, Weight and Diabetes 2004
- Food Access Study 2004
- Local Food Buying in Waterloo Region 2004
- Optimal Nutrition Environment Study 2005
- Marketing & Branding of “Buy Local Buy Fresh” 2005
- Urban Agriculture Report 2005
- Food Flow Analysis Study 2005
- Towards a Healthy Community Food System in Waterloo Region 2005
- Food System Plan for Waterloo Region 2007
- Neighborhood Markets Evaluation 2008

Example 7: programs and initiatives to promote and protect local food production

Level of food system: production, distribution (access)

- The Greater Toronto Area Agriculture Action Committee developed a Golden Horseshoe Agriculture and Agri-Food Strategy for 2021. Its vision is: “The Golden Horseshoe is globally renowned as a vibrant food and farming cluster, characterized by profitable farming operations, a thriving hub of food processing, food retail and food service businesses, extensive research capacity, innovative technology, and a wide range of healthy and safe products” (Watson, 2012, Background report, pg. 23). The action plan focuses on 5 strategies:
 - GROW THE CLUSTER: Grow the Golden Horseshoe so it becomes the leading food and farming cluster in the world, renowned for healthy and safe products.
 - LINK FOOD, FARMING AND HEALTH: Educate current and future consumers about the importance of locally-sourced food and farming products for enhancing their health and well-being.
 - FOSTER INNOVATION: Encourage and support innovation to enhance the competitiveness and sustainability of the Golden Horseshoe food and farming cluster.
 - ENABLE THE CLUSTER: Align policy tools and their application to enable food and farming businesses to be increasingly competitive and profitable.
 - CULTIVATE NEW APPROACHES: Pilot new approaches to support food and farming in the Golden Horseshoe
- The City of Ottawa provides financial relief to local farmers (e.g., [Ottawa’s Farm Grant Program](#)). The Ottawa City Council approved a Farm Grant Program to provide financial relief in the form of tax benefits to working farmers.
- Public Health, in partnership with community organizations implement direct marketing program from food producers to consumers (e.g., [York’s Gleaning Program](#), [Peel’s From Our Farm to You](#)).
- Regional governments coordinate Local Food Procurement Policy (e.g., [Toronto](#))
- Regional government departments (e.g., Public Health and Administration) are involved in disaster preparedness programs ([Grey County](#), [Peel](#)). Examples are crisis management planning to keep a farm functioning during an emergency, management of a healthy and safe food supply during a disaster.
- The Toronto Food Policy Council published a 2007 report to promote local agriculture in Ontario. It identifies a number of elements to promote a shift in the provincial government’s priorities for agriculture: 1) Shift the priority from export assistance to import replacement; 2) Realize the value of new Canadians as consumers and future farmers; for example, the Toronto Food Strategy is working with the Vineland Research and Innovation Centre to pilot test two markets to bring new Ontario produce previously imported to newcomer populations; 3) Protect good-quality farmland around the big cities and bring land that is presently unused or underutilized back into full food production; and 4) renew our aging farming class with the fresh blood of youth and New Canadians ([Toronto](#)).

5. Planning and developing municipal policy to support local agriculture

There is good evidence to suggest that land use planning has the potential to contribute to healthy and sustainable food systems. Some of the promising areas of focus include farm size severances, rural land uses, natural areas protection, rules on farm diversification, farmers' markets, road side stands, livestock facilities; farmland preservation (Caldwell, 2006; Pothukuchi, 2009; Ontario Farmland Trust and Metcalf Foundation, 2009). For example, planning policies can change zoning requirements, limit or ban some non-nutritious foods, and implement taxes or fees that dedicate funds for obesity prevention (Ashe et al., 2007).

The role of regional government ranges from developing land use policies, supporting the development of planning policies to change zoning requirements, implementing the use of GIS systems to identify land potential for urban agriculture, and supporting exploration of land use for urban agriculture.

Summary of evidence:

Potential of municipal planning to protect agricultural land and promote healthy and sustainable food systems

- A review of evaluation data from three California-wide healthy eating and physical activity initiatives showed that land use and transportation patterns were correlated with self-rated health and health conditions such as cardiovascular disease, respiratory illness, injuries and mental health [good evidence] (Aboelata and Navarro, 2010).
- Legislative and non-legislative plans, policies, processes and programs that influence local government planning provide opportunities to address several strategies for promoting food security such as increasing access and availability of healthy food choices within the community; establishing workplace healthy eating environments and policies; establishing healthy catering at events and festivals; decreasing fast-food availability and fast-food outlet density; increasing public breastfeeding facilities and workplace policies; modifying outdoor food advertising to increase healthy food promotion and decrease unhealthy food promotion; increasing drinking water fountains in public areas; protecting urban agriculture and horticulture; increasing community cooking facilities; and modifying individual housing designs to ensure adequate food storage and preparation areas [weak evidence] (Good, Martin, Burns, and Groos, 2010).

Example 8: examples of provincial government role policies to protect agricultural land

Level of food system: production

British Columbia has protected its farms through its Agricultural Land Reserve (4.7 million hectares); Ontario has also enacted policy through the province's most urbanized area known as Greenbelt. In both cases, provincial governments have taken the lead on policies to protect agricultural land. Both examples are good models for farmland protection (which combine legislation with investment and education). However, important loopholes in both policies are the applications for exemptions, whose criteria are "too discretionary" (Benjamin, 2011). Municipalities in both jurisdictions have developed land use plans in agreement with the provincial policies.

Opportunities for urban agriculture

- The use of Geographic Information Systems to identify land potential for urban agriculture in Philadelphia, PA, found a total of 8% of residential land as potentially viable for urban agriculture (grasslands and bare lands). Other dimensions of feasibility such as soil quality and property were not assessed [moderate evidence] (Kremer and DeLiberty, 2011).
- A qualitative study of community gardens in Toronto identified that the perceived barriers to establishing gardens were insecure land tenure and access, bureaucratic resistance, and concerns about soil contamination. [moderate evidence] (Wakefield et al., 2007).
- A qualitative study of 10 cases of brownfield redevelopment into urban agriculture in Toronto, ON, identified a wide range of social and environmental benefits. However, the study also identified that the redevelopment requires extensive public-sector involvement (i.e., a concerted effort from planners to community representatives), potential funding sources, and the assessment and completion of green space and brownfield inventories to identify opportunities for urban agriculture [moderate evidence] (De Sousa, 2003).

Example 9: regional government actions to promote urban agriculture

Level of food system: production, distribution (access)

- Toronto Public Health, in collaboration with Parks, Forestry and Recreation and the Toronto Environment Office developed an urban gardening soil assessment guide to assist City staff in the assessment of potential sites for community and allotment gardens (guidelines <[Toronto](#)>). There is also a big movement towards school gardens in Toronto.
- Proposal for an urban agriculture strategy – Toronto Food Policy Council (a Toronto Public Health employee is the coordinator of the TFC) (1999) Feeding the City from the Back: A Commercial Food Production Plan for the City of Toronto (available at www.toronto.ca/health/tfpc_feeding.pdf). It includes several policy recommendations to encourage urban agriculture and local food supply.

Example 10: the role of planners in supporting healthy food environments and urban/peri-urban agriculture

Level of food system: production, access

The Ontario Professional Planners Institute Planning for Food Systems in Ontario issued [A Call to Action in 2011](#), which suggests that planners can take a lead on food system planning through the following actions:

- Become more familiar with the concept of food systems and identify where the components fit into rural and urban communities and the types of information and knowledge that are required to support decision making.
- Review local documents with a food systems lens (e.g., integrated community sustainability plan, official plan, secondary plan, zoning by-law, public health reports).
- Consider which planning tools may be appropriate, and whether current policy and regulatory frameworks stifle initiative and innovation.
- Use effective communications, including skills in listening, conveying information and knowledge, and developing internal and external relations to facilitate a connection between rural and urban communities and to foster an integrated understanding of the issues.

Similarly, the following roles are suggested by the US Centers for Disease Control and Prevention and the American Planning Association ([CDC Land Use Planning and Urban/Peri-Urban Agriculture](#)).

Community planners can

- Get involved with food policy councils
- Seek growth management strategies to preserve farm and ranch land
- Recommend commercial districts where restaurants and grocery stores are located
- Suggest policies to encourage community gardens and other ways of growing food in communities

Economic development planners can

- Support the revitalization of main streets with traditional mom-and-pop grocery stores
- Develop strategies to attract food processing plants to industrial zones

Transportation planners can

- Create transit routes connecting low-income neighborhoods with supermarkets

Environmental planners can

- Provide guidance to farmers to avoid or reduce the effects of run-off on lakes and rivers

6. Promoting the availability of healthy food outlets or healthy food environments in proximity to residents

There is good evidence to suggest that the geographical distribution of low-socioeconomic status is an important determinant of the availability of food sources in the US. In particular, areas with low socioeconomic status have limited access to fresh food sources.

There are some studies with moderate evidence suggesting that the lack of availability of fresh food sources in low-income neighbourhoods may be not applicable to the Canadian context. The applicability of US evidence to the Canadian context needs to be further explored.

The role of regional government ranges from conducting GIS assessments of access to healthy food outlets by community residents, conducting health surveillance (e.g., Body Mass Index vs. access to healthy food outlets by community residents), and providing incentives to farmers to set up farmers' markets where food retailers are sparse.

Summary of evidence:

Distance to sources of healthy food

- A systematic review of the United States literature on food access and food deserts research found that low income neighbourhoods tended to have fewer supermarkets than the highest income neighbourhoods. However, poverty was an important economic barrier in accessing food in low-income areas (smaller stores with low quality food and higher access). Consumers who shopped at non-chain stores in urban and poorer areas paid more per unit of measurement than they would have at chain stores in suburban and non-poor areas. Supermarkets will stay invested in a neighbourhood as long as the residents have purchasing power. African-American populations tended to live more in the poorest neighbourhoods [strong evidence] (Walker, Keane, and Burke, 2010).
- A systematic review of literature published between 1963 and 2007, identified that the evidence was strong to suggest that low income communities in United States lived at a greater distance to grocery stores and closer to other sources of unhealthy foods. This is particularly important because American low income population is also less likely to own a car [Strong evidence]. However, the evidence from other countries, including Canada, was mixed [Strong evidence- conflicting results] (Beaulac, Kristjansson, Cummins, 2009).
- A systematic review of the international literature found that availability of healthy versus unhealthy food was inconsistently related to obesity, while neighbourhood features that discourage physical activity were consistently associated with increased

body mass index. The trends were more important in the US context [strong evidence] (Black & Macinko, 2008).

- A cross-sectional study among 13,102 adult residents of New York City found that the density of healthy food outlets (supermarkets, fruit and vegetable markets, and natural food stores) was associated with a lower mean of body mass index. However, increasing density of food outlets categorized as unhealthy was not significantly associated with BMI or obesity [moderate evidence] (Rundle et al., 2009).
- A geographic information system study in Melbourne, Australia, identified that geographical accessibility of healthy food stores was mostly better amongst those living in more advantaged neighbourhoods. However, by contrast, evidence from the United States showed that the availability to supermarkets did not differ between advantaged and disadvantaged neighbourhoods. Food prices favoured those living in disadvantaged areas [moderate evidence] (Ball, Timperio and Crawford, 2009). Motor-vehicle ownership was not included in the analysis.
- People who lived closest to farmers' markets in a rural region of New York State were their primary consumers [moderate evidence] (Schmit and Gomez, 2011).

Explore further implications of distance/proximity to healthy foods as a barrier in the Canadian context

- The systematic review of international literature conducted by Julie Beaulac, Elizabeth Kristjansson, and Steven Cummins (2009) identified that "One of 3 Canadian studies showed half as many grocery stores and 3 times more convenience stores in a low-income area. One study found mixed results; distance to stores was shortest for middle-income areas. In another, low-income areas were better served by stores than other areas." [strong evidence- conflicting results]
- A descriptive study using GIS analysis and good household level of information in Middlesex County, ON, found that residences in neighbourhoods with high unemployment, low education levels and low socioeconomic status had better geographical access to all food sources. A majority of these residences were within walking distance of the nearest grocery store. Therefore, low income residents, who were less likely to own a car, were also more likely to live in a built up area with more food stores. The authors discuss that this may also entail adverse factors such as more availability of unhealthy food sources, such as convenience stores. The area of study was predominately rural [moderate evidence] (Sadler, Gilliland, Jason, and Arku, 2011).
- A cross-sectional study among low income families in Toronto showed that food security did not appear to be mitigated by proximity to food retail or community food programmes. High rates of food insecurity were observed in neighbourhoods with good geographic food access. Instead, food insecurity was associated with household factors including income and income source [moderate evidence] (Kirkpatrick and Tarasuk, 2010).

- In a study examining the food retail environment around 188 schools across Canada, there was no association between the neighbourhood socioeconomic status, food insecurity, and the proximity of food sources. Instead, food insecurity was associated with household factors including income and income source [moderate evidence] (Seliske et al., 2009).
- A GIS study compared three previously used methodologies to identify food deserts in Edmonton, AB, Montreal, QC, and Portland, OR. The study identified that there was a great deal of variability in the final areas identified in spite of some minor consistency. The study also highlighted that the most commonly used concepts may not be applicable to some suburban areas where low income communities are more disperse [moderate evidence] (Leete et al., 2011).

