A Project SOIL Report

Ontario Public Institutions and On-site Food Production

Current Capacities and Constraints

Phil Mount and Irena Knezevic

http://projectsoil.ca
Shared Opportunities on Institutional Lands

Ontario Public Institutions and On-site Food Production: Current Capacities and Constraints

Phil Mount* and Irena Knezevic**

* Centre for Sustainable Food Systems, Wilfrid Laurier University
** School of Journalism and Communication, Carleton University

Project SOIL is funded by the New Directions Research Program
Ontario Ministry of Agriculture, Food and Rural Affairs

Acknowledgements

The research was supported by a group of enthusiastic and exceptionally skilled research assistants: Emily Cho, Elena Christy, Chantal Clement, Emily French, Sarah Good, Tim O'Brien, Jessica Reeve, Lauren Turner, and Cassie Wever.

The following Project SOIL team members have contributed to the development of this report: Alison Blay-Palmer, Doug Dowhos, Chris Jess, Karen Landman, Tamaura Proctor, Louise Quenneville, Linda Varangu, Jenny Weickert, and Brendan Wylie-Toal.

The authors take responsibility for all opinions expressed in this document. Those opinions may not reflect the opinions of all team members, nor the opinions of the funder, the Ontario Ministry of Agriculture, Food and Rural Affairs.

Suggested citation:
Mount, P. and Knezevic, I. (2015). "Ontario public institutions and on-site food production: Current capacities and constraints". Guelph, Ontario: Ontario Ministry of Agriculture, Food and Rural Affairs. Available at http://projectsoil.ca/project-reports/

REPORT HIGHLIGHTS

- Opportunity for on-site food production comes from public and political support for 'local food', combined with a shortage of land for new producers
- GIS study of Ontario healthcare properties shows 217 with more than one acre of arable land available, and 54 with more than five acres
- Case studies demonstrate the benefits of a 'farmer'— independent, staff member or community group—and/or labour force dedicated to the project
- Initial and on-going viability correlates to the extent of institutional support, particularly staff time for project coordination
- Institutional motivations for on-site food production initiatives vary, include mental and physical therapeutic benefits

Table of Contents

PROJECT CONTEXT

Figure 1: Original Kingston General Hospital, 1835 (from A Brief History of Public Institutional Food Production)

Ontario has a long history of food production at public institutions*. In the late 19th century, healthcare institutions in Ontario faced rapid epidemiological and technological advances, growing service populations, and the need to effectively respond to epidemics and mental health illnesses. Like most other large-scale public institutions—particularly those in rural and remote locations—they by necessity had to produce—or procure through donations—the food that would be consumed on site, whether by inmates, patients, students or staff. As such, institutions were regularly built on arable farmland to support livestock (cattle, sheep, pigs, poultry) and produce.

* See 'A Brief History of Public Institutional Food Production' at http://projectsoil.ca/background/history/

Over the course of the 20th century, most public institutions in Ontario moved slowly away from this model. In the last 30 years, this trend has accelerated, driven mainly by an abundance of readily available cheap food, made even more so by the efficiencies of scale delivered by food service providers. By the turn of the 21st century, it was virtually inconceivable that a public institution in Ontario would consume food produced on-site. In fact, a great number had dispensed with the equipment and capacity to even process fresh food on-site.

