Feeding Diversity

Community Access and Commercialization of World Crops

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Vineland
Research and Innovation Centre
www.vinelandresearch.com

TORONTO FOOD POLICY COUNCIL

TORONTO Public Health

INTRODUCTION

Through the McConnell Foundation Sustainable Food Systems Initiative, Toronto Public Health and Vineland Research and Innovation Centre partnered on a project to assess the viability of expanding market opportunities for world crop producers while improving access to these foods amongst a range of consumers groups, especially communities without adequate access to healthy food.

Vineland Research and Innovation Centre is a horticultural research centre in Ontario with a unique focus on commercialization of "world crops." The Toronto Food Strategy, a team at Toronto Public Health, works on a variety of initiatives to foster a health-focused food system. These two institutions came together through the ***Feeding Diversity*** project. The initiative represents an opportunity to create a partnership between sectors as a way to achieve mutual goals of world crop commercialization and healthy food access: Vineland, with its broader horticultural and market access perspective, and Toronto Public Health with its mandate to improve population health and overcome health inequalities.

Through the regional food system assessment funding, the partnership identified the following goals:

1. To assess the market demand for world crops;
2. To assess the potential for import substitution by local production of new, agronomically suitable world crop varieties; and
3. To identify new, scale-appropriate market pathways for these crops.

Building on the multifaceted work of both Vineland and Toronto Public Health, this assessment report:

- compiles existing research related to world crop supply and demand in the Greater Golden Horseshoe;
- summarizes trends in supply, demand, and current pathways to market for world crops, more generally at the regional level and more specifically at the community level, based on consultations held in two of Toronto's low-income newcomer neighbourhoods;
- produces a critical analysis of current barriers, gaps and opportunities; and
- prioritizes the most promising projects for further discussion and development.

The following work was undertaken by the project partners and forms the basis for this report.

- A literature review conducted by Dr. Ben Campbell (Horticultural Economics Researcher at Vineland) and surveying existing literature on world crops, outlining the various groups, organizations and research initiatives involved in world crop cultivation, research, marketing, and outreach (Appendix A).
- A final report from the TPH community-based research and consultation (Appendix B).
- Ongoing production side research by Vineland (field trials, varietal testing, market development, consumer preference).
- Ongoing healthy food access research by TPH (food access mapping at various scales, exploring multiple strategies to improve healthy food access) (Appendix C)
- Discussions with key stakeholders over the assessment period.
- Discussions amongst project partners over the assessment period.

These findings have illuminated a complex landscape for Ontario-grown world crops. This report lays the framework for another phase of work for the project partners: the development of a business plan that will evaluate the financial and practical feasibility of linking diverse scales of world crop production with retail markets.

ABOUT THE PROJECT PARTNERS

Vineland Research and Innovation Centre: The Vineland Research and Innovation Centre ('Vineland') is a world-class research centre dedicated to horticultural science and innovation. Located in Canada's Niagara Region, Vineland's mission is to deliver innovative product and production solutions that address the needs of the horticulture industry and advance Canada's research and commercialization agenda. Since 2009, Vineland has implemented a world crops program that investigates the opportunities for producing, commercializing, and developing consumer demand and market potential for ethno-cultural vegetables. Vineland's goal is to support local farmers to transition to new and possibly more lucrative markets for culturally specific vegetables that are proven to thrive here in Ontario.

Vineland has become a hub for much of the research and farmer engagement around world crops – particularly South Asian and Caribbean crops. Vineland's production and consumer research will be integral to the process of forming and implementing a world crop marketing strategy.

Vineland's world crop activities include:

- Crop production research
  - Varieties
  - Grown and development
  - Total and marketable yield
  - Pest and disease incidence
  - Post-harvest storage
  - Economic assessment
- Market assessment
  - Consumer demand
  - Consumer acceptance (taste, traits)
  - Market dynamics (size, evolution, value)
  - Routes to market
- Breeding
  - Selection for key traits (production, days to maturity, disease resistance, beneficial nutrients)
  - Consumer acceptance (taste, traits)
  - New varieties for Ontario's climate
- Education and market growth
  - Barriers and opportunities to niche market entry
  - Awareness (retail, consumer)
  - Crop profiles (for growers)
  - Farmer-buyer networking sessions
- Value chain partnerships

Toronto Public Health: Toronto Public Health's (TPH) mission is to reduce health inequalities and improve the health of the whole population. TPH provides services to individuals and communities, and advocates for public policies that make our city healthier. The Toronto Food Strategy team was launched in 2010 to implement Toronto's food strategy and work towards a health-focused food system. Key projects include: food access mapping which has identified gaps in food access for Toronto's most vulnerable populations; the development of corresponding initiatives to improve healthy food access; including a mobile good food market pilot initiative, a food skills and employability project; and work with community partners and across City divisions to ensure enabling policies that support community food activities. The Food Strategy's goal is to bring healthy, fresh, culturally appropriate vegetables to Toronto's low income and newcomer populations – particularly those residing in food deserts.

The **Toronto Food Policy Council** was established in 1991 to advise TPH and the City of Toronto in the development of inclusive and comprehensive food security policies and programs. The TFPC acts as the community reference group for the Toronto Food Strategy with a focus on identifying emerging issues, facilitating linkages between the community, Toronto Public Health and City Divisions, and advising the food strategy team on their implementation process.

The Toronto Food Strategy and TFPC are well-positioned to act as a portal to urban markets, particularly new immigrant and low-income or underserviced communities.

The partnership between Vineland and the Toronto Food Strategy brings the work of these two institutions together to understand issues of scale and access, with particular emphasis on world crops, in the GTA food system.

This report amasses and analyses research and knowledge from a range of key stakeholders involved in the production and distribution of world crops with the intent of import substitution. In an attempt to address the complexities involved in such an initiative, we are engaging a wide range of informants, stakeholders and partners as a means of connecting the usual silos and developing a creative and coordinated approach to market development and healthy food access.

KEY TERMS

The following terms are used throughout this report and are explained below. We recognize, however, that all of these terms are fluid and often occupy a decidedly 'grey area' in public discourse given a complex and rapidly evolving cultural milieu.

World crops - Vegetables or specific varieties of vegetables that are relatively *new* to local farms and carry with them a regional significance to the more recent wave of newcomer Canadians. Many of these crops are common in both newcomer and Canadian diets / cuisines. However, these crops are generally imported. It is well known that world crops can be grown in Canada. This project explores the larger scale production requirements and necessary market linkages to make this commercially viable. Terms also used in this report include "ethno-cultural vegetables," culturally appropriate," and "culturally specific vegetables".

Newcomer – A newcomer is defined as someone who was born outside Canada and who migrated here within the last ten years. According to the 2006 census, there were 465,815 newcomers in Toronto, which accounts for 18.4% of the city's total population. Of this number, 267,855 or 10.8% of all residents had been in Canada for five years or less (Access Alliance and Toronto Public Health 2011, 12).

Longer-term immigrant – Individuals who were born in another country but have been in Canada for more than 10 years (Access Alliance and Toronto Public Health 2011, 12).

Immigrant – Refers to both newcomers and longer-term immigrants (Access Alliance and Toronto Public Health 2011, 12).

Cross Cultural Eater – acknowledges that we are all part of a global cuisine and experiment with new foods and recipes.

Photo by Peter Mitchell

LANDSCAPE

Shifting Demographics, Shifting Markets

Canada's demographics are changing rapidly. A recent report by Statistics Canada (2010) estimates that by 2031, 63% and 59%, respectively, of Toronto and Vancouver's populations will be visible minorities (Fig. 1). While these changes are most evident in larger 'destination cities', it is a trend that is occurring across the country. This abundance of "new" Canadians has the potential to transform the Canadian food system given their desires for authentic tasting foods, notably vegetables. The demand for ethno-cultural vegetables is considerable. Monthly spending on ethno-cultural vegetables by only three ethnic groups (Chinese, South Asian, and African/Caribbean) is estimated to be $61 million per month in the Greater Toronto Area (GTA) alone (Adekunle et al. 2010). Considering these ethnic groups, among others, reside throughout Ontario and Canada, the market potential is considerable for local producers if they offer the right product and present it in the right way. Canadians are also cross-cultural eaters, exploring new cuisines and seeking out new foods. This presents a significant economic opportunity for Canada's horticultural industry which must evolve to meet the demands of the changing consumer palates.

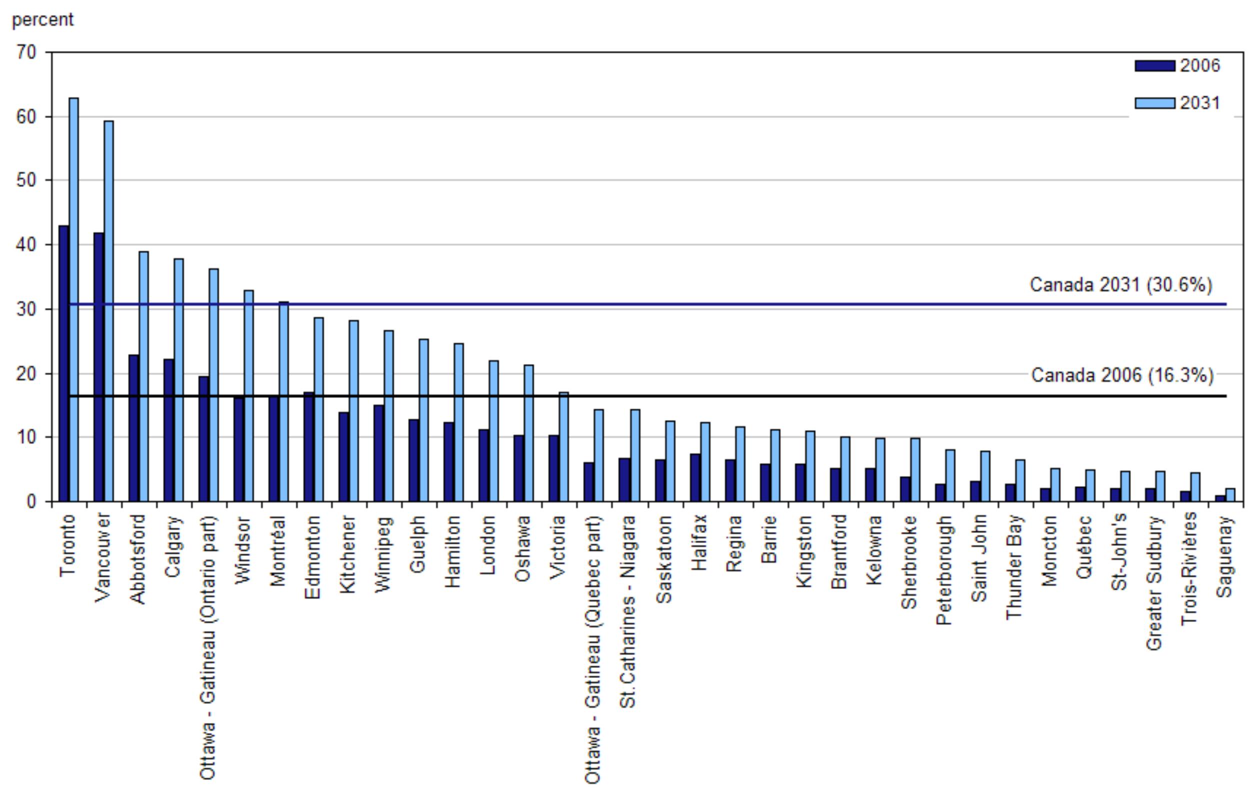

Figure 1. Proportion of the population belonging to a visible minority group by census metropolitan area, 2006 and 2031 (projected). Source: Statistics Canada, Demography Division.

Many vegetables that are currently imported can thrive in Ontario's soil and climate. Callaloo, yard-long beans, Indian eggplant, Chinese hot peppers, and okra are but a few of the ethno-cultural vegetables that can - and *are* increasingly - being grown here.

Much earlier experimentation with growing these vegetables in Ontario took place in Toronto's community gardens (Baker, L. & FoodShare, 2002). Backyard and community gardens boast an increasingly diverse mix of crops, and these gardeners source seeds of their favourite varieties from "back home" trading them amongst the community here. On a stroll through Toronto's neighbourhoods, it's not unusual to see a community garden boasting Asian crops such as bitter melon and fuzzy gourd alongside Jamaican callaloo or Middle Eastern molokhiya. The cultivation of these crops has helped the diasporic communities in the GTA stay connected to their cultures, their traditional diets, and to others in their community.

It is clear, though, that what began in backyards and community gardens is increasingly translatable to larger scale production. Yet the capacity to *grow* a new type of crop does not necessarily translate into its ability to thrive in commercial agriculture or in the marketplace. Farmers need to know how a particular crop grows, its particular climatic and nutritive needs, how and when to harvest it, how to store it appropriately to ensure it remains fresh in its transition to market, and where they can sell these crops when they grow them. Similarly, retailers and distributors must be confident that a product will sell – it must deliver the colour, shape, and flavour that customers seek. Furthermore, any Ontario-grown world crops must compete with the imported varieties which are readily available and generally low-cost.