Example 11: examples of regional government actions to promote the availability of healthy food outlets in underserved areas

Level of food system: access

Waterloo Region Neighbourhood Markets Pilot Project

Waterloo Region Public Health committed to a lead role during a [neighbourhood markets pilot project](#). Public Health facilitated a community planning process to explore the markets' continuation in 2009. The neighbourhood market pilot project began with two sites in 2007 and was expanded to five sites in 2008. A [2009 evaluation report](#) identified that the markets were very successful in increasing fruit and vegetable consumption. Ninety per cent of the regular customers indicated that they ate more vegetables and 53 per cent reported eating more fruit as a result of the markets. Results from pre and post household interviews indicate that the markets were successful in enabling some of those on low and fixed incomes to improve their fruit and vegetable consumption.

City of Vancouver Expanded Food Options on City Streets

In 2008 City Council directed staff to work with the Vancouver Food Policy Council to increase the variety of food sold through street vendors. The program was directed to include a focus on foods that are nutritious and represent cultural diversity of Vancouver, expand the geographical area in which street food vendors can operate, and increase access to affordable, nutritious food in low-income communities. The program was expanded in 2010 to include an additional 17 street food vending locations to the existing 60. The program has resulted in creating healthier and more diverse street food vending locations and increased public awareness of the program ([see report here](#)).

Hamilton Farmers' Market Food Voucher Pilot

The City of Hamilton will be piloting a program that provides a monthly \$20 gift certificate for single, unattached individuals receiving Ontario Works. These are individuals who have the most difficulty affording nutritious food after rent is paid. Research suggests that programs that provide those on social assistance with cash or gift cards for groceries are effective in improving the nutritional value of meals. Programs that provide gift certificates for farmers' markets are especially effective. Research has also shown that receiving vouchers or coupons for farmers' markets was directly related to increased vegetable and fruit consumption for low income participants and that people who used produce coupons for a farmers' market consumed more vegetables and fruit than did people who used produce coupons at the supermarket (see [Hamilton Farmer's Market Food Voucher program](#)).

Portland Food Cartology Program

The Urban Vitality Group (UVG) partnered with the City of Portland, Bureau of Planning to study the effects that food carts have on street vitality and neighborhood livability. The findings indicate that food carts have significant community benefits to neighborhood livability by fostering social interactions, walkability, and by providing interim uses for vacant parcels. Additionally, carts provide good employment opportunities for immigrants and low-income individuals to begin their own businesses, although there are

significant barriers to continued stability and success (pg 4) ([Portland Food Cartology program](#)).

Lessons from the Toronto Street Food Pilot

Toronto Public Health was directed by the City of Toronto Executive Committee to implement the Street Food Pilot to promote healthy food choices in street food supply. The [Toronto Street Food Pilot- 2011 Council Report](#) quotes an evaluation that concludes: "...that Toronto A La Cart pilot project has not met its objectives, and no improvement can be expected in the final year of the pilot. ...that modifications to the existing regulatory framework for hot dog carts and mobile food trucks should be investigated if the City wishes to pursue its objective of introducing healthier, more diverse street food".

In addition, an independent review of the program identified that conflicting objectives without the proper support from the local government was part of the problem: "The second of the approved Street Food Pilot Projects was designed to deliver a range of social and community benefits including improved access to healthier food choices in priority neighbourhoods, development of the A La Cart brand for use in tourism promotion, and job creation through micro-business incubation. With capital funding for cart purchases as originally requested, program funding and/or business mentoring, achieving these goals might have been possible. But it is unrealistic to expect independent, entrepreneurial business owners to deliver social outcomes without public financial assistance." (p.10)

Additional categories emerging from the panel of experts

7. Supporting data collection/management and the analysis of evidence to inform action in food systems development

The external panel of experts who reviewed this report highlighted the importance of regional/municipal government in supporting data collection and the analysis of evidence to inform action in food systems development. In effect, this document could not have been written without commitment to the collection of data and analysis of evidence to inform action on behalf of organizations/government, community groups, etc. by regional/municipal governments. A survey to government and some community stakeholders in food system programming across Canada identified that community groups and non-governmental organizations were among the most common sources of information for municipalities. However, municipal expertise and provincial government were the second source (FCM, 2011)

Example 12: regional and municipal government leadership/involvement in data collection/management and the analysis of evidence to information action in food systems development

Level of food system: production, processing, distribution, access, consumption, and waste management

Waterloo Food System Plan 2007: Public Health conducted several research studies to document the state of Waterloo Region's food system. The report makes several recommendations based on the research and encourages Public Health staff to continue to provide administrative and research support to the Waterloo Region Food System Roundtable (Miedema and Pigott, 2007).

Vancouver coastal Health Community Food Action Initiative Evaluation Report 2011: Evaluation focused on assessing Vancouver Coastal Health Community Food Action Initiative's ability to meet its four objectives: access to local, healthy food; community capacity to address food security; develop and use of policy that supports CFS; awareness of food security and increased food knowledge and skills. The report provides recommendations for future directions with the initiative including continued monitoring and evaluation in order to remain on the cutting edge of food security work (SPARC BC, 2011).

The Canadian Federation of Canadian Municipalities – Sustainable Food Systems Survey: The goal of the research was to investigate if sustainable food systems were important to municipalities and to determine what municipalities were doing about sustainable food systems. Results highlighted that the majority of urban and rural municipalities are interested in sustainable food systems, that sustainable food systems are of medium to high priority, and that the majority of respondents had integrated sustainable food systems into their current or future plans (FCM, 2011).

The Golden Horseshoe Agriculture and Agri-Food Strategy and Action Plan conducted research re: agri-food in the area and the challenges. Results of the evaluation allowed for the determination of the economic value of agricultural products and processed goods generate in the Golden Horseshoe area, and identification that the agriculture and agri-food cluster represents one of the major economies of the Golden Horseshoe area. Results of the research could lead to the protection of farmland so that the capacity to produce food can be maintained, if not expanded (Walton, 2012a, 2012b).

The West Kooteney Food System Alliance report acknowledges that data collection is needed to learn more about a community's food system. Data collection is recommended for several reasons: developing baseline data for assessing trends and patterns, identifying key issues and priorities/action plans, and identifying opportunities to expand local markets for locally produced food (Steinman, 2011).

Conclusion

This discussion document is intended to promote interdepartmental dialogue and action at Halton Region to positively impact the sustainability of the local food system and enhance community food security. The paper builds on a critical assessment of the international literature to identify key messages supported by evidence. However, in order to further advance in our understanding of what the Region can do to promote healthy and sustainable food systems, there is a need to contextualize the findings and build on the numerous programs and initiatives already led by different Regional departments. We are confident that the messages and examples identified in this document will facilitate next steps such as an inventory of existing corporate community food security initiatives across departments, and the identification of opportunities for further action.

The six overarching themes identified in the literature are summarized below. All of them have been accompanied by the details of the findings supporting the recommendation and examples from other jurisdictions.

- 1. Working Together: the need for coordination and collaboration**
- 2. Supporting programs and initiatives based on multiple benefits, including sustainability and food security**
- 3. Addressing locally the root determinants of food insecurity, while supporting short-term access to healthy, local, sustainable food by low-income and priority populations**
- 4. Supporting local food production, processing and distribution to promote the sustainable development of food systems**
- 5. Planning and developing municipal policy to support local agriculture**
- 6. Promoting the availability of healthy food outlets in proximity to residents**

In addition, our panel of experts highlighted a seventh theme:

- 7. Supporting data collection/management and the analysis of evidence to inform action in food systems development**

The invitation to increase collaborative work across departments is supported by the first overarching message from the literature: the need for coordination. In effect, the literature clearly shows that when individual initiatives are not part of a coordinated effort, regardless of their individual effectiveness their results fall short of improving the sustainability of food systems. Also, as suggested by the literature, central to this coordination effort is the need for multi-level assessment criteria for a variety of opportunities.

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Appendix 1: Detailed description of the methodology

1. Background

The 2009 Halton Health Department DMT Priorities document identified the development of an implementation plan for a Halton Community Food Security Strategy as one of its Program Specific Priorities (Area: Determinants of Health). “A Halton Community Food Security Strategy would be an action plan to outline the Region’s role in supporting a community food system that improves health, promotes economic development and social justice, protects the environment, and reflects and celebrates cultural diversity.”¹ In agreement between the Health Department Chronic Disease Prevention Team and Planning & Public Works, the following steps have been suggested to develop a strategy and identify recommended actions: 1) Identify and confirm best practices for Regional Government contribution to Community Food Security; 2) Establish a cross departmental project team to assist in developing a Corporate Community Food Security Action plan; 3) Complete Inventory of Existing Corporate Community Food Security initiatives; 4) Complete gaps analysis; 5) Develop Community Food Security Action Plan; 6) Seek endorsement of Action Plan by Regional Council; 7) Implement relevant actions at Departmental Level; and 8) Monitor implementation of Action Plan and update Regional Council as necessary. This document outlines some preliminary ideas for Step 1 (Identification of Best Practices).

2. Objective (Step 1)

To identify and confirm best practices for regional government contribution to Community Food Security. The goal of this step is to have an understanding of what regional governments can do in terms of their own practices, protocols and policies to positively impact the local food system and enhance community food security.

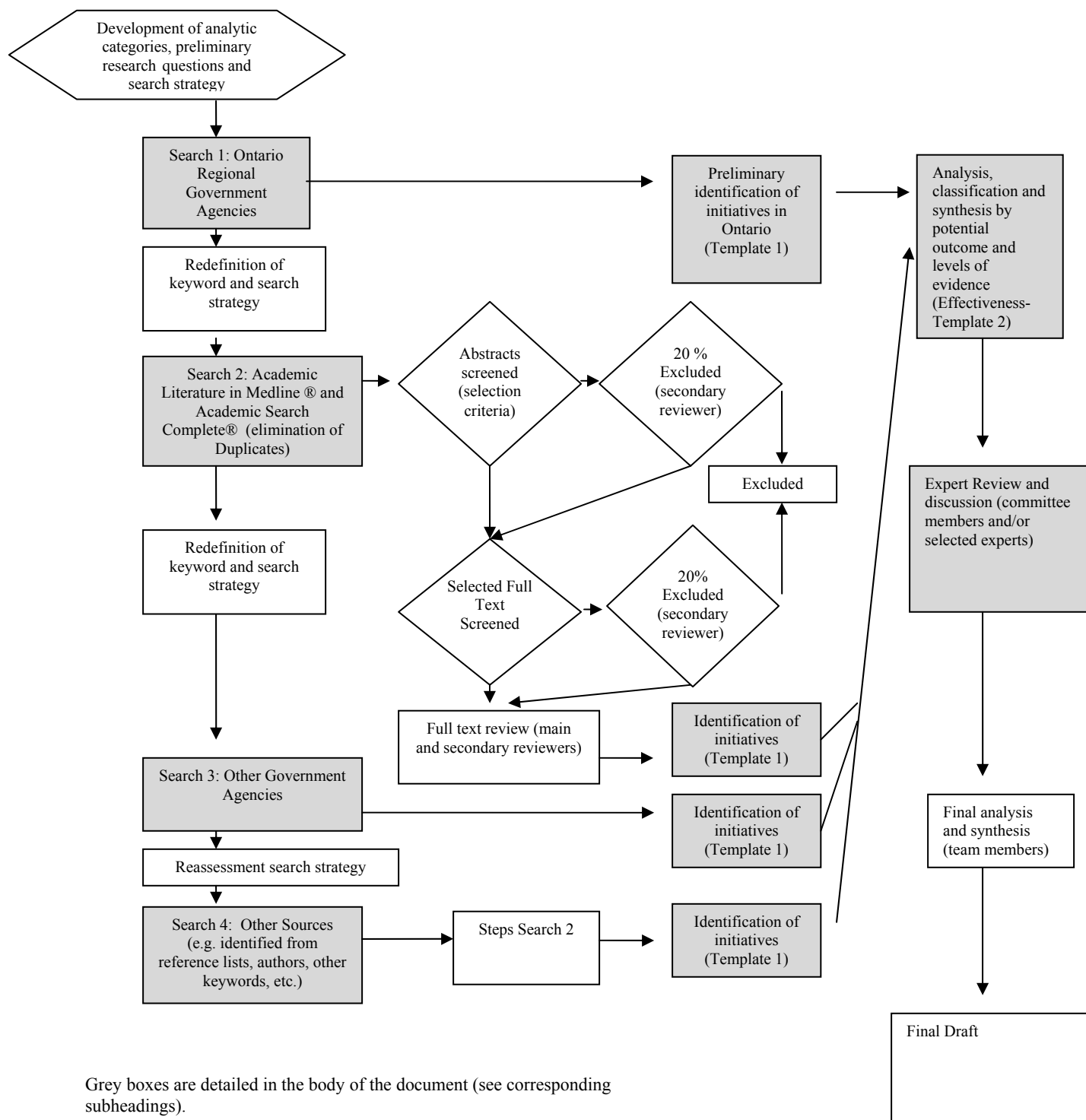
3. Project Description

Figure 1 describes a suggested systematic review flowchart to identify best practices for Regional Government Contribution to Community Food Security. First, four initial searches were conducted by Chronic Disease Prevention (CDP) team members. Searches were accompanied by team planning interactions. Second, preliminary analysis and synthesis according to levels of evidence was conducted by CDP team members. Subsequent stages will include a review and discussion by experts and/or key stakeholders according to selected criteria.²

¹ See J., Gates L., and Ross H. (July 14, 2009). A Sustainable Community Food System Model. Project Recommendation. Halton Region Health Department.

² The cross departmental project team (Step 2) would be the most likely panel of experts.

Figure 1: Project flowchart



3.1. Search Description (Identification practices by systematic literature review):

The search phase started with the development of analytic categories/concepts and the identification of preliminary research questions (current phase- CDP team members). The Project Recommendation document offered some preliminary concepts and a conceptual model for discussion.³ For instance, it highlighted the extent to which food systems include food production, food processing, food distribution; food markets and food consumption. These categories were used for the initial keyword selection. Details for the search strategy are described below. The strategy was reviewed after each search step.