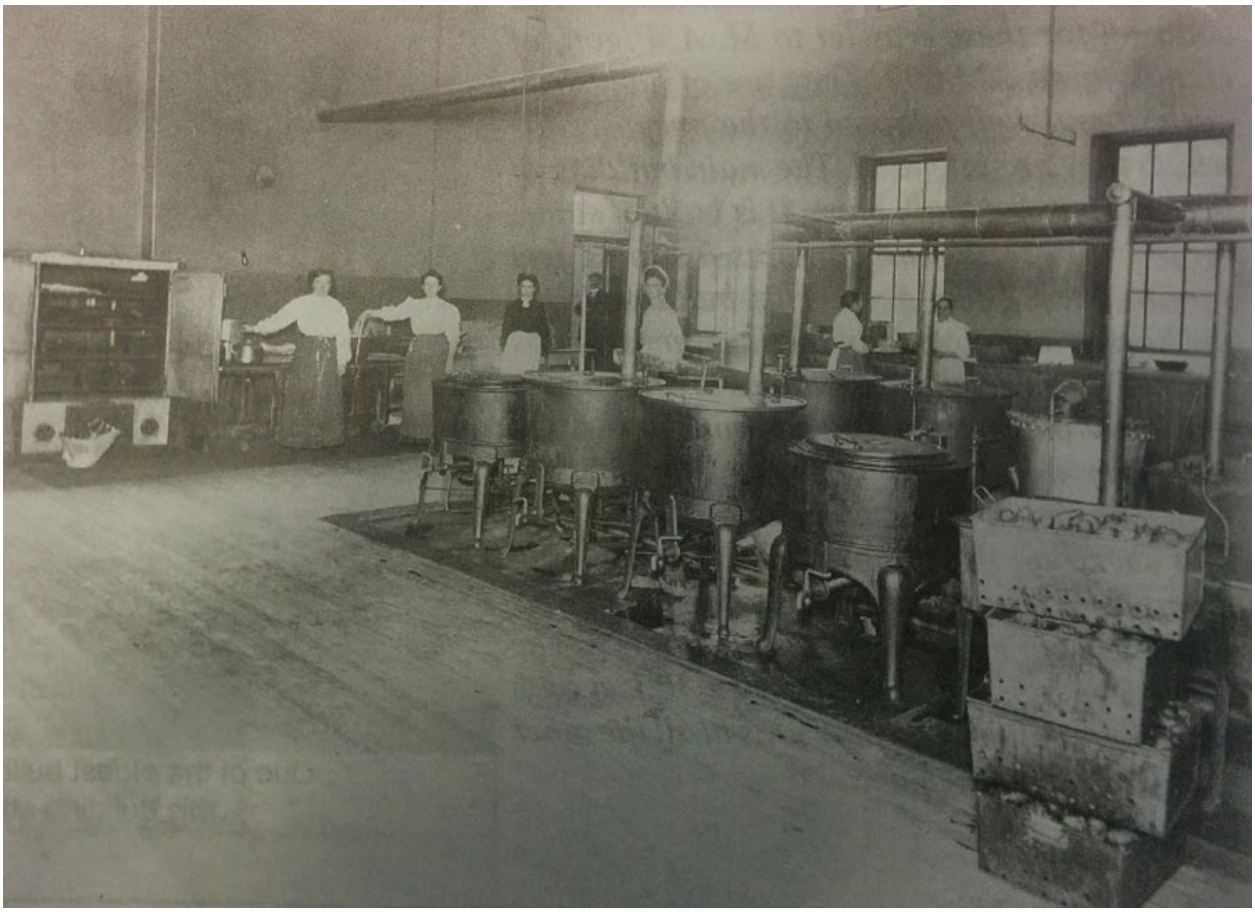


Figure 2: The kitchen at Brockville Psychiatric Hospital, 1906 (from A Brief History...)

Over the last decade in Ontario, three factors have changed to create an interesting new dynamic. First, the rising interest in 'local food' and its potential benefits for health, communities and rural economies produced an impact well beyond its market reach. In fact, it spurred the second factor: support from all provincial political parties for increased local food production, culminating in the Local Food Act—which promised, among other things, to develop targets for the procurement of local food by public institutions. The third factor is also a product of the interest in local food. Over the past decade, many new and young farmers have received training in production for local

markets. However, at the same time, the price of farmland in Ontario has increased dramatically, as has the competition for farmland rental properties. As well, many planning departments—particularly in regions around major urban centres—have become reluctant to break up farm properties for fear that they will end up as rural estates or residences for urban commuters, and be lost to agriculture. This combination of i) well-trained new and young farmers, ii) high land prices and iii) a lack of small parcels in regions where the markets for small-scale production exists has led many farmer training programs in the province—including Just Food, FarmStart, Farms at Work, and Everdale—to search for solutions to this land crisis. The provincial government has become a strong advocate for 'local food', and in 2014 the Premier mandated the Minister of Agriculture, Food and Rural Affairs with implementing the Farms Forever Program, as a top priority to ensure the sustainability of agriculture in the province.

> The [Farms Forever] program will help preserve the productive capacity of agricultural land close to major urban centres, support the local sourcing of food, strengthen Ontario's agri-food sector and support young farmers (Wynne, K. 2014)[1].

These factors together created the impetus for the current project, based on the premise that many of the public institutions looking to increase their consumption of local food also control under- or un-utilized land that could be put into food production—through mutually beneficial arrangements with local food producers looking for access to farmland. Currently, private U.S. healthcare institutions—in Vermont and Michigan—are at the forefront of this exploration of the multiple, mutual benefits of on-site food production. Would some variant of this model work in Ontario?

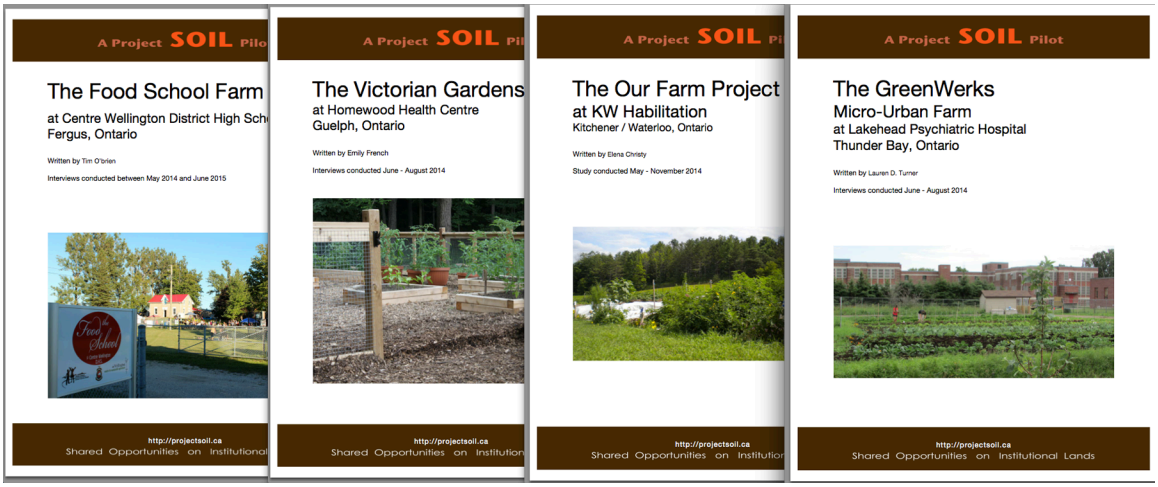
Figure 3: The resident farmer, demonstration kitchen and greenhouse at Henry Ford West Bloomfield Hospital, MI

[1] Wynne, K. (2014). Mandate letter: Agriculture, Food and Rural Affairs.
Available at http://www.ontario.ca/page/2014-mandate-letter-agriculture-food-and-rural-affairs

PROJECT OVERVIEW

Project SOIL (Shared Opportunities on Institutional Lands) is a feasibility study that explores the potential of on-site food production for public institutions through arrangements with local producers, particularly where access to farmland is limited and expensive. Funded by the Ontario Ministry of Agriculture, Food and Rural Affairs, we have produced four in-depth case studies of existing models with significant annual production—which are now available on our website: FoodShare's School Grown Market Gardens; the Ottawa Food Bank's Community Harvest food growing project; McGill Feeding McGill; and the Kingston Prison Farms.