While still a small sector, local farmers *are* increasingly responding to this demographic shift by growing new crops. Indeed, this has happened in tandem with demographic shifts of previous decades. The East Asian community, for example, is well-established in North America and as such numerous farms grow a range of Asian crops. Farmers north of Toronto in the Holland Marsh area produce crops like bok choi, gai lan, and nappa cabbage at a formidable scale. Interestingly, these crops are primarily grown for export to New York State where farmers can secure higher prices than the Ontario market can bear.

Despite the broad range of cuisines and food available in Toronto, many people have serious food access challenges. In Toronto 1 in 5 families live in poverty (United Way, 2011). Moreover, this poverty is concentrated in Toronto's inner suburban neighbourhoods (Hulchanski, 2005). These neighbourhoods house the highest concentration of newcomers, lack both transportation and social services, and are where Toronto's many "food deserts" manifest. In Toronto's inner suburban neighbourhoods, food affordability, availability, and inadequate transportation have created barriers to accessing healthy food. Other factors influencing the demand for ethno-cultural crops relate to affordability and access. Toronto Public Health has done mapping of access to healthy food across the City, demonstrating that there are neighbourhoods where there is a prevalence of low incomes, poor access to supermarkets (used as a proxy for healthy food), and poor access to public transportation. This research has demonstrated that many of Toronto's low-income neighbourhoods, often with dense newcomer communities, are poorly serviced by grocery stores (see Appendix C for examples of healthy food access maps completed by Toronto Public Health).

A recently published report "The Global City: Newcomer Health in Toronto" (Access Alliance and Toronto Public Health 2012) paints a complex picture of the health status of this population. Overarching themes from the evidence reviewed in the report include:

- Most newcomers arrive in good health.
- Overall, newcomers lose their health advantage and their health declines over time.
- Social and economic exclusion have a major impact on the health of newcomers.
- Newcomers experience multiple barriers to accessing necessary services.

This represents a challenge for increasing access to healthy food in underserved, low-income, newcomer neighbourhoods. Indeed, the demand side of the equation for ethno-cultural crops is nuanced, complex and not uniform.

Responding to new market opportunities

Substituting locally grown world crops for imports poses both unique challenges and opportunities. Existing field research needs to be merged with the existing market and food access research to enable farmers to confidently scale up production of new crops while simultaneously equipping them to access new markets. The wide range of production scales needs to be matched with scale-appropriate market outlets, adding yet another layer of complexity to this small but growing part of the local food system. Food access and health need to be taken into consideration.

The immature but evolving state of Ontario's world crops value chain may also be its strength. Bringing a range of stakeholders together to address the inherent challenges of food system reform will help ensure a dynamic, adaptable, and appropriate strategy to develop a new value chain for world crops.

Key Stakeholders

While drawing heavily from the work done by the project partners (Vineland and TPH), this assessment project also builds on a strong foundation of Ontario-based world crops research, consultation, and outreach as completed by a range of stakeholders. The following organizations have contributed to this growing body of work:

UNIVERSITY of GUELPH

Ethno-Cultural Vegetables Ontario (ECVO) is a research group within the School of Environmental Design and Rural Development (SEDRD) at the University of Guelph. The team is led by Dr. Glen Filson (U of G), Dr. Bamidele Adekunle (U of G), and Sridharan Sethuratnam (FarmStart). Three of their Graduate and Undergraduate Research Assistants intimately support the research and communications pertaining to the project. The main body of ECVO's research has been to identify which ethno-cultural crops are most in-demand in the GTA and the potential economic benefits to import substitution. Some research has explored food pricing and culturally delineated purchasing habits in ethnic and chain grocery stores. Their public outreach includes a blog (www.ecvontario.blogpost.com) and a short documentary about ECV in Ontario (forthcoming). See the bibliography for a full list of U of G's published research on ECV.

FARMSTART

FarmStart, a Guelph-based organization, is active in helping new farmers establish themselves through courses and new farmer incubator programs. These new farmers include a significant number of newcomers who are growing world crops. In 2007, they ran a conference called Growing International which brought together key actors in the food system, ethno-cultural researchers, and new immigrant leaders to discuss how Ontario's agri-food industry can take advantage of opportunities in the Province's growing ethno-cultural markets. Then in 2010, FarmStart published a report of the same name which further explored the potential for growing the ethno-cultural food market in the GTA. In the same year (2010), FarmStart collaborated with the University of Guelph ECVO team to co-publish a more extensive market research report on the potential market for ECV in Ontario.

World Crops Project

The World Crops Project supports urban community gardens in growing a collection of world crops to help improve access to culturally appropriate food while investigating market outlet opportunities in these communities. Born out of the Centre for Land and Water Stewardship (CLAWS) at the University of Guelph in 2007 as a project that connected urban newcomers to rural landscapes, CLAWS staff Peter Mitchell later moved the project to The Stop Community Food Centre, where it became the World Crops Project. Here, the "learning gardens" aspect of the program launched and gardens were supplied with world crop seedlings provided by Vineland to cultivate and learn from. As of 2012, a new project partnership has evolved with Vineland with goals of coordinating commercialization efforts at the rural and peri-urban level while growing the learning garden programming. The World Crops Project within the context of community gardens has a strong social media presence that communicates all aspects of world crop production, retailing, public events, community development activities, and culinary uses. Social media sites can be found via their website: www.worldcropsproject.posterous.com.

In 2011-2012**, The Stop Community Food Centre** ran a program called Eat Local, Taste Global which helped promote the availability of locally grown world crops and provided resources to help consumers cook with these foods through their farmers' market and online. The Stop developed a series of online cooking videos to help consumers learn new recipes. Staff also published a guide book on how to grow and cook world crops. These materials are already complementing marketing efforts at farmers' markets and could also be used in retail settings in the future.

The Toronto Food Policy Council identified the opportunity to link local producers to new urban markets in the mid 2000s, hosting meetings about import replacement and supporting several new research initiatives. The TFPC funded and supported the 2010 FarmStart publication "Growing International: Exploring the Demand for Culturally Appropriate Foods, Preferences for Ethno-Cultural Vegetables in the Greater Toronto Area," and later supported research on season extension for world crops. TFPC members are actively involved in the Feeding Diversity project, and other world crop initiatives listed here.

OMAFRA has provided ongoing support for world crops to both Vineland and the other initiatives. OMAFRA co-published a grower's guide in 2009 called "New Crops, Old Challenges: Tips and tricks for managing new crops!" which profiles 30 new crops. OMAFRA also populates their crops webpage with information that can be applied to ethno-cultural and other specialty crops (falling either into a general vegetable category or under umbrella groups such as cucurbits or leafy greens). OMAFRA New Crop Development Specialist, Evan Elford, manages the "specialty crops" division and writes the blog ONspecialtycrops.wordpress.com which acts as a hub for information on crop production and events affecting specialty crop producers and interested members of the industry in Ontario. Ethno-cultural vegetables are among the specialty crops addressed.

Ontario Fruit and Vegetable Growers' Association (OFVGA) have been a catalyst for Vineland's entry into world crops. They recognized the rapidly expanding market for world crops early on and partnered with Vineland through its CAAP-funded projects to activate research and innovation in this area.

A more detailed description of the recent and historical work of these and other various agencies is documented in Appendix A.

ANALYSING THE VALUE CHAIN

The following section documents the findings of this assessment project. The report takes a value chain approach, starting the discussion on the demand-side with an explanation of demand, consumer preference, and access issues. The report then describes findings related to the supply-side opportunities and challenges. A discussion about the retail environment, distribution and infrastructure follows. Finally, the report offers a discussion about scale appropriate market development to link the consumer market to local producers.

World Crops from the Demand Side

A scan of current and previous work on the demand for world crops in the Greater Toronto Area reveals:

The total size of the market for South Asian, East Asian, and Afro-Caribbean vegetables in the Greater Toronto Area totaled $732 million per year in 2010 (Adekunle et. al, 2010).

The demand outside the GTA, for example across Ontario, Canada, or even extending into the Northeast US has yet to be measured but is estimated to be large.

- The consumer study conducted by Vineland (Campbell, et. al., 2012) found that there is a large and growing market demand for ethno-cultural crops throughout the Northeastern US, particularly large urban centres in New York State which, interestingly, receive the majority of the Ontario-grown Asian leafy vegetables. Further research needs to be done in order to understand why these crops are bypassing the GTA/Ontario market.
- Initial results from the same Vineland study indicates that demand for world crops is not limited to Asian and Afro-Caribbean consumers but there is uptake, albeit relatively small at the moment for some vegetables, within other cultural groups. For example, sweet potatoes were consumed by 74% of "Canadian" respondents, a similar statistic was found for the small cucumber. Further research is revolving around how acculturation will impact demand in the long-run.
- The okra market is quite substantial with estimates ranging from 14.2 million to 24.9 million pounds sold in-season across Canada. Using the 24.9 million pound figure, okra sales represent $49.7 million dollars (at $1.99/lb).
- The yard long bean market is around 23.7 million lbs in-season or approximately $59 million in value at $2.49/lb,
- The current market for Asian long purple eggplant is 21.4 million lbs in season representing a value of $33.4 million in domestic sales (at $1.55/lb).

In June 2012, the Toronto Food Strategy investigated food access and consumer preferences in two culturally diverse, low-income and/or newcomer communities: Malvern (Scarborough), and Flemingdon Park (East York). These workshops explored the community's purchasing habits, preferences, and the cultural importance of a range of ethno-cultural vegetables and were meant to gain an overarching perspective of how world crops fit into the lives of residents in these areas.

The goal of this research was to explore broader demand trends through micro-research and consultation with two newcomer communities in Toronto. The four main research questions are listed below and popular education methodology was used. Each activity engaged participants in small group discussions.

Research questions:

1. How does the linguistic make-up in these two communities impact how crops should be named / labelled / marketed?
2. Where are residents currently accessing food? To what degree is the fresh produce available fresh, affordable, and culturally appropriate?
3. To what degree are culturally specific vegetables being consumed

in the home? How are they being prepared?
4. What do you look for when you buy certain culturally specific crops? (Okra, long beans, and amaranth were chosen as sample crops given their common consumption in South Asian, African and Caribbean culture.)

The small group discussions and larger report-back summaries were highly informative both for the facilitators and for the participants involved. The following represent the key findings from these consultations. The full report can be found in Appendix B.

- Price, variety, freshness and convenience were four factors that participants consistently prioritized when choosing where to shop and what to buy. In the two neighbourhoods investigated, the retail landscape was, overall, able to meet consumer needs on all four levels. However, drawing on the food retail mapping conducted by the Toronto Food Strategy in 2011, we are aware that such levels of food access, affordability, and acceptability are not as high in many of Toronto's underserviced inner suburb neighbourhoods.

- The vast majority of participants continue to cook culturally traditional foods at home, generally using traditional ingredients wherever possible (i.e. available, affordable, fresh, etc.). Participants in these two groups ranged from having been in Canada from 2 - 30 years. However it remains to be explored how much this adherence to cultural foods would endure amongst those who arrived at a young age or are descendents of immigrant parents. (Note: this is the subject of ongoing research at Vineland).

- The consultations also investigated participants' perceptions of local food, as well as their perceptions of the food available here in Toronto compared to 'back home'. Anecdotally, we found that there were interpretation differences in defining the terms "local" and "sustainable". However many respondents felt that the food available here in Toronto is "too big", "picked too early" and isn't as flavourful compared to back home, which corresponds to conversations had by Vineland researchers in newcomer communities in 2011 and 2012. Given that larger sized fruits and vegetables tend to be the norm in North America, the perspective shared by workshop participants affirms that newcomer consumers may espouse a different set of priorities when it comes to fresh produce. This is a key consideration for local farmers who are considering growing these new crops.

Dr. Lesschaeve from Vineland leads consumer preference research at Access Alliance in East Toronto.

photo by Peter Mitchell.

Understanding Consumer Preferences

Through funding from OMAFRA's New Directions Program, Vineland is in its second year of a three year consumer research study on consumer preference, market demand, and sensory preferences for several ethno-cultural vegetables. This project addresses consumer and producer challenges and opportunities related to the growing ethnic food market, while also evaluating the current and future market for Ontario-grown ethnic vegetables. The first year of this project was dedicated to three main objectives: (1) determining costs of producing ethnic vegetables locally, (2) assessing current consumer purchasing behaviour and interests for ethnic vegetables in Canada and northeastern United States, and (3) evaluating ethnic consumer acceptance for locally grown ethnic vegetables versus imported ones.