3.1.1. Web scan of regional initiatives in Ontario: The objective was to identify provincial: 1) practices and initiatives; 2) policies and/or legislation related to food security and food systems; 3) evaluation reports when available, and 4) keywords for searches 1-3. Two searches were conducted in June, 2011 with the following strategy:

- Search A: Ontario Health Units
 - o *Database:* a customized search engine developed by the Ontario Public Health Libraries Association was used (available at: <http://www.ophla.ca/customsearch.htm>). This engine covers the following health units in Ontario: Leeds/Grenville/Lanark, Hamilton, Toronto, Durham, Thunder Bay, Elgin St. Thomas, Peterborough, Algoma, Halton, Sudbury, Niagara, Grey Bruce, Ottawa, Chatam Kent, Huron County, Waterloo, Wellington/Dufferin/Guelph, Simcoe/Muskoka, York, Kingston/Frontenac/Algoma, Hastings, Peel, Porcupine, Windsor/Essex/Kent, Eastern Ontario, Renfrew County, Haliburton/Kawartha, Haldimand/Norfolk, Hastings and Prince Edward County, North Bay/Parry Sound and Perth. Documents or websites referenced in the literature and otherwise not captured by this strategy were also included.
 - o *Keyword (s):* food security (376 hits found)
- Search B: Ontario Municipalities
 - o *Database:* a customized search engine developed by Heather Kemp, Information Specialist, Communication Division, Regional Municipality of Halton (available at: <http://www.google.com/cse/home?cx=000209475153157123321:hvyqdwuuzc4>). The selection criteria for the municipalities included regional government or large municipalities with some characteristics that could be comparable to Halton Region (conducted in agreement with the project team). This engine covers the following jurisdictions in Ontario: Sudbury, Grey Bruce, County of Grey, Bruce County, Haliburton Kawartha Pine Ridge, Haliburton County, City of Kawartha, Simcoe Muskoka, County of Simcoe, Muskoka District, Niagara Region, Waterloo Region, York Region, Peel Region, Halton Region, Toronto, City of Hamilton, City of Peterborough, City of Ottawa, Region of Durham, St. Thomas, County of Elgin, City of North Bay, Parry Sound, City of Kingston, County of Frontenac, County of Lennox & Addington, Region of Durham.

³ See J., Gates L., and Ross H. (July 14, 2009). A Sustainable Community Food System Model. Project Recommendation. Halton Region Health Department.

- *Keyword (s)*: Search B1 - allintitle: "food security" (5 hits - June 14 2011); Search B2 - allintitle: "food security" OR "food" OR "food system" OR "food strategy" (42 hits - June 14 2011); Search B2 - allintitle: "food security" OR "food" OR "food system" OR "food strategy" OR "urban agriculture" OR "farmer" OR "local food" OR "community food security" (48 hits - June 27 2011); Search B4 – allintitle: farm* (30 hits - June 27 2011); Search B5 – allintitle: farmer (2 hits - June 27 2011); Search B6 – allintitle: local food (3 hits - June 27 2011); Search B7 – allintitle: community food security (8 hits - June 27 2011); Search B8 - allintitle: "urban agriculture" (1 hit - June 27 2011)

For both searches, the following selection criteria were applied:

- *Inclusion criteria for documents*: 1) relevant food security or food system initiative; 2) a practice or initiative in which the government is the main responsible or a partner; 3) a policy, position statement, briefing document or legislation; 4) published in the last ten years (2001 to present).
- *Exclusion criteria*: 1) activities with no clear regional government role.

Halton examples were used as a tool to control the quality of the scan. However, they were intentionally excluded from the report as they will be the subject of an inventory in subsequent stages as described in the background of the proposal.

3.1.2. Identification of evidence – academic literature: The objective was to identify initiatives with local or regional government involvement and, particularly, the evidence to support them. Three main searches were conducted as described below.

- *Databases*: Academic Search Premier®, Medline®, CINAHL® with Full Text (CINAHL® with Full Text is the world's most comprehensive source of full text for nursing & allied health journals, providing full text for more than 610 indexed journals); and Nursing & Allied Health Collection®, HealthEvidence.ca® and Cochrane® were also reviewed, but no additional documents were identified. In addition, relevant documents that were referenced by the selected literature and otherwise not included were added to the list.

- *Keywords*:

- Search 1

			And	
Or	food	sustainability	public health	best practice
	hunger	accessibility	regional government	policy
	obesity	initiative	Canada	strategy
	nutrition	security	community based	evaluation

	agriculture	system	public welfare	Interventions
		consumption	local government	framework
		supply relief	Ontario	
○ Search 2				
Or	And			
	food	Economic development	public health	best practice
	hunger	Long-term care	regional government	policy
	obesity	Social services	Canada	strategy
	nutrition	planning	community based	evaluation
	agriculture	Social welfare	public welfare	Interventions
	Food safety	Regional health planning	local government	framework
	Food*	Social planning	Ontario	government policy
		Community health planning		decision making
		Community Health Planning organization & administration		
		public assistance organization & administration		
		health programs		
		community based social services		

- Search 3: Search 3.1: “Local food” OR “Food waste” OR “food disposal” OR “food distribution” OR “food production” OR “food processing” OR “food consumption” OR “food access”; Search 3.2: Sustainability OR accessibility OR initiative OR security OR system OR consumption OR supply OR relief OR “regional health planning” OR “economic development” OR “community development”; Search 3.3: public health OR “regional governance” OR Canada OR “community based” OR “public welfare” OR “local government” OR Ontario; Search 3.4: best practice OR policy OR strategy OR evaluation OR interventions OR framework OR “decision making”

- *Selection Criteria:*

- Inclusion: 1) a relevant food security or food system initiative; 2) an initiative already implemented and evaluated (qualitative or quantitative/ process or results);⁴ and 3) sources published in the last ten years (2001 to present).
- Exclusion: 1) no evaluated initiatives; 2) sources with little information on interventions

The team’s Communication Specialist conducted the search and screening of abstracts guided by eligibility criteria for potentially relevant articles. One of the CDP team members (main reviewer) scanned all abstracts from the initial search to assess for inter-rater agreement and complete the selection. As there was an overall inter-rater agreement (approx. more than 90%), the primary reviewer selected articles from all subsequent searches. A secondary selection was conducted by 3 team members for the first search (inter-rater agreement approximately more than 80%) and by the main reviewer for the subsequent searches. A final review of the selection by the main and secondary reviewers was conducted in the development of the draft.

3.2. Data collection by source – Template 1: To collect selected cases from searches 1 to 3. It included the following categories (* denotes obligatory):

- Type of Article (including type of research if this is the case- see template 2)*
- Type of Intervention*
- Level of intervention (Municipal, Regional, Provincial, Other)* - include the name of the jurisdiction
- Target population/community*
- Field/Discipline (e.g. public health, economy, social services, etc)
- Description of key stakeholders (government agencies, NGO’s, Other community organizations, business, etc)*

⁴ Potential limitation: there is a selection bias towards older practices (promising recent interventions may be not evaluated yet). Searches 1 and 3 (current practices) may help to partially overcome this limitation.

- Level of food system: Production, processing, access (distribution), consumption, disposal (adapted from the Ontario Ministry of Municipal Affairs and Housing presentation at the OPPI Conference)
- Type of evaluation if available (reviews – literature review, scoping review or systematic review if critical appraisal was conducted.), quantitative⁵, qualitative (specify) or participatory)
- Year of data collection (articles are data for literature reviews)
- Critical appraisal: provide brief comments based on guidelines available at [Critical Appraisal Resources](#) (in particular from [CASP](#))
- Methodological comments or limitations
- Key messages-practices (positive and negative outcomes; for multi-method studies and literature reviews, please indicate the type of supporting evidence for each statement- strength of the association- if relevant)*
- Relevant background information (Contextual information/notes about important differences that may influence the implementation of the strategy in our region)
- Resources used
- Potential keywords for future search

Critical appraisal: several tools for critical appraisal of the literature were explored. The critical appraisal of the literature was based on the checklists developed by the Critical Appraisal Skill Programme (available at <http://www.casp-uk.net/>). The full text review was conducted by the two main authors. The summaries were part of an ongoing consultation and comparison of notes to standardize criteria.

3.3. Data summary – Template 2: to analyse and summarize information by emerging category and level of evidence. It included the following categories:

- Type of Intervention
- Level of intervention (Municipal, Regional, Provincial, Other)
- Target population/community
- Key messages (best practices)
- Supporting evidence: type of evaluation available (adapted from VNAA, 2010):
 - Level 1- Systematic reviews and repeated studies
 - Level 2a- Experimental (Single or Quasi experimental study) and
 - Level 2b- non-experimental (Exploratory or qualitative study)
 - Level 3- Recommendations of respected, experienced authorities
 - Level 4- No evaluation methodology (e.g. opinion articles)
- Description of key stakeholders (government agencies, NGO's, other community organizations, business, etc.)
- Resources

⁵ It includes: experimental design, quasi-experimental design, analytic observational study (cohort studies, case control studies, repeated measures/interrupted time series) or descriptive observational study (prevalence, environmental scan, descriptive explanation, case study).

- Relevant background information

A synthesis according to emerging categories levels of evidence was carried out. Consistent Level 1 and 2a evidence was classified as good evidence. Level 2b was classified as moderate evidence. Level 3 was classified as weak evidence. Level 4 (opinion) articles were not included in the final synthesis. Their theoretical perspective was quoted in the text when relevant. In all cases, inconsistent messages were made explicit.

3.4. Expert review – contextual analysis: A panel of experts reviewed a first draft of the document. A discussion with stakeholders was intended to contextualize the existing evidence and potential best practices as complex social processes. “Best Practices” approaches have been criticized in public health disciplines because of their potential to overlook important contextual influences and social behaviour processes.⁶ Subject matter experts with experience in both food systems as well as working within municipal/regional/local governments were identified to comment on our findings. A panel of 7 experts from experiences in Vancouver, Toronto and Waterloo Region joined 2 teleconference panels and provided subsequent feedback by e-mail. The subject matter experts were asked to provide feedback on: 1) consistency of the emerging themes and evidence with their experience; 2) suggestions for modification; 3) the potential of the emerging themes to have a positive outcome on community food security; 4) gaps that should be addressed; 5) additional examples to be included, and 6) suggestions for the overall process. The overall assessment was very positive and supportive of the findings. Additional references and suggestions were incorporated where possible.

⁶ See for instance, Green, L.W. (2000). From Research to “Best Practices” in Other Settings and Populations. *American Journal of Health Behavior*, 25 (3): 165-178.

Appendix 2: Summary of selected articles and critical appraisal notes

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal- limitations
(Aboelata and Navarro, 2010)	Access	State-wide healthy eating and physical activity initiative: Review of evaluation data from 3 California- Wide healthy eating and physical activity initiatives (Aboelata and Navarro, 2010)	Engaging with, or partnering with community residents can improve communities, ensure intersectoral collaboration takes place. (Aboelata and Navarro, 2010)	“Land use and transportation patterns have been shown to affect self-rated health and health conditions such as cardiovascular disease, respiratory illness, injuries and mental	“Land use, transportation and safety emerged as critical levers to improve eating and activity environments in the HEAC, CCROPP and HEAL-CHI initiatives” pg 2146 [2a](Aboelata and Navarro, 2010)	Valid study. Interrater reliability was not tested. (Aboelata and Navarro, 2010)

⁷ Production, processing, access (distribution), consumption, disposal (adapted from the Ontario Ministry of Municipal Affairs and Housing presentation at the OPPI Conference)

⁸ Including:

- Level of intervention (Municipal, Regional, Provincial, Other)
- Level of food system: Production, processing, access (distribution), consumption, disposal (adapted from the Ontario Ministry of Municipal Affairs and Housing presentation at the OPPI Conference)
- Target population/community
- Description of key stakeholders (government agencies, NGO's, other community organizations, business, etc.)
- Resources

⁹ Type of evidence (adapted from http://www.chronicconditions.org/clearinghouse/g/?h=HTML/Best_practice.html):

- Level 1- Systematic reviews and repeated studies.
- Level 2a- Experimental (Single or Quasi experimental study) and
- Level 2b- non-experimental (Exploratory or qualitative study).
- Level 3- Recommendations of respected, experienced authorities.
- Level 4- No evaluation methodology (e.g. opinion articles)

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				health” pg 2146. (Aboelata and Navarro, 2010)		
(APA, 2011)	All	Support of planning professionals and planning departments to food policy councils (examples from 4 cases).	<p>Focuses on the role of planners. It contains on page 7 a table of planner function by food policy council objective.</p> <p>Regarding the role by planning departments, it highlights: access to information and resources, validation and endorsement of projects, help in navigating the political process; expanding the</p>	<p>It draws upon the experience of four FPCs—the Greater Kansas City Food Policy Coalition, the Cleveland-Cuyahoga County Food Policy Coalition, the Santa Fe Food Policy Council, and the Regional Food Policy Council of the Puget Sound Regional Council—and highlights the ways in which they</p>	<p>FPCs and planners share similar goals, as well as the same systems-thinking approach for reaching them. [2b?3?]</p> <p>FPCs offer planners an ideal entry into food systems planning work. [2b?3?]</p> <p>FPCs seek out planners for general planning skills and perspective, not for expertise in food systems. [2b?3?]</p>	<p>It mentions that was informed by existing literature from 4 case studies. Interviews with stakeholders from the case studies. Other aspects of the methodology are not described.</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal- limitations
			network of partners, sharing trained staff; capacity to further develop initiatives.	work with planners and planning departments.		
(Ashe et al., 2007)	Access/consumption	Examined five focus areas for local policy change to improve the health of a community; school environment, built environ, community facilities, point of sale environ, earmarking taxes and fees (Ashe et al., 2007)	Develop policy to affect the nutrition environment (Ashe et al., 2007)	Denormalizing unhealthy behaviours more effective than pursuing education-based approached. But denormalization strategies can be difficult in low-income communities where unhealthy food choices are widely available (Ashe et al., 2007).	<p>“Although the connection between land use planning decisions and the nutritional environment is profound, relatively little attention has been paid to it” pg 141. [4] (Ashe et al., 2007)</p> <p>“Communities can use local laws or policies as a valuable tool in changing a community’s environment so that healthy eating and physical activity become the norm. (Ashe et al., 2007)</p>	Methodology and data sources were not mentioned in the article. (Ashe et al., 2007)

