

10.0 INNOVATION AND TECHNOLOGY



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10.1 Findings

In Ontario, the food system plays a large and important role in the economy; the food system employs more than 767,000 people (11% of the paid labour force).³²⁰ Innovation and technology within the food system is an important component for the food system to continue to have such a powerful influence on the economy as the market transforms and shifts over time. Innovation is defined by Agriculture and Agri-Food Canada as the, "...introduction of new or significantly improved product and/or process which results in more efficient production or higher returns."³²¹ However, efficient production and higher returns through innovation do not necessarily support a sustainable local food system and innovation includes many more benefits than solely profit maximization. Innovation within the food economy can also provide value to the environment and society. There has been a push in the recent years to implement sustainable production practices in order to protect the environment so that a local food system can continue to thrive. As a result, innovation and technology that focuses on sustainable production practices has become increasingly important.

Innovation plays an integral role within the food system as the agriculture and agri-food sector needs to constantly adapt and respond to competitive pressures, global challenges, changing consumer demands and opportunities for long-term sustainability.³²²

This section of the environmental scan focuses on innovation and technology with the aim to:

- Determine the level of innovation within the local food system
- Identify initiatives where technology is being developed and utilized to enhance the local sustainable food system
- Give an overview of innovative programming that addresses or supports a more sustainable food system

As a nation, Canada recognizes the significance of technology and innovation. In 2010 Agriculture and Agri-Food Canada identified seven research priorities as part of their science and innovation strategic plan. These priorities include a focus on:

- 1) The quality and safety of food, security and protection of the food supply,
- 2) Human health,

³²⁰ Econometric Research Limited, Harry Cummings & Associates, and Rob MacRae, *Dollars & Sense: Opportunities to Strengthen Southern Ontario's Food System*, 2015, Print, at p.6.

³²¹ Agriculture and Agri-Food Canada, *An Overview of the Canadian Agriculture and Agri-Food System*, 2015, Web, at <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2015/?id=1428439111783>.

³²² Agriculture and Agri-Food Canada, *An Overview of the Canadian Agriculture and Agri-Food System*, 2015, Web, at <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2015/?id=1428439111783>.

- 3) Understanding and developing biological resources,
- 4) Sustainable production,
- 5) Profitability and competitiveness.³²³

Acknowledging the value of innovation and technology has enabled Ontario to become a world leader in food technology research and development, with several research and educational institutions working in this area (e.g. University of Guelph, University of Toronto, Western University, Queen's University).³²⁴ Recognizing that tomorrow's economic growth depends on today's investments, Ontario is investing in an aggressive innovation agenda to ensure it is one of the winning economies in the twenty-first century.³²⁵

Technological innovation is one way that enterprises within the food system can be better supported. Food and Beverage Ontario articulates that there are numerous opportunities for Ontario processors to benefit from commercialization. Centres such as Guelph Food Technology Centre, Toronto Food Business Incubator, Agri-Tech Commercialization Centre and Vineland Research and Innovation Centre make it possible for Ontario processors to bring innovative agri-food products to market through commercialization.³²⁶

Process innovations also show promising benefits as in 2012, process innovations lowered the production cost of food manufacturing enterprises for 62.6% of food manufacturers.³²⁷ While it's clear that the province is prioritizing innovation and technology, it is also beneficial to see what is happening on a more local level within Middlesex-London.

Innovation and Technology Supporting the Local Food System

In Middlesex-London there are some great examples of innovative practices that are currently working to support small to medium agri-food based initiatives and the local food system. Profiled in this section include:

- Winners of the Agri-Food Innovation Excellence Award
- Smart APPetite
- Growing Chefs! Ontario
- On the Move Organics
- Edgar and Joe's

³²³ Standing Senate Committee on Agriculture and Forestry, "Innovation in Agriculture: The Key to Feeding A Growing Population," 2014, Print, at p.16.

³²⁴ Synthesis Agri-Food Consulting, *A Global Hub for Food Processing Agri-Food Asset Map: An Analysis of Ontario's R&D Excellence and Commercialization Capacity in Food Processing*, 2010, Print, at p.9.

