

World Foods, Local Production

The Current Supply and Future Potential of Ethnic Crops in the Greater Golden Horseshoe Region



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The Friends of the
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1 Executive Summary

This report attempts to address the question of ascertaining the potential for local production of ethnic crops in the Greenbelt. The adopted approach involves figuring out what is known now, what gaps exist in the current body of knowledge in the area, and what can be done to address these gaps to move forward with increasing the current level of ethnic food production in the Greenbelt. Recommendations were drawn from a combination of reviewing literature and a series of key informant interviews with city and provincial food planning and research departments, farming co-operatives and growers' associations, academic institutions and Greenbelt farmers.

In the case of ascertaining market demand and current supply, the key issue was the fact that there is currently no comprehensive information available in the Greater Golden Horseshoe Region (GGHR). Additionally, there is no organization that tracks the research and development of new ethnic crops in the region. Fragmentation between government and farm policies only contributes to the confusion. Lastly, there is no centralized point for knowledge extension on ethnic food to all stakeholders concerned.

In summary, several recommendations are put forth for the various areas of focus. Although it is recognized that all of these suggestions are relevant to the development of a comprehensive local ethnic food system within the Greenbelt, a few are of particular significance to the advancement of local ethnic food production and attention should be prioritized to these areas. The most important steps are:

- 1) To carry out detailed supply and demand studies and
- 2) To begin building a stronger communications network.

2 Introduction

There are a number of organizations currently involved in ethno-cultural food within the Greenbelt in the Greater Golden Horseshoe Region (GGHR). Various organizations, including FarmStart and the Toronto Environmental Alliance have carried out research on ethnic food, producing various reports that have examined consumer preferences for ethnic food and the growability of various ethnic crops in Ontario. Despite a common interest in ethnic food supply and demand by these organizations, these entities operate in a fragmented manner with each functioning almost independently of the others.

More importantly, there is no overarching plan or strategy that attempts to tie existing research with broader aspects of the ethno-cultural food industry. Our research addresses this gap by:

Consulting with key informants in the area to assess the current state of the ethno-cultural food industry in the GGHR and recommend a series of action items to move forward with addressing issues such as:

- **Quantifying the market demand for ethnic food**
- **Quantifying the current production and increasing levels of future production of ethnic food in GGHR**
- **Identifying Research and Development requirements and Policy barriers in area**
- **The current system of knowledge sharing in the industry**

Our report puts forward a series of practical action items in each of the aforementioned theme areas. Its objective is to accelerate the progress towards creating a locally grown ethno-cultural food industry in the GGHR, thus helping to contribute towards the sustainability of the region.

In this report, the term ‘ethnic food’ refers to crops that are not traditionally/historically grown in the Ontario, and were not introduced by European settlers. The focus of the research will be on farming practices within the Greenbelt since this is the region that is best positioned to serve the demand within the GGHR. Additionally, most recommendations concern mainly ethnic produce items though informants indicated that potential ethnic markets exist in herbs, spices and meat as well.

3 Methods

The methodology used in this study is a combination of secondary research and key informant interviews. Interviews conducted were semi-structured, with some conducted in person and some conducted over the telephone. Some responses were collected via email questionnaires. Efforts were made to collect information regarding not only what knowledge currently exists, but what, in the expert opinion of the informants, is needed to fully understand the potential for ethnic food and what issues the informants feel are most important to address in the short, medium, and long term.

Key informants were identified using a snowballing technique. Initial contacts were identified with the assistance of the academic and external advisors to the project. Additional potential informants were contacted as literature was reviewed and new organizations involved with ethnic food production in the region were identified. The main criterion for inclusion was that informants have knowledge related to the demand, supply, and/or barriers to entry components of the current local food chain. Knowledge relating specifically to ethnic food rather than simply focused on local food issues was a key determinant of relevance.

Informants were recruited from several different areas, such as city and provincial food planning and research departments, farming co-operatives and growers' associations, academic institutions and Greenbelt farmers. See Appendix A for a full list of respondents and their affiliations. Although attempts were made to contact ethnic food retailers, none were available to participate in our study.

Data analysis involved categorizing current information, and suggested areas of focus from the interviews, under major themes identified during the process. By combining interview data with secondary research we have determined exactly where there are gaps in research and moved forward with our recommendations from there.

4 Demand for Ethnic Food

4.1 Background

In order to encourage the local production of ethnic food in any region, farmers need to know what are the most popular items being demanded, how much of it is being demanded, where it can be marketed, and the prices at which these items can be sold (Mangan, 2002). This information would help farmers to determine whether or not switching into ethnic food production would be profitable. Akin to any other business, farmers too are more likely to enter the ethnic food market if they are convinced that it is a guaranteed one and that it is large enough to ensure a profit.