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(Ball, Timperio and Crawford, 2009)	Production	This study investigated whether the availability and accessibility of supermarkets and fruit and vegetable stores, and the availability, variety and price of foods within these stores, varied across areas of different levels of socioeconomic disadvantage in Melbourne, Australia.	Not directly discussed- Potential for land use planning		<p>Geographical accessibility of healthy food stores was mostly better amongst those living in more advantaged neighbourhoods [2b]</p> <p>Availability to supermarkets did not differ [2b].</p> <p>However food prices favoured those living in disadvantaged areas [2b].</p>	<p>Data on food store locations, and food variety and price within stores were obtained through objective audits of 45 neighbourhoods of varying socioeconomic disadvantage. Road network distances were used.</p> <p>Associations of food accessibility and neighbourhood socioeconomic disadvantage vary according to the indicator of accessibility examined.</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
						Not all sources of food were considered.
<u>(Barker, 2011)</u>	All	General local food policy - What allows new food systems to evolve: municipal and institutional urban space is available to cultivation and food processing; official plans and zoning bylaws recognize agriculture as an official urban land use, institutions such as hospitals, universities and government offices procure more food from regional supply chains while public health units strengthen food security in their communities. <u>(Barker, 2011)</u>	: in the author's opinion local government has a role to play in food sustainability <u>(Barker, 2011)</u>	2020 Vision Sustain Ontario <u>(Barker, 2011)</u>	: in the author's opinion local government has a role to play in food sustainability [4] <u>(Barker, 2011)</u>	Opinion role

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(Beaulac, Kristjansson, Cummins, 2009)	Access	Review the evidence for the existence of food deserts in socioeconomically disadvantaged areas	In the US, the authors 'suggest that local, federal, and state governments consider environmental and social interventions to decrease price disparities between healthy and unhealthy foods, facilitate the entry of supermarkets and other food stores into low-income areas, encourage the development of local grocery cooperatives, encourage the advertisement of healthy foods, and foster the development of	The studies reviewed were a mix of geographic and market-basket approaches, but the methodological quality of studies and completeness of reported findings were mixed.	There was "clear evidence for disparities in food access in the United States by income and race." This is particularly important because American low income population is also less likely to own a car [Strong evidence] "Findings from other high-income countries were sparse and equivocal." [Strong evidence]	The authors conducted a systematic review of the literature with a qualitative assessment of the quality of studies. The search covered from 1966 to 2007.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			more community food projects.' However, more evidence is needed for other countries.			
(Benjamin, 2011)	Production	Agricultural land protection: British Columbia has protected their farms through their Agricultural Land Reserve (4.7 million hectares); Ontario has also enacted policy through the country's most urbanized area known as Greenbelt (Benjamin, 2011) Focus on provincial and federal role.	In both cases, Provincial Governments have taken the lead on policies to protect agricultural land. A similar initiative at the Federal level is recommended.		Both examples are good models for farmland protection (which combine legislation with investment and education). [4] (Benjamin, 2011) An important loophole in both policies are the applications for exemptions, whose criteria are “too discretionary” [4] (Benjamin, 2011) A progressive farmland protection initiative should be promoted at a federal level [4] (Benjamin, 2011)	Opinion article
(Black & Macinko,	Access	Thirty-seven	Not directly discussed-	Studies from US, UK,	The influence of neighbourhood level	Systematic review of the

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
2008)		<p>studies met all inclusion criteria and revealed that the influence of neighbourhood level</p> <p>factors appears mixed.</p>	Potential for land use planning	Canada and Australia. The US trends were more evident.	<p>factors appears mixed.</p> <p>Availability of healthy versus unhealthy food was inconsistently related to obesity, while neighbourhood features that discourage physical activity were consistently associated with increased body mass index [1] .</p>	literature
(Blake, Mellor, and Crane. 2010).	Access, production	<p>Marketing local food</p> <p>Marketing and consumption strategies of local food</p>	The role of government is not discussed.	This research explores the ways that retailers seek to sell local food, ways that this term is understood by consumers, and ways that consumers negotiate these differences in West	<p>Local is a relative concept produced by both consumers and producers (e.g. it also involves understandings of convenience, health, and status). The term local should not be positioned as a social fact [2b](Blake, Mellor, and Crane. 2010)..</p>	Case study methodology: interviews with producers and white, middle-class consumers. Well documented arguments.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				<p>Yorkshire in the United Kingdom. There is a focus on racialized strategies.</p>	<p>There are social consequences implicated in the increasing popularity of local food, which might perpetuate existing inequalities surrounding health and food choice. It is not always easy to get food that conforms to the food activist's definition of local food that is farmed, processed, and purchased all within a distance of thirty or even one hundred miles [2b] (Blake, Mellor, and Crane. 2010)..</p> <p>These cases also show that it might be easier for large firms with strong supplier networks to access food farmed locally to</p>	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
					consumers than it is for small independent retailers [2b] (Blake, Mellor, and Crane. 2010).	
(Broadway and Broadway, 2011).	Production, access	Vancouver Food Policy and localization of food production (urban agriculture) (Broadway and Broadway, 2011).	<p>The Vancouver Food Policy Council is a partnership between local government and non-profit organizations. A food action plan and the creation of the food council were approved by the city council (Broadway and Broadway, 2011).</p> <p>The plan included the creation of a number of garden plots (#2500).</p> <p>Bylaws to</p>	It discusses the efforts and policies enforced by the Vancouver Food Policy Council to promote urban agriculture and local food production (Broadway and Broadway, 2011).	<p>Regional efforts have not affected the availability of food produced locally in supermarkets [4] – not well supported by evidence (Broadway and Broadway, 2011).</p> <p>Supermarkets tend to rely on few suppliers with a just-in-time system (continuous supply- no storage). This applies for organic and non-organic products [2b] well supported by evidence (Broadway and Broadway, 2011).</p>	<p>A survey in 28 supermarkets and grocery stores was conducted. The sample was purposive (not random). There is a comparison of two types of retailers (regular and specialized on organic/local production) (Broadway and Broadway, 2011).</p> <p>There are no pre and post tests to support the main</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			<p>allow hobby beekeeping and urban agriculture were passed(Broadway and Broadway, 2011)..</p> <p>Permit fees, permission to be on private lands and expedited applications were approved by council to encourage farmer's markets (Broadway and Broadway, 2011).</p> <p>A food charter was approved (Broadway and Broadway, 2011).</p> <p>A marketing campaign to</p>			<p>conclusion.</p> <p>The conclusions on the economic rationale of supermarkets offer valuable insights.</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			promote transformation of lawns into gardens and green roofs was also developed (Broadway and Broadway, 2011).			
(Caraher, 2007)	All	General local food policy - Results from a 2001/2002 review of London-based food projects showed that in order to tackle macro-level issues in food system. Projects tended to be isolated, focused on behavioural change, and not sustainable (Caraher, 2007)	Include local food projects into larger policy frameworks (Caraher, 2007) Successive governments have promoted local action to address food components of public health (Caraher, 2007)		in order to ensure sustainability and address structural problems, "Food projects which remain essentially community outreach projects for the transmission of health education messages are probably doomed to failure if they are not supported by, and in tandem with, public health policy infrastructures" (1[systematic review] and 2b [in-depth interviews and document review]); (Caraher, 2007)	A valid study, finding provided results that were helpful locally and internationally . Purely school-based interventions excluded; no focus on effectiveness (Caraher, 2007) .

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(Carvelo, L, 2001)	Access, Consumption	No methodology presented – an opinion paper	Working with the community re: land use planning	<p>“Statutory authority currently exists for local governments to implement measures in support of School Healthy Food Zones through planning and land use management tools, including the creation of areas around schools where land uses deemed to be incompatible are excluded.</p> <p>Land use approaches for promoting healthy food options have limitations</p>	<p>“Statutory authority currently exists for local governments to implement measures in support of School Healthy Food Zones through planning and land use management tools. There are limitations, and potential for undesirable effects, which could be mitigated through various Provincial options”.[Level 3}</p>	Level 3

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				<p>however, primarily:</p> <ul style="list-style-type: none"> • the focus must be on land use rather than food products or ingredients; • “minimum distance separation” authority is not specifically referenced in the legislation; • existing incompatible uses are protected by law and anticipated regulation may result in increased undesirable uses as those that would be 		

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				restricted seek to establish themselves first and obtain non-conforming protection”		
(Connelly, Markey and Roseland, 2011)	Access	<p>Food Box programs in Edmonton and Vancouver and New Market Local Food Hub in Vancouver (Connelly, Markey and Roseland, 2011)</p> <p>Level of intervention: municipal (Edmonton, Vancouver) (Connelly, Markey and Roseland, 2011)</p> <p>Target population/community: community at large, decision</p>	Being a part of the decision making process/community collaborator (Connelly, Markey and Roseland, 2011)	The paper focuses on efforts to bridge social economy and sustainability	<p>‘The potential for community transformation by integrating sustainability and the social economy’ is limited by ‘the context of competition with mainstream economic activities that are heavily subsidized and do not account for negative social, economic and environmental externalities.’ [2b? Details no provided] (Connelly, Markey and Roseland, 2011)</p> <p>Other messages:</p> <ul style="list-style-type: none"> - The recurring barrier to each proposed 	Results of research provide valuable information and a clear statement of findings is presented, however, details of the methodology used is not provided – see below. (Connelly, Markey and Roseland, 2011)

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		makers, (<u>Connelly, Markey and Roseland, 2011</u>)			<p>initiative was the lack of coordination across the local food value chain and the lack of physical and social infrastructure to support increased food security across the region” [2b] pg 316 (<u>Connelly, Markey and Roseland, 2011</u>)</p> <p>Edmonton’s Good food Program has good customer satisfaction and it “ has expanded to cater more towards niche foodie and middle-class markets with prices that reflect those demographics: [2b] pg 315 (<u>Connelly, Markey and Roseland, 2011</u>)</p>	
(Connelly, Markey and Roseland, 2011, Markey, and Roseland,	Production, processing, access	Good Food Box and a Community Food Hub initiates Sustainable community	Policy makers and practitioners must work to ensure that initiatives are	This article explores the potential for community transformation by bridging	In both cases, investments in physical infrastructure for local food systems are required to scale-up the impact and reach of	The case studies and subsequent analysis are based on a comprehensive

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
2011)		development (SCD) and social economy approaches to transforming local food systems (as exemplified by a Good Food Box and a Community Food Hub initiatives) (Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011)	provided with the appropriate operational and regulatory settings to realize their transformative influence (Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011). The criteria used by government partners to evaluate the support of initiatives should go beyond the business cases and include social and sustainability objectives (Connelly, Markey and Roseland,	these two approaches (Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011). Two Canadian cities (In Edmonton: Good Food Box ; in Vancouver: the creation of a local food hub to establish the infrastructure required for transforming the food system)	alternative food systems. These initiatives are competing with mainstream economic activities that are heavily subsidized and do not account for negative social, economic and environmental externalities [2b](Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011) Equal attention and investments in social infrastructure are also needed (critical engagement by citizens in discussion, reflection and action). [2b](Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011) Measures for success of local food initiatives should incorporate multiple social and sustainability criteria	literature review, semi-structured interviews with key local food stakeholders in Edmonton and Vancouver in 2010, and a review of local secondary sources. The arguments are well supported by the evidence.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			2011, Markey, and Roseland, 2011)		[2b] (Connelly, Markey and Roseland, 2011, Markey, and Roseland, 2011)	
(De Sousa , 2003)	Production, access	Soil assessment for urban agriculture	Potential role in land use planning and the assessment of soil quality.	The study aims to examine the issues, obstacles and processes involved in remediating potentially contaminated urban brownfield sites and converting them into green spaces, to identify the benefits that these green spaces can bring to the community and culture,	The redevelopment of brownfield sites constitutes a valuable opportunity for increasing green spaces in urban areas and, thus, bringing about benefits such as soil quality improvement, habitat creation, recreational opportunity enhancement, economic revitalization of neighborhoods, and so on [2b]. The redevelopment requires extensive public-sector	A review of 10 case studies and personal interviews with relevant stakeholders. Detailed presentation of evidence.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				and to understand the specific planning processes that it involves. A review of 10 cases in Toronto, ON	involvement (i.e. a concerted effort from planners to community representatives). [2b]	
(Desjardins, E., Lubczynski, J., & Xuereb, M. , 2011)	All	2 parts: 1) built a database about Waterloo Region food systems and analysis of the data to calculate indices e.g .food miles, redundant food trade 2) Focus groups held to determine priorities and commitments of stakeholder groups.	Local government (public health) led the analysis	“What characterizes food systems planning in Waterloo is the inclusion of both rural and urban land use policies, and close collaboration between the Planning and Public Health departments”. “Changing	The “...process of incorporating food-related policies into the Waterloo Regional Official Plan has emphasized the roles of collaboration and thorough research in order to build the requisite political will.” [2b] There is “merit of a synergistic partnership between Public Health, Planning, and food system stakeholders to build a rationale and	Level 2 b – description of a case study- the article summarizes a series of studies to support their food systems planning.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				<p>existing land use policies that support food systems is never simple. It requires knowledge of the existing regulatory structure and is fraught with tensions between commercial and public interests, which are often not clear-cut”.</p>	<p>process for change “[2b]</p> <p>“It is important to monitor the social, economic, agricultural, and developmental outcomes and challenges that result from implementing food policies in the Regional Official Plan. A key component to monitor is change to the food environment, for which precise indicators are required.” [2b]</p> <p>The changing social context in each locality may alter these types of process. There needs to be a coordinated Provincial Policy framework and enhanced collaboration across different regions [2b]</p>	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(Diamond, 2011)	Access and Distribution <u>Diamond</u>	Increasing access to local food and enhancing distribution of local foods through development of a warehouse. Article does not describe an intervention – it describes a community-based retail venture that has helped to promote local food distribution and access in the community.	No role of government mentioned	“The Co-op warehouse was initiated as a way to obtain better produce for the Wedge (Community Co-op) and, in so doing, give the co-op a competitive leg up on its competitors”.	“Co op Partners Warehouse has demonstrated its continued commitment to local growers not only by buying their products and distributing them through its sales network.... This is a good example of how small business ventures can reap rewards far beyond their immediate impact on company sales [4] (Diamond, 2011)	No formal study was conducted. The article describes a community-based retail business.
(Dowler, 2008).	Production, access, consumption	Low cost foods in supermarkets and local or organically produced foods for sustainability (Dowler, 2008).	Work on food and nutritional inequality has traditionally been located within public health, though policy usually focuses on	The article focuses on the synergies between sustainable consumption and environmental justice	Local and/or organically produced food is an important answer to sustainability concerns. However, it may be more expensive and/or inaccessible [3] (Dowler, 2008). The mainstream	Well-documented literature review. It does not have explicit details on the methodology or the