Consumer purchase interests for ethnic vegetables were evaluated through an online survey administered to more than 1,300 respondents. Results indicate that overall the crop type, the region of origin, and the price were the main drivers of purchase. However these results differ when respondents are segmented by ethnic heritage or region of residence. This research also demonstrated that despite the marked growth of the "buy local" food movement and the success of the Foodland Ontario program, new immigrant consumers or those still deeply rooted to their homelands tend to prefer vegetables grown in their home countries (Vineland study: Campbell et. al, 2012). Furthermore, in some cases, this "home country" effect has a similar, or greater, effect than the local label. For instance, the African/Caribbean label has a negative effect on Canadian, Chinese, and South Asian consumers; however, it has a positive effect on the average African/Caribbean consumer. For many ethnic consumers, Canadian-grown produce is seen as "too clean" or "too perfect" compared to those from their home country, suspecting that Canadian growers use more chemical inputs (Isabelle Lesschaeve, personal communication 2010; Emily Van Halem, personal communication, 2012).

Vegetable quality is measured differently across cultural groups. The Vineland consumer study (Campbell et. al, 2012). found that consumers who identified themselves as "Canadian" find messaging about external appearance as being the most important message about quality, compared to consumers who identify as African/Caribbean and Chinese who respond to messaging around firmness and freshness, respectively. Based on these findings it is clear that messages about quality are not valued the same and are highly dependent on the consumer's ethnic heritage. Overall, these findings are important for growers to understand as they have implications around how they grow these new crops and requires growing to specifications they are not accustomed to. Further, they may need to utilize other marketing techniques beyond the "eat local" platform to reach their target audience.

Consumer acceptance for locally grown okra, Asian long eggplant and yard long beans has been assessed through experiments with Toronto community groups. Imported produce tended to be preferred by participants who provided much qualitative information on the product attributes they use to select vegetables at point of sales. While freshness was repeatedly identified as important amongst study participants, some also indicated that varying levels of freshness may be acceptable depending on the intended culinary use for the vegetable. The preference for imported produce can be due to a higher familiarity with the vegetable variety that is imported versus the variety that was locally grown (Lesschaeve, 2011). However, the first round of consumer studies was done using produce that was harvested late in the Ontario growing season and not of peak quality. Indeed, studies carried out in 2012 using fresh vegetables harvested earlier in the growing season have shown that consumers prefer the fresher locally-grown vs. imported produce (Lesschaeve, personal communication 2012).

Summary of Demand-Side Findings

The following diagram summarizes our demand-side findings. We understand there to be a continuum of demand, reflecting the multiple dimensions of the market, consumer preference, access and affordability. The diagram attempts to illustrate the complexity of the demand for world crops, the factors influencing purchasing patterns, including motivations, culinary preferences, selection patterns, and barriers to access.

CONSUMER PROFILE: Vineland's consumer research investigates the potential market uptake for locally grown world crops.

Consumer Group:	**Newcomers: South Asian, Afro-Caribbean specifically**
Motivating factors:	Pronounced preference for cultural crops, maintaining food traditions, purchasing foods "from home" (sometimes literally). Many seek fresh, affordable produce.
Extent of Demand:	The Canadian okra market in season represents $49.7 million dollars, the Asian long eggplant $59 million, and the yard long beans $33.4 million (Campbell 2012)
Barriers to Market Uptake:	Very Price sensitive; very discerning palate (demand same taste, texture, varieties as back home); Home Country preference; preferences varied with ethnic heritage
Opportunities:	Current research trials do deliver same varieties. Locally grown delivers fresher product.

General opportunities & challenges to market uptake of world crops

Opportunities within other consumer groups:	Amongst the population outside of the researched cultural groups (South Asian and Afro-Caribbean), there still exists an opportunity to meet and/or create a demand for locally grown world crops. Longer-term immigrants from other ethnic backgrounds as well as those of European heritage and native-born Canadians may enjoy the chance to try new vegetables when supplied with educational supports (e.g. recipes and tips on how to select, store, and cook these new foods as The Stop's Farmers' Market did with their "Eat Local, Taste Global" program in 2011). In the coming 1-2 years, Vineland will begin investigating the potential for locally grown world crops to take hold amongst the "mainstream market" as well the descendents of immigrants from South Asia and the Caribbean. For those committed to accessing their favourite locally grown world crops beyond the growing season, there is also an opportunity to develop the value-added food processing sector in Ontario.
Barriers within other consumer groups:	Yet, despite these varied market opportunities, it is important to note that many consumers – both newcomer and established – may be highly price conscious possibly hindering the market uptake of some of these programs. Ultimately, any shift in production, processing, or marketing must meet a demonstrable demand amidst what is a complex and varied consumer environment.

World Crops from the Supply Side

A similarly complex supply-side context emerged from our assessment. Again, a number of factors impact the willingness of farmers to produce world crops: openness to shifting production practices and new markets, scale of production, labour availability, economic viability and the availability of transition support.

Response from farmers interviewed regarding willingness to shift production to new crops has been varied. Some farmers are resistant to change, having farmed the same crop for over 25 years. Other farmers, however, are open to shifting production to explore new market opportunities and experiment with new crops. Newer, younger farmers seem to be adaptable at their stage of production.

Vineland hosts a farmer training session at Collins Farm in Puslinch, ON where large plots of Asian eggplant and okra were trialed.

Photo by Peter Mitchell.

Our research indicates there are a range of producers interested in growing world crops for market from large/medium scale vegetable growers to those growing in or near the city on small plots. Vineland is now in its third year of investigating the productivity and economic viability of growing various world crops in Ontario. This specific data on production costs and market value will be useful for producers both large and small and will be available in 2014.

Some world crops require more labour: for example, okra needs harvesting every two days at peak season. Therefore labour capacity is a consideration for economic viability. It is likely that growers accustomed to producing herbs and root crops will not transition to higher maintenance crops like okra or Asian eggplants because it would alter their existing labour, infrastructure and planning process too greatly. Small or medium scale farmers, however, may see a significant opportunity in introducing plots of eggplants and okra to their already diverse crop mix.

Integral to successful commercialization is the ability to produce selected vegetables in an economically viable manner. Preliminary findings indicate varying costs of production with labour for harvesting being the largest single cost. The economic viability of these vegetables is being further examined using data obtained from on-farm trials before final cost/price estimates are released, taking into consideration the economies of scale associated with commercial production. The data obtained from this study (forthcoming) will be most relevant to medium or large scale operations. Further research is needed to determine the financial viability for small scale agriculture given the different market pathways typically accessed by smaller producers, e.g. farmers' markets vs. supermarkets, and the different price structures associated with 'direct' sales as opposed to retail sales.

Vineland has led production research for world crops, determining which crops and varieties are best suited for commercial agriculture in Southern Ontario. The production trials at Vineland and partner sites have provided agronomists with experience in growing different ethno-cultural vegetables. In turn, this training combined with new factsheets and crop profiles, will better equip OMAFRA staff to support Ontario farmers if they transition to these new crops. Vineland is in the midst of evaluating the economic viability of production for 4-6 world crops through farm trials and producer interviews across the province. As of 2012, the following crops have been trialed: **okra, Asian long eggplant, Indian round eggplant, bottle gourd, yard long beans, fuzzy melon, Chinese red hot pepper, tomatillos, daikon radish, Indian red carrot,** and **maca**. The performance of these crops, combined with producer feedback, will be used to measure production costs and identify issues inhibiting expansion into new markets. Such findings will communicate expected performance indicators which will help farmers see the business opportunity in crop conversation.

BOX 1: Criteria for farmers to succeed in a transition to a new, culturally specific crop:
▪ There is enough consumer demand that farmers see a significant financial opportunity in shifting production to meet the need (i.e. market is not yet saturated, greatest benefit will be seen by the early adopters) ▪ Farmers are equipped with the knowledge of new crop production techniques the right varieties, and are professionally supported throughout their transition ▪ The infrastructure and equipment of the farm can be readily adapted to the production of new crops ▪ Farmers are willing to transition and are keen to align their production with the specific demands of new markets ▪ Farmers are proactive in finding new markets ▪ The economic viability of new crop production is demonstrated and quickly made evident once new crops are produced and sold ▪ Mixed sized farms are producing for various market sectors to meet the wide range of consumer groups and niches

Ontario Food Terminal

Critical to the distribution of fresh produce across Ontario is the Ontario Food Terminal (OFT). The OFT is the third largest fresh produce distribution hub in North America after Chicago and Los Angeles. The Terminal, operating 365 days a year, sees over 1 million tonnes of fresh produce bought each year by large, medium, and small scale retailers, distributors, and “jobbers” who are independent middlemen (Bélanger & Iarocci, 2008). The OFT acts as a great equalizer in many ways, allowing any retailer or distributor to buy from either the resident wholesalers (who bring in both local and imported produce) or the year-round farmers’ market which creates a permanent space for Ontario growers to sell their product in bulk. A corner store owner can easily pick up a few cases of something, while dedicated buyers for larger retailers – both independent and chain – can negotiate with wholesalers for large orders that will get dropped off to the appropriate store by later that morning. While the largest retail chains – Loblaws, Sobeys, Longo's, Metro, and Walmart – have their own distribution centres in and around the GTA and frequently have direct contracts with growers within and outside Ontario, they still send buyers to the OFT to supplement their stock. For many buyers, going through the OFT is the fastest, most efficient way to consistently access the stock they need.

While importers and distributors occupy the majority of the Ontario Food Terminal's real estate, a year-round wholesale farmers' market enables local producers to feed into this distribution system too.

Photo from OFT.

Retail Environment

Just as there is a wide range of farm scales able to supply world crops, there is an equally diverse range of market outlets that could vend world crops to consumers. Broadly, the following categories of retail environments exist:

Large chain supermarkets control over 2/3rds of the food retail sector in Canada under the umbrella of three companies - Loblaws, Sobey's, and Metro*.* This doesn't include the increasing presence of American chains Costco, Safeway and Walmart in the Canadian market. These chains generally hold onto a number of subsidiaries too, hence their significant overall size. **Loblaw Company Ltd** owns Loblaws, No Frills, Superstore, Valu-Mart, T&T, and Zehrs; **Sobeys** owns Foodland, FreshCo., Price Chopper, and IGA; and **Metro** owns Food Basics and Adonis (a Montreal-based Middle-Eastern grocery chain). Most large chain supermarkets order produce through a centralized distribution centre, however, some stores have a mandate and the capacity to buy direct from farmers or cooperatives that can meet the scale and consistency of demand these stores require. A few of Vineland's trial plots are located on farms who already hold contracts with some large chain retailers and may be able to scale up their world crop production to fill the large orders needed to work with such stores.

Small/medium chain and/or Independent supermarkets which tend to have 1-25 stores under their purview are more able to buy direct from farms, cooperatives, independent distributors and/or the OFT. Some retailers even have their own delivery vehicles in which they pick up fresh produce directly from the farm. Examples of independent retailers that Vineland has already worked with include Golden Groceries with five suburban GTA locations, several retailers in Niagara, Caledonia Produce and Sundine Produce Distributors. The GTA's countless independent supermarkets, often located in the suburbs or densely populated inner suburbs, also pose a significant opportunity for locally-grown world crops to reach the city's South Asian, Caribbean, African and East Asian communities. Such retailers are most likely to purchase their produce through the OFT directly or through a wholesale distributor that uses the Food Terminal or other direct import sources. **Longo's** could be considered a medium scale chain supermarket with 25 stores across the GTA. Longo's is a partner in Vineland's world crops program and hopes to make even more locally-grown produce available through its stores in the coming year. Like the other large chain supermarkets, Longo's distributes produce through a central distribution hub but has demonstrated a willingness to vend locally grown world crops at select stores and has bought directly from Vineland and specific farmers to do so.

Small food retail establishments present yet another retail environment which arguably, may have the most flexibility in terms of buying. Convenience/ variety stores, produce stands, and green grocers are generally independently run with purchasing happening at the OFT or in concert with other such stores. Farmers sometimes even make direct relationships with these stores, as they are able to purchase small or one-time produce orders on the spot. TPH is currently embarking on a Healthy Corner Stores initiative to explore how the large stock of smaller food retail stores in Toronto might be leveraged to provide better access to healthier foods in neighbourhoods underserved by discount supermarkets. Successfully integrating locally grown culturally appropriate vegetables into the pilot sites of the project could establish a business model for other small retailers across the city to follow.

Golden Groceries, an independent supermarket in Mississauga caters to the large South Asian community by providing a range of culturally specific vegetables – some of which are locally grown.

Photo Credit: Laura Berman, Greenfuse Photography

Institutional Buyers such as public institutions, schools, and hospitals may not be conventional retail environments, but they are all significant purchasers of fresh or processed foods and pose a significant market opportunity for farmers. Results from a Vineland project through a Broader Public Investment Fund grant found that entrance into these markets is extremely complex, with each having a wide array of issues that have to be navigated for successful entry. Barriers include limited fresh food preparation on site, tight budgets, strict use of large scale suppliers and supply channels. While some institutions do operate independently and/or on smaller scales and could very well offer a viable market for local growers, most institutions will be better served once the scale of world crops production and processing sector has expanded to be able to meet the scale and price requirements of such outlets.