Most farmers producing ethnic crops in the Greater Golden Horseshoe Region (GGHR) tend to run medium- to small-sized farms (von Donkersgoed, personal communication, 2008). In addition to encouraging farmers to switch into ethnic crop production, demand information is required to help existing ethnic farmers preserve and expand upon their current production. A study conducted by researchers from Queen's University in Ontario suggests that this ethnic-food sector is thriving despite existing public policies that are biased toward large-scale, industrialized agri-food firms in the region (Donald et al, 2005). The researchers conducted sixty five interviews with food producers, processors, restaurateurs, food media, non-government organizations, government, and private sector agencies and found that a disconnect currently exists between the traditional agri-food paradigm that the government regulatory environment is promoting and the locally consumer-driven food cluster that is emerging.

The establishment of ethnic farmers' markets is one way of preserving small farms, particularly in the vicinity of growing metropolitan areas, where prices received for products sold directly to consumers tend to be 'significantly higher than typical wholesale prices' (Brown et al, 2006). Among the many benefits to farmers inherent in farmers' markets is the fostering of entrepreneurship, since the direct contact with consumers allows farmers to 'experiment with new items to respond to shoppers' demands'. Farmers' markets play a vital role in enabling small-scale farmers to gain direct access to customers. Without this direct access to consumers, the existence of many small- and medium-size growers would be threatened, since smaller farms

are more likely to use such direct marketing methods (Brown et al, 2006). Establishment of such market locations would specifically require demographic information regarding the concentrations of ethnicities within the region as well as their willingness to pay a price premium for such locally grown items (Govindasamy et al, 2007). Any survey that tries to assess the amount of ethnic food demanded must also take into account these two factors.

In 1994, a report was published by Agriculture and Agri-foods Canada that contained an assessment of select ethnic food markets in the country, including the Greater Toronto Area (GTA). The results of this research represent the first attempt to quantify the ethnic food market. The benchmark data it generated were only intended to stimulate interest and discussions about the market. This study combined information from both secondary sources (articles and surveys conducted by other organizations for other purposes) and personal interviews (10) with ethnic food importers and distributors in Toronto (as summarized by EKOS, a professional research firm contracted for this study). The study noted that Chinese-style foods have achieved a much greater degree of mainstream market penetration than South Asian or Middle Eastern foods and consequently, have achieved higher sales and annual growth. The report identified that the key to future growth for South Asian and Middle Eastern food companies is in greater mainstream market penetration and exportation, for which more accurate demand information is required. Niche opportunities exist for low-volume operators and small entrepreneurs to target ethnic consumers (Chinese, South Asian and Middle Eastern) with "authentic", locally produced ethnic foods that offer better quality, freshness and availability than imported products. However, the report notes that growth will depend largely on immigration and the degree of cultural retention (especially food traditions) (Agriculture and Agri-foods Canada, 1994).

No work was done to capitalize on the findings of the 1994 report within the GTA, i.e. trying to determine the actual amounts of food being demanded which would give farmers an indication of how big a market there is and thus allowing them to react accordingly. The only preliminary survey that focuses on trying to assess the current demand market for locally produced ethnic food in Toronto highlights the gaps that exist in research on this issue. Toronto Environmental Alliance (TEA) has acknowledged a strong demand for locally produced ethnic food and has compiled a guide for sourcing local ethnic food throughout the city (2008). The report entitled "Use and Buying Preference of Asian Communities in Toronto" contains results of focus group

meetings conducted with 30 retailers on the most popular food items purchased by members of the Chinese and South Asian community. A list of 30 ethnic items were identified (for each community) as a result of the focus groups. However, the report was only meant as a preliminary study into the issue. As a result, it does not contain any ranking of the items in terms of popularity neither did it calculate levels and prices at which these items were bought on a monthly basis. Work needs to be done to supplement this study to try and fill in these gaps.

Another point to note is that even though South Asian and Chinese communities account for the two largest visible minorities in the region (13% and 10% of the total population in the GTA respectively), surveys need to be conducted to determine items demanded by other large ethnic communities residing within the GGHR as well. For example: the Caribbean and the Filipino community account for 7% and 3% of the total population in the GTA respectively and thus their demand for ethnic specific food is also likely to be large (Statistics Canada, 2006).

