



CITY REGION FOOD SYSTEM TOOLKIT

Assessing and planning resilient and sustainable city region food systems

Example: Data sources for literature review in Toronto, Canada

Brief description	This table provides a list of all the identified available data sources for the Greater Golden Horseshoe and Toronto as well as some national level information.
Expected outcome	This table allows for a more holistic understanding of data availability and gaps for a CRFS.
Expected output	Consolidated list of data available across the food chain including web links as appropriate.
Scale of application	Project level
Expertise required	Project management
Examples of application	Toronto and Greater Golden Horseshoe
Year of development	2015
Author(s)	Sally Miller
Relevant CRFS Handbook modules; related tools, examples and activities	Rapid scan module

Full description and justification

This table provides a list of all the identified available data sources for the Greater Golden Horseshoe and Toronto as well as some national level information. The Toronto literature review required approximately 150 hours to complete. It includes the names of reports, publication dates, and website links where available.

The table will demonstrate to project teams in other city regions the scope and types of documents they may include in their own Rapid scans, as well as how to keep a clear record of sources for future reference.



1 Food Production

Indicator	Sources of information
National: Food imports	FAO http://faostat.fao.org/site/535/DesktopDefault.aspx?PageID=535#ancor
Urban-rural linkages enhancing territorial competitiveness	Agricultural systems: see Caldwell report (FoG)
urban/ Peri-urban Farms	GB papers Bartram, J., Swail, S. L., & Mausberg, B. (2007). The Holland Marsh: Challenges and Opportunities in the Greenbelt Friends of the Greenbelt Foundation Occasional Paper Series. Rod MacRae, Joe Nasr, James Kuhns, Lauren Baker, Russ Christianson, Martin Danyluk, Abra Snider, Eric Gallant, Penny Kaill-Vinish, Marc Michalak, Janet Oswald, Sima Patel, and Gerda Wekerle, "Could Toronto Provide 10% of its Fresh Vegetable Requirements from Within its Own Boundaries? Part II, Policy Supports and Program Design." Journal of Agriculture, Food Systems and Community Development, Feb. 2012 (pp. 147–169) Estimates of acreage in production and potential production: MacRae, R.J., E. Gallant, S. Patel, M. Michalak, M. Bunch and S. Schaffner. "Could Toronto Provide 10% of its Fresh Vegetable Requirements from within its own Boundaries? Matching Consumption Requirements with Growing Spaces" Journal of Agriculture, Food Systems and Community Development 1.2 (2010):105-127. Toronto Agricultural Program (TAP); see staff update, including table with progress updates about UA initiatives in TO
Cheese farms, other sub-sector reports	
Daily and weekly food prices <ul style="list-style-type: none"> ▪ Farmgate prices compared to consumer prices 	<i>Finding Food</i> (TPH), Food Flow report appendix (Toronto prices over one month) http://www.numbeo.com/common/ (crowd-sourced price comparison, global) Statistics Canada at http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ155a-eng.htm
Production levels of ethnobocultural, culturally diverse foods	FarmStart; Vineland World Crops?
Eco-production zones	Soil classes (OMAFRA?); watershed (Blue Belt report?),
Agriculture, urban and peri-urban agriculture land use <ul style="list-style-type: none"> ▪ Area of agricultural land 	Greenbelt papers Zoning by-law changes Hamilton for urban ag: (GGH) http://www.foodandfarming.ca/hamilton-pushes-for-urban-farming/ Parks and Rec map; compare NY and Phil. projects Greenbelt papers





<ul style="list-style-type: none"> ▪ Area of urban agricultural land ▪ Total area for land protected for ag. ▪ Types and percentage of ag. uses in area ▪ Policies/regulations for agricultural land preservation 	<p>GHFFA website: TRCA overview in blog: http://www.trca.on.ca/the-living-city/land/urban-agriculture/#sthash.NQYgbh0y.dpbs</p> <p>Toronto Region Conservation Authority. (2012a). Near Urban Agriculture, from http://www.trca.on.ca/the-living-city/programs-of-the-living-city/near-urban-agriculture/</p> <p>Toronto Region Conservation Authority. (2012b). Sustainable Near-Urban Agriculture Policy.</p> <p>Toronto Region Conservation Authority. (n/a). Living City Scorecard. Cowell, S.J., and S. Parkinson. 2002. Localization of UK food production: An analysis using land area and energy as indicators.</p> <p>Cummings, H. 2003. Growing food and economy: Economic impact study of the agriculture and food-related sectors in Waterloo Region. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/4bb1aceaadd5d9e885256dce006768da!OpenDocument. Agriculture, Ecosystems, and Environment 94: 221–236.</p> <p>Aggregates: Binstock, M., & Carter-Whitney, M. (2011). <i>Aggregate extraction in Ontario: A strategy for the future — Executive summary</i>. Retrieved from Canadian Institute for Environmental Law and Policy website: http://cielap.org/pdf/AggregatesStrategyExecSumm.pdf</p> <p>Winfield, M. (2005). <i>Building Sustainable Urban Communities in Ontario: A Provincial Progress Report</i>. Toronto: The Pembina Institute.</p> <p>growTO: an urban agriculture action plan for Toronto (2012) http://tfpc.to/wordpress/wp-content/uploads/2012/08/GrowTO_ActionPlan_lowresFINAL.pdf</p> <p>Snapshot of existing projects: Commercial Farms and Market Gardens; Residential Gardens and Edible Landscaping; Community Gardens on City-owned Land; Gardens or Farms on Institutional Land; Gardens at Schools; Entrepreneurial Farms/Community Supported Agriculture; Gleaning Projects and Orchards; Rooftop Farms; Greenhouses; Therapeutic Gardens; Urban Livestock</p> <p>Priorities moving forward: link growers to land and space; strengthen education and training; increase vitality and promotion; add value to urban gardens; cultivate partnerships; develop supportive policy</p>
<p>Land use policy</p> <ul style="list-style-type: none"> ▪ Zoning regulations and impact 	<p>Places to Grow Act</p> <p>Greenbelt Plan</p> <p>Oak Ridges Moraine Act</p> <p>Niagara Escarpment Act</p> <p>GGH Plan</p> <p>Ontario Greenbelt Alliance. (2010). <i>Green among the grey: Fifth anniversary progress report on the Greater Golden Horseshoe Greenbelt</i>. Retrieved from: http://greenbeltalliance.ca/files/pdf/GreenbeltProgressReportFINAL.pdf</p> <p>Wilson, S. J. (2008). <i>Ontario's wealth, Canada's future: Appreciating the value of the Greenbelt's eco-services</i>. Report prepared for the David Suzuki Foundation. Retrieved from www.davidsuzuki.org/publications/reports/2008/ontarios-wealth-canadas-future-appreciating-the-value-of-the-greenbelts-eco-serv/</p>