Over the summer of 2014 we also completed four pilot projects, where we took the first steps with a diverse set of partners at health care, social service and educational institutions across the province, and documented the results through Participatory Action Research projects at Homewood Health Centre (Victorian Kitchen Garden project); Centre Wellington District High School (Food School Farm); Lakehead Psychiatric Hospital (GreenWerks Garden); and KW Habilitation (Our Farm). In 2015 we completed a fifth pilot, at Hôpital Glengarry Memorial Hospital, where we have expanded the Therapeutic Garden Project—almost doubling its size.



Over the past year we have conducted a survey and interviews with institutional administrators and staff at educational and health care facilities across the province. This process was intended not only to gauge their interest in on-site food production, but also to capture a broad set of responses to the very idea, as well as the barriers and limitations within respondents' institutions. In 2015-2016 we will conduct in-depth feasibility studies with six institutions, in order to gauge the potential, identify possible barriers and responses, develop a cost-of-production and value accounting model, build connections with local producers, and share resources so that on-site growing projects at these institutions have the best chance at viability over time.

POTENTIAL BENEFITS AND BARRIERS

Healthcare facilities are increasingly interested in the potential of fresh produce to improve health outcomes and patient experiences. For all public institutions, utilization of on-site space would ensure transparency of production and handling practices, and add the possibility of direct input into crop planting decisions. Small Plot Intensive (SPIn) farming techniques have been employed in sites across North America, demonstrating efficient, low-cost, economically viable practices with consistently high returns per square metre. Partnership with farmers trained in intensive production practices for constrained spaces would be of clear benefit to these institutions, many of which do not have great expanses of land available for food production.

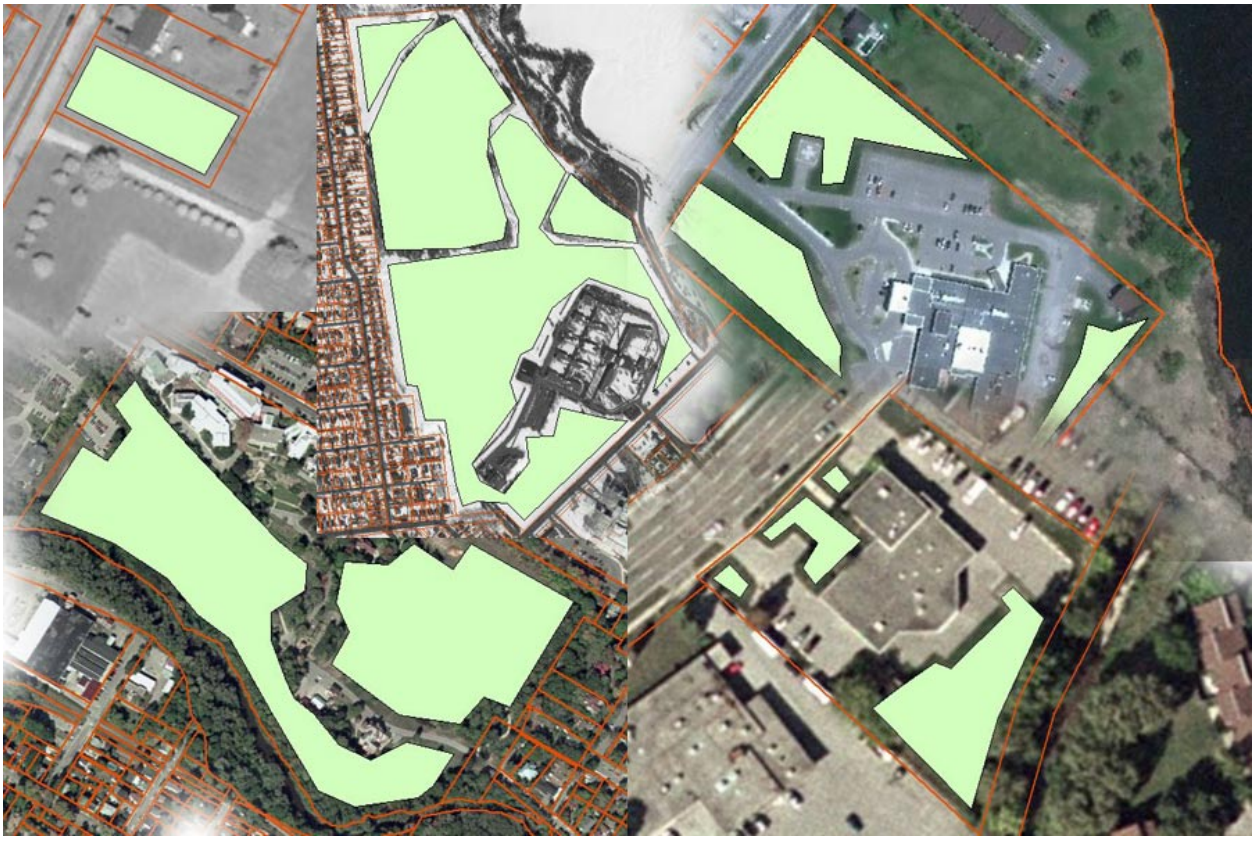


Figure 4: Mapping arable land at Ontario's healthcare institutions using GIS

In 2014 we collaborated on two GIS student research projects and employed a mapping technician on a project that used GIS and provincial land parcel data to map out both the amount of land held by Ontario public hospitals and Long Term Care homes, and the amount of that land that is in a condition suitable for agriculture. Of 659 Ontario health care facilities examined, 217 have more than one acre, 134 more than