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			<p>individual agency (Dowler, 2008).</p> <p>Potential role in providing infrastructure and support to scale up local initiatives and policies to make supermarkets more attractive, fair and less dependant on cars (Dowler, 2008).</p>	<p>(Dowler, 2008)..</p> <p>The discussion focuses on the UK (Dowler, 2008).</p>	<p>supermarkets seem to remain the essential focus for UK sustainability Policy. Future needs to enable food shopping to be pleasurable, fair and obtained without driving (more important for sustainability than accessibility) [3] (Dowler, 2008).</p> <p>“Local” initiatives can demonstrate modest short-term gains, including skills and local empowerment, but few tackle structural determinants of inequalities. They often lack comprehensive, strategic support, despite serving as key policy instruments against food inequalities [3] (Dowler, 2008).</p>	<p>appraisal of the references.</p> <p>Most references are limited to the UK.</p> <p>There is no space in the paper to discuss food access and choice through other means: schools, workplaces, hospitals, campuses, etc (Dowler, 2008).</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(<u>Farley, 2011</u>)	Access, Consumption	Public policy and economic incentives to create a healthier food environment e.g. health buck for WIC customers to use at farmer's markets, restaurants posting calorie counts. (<u>Farley, 2011</u>)	Working with individuals, community agencies and policy makers to change the food environment to make healthier food choices more accessible (<u>Farley, 2011</u>).		New York City needs to use public policy and economic incentives to create a healthier food environment [4-opinion] (<u>Farley, 2011</u>)	
(FCM, 2011)	All	A survey (quantitative and qualitative) to determine the scope of interest and implementation of sustainable food systems in municipalities across Canada. There were 115 respondents to the	The survey highlighted that municipalities gather most of the information and resources on sustainable food systems through community groups and non-governmental organizations [2b]	The purpose of the survey was to identify: <input type="checkbox"/> Whether sustainable food systems are an important issue for municipalities ; <input type="checkbox"/> Whether councils are	Survey results demonstrate that there is interest in sustainable food systems in both rural and urban areas across Canada. The results highlighted a multitude of ways in which municipalities go about planning and implementing the various aspects of sustainable food systems. Furthermore,	A convenience sample of local government agencies Level 2b

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		survey who work in municipal government.		<p>interested in sustainable food systems;</p> <p>□ How sustainable food systems rank as a municipal priority;</p> <p>□ What municipalities are currently doing regarding the issue of sustainable food systems;</p> <p>□ Whether municipalities are looking for resources, funding and training; and</p> <p>□ Current sources of information on sustainable food systems for</p>	<p>municipalities stated their highest interest regarding sustainable food systems (in order of highest to lowest) was focused in establishing farmers' markets, community gardens, food mapping, and community supported agriculture, as well as incorporating sustainable food systems into planning.[Level 2b].</p> <p>Farmers markets and food initiatives incorporated into official community plans were among the most common initiatives to address food systems or related issues [level 2b]</p> <p>Community groups and non-governmental</p>	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				municipalities	organizations are among the most common sources of information for municipalities on food systems (80 and 72%). Municipal expertise and provincial government were the second source (41 and 45%) [Level 2b]	
(Frykholm, 2011).	Disposal	Donation of unsold produce and waster reduction in supermarkets. The authors promote a community meal kitchen in US (Frykholm, 2011).	Not clearly described. A law limits the liability from health problems due to donation food (Frykholm, 2011).	The article presents discussion regarding the management policies of the grocery store chain Safeway, trends in supermarket food management, and waste (Frykholm, 2011).	Yhe chain's official policy refuses to donate unsold produce. This approach is wasteful and irresponsible towards its social responsibilities and its ecological efficiency [4](Frykholm, 2011).	Opinion article
(Good, Martin,	All	Legislative and non-legislative	Focusing on influencing the	Study conducted in	All tools provide opportunities to	The methodology

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
Burns, and Groos, 2010).		plans, policies, processes and programs that could affect environments to support health eating: This project aimed to identify how local government planning tools could be used to influence physical and policy environments to support healthy eating behaviours in communities (Good, Martin, Burns, and Groos, 2010). Planning tools' refers to the legislative and	content of local governments' policies and plans is important. Activities at different levels of government are complementary (Good, Martin, Burns, and Groos, 2010, p5).	Queensland, Australia. There is a great variation among states in Australia (Good, Martin, Burns, and Groos, 2010, p5). 10 strategies identified in the literature were assessed (Good, Martin, Burns, and Groos, 2010, p6). ¹⁰	address at least 3 of the selected strategies [3] (Good, Martin, Burns, and Groos, 2010). There is a need for increased monitoring and surveillance of the <i>local</i> food system and the community's health and nutrition outcomes (this is not clearly supported by the methods) (Good, Martin, Burns, and Groos, 2010)..	is not solid: The assessment is based on a nutritionist's interpretation of the scope for each planning tool and a consultation with key health and local government practitioners. The methodological details of the consultation are not provided (Good, Martin, Burns, and Groos, 2010).

¹⁰ Increase access and availability of healthy food choices within the community; Establish workplace healthy eating environments and policies; Establish healthy catering at events and festivals; Decrease fast-food availability and fast-food outlet density; Increase public breastfeeding facilities and workplace policies; Modify outdoor food advertising to increase healthy food promotion and decrease unhealthy food promotion; Increase drinking water fountains in public areas; Protect urban agriculture and horticulture; Increase community cooking facilities; Modify individual housing designs to ensure adequate food storage and preparation areas.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		<p>non-legislative plans, policies, processes and programs that influence local government planning (Good, Martin, Burns, and Groos, 2010).</p> <p>Focus on the built environment (Good, Martin, Burns, and Groos, 2010).</p>				<p>The feasibility of using the tools was not assessed (Good, Martin, Burns, and Groos, 2010).</p> <p>The conclusions are very general and provide little new information (Good, Martin, Burns, and Groos, 2010).</p>
(Harper, et al., 2009)	Access	Food Policy Councils.	Local (and state) government are acknowledged as the testing ground for innovative policy ideas that often become part of the national norm. They are also	Instead of one single place where one might address the wide range of “seed to table” items that make up our food system, food work is spread across	<p>Based on the literature review and interview data, Food Policy Councils have five key potentials:</p> <ul style="list-style-type: none"> • Potential to address public health through food access, hunger and food insecurity, and quality of food; Potential to affect national and state level 	Level 2 b - An extensive literature review and testimony from 48 individual interviews with the people most involved in Food Policy

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			acknowledged as the places where citizens and well-informed organizations can have the most influence.	<p>numerous governmental departments and functions... While this kind of “silo-ing” can lead to numerous dysfunctions, it also offers enormous opportunities to pursue coordinated and comprehensive food policies once an effort is made to connect the “silos.”</p> <p>“Food Policy Councils began as a way to address the food system as a whole”.</p>	<p>policy debates: Potential to bring local food policy into the mainstream; Potential to address poverty and inequality; Potential to boost local economies:</p> <p>In addition, the following challenges were identified:</p> <ul style="list-style-type: none"> • Achieving and working with diverse membership and constituencies • Working in complex political climates • Designing an effective organizational structure • Obtaining adequate funding • Balancing focus between policy and program work and between structural and specific foci 	Councils. There is not a clear description of a critical appraisal of the literature according to methodology.

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					<ul style="list-style-type: none"> • Adequately evaluating a council's impact <p>The main recommendations include:</p> <ul style="list-style-type: none"> • Being “positive energy” organizations, becoming as doers and problem solvers, and working for the creation of positive alternatives instead of exclusively fighting against the current system • Maintaining good relationships with local (and state) government. Whether a council is independent of government or housed within a government agency, buy-in from local officials is key. • Starting small—Food Policy Councils are 	

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					<p>still young and building credibility. Many have identified “quick wins” and are striving to establish a good track record before taking on larger structural issues. Mark Winne notes that councils “tend to look at things that we can influence, like getting a law or regulation passed or more funding - that’s the reality that practicality tends to circumscribe the work of Food Policy Councils while bigger issues take longer and become research items”</p> <ul style="list-style-type: none"> • Balancing programs and services with larger policy changes. Creating successful programs can address immediate needs while indirectly changing the policy context of a food system. This can 	

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					help build credibility needed to address larger structural issues later on.	
(Himmelgreen and Romero-Daza, 2010)	Access	Measurement of food security (Himmelgreen and Romero-Daza, 2010) Change in concept from 'hunger' to low food security	Setting approaches to food security policies (measurement) (Himmelgreen and Romero-Daza, 2010)	In 2006, the United States Department of Agriculture (USDA) announced that the word "hunger" would be removed from official policy statements, substituting it with "very low food security." (Himmelgreen and Romero-Daza, 2010)	Although the exclusion of "hunger" may be technically valid, it is important that this term remain part of the food policy lexicon. "hunger" will only mask the dire conditions experienced by millions of Americans who struggle day-by-day to provide food for their families [4]. (Himmelgreen and Romero-Daza, 2010)	Opinion article/theoretical research
(Huang, 2010)	Disposal <u>Tzy-Ying Huang</u>	The paper describes the Methodological steps in developing	To continually monitor food waste and improve	"It is becoming more evident that there are	"For consumption, recycling inefficiency was at approximately 29%. More inputs,	This paper focused on the latter parts of the food

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		<p>a Food Recycling Index.</p> <p>Identified major inputs and outputs in the food chain, classifying these as per – energy, water, nutrients, contaminants and assigning scoring.</p>	recycling efforts.	strong links between health, nutrition, and environmental sciences, particularly in how food is produced”.	<p>including food ingredients, energy, and resources were used than actually required to prepare a meal, resulting in food waste mass”</p> <p>“The overall FRI for Taipei was 1.24, indicating a moderate level of inefficiency to be the case”.</p>	system, leaving the preceding phases – agricultural production, food processing, and food distribution – outside the scope of this assessment
(ICMA, 2006)	All	This report examines the need for local government intervention to ensure that all citizens have access to healthy food.	According to the report, legislators can intervene by supporting farmers’ markets or community gardens, using zoning laws to restrict fast-food restaurants and supporting supermarket development in lower-income	It contains a good number of examples of local food production, urban agriculture and distribution with a clear list of the role of local government (US examples).	It describes initiatives and examples such as farmer’s markets, community gardens, supermarket development, out of school programs, food policy councils and zoning regulations for fast food outlets [4]	Not a research paper.