<p>Resilience of local agriculture</p> <ul style="list-style-type: none"> ▪ Diversity of crops; ▪ availability of crop varieties for drought, cold snaps, other climate ▪ Access for food producers to land and clean water 	<p>DSF studies? crises</p> <p>Conversion assessments: balmford 2002 for trade off between conserving land rather than converting for ag or residential http://www.ncbi.nlm.nih.gov/pubmed/12169718</p> <p>Ducks Unlimited Canada. (2010). <i>Southern Ontario wetland conversion analysis</i>. Retrieved from www.ducks.ca/aboutduc/news/archives/prov2010/pdf/duc_ontariow.ca.pdf</p>
<p>Number (or percentage) of farms in city region (economic vitality) for different products</p> <ul style="list-style-type: none"> ▪ Farm size ▪ Farm type 	<p>Stats can provincial, GH report for GH, see Ag. by the numbers (FoG)</p> <p>Provincial: National Farmers Union. (2011). <i>Farms, farmers and Agriculture in Ontario</i>. Ontario: National Farmers Union.</p> <p>Poce, V. D., Goarley, E., & Mausberg, B. (2009). <i>Greenbelt Grown: A Profile of Agriculture in Ontario's Greenbelt</i>. Online: Friends of the Greenbelt Foundation.</p> <p>Numbers for mixed farms? Organic? No till? holistic mgmt livestock?</p>
<p>Urban agriculture</p> <ul style="list-style-type: none"> ▪ Number of urban ag. production sites ▪ Production volumes/ value (in market and overall) ▪ Number of community garden organizations 	<p>Scaling Up Urban Agriculture http://metcalfoundation.com/wp-content/uploads/2011/05/scaling-urban-agriculture.pdf</p> <p>GrowTO Action Plan</p>
<p>Number of producers (for different products; organic) and farm size operations</p>	<p>See stats from Commodity groups</p> <p>Longitudinal: Statistics Canada. (2006a). <i>Agricultural perspectives from seven censuses, Canada and provinces: census years 1976 to 2006</i>. Online: Retrieved from http://www.statcan.gc.ca/pub/95-632-x/2007000/t/4185579-eng.htm - 35</p> <p>Statistics Canada, <i>Census of Agriculture (2011). Highlights and Analyses</i>. Retrieved August 30 from http://www.statcan.gc.ca/pub/95-640-x/2012002/prov/35-eng.htm</p> <p>Toronto</p> <p>Forthcoming</p> <p>The TFPC has compiled a list of community food assets ward by ward across Toronto. Mapping includes: community gardens and urban farms supported by the City, farmers markets, coops, healthy food retail outlets, emergency food organizations, community food programs, student nutrition programs</p>
<p>Production volumes (for different products)</p> <ul style="list-style-type: none"> ▪ Volume of food produced (products appropriate to city-region production) 	<p>Dollars and Sense, stats Canada (provincial), Greater Golden Horseshoe and Greenbelt papers</p> <p>JRG Consulting Group, <i>Agriculture by the Numbers: Understanding the greenbelt's Unique Advantages</i>. Friends of the Greenbelt Foundation. August 2014.</p>





<ul style="list-style-type: none"> ▪ Volume of production of #1 that is produced locally currently ▪ Volume of imported food that could be replaced by local food ▪ Assessment of volume of food that cannot be grown in TO area that could be shifted through education (shift to seasonal menus) ▪ Number of farms producing for local markets: direct, retail, wholesale ▪ Volume of product sold to local markets from local producers ▪ Health: percentage of local food sold as fresh vs. processed 	<p>Cummings, H. 2005. Region of Waterloo food flow analysis. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/54ed787f44aca44c852571410056aeb0!OpenDocument.</p> <p>Producer organizations: Holland marsh Growers, OFVGA, etc. Number of supply managed vs. not (dairy without supply mgmt— Monforte) Production levels for biodiesel (vs. biodiesel from recovered waste like restaurant oil)</p>
<p>Production technologies/ systems used</p>	<p>Toronto, 2011: Scaling up Urban Agriculture in Toronto http://metcalffoundation.com/wp-content/uploads/2011/05/scaling-urban-agriculture.pdf</p> <p>Van Bers, Caroline and Robinson, John B.(1994) 'Farming in 2031', Journal of Sustainable Agriculture, 4: 1, 41 — 65. URL: http://dx.doi.org/10.1300/J064v04n01_05</p> <p>LFP, no till, IPM, organic, natural, mixed farms compared to specialized</p> <p>Ontario Fresh sorts by organic: https://ontariofresh.ca/profile-search?search=organic ; lists 124 organic farms in Ontario, but includes Org. Meadow, Pefeennings, so aggregators as well as farms, could be duplicates (Pefeennings is farm and wholesaler, since this is promo, may list in both categories)</p> <p>Organic Council 2008 numbers: http://www.organiccouncil.ca/organics/faq(1.5% of Canada farms)</p>
<p>Number and location of community gardens/ CSAs/ school gardens, etc</p>	<p>Parks and Rec maps TUG?</p>
<p>Aquaculture and fisheries</p>	<p>Ontario Nature Blue Belt Report Ontario Commerical Fisheries Association: http://www.ocfa.ca/fisheries-industry Aquaponics PDF for large-scale aquaponics (farming and fish under cover)</p>





<p>Number of farmers practicing sustainable production methods</p> <ul style="list-style-type: none"> ▪ Health: food safety assessments for local production ▪ Agricultural practices range and types (number of organic/ sustainable acres) ▪ Number and size of farms working with organizations for stewardship ▪ Number, type of organizations promoting stewardship in ag. 	<p>Toronto 1999 Feeding the City from the Back 40: A Commercial Food Production Plan for the City of Toronto http://www1.toronto.ca/city_of_toronto/toronto_public_health/healthy_families/nutrition/toronto_food_policy_council/files/pdf/tfpc_finding.pdf Nature Counts MNR 2006, estimating value of natural capital to sust. ag.</p>
<p>Organic production</p>	<p>Rod MacRae, Russ Christianson paper for WWF</p>
<p>Farm employment/income/wages</p> <ul style="list-style-type: none"> ▪ off-farm income ▪ Urban ag. jobs 	<p>Stats Can FoG Economic Benefit of GB report Statistics Canada. (2011). 2011 Farm and farm operator data. Online: Retrieved from http://www29.statcan.gc.ca/ceag-web/eng/community-agriculture-profile-profil-agricole?geold=350000000&dataType=1.</p>
<p>Permaculture</p>	<p>Jane Hayes</p>
<p>Urban agriculture</p>	
<p>Job creation or loss</p> <ul style="list-style-type: none"> ▪ Number of vulnerable groups involved in production ▪ Programs to support vulnerable groups in farming and their impact (# of producers, area farmed, production volume for market) ▪ Sanitation, health and safety agricultural employment conditions and risks ▪ Opportunities for training, skills transfer 	<p>OAFVP Data: Number of jobs; Industries that make up the food sector; Prominent occupations in the food sector; Employment income for occupations in the food sector; Demographic characteristics of occupations in the food sector; Overall observations regarding labour market data (Draft report available on request) Industry overview at: http://www.toronto.ca/legdocs/mmis/2014/ed/bgrd/backgroundfile-65499.pdf Forthcoming? Precarious Work for food workers, John Stapleton for Metcalf OMAFRA's economic development tool: Analyst: http://www.omafra.gov.on.ca/english/rural/edr/edar/ Michael Wolfson: planning student report from 2011</p>
<p>Job sustainability: quality and permanence of jobs created or maintained</p>	<p>Salary levels; skills levels required; benefits; job security; need for second/ third jobs</p>