two acres, 54 more than five acres, and 28 more than ten acres of arable land on site at their institution—that is, some mix of green space, fields and light tree cover*.

Any land that could be used for food production is a current expense—as part of grounds-keeping duties of staff or external contractors. Depending on the nature of the arrangement with the food producer, this same land could turn into an asset, generating a cash or in-kind rental fee. For the producer, this arrangement has the potential to develop into long-term, stable land access with favourable lease rates and / or a stable, fixed market. For both—because of the exceptional nature of the arrangement—this has the potential to generate positive community exposure and media coverage that highlights not only these benefits, but many others that come with gardens, including therapeutic, educational and aesthetic. Institutions might also use such an opportunity for skill training, community outreach, or to demonstrate commitment to local producers, improved nutrition and innovation.

The Canadian Coalition for Green Health Care has been working with Health Canada to improve the resilience of health care facilities in the face of climate change, including disastrous weather. Resilience demands that facilities design for redundancies, including those that ensure a stable and secure food supply, by moving away from an over-reliance on food purchased from distant places, as access to arable land around the world changes. Through initiatives such as on-site food production, health care facilities encourage more reflection on and control over their food procurement practices. Relationships with local and regional producers also encourage viable local food production, and build resilience in the regional food system.

At the same time, there are many potential barriers that might dissuade institutions from an on-site food production project. Dedicating even a portion of staff time to liaise or manage the project can be a challenge. Liability concerns might limit what is considered possible in a relationship with an outside contractor on-site. Similarly, food safety regulations may constrain decisions about acceptable sources of fresh food to be used in the institution's kitchen. If the food production project is kept in-house, labour, cost and experience become limiting factors. For a more detailed evaluation of benefits and barriers, see our literature review here: http://projectsoil.ca/literature-overview-2013/

* See our GIS Report at http://projectsoil.ca/background/gis-report/

LESSONS FROM CASE STUDIES

The first phase of this work built on our literature review and involved developing case studies that explore existing initiatives with already developed capacities. Our case studies examined the School Grown Market Gardens at Bendale and Eastdale schools in Toronto (in collaboration with FoodShare), the Black Farm project (in collaboration with the Ottawa Food Bank), the Kingston prison farms, and the McGill Feeding McGill initiative in Montreal, Quebec. The case studies enabled us to identify necessary resources and challenges to be expected in initiating institutional food production, based on well-established projects that have developed significant production.

Figure 5: McGill Feeds McGill collaboration

Some of these initiatives had obvious advantages that mediate their effectiveness as examples: the land base of both the prison farms and McGill's MacDonald campus provided exceptional natural resources, while the captive worker population at the

prison farms cannot be replicated. At the same time, both of these examples demonstrate the importance of institutional support showing a willingness to do what is required to incorporate the food produced on site into institutional food services. In the case of McGill, this required a close collaboration between the principals of the Plant Sciences and Food Service departments, and the cooperation of two external foodservice providers.

Each of these cases demonstrated a different model for the utilization of their food production. The McGill farm sells their product to food service companies that supply the downtown Montreal campus. The Community Harvest food-growing project supplies fresh vegetables to food access programs across the Ottawa region. School Grown provides a small quantity of food for educational and food service purposes at the schools and a local college, but sells the bulk at local farmers markets in Toronto. The prison farms not only used their food on site, they produced enough to supply other correctional institutions across the province, sell into local markets, and supply significant quantities to the local food bank.

Figure 6: FoodShare's School Grown program

Each also relied on a slightly different model for labour and production schedules. As mentioned earlier, the prisons relied heavily on inmates, although supplemented by staff and external contractors. The dairy, egg, chicken and abattoir facilities ran year-round, with a constant need for labour. The Ottawa Food Bank has an extensive network of volunteers, and supplements this workforce with corporate and community organization volunteer days, and one part-time staff member, as well as the full time efforts of the farmer and program coordinator, also a full-time staff member. As the Food Bank has a year-round need for fresh vegetables, planting is staggered to provide harvest as early in the season as possible, and extending as late as possible, including root crops that can be stored for early winter distribution. Both McGill and FoodShare's School Grown program rely on paid students for labour. However, because McGill's market is part of the university's food services, they focus on a fall harvest, for which they hire extra students. The School Grown program sells at markets all summer long, and staggers the planting and harvests accordingly—targeting mainly high value crops that will fetch the best return. This program also relies heavily on the full-time staff coordinator, who has extensive training in high volume urban food production.

Other key findings include:

- The role of institutional support cannot be overstated. While most of these started as side projects, with part-time staff hours and attention, they only flourished with institutional commitment. All of these projects had full-time staff committed to overseeing the project– and in two cases acting as staff farmer.