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			areas.			
(Jacobson, 2007).	All	Community Food Assessment (CFA), which is a participative planning tool for identifying food-related issues, and take collective action to solve them (Jacobson, 2007).	Not clearly described. The process was initiated by universities and the local governments became partners (Jacobson, 2007)..	A case in a community in a Northwestern state in US (Jacobson, 2007)..	From a social justice framework, a CFA is able to combine community organizing, policy advocacy, research, coalition building, and community development [2b] (Jacobson, 2007).	A participative action research is described. The support for the arguments is not always illustrated with data.
(Just Food and University of Ottawa, 2011)	All	The action plan proposals are community solutions.	The recommendations include a role by the city council and/or staff in issues such as : reviewing zoning by-laws for urban food production and distribution; incentives for fresh food distribution;	The proposals have been written, researched, and edited largely by community members (public forum and working groups). A list of resources and	The action plan includes proposals on these areas (Level 3): 1- Breastfeeding; 2- Healthy School Food Environments; 3- Income and the Cost of Eating; 4- Community Programming for Food Security; 5- Food Education &	The documents mention that they are based on research evidence, but a detailed appraisal is not described. Data from the Ottawa Food Study is

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			support infrastructure development for food distribution; food procurement policies for food institutions ; maintaining and expanding policy reduction programs, advocating for provincial support in food policy areas.	links is provided here.	Awareness; 6- Planning and Zoning; 7- transportation and Food Access; 8- Healthy Corner Stores (not available); 9- Community Gardening on Private Land and City of Ottawa Land Community Gardening and Urban Agriculture on NCC Lands (not available); 10- Prevention and Remediation of Soil Contamination (not available); 11- Edible Landscapes (not available); 12- Hens and Bees in Urban Areas (not available) A Food Policy forum for Ottawa.	referenced.
(<u>Kearney, 2010</u>)	Consumption	Drivers of food consumption and	The article focuses on health aspects.	Year of data collection:1969-2001	Drivers of food consumption include income (increased	A valid study: a 50 year-time-series

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		<p>Policies (Kearney, 2010)</p> <p>Level of intervention: international</p> <p>Target population/community:</p> <p>Field/Discipline: academic – Dublin Institute of Technology</p> <p>Description of key stakeholders: policy makers, health organizations, academic institutions, agricultural community (Kearney, 2010)</p>	It does not approach the environmental and sustainability dimensions of food systems.	(Kearney, 2010)	<p>income resulted in increased fat consumption), urbanization (results in higher caloric intake and lower energy expenditure in urban jobs), trade liberalization (affects availability of certain foods e.g. meat, dairy, processed foods). [2a] (Kearney, 2010)</p> <p>Policies will only be effective if they are developed with input from both the agricultural and health sectors. [4] (Kearney, 2010)</p>	based on individual dietary surveys (nationwide monitoring systems) and food balance sheets constructed by the FAO from national accounts of the supply and use of foods (Kearney, 2010).
(Kickbush, 2010)	All	Discussion paper on the challenges for health			Recommendations for the local level include [4]: Advocate for a	Not a research paper

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		promotion and sustainable development with a food systems perspective.			<p>food system that promotes sustainability, improves health, and ensures equity.</p> <p>Empower communities to engage for healthier food production and consumption.</p> <p>Engage policymakers; media; food and related industries; and public health, nutrition, environmental and development professionals to contribute to solutions associated with the food system, including issues related to sustainability, nutrition and equity (mediate).</p>	
(Kirkpatrick and Tarasuk, 2009)	Access	The purpose of this paper is to examine food security circumstances, participation in community food programs, and strategies	Public health practitioners have a responsibility to critically examine the programs that they deliver to	Severe food insecurity was associated with the same risk factors	Two thirds of families were food insecure over the past 12 months and over one quarter were severely food insecure, indicative of food deprivation [2b].	Valid study - Data from surveys conducted with 484 low income families and neighbourhood

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		employed in response to food shortages among a sample of low-income families residing in high-poverty Toronto neighbourhoods.	assess their relevance to food-insecure households and to advocate for policy reforms to ensure that low-income households have adequate resources for food.	repeatedly identified in national surveys – i.e., declining income, reliance on social assistance, and living in a lone-mother household	Only one in five families used food banks in the past 12 months and the odds of use were higher among food-insecure families [2b]. One in 20 families used a community kitchen, and participation in community gardens was even lower [2b].	mapping were analyzed Data collection was completed between November 2005 and January 2007 in 12 census tracts randomly chosen from 23 high-poverty tracts in Toronto
(Kirkpatrick and Tarasuk, 2010)	Access	The study examined the association between household food security and neighbourhood features including geographic food access and perceived neighbourhood	The findings raise questions about the extent to which neighbourhood-level interventions to improve factors such as food access or social cohesion can	Twelve high-poverty neighbourhoods in Toronto, Ontario, Canada.	Food security did not appear to be mitigated by proximity to food retail or community food programmes, and high rates of food insecurity were observed in neighbourhoods with good geographic food access [2b]	Valid study - Respondents from 484 low-income families who had children and who lived in rental accommodations.

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		social capital.	mitigate problems of food insecurity that are rooted in resource constraints. In contrast, the results reinforce the importance of household-level characteristics and highlight the need for interventions to address the financial constraints that underlie problems of food insecurity.		Food insecurity was associated with household factors including income and income source [2b]	
(Kirkpatrick and Tarasuk ,2011).	Access	Subsidized housing	Government role in identifying households in risk and supporting subsidize housing	The study aimed to compare household food insecurity among low income families with	Low after-shelter income was positively associated with food insecurity [2b] The proportion of income used for housing was inversely associated with food	Well-designed, valid study. It is cross-sectional random survey. Therefore, it can not claim

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			programs.	subsidized housing, market rental housing and waiting lists for subsidized housing. 12 high poverty census tracts in Toronto were assessed between 2005 and 2007.	insecurity [2b] The pervasiveness of food insecurity among subsidized families raises questions about the adequacy of current subsidy levels [4].	causality. Health Canada's Household Food Security Survey Module was used. The sample of households using 30% or less of income in housing was small.
(Kremer and DeLiberty, 2011).	Production	The use of GIS systems to identify land potential for urban agriculture (Kremer and DeLiberty, 2011).	Not discussed (Kremer and DeLiberty, 2011).		A total of 8% of residential land in Philadelphia was classified as potentially viable for urban agriculture (grasslands and bare lands) [2b] (Kremer and DeLiberty, 2011). The current local food movements target middle and high income population, although personal food production in	Good evidence to support main conclusions. Other dimensions of feasibility such as soil quality and property were not assessed. The article focuses on methodologica

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					community gardens is filling the gap in low-income areas [2b] (Kremer and DeLiberty, 2011).	1 aspects.
(<u>Lee, Fischer and Johnson</u> , 2010; Lee, et at. 2011)	access?/Consumption/	Home-delivered programs: Home-delivered meals program (Target population: senior citizens in Georgia, US) (<u>Lee, Fischer and Johnson</u> , 2010; Lee, et at. 2011)	conducted research, made recommendations (<u>Lee, Fischer and Johnson</u> , 2010; Lee, et at. 2011)	There is a growing prevalence of food insecurity in older adults in the state of Georgia. (<u>Lee, Fischer and Johnson</u> , 2010)	“ the project detected an alarming level of food insecurity, especially among home-delivered meals waitlisted people in Georgia OAANP” pg 141 (type 1- literature review?) (<u>Lee, Fischer and Johnson</u> , 2010; Lee, et at. 2011)	“there have been concerns, however, regarding the use of annual prevalence of food insecurity as a ‘definite performance outcome measure’ for food assistance programs (<u>Lee, Fischer and Johnson</u> , 2010; Lee, et at. 2011) It involves botha cross-sectional and a longitudinal component (<u>Lee, Fischer and Johnson</u> ,

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						2010; Lee, et al. 2011).
(Leete, Bania, and Sparks-Ibanga, (2011)	Access	Geographic information systems (GIS) methods were used to construct multiple measures of neighbourhood food access. These measures were used as inputs to three commonly used methods of identifying food deserts. The results were examined to confirm food desert classifications as to whether or not they yield congruent results, both in terms of the areas identified as food deserts and the characteristics of populations living in those areas.	Not discussed	<p>“Different studies have applied a variety of methodologies to identify food deserts and there has been no assessment of the comparability of these methods”.</p> <p>“The focus on food access in areas identified as food deserts has come at the expense of an examination of food access issues for low-income</p>	<p>“For the average Portland census tract, the mean distance to a supermarket is just more than 1 kilometer, but ranges from 0.19 to 4.7 kilometers (Table 1).</p> <p>Of the fifteen tracts identified, only one is considered a food desert by all three methods, five are identified by two out of three methods, and the remaining nine are designated as food deserts by only one method. Thus, there is some concurrence across methods, but it is not complete”.</p> <p>“Our research shows that the great majority of low-income households with poor</p>	2 b

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				<p>households more generally, including those who live outside food deserts”.</p> <p>Food hinterlands are defined “as neighbourhoods that lack adequate access to supermarkets (according to the standards set out in food desert definitions), but that are not considered food deserts because they do not have concentrated socioeconomy</p>	<p>access live in the food hinterlands and not in the food deserts and, because of the suburbanization of poverty, the food hinterlands may be increasing in importance relative to food deserts”.[2b]</p>	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				c vulnerability”		
(Lightman, Mitchell and Herd, 2008).	Access, distribution	Investigating the impacts of globalization on the composition of food bank users in Toronto (Lightman, Mitchell and Herd, 2008).	Setting OW rates and expectations to enter into the workforce (Lightman, Mitchell and Herd, 2008).	Questions the premise that people are better off working, even at low paying jobs as they engage in employment (Lightman, Mitchell and Herd, 2008). Municipal – Toronto	Employment did not reduce the reliance of respondents on food banks. Advanced education credentials are not sufficient to protect one’s position in the labour market [2b] (Lightman, Mitchell and Herd, 2008).	Large sample size use, questionnaire was pre-tested (Lightman, Mitchell and Herd, 2008). Qualitative research. (Lightman, Mitchell and Herd, 2008).
(McCullum et al, 2002).	Access	To find common ground around 6 community food security action agendas: distribution of surplus food, education, family and community values, food	The article acknowledges that there is a role for government in food security but does not describe it.	“An important first step in building community food security is to understand how this terminology is	Four different community food security groups emerged before the search conference: anti-hunger advocates, agricultural visionaries, food traditionalists, and agricultural entrepreneurs [2b] (McCullum et al,	Qualitative research – in-depth, semi-structured interviews with pre-determined concepts but allowed for flexibility.

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		<p>processing and marketing, legislative initiatives and action, and new agriculture.</p> <p>Utilized qualitative methods to assess the degree to which stakeholders with diverse interests were able to find common ground around different aspects of community food security.</p>		<p>conceptualized among diverse stakeholders—that is, individuals or groups who have a “stake” in, or are directly affected by, an issue”.</p>	<p>2002)..</p> <p>6 final action agendas and corresponding goals emerged from the search conference [2b](McCullum et al, 2002).</p>	<p>“One limitation of this research is the homogeneity of the sample. All participants were white and resided in one county in upstate New York. It is likely that differences in interests may exist in other more diverse communities. Therefore, these findings cannot be generalized to other groups” (McCullum et al, 2002).</p>
(McEntee,	Access	Localization of food access. No	No role of government	from Grafton County, New	Two types of localism were identified: a	Qualitative fieldwork with

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2010)		clear intervention-potential marketing strategies	clearly discussed (McEntee, 2010)	Hampshire, USA (McEntee, 2010)	<p>contemporary one, which is linked to a political agenda of sustainability and support for local farmers. Second, a traditional one, which is less political and focused on fresh and affordable foods [2b] (McEntee, 2010)</p> <p>Gaining additional knowledge about people's motivations for participating in a traditional localism could lead to the development of marketing strategies that speak to a different audience; an audience that might be more likely to include low-income people [4] (McEntee, 2010).</p>	<p>a detailed description of the approach and methods: interviews with key stakeholders, community members and participant observation (McEntee, 2010).</p> <p>However, the potential implications of the framework are not well documented (McEntee, 2010)</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
(Metcalf Foundation, 2008) ¹¹	All	<p>Collaborative efforts for food system reform.</p> <p>A general food systems strategy (Metcalf Foundation, 2008)¹²</p>	The document is intended for civil society stakeholders. It contains however several suggestions of the strong role of government (local to federal) in policymaking.	<p>Two parts. Part One is a general introduction to the landscape of sustainable local food in southern Ontario; Part Two contains a sampling of some current initiatives, drawing on the experience of the participants in the original meetings, and those of people in their networks. The focus in this paper is on</p>	<p>there are hundreds of people who are actively working to promote local sustainable [2b]</p> <p>Another finding is that there are many roads to change [2b]</p> <p>starting to see the long-awaited fruition of the efforts of those who have been working for years and even decades on advancing a local sustainable food system [2b]</p>	Based on document reviews (no systematic) and open-ended interviews with key stakeholders. Methodological details are not described. (Metcalf Foundation, 2008).

¹¹ This document is not quoted in the briefing note. However, it was clearly an important reference for its development. The wording is clearly similar.

¹² This document is not quoted in the briefing note. However, it was clearly an important reference for its development. The wording is clearly similar.

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				agriculture (crops and livestock). (Metcalf Foundation, 2008)		
(Miedema, and Pigott, 2007)	All	11 focus group meetings were held with key players in the Waterloo Regional Food System. A follow up forum was held. The purpose of the forum was to present a summary of the feedback received and to have participants discuss and vote on the suggested list of 6 priorities developed from the focus group meetings.	Conducted the focus groups and wrote the Food System Plan	Before writing the document, Public Health established an advisory group involving producers, retailers, consultants and the Ont Ministry of Food and Rural Affairs, the Waterloo Federation of Agriculture and others to guide the development of the Community Food System	<p>The key informant consultation process has initiated collaboration among many different sectors involve din the food system. The process also identified some recommendations for Public Health's continued involvement:</p> <ul style="list-style-type: none"> - To continue to provide administrative and research support to the roundtable - To continue to identify mechanisms to increase opportunnities for enganced supply and distribution systems for local foods as a means to increase 	Level 2 b

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				Plan.	food access. - To explore the expansion of the Region of Waterloo's Green Purchasing Program to include local food.	
(Mikkelsen, 2005)	Access, consumption	Investigating the role of food industry in the healthy eating scene and the role that industry can play in promoting healthy eating habits (Mikkelsen, 2005) Examined role of government and industry in encouraging the public to eat more healthfully (Mikkelsen, 2005).	Work with food industry, engage in research to investigate the impact of food industry in healthy eating (Mikkelsen, 2005).	Took place in Europe. There is no consensus on the role that food industry can play in promoting healthy eating habits (Mikkelsen, 2005).	There is a declining role of food industry in healthy eating while there is a growing role of food industry engaging in private nutritional or diet related schemes. Corporate nutritional responsibility (CNR) – a corporation takes responsibility for the nutritional impact that a food produce has on its users and their dietary habits [4] (Mikkelsen, 2005).	Opinion article (Mikkelsen, 2005).
(NCCHPP and Quebec National	All	A background document describing food	Food policy councils advise or partner on		The connections between FPCs and public health issues are	Not a research paper.