<p>Economic impacts</p>	<p>KPMG. (2011). Study of the Ontario Economic Impact of Ontario VQA Wines. Ontario: Wine Council of Ontario.</p>
<p>Environmental impacts</p> <ul style="list-style-type: none"> ▪ Soil fertility ▪ Water use or waste in agriculture (DSF measurement)) ▪ Carbon footprint of food production (DSF measurement)) ▪ Status of biodiversity/ wildlife habitat measurement (DSF measurement)) ▪ Carbon storage (DSF measurement) ▪ Carbon sequestration (DSF measurement) 	<p>Suzuki reports; GGH measurements for WEFC, D&S report enviro section</p> <p>Tomaly, Ray (2012). Carbon in the Bank: Ontario's greenbelt and its Role in Mitigating Climate Change. David Suzuki Foundation. August 2012.(from DSF)</p> <p>Diversity of wildlife reports, soil health (Ralph Martin?), topsoil loss, soil immunity, water pollution from run-off, chemical pollution from large-scale applications or waste management</p> <p>Econometrics Research Limited. 2012. Evaluating the Economic Benefits of Greenbelt Assets. Number 14. Friends of the Greenbelt Foundation Occasional Papers.</p> <p>Caldwell, Wayne and K. Proctor. 2013. Farming in Ontario's Greenbelt: Possibility Grows Here. No. 15. Friends of the Greenbelt Foundation Occsional Papers. June 2013.</p> <p>Wilson, Sara J. 2008. Lake Simcoe Basin's Natural Capital: The value of the Watershed's Ecosystem Services. Friends of the Greenbelt Occasional Paper Series. June 2008. David Suzuki Foundation, Friends of the Greenbelt Foundation, The Lake Simcoe Region Conservation Authority.</p> <p>Troy, Austin and K. Bagstad. 2009. Estimation of Ecosystem Service Values for Southern Ontario. Spatial Informatics Group for the Ontario Ministry of Natural Resources.</p> <p>Cowie, Amber. 2011. Biodiversity in Ontario's Greenbelt. David Suzuki Foundation and Ontario Nature. Novmeber 2011.</p>
<p>Flow/ retention of dollars based on different ag. and consumption activities</p> <ul style="list-style-type: none"> ▪ Circulation/ multiplication of dollars 	<p>I/O studies with direct, indirect and induced impacts</p> <p>See : Greenaway, G., & Sanders, S. (2006). The Fiscal Implications of Land Use: A 'Cost of Community Services' Study for Red Deer County". Calgary, Alberta: Miistakis Institute. studies for model; Dollars and Sense reports</p> <p>Econometric Research Limited. (2012). Evaluating the Economic Benefits of Greenbelt Assets. Econometric Research Limited Friends of the Greenbelt Foundation Occasioal Papers. online: Greenbelt Foundation.</p>
<p>Level of local ownership of land or businesses</p> <ul style="list-style-type: none"> ▪ Level of rental vs. owned land ▪ Comparative production types on owned and rented land 	<p>Ag. census for farms and farmland, NFU reports</p> <p>Stats Can for others</p> <p>Brouwers, T. (2009). Canada's Disappearing Farmland. Retrieved from http://www.organicagcentre.ca/NewspaperArticles/na_disappearing_farmland_tb.asp</p> <p>Land trust model: Learmouth, P. (2009). Farmland Conservation Agreements in Ontario. Ontario: Kawartha Heritage Conservancy.</p>
<p>Property values and trends for ag. and near-ag land, rental rates</p>	<p>MLS study (Peter Jeffreys/ OFA reference), GH report</p> <p>For agriminiums: Condominium Act, S.O. 1998, Chapter 19 C.F.R. (1998a).</p> <p>Farming and Food Production Act 1998 (1998b)</p>
<p>Levels of knowledge and skills; opportunities to</p>	<p>NFU reports? FarmStart? impact of agri-tourism (OCTA)</p>





transfer to others or next generation	
Rate of farmland loss/retention <ul style="list-style-type: none"> ▪ Public land area used for food production ▪ Number of retiring farmers over ten years 	Stats Canada, Walton report Holtlander, Cathy. 2015. Losing Our Grip 2015 (Update report). National Farmers' Union. Farms Forever concept paper
New farmer numbers and access to farmland and markets	FarmStart: Learmouth, P. (No Date). Accessing Land for Farming in Ontario: A guidebook for farm-seekers and farmland owners. Online: FarmStart, Metcalf Foundation and Everdale Environmental Learning Centre., Places to Farm report
Cultural value of agricultural lands (DSF measurement)	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Additional reports on GGH, Whitebelt, watersheds from DSF
Subsidy levels for local food for local markets	National Farmers' Union, OMAFRA
Import and trade regulations	National Farmers' Union reports, briefs
Soil fertility	Ralph Martin: Soil Organic Matter Soil classification maps/ reports
Water use or waste in agriculture (DSF measurement))	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Molnar, Michelle et al. 2012. Watersheds of the Ontario Greenbelt. David Suzuki Foundation. May 2012.
Carbon footprint of food production (DSF measurement))	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Additional reports on GGH, Whitebelt, watersheds from DSF
Status of biodiversity/wildlife habitat measurement (DSF measurement))	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Additional reports on GGH, Whitebelt, watersheds from DSF
Carbon storage (DSF measurement)	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Additional reports on GGH, Whitebelt, watersheds from DSF ALUS?
Carbon sequestration (DSF measurement)	Ontario's wealth, Canada's future (David Suzuki Foundation: DSF) Additional reports on GGH, Whitebelt, watersheds from DSF





2 Food distribution and wholesale

Indicator	Sources of information
Daily and weekly food prices	Ontario Food Terminal
Number and type of wholesalers (for different products)	Spacing Magazine on food Include aggregators like Pfennings
Wholesale market food flows, challenges and investment needs (2011)	<p>Corn production by marketing channels http://www.statcan.gc.ca/pub/96-325-x/2014001/article/11913-eng.htm#a9</p> <p>Apple production by marketing channels http://www.omafra.gov.on.ca/english/stats/hort/applebymc.htm actual trajectory of products: corn for whiskey? biofuels? feeding US cows? http://www.suncor.com/en/about/212.aspx 20% of corn crop in Ontario goes to Suncor!</p> <p>Maan Miedema, J. 2006. Redundant trade study in Waterloo Region. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/54ED787F44ACA44C852571410056AEB0/\$file/Redundant_Trade.pdf?openelement.</p> <p>Maan Miedema, J. 2008. Neighborhood markets initiative: Evaluation report. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/54ED787F44ACA44C852571410056AEB0/\$file/Neighbourhood%20Markets.pdf?openelement.</p>
UA Infrastructure needs	<p>Toronto: Scaling up Urban Agriculture in Toronto Building the Infrastructure http://metcalffoundation.com/wp-content/uploads/2011/05/scaling-urban-agriculture.pdf Food chain analysis; food infrastructure, material flows</p>
Food distribution and wholesale	<p>Toronto Canadian Business Patterns, Census Tract Aggregation Tool, December 2013, Food wholesale and distribution by NAICS; can be used to count number of firms by category and locate them http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=bc2f2cd2563d6410VgnVCM10000071d60f89RCRD&vgnextchannel=e71032d0b6d1e310VgnVCM10000071d60f89RCRD</p>
Jobs	<p>Toronto Data: Number of jobs; Industries that make up the food sector; Prominent occupations in the food sector; Employment income for occupations in the food sector; Demographic characteristics</p>





	of occupations in the food sector; Overall observations regarding labour market data
Flow/ retention of dollars based on different ag. and consumption activities Circulation/ multiplication of dollars	I/O studies with direct, indirect and induced impacts See COCs studies for model; Dollars and Sense reports
Food and beverage	Ontario Food and Beverage Organization
Availability of food hubs	FoG, LOFC, CountryGuide report (Lois Harris)
Transportation costs and emissions	Worth a million report; reports on food miles (Waterloo/ Xuereb)
GHG emissions and availability of local farm supply, vets, processing: regional infrastructure	i.e., impact of loss of slaughterhouses?