- Continued institutional support required that institutional administrators recognize the associated non-monetary value of food production

Figure 7: Ottawa Food Bank's farm project

- Community relationships can facilitate success for institutions without sufficient arable land – as was illustrated by the Ottawa Food Bank's Black Farm project established on donated land

LESSONS FROM SURVEY AND INTERVIEWS

In February 2014 we launched an online survey, sent to almost 1,000 contacts at public institutions, that was intended to gauge the extent to which Ontario institutions were interested in exploring on-site food production arrangements, how feasible they thought those arrangements were, and what obstacles stood in the way of seriously considering such initiatives. While the response was disappointing (only 44 respondents completed the survey), the key findings from the survey and 24 interviews that followed offer some insight into institutional needs and expectations:

- Institutions had a very wide range of total acreage available for food production, although the majority had less than 1 acre, with land primarily consumed by parking, lawns, and treed areas. Less than one-third of respondents mentioned decorative or edible gardens.
- Respondents were most interested in on-site food productions for general benefit to patients, staff and students; access to fresh food; showcasing / educational purposes; and therapeutic benefits.
- The most cited potential barriers to prevent respondents' institutions from considering on-site food production were lack of administrative capacity; general lack of interest; concerns for liability; lack of land/limited space; and the staff and cost/funding required for general maintenance.

The participating health care facilities identified several potential measures of success, including positive health and nutrition effects of fresh food—both for overall patient wellness and/or to minimize patient stay (and reduce hospital's costs); dollar per square-foot revenue; reasonable initial investment; contribution to healthier workplace for staff and patients; and positive media coverage.

More than half of the institutions participating in the interviews (13 of 24) had on-site food production projects at the time of the interviews, while a further eight expressed interest in food growing projects. Of these mostly educational and healthcare institutions, the primary motivation for pursuing on-site food production was to better serve the community by providing new opportunities to food access. Food production projects were most often cited as being good ways of giving back to the community, whether by donating land to non-profit groups or developing community garden-styled spaces for the purpose of donating food to shelters or food banks. As a consequence, charitable projects were often favoured over profit-making initiatives.

For health care institutions more specifically, the majority of interviewees mentioned the therapeutic benefits of gardening as their primary motivation for on-site food production, particularly for long-term patients. Most stated these projects are—or would be—a way of getting patients or residents to be more active, aid in rehabilitation, spend more time outdoors, help with memory, or to rekindle old habits and interests. With a reputation of excellent service and experience, those in long-term care felt that giving residents/patients additional outlets to engage in outdoor activities would be a good way of improving their services. Educational institutions highlighted the ability for students to gain food production skills and knowledge through both formal and informal opportunities.

Figure 8: Farmers, staff and residents at the sensory garden, KW Habilitation

Though on-site food production was generally considered in a positive light, a number of barriers were identified as limiting or prohibitive to the possibility to develop or maintain projects. Funding was the most frequently cited barrier to developing and

maintaining projects, especially for healthcare institutions. Almost all institutions hoping to start projects either do not have or are unwilling to divert their own funds for on-site food production. Most assumed any funding would likely have to come from external sources (e.g. grants, donors), which come with their own set of limitations and added responsibilities. Similarly, administrations typically demand that ongoing projects keep their costs low, making it difficult to improve or expand projects, or provide the necessary infrastructural support.

Healthcare institutions also identified a lack of staff or volunteer commitment to both starting and maintaining projects. Existing staff is typically overworked, with little time to dedicate to a new project, regardless of willingness or interest. This limitation highlights an opportunity to connect healthcare institutions with the proper individuals or networks that could work their land with little to no additional costs to the institutions.

Though mentioned less frequently, some interviewees stated that they would not be interested in producing the volume of food required for use in-house. Similarly, others identified limited kitchen or prep space, as well as the lower cost of external food providers, and the added cost of hiring staff, or convincing current staff to dedicate additional hours to prepare food from scratch. Lastly, a number of health care institutions cited prohibitive food safety policies, food inspections and legislation as a barrier to using the food in-house, regardless of their willingness to do so. However, most also acknowledged the potential benefit to staff and patients of having direct access to fresher, healthier, local produce if used in cafeterias and other on-site food outlets. On-site food production was also mentioned as a means to create health and nutrition awareness, and increase the visibility of food issues especially amongst staff.

To mitigate the constraints raised above, institutions that have implemented on-site food production listed a number of key opportunities and successes from their own experiences, which could be valuable to healthcare institutions:

- Partnerships were listed as the best means to successfully implement food production projects, especially when access to funds and resources (e.g. staff, time) are otherwise unavailable or limited. Costs can be drastically reduced if partnered with those with the right expertise and/or materials to implement projects. It was also acknowledged that informal connections and relationships provided a major portion of most projects' startup and maintenance, whether through the help of volunteers, or families and friends of staff, residents and patients.
- Strong institutional support is a major factor for success. In the Champlain Cardiovascular Disease Prevention Network, broader institutional initiatives embed food production initiatives into larger projects or strategic plans

(e.g. health care reform, sustainability plans, corporate social responsibility schemes) to ensure their growth and success.

Figure 9: Telus House Toronto's community garden

These survey results and the interviews portrayed a wide ranging set of resources, constraints, and expectations for on-site food production among Ontario institutions. They also gave us some sense of the institutional motivations for considering on-site food production, and the success metrics that would be meaningful to those institutions.