Direct market environments are an increasingly popular vehicle amongst consumers for buying food. Farmers' markets, community supported agriculture programs, and farm-gate sales are gaining momentum amongst those seeking a closer connection to their food that empowers the growers and consumers at the same time. Already, a variety of world crops are being grown locally and vended through these direct market outlets. Given that world crops are frequently unfamiliar to shoppers in farmers market-like contexts (as demonstrated in the Eat Local, Taste Global program at The Stop in 2011), the face-to-face interaction that direct marketing offers can effectively help educate eaters on the benefits and uses of these crops. As such, it presents a significant opportunity for locally grown world crops to reach and gain footing amongst a new consumer group. However, market scale is limited and produce is generally sold at higher prices than comparative offerings in supermarkets. Consumers purchasing from farmers' markets also tend to be more affluent. This favours commercial production on a smaller scale and represents a promising business opportunity for inner city (peri-urban) farms situated close to their markets.

Suburban based Southern Horizons Farm grows and sells a range of culturally specific foods like okra, callaloo, tomatillos, and hot peppers for eager customers at their Toronto markets.

Photo by Peter Mitchell.

Other Retail Environments**:** Several unconventional retail scenarios exist that may be ideal pathways to market for a small but growing sector. FoodShare Toronto, for example, has been purchasing crops from Vineland and their collaborating farmers for over a year and has been distributing them to their **Good Food Box** customers. More recently, in partnership with Toronto Public Health, FoodShare has begun selling world crops through the pilot phase of their **Mobile Produce Vending** program – a truck which travels to various communities identified as lacking sufficient access to fresh vegetables.

There is no set formula as to what type of farmer or distribution channel should supply a certain kind of retailer or consumer. The food system is a complex environment where a range of producer-buyer/consumer relationships can succeed. What is important, however, is that the links between producers, retailers, and consumers are made and supported in the early stages of a new business relationship. This assessment has helped us understand the types of supports growers and buyers need in order to form new partnerships.

BOX 2: Support Needed by Growers and Buyers to Make Market Links:
Growers ▪ Understanding market options and requirements (scale of production, presentation, frequency of supply) needed to access the market ▪ Crop specifications required to meet consumer demands ▪ Understanding of sales and distribution channels for 'non-traditional' produce ▪ Introduction to buyers of specialty vegetables ▪ Purchase contracts in place before the growing season *Buyers* ▪ Awareness that local production and supply of these vegetables exists ▪ Understanding of the consumer demands ▪ Knowing where to access locally-grown produce ▪ Face-to-face meetings with local growers to establish connections and secure supply *Both* • Access to the services of a broker or coop to consolidate supplies from several smaller producers to meet the needs of larger retailers

Connecting infrastructure

A productive crop coupled with an eager market do not necessarily equate successful market uptake unless there is the appropriate connecting infrastructure in place. The aggregation and distribution sectors are crucial to delivering fresh crops to those eager markets in a timely manner. Yet for farmers seeking to tap into markets outside of the standard Ontario Food Terminal sales point, aggregation and distribution can be a major challenge.

One of the key objectives of this assessment and Vineland's ongoing work is to define the infrastructure requirements needed to facilitate efficient movement of fresh produce to market, creating opportunities for new distribution networks and retail. Vineland has hosted a world crops industry session attended by industry, government, and individual producers to discuss the viability and market for world crops (see: Vineland, 2010). Beyond this, Vineland also hosted a producer-buyer forum to help establish new links between growers and buyers. While the premise of connecting growers to buyers remains critical, it may be more important than expected to support the establishment of these new connections. Utilizing a broker or market development staff to make direct linkages emerged as one possible solution to connect growers and buyers.

Finally, given that many farms beginning to grow world crops will likely do so on relatively small acreage, there is a significant opportunity to explore the creation of an aggregation system or distribution network that could help numerous farms feed into a larger distribution network. Farmer co-ops have been working successfully on this model for many years (requiring farmers to grow to the same quality standard); a similar model based around producers of ethno-cultural crops may meet similar success and will help numerous smaller producers access new retail outlets without each having to invest heavily in new marketing and distribution approaches.

Market uptake

Ultimately, the success of any import substitution effort relies on market uptake: the willingness for consumers and buyers to put their money behind locally-grown world crops. As mentioned above, some consumers may already support local food but have little experience with these particular cultural crops; other consumers may know these crops intimately but don't tend to buy local food either due to lack of awareness on its availability or other drivers behind food-purchasing decisions. Similarly, distributors and retailers may need some support when it comes to sourcing products through different supply chains then they are used to. Building a new value chain (or expanding existing value chains) around a new set of crops is undoubtedly challenging in its early stages. A multi-faceted communications and outreach strategy could help raise awareness of the availability of local world crops, how to use them, where to buy them, and why they are worth buying.

Live cooking demos at The Stop's Farmers' Market helped familiarize consumers with world crops.

Photo by Quincy McColgan

Several initiatives have already begun work in this realm: The Stop Community Food Centre's "Eat Local, Taste Global" from August 2011-April 2012 saw world crops being cooked and sampled at The Stop's Toronto farmers' market, as well as the creation of crop-specific recipe and information sheets, an online cooking video series, and a guide book to growing and cooking world crops. The videos were released throughout the 2012 growing season and the guide books were sold and distributed as of July 2012 through The Stop and Vineland. The experience at The Stop indicated that customers were more willing to purchase unfamiliar crops once they had sampled them and/or received a recipe card which indicates that some encouragement or support is needed for consumers to expand their culinary horizons into world crops. For more information: www.thestop.org/eat-local-taste-global

Community-based outreach is also happening through over a dozen urban "Learning Gardens" coordinated by the World Crops Project. Seedlings were distributed in the spring to each garden and cultivation guidelines provided, enabling the gardeners to successfully grow an array of culturally appropriate foods in their communities. These gardens, alongside an active social media presence, have made the World Crops Project the go-to organization on world crops in Toronto. While this project does not directly increase sales of locally grown world crops, it does raise awareness that these crops *can* grow here. Through the increased community awareness of locally grown world crops it has fostered, The World Crops Project may be able to cultivate new business relationships between local growers and small and independent retailers in these communities in the future. For more information: www.worldcropsproject.posterous.com

A few other organizations are developing a web presence to communicate publicly about world crops. Ethno-Cultural Vegetables Ontario (www.evcontario2011.blogspot.com), a University of Guelph-based group, posts articles, videos and recipes featuring cultural crops through various social media sites. An American group, based in Massachusetts (www.worldcrops.org) also features a range of crop profiles and cultivation resources for growers.

As production grows in the next few years, implementing an effective market development strategy will be crucial to ensuring the success of a complete value chain for locally grown world crops.

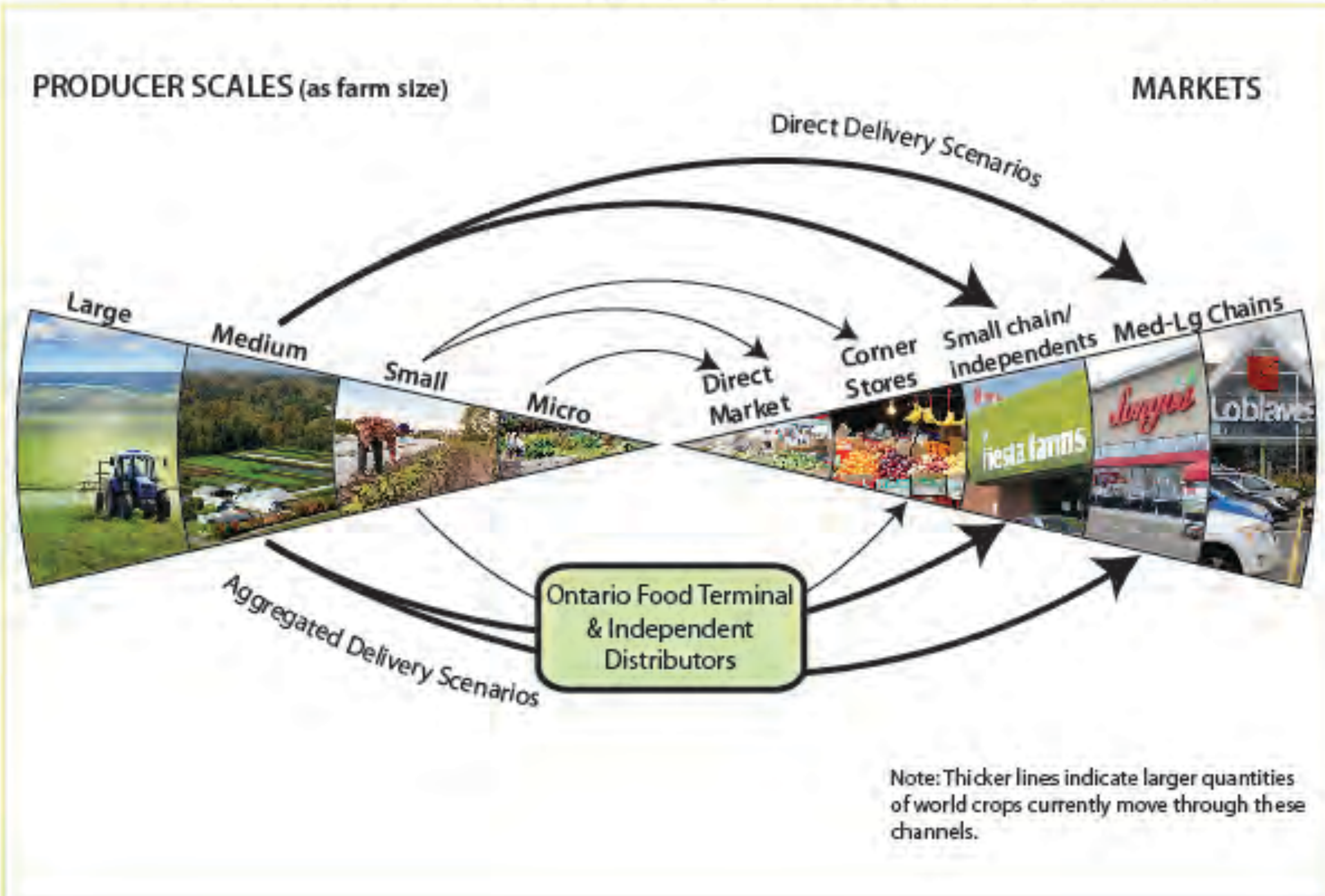

Figure 2: Existing producer-market linkages for Ontario-grown world crops

The graphic above illustrates the existing grower-to-market connections for Ontario-grown world crops and identifies where the sector can expand.

Current world crop production in Ontario resides primarily amongst small or medium scale farms. While the number of existing growers is currently small, there is significant opportunity to grow these numbers at the small and medium sized farm level.

There are multiple, nascent distribution pathways for world crops. Growers are in some cases selling directly to retailers. More commonly, small and medium-sized farms are selling to wholesalers or distributors, often based out of the Ontario Food Terminal. Growing the presence of Ontario-grown world crops through aggregation channels will facilitate access to such produce for a greater number and variety of retailers and food service companies across the city.

While world crop producers are beginning to scale up their production and diversify their markets, there is still significant room to grow both the volume and type of scale-appropriate market linkages.

GAPS, CHALLENGES, OPPORTUNITIES

Throughout our assessment, it became clear that there are challenges and gaps in the on-going projects related to commercializing world crops and linking to diverse markets. These are described below, with possible opportunities on which to base an initiative moving forward.

Crop conversion

A central issue raised throughout the value chain interviews is the need for consistent supply. Currently, Ontario does not produce enough products or volume to meet retail needs. For this reason production acreage needs to increase, and opportunities to extend the growing season (and supply) need to be investigated.. Some producers are innovative and willing to try new crops, however, the vast majority of growers are more conservative, being slow to adapt or reluctant to try growing anything new, implying a strategy or business plan needs to be developed and communicated to detail the opportunities around producing ethno-cultural vegetables.

Labour

A key to being competitive will be finding a way to bring down the harvesting costs of many ethno-cultural vegetables. Current harvesting practices are extremely labour intensive, making it difficult to compete with countries which have lower pay standards. Without higher margins or premiums for these vegetables, labour costs may jeopardize the economic viability of their production in Canada. More research needs to be conducted on factors that would cause consumers to pay a premium for locally grown ethno-cultural vegetables and to drive down costs of production through more efficient growing practices that elevate productivity and reduce costs, including labour inputs. That being said, given the diversity of consumer groups and market outlets, small and medium-sized farms are still well positioned to profit from the production of world crops for small or specialty retailers, direct marketing channels (farmers' markets, CSAs, etc.), and restaurants. Many small farms already account for higher labour crops and so may be more amenable to introducing these new cultural crops. Notwithstanding the high cost of labour, farmers must still be able to make a living wage if they choose to invest their time and resources into growing world crops.