3 Food processors

Indicator	Sources of information
Food processing companies	AoFP, OFVPA, OPVG M. Wolfson? How to capture small, micro and mixed enterprises (e.g, production kitchen at West End Food Co-op)
Extent of food processing sector	AoFP Synthesis (agri-food consulting). 2011. A Global Hub for Food Processing: Agri-Food Asset Map. For Ontario government (OMAFRA?).
Urban and peri-urban levels of food processing	AoFP WCM Consulting. 2002. Food Industry Outlook: A Study of Food Industry Growth Trends in Toronto. for Omafra and Toronto Economic Development.
Food processors	Toronto, 2013 Alliance of Food Processors report: Ontario's Food and Beverage Industry: The New Engine of Ontario's Economy Includes industry profile http://www.aofp.ca/pub/docs/Ontarios Food and Beverage Processing Industry Strategy The New Engine of Ontarios Economy.pdf Toronto.net directory, 35 processors, paid listings http://www.toronto.net/Food_Production.html
Food and beverage sector	Toronto Web page with Toronto Food and Beverage industry facts http://www1.toronto.ca/wps/portal/contentonly?vnextoid=67c4c1b5c62ca310VgnVCM10000071d60f89RCRD&vnextchannel=401132d0b6d1e310VgnVCM10000071d60f89RCRD
Food processing	Toronto Canadian Business Patterns, Census Tract Aggregation Tool, December 2013, Food processing by NAICS; can be used to count number of firms by category and locate them http://www1.toronto.ca/wps/portal/contentonly?vnextoid=bc2f2cd2563d6410VgnVCM10000071d60f89RCRD&vnextchannel=e71032d0b6d1e310VgnVCM10000071d60f89RCRD
Industry overview	Toronto Data: Number of jobs; Industries that make up the food sector; Prominent occupations in the food sector; Employment income for occupations in the food sector; Demographic characteristics of occupations in the food sector; Overall observations regarding labour market data Bure, Claire and S. Laban, H-D Chung, J van den Steenhoven. 2015. Building a Resilient Tender Fruit Industry in Ontario. June 2015. The Ontario Tender Fruit Lab Food for Action.
Flow/ retention of dollars based on different ag. and consumption activities	I/O studies with direct, indirect and induced impacts See COCs studies for model; Dollars and Sense reports Use of local banks for mortgages, use of local farm supplies and inputs, local banks and loan agencies, local machinery repair, local markets and



Circulation/ multiplication of dollars	local meeting areas (increased use of community centres vs. large-scale conference centres)
Trade flows	Amount in and out of specific commodities, redundant trade figures
Emissions from food transportation	UK study and responses; Suzuki reports?, D&S enviro section? Xuereb Food Miles report for Waterloo



4 Point of sale: Markets, catering and retail

Indicator	Sources of information
Location of points of sale (farmers' markets, food stores)	Google maps, streetview TFS- retail mapping (see below for link) FM Networks for fm mapping Map locations and street views Toronto and much of surrounding area, 2014: streetview adequate enough to do significant mapping of green space/ land use TFPC food asset mapping Co-ops: Big Carrot, WEFC, Karma (Toronto), Garden City (St. Cath), Mustard Seed (Hamilton) public markets --- St. Lawrence, Kensington, anticipated Westfield market with CSI at Honest Ed's site
Farmers' Markets	GHFFA: 7 regions working on maps of local food markets (retail, csa, etc.0 Marina/ Brickworks for econ. impact of farmers' markets (Mary Lou Morgan report too) http://www.edibletoronto.com/local/farmers-markets?id=628:farmers-market-directory&catid=93 Toronto FMs: http://tfmn.ca/?page_id=76 Greenbelt markets are here: https://www.greenbeltfresh.ca
Farm direct sales companies	#s of pick your own establishments #s of CSAs on-farm markets agritourism #s Farm/ restaurant collaboratives (Harvest Kitchen) CSA directort (Ontario CSA Network) http://csafarms.ca/CSA%20map.html
Daily and weekly food prices	OFT
Food retail	Toronto http://tfpc.to/policy/food-strategy-update-food-retail-mapping-in-toronto Food Strategy: Food Retail Mapping; environmental and income barriers to healthy food access Toronto http://www1.toronto.ca/wps/portal/contentonly?vnextoid=bc2f2cd2563d6410VgnVCM10000071d60f89RCRD&vgnnextchannel=e71032d0b6d1e310VgnVCM10000071d60f89RCRD Canadian Business Patterns, Census Tract Aggregation Tool, December 2013, Food retail by NAICS; can be used to count number of firms by category and locate them Toronto Extensive data collecting and mapping work on this issue Food Asset map: Page 13 Other material available through Lauren Baker http://www.toronto.ca/legdocs/mmis/2014/ed/comm/communicationfile-44865.pdf
Community food agencies, banks	Miller, S. 2013. Finding Food. TFS/ TPH. <i>CBC online</i> . 2007. Food banks provide low nutritional value: study. January 11, 2007. Online at http://www.cbc.ca/news/health/story/2007/01/11/food-banks.html .



Food businesses	COGs (cost of food for retail in Ontario) http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=3550009&pattern=&csid= (35.5% food= 9.59 billion Canada) 7.8 m pop, 13.8 m,
Fresh produce report	
Fresh produce price instability	CPI by province http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/cpis08g-eng.htm By city http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/cpis02a-eng.htm 1.4% increase over 2002 from Sept 204-Sept 2015
Farm/school program	SNPs FoodShare TDSB
Public Facilities	
Collective food purchase case study	Miller, Kamizaki, Finding Food and Food Flow reports (TPH/ PARC)
Direct organic markets	Ontario Farm Fresh Association member directory?
Food retail sector	Total dollars http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=3550004&&pattern=&stByVal=1&p1=1&p2=-1&tabMode=dataTable&csid= over 27 billion for Canada
Farmers' markets	Toronto Farmers' market by district with links http://www.toronto.com/articles/torontos-best-farmers-markets/
Public food procurement	Toronto Finding Food: Community Food Procurement in the City of Toronto http://tfpc.to/wordpress/wp-content/uploads/2014/02/CFP-Finding-Food.pdf Toronto 1. Approves children services pilot project; describes benefits of local, sustainable food procurement; allocation of additional funds to offset potential increase in costs 2. Increase in LSF procurement by 13.4%; increase cost 0.07% 3. Adjusts RFP language to reflect LSF purchasing priority Municipal initiatives to support procurement of local sustainable food (LSF) 1. http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2008.GM14.3 2. http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.GM24.19 3. http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2011.GM5.13 Food for Life Partnership. June 2011. Good food for all: The impact of the Food for Life Partnership. Bristol, U.K. Online at www.foodforlife.org.uk/LinkClick.aspx?fileticket...tabid=310 (PDF).





