FOOD ASSET MAPPING IN TORONTO AND GREATER GOLDEN HORSESHOE REGION[1]

LAUREN BAKER

» *The purpose of the mapping project was to provide a baseline for planners and policy mak- ers to: 1. understand, promote and strengthen the regional food system, 2. provide information to enable analysis to inform decision making; and, 3. plan for resilience in the face of climate variability and socio, economic, and political vulnerability.* «

Figure 1: The bounty of the Greenbelt harvest season. Photo credit: Joan Brady

The City of Toronto is the largest City in Canada with a population of 2.6 million people (2011). The City is known as one of the most multicultural cities in the world, with over 140 languages spoken. Immigrants account for 46% of Toronto's population, and one third of newcomers to Canada settle in the city[2]. Needless to say, diets are extremely diverse. This represents an opportunity for the food and agriculture sector in Ontario, one that many organizations are seizing.

The region surrounding the City of Toronto, known as the Greater Golden Horseshoe (GGH), is made up of 21 upper and single tier municipalities. This region is Canada's fastest growing, with a population of 8.7 million in 2011 which is projected to grow to 13.5 million by 2041. The region is plagued by traffic congestion, inadequate infrastructure, loss of agricultural land and natural spaces to urban development, and storm water management challenges. Efforts to densify the built environment and better plan urban communities could lead to healthier, sustainable and resilient communities.

In this same GGH region forty-two percent of Ontario's best quality farmland is located, representing half of the land area. The region produces a mix of crops including grains and oilseed, fruit and vegetables, floriculture, livestock and other specialty crops. Two provincially designated specialty crop areas define the region: the Niagara Peninsula known for tender fruit production and the Holland Marsh known for vegetable production. The GGH is known as the third largest food processing and manufacturing cluster in North America, and the cluster uses over 60% of the agricultural products grown in Ontario[3]. Agriculture and the broader food system contribute $11 billion and 38,000 jobs to the provincial economy, generating $1.7 billion in tax revenue.

In 2005 a Greenbelt was created to contain urban growth and protect the natural and cultural heritage of the region. The Greenbelt protects 7% of Ontario's farmland, approximately 856,424 acres and 5501 farms[4], mostly outside of urban communities clustered in the Golden Horseshoe and around the City of Toronto.

In Canada, the agricultural policy framework is established by the federal government. Land use policy is under the jurisdiction of the province (Ontario) and administered by municipal governments. This framework and the resulting policies and programs directly shape agricultural production. While land use policy is directed and defined by the province, the way those definitions are interpreted across municipalities can vary.

The regulation of food and agriculture involves over 19 ministries including Ontario Ministry of Agriculture, Food and Rural Affairs, Ministry of Municipal Affairs and Housing, Ministry of Economic Development, Employment and Infrastructure, Ministry of Health and Long-Term Care, and the Ministry of Environment and Climate Change. The provincial land use policy statement has recently been revised to accommodate new forms of agriculture, in particu-

Figure 2: Tomatoes grown in the Holland Marsh, a vegetable specialty crop region. Photo credit: Lauren Baker

lar to support on-farm, value-added activities. However, farmers state that the current provincial land use policy framework supports urban development over farmland preservation, inhibiting the viability of the agricultural sector[5].

Little is known about the historic changes and shifts in food assets over time in the City of Toronto and Greater Golden Horseshoe Region. The flow and diversity of the population impacts farming, food processing and manufacturing, the food retail environment, neighborhood markets and green grocers, but none of this is well documented. What is known is that agricultural production has shifted over time to access new markets and market opportunities. Overall the number of farms has diminished greatly over the past 50 years, as have the number of food processing outlets[6]. Food manufacturing and processing has been centralized and consolidated in the Greater Toronto Area and over half of the Ontario food processing facilities are located in the Golden Horseshoe.

Food insecurity is a persistent problem in the Golden Horseshoe, with over 12% of the population in Toronto reporting insecure access to adequate food due to financial constraints.[7] Over time, Toronto's food advocates have actively built a network of community food programs to address food insecurity, enhance food security and increase access to healthy food. These initiatives directly connect to the City of Toronto's diverse communities and priorities related to health, poverty reduction, and social equity.

WHAT ARE FOOD ASSETS?

Food asset planning is an emerging field. Food assets relate to the growing interest in food environments emerging from both the planning and public health literature, as well as the literature on strengthening regional value chain connections. For example, the American Planning Association's Policy Guide on Community and Regional Food Planning, published in 2007, recommends that planners "provide data and mapping support to community and regional food assessments, including the incidence of food insecurity and location of diverse food assets" and develop policies and plans to enhance these assets[8].