Connecting Infrastructure

As previously outlined, with any new crop category, challenges exist in accessing or developing appropriate distribution networks. This is exacerbated by the (still) relatively small scale of production. A kind of 'chicken and egg' scenario exists – which comes first, production or distribution channels? In reality, both must evolve and grow together, which creates opportunities for entrepreneurs willing to invest in new models of sourcing and distributing world crops, or the development of cooperative approaches that consolidate product to access larger markets. In addition, ethno-cultural vegetables generally have different post-harvest requirements to maintain freshness and quality. Current distribution networks are often via refrigerated trucks and warehouses whereas many world crops store best at slightly higher temperatures. Critical thinking around such distribution channels, combined with clarity around the target consumer groups, will help identify the type of infrastructure needed to promote market access by locally-grown produce.

Long beans grown at Vineland's research site are stored at precise temperatures to maximize shelf life after harvesting.

Photo by Peter Mitchell

Marketing

Given that the local world crop sector is quite nascent, it is important to ensure these new products are promoted across the board as a way to garner public interest amongst all consumer groups. A multi-faceted outreach approach will help raise public awareness of the world crops being grown in Ontario, how to use them, where to buy them, and why consumers should try them. This need not be a traditional brand-specific marketing campaign, but instead will seek to promote these new foods overall, including health benefits that may be derived through their consumption..

Organizations such as Foodland Ontario could be invited to participate by integrating these new crops into their communications materials, as could other local food organizations. Communications materials (recipes + social media promotions) could continue to be developed to promote the cooking of locally grown world crops amongst 'cross cultural eaters' who may be more likely to spend more money on fresh produce. Meanwhile, local food awareness actions may be helpful amongst consumer groups who are familiar with the crops but tend not to choose *local* because it may not look or feel exactly as it does back home.

Communication with value chain stakeholders

In many ways the information around ethno-cultural vegetables has grown faster than it can be disseminated in a meaningful way. To facilitate this process, institutions need to work more efficiently together and move research forward to prevent large overlaps in projects and duplication of efforts. In many cases this is occurring but a more unified strategy needs to be adopted that consolidates information, preferably making it accessible online and in print. Many projects are now using Vineland as a research hub hoping to minimize such communication issues, facilitate information sharing, and reduce duplication of effort.

Aligning production with consumer preferences

Vineland is conducting research on numerous levels to ensure that the crops being grown in Ontario will meet the needs and expectations of consumers. That said, the dietary preferences range dramatically amongst the ethnic consumer base which represents dozens of countries and immigrants ranging from newly arrived to much more established families. As market development plans move forward, it will be necessary to investigate consumer preferences based on ethnic heritage and other demographic characteristics to trigger import substitution. To do so, staff must ensure that the Ontario-grown crops are the same size, variety, colour, and texture to those already desired by each community, and that the local versions are fresher and taste as good as, or better than, the imports to ensure market uptake. Lastly, a balance needs to be struck between the price paid to farmers and the price consumers are willing to pay for the offered quality.

Food Access

Perhaps one of the largest gaps within the value chain is getting product to underserviced communities that make up much of the current customer base. Many newcomers, often residing in low income communities, do not have direct access to fresh vegetables. Most of the current initiatives revolve around increasing production, demand, and availability in general, but they do not directly examine means of increasing availability and access within such communities. By increasing access to fresh vegetables, especially culturally specific vegetables, consumers in these neighborhoods can not only eat more healthily, which has broader health and wellness implications, but such initiatives can open up new markets for local producers.

Opportunities to increase access to locally grown world crops in new immigrant and/or food desert neighbourhoods includes the Mobile Good Food Market (a mobile produce vending truck) that is in its pilot phase. Operated by FoodShare but coordinated in partnership with the Food Strategy, United Way, and the Food Policy Research Initiative, this program aims to improve access to a wide range of fresh, affordable produce at regularly scheduled stops in underserviced neighbourhoods across the city.

A mobile produce vending truck brings fresh produce to underserviced neighbourhoods neighbourhoods across Toronto.

Photo by Laura Berman, Greenfuse Photography

Another opportunity is to integrate locally grown world crops into the Healthy Corner Stores initiative currently being undertaken by the Toronto Food Strategy. This project aims to introduce fresh produce into some of the many convenience stores which, in the past, have often been used as the most accessed venue for food purchase in food desert communities. Beyond this program, there are a range of opportunities to strengthen institutional support for world crops through TPH's existing food programs which purchase significant amounts of fresh produce.

Both of these initiatives can help develop significant markets for fresh ethno-cultural vegetables that can be supplied – on a seasonal basis – with locally-grown produce. This is the type of scale-appropriate market that could provide the incentive that growers need to diversify production.

Vineland has recently launched a new research initiative in collaboration with TPH and the University of Guelph to investigate determinants of healthy food consumption, especially considering barriers such as accessibility in the so-called food deserts.

Even for more price-sensitive consumers, locally grown world crops still stand a good chance of garnering the attention of the new immigrant market. Keeping variety, appearance, taste, and freshness in mind, there is a significant opportunity to market Ontario-grown world crops drawing on the newcomer community's understanding that local food is fresher, more flavourful, and more nutritious. Based on the Toronto Food Strategy consultations (June 2012), the majority of consumers will prioritize freshness and flavour over price if the cost is only marginally higher for the local variety. Some higher income consumers could afford even higher price points. Future projects should keep this spectrum in mind when developing marketing strategies to increase the availability of world crops in Toronto's diverse neighbourhoods.

FEEDING DIVERSITY NEXT STEPS

While we will continue to focus attention on both building the network for locally grown world crops amongst other relevant stakeholders and integrating the work of existing projects (e.g. existing Greenbelt, New Directions, and CAAP funding), we see the next phase of the Feeding Diversity grant with the McConnell Foundation as being able to help address the current gap in marketing and distribution infrastructure. It is this absence of sufficient farmer-to-retail support that is currently a major impediment to Ontario farmers transitioning into world crop production and, in turn, accessing new markets. ** food access challenges

With support from the McConnell Foundation, the medium term goals will comprise the bulk of the Implementation Phase of the Feeding Diversity project. In the shorter term, we aim to develop a business plan that identifies necessary partners, conduct a financial analysis of our business concept, and plan the for scale-appropriate market interventions. In doing so, we aim to consistently support relationship-building and supply chain connections amongst stakeholders across the value chain with a nuanced approach to scale and food access. The key organizational leads are indicated alongside each component below.

Moving forward, our overarching goals are:

- to develop appropriately scaled market linkages between farmers and urban communities;
- to increase production of world crops while creating &/ reaching diverse markets;
- to expand the number of retailers substituting imports with locally grown world crops amongst a range of retailer scales and communities; and
- to strengthen the network for world crops amongst key stakeholder groups through a steering committee and/or stakeholder meetings as well as more consolidated communications

Proposed Activities

- Determine feasibility of import substitution in 5-10 communities
- Work with retailers and retail outlets (through Healthy Corner Stores project)
- Match appropriate world crops (to community / buyer)
- Explore feasibility of integrating world crops content into Foodland Ontario marketing materials
- Develop culturally appropriate marketing campaign (e.g. link into FoodLand Ontario)
- Assess price competitiveness for import substitution of world crops
- Consumer outreach amongst “cross cultural eater” groups (e.g. at farmers’ markets, demonstrations in retail outlets serving a diverse consumer base)
- Conduct farmer interviews which will inform the distribution and market access components of the business plan
- Identify in-store educational / marketing tools needed to impact newcomers by touring local/eligible grocery stores with select participants from community consultations
- Engage Business Improvement Associations (BIAs) to help involve retailers in various neighbourhoods
- Explore feasibility of hiring a market development specialist (broker) who is familiar with a range of retail environments and distribution channels to work closely with existing farm extension staff to facilitate new business relationships between growers and buyers/distributors, and explore the potential of a cooperative world crop farm model
- Explore feasibility of working with relevant farmers’ market organizations to reach market users re: world crops info cards, recipes, sampling, or other resources (e.g. Greenbelt Farmers’ Market Network, MyMarkets)

CONCLUSION

In this assessment, we found that there *is* significant demand for world crops, yet it is occurring at a limited scale so far. The key challenge identified was linking scale appropriate production to diverse markets while simultaneously cultivating consumer awareness. Moving forward, Vineland is poised to continue supporting the cultivation and consumer research side while remaining a hub for the connecting infrastructure and market development pieces. Toronto Public Health's strength is in the city, on the ground with communities; it seems natural then, that the TPH and the TFPC help make fresh, locally grown culturally specific vegetables available and accessible in Toronto's diverse communities, with specific focus on its low-income, and underserviced neighbourhoods. Acknowledging the range of market access opportunities, diverse ethnic backgrounds, and different income levels of consumers wanting to purchase these new crops, the partners will collaborate closely in an effort to ensure market reach happens across the retail spectrum.

Working collaboratively in the next phase, we will build new relationships and deepen existing ones with relevant stakeholders and actors involved in local agriculture and world crops. Collaborations with Toronto-based **newcomer networks** will be essential to achieving broad support and integrating with other existing programs. The **GTAAAC** has included world crops in its Greater Golden Horseshoe Food and Farming Action Plan and should therefore be intimately connected to this project in an advisory and potentially programmatic capacity. The **Ontario Fruit and Vegetable Growers' Association** will be instrumental in helping us reach more Ontario farmers through its membership and farm publication, *The Grower*. Strengthening ties to the **Foodland Ontario** program will help focus a marketing campaign on world crops in Ontario, while further collaboration with **OMAFRA** programs will help us reach more farmers across the Province.

Successfully enabling locally grown world crops to achieve uptake throughout the value-chain, will take integration with a range of stakeholders. Through careful business planning and partnership development, we will be well positioned to achieve positive and economically sustainable changes towards the localization of the world crop market in Ontario.

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LIST OF APPENDICES:

A – Literature review, Ben Campbell

B – Community Consultation Research Report

C – Food access map samples

Appendix A

Literature Review of Ethno-Cultural Vegetable Initiatives

By

Ben Campbell
Vineland Research and Innovation Centre

BACKGROUND

Definition

For decades Canadian communities have welcome new immigrants from different cultural heritage, however, in many cases foods available to them in Canada remained mainstream such that “new” Canadians needed to adapt to traditional Canadian foods. With increasing globalization of trade, “new” Canadians have been able to begin sourcing foods, especially vegetables, from their home countries. These new vegetables have been termed many things, such as “world crops,” “ethnic vegetables,” “ethno-cultural vegetables,” among other names. Even though these terms are commonly used to represent the same concept, a specific definition that clearly characterizes an “ethno-cultural” vegetable is extremely difficult to come up with.

In general ethno-cultural vegetables have been classified as such if they are consumed by one or more ethnic groups but not by the mainstream population, a definition shared by Vineland and the Ethno-Cultural Vegetable Group at the University of Guelph. For instance, okra would be classified as an ethno-cultural vegetable given it is consumed by several ethnic groups (e.g. Chinese, South Asian and African/Caribbean), whereas potatoes would not be classified as ethno-cultural even though they are consumed by various ethnic groups. Based on the above definition certain vegetables can be clearly termed as ethno-cultural, such as okra, bottle gourd, amaranth/callaloo, and bitter melon, however, other vegetables are classified as ethno-cultural, depending on the type, such as eggplant (e.g. Oriental long purple), carrot (e.g. red), and bean (e.g. yard long). A recent study by Vineland Research and Innovation Centre (Vineland) examined purchasing across ethnicities for a wide range of vegetables. This study quantified usage and provided a look at which vegetables can be termed ethno-cultural or not and also those vegetables that may/may not be considered ethno-cultural vegetables. Terminology aside, for the purposes of our research, we are clearly looking at crops that are, by and large, new to Ontario. Every new wave of immigrants will bring certain ‘tastes’ and traditions with them to Canada. With this come evolving trends in demand for different vegetables and fruits. Today, this has created demand for fresh produce traditionally consumed in South Asian and Afro-Caribbean communities in particular. But markets continue to evolve, along with consumers ‘tastes’ in general. The horticulture industry must continually diversify to access the opportunity these changes bring, and to supply this evolving market with fresh, healthful, locally-grown produce.

Introducing new ethno-cultural foods on the market will raise curiosity among adventurous consumers and change their preferences or their diets. For instance, sweet potatoes, kiwi, and sushi were centered around certain groups just a decade ago, but now they are considered mainstream given their popularity across ethnicities. One such ethno-cultural vegetable that is gaining popularity across ethnicities is okra.

Traditionally found in ethnic food stores, fresh whole okra is now available in most grocery stores throughout Ontario, with new product forms of okra (e.g. deep fried chips) appearing in many retail outlets as well. Furthermore, as ethnic communities become increasingly blended in nature either through marriage, community dynamics, and acculturation, food habits change which can affect consumption of once traditional vegetables across ethnic lines.