Labour market	OAFP report? Distination Excellence? M Wolfson has Zizys, Tom. 2015. Good Food, Good Jobs: Seeking Better Employment Outcomes in the Food Sector in Toronto. Prepared for Toronto Food Strategy. TPH/ TFPC. January 2015.
Flow/ retention of dollars based on different ag. and consumption activities Circulation/ multiplication of dollars	I/O studies with direct, indirect and induced impacts See Cost of Communities studies for model; Dollars and Sense reports
Emissions	Miller Climate Spark grid: emissions from small local food store



5 Food consumption

Indicator	Sources of information
Diversity of food sources	
Age, race/ethnicity, single-parent status, geographical distribution of population groups, income	<p>Census Metropolitan Area stats canada tables http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/met01/met128-eng.htm</p> <p>Some GH report demographics</p> <p>Filson study The paper appeared online in the <i>Journal of Agriculture, Food Systems and Community Development</i>. The lead author is Bamidele Adekunle, special graduate faculty in SEDRD's capacity development and extension program.</p> <p>See census from Lauren and Joel Fridman</p>
Food banks	<p>Hunger Count (provincial only)</p> <p>Ongoing health units studies</p>
Community kitchens	TO foosd asset mapping
Availability of food	<p>Resilient Food Guide (mentioned in meeting, follow up) maybe Jennifer Wilkins Regional Food Guide?</p> <p>Wilkins, Jennifer and J. Bokaer-Smith. 1996. Northeast Regional Food Guide. Cornell Cooperative Extension. Cornell University.</p>
Infant, child food access	Hunger Count/ Tarasuk studies
Low income residents have access to/can afford local and healthy food	<p>FoodShare reports? CFCs?</p> <p>Healthy Corner stores maps (Brian Cook/ TFS)</p> <p>Andrée, P., Martin, M., Ballamingie, P., and J. Pilson. 2015. <i>Food Access, Housing Security, and Community Connections: A Case Study of Peterborough, Ontario</i>. Nourishing Communities Sustainable Local Food Systems Research Group. October.</p>
Malnutrition/stunting in children	<p>TPH/ TFS</p> <p>De Wit, Yvonne. 2012. <i>Nourishing Young Minds</i>. Toronto Public Health. June 2012.</p>
Nutrition, food security, sanitation	<p>TPH/ TFS</p> <p>Desjardins, E., R. MacRae and T. Schumilas. 2010. Meeting future population food needs with local production in Waterloo Region: linking food availability and optimal nutrition requirements. Agriculture and Human Values [On-line: DOI: 10.1007/s10460-009-9204-y]</p> <p>Desjardins, E., and R. MacRae. 2005. An optimal nutrition environment for Waterloo Region, 2006–2046. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/54ED787F44ACA44C852571410056AEB0/\$file/nutrition_environment_report.pdf?openelement.</p> <p>Desjardins, E., and M. Xuereb. 2005. Towards a healthy community food system for Waterloo Region. Region of Waterloo Public Health. http://chd.region.waterloo.on.ca/web/health.nsf/4f4813c75e78d71385256e5a0057f5e1/54ed787f44aca44c852571410056aeb0!OpenDocument.</p> <p>Union of Concerned Scientists. August 2013. "The \$11 Trillion Reward: How Simple Dietary Changes can Save Lives and Money, and How We Get There".</p>



	<p>Online at http://www.ucsusa.org/food_and_agriculture/solutions/expand-healthy-food-access/11-trillion-reward.html.</p> <p>Willows, Noreen and P. Veugelers, K. Raine and S. Kuhle. 2011. "Associations between household food insecurity and health outcomes in the Aboriginal population (excluding reserves)". Statistics Canada, Catalogue no. 82-003-XPE • Health Reports, Vol. 22, no. 2, June 2011.</p> <p>Consider indicators that link back to production: nourishment per acre? See Jules Pretty on "Regenerating Agriculture"</p>
Nutrition and farmers' market access/ good food markets	FoodShare? Double Up Food Bucks? (effect of increased access and knowledge on health)
Diet composition, nutrient poverty	TPH/ TFS
Average household income, % poverty level, employment statistics, assistance programs spatial distribution of socio-economic characteristic	<p>Stats Can Bread and Butter Toronto CMA census GH? Neighbourhood Equity Index (City of TO report) Social Policy Analysis and Research, City of Toronto. 2014. TSNS 2020 Neighbourhood Equity Index: Methodological Documentation. Prepared for the Toronto Strong Neighbourhoods Strategy 2020. March 2014. City of Toronto Social Development, Finance and Administration.</p>
Newcomer stats	<p>Guelph research report, FarmStart (Watkins), see ethnocultural paper for WEFC. GH report 9 Prof. Glen Filson, School of Environmental Design and Rural Development (SEDRD) discussed at http://atguelph.uoguelph.ca/2011/11/demand-for-ethnocultural-vegetables-far-exceeds-supply/. See also, EthnoCultural Vegetables in Ontario blob at http://evontario2011.blogspot.ca Toronto Public Health and Access Alliance Multicultural Health and Community Services. The Global City: Newcomer Health in Toronto. November 2011.</p>
Food basket prices	<p>Nutritious Food Basket information http://www1.toronto.ca/wps/portal/contentonly?vnextoid=5bc0ce7e2b322410VgnVCM10000071d60f89RCRD&vnextchannel=7209ce7e2b322410VgnVCM10000071d60f89RCRD</p>
HH/local income (including gov/institutional) spent on food	<p>Beyond Bread and Butter? Ontario: http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil132g-eng.htm food expenditures Household income tables: http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/ind01/l3_3868_2812-eng.htm?hili_none</p>
Suite of household food insecurity indicators	<p>Tarasuk, V, Mitchell, A, Dachner, N. Research to identify policy options to reduce food insecurity (PROOF). (2013). <i>Household food insecurity in Canada 2011</i>. Retrieved from http://nutritionalsciences.lamp.utoronto.ca/. Food Banks Canada. 2014. Hunger Count 2014.</p>





	<p>Martin Prosperity Institute. 2010. Food Deserts and Priority Neighbourhoods in Toronto. Online at http://martinprosperity.org/2010/06/15/food-deserts-and-priority-neighbourhoods-in-toronto/.</p>
Diabetes Atlas	<p>Toronto, 2012 100+ maps Key findings summary at bottom page; links diabetes to income and activity level http://www.stmichaelshospital.com/crich/reports/toronto-diabetes-atlas/</p>
City-wide community health data	<p>Toronto Health profiles, health data maps, equity analyses http://www.torontohealthprofiles.ca/ Neighbourhood Equity Index</p>
Urban Heart Project	<p>Toronto, 2012 Based on WHO initiative; helps measure how 140 neighbourhoods do across policy domains including economic, social and human development, civic engagement, physical environment and infrastructure, and population health http://www.stmichaelshospital.com/crich/projects/urbanheart/</p>
Well-being	<p>Toronto, 2011 Indicators include demographic information (total population, by age); civics and equity (city grant funding; walk score; neighbourhood equity score); economics (social assistance recipients; local employment; businesses; debt risk score; home process; child care spaces); education (early dev't); environment (green rebate program; tree cover; green space; pollutant scores); health (student nutrition; fertility; mortality; health providers; cervical/breast cancers); recreation; safety; transportation (road kms); culture (linguistic diversity index) http://map.toronto.ca/wellbeing/#eyJ0b3ItZ2lkZ2V0LWNsYXNzYnJlYWsiOjSAcGVyY2VudE9wYWVudHJlZCwzY3VzXjItYcSTYcSXxIBuZWlnaGJvdXJob29kc8S2fcSrxlHEg8SFxlfEicSLdGFixYXEmCLEo3RpdmVUxZBJZMSXxYnEhMWPYi1pbmRpY2HEgnLFhcWlYWdzTWfWxLYiesWCbcSXNMSseMSXLTg4Mzc3NjMuNcaDNzI3xKzEpzo1NDEyOTMxLjI0xolyODFiMwKxabFqMWqxZLEgMwYxatpb27ElzLErHPFpGdsZcW0xK5yxJPEn1RpbWxFnMapxKzFlsa4xqliMsW0c2XGr2N0ZWRJxaXFp8WpxlPGujoiNzMixKzGnseMxarFnHNBxaVXxLnEu3TFklvEgMShxZ7HkseUInfHnmh0xJcXxKzEk8akx4NQb8SOcsSlxo1mYWzHg31dxYfFiMa9ZceDx7blgsWGxKzGssaOdMeKxp%2FHjXJNxYPGsMeQxqxuxq7GsMWH</p>
School nutrition	<p>Toronto, 2013 School nutrition allocations and project summary http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL24.5 http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.HL24.5</p>
Agriculture and poverty	<p>NFU, Greenbelt papers (Victoria Poce)</p>
Food Security	<p>TFPC maps of hunger, asset mapping project with health units (Lauren B contact) Health Canada for food access mapping Food swamps review by Leah (?) and Catherin Mah Daily Bread Food Bank. 2008. <i>Nutritious Food to Drop-ins: Final Report</i>. February 2008 (unpublished).</p>