However, one of the issues that arise in using targeted demand surveys is the need to distinguish between first and successive generations of ethnicities. First generation ethnic individuals use food as a means to preserve their cultural identity and thus form a large part of the immediate market (Jonsson et al, 2002). Taste in food reflects in part the consumer's social and cultural origins, social ambitions and the cultural capital acquired, either as part of their upbringing or more deliberately. This makes the apparently straightforward task for marketers of researching taste rather more complex, especially in societies where upward social mobility is taking significant numbers of people away from their roots (Wright et al, 2001). This also suggests that the food preferences of second and higher generations of immigrant ethnic groups may be quite different than that for the first generation.

Another issue in trying to conduct food demand surveys among ethnic groups is that they ignore the demand from mainstream consumers and thus might not be indicative of the true potential of the market. Although first generation immigrants may form a large base of this demand, globalization has led to increased exposure to various types of produce items. Thus mainstream consumers are also beginning to demand ethnic produce and this only adds to the possibly large

size of the ethnic produce market (Coupe, 1996). A demand survey that addresses this part of the market would also be helpful.

The most comprehensive demand surveys carried out on ethnic foods in North America are conducted by researchers from Rutgers University. Two demand surveys have been conducted, the first in 2006 which attempted to gauge the market demand for Asian vegetables (Chinese, South Asians, and Korean) in three North American states (New York, New Jersey, and Pennsylvania). A sample size of 1,800 surveys was statistically determined based on census populations of the year 2000, with 600 surveys being mailed out for each of the three groups. A response rate of approximately 25% was obtained which was fairly consistent across the groups. Questions were asked to determine crops that had the greatest potential for local production (based on popularity), understand consumer shopping patterns (where, what and how often), as well as consumer willingness to pay a price premium for local ethnic crops. More details regarding questions asked can be found in the Appendix B. Note that the study did not try to include mainstream consumers within its sample frame, neither did it make any particular distinction between first and successive generations of immigrants.

In addition, 83 New Jersey farmers' markets were located and ranked based on the respective size of Chinese, Indian, and Korean populations within a 5 mile radius of each. Farmers' markets having the 5 largest respective ethnic populations within close (5 mile) proximity were identified as potential distribution outlets for ethnic produce. A total of 11 distinct farmers' markets are identified based on this criterion. (The first two alone have the ability to reach and/or serve 17% or more of the New Jersey populations, respectively.)

The second survey, conducted in 2007, added and expanded on was more extensive and covered the market demand for ethnic crops among Asian (Chinese and South Asian) and Hispanic (Puerto Rican and Mexican) segments of the population. The survey also spanned a larger area covering the 16 American states bordering the east coast and Washington D.C. Bilingual phone surveys were developed and administered and 1,084 completed surveys (271 per sub-group, the sample size determined to be statistically significant) were collected to assess ethnic produce demand, quantify the current market, and obtain purchase data for ethnic crops to prioritize

selections for production trials. Questions asked were of a similar nature to the previous demand survey conducted in 2006. Since the surveys were carried out over the phone, a greater number of responses were collected. However, the time taken to administer the phone surveys was also greater. This survey too did not attempt to gauge the demand for ethnic food from mainstream consumers, neither did it conduct the farmer's market exercise for its states that the previous study did. However, despite its few shortcomings, this report gave the region a comprehensive understanding of the demand for ethnic food among its communities and gave specific direction for produce items that should be targeted for crop trials.

4.2 Findings

There was a general feeling among interviewees that there is a dearth of hard numbers with regards to current levels of ethnic food demanded in the GTA. The ethnic food industry is a relatively new market in the province, a subject *“that wasn't even on the radar 3 years ago”* as observed by a respondent from the George Morris Centre, an independent agri-food think tank.

As a result, a respondent from the Holland Marsh Growers Association noted that currently

“Farmers lack market access information. They need to know who the players are in the community, “what is the interest in Kale?” for example. Where would consumers go to buy the produce? Overall, the tracking of a definitive value chain from farmer to end user currently does not occur”.

A common theme among interview responses was that consumers of ethnic food can be broadly divided into three categories: Ethnic Retailers, Ethnic food processors & Ethnic Communities (for personal consumption). There is a need to gather demand information from all three types of consumers. Concentrating on just one type (for example: retailers) might not give a complete picture. A key informant from George Morris Centre said, *“consumers may not be happy with what they are buying, they may be settling for something less than ideal simply because it is all they can get. Surveying both levels of consumer is important to get this information”.*

Additionally, larger retailers may not be getting direct feedback from consumers buying fresh produce and packaged foods. The types of ethnic food and quantities consumed in the GTA by each of the three categories of consumers needs to be monitored. In the case of restaurants and food processors, however, such information may be hard to obtain since they are generally wary

of such questions. A key informant from FarmStart who was involved in an attempt to collect preliminary demand information from restaurants and retailers in the GTA commented that *“they think you will report them to health inspectors – you really need an inside contact to get some information”*.