³²⁵ Synthesis Agri-Food Consulting, *A Global Hub for Food Processing Agri-Food Asset Map: An Analysis of Ontario's R&D Excellence and Commercialization Capacity in Food Processing*, 2010, Print, at p.9.

³²⁶ Food and Beverage Ontario, *Updated Economic Impact Study of the Ontario Food and Beverage Sector*, 2015, Print.

³²⁷ Agriculture and Agri-Food Canada, *An Overview of the Canadian Agriculture and Agri-Food System*, 2015, Web, at <http://www.agr.gc.ca/eng/about-us/publications/economic-publications/alphabetical-listing/an-overview-of-the-canadian-agriculture-and-agri-food-system-2015/?id=1428439111783>.

- London Training Centre’s Local Food Program
- John Paul the 2nd School Garden Project
- London Gets Local
- Harvest Bucks
- London Food Incubator

Many of the above are social innovations within the Middlesex-London food system. Social innovation³²⁸ in the food movement has taken a firm hold across Canada with many community programs and food enterprises incorporating a strong set of values and a social mission into how they operate.

In Middlesex-London there have been three successful technological innovations focusing on the food system, so successful that the innovations received the Premier’s Award for Agri-Food Innovation Excellence (since 2011).³²⁹ These three ideas are highlighted in the textbox below.

The development of SmartAPPetite is an example of a local innovation that helps support small to medium sized agri-food based initiatives. The app makes it easier for consumers to find and eat healthy local meals by providing information on where locally produced foods can be bought. The app has two main goals: 1) to make it easier for consumers to eat healthy local meals by improving food literacy about and awareness of what food is around the corner in our local communities and 2) highlight the importance of Southwestern Ontario’s food industry to the local economy and support its role as a local economic development tool.³³⁰

Growing Chefs! is an example of a recently developed program that supports the local food system through children’s food education projects. The programming available focuses on teaching children how to cook and better eating habits through learning how food is grown, where it comes from, its name, how our senses can be used with food, the history of different foods and what food means in different cultures. Programming supports a more sustainable food system by incorporating local chefs as hosts, fieldtrips to local farms and farmers’ markets, and cooking with locally produced food.³³¹ Given the limited number of opportunities for children and youth to learn about food in school, expanding this program to new schools across Middlesex-London would aid in efforts to increase food literacy among residents.

³²⁸ A social innovation is defined as “a novel solution to a social problem that is more effective, efficient, sustainable, or just than current solutions. The value created accrues primarily to society rather than to private individuals.” – Stanford University, Centre for Social Innovation. Retrieved from:

<https://www.gsb.stanford.edu/faculty-research/centers-initiatives/csi/defining-social-innovation>

³²⁹ Excerpts are derived from the Premier’s Award for Agri-Food Innovation Excellence, Web, at

http://www.omafra.gov.on.ca/english/premier_award/2011/events/a/gf.htm,

http://www.omafra.gov.on.ca/english/premier_award/2011/events/a/ser.htm, and

http://www.omafra.gov.on.ca/english/premier_award/2014/events/a/bri.htm.

³³⁰ Smart APPetite, “The Project: What is SmartAPP?” No Date, Web, at <http://www.smartappetite.ca/the-project>.

³³¹ Growing Chefs! Ontario, No Date, Web, at <http://growingchefsontario.ca>.

On the Move Organics served as a delivery service of locally produced organic certified food. Residents in London and the surrounding area are able to purchase, on a weekly basis, a box of 100% in season, local food that features fresh produce from small-scale organic farms surrounding London.³³²

Edgar and Joe's Café is another local initiative that supports the local food system. The café makes fresh and local food available, affordable and approachable to people within London's SoHo district, using local food whenever possible. Edgar and Joe's Café employs people experiencing mental health or who are socially disadvantaged, and trains apprentices for the food and hospitality market.³³³

The London Training Centre has developed a Local Food Skills program where participants are introduced to the food industry through a three-week program. Instruction is provided in cooking and service methodologies, steps of service, point of sale systems, beverage alcohol service, food safety, menu planning and design, kitchen equipment, kitchen health and safety, food costs, career and job search strategies, targeted resumes and job leads.