	<p>Irwin, Jennifer D. et al. 2007. "Can Food Banks Sustain Nutrient Requirements? A Case Study in Southwestern Ontario". Canadian Journal of Public Health. Vol. 98, Issue 1, pp. 17-20.</p>
Poverty overview	<p>(see well-being indicators for TO for social assistance numbers) http://www5.statcan.gc.ca/cansim/a26 (Ontario poverty levels, including market basket indicator)</p>
Cost of living	<p>Stats Can, CCPA reports?</p>
Agriculture and health	<p>Rod MacRae; DSF; Pretty? Effect of increased knowledge of farm issues on health? Health impacts of urban agriculture (literature review Buzby, J.C., H. Farah, Wells, and G. Vocke. 2006. Possible implications for US agriculture from adoption of select dietary guidelines. Economic Research Report No. ERR-31, Washington, DC: Economic Research Service, USDA. http://www.ers.usda.gov/publications/err31. Peters, C., N. Bills, J. Wilkins, and R. Smith. 2003a. Fruit consumption, dietary guidelines, and agricultural production in New York State—Implications for local food economies. Ithaca, NY: College of Agriculture and Life Sciences, Cornell University. Peters, C.J., G.W. Fick, and J.L. Wilkins. 2003b. Cultivating better nutrition: Can the food pyramid help translate dietary recommendations into agricultural goals? <i>Agronomy Journal</i> 95(6): 1424–1431. Peters, C.J., J.L. Wilkins, and G.W. Fick. 2007. Testing a completediet model for estimating the land resource requirements of food consumption and agricultural carrying capacity: The New York State example. <i>Renewable Agriculture and Food Systems</i> 22(2): 145–153.</p> <p>Peters, C., N. Bills, Lembo, A.J., Wilkins, J.L., and Fick. G.W. 2009 Mapping potential foodsheds in New York State: A spatial model for evaluating the capacity to localize food production. <i>Renewable Agriculture and Food Systems</i> 24(1): 72-84. Cohen, Larry et al. 2004. "Cultivating Common Ground: Linking Health and Sustainable Agriculture". The Prevention Institute. Oakland, CA. September 2004. Online at http://www.preventioninstitute.org/component/jlibrary/article/id-67/127.html. David, Linor. 2013. "Growing People First: Emerging Best Practices from a Mental Health and Gardening Knowledge Swap". Ontario Health Promotion E-Bulletin. Online at http://www.ohpe.ca/node/14050. Horrigan, Leo et al. 2002. "How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture". Center for a Livable Future, Johns Hopkins, Baltimore, MD. May 2002. pp. 445-456.</p>
Food safety stats	<p>Industry reports? TPH?</p>





6 Waste and other material resources

Indicator	Sources of information
Volume food waste re used	Guelphfoodwaste.com researchers at U of G, little info on the site though TPH Southwest Food Collaborative (GHFFA website) TPH paper on food waste (LB) Uzea, N. et al, Developing an Industry Led Approach to Addressing Food Waste in Canada Gunders, D. (2012). Wasted: How America is losing up to 40 percent of its food from farm to fork to landfill. Natural Resource Defense Council (NRDC) Issue Paper 12-06-B. August. Available online at http://www.nrdc.org/food/files/wasted-food-ip.pdf von Massow, M. and R.C. Martin (2013). Residential food waste numbers: Preliminary findings. University of Guelph. Vidoni, Michael. 2011. Community Composting in Toronto. http://www.davidsuzuki.org/what-you-can-do/food-and-our-planet/help-end-food-waste/
Energy production from waste	Biodiesel from restaurant waste
Waste management	Lee, Heather. 2014. Food Waste Reduction and Diversion: Opportunities for Toronto. Prepared for the Toronto Food Policy Council. October 27, 2014. Wally Seccombe on green bins; also Helene St. jacques
Solid waste management	September 30, 2014 : City Council meeting minutes : excellent source of indicators
	Toronto: Draft policy report available Current compost success rates and project evolution; new strategy for waste diversion to further reduce waste
Environmental impacts	FoG and OMAFRA reports; indicators from DSF, Rod MacRae; studies from US soil conservation program?
Water contamination	

7



8 Governance and policy

Indicator	Sources of information
<p>Growth management and greenbelt policy</p> <p>Urban/rural fringe land use management</p>	<p>GHFFA</p> <p>Local Leadership report (FoG)</p> <p>Churchyard, A. (n/a). Planning Regional Food Systems: A guide for municipal planning and development in the Greater Golden Horseshoe</p> <p>Greenbelt Plan 2005 (2005a).</p> <p>Places to Grow Act, 2005, S.O. 2005, Chapter 13 C.F.R. (2005b).</p> <p>Provincial Planning Act (2005c)</p> <p>Lister, N. M. (2010). Planting the Seeds for Farm Innovation: A Guide to Achieving Flexible Land Use Policy in Ontario's Greater Golden Horseshoe. online</p> <p>Miedema, J. M., & Piggott, K. (2007). A Healthy Community Food System Plan for Waterloo Region. Waterloo, Ontario: Grand By Design and Region of Waterloo Public Health.</p> <p>Ontario Greenbelt Alliance, & Environmental Defence Fund. Places to Sprawl: Report on Municipal Conformity with the Growth Plan for the Greater Golden Horseshoe, as provided under Ontario's Places to Grow Act. online.</p> <p>Milan Urban Food Policy Pact</p> <p>Allen, Rien and P. Campsie. 2013. Implementing the Growth Plan for the Greater Golden Horseshoe: Has the strategic vision been compromised? Neptis Foundation.</p>
<p>Provincial land use policy re UA</p>	<p>Provincial Policy Statement, P2G, GB Act, Niagara Escarpment and Oak Ridges plans</p> <p>Places to Farm (Miller 2013)</p> <p>FarmON Alliance. (2005). Five-Year Review of the Provincial Policy Statement.</p>
<p>Municipal policies</p>	<p>Hamilton zoning by-law changes, TFPC, food charters (TO, other?)</p> <p>Draw on Places to Farm for use of policies/ zoning to protect ag.</p> <p>Christianson, Russ. 2015. . Report of Porceedings November 20, 2014 Meeting. York Region Food Collaborative. January 2015.</p>
<p>Modeling</p>	<p>Christian Peters/ Jennifer Wilkins work at Tufts: Foodprints and FoodShed Analysis</p>
<p>Land Use policy</p>	<p>Caldwell, W., Churchyard, A., Dodds-Weir, C., Eckert, A., & Procter, K. (2011). Lot Creation in Ontario's Agricultural Landscapes: Trends, Impacts and Policy Implications Report 3: Impacts and Analysis.</p> <p>Caldwell, W., & Weir, C. (2002). Ontario's Countryside: A Resource to Preserve or an Urban Area in Waiting? A Review of Severance Activity in Ontario's Agricultural Land During the 1990s. Online: School of Rural Planning and Development, University of Guelph.</p> <p>Caldwell, W., & Weir, C. (2003). Rural Non-Farm Development: Its Impact on the Viability and Sustainability of Agricultural and Rural Communities. Online: School of Rural Planning and development, University of Guelph.</p> <p>Walton, M. (2012). Food and Farming: An Action Plan 2021. Ontario: Greater Toronto Area Agricultural Action Committee (and Appendices).</p> <p>Markham food belt proposal</p>
<p>Food security</p>	<p>Council of Canadians advocating in Niagara (GHFFA website)</p>