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Public Health Institute, 2011)		policy councils in general. Examples of the objectives of food councils in Canada are provided.	policy formulation and implementation . FPCs do this by spearheading research, community education campaigns, and education programs that inform and enable policy implementation .		notable. The impact of FPCs on public health practice can be seen in FPC programs and activities that emphasize the importance of healthy communities, improved nutrition, equitable food access, community development, and environmental health. [4]	
(PHSA, 2011)	All	“The action ideas contained in this document were drawn from a consideration of a variety of tools, resources and opportunities that institutions can utilize and/or engage to promote healthy eating and a local, sustainable	“The framework provides a range of ideas that health authorities, educational institutions, childcare facilities, and local governments can take to	‘A recent review of the academic and grey literature found that BC is overly dependent on other countries for its fruits and vegetables.[3] BC has gradually lost	“The paper focuses on actions that can be taken by health authorities, educational institutions, childcare facilities, and local governments... These institutions provide oversight for many of the environments where children, youth, and adults live, work, learn, play, heal, and	Level 3 The recommended actions were sourced from local initiatives and a review of policy documents. No critical

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		food system”.	support the determinants of healthy eating while promoting a local and sustainable food supply”	its capacity to produce and process foods such as fruits and vegetables.5 As we encourage BC’s population to eat 5-10 daily servings of fruits and vegetables, it becomes important to ensure sustainable access to these foods”.	eat. They have access to a variety of tools, resources and opportunities that can transform environments and influence healthier behavioural choices. As purchasers of food, these institutions have a formidable capacity to shift the balance and re-localize food production. Most importantly, there are well established relationships among these institutions and they are already providing leadership by taking action in this area” [level 3]	assessment is described.
(Pinstrup-Andersen and Herfort, 2008).	Production, processing, access	Improving rural infrastructure and establishing markets. (Pinstrup-Andersen and Herfort, 2008).	Governments can address food security problems by including rural infrastructure investment to support agricultural	It focuses on an international perspective (including low and middle income	Policies should focus on three goals: eliminating food insecurity, assuring sustainable management of the ecosystem, and producing enough food	A guide/tool based on literature and the author’s opinions. No clarity on the methods to develop it.

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
			growth, and establishing local and national markets for food and agricultural products (Pinstrup-Andersen and Herfort, 2008).	countries)	<p>to meet current and future demands [4] (Pinstrup-Andersen and Herfort, 2008, p. 58).</p> <p>Focus on rural areas and the development of infrastructure. This is where more food insecurity exists in countries in need [4] (Pinstrup-Andersen and Herfort, 2008, p. 58).</p> <p><i>Address the underlying causes of</i></p> <p><i>food insecurity</i> (focus on</p> <p>agricultural and rural development) [4] (Pinstrup-Andersen and Herfort, 2008, p. 58).</p> <p><i>Emphasize well-balanced diets</i> [4] (Pinstrup-Andersen and Herfort, 2008, p. 58).</p> <p><i>End trade distortions</i></p>	

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					[4] (Pinstруп-Andersen and Herfort, 2008, p. 58).	
(Pothukuchi, 2009).	All	Integrating food systems in planning and the development of local food plans: this paper documents the progress of local food planning within the planning profession in the United States since about 2000 (including the adoption of the Community and Regional Food Planning Policy Guide). It also documents and documents contributions to food planning by the public health field as it tackles the built environment's	local planning mechanisms that integrate food issues into regular planning functions and develop plans for building local food reserves and related activities (at region, city at neighbourhood) (Pothukuchi, 2009).	US based with few examples from Canada (Waterloo, ON) (Pothukuchi, 2009). Good description of initiatives (Pothukuchi, 2009).	Holistic approaches to food systems are fundamental [4] (Pothukuchi, 2009). Other positive factors are: political will, skilled policy and program practice, appropriate food system expertise, and strong interdisciplinary and intersectoral partnerships (with middle- and long-term goals) [4] (Pothukuchi, 2009). Although health-related arguments are visceral and persuasive, arguments of economic benefits, with health-related rationales can be more effective [4](Pothukuchi, 2009).	An opinion paper (with detailed description of activities)

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		connection to the national obesity epidemic and lack of access to healthy foods in impoverished areas (Pothukuchi, 2009).			Downsizing of local governments amidst the economic recession is a threat [4] (Pothukuchi, 2009). More funding is still required [4] (Pothukuchi, 2009).	
(Reynolds, 2009)	All	General local food policy - Food is not seen as a service by government” pg 422. “...we believe a holistic approach is necessary: where decisions are made that not only consider the healthiness of a particular food offering but also its environmental impact, where social and cultural concerns are considered as much as economic	the food strategy was created by the Greater London Authority (Reynolds, 2009)	In 2006 the mayor of London launched the strategy Healthy and Sustainable Food for London. Farming issues and locally produced food were not the main drivers for the London food strategy – CVD and obesity were.	a holistic approach is necessary [4- opinion] (Reynolds, 2009)	

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		concerns.” (Reynolds, 2009)		A member of government created a food unit within London government and a food board (London Food – this was based on the Toronto Food Policy Council). The priorities are the health of Londoners, London’s food economy the environmental impact of London’s food system, London’s food culture and food security. The strategy categorises London’s		

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				food sector into 8 stages – from primary production to disposal – “growing to throwing” (Reynolds, 2009).		
(Rideout, Seed and Ostry, 2006)	All	<p>There was no intervention conducted in this article. The article describes a conceptual model and five classes of food security indicators for BC regional health authorities (RHAs)</p> <p>The article focuses on the dimensions of community food security that fit broadly within the jurisdiction of</p>	<p>“Food insecurity is a complex and difficult to-define issue that is affected by a wide variety of government policies...the causes of food insecurity may be diverse, the most important outcomes are health-related, giving health authorities a unique role to play in</p>	<p>“most public health departments in Canada have little direct responsibility for ensuring food security within their jurisdictions”. “British Columbia Regional Health Authorities (RHAs), now responsible for food</p>	5 classes of food security indicators were identified: direct; indirect; consequence; process; supra-regional [2b] (Rideout, Seed and Ostry, 2006)	The model was developed after a review of the food security literature and interviews with British Columbia community nutritionists and public health officials.

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		public health authorities and within a population health framework (i.e., social determinants of health).	improving food security in Canadian communities.	security, will require indicators to monitor performance		
(Rocha and Lessa, 2009).	All	The article describes the unique role of urban governance in the creation of an alternative food system.	Conscious public policy making by the government has made Belo Horizonte a success. The government created a Secretariat for Food Policy and Supply.	“Belo Horizonte’s alternative food system is unique because it is a government creation which reached to both the private sector and the civil society” (Rocha and Lessa, 2009).	“Belo Horizonte has developed a distinct mode of governance for food security, a unique ‘alterity’ of its food system, different from those being attempted in Europe and in North America. It is ‘alternative’ because it was created and it is maintained by policy and government action to correct perceived failures in the conventional food system” [2b] (Rocha and Lessa, 2009).	This was not a formal research initiative. The authors gained information described in the article from summarizing municipal documents, and the Secretariat for Food Policy and Supply website. They also conducted interviews with the Secretariate’s key staff members and

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
						managers
(Roustit et al., 2010)	Access	<p>School food supplementation - Provincial (Quebec) (Roustit et al., 2010)</p> <p>Description of key stakeholders: Education ministries, healthcare organizations (Roustit et al., 2010)</p>	Quebec Ministry of Education, Leisure and Sport implement the food assistance initiative (Roustit et al., 2010)	Year of data collection: 1999 (Roustit et al., 2010)	<p>“The variable of school food assistance program constitutes a moderating factor in the association between food insecurity and school-related outcomes” pg 1178.</p> <p>[2b- cross sectional survey] (Roustit et al., 2010)</p>	<p>Well designed – but cross sectional survey can’t uncover details of causes and effects.</p> <p>Excluded adolescents attending secondary school outside the public school board. (Roustit et al., 2010)</p>
(Rundle et al. , 2009)	Access	The purpose of this study was to examine the association of neighborhood food environments with body mass index (BMI) and obesity after control for neighbourhood	Not directly discussed- Potential for land use planning	A cross-sectional, multilevel analysis of BMI and obesity among 13,102 adult residents of	<p>Density of healthy food outlets (supermarkets, fruit and vegetable markets, and natural food stores) was associated with a lower mean of BMI [2b].</p> <p>Increasing density of</p>	Observed associations may be attributable to self-selection of individuals into neighbourhoods that support

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		walkability		New York City.	food outlets categorized as BMI-unhealthy was not significantly associated with BMI or obesity [2b].	their preferred lifestyle.
(Sacks, Swinburn and Lawrence, 2008).	Access	National governments – Australia and New Zealand : Describing a structure for systematically identifying areas for obesity prevention policy action across the food system and full range of physical activity environments (Sacks, Swinburn and Lawrence, 2008).	Ensure synergy exists among policy actions (Sacks, Swinburn and Lawrence, 2008).	It is important to analyze the policy actions of other (non health) sectors in government and society so that a comprehensive approach to obesity (Sacks, Swinburn and Lawrence, 2008).	The analysis grids presented in this article provide a tool for systematically scanning for policy opportunities to change the food system and physical activity environment to prevent obesity (Sacks, Swinburn and Lawrence, 2008).	Literature review. The article is well documented and developed. It is not clear however if a critical appraisal of the literature was conducted.
(Sadler, Gilliland, Jason, Arku, 2011).	Access	Increasing proximity to affordable food sources (food deserts): Indirect assessment of the	Not directly assessed. (Sadler, Gilliland, Jason, Arku, 2011).	Trends in food retailing associated with the consolidation of smaller-	In this study, residences in high distress neighbourhoods had better access to all food	Descriptive study with GIS analysis with exhaustive household level of

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		<p>effect of proximity to fresh food sources to increase access to healthy foods among population with low socio-economic status (Sadler, Gilliland, Jason, Arku, 2011).</p> <p>Middlesex County, Ontario, Canada (Sadler, Gilliland, Jason, Arku, 2011).</p>	<p>However, the location of fresh food sources is associated with land use and business marketing policies.</p> <p>Given that there was no systematic absence of grocers from poorer areas, an appropriate course of action by stakeholder groups may lie in interventions beyond improving physical access (Sadler, Gilliland, Jason, Arku, 2011, p12)...</p>	<p>format retailers into fewer, larger-format supercentres have left some rural areas with fewer sources of nutritious, affordable food (Sadler, Gilliland, Jason, Arku, 2011).</p> <p>The are of study, Middlesex County, Ontario, Canada, is predominately rural (Sadler, Gilliland, Jason, Arku, 2011).</p>	<p>sources, and a majority of these residences were within walking distance of the nearest grocery store. [2b] (Sadler, Gilliland, Jason, Arku, 2011, p12)..</p>	<p>information.</p> <p>Comprehensive list of sources of food, which included grocery stores, fast food, fruit and vegetable sources, grocery stores plus fruit and vegetable sources, variety stores (Sadler, Gilliland, Jason, Arku, 2011)..</p> <p>The study uses a socioeconomic distress index, which is an area-based measure comprised of four variables from the 2006</p>

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						<p>census: low educational attainment, unemployment rate, lone parent families , and incidence of low income (low-income cutoff for the region) (Sadler, Gilliland, Jason, Arku, 2011).</p> <p>'Edge effect' accounted for by assessing surrounding areas. This assessment is the main objective of the article (Sadler, Gilliland, Jason, Arku, 2011).</p>
(Schmit and	Production, access	Developing	Provide	Studies have	The empirical results	A valid study

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
Gomez, 2011).		<p>farmer's markets (Schmit and Gomez, 2011)</p> <p>Took place at municipal level Investigation of the factors that influence vendor and market performance in rural communities (Schmit and Gomez, 2011).</p>	<p>funding for farmer's markets, provide incentives to farmers to set up farmer's markets in areas where food retailers are sparse (Schmit and Gomez, 2011).</p>	<p>shown that there is limited potential for affordable, nutritious foods in low-income, rural areas that are sparsely populated due to lack of incentives for food retailers to provide a wide assortment of fresh, high value foods e.g. veg/fruit (Schmit and Gomez, 2011)</p> <p>A rural region of New York State. Year of data collection, 2008 (Schmit and Gomez,</p>	<p>suggest four inter-related planning recommendations when considering market and public policy interventions: (1) establishing larger, centrally located markets with public sector contributions, (2) targeting variety in products and vendors, (3) prioritizing attention to marketing and promotion, and (4) reducing cost burdens to underserved, low-income residents [2b](Schmit and Gomez, 2011).</p> <p>Consumers who lived closest to the markets were the primary attendees. Vendors that concentrated more sales at farmer markets were associated with higher levels of vendor performance</p>	<p>that utilized several measures of analysis. Data collected from customers, vendors, and markets (Schmit and Gomez, 2010).</p>