Throughout the program students learn and experience the connection between food and the land, the value of bio-diversity, sustainability and the importance of supporting local producers. Students also learn that buying and eating locally produced food is an investment in their health and the health of our communities. Students are taught the value of eating locally and using the whole animal/food in their cooking. Food for the program is provided by the London Training Centre's one-acre farm located just west of London; 95-98% of the food prepared in this program that is not from the one-acre farm comes from Middlesex County, Elgin County and Oxford County.

John Paul II Catholic Secondary School recently created a school garden, in which they use rainwater harvesting to minimize pollution and the cost of water. Within a city, pavement and buildings shed rainwater, which overwhelms water infrastructure and leads to pollution (because pollution treatment plants can't handle the extra flow of water, sewage can be released into the river). Through rainwater harvesting, the rainwater is harvested into cisterns, which absorbs the heavy rains, leading to less runoff and less pollution.³³⁴ In 2015, John Paul II was awarded the School Community Award by Ophea.³³⁵ This award is presented to a "school or community organization that has demonstrated leadership and excellence in successfully bringing together members of the community (including parents, teachers, boards of education, public health, sport and recreation organizations, community coalitions, local businesses, and municipal governments)."³³⁶ While some schools struggle to create school

³³² On the Move Organics. No Date, Web, at <http://onthemoveorganics.ca>.

³³³ Edgar and Joe's, No Date, Web, at <http://edgarandjoes.ca>.

³³⁴ The London Free Press, "Urban garden at John Paul II Catholic secondary school in London a big hit," 2015, Web, at <http://www.lfpress.com/2015/09/18/urban-garden-at-john-paul-ii-catholic-secondary-school-in-london-a-big-hit>.

³³⁵ Ophea is a not-for-profit that works to support health active living for children and youth in Ontario (see <https://www.ophea.net/> for further information).

³³⁶ Ophea, "Awards & Recognition," 2015, Web, at <https://www.ophea.net/about-us/awards-recognition>.

gardens due to restrictions from their respective school boards, positioning the school garden as an opportunity to be innovative through green infrastructure could help to strengthen their case.

Ham 'n Eggs T, the name of a recently developed urban education farm in London, is another example of innovation within the area. Situated at the intersection of Hamilton Road and Egerton Street, the property cover two-thirds of an acre. The main garden is 1000 square metres, is wheel chair accessible and has seating areas, and features rhubarb and garlic trees. There is also a ten tree orchard and three other gardens on site. A green house is currently on-site and an underground green house will be built in the near future to allow for vegetables to grow year round (Source: Primary Research, Key Informant).

The London Gets Local Facebook page, created and maintained by Natasha Hockley, helps to connect people in the Middlesex-London area to local farmers, local producers/artisans, and local crafters. The purpose of the group is to show people the sustainable alternatives that are available to them, and to help shift shopping habits from large retailers to supporting small local farmers and local businesses. The list of local farmers, producers, artisans, and crafters can be accessed via the Facebook page.

The Child and Youth Network, in partnership with Middlesex-London Health Unit, other community stakeholders and farmers' markets, has created an innovative program, called Harvest Bucks, which helps to connect consumers with fresh, healthy local produce. Harvest Bucks are vouchers that can be used at five farmers' markets within London to purchase fresh vegetables and fruit (please see Section 4.1 for additional detail on Harvest Bucks).³³⁷

Harvest Bucks (2014)

- \$17,738 harvest Bucks distributed; \$13,014 Harvest Bucks redeemed
- 536 London households served
- 93% ate all of most of the vegetables and fruit purchased
- 77% are more vegetables and fruit in general
- 87% intend to buy vegetables and fruit at a farmers' market in the future