	<p>Also Community Food Advisory program in ON http://www.communityfoodadvisor.ca</p>
<p>Sustainable consumable goods levers for change and best practices</p>	<p>OECD countries, 2008, report on sustainable consumption across range of consumer goods: http://www.oecd.org/greengrowth/40317373.pdf Standards and labels (includes food content (e.g. GE) and/or nutritional labelling); taxes and charges; subsidies and incentives; communication campaigns (to reduce consumption of junk food; ethical food consumption); education (sustainable schools that promote healthy eating; voluntary labeling; corporate reporting; advertising; public procurement (The Netherlands identified as a 'Deep Green' country for public procurement of non-food consumables)</p>
<p>Regulations in place to protect agricultural land Codes/regulations that allow/promote UA/local food Policies regarding use of open space/ zoning etc Land use planning includes consideration food system Policies require labeling of food origin / food miles etc</p>	<p>Toronto 2011: Assessing urban impacted soil for urban gardening: Decision support tool, Technical report and rationale, May, 2011 http://tcgn.ca/wiki/uploads/DonationsTradesSharing/urban_gardening_assessment.pdf</p>
<p>Plans, public policies, fiscal incentives</p>	<p>FAO, 2011 The Place Of Urban And Peri-Urban Agriculture (UPA) In National Food Security Programmes, P. 38 http://www.fao.org/docrep/014/i2177e/i2177e00.pdf</p>
<p>National Food Sovereignty</p>	<p>Food Secure Canada Milan Urban Food Policy Pact (endorsed by Toronto City Council). October 15m, 2015.</p>
<p>Open/ public space use for local ag.</p>	<p>http://publicspaces.ca</p>
<p>Policies that support/restrict healthy food retail, farm to school, state food policy councils, institutions</p>	<p>Review paper on how to avoid trade restrictions Policies from the Field: Promising Food Policies from Other Places http://s.cela.ca/files/Local%20Food%20Procurement%20%28Feb.2013%29.pdf Wylie-Toal, B., Padanyi, P., Varangu, L., Kanetkar, V. (2013). <i>Local Food Provision in Ontario's Hospitals and Long-Term Care Facilities; Recommendations for Stakeholders</i>. Report for the University of Guelph/Ontario Ministry of Agriculture, Food and Rural Affairs Partnership. Baker for Ryerson planning paper on this topic</p>
	<p>Toronto region, 2012 Food and Farming: An Action Plan 2021 https://www1.toronto.ca/static_files/economic_development_and_culture/docs/Sectors_Reports/foodfarming_actionplan.pdf</p>





<p>Food assistance programmes</p>	<p>Finding Food Food flow report Canada, 2104 Food banks, welfare, and food insecurity in Canada http://nutritionalsciences.lamp.utoronto.ca/wp-content/uploads/2014/09/BFJ-02-2014-0077.pdf</p>
<p>Presence of policies that encourage local processing, such as flexible food regulation and certification policies, and industrial land use planning.</p>	<p>Toronto, 2010 Nurturing Fruit and Vegetable Processing in Ontario, Carter-Whitney, CIELA, Sally Miller, West End Food Co-op http://metcalfoundation.com/wp-content/uploads/2011/05/nurturing-fruit-and-vegetable-processing.pdf</p>
<p>Action goals for sustainable food system</p>	<p>Toronto, 2010 Cultivating Food Connections: Toward a Healthy and Sustainable Food System for Toronto Overview of action goals for healthy, sustainable food system Appendix 1: http://www.toronto.ca/legdocs/mmis/2010/hl/bgrd/backgroundfile-30483.pdf file:///Users/alisonpalmer/Downloads/Cultivating%20Food%20Connections%252cToronto%20Food%20Strategy%20(FINAL)_1.pdf Food strategies for CFA, political parties</p>
<p>Urban agriculture action plan for Toronto</p>	<p>growTO: an urban agriculture action plan for Toronto (2012) http://tfpc.to/wordpress/wp-content/uploads/2012/08/GrowTO_ActionPlan_lowresFINAL.pdf Snapshot of existing projects: Commercial Farms and Market Gardens; Residential Gardens and Edible Landscaping; Community Gardens on City-owned Land; Gardens or Farms on Institutional Land; Gardens at Schools; Entrepreneurial Farms/Community Supported Agriculture; Gleaning Projects and Orchards; Rooftop Farms; Greenhouses; Therapeutic Gardens; Urban Livestock Priorities moving forward: link growers to land and space; strengthen education and training; increase vitality and promotion; add value to urban gardens; cultivate partnerships; develop supportive policy</p>
<p>UA production potential for Toronto</p>	<p>Rod MacRae et al. 2012.. Could Toronto Provide 10% of its Fresh Vegetable Requirements from Within its Own Boundaries? Part II, Policy Supports and Program Design. Journal of Agriculture, Food Systems and Community Development, Feb. 2012 (pp. 147–169) Scaling up urban agricultural activities in the City of Toronto could supply ten percent of the city's commercial demand for fresh vegetables, create jobs and economic opportunity, engage diverse communities, and enhance the urban environment. From City of Toronto minutes, http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.PE23.1 Link to production measures</p>





Urban agriculture	<p>Toronto, 2010 Scaling up Urban Agriculture in Toronto: Building the Infrastructure, Nasr, MacRae, Kuhns http://metcalffoundation.com/wp-content/uploads/2011/05/scaling-urban-agriculture.pdf</p>
Number of UA producers' organization	See above
Need for school nutrition programs	<p>Toronto List of resources that together help make the case for school nutrition programmes http://www.foodshare.net/files/www/Food_Policy/Building_the_case_for_a_Universal_School_Food_Program.pdf SNPs/ TFS School gardens Green Thumb Growing Kids</p>
Food opportunities	<p>Toronto, 2010 Menu 2020: Ten Good Food Idea for Ontario, Sustain Ontario http://metcalffoundation.com/publications-resources/view/menu-2020-ten-good-food-ideas-for-ontario/</p>
Cost of food transfers	<p>Global, IFPRI, 2014 9 Costing alternative transfer modalities 10 http://www.ifpri.org/publication/costing-alternative-transfer-modalities</p>
GHG reduction	<p>Toronto, 2007 Commitment to use community and backyard gardens as part of GHG mitigation strategy http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2007.EX10.3</p>
Land use policy	Places to Grow, Greenbelt Strategy Ontario Farmland Trust
Access to capital	FarmStart report
Access to business planners and other business supports	AMI report