Rationale

Given the lack of clarity around the exact definition of ethno-cultural vegetables, why has this market been receiving wide-spread attention over the last couple of years? The reason is simple: potential opportunity for Ontario producers to provide a core product to an expanding group of consumers. A recent report by Statistics Canada (2010) estimates that by 2031 Toronto's and Vancouver's population will be made up of 63% and 59% visible minority, respectively. This abundance of "new" Canadians has the potential to transform the Canadian food system given their desires for authentic tasting foods, notably vegetables. Assuming demand parallels the population increase, the market for ethno-cultural vegetables is considerable. As estimated by Adekunle et al. (2010), the monthly spending on ethno-cultural vegetables by only three ethnic groups (Chinese, South Asian, and African/Caribbean) is $61 million per month in the Greater Toronto Area (GTA) alone. Considering these ethnic groups, among others, reside throughout Ontario and Canada, the market potential is considerable for local producers if they offer the right product in the right way.

Objective

This report will highlight past and on-going research initiatives to better characterize market needs and potential for world crops, identify crops which are 'in-demand' that can be profitably produced by Ontario farmers, while also identifying gaps that new initiatives can/should address.

PAST INITIATIVES

The ethno-cultural vegetable market is beginning to receive wide-spread attention from a variety of sources. The next section outlines many of the institutions working on these initiatives, while also detailing collaborations and results when available. A common theme within these initiatives is apparent collaboration among many institutions working on common projects; however, the communication between collaborators tends to be limited, each individual or each group working on selected issues that are generally not communicated widely. Even with the communication limitations, the uptake to industry is beginning to bear fruit with popular press articles on the rise, such as Androich's (2010) article in Canadian Grocer.

Initiatives around the ethno-cultural vegetable market in Ontario are not new. A 1994 study by Agriculture and Agri-Food Canada focused on ethnic foods but drew conclusions based on food service and retail. Their study found that ethnic foods are more prevalent in food service (65-80% of the total ethnic market) compared with the retail sector (35%). Though no link via hard evidence was found, they surmised that there is increasing popularity of ethnic foods. If true, then focusing only on ethnic consumers may severely underestimate the true market size of ethnic foods. A further finding in the Agriculture and Agri-Food Canada study was that specialty food stores are the main purchasing location for Chinese, South Asian, and Middle Easterners but are more heavily used by South Asian and Middle Eastern consumers.

During the early 2000's the University of Guelph (led by Dr. Mary Ruth McDonald) began production related research on a variety of leafy ethno-cultural vegetables in the Holland Marsh. However, a high percentage of these leafy vegetables are currently exported to the U.S. market. Of interest is that some of the largest producers in this area ship a majority of their crop to New York, directly bypassing the considerable Toronto market (Vineland interviews). The exact reason for exporting instead of supplying a local domestic market is unknown, but it is most likely due to higher prices within the Northeastern US market as compared to the Canadian market.

After the release of the 1994 Agriculture and Agri-Food Canada report there is a decline in the number of initiatives surrounding the ethno-cultural vegetable market until around 2008 at which point the movement started to become increasingly mainstream. In 2008, Agriculture and Agri-Food Canada (conducted by WCM Consulting Inc.) released a "SWOT Analysis of the Ethnic Food Sector in Ontario." One main outcome is that ethnic food must have "authenticity" which implies from the consumers a relationship to their "home" country or to be prepared in a traditional manner. The report also touched on export opportunities for ethno-cultural foods. Also of interest is that the report lists a wide range of literature reviewed for the report which can be sourced and reviewed as a supplement to this review.

CURRENT INTIATIVES

Recently, several institutions have focused considerable energy to better understand the ethno-cultural vegetable market, including Vineland Research and Innovation Centre (led by Dr. Michael Brownbridge and Dr. Isabelle Lesschaeve), the University of Guelph (led by Dr. Glenn Filson) and the Ontario Ministry of Agriculture, Food and Rural Affairs.

Vineland Research and Innovation Centre

Production

Vineland began its foray into the ethno-cultural vegetable market through production research to test the performance in Ontario of various ethno-cultural vegetables. A key difference in the Vineland trials and the Guelph led trials in the Holland Marsh is that the Guelph trials were looking at leafy ethno-cultural vegetables compared to the non-leafy vegetable trials on-going at Vineland. In addition, trials done in the Holland Marsh were done to identify crops which could be grown in that specific environment, which is somewhat cooler than other vegetable-producing areas of Ontario, and better suited to 'cool' crops such as brassicas, various root crops such as carrots, and onions. Vineland's trials have focused more on 'heat-loving' varieties particularly favoured by the South Asian community, although several have cross-cultural appeal. Production trials at Vineland have been carried out in collaboration with the OMAFRA at the Simcoe Research Station, providing production data from two different agro-ecological zones, and examined numerous varieties of several major ethno-cultural vegetables, such as okra, eggplant, and beans. However, research farms generally follow different production practices to commercial farms. Thus, to validate on-farm performance, Vineland has collaborated with numerous Niagara-based producers to trial select varieties. Results have allowed lower performing vegetable varieties to be eliminated in favor of those best-suited to commercial production in Ontario's climate, and those that conform to consumer demands in the marketplace.

Integral to successful commercialization is the ability produce selected vegetables in an economically viable manner. Preliminary findings indicate varying costs of production with labour for harvesting being the largest cost across vegetables. The economic viability of these vegetables is being further examined using data obtained from on-farm trials before final cost estimates are released given the economies of scale associated with commercial production.

Perhaps the single greatest issue around production is moving of producers from one staple crop (e.g. potato) to a new crop or crops as growers seek to diversify production. A single conversation between a potato producer and Vineland personnel at the Toronto Food Terminal highlights this point. The producer was asked if he might be interested in producing a value added ethno-cultural vegetable and the response was "No" because he farmed potatoes as did his father and his father's father (Campbell, personal communication 2011). So, even if economically viable vegetable varieties can be identified, work needs to be done to provide growers with key performance indicators which will help them see the business opportunity (or not) to convert their production and adapt to the changing marketplace instead of keeping doing what they have always done.

Market Components

In 2011, Vineland obtained funding through OMAFRA's New Direction Program to evaluate consumer preference, market demand, and sensory preferences for several ethno-cultural vegetables. This study was funded for 2011-2014, with the first year providing critical insights into market demand both within and outside of Ontario, along with insights as to what drives both ethnic- and non-ethnic vegetable preference. Key objectives for the New Directions grant include:

1. Confirm economic viability of production for 4-6 major ethnic crops via Vineland trials and producer interviews across the province. From this we will accurately measure production costs and identify issues inhibiting expansion into new markets.
2. Confirm intrinsic vegetable quality and acceptability via sensory testing. Sensory testing will identify quality parameters and ascertain strengths and weaknesses of locally produced vegetables. Freshness and authenticity at the producer and retail level will also be assessed to determine how product progression through the value chain affects quality.
3. Provide consumers with vegetables that meet their needs/wants. Consumer surveys will address how ethnic and non-ethnic consumers perceive locally produced ethnic vegetables, and use this information to drive production research.
4. Provide producers with current and future demand to define the size of the economic opportunity. This includes analyzing how generational factors (e.g. changing eating habits from one generation to the next) affect demand, as well as examining new markets both in Canada and abroad.
5. Define infrastructure requirements needed to facilitate efficient movement of fresh produce to market, creating opportunities for new distribution networks and retail connections.

Market Demand: In light of studies carried out by Agriculture and Agri-Food Canada and Adekunle et al. (2010) there is clearly demand for ethno-cultural vegetables in Toronto. However, these studies did not address the demand outside the GTA, such as within Ontario, Canada, via non-ethnic groups and in key export markets in the Northeastern US. Even though the GTA represents an extremely large market, other domestic markets need to be assessed to facilitate production growth and efficient market access by Ontario farmers. The US market also offers an interesting alternative given the growth in the ethnic consumer market along the East Coast, especially in New York. If the role of many of the world crop initiatives are to increase local access within Ontario and the GTA, then understanding why much of the Asian leafy vegetables, 90% at one large Holland Marsh producer, are bypassing the GTA on their way to New York needs to be understood.

Preliminary results indicate that there is indeed a demand by key (South Asian, African/ Caribbean, and Chinese) consumers in the GTA (Adekunle et al. 2010), but also within Ontario, Canada, and in the Northeastern US (Vineland consumer study to be released). Initial results indicate that demand is not limited to “ethnic” consumers but there is uptake, albeit relatively small at the moment for some vegetables, within other ethnicities. Further research is revolving around how acculturation will impact demand in the long-run.

Consumer Preferences: Initial results of a 2011 Vineland led study found the key components of purchasing vary across ethnicities. Of particular interest is the value associated with an Ontario-grown labeled vegetable compared to imported vegetables. Given the growing “Buy local” movement and the popularity of the Foodland Ontario program, we would expect Ontario-grown vegetables to increase a consumer’s willingness to purchase, and in general that is the case. However, when linking consumer ethnic heritage with the importance of the vegetable origin on their purchase we see a “home country” effect (i.e. a consumer values a vegetable labeled as being produced in their home country). In some cases, this “home country” effect has a similar, or greater, effect than the local label. For instance, the African/Caribbean label has a negative effect on Canadian, Chinese, and South Asian consumers;

however, it has a positive effect on the average African/Caribbean consumer. The same "home country" phenomenon can be seen with South Asian consumers as well. This finding corroborates qualitative insights gained with ethnic consumers describing Canadian produce as "too clean" or "too perfect" compared to those from their home country, suspecting Canadian growers use more chemical inputs (Isabelle Lesschaeve, personal communication 2010).

Further findings of the Vineland consumer study are that ethnicity plays a role in how a consumer reacts to a quality message. For instance, consumers that identify themselves as "Canadian" find messaging about external appearance as being the most important message about quality, compared to African/Caribbean and Chinese who respond to messaging around firmness and freshness, respectively. Based on these findings it is clear that messages about quality are not valued the same and are highly dependent on the consumer's ethnic heritage.

<u>Sensory Preferences</u>: Vineland is also investigating if locally grown vegetable are perceived differently from imported vegetables, whether it is based on appearance at point of purchase or after cooking them. Preliminary findings showed that perceived visual differences sometimes favored local produce and sometimes did not. Perceptions were impacted by a consumer's familiarity with the crop variety. For example, imported yard long beans have a bright green colour and are presented in straight bunches. Conversely the local produce was curly and had some purple spots on the dark green skin. The latter were interpreted as rotten spots due to the lack of familiarity with the variety. Taste-wise, experiments will be conducted in 2012 and 2013 in a controlled environment to determine if differences in taste or texture can be detected.

<u>Value Chain Issues</u>: Understanding production and consumer behaviour alone does not guarantee a place on the market. Assuming the optimal variety is identified, and can be produced economically and in a way that meets consumer wants, unless value chain issues are understood and addressed then the "perfect" product may never make it to market. For this reason Vineland has undertaken several initiatives to better understand the retail and public institution market.

With respect to the retail market, Vineland has hosted a "world crops" workshop and its researchers have participated in a wide variety of workshops both in the field (see Appendix 1: Twilight Grower Sessions) and at industry sessions (see Appendix 2: Vegetable Crop Diversification Workshop) to discuss the viability and market for world crops. These workshops have raised awareness and interest about world crops to industry, government, and individual producers. Further, Vineland hosted a producer/buyer forum to link producers with retail wholesalers and buyers to discuss the requirements to move ethno-cultural vegetables from the farm to the retail shelf, and to facilitate establishment of business links between growers and buyers. Issues discussed included production practices, safety requirements, product specifications, and pricing. The end result was a network session where business cards were exchanged and a better understanding of the issues was ascertained.

The retail market is where many producers have their eyes focused when thinking about production of ethno-cultural vegetables. However, the sales opportunities at public institutions can be as viable depending on the market. Through a Broader Public Investment Fund grant, Vineland evaluated issues relating to moving local Ontario ethno-cultural vegetables into public institutions, such as hospitals, universities and public schools. Results from this project found that entrance into these markets is extremely complex with each having a wide array of issues that have to be navigated for successful entry. For instance, hospitals tend to have limited capacity to prepare vegetables on-site, so vegetables need to be processed and be easily reheated for serving. Hospitals also work on a very strict budget with many going through volume purchasers to get their product. However, working with vegetable processors offers a unique opportunity to enter this market if connections can be made (Brownbridge and Campbell, 2012).

On the other hand, selling to a university is highly dependent on the university. Interviews with institutional food purchasers indicated that most universities have different standards and practices that govern their purchasing of vegetables. For instance, some institutions have contracts with large suppliers (e.g. Sodexo) which could make supplying to the institution as an independent entity difficult. Other institutions deal directly with local suppliers and some even deal directly with local producers. The critical issue for a producer wanting to enter this market is to understand how the university goes about purchasing their vegetables and then adapting to their purchasing system.

Other Initiatives: Vineland is involved with numerous other initiatives that integrate with the above research.