Source: Middlesex-London Health Unit, <https://www.healthunit.com/harvest-bucks>

Another innovative idea being considered in the area is currently referred to as the London Food Incubator. David Cook, owner of Fire Roasted Coffee, has secured a space to offer space and support for small and medium-sized start-ups in the local food industry in London's Old East Village. The idea is that small businesses can start in the Western Fair District, further

³³⁷ Middlesex-London Health Unit, "Harvest Bucks," 2015, Web, at <https://www.healthunit.com/harvest-bucks>.

develop their product and get a customer base started, and when they're ready to scale up they can move into the food incubator and communally produce their product at this location.³³⁸ Within this space, an area has been designated to a grocery store that will employ people with disabilities. The store is a joint project of ATN Access and Pathways Skills Development, two local agencies that help to connect people with disabilities to employment. The store will offer a full product line of groceries.³³⁹ The vision for the space is an open-concept retail production facility. Small businesses will be producing their product, selling it on-site and also producing for wholesale distribution. The plan is to have a full-service café and restaurant, the grocery store as mentioned, and a large storefront patio.³⁴⁰

10.2 Gaps in Knowledge

Agri-Food Innovation Excellence (2011): Glenwillow Farms - Strathroy

At Glenwillow Farms, the fertilizer that had been used for years on corn was not as readily available, so an alternative had to be found. The only alternative at the time required expensive machinery. Several major alterations were made to a corn planter, including widening the frame, altering the hydraulic system, and making the storage boxes bigger. As a result, the farm's corn yield is better and the new fertilizer is more environmentally friendly.

Agri-Food Innovation Excellence (2011): S. Eric Richter - London

Ontario has bred the Black Pearl, Canada's first locally adapted black soybean line after 13 years of development. The soybean is unique because of the antioxidant properties found within its seed coat, making it highly desirable as a functional food. It can be used in powdered form as a food additive or in the production of soy-based food products, such as soy sauce and soymilk. Ontario's Black Pearl is poised to meet the demand of global companies who are looking to diversify their supply sources and secure higher quality product. These "pearls" have the potential to add an additional \$20 million in export market value for the province's soybean industry.

Agri-Food Innovation Excellence (2014): Bosco and Roxy's Inc. - London

Bosco and Roxy's produces premium dog treats. Their hand-decorated gourmet cookies, bones stuffed with "German Shepherd Pie" and frozen yogurt cones are popular with pet owners and their pets. Between 2012-2013 sales of the products doubled at \$1.3 million. Retailers such as Bed, Bath and Beyond, PetSmart, Pet Valu and Global Pet Foods have taken notice, indicating that numbers may double in 2014. Bosco and Roxy's Inc. sources 90% of its ingredients in Ontario; local dairies, grain farmers and a freezer manufacturer are also benefiting from this innovation.

(Source: Ministry of Agriculture, Food and Rural Affairs, "Premier's Award for Agri-Food Innovation Excellence," 2016, http://www.omafra.gov.on.ca/english/premier_award).

³³⁸ Chris Montanini, "Fire Roasted Coffee attempting a (larger) local food hub in Old East Village," *Londoner*, 2015, Web, at <http://www.thelondoner.ca/2015/08/14/fire-roasted-coffee-attempting-a-larger-local-food-hub-in-old-east-village>.

³³⁹ Hank Daniszewski, "Grocery store planned for Old East Village will train disabled staff," *The London Free Press*, 2015, Web, at <http://www.lfpress.com/2015/08/14/store-will-sell-food-train-disabled-staff>.

³⁴⁰ Christopher Clark, "Questions: David Cook Foodservices Entrepreneur," *Business London*, 2015, Web, at http://www.myvirtualpaper.com/doc/Business-London-Magazine/bl_october_2015/2015093001/?referrer=http%3A//businesslondon.ca/sitepages/#34.

While there are no identified gaps within innovation and technology, the information on this topic was located according to examples of innovation that address food system gaps, support agri-food based small-to-medium sized enterprises, and support a more sustainable food system. As such, there are likely other examples of innovative and technology in Middlesex-London that influence or impact food system activity.