11 National indicators, context

Indicator	Sources of information
Impact of food prices	
Urban Profile, UN Habitat, 2007	
Other jurisdictions	Greater Philadelphia Food System Study
Water access, waste collection	
UN	Economic, social, environmental by country http://data.un.org/Default.aspx
	GDP data, national accounts http://unstats.un.org/unsd/nationalaccount/sdPubs/ama-2013.pdf
WHO	http://apps.who.int/gho/data/node.country High level health indicator data by country
FAO	<p>FAO-STAT – Food Security indicators, by country</p> <p>AVAILABILITY (Average dietary energy supply adequacy; Average value of food production; Share of dietary energy supply derived from cereals, roots and tubers; Average protein supply; Average supply of protein of animal origin)</p> <p>ACCESS (Percent of paved roads over total roads; Road density; Rail lines density; Gross domestic product per capita (in purchasing power equivalent); Domestic food price index; Prevalence of undernourishment; Share of food expenditure of the poor ; Depth of the food deficit; Prevalence of food inadequacy)</p> <p>STABILITY (Cereal import dependency ratio; Percent of arable land equipped for irrigation; Value of food imports over total merchandise exports; Political stability and absence of violence/terrorism; Domestic food price volatility ; Per capita food production variability; Per capita food supply variability)</p> <p>UTILIZATION (Access to improved water sources; Access to improved sanitation facilities; Percentage of children under 5 years of age affected by wasting; Percentage of children under 5 years of age who are stunted; Percentage of children under 5 years of age who are underweight; Percentage of adults who are underweight; Prevalence of anaemia among pregnant women; Prevalence of anaemia among children under 5 years of age; Prevalence of vitamin A deficiency in the population; Prevalence of iodine deficiency)</p> <p>ADDITIONAL USEFUL STATISTICS (Total population; Number of people undernourished; Minimum Dietary Energy Requirement (MDER); Average Dietary Energy Requirement (ADER); Minimum Dietary Energy Requirement (MDER) - PAL=1.75; Coefficient of variation of habitual caloric consumption distribution; Skewness of habitual caloric consumption distribution; Incidence of caloric losses at retail distribution level; Dietary Energy Supply (DES); Average fat supply)</p> <p>http://faostat3.fao.org/download/D/*/E</p>
	Food security indicators, by country, 1987-2014, Prevalence of undernourishment (%) (3-year average)



	<p>Average dietary energy supply adequacy (%) (3-year average)</p> <p>Prevalence of food inadequacy (%) (3-year average)</p> <p>Number of people undernourished (millions) (3-year average)</p> <p>Depth of the food deficit (kcal/capita/day) (3-year average)</p> <p>Per capita food supply variability (kcal/capita/day)</p> <p>http://faostat3.fao.org/download/D/FS/E</p> <p>Can generate custom tables</p>
<p>MAPS</p> <p>Area of agricultural land for urban/ peri urban/ rural food production</p>	<p>NASA MAPS, Vegetation cover</p> <p>1. There are two sensors - the MODIS sensor from 2000 to the present at various resolutions - 250m at the native resolution and 5000m aggregated.</p> <p>There are maps for display or for exploration using various viewers developed by the remote sensing community for agriculture:</p> <p>2. 250m MODIS viewer - lots of features, esp time series analysis MODIS-based time series analysis viewer:</p> <p>3. Explorer that uses coarse resolution (10km) datasets, but displays NDVI, rainfall, and temperature together</p> <p>1. MODIS viewer http://pekko.geog.umd.edu/usda/beta/</p> <p>2. MODIS-based time series analysis viewer: http://wamis.meraka.org.za/time-series-viewer</p> <p>3. Coarse resolution Explorer http://earlywarning.usgs.gov:8080/EWX/index.html</p>
	<p>NASA MAPS roads</p> <p>Best source of 'standard' road data is just a GIS package with ESRI files that have vectors for the major roads. In Africa the USGS has a really great GIS layer of roads that actually function and keep it up to date (harder than you'd think) but these are very hard to work with and are frankly not easy to access. Lots of places take the World Bank GIS layers and put them online - see http://www.infrastructureafrica.org/documents/tools/list/arcgis-shape-files?page=11 for the Zambia layers for example.</p> <p>There has been an effort recently in the research community to make gridded files on how long it takes to get to major city (defined as over 50000) which is useful for understanding if a particular place is isolated or not.</p> <p>See http://bioval.jrc.ec.europa.eu/products/gam/index.htm This map is particularly useful in Africa and the mountainous areas of Asia where places are very remote despite being 'near'.</p>
	<p>FAO Geonetwork, Global scale, some country data</p> <p>Administrative and Political Boundaries; Agriculture and Livestock; Applied Ecology; Base Maps, Remote Sensing and Toponymy; Biological and Ecological Resources; Climate; Fisheries and Aquaculture; Forestry; Human Health; Hydrology and Water Resources; Infrastructures; Land Cover and Land Use; Population</p>





	<p>and Socio-Economic Indicators; Soils and Soil Resources; Topography</p> <p>http://www.fao.org/geonetwork/srv/en/main.home</p> <p>http://harvestchoice.org/products/data</p> <p>Interactive maps and tables; data by country; seems to require GIS software to create maps from raw data sets; exploring availability of data at city-region scale</p>
	<p>http://gaez.fao.org/Main.html</p> <p>All maps only for 2000</p> <p>Maps available for at 1000 ha pixels for land resources (soil, water, terrain, land cover, protected areas, agro-ecological zones, selected socio-economic), agro-climatic resources (thermal/moisture regimes, growing period), suitability and potential yield (agro-climatic yield, climate yield constraints, crop calendar, agro-ecological suitability and productivity), actual yield and production (crop production value, crop harvested area), yield and production gaps (aggregate yield ratio, crop yield ratio and production gap)</p>
IFPRI	
CGIAR	
IFPRI	
MDG Progress	<p>http://www.statistics.gov.lk/MDG/Mid-term.pdf (2008)</p> <p>Especially pages 22+ re poverty, minimum level of dietary consumption; some data by city, province, gender; urban/rural</p>
General info, UA, 2011	<p>Farmer/gardener interviews</p> <p>Maps: land use; public green spaces; soils</p> <p>Enumeration of UA and related activities</p> <p>Stakeholder table</p>
Health: Obesity rates per wealth class; for school children Diet related diseases	<p>WHO</p> <p>Interactive map:</p> <p>Maps with data by country, 2008, obesity rates per capita, by male/female</p> <p>http://gamapserver.who.int/gho/interactive_charts/ncd/risk_factors/overweight_obesity/atlas.html</p> <p>Data: http://apps.who.int/gho/data/view.main.2430</p>





12 Pending indicators

Extent of food deserts: Food deserts are defined as urban neighbourhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options. The lack of access contributes to a poor diet and can lead to higher levels of obesity and other diet-related diseases, such as diabetes and heart disease
Number/% of farms with direct sales
Economic value of produce directly sold to consumers/ from UA/ from CSA/ sold on roadsides
Access to local food by residents from different wealth classes
Number of farm to school/farm to institution/ farm to restaurant programmes
Wage information and number of workers in local distribution organizations
Area of agricultural land under organic/conventional production
Number of food banks/ soup kitchens
Customer preference for local food/ willingness to pay
Proportion of different types of farms (family owned, etc)
Surface (or percentage) area in region per type of crop/product
Tenure on farm
Number of producers who use a locally grown label
Carbon foot print production
Urban, agricultural and recycled water use
Agricultural income versus other sources of income for farmers
Number of food waste recovery programs, such as community composting, rendering companies that collect food service grease, and food scrap processing facilities]
Number of Waste disposal, recycle, large-scale composting, backyard composting, school composting programmes/initiatives
Percent of green waste/ organic waste recycled; Organic waste disposed vs recycled
Food choice: percentage of population (per wealth class; children) who eat more than 5 fruits/vegetables a day
Consumer processed and fast food consumption





Amount of produce distributed by food banks

Units of food and water available for emergency preparedness

Percentage food system jobs as part of total jobs

Wages food systems jobs as compared to other jobs

Wages paid and number of workers

Number of food manufacturers (for different products)

Carbon footprint transport