- Niagara Parks – Display Garden and Chef Garden
- Greenbelt Fund with The Stop – Linking urban and rural farmers
- Ontario Market Investment Fund with The Stop – Eating global, growing local
- KTT initiatives with OMAFRA and University of Guelph – Developing crop profiles and awareness

Ontario Ministry of Agriculture Food and Rural Affairs

OMAFRA's has been involved at several levels, collaboration in production trials, production of factsheets and crop profiles, and funding. Production trials with Vineland specialists have provided OMAFRA staff with experience in growing different ethno-cultural vegetables to which they have previously had little exposure. Factsheets have provided a means of offering insights into production and marketing of non-traditional crops (Filotas 2009), while web-based crop profiles can be accessed by any interested parties and can be readily updated as new information becomes available. Lastly, OMAFRA has provided funding to Vineland through the New Directions program to facilitate new market related research around ethno-cultural vegetables.

Agriculture and Agri-Food Canada

In addition to the research described in earlier sections, AAFC has funded several projects through the Canadian Agricultural Adaptation Council. Many are focused on local foods, but apply to ethnic vegetables as well.

University of Guelph

The University of Guelph has produced several key publications around the ethno-cultural vegetable market, notably Adekunle, Filson, and Sethuratnam (2010), Filson, Adekunle, and Sethuratnam, and Adekunle et al. (2011). These works provided the first estimates of market demand for ethno-cultural vegetables within the GTA by South Asians, Chinese, and Afro-Caribbean consumers. Several graduate students at Guelph have started to address retail issues and challenges (Kajumba, 2001; Nawaratne, 2011).

However, recent initiatives focus on developing an awareness campaign to promote ethno-cultural vegetables within Ontario. To name a few: a Facebook page (https://www.facebook.com/pages/Ethno-Cultural-Vegetables-Ontario/189095224448704?v=info), blog (http://evcontario2011.blogspot.ca/), and online videos (http://www.youtube.com/user/ECVOntario/videos).

Other Institutions

Institutions outside those abovementioned have examined the ethno-cultural market in some way or another. A brief synopsis is presented below.

- West End Food Coop– Sorauren Farmers' Market (2008)
  A new farmers' market at Sorauren Park in Toronto's Roncesvalles and Parkdale neighbourhoods draws local Ontario farmers to market and showcase locally-grown ethno-cultural crops to residents of this diverse community.

- The Stop Community Food Centre: Eat Local, Taste Global project
  Working on a variety of Greenbelt initiatives and in collaboration with Vineland and the University of Guelph, among others, to increase ethno-cultural vegetable awareness and consumer purchasing. Last year, partnering with a local producer, Vineland supplied fresh ethno-cultural vegetables for use in cooking demonstration and tasting events at the The Stop's farmers' market to educate consumers on methods of preparation while raising awareness of these crops among consumers, and their production within Ontario Fact sheets were developed to inform consumers about the crops and to provide a selection of recipes The final output (in review) is a book 'Eat Local, Taste Global' (Van Halem, in press) which describes different ethno-cultural vegetables, provides a selection of different ethnic recipes and tips on growing the crops in the home garden.

- The Stop and the World Crops Project
  In addition, The Stop partnered with the World Crops Project to promote production of vegetables in community gardens across inner city neighbourhoods. Activities were organized through The Stop, which also identified partners and coordinated outreach activities through the growing season. Vineland produced and supplied seedlings to these community gardens, and provided technical support via a variety of outreach events, transferring 'rural' knowledge to inner city dwellers. This directly provided participants with a supply of fresh vegetables through the summer.

- FoodShare Toronto
  FoodShare included Vineland-produced vegetables in their Good Food boxes through the growing season and helped promote awareness of culturally diverse vegetables amongst consumers.

Other Institutions:

Toronto Food Strategy - Retail level research identifying what retailers in various key neighbourhoods sold with part of the questionnaire focusing on world crops being sold.

Toronto Public Health – A neighbourhood based community food mapping exercise to determine where people in various communities access food and to identify 'food deserts' where access to fresh produce is severely limited.

The Stop/University of Guelph (Peter Mitchell): Utilization of urban gardens within inner city Toronto.

Efforts Outside Ontario

Just as Ontario is examining both the domestic and export markets for ethno-cultural vegetables, other countries are doing the same with an eye to capitalize on the large ethnic population within their own borders and in Ontario. Currently much of the on-going research in the US is aimed at establishing a foothold with US consumers; however, a next step is to look to export markets. A leader in this research is Dr. Ramu Govindasamy at Rutgers University, see http://dafre.rutgers.edu/documents/ramu/agmkt.htm for his research, notably Govindasamy et al. (2007). Another good article is Jamal (1996) regarding acculturation of ethnic foods by native British consumers.

In a similar manner to the University of Guelph video campaign, other institutions are moving their ethno-cultural vegetable efforts online, see http://www.youtube.com/watch?v=RGUymkXcSYo by the University of Massachusetts Amherst. Further, other countries such as Australia are also looking to establish themselves in these markets with select ethno-cultural vegetables, Midmore et al. (2006).

GAPS AND OPPORTUNITIES

After reviewing the above initiatives, it is clear that there are gaps in the on-going projects, such as production (i.e. labour and crop conversion), appeal of US market, communication, and value chain issues.

Labour

A key to being competitive will be finding a way to bring down the harvesting costs of many ethno-cultural vegetables. Current harvesting practices are extremely labour intensive, making it difficult to compete with countries which have lower pay standards. Without higher margins or premiums for these vegetables, labour costs may jeopardize the economic viability of some of the crops. More research needs to be conducted on factors that would cause consumers to pay a premium for locally grown ethno-cultural vegetables. Additional research needs to be done on production costs as commercial farmers take on the challenge of producing ethno-cultural vegetables to determine opportunities to rationalize labour intervention and control cost.

Crop conversion

A central issue raised throughout the value chain interviews is the need for consistent supply. Currently, Ontario does not produce enough products or volume to meet retail needs. For this reason production acreage needs to increase. Some producers are innovative and willing to try new crops, however, the vast majority of growers are more conservative, being slow to adapt or reluctant to try growing anything new, implying a strategy or business plan needs to be put in place to detail the opportunities around producing ethno-cultural vegetables.

Communication

In many ways the information around ethno-cultural vegetables has grown faster than it can be disseminated in a meaningful way. To facilitate this process, institutions need to work more efficiently together and move research forward to prevent large overlaps in projects and duplication of efforts. In many cases this is occurring but a more unified strategy needs to be adopted that creates a warehouse of information. Many projects are now using Vineland as a research hub hoping to minimize such communication issues.

Inner city gaps

Perhaps one of the largest gaps within the value chain is getting product to inner city communities that make up much of the current customer base. For many ethno-cultural consumers in major metropolises inner city communities do not have direct access to fresh vegetables (food deserts). Most of the current initiatives revolve around increasing production, demand, and availability in general, but they do not examine increasing availability and access within such communities. By increasing access to fresh vegetables, especially ethno-cultural vegetables, consumers in these neighborhoods can not only eat more healthily, with broader health and wellness implications, but such initiatives can open up new markets for local producers.

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Appendix 1: Flyers for the Vineland industry sessions.

World Crops Grower-Buyer Open Forum

Ontario Fruit and Vegetable Growers' Association, Vineland, and Ontario Ministry of Agriculture, Food and Rural Affairs World Crops Twilight Session, summer 2011

More than just production research, Vineland's world crops program is about growing acreage of profitable ethno-cultural vegetable production across Canada. In December, Dr. Michael Brownbridge's Horticultural Production Systems team joined forces with Vineland's business development office to host a world crops supply chain connector event. Produce procurement specialists from large and small retailers met with growers to discuss market opportunities, product specifications, and contract requirements.

The Forum segued nicely from Grower Twilight Sessions hosted by Ontario Fruit and Vegetable Growers' Association, OMAFRA and Vineland this past Summer at three research locations. Follow the link to view some fantastic footage from this event...

World Crop Twilight Growers' Sessions
http://www.youtube.com/watch?v=0LEhOrALS6E

Appendix 2: Flyer for crop diversification workshop.

Vegetable Crop Diversification Workshop

This workshop brings together farmers, retailers, academic researchers, agronomists and extension specialists to share their experiences in growing and marketing world crop varieties in Ontario.

SPEAKER PROGRAM INCLUDES

Dr. Michael Brownbridge, Research Director &
Ahmed Bilal, Research Associate
Ethnic Vegetable Production in Ontario: Research Update
VINELAND RESEARCH AND INNOVATION CENTRE

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Art Smith, CEO
The Need for Diversification in Ontario's Vegetable Industry
ONTARIO FRUIT AND VEGETABLE GROWERS' ASSOCIATION

-

Joan Beck, Farm Manager
New Vegetable Crops: A Grower's Perspective
J. COLLINS & SONS LTD.

-

Harjinder Singh, President
Retail Opportunities for Ethnic Vegetables
GOLDEN GROCERIES LTD.

Glen Filson & Bamidele Adekunle
Market Potential of New World Crops in Ontario
UNIVERSITY OF GUELPH

-

Sreedhar, President
Import and Distribution of Ethnic Vegetables in Ontario
SUNDINE PRODUCE

-

Dr. Mary Ruth MacDonald, Professor
Production of Ethnic Vegetables in the Holland Marsh
UNIVERSITY OF GUELPH

-

Evan Elford, New Crop Development Specialist
Accessing Web-based Info on Ethnic Vegetables
ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS

MARCH 29, 2011 – 9:00AM-2:00PM – Rittenhouse Hall
@ Vineland Research and Innovation Centre

$30.00 – INCLUDES LUNCH AND MATERIALS

FOR MORE INFORMATION & TO REGISTER CONTACT Kathryn Goodish
kathryn.goodish@vinelandresearch.com – 905.562.0320 x777

APPENDIX B

Community Consultation on World Crops

Prepared by Emily Van Halem for the Toronto Food Strategy, Toronto Public Health
July 2012

EXECUTIVE SUMMARY

In June, 2012, the Toronto Food Strategy hosted community consultations on world crops in two of Toronto's diverse, newcomer communities: Malvern (Scarborough) and Flemingdon Park (East York). These workshops investigated the community's purchasing habits, preferences, and cultural importance for a range of ethno-cultural vegetables. These sessions were broad and were meant to gain an overarching perspective of how world crops fit into the lives of residents in these areas.

The retail landscape of these two communities reflected a fairly high level of fresh produce availability, including access to a range of crops appropriate to the cultural demographic of the area. Both chain retailers and independent grocery stores existed within a walk or short bus ride from participants' homes. While residents reported that some of the chain retailers were too expensive, there were still sufficient retailers that carried affordable, culturally appropriate produce to meet their needs.

Price, variety, freshness and convenience were four factors that participants consistently prioritized when choosing where to shop and what to buy. In the two neighbourhoods investigated, the retail landscape was, overall, able to meet consumer needs on all four levels. However, drawing on the food retail mapping conducted by the Toronto Food Strategy in 2011, we are aware that such levels of food access, affordability, and acceptability are not as high in many of Toronto's underserviced inner suburb neighbourhoods.

The consultations also investigated participants' perceptions of local food, as well as their perceptions of the food available here in Canada compared to back home. While most respondents generally understood the definition of local food and supported it, many also believed that local food was necessarily cheaper and more sustainable than imports which may not be the case. Further, many felt that the food available here in Canada was "too big", "picked too early" and isn't as flavourful compared to back home. Given that larger sized fruits and vegetables tend to preferred in North America, the perspective shared by workshop participants indicates that the growing number of new immigrant consumers may espouse a different set of priorities when it comes to fresh produce.

In order to more effectively identify how to substitute imports for locally grown varieties, some further study is needed to better understand the nuanced decision making that goes into buying world crops. Targeted focus groups in these and less serviced communities is recommended to investigate this and to identify key market opportunities for local growers.

OVERVIEW

In June, 2012, the Toronto Food Strategy hosted community consultations on world crops in two of Toronto's diverse, newcomer communities. Malvern (Scarborough) and Flemingdon Park (East York) hosted a 16 and 24 person workshop respectively that delved into purchasing habits, preferences, and cultural importance of a wide range of ethno-cultural vegetables. These sessions were broad and were meant to gain an overarching perspective of how world crops fit into the lives of residents in these areas.

Quick Profile:

Malvern	**Flemingdon Park**
Cultural mix predominantly Caribbean, South Asian (Sri Lankan) Most residents are more established – not as many brand-newcomers **Food Access:** Fairly good availability, with multiple affordable chain /independent grocery stores within a walk or short bus ride who sell a range of culturally appropriate crops. The six most popular shops were spread across a 3km squared boundary of Malvern, and were 1.5 km away from each other on average. Most respondents were Tamil seniors who took the bus to access groceries.	**Cultural mix** highly mixed – mostly a range of South Asian and some Roma Residents ranged from brand new to Canada or arrived within approx 10 years. **Food Access**: Very good, with multiple low-price chain/ independent grocery stores selling a range of culturally appropriate fruits and vegetables within walking distance. A wide range of fresh, affordable culturally appropriate crops were available from multiple sources.