With regards to targeting communities, there was agreement among interviewees in the ethnicities that need to be included. The top five immigrants groups according to the census are: South Asian, Chinese, African Caribbean, Filipino and Latin American (StatsCan 2006). However, such detailed information is generally not collected. Detailed demand surveys among members of each of these ethnic communities need to be conducted.

Once the most popular items consumed by each community are identified, retail pricing information for these products also needs to be collected. A researcher associated with FarmStart, a not-for-profit organization that works with farmers, indicated that *“knowing the price that retailers sell their produce at is a good starting point to understand the risks for farmers”*. It would also be useful to determine import prices of these items during the growing season in Ontario. Another important facet of pricing that needs to be looked at is how much consumers are willing to pay for locally grown ethnic produce. A ‘Willingness To Pay’ variable is modeled against relevant consumer ‘belief’ and related practice variables, demographic variables (age, gender, number of adults in the household, education, income, number of years in the Canada), and fixed effects for the municipalities and ethnicities (dummy variables). Price sensitivity testing also needs to be conducted to determine whether local versus non-local produce has any effect on willingness to pay.

Demographic information regarding current immigration trends and income levels would also be useful to help determine the market potential for ethnic foods. A Food and Beverage Specialist from the City of Toronto suggested to *“figure out what areas have the required income levels and immigration trends so that you can say to the farmers “grow this and sell it here and you have a market””*.

Informants were also asked questions regarding the design of the actual demand survey: the level

of detail required, sample size requirements, method of stratification, etc. Informants mentioned the Rutgers Study (Govindasamy et al, 2007) as a possible model for a future demand survey in Ontario. A researcher associated with the study noted,

“the better the level of market demand assessment, the better growers can plan for market segment penetration. Avoiding overproduction is more important than the current level of underproduction. If a farmer gets a really low price because of a glut in the market after institutional encouragement, they will rarely return.”

Respondents noted that data regarding types of crops demanded by ethnic groups could be transferred from one neighborhood to another. For example: if one were to determine the market demand for ethnic food in the Chinese community, it would be possible to target the neighborhood with the highest Chinese population and administer the survey there.

The second survey design debate that came up concerned the use of phone surveys over mail out surveys. A respondent from FarmStart indicated that *“phone surveys tend to be more costly and time intensive. Many times respondents aren’t able to remember how much they spent on what over the last week.”* However, another respondent from Rutgers University indicated that *“mail out surveys, albeit less costly, tend to get lower response rates”*.

The need to differentiate between 1st and 2nd generation immigrants also came up in several discussions. However, it was acknowledged that due to budget and time constraints, such a distinction shouldn’t be a top priority in designing the survey.

All key informants interviewed were in agreement that the immediate next steps (should a large scale consumer survey prove not to be feasible) would be to contact community leaders, retailers and processors who cater to the previously identified ethnic groups and gain food demand information with their help (by organizing focus groups, etc).

Overall, farmers require proof of a strong market before they make the decision to switch into ethnic food production. A respondent from the George Morris Centre concluded that *“any information that would help them assess the potential risk and enables a comparison to the productivity of something they already know to see if the payoff is worth the risk.”*

4.3 Recommendations

Based on key-informant interviews, and existing literature on ethnic food demand, a number of recommendations can be made to increase knowledge about the nature of demand for ethnic food in the GGHR.

1. Focus-Group Research with Retailers and Processors

Focus groups should be organized among representatives from the ethnic food retail and processing industry. Information can be gathered from these groups regarding ethnic food preferences in the GTA: what is being bought, how much of it is purchased, and at what price. Specific questions for each group include:

- *Retailers:*

What are the popular ethnic foods that they sell and at what prices? What items are hard to sell and why? What are the constraints experienced in the marketing of ethnic food?

Number of retailers contacted: At least one ethnic retailer per neighborhood identified as having a large concentration of ethnic population (as per demographic information)

- *Processors:*

What types of ethnic food are being processed in Ontario?

What currently imported ethnic food can be processed here? What prevents them from being processed here?

What needs to be done so that more ethnic food gets processed in Toronto?