Food assets are a key component of integrated food planning and have not been fully considered in the planning practice or literature. Food assets include the local food infrastructure that ensure food secure communities and regions - farms, processing and distribution capacity, food enterprises, markets, retailers, community gardens, urban farms, community gardens, community kitchens, student nutrition programs, emergency food distribution, and community food organizations or centers. The concept of food assets can be expanded to include waste facilities, agricultural inputs, urban orchards, and non-physical assets such as funding, investment opportunities, services, political support, etc.

Figure 3: Evergreen Brick Works Farmer's Market in Toronto. Photo credit: Lauren Baker

FOOD ASSET MAPPING BY THE GOLDEN HORSESHOE FOOD AND FARMING ALLIANCE

Figure 4: A produce auction managed by Mennonites in Elmira, Ontario.
Photo credit: Lauren Baker

The development of the Golden Horseshoe Food and Farming Action Plan 2021 created a framework for action to keep food and farming a strong economic driver in this highly urbanized area. The Plan identifies pathways for a more integrated and coordinated approach to food and farming viability in the area to ensure that the Golden Horseshoe retains, enhances and expands its role as a leading food and farming cluster (Golden Horseshoe Food and Farming Alliance, 2012). The next event was the establishment of the Golden Horseshoe Food and Farming Alliance. The Alliance was established in 2013, after the development of the Action Plan. The Alliance is comprised of the Niagara Agricultural Policy and Action Committee, the Toronto and Region Conservation Authority, the Friends of the Greenbelt, the Ontario Ministry of Agriculture, Food and Rural Affairs, Vineland Research and Innovation Centre, Holland Marsh Growers' Association, Durham College, Holland Marsh Growers, Niagara College, Country Herit-

age Park, Ontario Federation of Agriculture, Ecosource, Food and Beverage Ontario, the Regions of Durham, Halton, Niagara, Peel, York and the Cities of Hamilton and Toronto, as well as local representatives from the food and farming value chain. This group acts as a regional governance and coordination body, supporting initiatives that enhance agriculture and the economic, social, and cultural viability of the food and agriculture sector. The first phase to asset mapping was undertaken by the Alliance in 2013.

The purpose of the mapping project was to provide a baseline for planners and policy makers to: 1. understand, promote and strengthen the regional food system, 2. provide information to enable analysis to inform decision making; and, 3. plan for resilience in the face of climate variability and socio, economic, and political vulnerability. Mapping also provides a method to assess and track local food assets as a way to strengthen the "food cluster" and connect farmers with processors, manufacturers, and new
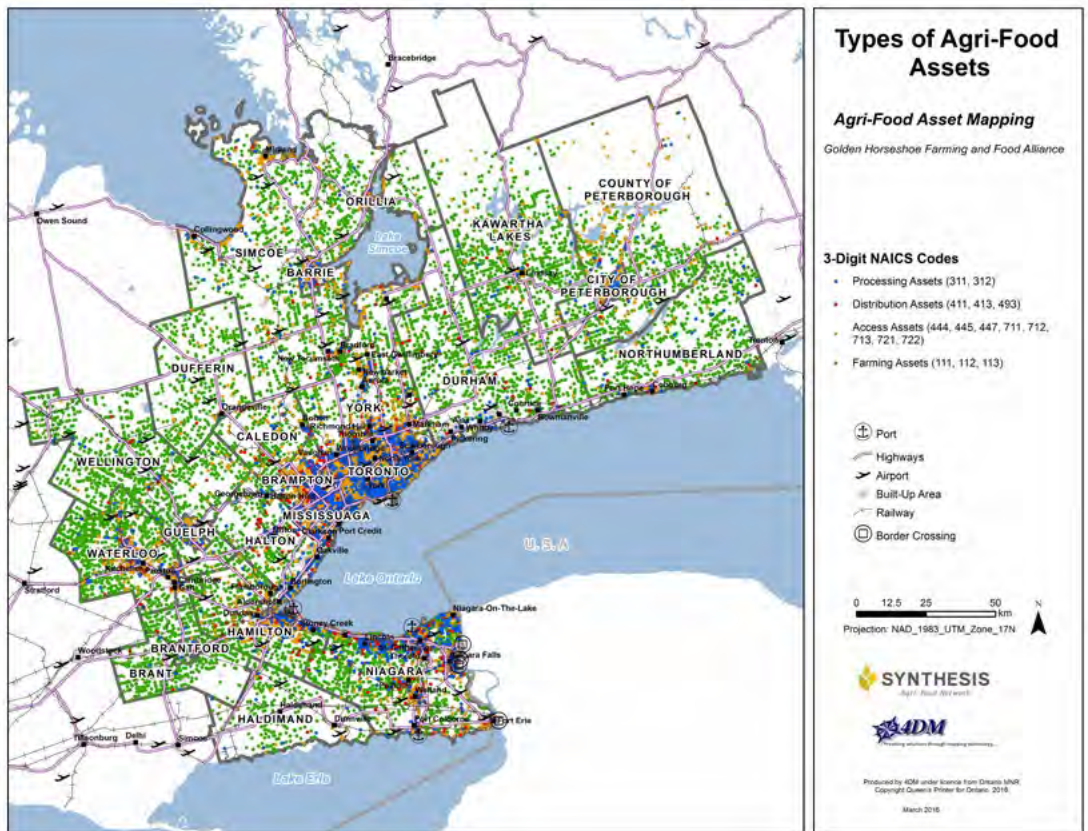
Figure 5: Types of agri-food assets