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				2011)	satisfaction. Markets need to continually develop new and innovative market features or activities and to upgrade facilities to maintain and improve market attendance and vendor satisfaction [2b] (Schmit and Gomez, 2010).	
(Seed, 2011) f	Access/consumption	Forty-eight key informant interviews were conducted with government, Civil Society, and food supply representatives involved in the initiatives. Relevant documents were reviewed and participant/direct observations were conducted.	Food security is recognized as a role of government – and of public health in particular. “BC is one of first provinces in Canada that has integrated food security into Public Health (PH) ³ and other government programming. These	“This new wave of health promotion food security initiatives across numerous government Ministries in BC was launched in 2002, but they were not initiated within a guiding framework or overall vision.	“While Civil Society was the driver for food security in British Columbia, Public Health was the driver for the integration of food security into the government. Public Health held most of the power, and often determined the agenda and the players involved. “While many interviewees heralded the accomplishments of the incorporation of food security into	Level 2 b

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			initiatives include provincial and health authority level food security initiatives.”	And, while individual program evaluations have been completed, there is a need for a greater understanding of the meaning and nuances of this integration, as well as how occurrences in BC related to the larger socio-political context”.	Public Health, stakeholders also acknowledged the relative insignificance of the food security agenda in relation to other “weightier”, competing agendas”. Interviewees described a clash of cultures between Public Health and Civil Society occurring partly as a result of Public Health’s limited food security mandate and inherent top down approach. Marginalization of the Civil Society voice at the provincial level was one of the negative consequences resulting from this integration. A social policy movement toward a new political paradigm - - “regulatory pluralism” - calls for greater engagement of Civil	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
					Society, and for all sectors to work together toward common goals. This integration of food security into the government exemplifies an undertaking on the cutting edge in progress toward this shift.	
(Seliske et al., 2009)	access	The food retail environment around 188 schools across Canada was examined, including full-service restaurants, fast food restaurants, sub/sandwich retailers, donut/coffee shops, convenience stores, and grocery stores.	Not directly discussed- Potential for land use planning		Access to food retailers was generally not associated with the neighbourhood SES in the immediate proximity.	
(Shenot and Salomon, 2006)	Access	A summary review of documents, programs,	Role of local government is articulated	A healthy, nutritious diet and regular physical	“As more Americans become aware of the national obesity	Level 3

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		initiatives	throughout the document.	activity can reduce the risk of obesity and associated chronic diseases, directly improving one's health and well-being and minimizing health care costs for local governments. Aftersitting on the sidelines, more and more cities and counties across the country are now exploring various strategies to promote healthy eating and adapting	epidemic and the resulting health crisis, especially the damaging consequences already apparent in our children, they will seek out communities that support healthy lifestyles.Easy access to healthy food is quickly becoming one of the hallmarks of a livable community, and local officials should continue to explore and refine ways to make nutritious foods available and affordable throughout their jurisdictions". [Level 3]	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
				them to meet local needs.		
(SPARC BC, 2011)	Access	<p>“An evaluation of the Vancouver Coastal Health (VCH) Community Food Action Initiative (CFAI), a health promotion initiative that supports community-led solutions to improve food security in VCH communities”</p> <p>“The evaluation utilized the following methods: a review of related program documents, forty interviews with community stakeholders, eight interviews with regional stakeholders, two</p>	Findings in the report discuss what is working well and where improvements can be made to how VCH (gov agency).	<p>As a provincial program, the CFAI is funded by the Ministry of Health, coordinated by the Provincial Health Services Authority (PHSA), implemented by Regional Health Authorities and carried out by community coordinators and nutritionists across BC. This evaluation focuses</p>	<p>The CFAI has helped turn food security into an important public policy issue in our region. But there is still work ahead. Recommendations are extended in three areas: design/ implementation, monitoring and evaluation, and policy development. [Level 2b]</p> <p>The VCH’s CFAI needs to remain on the cutting edge of food security work [2b]</p> <p>Vulnerable populations are accessing substantial amounts of local, healthy food, but the transition from a service delivery mode to an empowerment mode has not yet been</p>	Level 2 b. The evaluation included the following data sources: Information on food security in BC; Survey results (stakeholders; Stakeholder interviews; Regional-level interviews; and Case studies of two communities.

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		focus groups and an online and paper survey completed by 290 participants and volunteers”		exclusively on CFAI’s results in VCH’s service region.	<p>made in some programmes [2b].</p> <p>Some meaningful connections have been made with grocery stores and hospitals [2b]</p> <p>Sub-groups within the overall vulnerable population group may be missed by programming [2b].</p> <p>VCH’s CFAI policy related work could concentrate more on policies that support vulnerable groups’ dignified access to local, healthy food [2b].</p> <p>There is a lack of shared understanding about policy development [2b].</p>	

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
					<p>VCH's CFAI programming could include a greater regional focus [2b].</p> <p>Community coordinators are central to the effectiveness of the VCH's CFAI, but may be in danger of burn-out [2b]</p>	
(Steinman, 2011)	All	It focuses on food councils across North America.	Many of the organizations profiled in this report are independent of any government agency (p 21). Of the organizations profiled in this report, the Toronto and Vancouver Food Policy	The report was written to promote the development of an alliance in food systems in West Kootenay (BC).	The report discusses a number of possibilities for food council work, but it does not emphasize a particular recommendation. The diversity of contexts in which food councils operate determines their capacity of action, the involvement of multiple stakeholders, building on existing programs, seems to be an emerging key for	Compiles detailed descriptions of food councils based on interviews. The message learned are listed as quotes from the interviews (with no further analysis)

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			Councils are the only officially-sanctioned organizations housed within a government agency. The Waterloo Region Food System Roundtable and Halton Food Council are hybrid systems.		success [2b]. The functions of food system organizations have been isolated into eight categories; networking, education, communication, policy/advocacy, assessment, economic development/infrastructure, low-income food access and culture. The most successful organizations appear to be the ones which have developed their structure and form around their intended function(s), not vice-versa.[2b]	
(Sustainable Development Commission, 2009)	All	The study was carried out between June and August 2009, and comprises the following four elements: <ul style="list-style-type: none">• Literature review: evidence gathering and mapping of	“Developing a better understanding of a sustainable diet is essential for government to achieve its objective of ‘a sustainable, secure and	Basic messages about healthy eating have been understood and promoted for many years. However,	We found that there is broad agreement on the areas to tackle as a priority, or potential messages needed in trying to achieve a sustainable diet, although the ease with which such changes could be made varies	Level 2b

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		<p>synergies and tensions between elements of sustainable diets</p> <ul style="list-style-type: none"> • One-to-one interviews with food and health experts from industry, academia and civil society • A stakeholder workshop: On 10th July 2009, the SDC convened government officials, food industry representatives, academics and consumer and environmental interest groups to test the evidence gathered, identify and cover gaps, and to identify barriers, challenges and opportunities, including areas for further research 	<p>healthy food supply'.¹ Not only would this provide more coherent messages to consumers, but it would also help clarify what is required of the supply chain.</p> <p>The need to address this issue has been identified as a priority for government".</p>	<p>understanding about how such advice fits with evidence of the environmental and other sustainability impacts of our diets, for example on climate change, is less clear.</p> <p>Developing a better understanding of a sustainable diet is essential for government to achieve its objective of 'a sustainable, secure and healthy food supply'.¹ Not only would this provide</p>	considerably".	

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		<ul style="list-style-type: none"> • Mapping and critique of existing initiatives aimed at promoting a more sustainable diet. 		more coherent messages to consumers, but it would also help clarify what is required of the supply chain.		
(Tarasuk, 2010)	Access Tarasuk	<p>Review of policies affecting healthy eating patterns in Canada - No evaluation of any intervention.</p> <p>There is a need for municipal planners to ensure that food environments are conducive to healthy eating patterns (Tarasuk, 2010).</p>	To set policy recommendations to support healthy eating (Tarasuk, 2010).	Results from CCHS data show that Canadian adults and children have nutrient inadequacy (Magnesium, vitamins A, C, calcium and fibre) and excess (sodium). When considered in conjunction with the findings that 2/3 of adults	<p>More effective nutrition communication tools are needed to help people navigate an increasingly complex food retail environment [4] (Tarasuk, 2010).</p> <p>There is a need for municipal planners to ensure that food environments are conducive to healthy eating patterns [4] (Tarasuk, 2010).</p>	A commentary piece (Tarasuk, 2010).

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				and 1/3 of children are overweight or obese, it shows a need for a more effective promotion of healthful dietary patterns (Tarasuk, 2010).		
(Tarasuk, Fitzpatrick and Ward, 2010)	Access	The impact of policy and program interventions needs to be examined across socioeconomic strata to ensure that actions reduce rather than exacerbate nutrition inequities	Not directly discussed. The importance of considering socioeconomic variation in food security programs and initiatives.	Examination of the relationship between household income and education level and adults' and children's intakes of energy, fibre, micronutrients, and number of servings consumed of food groups	A higher household income adequacy and (or) higher levels of education were associated with increased consumption of milk and alternatives, and vegetables and fruit, and significantly higher vitamin, mineral, and fibre intakes among both adults and children [2b]. The prevalence of	Well designed study. Descriptive: no causal association can be confirmed.

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				from Canada's Food Guide. Using data from the 2004 Canadian Community Health Survey.	inadequate nutrient intakes among adults was higher among adults with the lowest level of income adequacy or educational attainment, compared with others [2b].	
(Wakefield et al., 2007).	Production, access	This article describes results from an investigation of the health impacts of community gardening, using Toronto, Ontario as a case study.	Bureaucratic resistance and concerns about soil contamination were among the barriers to urban agriculture.		<p>Results suggest that community gardens were perceived by gardeners to provide numerous health benefits, including improved access to food, improved nutrition, increased physical activity and improved mental health [2b – perceived health].</p> <p>Community gardens were also seen to promote social health and community [2b].</p> <p>Perceived barriers were</p>	<p>Community-based research project that collected data on the perceived health impacts of community gardening through participant observation, focus groups and in-depth interviews.</p> <p>Perceived health impacts are subjective measures.</p>

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					insecure land tenure and access, bureaucratic resistance, concerns about soil contamination. [2b].	
(Walker, Keane, and Burke, 2010)	Access	Geographical access to healthy foods	Potential role for land use, public health and economic development planning in promoting access to healthy foods.	<p>A systematic review of studies that focused on food access and food desert research in the United States.</p> <p>In a food desert, an area devoid of a supermarket, access to healthy food is limited.</p>	<p>Low income neighbourhoods tended to have fewer supermarkets than the highest income neighbourhoods [1].</p> <p>This means that consumers who shopped at non-chain stores, in urban and poorer areas paid more per unit of measurement than chain, suburban and non-poor areas [1].</p> <p>Poverty plays out in economic barriers in accessing food in low-income areas (smaller stores with low quality food and higher access). Black</p>	<p>Comprehensive review. However, the outcomes from the evidence are not clearly described.</p> <p>Most of the articles are from</p>

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
					<p>population tended to live in the poorest neighbourhoods [1].</p> <p>Supermarkets will stay invested in a neighbourhood as long as the residents have purchasing power [1].</p>	
(Walton, 2012 a and b)	All	<p>The purpose of this report is to provide an overview of existing research about the agri-food cluster in the Golden Horseshoe. This overview was developed by reviewing existing reports and interviewing select community and agriculture/agri-food sector representatives.</p> <p>The study area</p>	<p>The report examines government structures in the Golden Horseshoe.</p> <p>The report notes the frustrations expressed by operators in the agri-food cluster in dealing with a plethora of government agencies and</p>	Details about the number of farms, farm revenue etc. in the Golden Horseshoe are presented.	<p>“ More than 212,000 jobs are stimulated or maintained in Canada annually by the demands of primary production and processing activities in the study region alone... the agriculture and agri-food cluster represents one of the major economic powerhouses of this regional economy, and ..the nation” (p. 4.7). [2b]</p> <p>The population growth</p>	Level 2b – exploratory study (qualitative)

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		encompasses the Golden Horseshoe; an area that includes the Regions of: Durham, York, Peel, Halton and Niagara, the Cities of Toronto and Hamilton and the Holland Marsh.	related regulations and the lack of coordination between gov't departments and levels of gov't. (p. 7.1).		<p>in the area produces pressure to reduce the area of agricultural land; however, it also entails a larger market base and a larger pool of labour force (pp, 11.1-10) [2b]</p> <p>Given the high value of the land in the Golden Horseshoe, the production of bio-energy is not suggested. Instead, the recommended use of land is food production (p. 11.10) [2b]</p>	
(Yeatman, 2008)	Access	<p>Local food policy (general: key factors that influence the policy development process)</p> <p>Level of intervention: municipal (within</p>	ability to develop policy at the local level. (Yeatman, 2008)	Year of data collection: 1995-1996 (Yeatman, 2008)	“A local food policy was a way of organizing existing initiatives from across the different departments of local government and provided a framework for further developments in food-	Methodological details were not provided e.g. number of interviews conducted, how analyzed etc. (Yeatman, 2008)

Reference	Level of food system ⁷	Details type of intervention ⁸	Role of government	Relevant background information	Key messages (best practices) - Supporting evidence ⁹	Notes critical appraisal-limitations
		<p>Australia)</p> <p>Target population/community</p> <p>Field/Discipline: public health</p> <p>Description of key stakeholders: public health professionals, regional government (Yeatman, 2008)</p>			<p>related areas: pg 132 [type 2b?] (Yeatman, 2008)</p> <p>“..generation of support for a food policy agenda within the local governments themselves over a period of time was the more successful approach (Relationships between health services and local government staff were important) [type 2b?] (Yeatman, 2008)</p> <p>“</p> <p>“Little or no evidence was found identifying active roles for public interest groups or the media” pg 134.) [type 2b?] (Yeatman, 2008)</p>	

Halton Region
Dial 311 or 905-825-6000
Toll free 1-866-4HALTON (1-866-442-5866)
TTY 905-827-9833
www.halton.ca