Figure 10: The Food School Farm in Fergus, Ontario

LESSONS FROM PILOT PROJECTS

Over the summer of 2014, we completed four pilot projects, and documented the results through Participatory Action Research projects at Homewood Health Centre (Victorian Kitchen Garden project); Centre Wellington District High School (Food School Farm); Lakehead Psychiatric Hospital (GreenWerks Garden); and KW Habilitation (Our Farm). A fifth pilot is underway at Hôpital Glengarry Memorial Hospital (Horticultural Therapy Garden). The names of the food production initiatives are indicative of the diverse motivations, approaches, resources and expectations involved.

Homewood Health Centre, Guelph

One of the country's leading addiction and mental health treatment facilities, Homewood departmental leadership decided collectively that the project would fit best with their horticultural therapy department. Tamaura Proctor—a trained horticultural therapist and department head—became the on-site project lead, dedicating a portion of her time to the management of the garden. Using a design produced in collaboration with a volunteer landscape architecture student, the grounds staff built a modest Victorian Kitchen Garden with nine raised beds, intended to meet the emotional and physical needs of the patients. As such, construction materials, siting of the garden and even the selection of plants was determined by the extent to which they supported the priority of patient care. The horticultural therapy department has a strong interest in capturing the therapeutic benefits of the food growing initiative, and is looking to collaborative research initiatives that will further this goal.

Soil for the raised beds was purchased, and crops were initially watered with Miracle Grow. Manual weeding and pest control meant that no other inputs were used. Limited water was required, although expansion might necessitate installation of a dedicated water line. Patients are involved in spreading mulch and raising the seedlings, while staff and volunteers harvest the produce. The Guelph Food Bank was to be the recipient of any surplus, but given the small volumes, all of the produce was used in the kitchens on site. Following a review of the initiative in 2015, the administration will decide whether to approve expansion of the garden using the same design template. While the Homewood site has ample grounds, expansion will be determined mainly by program relevance, resources and outcomes.

Aside from a modest financial contribution from Project SOIL, all funds were raised internally. The kitchen, grounds and communications departments each also all provided essential support to the project. Construction was handled internally by the grounds department, while communications handled press releases, photography and media exposure. The kitchen department provided sanitized containers for harvesting, weighed the produce, and prepared it for incorporation into the meal plan. The kitchen has received nothing but positive feedback about the produce, and patients expressed excitement about eating something that was produced on site.

The staff and volunteers had to comply with public health and safety guidelines in order to use produce for patient and staff consumption. A site inspection was conducted by Public Health to ensure that the garden was fenced, that no animal manure was applied to the beds and only potable water was used for irrigation. Those harvesting are required to wear gloves at all times. Once the produce is brought to the horticultural therapy department, gloves are removed, and hands washed with soap before reapplying a new pair of gloves. The department is also responsible for an initial

wash of the produce to remove soil and debris before it is sent to the kitchen, where it is washed two additional times. Public Health also required that patients and staff be notified when produce grown on site was incorporated into the meals.

Figure 11: The Victorian Kitchen Garden at Homewood Health Centre, Guelph Ontario

Homewood has a plan for unhurried assessment and growth of their food production pilot. Limited scale allows for the project to continue to be managed in-house. Next steps include an assessment of the therapeutic benefits for patients, and decisions on whether to replicate the Victorian Kitchen Garden, and increase community engagement.

Key points:

- The main focus of the project has been the therapeutic potential of a food growing garden
- Institutional support—from the CEO to multiple departments within Homewood—has been critical to the project's development
- The garden project has been an important vehicle for making connections both to other departments within Homewood, and to the broader community

Lakehead Psychiatric Hospital, Thunder Bay

The Employment Options program of the St. Joseph's Care Group started the GreenWerks Garden in 2011, as a social enterprise focused on providing vocational skills development for clients with complex mental health and/or addiction challenges. After three years establishing the garden and building relationships, program supervisor Doug Dowhos was looking to expand production and incorporate more produce into the foodservice operations of the on-site foodservice provider, Sodexo. This would strengthen their existing markets, which—along with Sodexo—included purchases by staff at their own mini farmers market, and the Regional Food Distribution Agency. The latter is one of their original project partners, and purchases produce at wholesale rates to distribute to food banks across the northwest. This mutually beneficial arrangement has grown to include collaboration on other garden sites, and supplies GreenWerks with volunteers when needed.

Labour in the garden is supplied primarily by clients of the Employment Opportunities program—supplemented by volunteers and summer students—while St. Joseph's Care Group provides a supervisor and occupational instructor to oversee and manage the operation. St. Joseph's Care Group also supplied fencing and irrigation, along with necessary tools and vehicles and financial support. The program is also supported by a number of other community partners: Thunder Bay Correctional Centre supplies approximately 75% of the seedlings used in the garden, while Willow Springs designed the new healing garden extension.

Figure 12: The GreenWerks Garden, Lakehead Psychiatric Hospital, Thunder Bay Ontario

Despite the short growing season, testing showed that the soil supports the production of most vegetables. While production space on the grounds of Lakehead Psychiatric is almost limitless, wildlife is an important consideration: the current site was developed in a 1.75 acre area already enclosed within a large, deer-proof fence. The current growing site is less than half an acre, so there is room to expand and add a greenhouse within this footprint. Their partnerships with the Regional Food Distribution Agency and Sodexo allow the freedom to expand, easily absorbing any increased production.

Along with skills training, the GreenWerks Garden also provides therapeutic benefits to the clients working in this environment. Anecdotally, staff has noted increased quality of life and decreased readmission rates, along with the benefits of fresh food. The Employment Opportunities program provides a home and resources for expansion of the food production project, while Sodexo and the Regional Food Distribution Agency can absorb any increase in production. Immediate expansion plans are limited only by the space available within the fenced-in enclosure.