markets. Planners hope to use the information to understand how land use policy and economic development programs can best support the agri-food sector and the implementation of the Food and Farming Action Plan 2021.

The Alliance asset mapping project was guided by a steering committee of regional planners and economic development officers. In addition, a workshop about sharing the results of the asset mapping project attracted economic development officers, policy/landuse/GIS/environmental planners, public health staff, staff from the Board of Trade and staff from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Workshop participants identified the following ways they will use the asset mapping data:

· To understand value added opportunities and link up value chains
· As an investment tool
· To increase efficiencies in the food system
· To understand strengths/weaknesses and

opportunities/challenges of the food and farming sector
· To move from anecdotal to quantifiable understanding of the sector
· To identify where government can best support industry and policy development
· For reporting
· To increase viability of agriculture in the greenbelt
· To work collaboratively across the region and across the food system vs municipality by municipality
· For regional food system assessment
· To define a new economic cluster for the region
· To compare municipality by municipality
· To collaborate, find synergies and enhance communication
· To apply the methodology to other sectors
· To enhance employment survey data
· For analysis and planning
· To protect agricultural land, protect livelihoods
· To compare data over time

Two phases of asset mapping have been undertaken by the Alliance. The first involved the seven regional and municipal governments engaged in the Alliance. In the second phase, the project was expanded to include the Greater Golden Horseshoe, 14 additional regional governments and Eastern Ontario. Future plans include expanding to the province as a whole. Funding for the Asset Mapping project was provided by the Alliance partners, Agricultural Adaptation Council and Ontario Ministry of Agriculture, Food and Rural Affairs.

Across the Greater Golden Horseshoe, over 50,000 asset points have been mapped using the following approach. Assets were identified through municipal data (44%), open source data (32%) and third party data (24%).[9] For example, municipalities provided data collected by economic development for business retention and expansion analysis. Many municipalities had previously collected data to map farm gate sales. OMAFRA provided access to farm business names, type of farming conducted, and locations. Each asset was assigned a North American Industry Classification System (NAICS) code, a data inventory was created, consensus was reached by the steering committee on common data attributes, a data model was developed to reflect the temporal, spatial, and business relationship of the agri-food asset records and to identify relationships between the data elements and attributes. The data was imported into a central database, and visualization and web presentation tools were developed. The tool has been designed for the use of the partnering municipalities and will not be available for public use.

Challenges included sharing data across municipalities, building confidence in the data, and maintaining data integrity. Moving forward the group will update data, maintain data integrity, review assets and confirm locations, update NAICS agri-food inventory, create guidelines on NAICS classification, add GPS locations, and enable new web functions. A longer term goal includes automation and synchronization of employment data and business retention and expansion surveys across the region for ease of updating.

FOOD ASSET MAPPING BY THE TORONTO FOOD POLICY COUNCIL

The second approach to asset mapping, undertaken by the Toronto Food Policy Council, complements the work of the Golden Horseshoe Food and Farming Alliance by adding in community food assets.

The Toronto Food Policy Council (TFPC) was established by the Toronto City Council, in 1991, to bring a food systems approach to the growing problem of rising hunger and food insecurity. The TFPC's mandate is to: advise and support the City of Toronto and Toronto Public Health in the development of inclusive and comprehensive food security policies and programs; advocate for innovative community food security programs; foster dialogue with Toronto Public Health, community groups, social agencies, educational institutions and businesses; and, act as the community reference group for the Toronto Food Strategy. TFPC members include three elected officials, three farmers from the surrounding rural communities, two youth delegates from the Toronto Youth Food Policy Council, and twenty two citizen stakeholders representing diverse food system perspectives and sectors. Over the past twenty five years, the TFPC has made significant contributions to the Toronto Food Strategy, Toronto Environmental Plan, Toronto Food Charter, the Official Plan, the Toronto Food and Hunger Action Plan, and facilitated City engagement with the Greater Toronto Area Agricultural Action Committee and Golden Horseshoe Food and Farming Alliance.