These consultations helped identify what priorities guide each community’s fresh food purchasing habits. Below the key findings from these consultations are summarized.

FINDINGS

Availability of culturally appropriate foods:

Through an interactive mapping activity, participants at both locations highlighted the retailers they frequented most and the reasons that they preferred these sites. Respondents then went on to identify which stores carried their preferred varieties of cultural crops and rated their satisfaction with this produce.

Overall, it was apparent that in both communities visited, the availability of fresh, culturally appropriate foods was high. Most respondents seemed satisfied with the range of foods they could buy, but acknowledged that some foods are either not available or are too expensive to purchase as much as they'd like. The independent retailers tended to consistently vend the best range of affordable cultural crops while the larger chains (while often carrying high quality produce) tended not to carry the same range of foods and would vend at prices that were unaffordable to most respondents. The exception to this rule would be No Frills (Malvern) and Food Basics (Thorncliffe Park, near Flemingdon Park) which are chain stores which carry some cultural crops and do so at a rate affordable to the community. Aside from price, freshness, and variety, the independent retailers may also experience success because they are owned by members of the community and are staffed by those who speak the same language as shoppers. This, undoubtedly, acts as a draw for immigrants still adjusting to a new country and

How participants prioritize their food purchases

Various activities conducted in these workshops revealed how participants prioritize various factors when shopping for produce. The four most consistently important factors were price, variety, freshness, and convenience.

Price

Affordability of produce was raised numerous times at both sessions reinforcing an already established understanding that Toronto's new/recent immigrant communities are very price-sensitive. However these two consultations also revealed that newcomer groups have a keen sense of quality when it comes to fresh produce, often insisting that the produce available here in Canada does not taste as good as back home. Such findings indicate that in order for Ontario-grown world crops to pose as a viable option for this section of the consumer base, they will need to come in at a comparable price to that which is currently for sale in stores such as No Frills and independent ethnic retailers. Or, for those who are somewhat flexible on budget, they will need to deliver as good – if not better – flavour than the existing imports to win over the discerning palettes of these consumers.

Variety

In the Flemingdon Park community, the most popular world crops were okra, Asian eggplant, Indian eggplant, long beans, bitter melon, and bottle gourd. Amongst the primarily Sri Lankan respondents in Malvern, okra, amaranth greens, bitter melon, eggplants, and long beans were most popular. These findings correlate fairly closely to the consumer research conducted by Vineland in past years that has led to their intensified field and consumer research focusing on some of these crops (okra, eggplants, long beans, bottle gourd, and amaranth). It is clear that for members of these two culturally diverse communities, having access to a variety of produce, including foods from back home, is very important.

Freshness

Fresh food was consistently ranked as either #1 or #2 (along with price) as a top priority when buying food. This finding corresponds with participant food maps where small groups identified their favourite retailers and listed why they liked that store.

Convenience

Through the mapping activity conducted in both communities, it was evident that most people walk or take transit to access groceries, with more car owners living in Malvern. This is reflected in the relatively small territory participants regularly covered to access grocery stores. These two communities happened to have fairly consistent access to fresh food in their neighbourhoods; however other food mapping research conducted by the Food Strategy indicate that many of Toronto's inner suburb neighbourhoods lack access to fresh food within walking distance where many residents are otherwise unable to afford / access transit.

Other factors which were listed amongst the top three priorities included if the vegetable was pre-packaged, the country of origin, and if it was organic. While country of origin wasn't often the deciding factor, it does play a role in decision making. Many respondents believed that the food back home is produced with fewer chemicals (if not organically), and the water is better, making the food taste better. Respondents from Pakistan seemed to believe this most strongly, however one should note that it may be an exception to the rule being such an agrarian area (participants may be more familiar with organic farming / philosophies as a result of their background).

Perceptions of Food Here Compared to Back Home

Most understood that what was sold in the store may not be coming from Ontario, but that it may be grown in Canada, the US, and Mexico and often treated with pesticides and chemical fertilizers. Some called the produce available here "genetically modified," citing that the produce here is often "too big," “picked too early,” and isn't as flavourful compared to back home. Given that larger sized fruits and vegetables tend to preferred in North America, the perspective shared by workshop participants indicates that the growing number of new immigrant consumers may espouse a different set of priorities when it comes to fresh produce.

Perceptions of Local Food

Many participants in the focus groups understood local food as generally grown in Ontario or within the region, and believed that local food *does* taste better, with some believing that this was because it is grown organically or naturally (which, in reality, is often not true). Interestingly, some respondents to a quick show of hands agreed with the statement: “Locally grown food is cheaper than imported food” which, in reality, is often not the case. Overall, participants seemed to support the idea of local based on their belief that it is fresher, more sustainable, and possibly even cheaper. It is good to know that participants are open and supportive of local food, but some misguided perceptions around what local food actually is and its cost may need to be addressed.

CHALLENGES & OPPORTUNITIES MOVING FORWARD

Food access and price are undoubtedly challenges for many residents in Toronto's diverse, inner-suburb neighbourhoods. Where fresh produce is hard to find, next steps may include finding new, innovative ways to make fresh produce (including world crops) available and accessible to residents. Where fresh produce is available, an appropriate next step would be to investigate the current pricing for various vegetables to determine how competitive locally grown produce can be for various crops in comparison.

Despite price sensitivity, locally grown world crops do, however, have a chance to garner the attention of the new immigrant market. Keeping variety, appearance, taste, and freshness in mind, there is a significant opportunity to market Ontario-grown world crops drawing on the newcomer community's understanding that local food is fresher, and a result, tastier. Based on the consultations, the majority of consumers will prioritize freshness and flavour over price, if the cost is only marginally higher for the local variety. Some consumers will be able to afford even higher price points if they are more established financially.

When bringing ethno-cultural crops to market, retailers should take care to ensure signage and labeling is listed in the appropriate language to the community. While most consumers will naturally be able to identify produce based on visual appearance, listing the crop's name in their mother language and having staff on hand who speak the language of the community can enhance the shopping experience and help build a relationship with, if not loyalty to, the retailer. Many respondents in the Flemingdon Park community indicated that some of their preferred fresh produce retailers had staff who spoke their language which was key for them as recent immigrants still learning English. Sunny Foodmart in Flemingdon Park is a Chinese grocery store but increasingly caters to the predominantly Urdu-speaking community by listing some crop names in Urdu, opening a halal meat counter with Urdu speaking staff, and hiring some Urdu-speaking cashiers. As such, and combined with the affordable prices and freshness of produce, this grocery store has become very popular in the two years since its opening. In highly diverse communities like Flemingdon Park where 5-8 languages are commonly heard, it will be challenging for one retailer to meet the needs of all consumers. However retailers can go a long way by simply labeling in multiple languages.

Partnering with the independent, cultural food retailers in some of Toronto's new immigrant communities may be an effective way to introduce locally grown varieties of familiar cultural staples to these communities which use and value fresh, tasty crops of their homelands. Residents seem to have formed a connection to these retailers and may support a transition to locally grown versions of the crops they know and love. We may be able to harness the energy and capacity of the local community organizations and/or residents to encourage collaboration with these retailers in making a transition to more local crops.

While the import substitution for "world crops" has been a focus here, there still exists a huge opportunity to substitute the standard Ontario-grown fare such as potatoes, tomatoes, onions, carrots, apples, pears, grapes, lettuce, and cucumber – all of which the consultation participants indicated they currently eat.

RECOMMENDED NEXT STEPS

The community consultations really demonstrated that residents in these two neighborhoods know their fellow residents and their retail environment very well. If the Food Strategy is to move forward in these or other communities around import substitution for world crops, working closely with the residents will undoubtedly be the key to lasting, effective change. The following are a shortlist of ways The Food Strategy could consider working with the local communities to facilitate world crop import substitution or find new, innovative ways to introduce such produce where none currently exists:

1. Ask community how likely they would be to work with the TFS to encourage retailers to change food sourcing when possible; build a grassroots team to help us meet with retailers to encourage change
2. Identify where retailers buy their crops (Food Terminal, etc.); identify how to access local instead and support retailers in doing so
3. Assess pricing at existing range of retailers and compare to popularity of these sites
4. Assess the range of crops available in the community as the standard for what is in demand
5. Assess the relevancy and develop of Point of Purchase materials in local languages re: local sourcing
6. Further investigate perceptions of "local" in various diverse, urban communities
7. Tour retailers with 1-2 residents at a time to better understand the nuanced decisions behind how they choose their groceries
8. Tour existing retailers to document variety, price, and freshness of available culturally appropriate produce
9. Investigate which grocery stores already label local food, and if so, how
10. Identify to what extent traditional foods/crops are being cooked for both new and more established immigrants

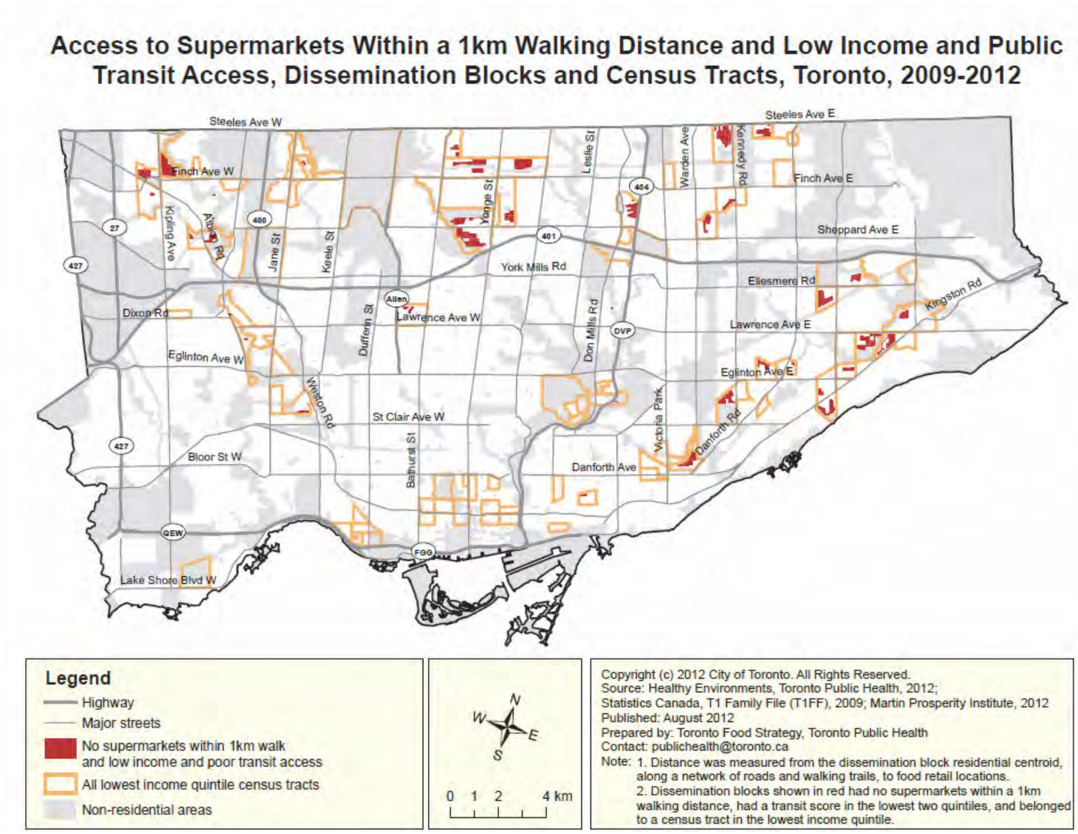
Given that these community consultations were a part of the McConnell Sustainable Food System Assessment Fund, the Toronto Food Strategy sees significant potential in implementing some of the above "next steps" as the team moves into the Business Planning and Implementation phases of the McConnell project.

APPENDIX C

Food Retail Access Maps

Below are examples of maps produced by the Toronto Food Strategy in 2012 that highlight the intersection of high geographic distance to food retail establishments and household income.

Example 1. The map below shows (in red) areas of Toronto which have high levels of poverty, below average access to public transit and are 1km or more walking distance to a supermarket.



Example 2. The map below shows in red lower income areas in the east end of Toronto that are 1km or more walking distance to "healthier" food retail establishments. The latter is defined as food retail (excluding foodservice establishments such as restaurants) that are open to the public, classified in Public Health's THEIS database as a supermarket, food store (convenience/ variety), butcher shop, fish shop, or bakery AND meets at least one of the following criteria:

- sells a significant quantity and diversity of fruits and vegetables,
- specializes in one of Canada's Food Guide categories (vegetables & fruit, grain products, milk & alternatives, meat & alternatives)

Markham Rd & Ellesmere: Low Income Areas & 1km+ Walking Distance to "Healthier" Food Retail

● Lower income & 1km+ distance to "healthier" food retail
● Healthier food retail
● Less healthy food retail

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TORONTO FOOD POLICY COUNCIL

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