Key points:

- Institutional support from St. Joseph's Care Group is critical to the ongoing success of the project
- Community partnerships helped the early project to minimize input costs and develop with an assured market
- Integration within the Employment Opportunities program provided both a source of labour and a set of metrics—beyond simple economics—by which to measure its value
- Therapeutic benefits are also an important added value of the program
- Collaboration with foodservice provider offers mutual benefits

Food School Farm, Fergus

In a partnership between the Food School program at Centre Wellington District High School and the Wellington Centre for Sustainable Agriculture, the Food School Farm was developed as an integral part of the high school's innovative agroecological education stream. Situated on roughly one acre surrounding a 19th century stone farmhouse, the farm offers the opportunity to integrate courses in growing food outdoors with food preparation and sustainable agriculture, under the Ministry of Education's Green Industries curriculum.

Figure 13: The Food School Farm at the Wellington Centre for Sustainable Agriculture, Fergus Ontario

The Wellington Centre for Sustainable Agriculture took over stewardship of the property in 2011 in agreement with the landlord, the Centre Wellington Township, in

exchange for farmhouse renovations. In turn, the Wellington Centre for Sustainable Agriculture—a non-profit community group—donated use of the property to the Food School. Less than a five minute walk from the high school, the property offered a convenient, invaluable opportunity to supplement students' food preparation education with food production skills.

After planting fruit tree saplings in fall of 2013, approximately ½ an acre was prepared for planting in 2014. Equipment and labour for the site preparation and ongoing maintenance was supplied on a voluntary basis by staff or municipal maintenance workers. Chef Chris Jess, the principal instructor and coordinator of the pilot site, was assisted by other instructors in delivering curriculum in the farmhouse schoolroom, donating seeds, and volunteering their talents in renovating the farmhouse and overseeing construction projects. For example, a garden box / cold frame prototype was developed using surplus board glass from the neighbouring hockey arena, with the design assistance of the project research student.

While water for crop production has not been an issue, two cisterns have been purchased to collect rainwater from the farmhouse roof. A greenhouse for seedling production and season extension has also been purchased. The site has healthy soil, however creating a garden from previously sod-covered ground can be a challenge. Using organic methods and without a dedicated team of students or volunteers to maintain the site over the summer months, heavy weed competition limited production.

The initiative is looking for a farm manager who can oversee the production and fund their position. This is the main constraint to ongoing and expanded food production, as they have ample space for growth and the support of the community group that stewards the property.

Key points:

- Initiative involved collaboration of the municipality, a local non-profit, and the school board, and continued support of all is critical to ongoing success
- Integrates practical food preparation and food production skills, along with sustainable agriculture education
- Struggled with volunteer labour, and looking for full-time farm manager

KW Habilitation, Waterloo Region

In 2013, Project SOIL reached out to Our Farm, a community group in the Kitchener-Waterloo area, to discuss their initiative to grow food for a regional community support organization for individuals with developmental disabilities: KW Habilitation. Despite difficult growing conditions in 2013, the community group and organization were keen to make the project work, and willing to commit resources and energy. This commitment evolved into the Our Farm pilot project, a multi-site food production program focused on skill-building and channeling fresh local produce into institutional food supply.

Figure 14: Our Farm at KW Habilitation's David Fischer Residence, Waterloo Ontario

KW Hab took the lead on the Our Farm project—with the community board acting in an advisory position—and hired one of the 2013 farmers in the role of farm manager at their large rural David Fisher Residence. This 10-acre site—half of which has been rented to a local farmer for field crops—has plenty of capacity for expansion over time.

They also committed Tracy Franks as overall project supervisor, and hired Jenny Weickert as program coordinator. At the same time, they started an urban micro-farm pilot in Waterloo, working with Young City Growers— a grass-roots initiative that seeks to provide urban agriculture opportunities for youth. While volunteers played an important role at both sites, labour primarily came from the farm managers, while the program coordinator distributed the produce.

Figure 15: The weekly market at the main office and residence, KW Habilitation, Kitchener, Ontario

Most of the vegetables were distributed between the 23 residences owned or leased by KW Hab, while the rest were sold to staff or at a local market. Since the residences have food budgets, the option exists to charge for the vegetables, to help make the project self-sustaining. As it was, these residences reported saving $25-$75 per week during the summer months, because of the food they received from the pilot sites.

Along with employment for the farmers, the pilot sites also offered knowledge and skill development through experiential learning for the residents and respite home visitors, as well as the therapeutic benefits these sites deliver. With ample space for expansion at the rural residence alone, the food production project has tremendous potential for growth. Continued collaboration with community farmers will be an important element of any expansion.

Key points:

- Partnership with community organizations to grow food at two different sites has provided essential capacity
- Institutional support—including a full-time staff coordinator—has enabled the project to flourish
- Land base and institutional demand provides significant room for growth and the opportunity for the project to be self-sustaining
- Institutional capacity for food processing provides additional opportunities for skill-building and institutional food provision

Hôpital Glengarry Memorial Hospital, Alexandria

A primary health care institution located in Alexandria, Ontario, Hôpital Glengarry Memorial Hospital (HGMH) is a registered charity which also focuses on post acute stroke rehabilitation services. The HGMH garden began with a $25,000 Healthy Communities Fund grant from the province in 2011.