The TFPC food asset mapping initiative is called "Food by Ward: Food Assets and Opportunities Ward by Ward". Data began to be complied several years ago, and includes neighborhood food assets such as community gardens, urban agriculture initiatives, farmers' markets, healthier food retail, emergency food distribution, community kitchens and other community food organizations/programs. A central database was formed, data was mapped, ward resources were developed for Toronto's 44 wards, the resources were verified by community food advocates, and launched at City Hall. Funding has been provided by Toronto Public Health.

The asset mapping project is guided by a working group of community food advocates
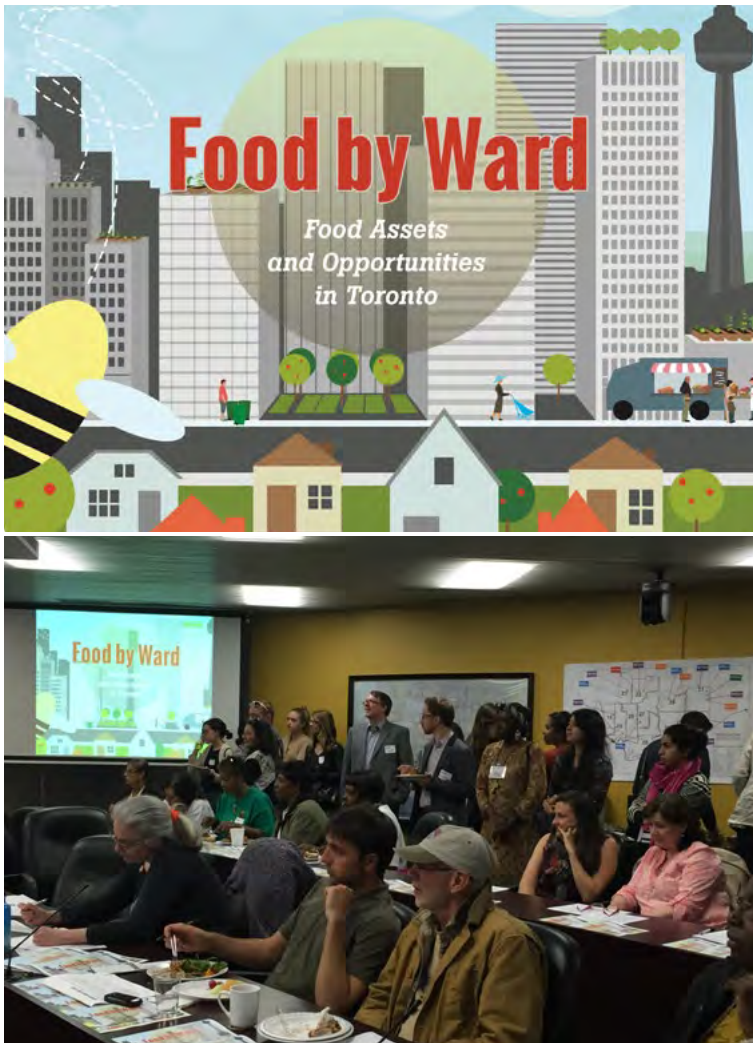
Figure 6: The launch of the Food by Ward asset mapping resources at City Hall in Toronto. Photo credit: Lauren Baker

and professionals. A workshop to share the results of the asset mapping project attracted City staff, public health professionals, academics, planners, community gardeners, people working in the emergency food distribution sector, urban farmers, farmers market coordinators, community volunteers, funders, and social service agency professionals. Workshop participants identified the following ways they will use the asset mapping data:

· To understand how to improve the neighborhood food environment;
· To advocate for better services;
· To build relationships with elected officials;
· To understand and rectify the uneven distribution of food assets across the city;
· To find land for urban agriculture;
· To understand the link between poverty, access to public transportation and food access;
· To find space for community food programs;
· To communicate how food is an important part of the city's social, cultural and economic infrastructure; and,
· To engage planners and other city staff.