10.3 Strengths and Assets

Innovation and Technology strengths and assets within Middlesex-London fit within six of the seven asset categories, illustrating a well-rounded approach to innovation and technology within the local area. This part of the food system in Middlesex-London has a focus on the application of innovation and technology, and a smaller focus on developing innovation and technology within the food system. As such, opportunities exist to work with academic institutions within Middlesex-London to engage in efforts to develop technology that would strengthen the local food system. Innovative programs/initiatives within Middlesex-London include Growing Chefs!, John Paul II Catholic Secondary School’s school garden, the London Food Incubator, a social enterprise grocery store, the Local Food Skills program, On the Move Organics, Edgar and Joe’s social enterprise café, the Harvest Bucks program, and the London Gets Local Facebook group. Middlesex-London residents have also won three Premier’s Awards for Agri-food Innovation Excellence in the last three years as well as, developed the SmartAPPetite app. Each of these assets creates a wealth of opportunities to strengthen the local food system. For example, Growing Chefs! and John Paul II’s school garden can increase food literacy amongst children; Edgar and Joe’s creates entry level food jobs and further training for higher level jobs within the food system and also supports local farmers by procuring and selling local food; and the Harvest Bucks program and London Gets Local Facebook group supports the purchasing of locally produced food.

Table 46 lists the strengths and assets that pertain to this section of the report and were identified through the community food assessment process (please see 1.2 for Asset Legend).

Table 46: Strengths and Assets within Innovation and Technology

INNOVATION AND TECHNOLOGY						
						
111. London Community Resource Centre						
						
112. Growing Chefs! London, Ontario						
						

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113. Three Premier's Awards for Agri-Food Innovation Excellence

114. Southern Crop Protection and Food Research Centre



115. Edgar and Joe's Café (social enterprise)

116. Smart APPetite (connecting local consumers to local producers and healthy eating information)

117. Social enterprise grocery store to open in Old East Village

118. Increased food entrepreneurship

119. London food incubator



120. School garden at John Paul II with technology implemented for rainwater harvesting

121. Harvest Bucks



122. London Training Centre

123. On the Move Organics (local food delivery)

124. London Gets Local Facebook group

125. Get Fresh, Each Local map

10.4 Areas to Cultivate

Within innovation and technology, two areas to cultivate were identified. Community members noted that due to strict and costly regulations, it is difficult for farmers to add value to their products on site. It was also mentioned that food tracking and traceability is a problem because either it is not being done or when it is, the technology used to accomplish this is not always being applied consistently.

10.5 Opportunities for Change

There was one initiative identified in the Food Processing and Distribution section that related to innovation and technology. In this section, the opportunity to implement regional branding

on food that is grown or raised in Middlesex-London was proposed as a means to improve tracking and traceability in the area. There is also an opportunity to further pursue social innovation within the food system. For example, LondonSOUP is an example of an initiative that is doing things differently; they are getting creative about the ways in which we foster change in the food system. LondonSOUP does this through micro-funding creative projects that promote local, nutritious food and sustainable projects.

LondonSOUP was started by a small group of food enthusiasts with an interest in promoting local, nutritious foods and sustainable projects. LondonSOUP serves as a grassroots micro-funder of creative projects, by having presenters pitch their sustainable project ideas to LondonSOUP patrons, and voting on their favourite sustainable project. Through LondonSOUP presenters are able to meet, inform, persuade, discuss, collaborate, test-market, and compete for funding to support their ideas.

(Source: LondonSOUP, www.londonsoup.ca)

“It is awesome witnessing the growing interest and initiatives in re-localizing our food system.”

- Survey Respondent

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 **\$ 13,014**
 **Harvest Bucks redeemed**

2,600 students
7 schools
400 volunteer hours

THREE Premier Awards for Agri-Food Innovation

John Paul II Catholic Secondary School awarded School Community Award

100% In season, local food delivered by On The Move Organics