With the help of summer students over the 2013 and 2014 seasons, and funding through the SOIL project, the garden expanded in scale and accessibility. In 2015, with help from a student participant researcher, as well as the support of the HGMH administration, the site expanded yet again, doubling production with micro-farm operations using the SPIn production technique. While the hospital owns ample land for potential expansion, much is earmarked for facility development.

Figure 16: A summer student works the new beds of the HGMH Therapeutic Garden, Alexandria Ontario

The HGMH Therapeutic Garden has flourished thanks largely to the efforts of project manager Louise Quenneville, also the hospital's emergency preparedness coordinator. From the side of her desk, she has started and developed the garden, hired and supervised summer students, and developed a business plan to encourage support from the hospital administration.

Summer students and occasional volunteers supply the labour, and the produce is used in the kitchen on site or sold to staff in weekly markets. Patients must be escorted by family members, nurses or therapists, but many have visited, and some have even volunteered with tasks such as weeding or watering. Grounds staff has also provided assistance preparing the garden sites, and installing equipment.

Plans for increased scale are limited by the available space, the administration's willingness to sanction expansion, and the reliance on summer students to manage the garden and provide labour. While the size of the space dedicated to the food production project has almost doubled annually, it remains less than 3,000 square feet in total. This project would benefit from a long-term plan for careful growth, to be implemented by an external farmer or community group working in collaboration with the project manager.

Key Points:

- Project champion within the institution has been critical to establishment
- Students have played an important role in developing production scales
- Therapeutic benefits for stroke rehab patients and institutional use of food are important targets

CONCLUSIONS

Our findings thus far provide several important insights. At a time where urban and peri-urban fresh food production is rapidly growing in popularity, institutional lands are increasingly recognized as an under-utilized resource. While documented benefits provide sufficient incentive for institutions to consider using their land for food production, the process of developing such a project requires careful preparation. Our case study, survey, interview and pilot project findings provide a "map" of institutional expectations, motivations and barriers (real or perceived) that are necessary to consider for such an initiative. Project SOIL is fully committed to promoting the use of institutional land for food production wherever possible, but our findings also indicate that much preliminary work is needed to ensure that a garden project is likely to succeed. Having the support of the institution in this process can dramatically improve the chances for long-term viability, and this support can be provided through many channels, including encouraging the cooperation of multiple departments (i.e. grounds, food services) and dedicating staff hours. Having "champions" who are able to incorporate such initiatives into their daily responsibilities is essential, as are dedicated paid staff who can attend to the daily tasks associated with the food production project. A 'champion' within the institution can also better navigate the administrative complexities, and understand the institutional needs and capacities.

Our second critical insight comes from our pilot projects. The participating pilot partners confirm that there is indeed a great deal of benefit to be gained from on-site food production. They indicate that intangible benefits are significant, but also difficult to measure—and include skill building, socializing, spending time outdoors, community engagement, and therapeutic benefits. The pilots also demonstrate the delicate balance required to adapt food production lessons to a particular site. The models that they have developed can be tremendously useful for planning and developing institutional gardens, but site- and institution-specific challenges must be expected.

Figure 17: Greenspace, sunshine and accessible raised beds at the HGMH Therapeutic Garden

FUTURE DIRECTIONS

At the time of writing, we are developing in-depth feasibility assessments at several institutions that have no food gardens on their land and are interested in changing that. As part of this work, we are also consulting with established farm incubator organizations and experienced urban production groups, to explore innovative food production models and identify farmers who could collaborate with public institutions. Moreover, we are connecting organizations with available land (for example, the Toronto Region Conservation Authority) with health institutions that have no land, but wish to have someone producing food for their facilities. The results of that work, combined with the results presented in this report, will ensure a well-rounded, robust assessment of the feasibility of on-site food production in Ontario and beyond.

RECOMMENDATIONS AND IMPLICATIONS FOR PRACTICE

This applied project is designed to investigate practical implications, so virtually all of our findings are relevant to practitioners interested in on-site institutional food production. Moreover, our findings suggest that institutional gardens, while requiring some initial investment, can offer a great deal of benefits in the areas of therapy, skill-development, social inclusion and connections, and community engagement. Our recommendations to practitioners interested in developing such initiatives are as follows:

- Explore existing models and connect to existing initiatives to assist you with preparatory work.
- If at all possible, establish a connection with a farmer (or community farm group) that will grow the food on-site. This approach has the advantage of instant expertise, and reduces or eliminates the staff time that would be devoted to planning, planting, maintaining and harvesting—while at the same time providing land for local food production, and fresh food that can be purchased for use on-site if desired.
- If you are tackling the project in-house, treat the first two years of garden development as a test period, to get a sense of soil and climate conditions and to fine-tune the gardening skills of those overseeing the project. You will likely experience a sharp learning curve, bad weather, fungus, bugs, weeds, and human errors (e.g., destroying seedlings while weeding).
- Secure administrative support for longer periods of time – year-to-year funding can present serious challenges to establishing healthy and functional gardens.
- Expect that you will have to rely on at least some volunteer labour but think of this as an opportunity for patient, staff and community engagement.
- Use the project to build connections within your community—from seed and seedling suppliers to building supply companies, food service providers, and community food access organizations. Unexpected benefits multiply through such connections.

Our participating institutions maintain that the benefits of food gardens far outweigh the challenges. On-site food production has a tremendous potential to improve the nutrition of staff and patients, strengthen larger local food initiatives, better connect institutions with the communities in which they are located, and offer the long-professed benefits of gardening for all involved—from therapeutic benefits and outdoor physical activities, to developing skills and social relationships in ways that few other activities do.