Across the City of Toronto, 3500 asset points have been mapped using the following approach[10]. Assets were identified through municipal data (all of Toronto's data is open source), and third party data. For example, the City of Toronto provided data collected by the Parks, Forestry and Recreation Division on community

Figure 7: St. John's Bakery, a social enterprise in the City of Toronto.
Photo credit: Lauren Baker

and allotment gardens. Toronto Public Health provided data on healthier food retail collected by food inspectors, and student nutrition programs. The Greenbelt Foundation supports a Greenbelt Farmer's Market network that provided data on farmer's markets.

Assets were categorized according to access to healthy food, emergency food assistance programs, community food programs and food festivals and events. Assets were mapped in these categories with definitions provided as well as a narrative about how these assets support a healthy, equitable and sustainable city. The maps were verified by community food advocates and the data was updated.

This approach to mapping reveals the inequitable distribution of assets across the city, connecting food access to broader issues of health and social inequality. Community food advocates and municipal staff involved are using the information to understand how the neighborhood food environment can contribute to a healthy, equitable and sustainable city. The data collected will now be integrated into the City of Toronto's data set and regularly updated. Chal-

lenges included building confidence in the data and maintaining data integrity. Moving forward the TFPC and City will work together to maintain data integrity, review and add assets, and develop web-based maps and functions.

DISCUSSION

Food asset mapping can provide an important baseline of information to understand how the agriculture and food sector is changing over time. It is both a quantitative and qualitative indication of what is important to those making decisions and about what to include (or not) as a food asset. The asset mapping, however, is only a first step – points on a map or entries into a database. The real work comes in putting the tools to use to strengthen food systems connections, networks of advocates and stakeholders, value chains, policy and governance. Over the years the tool will change and evolve and could be evaluated for its contribution to food system sustainability and equity. With both asset mapping initiatives, it

Figure 8: A rooftop community garden in Toronto. Photo credit: Lauren Baker

is too early to see how they will be used by advocates, professionals and policy makers.

Already, however, the maps are a catalyst for discussion and organizing. For example, the Golden Horseshoe Food and Farming Alliance municipalities are considering to extend their mandate beyond their political boundaries to make food system connections. In another example, one economic development officer suggested he would use the mapping tool to support local businesses to make value chain links to local suppliers. Another noted that understanding assets could leverage investment in a sector. Environmental policy planners were interested in seeing how agricultural landscapes could link to natural heritage areas to improve storm water management.

In Toronto, the asset mapping resource mobilized "food champions" to identify priorities that were embedded into the City's poverty reduction strategy. The food asset mapping catalyzed a discussion about neighborhood or ward food priorities that will be communicated to city councillors and decision makers. A longer term plan is to strengthen local food networks to realize their priorities. These networks link social service organization staff, city staff and community advocates, building community resilience and political agency.

NEXT STEPS

The food asset mapping initiatives will continue to evolve. A few opportunities for next steps are on the horizon. Toronto and region was selected, in 2015, to participate in the CityFoodTools initiative led by the RUAF Foundation, the Food and Agriculture Organization of the United Nations, and the Wilfred Laurier Centre for Sustainable Food Systems. Toronto is one of seven cities globally that will be undertaking a food system assessment.

The asset mapping work will be invaluable for this project. One identified possibility, to more deeply understand the regional food system, is to undertake food flow analyses for specific agricultural products. Here the strength of the asset mapping work is revealed as one can imagine

identifying, for example, apple farms, their current regional (and global) markets as well as exploring future market linkages.

The food system assessment emphasizes food security and equity, and an analysis of neighborhood food assets will be key to understanding issues related to access, quality, and community engagement. It is possible that the methods and process used in the food asset mapping initiatives, as well as the challenges, could be shared between global city regions. ◆

For more details on this initiative, visit
http://www.ruaf.org/projects/developing-tools-
mapping-and-assessing-sustainable-city-region-food-
systems-cityfoodtools

ENDNOTES

1 For further information and full reports on the two asset mapping initiatives described above, visit: www.foodandfarming.ca and www.tfpc.to

2 Statistics Canada, 2016

3 Golden Horseshoe Food and Farming Alliance 2014

4 Friends of the Greenbelt Foundation, 2014

5 Ontario Federation of Agriculture and Environmental Defense 2015

6 Carter-Whitney and Miller 2010

7 Tarasuk, V, Mitchell, A, Dachner, N. (2016). Household food insecurity in Canada, 2014. Toronto: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from http://proof.utoronto.ca

8 2007, 15

9 Golden Horseshoe Food and Farming Alliance, 2015

10 Toronto Food Policy Council, 2016

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Figure 9: An apple orchard in the Golden Horseshoe tender fruit specialty crop region. Photo credit: Laura Berman, GreenFuse Photos