Number of processors contacted: All (as key informants indicated not that many exist)

Such information from focus groups can then be coupled with demographic information to give a fairly quick picture of the size and nature of the ethnic food demand market in the GGHR.

Preliminary work has been conducted by TEA in trying to determine food preferences in the South Asian and Chinese communities. However, the goal of that study was not necessarily to quantify amounts bought and prices at which the items were bought. Further work should definitely try and fill in these gaps.

3. Full-Scale Market Research Survey

Carry out a full-fledged market research survey as conducted by the researchers from Rutgers University. It was determined through key informant interviews that farmers would want to

know that there is an “\$X worth market in Y area for crop Z” if they are to make a business decision to switch into ethnic food. Such detailed information can only be obtained through a comprehensive demand survey. A study similar to the one conducted in 2007 would definitely be beneficial to determine the size of the ethnic food demand market in the GGHR, but would cost the most and take the longest amount of time.

It is therefore proposed that a demand survey be conducted that targets South Asian, Chinese and Caribbean communities. These account for 27% of the total population in the GTA. For cost purposes, differentiating between 1st and 2nd generation individuals and capturing demand from mainstream consumers need not be a priority. Farmers want to know that there is a guaranteed market for ethnic produce and this type of market is likely to come directly from ethnic communities (as opposed to the hypothetical market from mainstream consumers). It is recommended that mail out surveys be administered (due to its lower cost and shorter time). However, an incentive (such as a \$5 coupon to purchase food at a local grocery store) should also be included to encourage a greater response rate. Surveys should be administered in communities where concentrations of these populations are the largest. For example: to estimate the market demand for ethnic crops among the South Asian community, Brampton (the area with the largest South Asian population in the GTA) could be targeted. As mentioned earlier, a statistically significant population should be determined based on total community size in the GTA.

Additionally, since Ontario’s ethnic makeup is similar to that in the Eastern seaboard (i.e. the region targeted by the Rutgers study), there is the possibility that some of the Rutgers results could be used as a starting point to guide future studies in Ontario. Therefore, results regarding the ‘Willingness to Pay’ from the Rutgers study could still be relevant for the context of the GGHR. Also, the top three most popular vegetables demanded by each community would also likely be the same (with variances occurring in the amounts demanded). These preliminary results from the Rutgers study could establish the start of preliminary crop trials in the GGHR.

Lastly, analysis of the survey sample expenditures and demographics as they correspond to consumer shopping patterns, preferences, and related practices, should be utilized to develop

predictive demand models for the larger populations. These models will facilitate effective distribution efforts by enabling producers, wholesalers, and retailers to target appropriate markets and locations, based upon demographic profiles and geographic population concentrations. This will help to marry the supply with local demand, as appropriate, to optimize marketing efforts.

5 Supply

5.1 Current production

5.1.1 Background

Organizations such as Foodland Ontario and Ontario Fruit and Vegetable Growers Association do publish availability guides that inform consumers about what types of produce items are grown in Ontario during various parts of the year (Foodland Ontario, 2008 & OFVGA, 2008). For example, availability guides indicate that Asian vegetables such as Choy Sum, Yu Choy, etc. are grown in Ontario during the summer months (June-Sept, peak). However, such information is limited to Asian vegetables only. It does not mention which farms grow this produce or where consumers can go to buy such *locally grown* ethnic produce.

Additionally, it has not yet been definitively determined where the ethnic foods supplied currently in retail stores across the GGHR comes from, nor is there any record of how much ethnic produce is currently grown in Ontario. Toronto Environmental Alliance has published 'Local Food Availability guides' for the Chinese and South Asian community. These guides indicate which retail stores in the Greater Toronto Area supply ethnic food but make no mention of how much of these crops are grown locally. Such baseline information is required to highlight the gaps in supply and consequently the potential for growth.

As there currently lacks comprehensive records on what types of ethnic food is being grown in the GGHR, the issue of traceability is one that deserves significant attention. Traceability is defined by Fonsah (2006) as a "record keeping system designed to track the flow of product or product attributes through the production process or supply chain". This particular study outlines

relatively straightforward and economically efficient steps in which such a system can be undertaken in the fruit and vegetable industry based on strategies adopted by various multinational fresh fruit and vegetable corporations around the world. The importance of maintaining written records of the day-to-day operations of the farm (from planting to packaging) is emphasized. The article mentions that this can be achieved using a ledger or notebook in the case of small-sized farms. For farms of large or medium-size, a computer may be needed. Fonsah states that some corporate and multinational fresh fruit and vegetable companies around the world have adopted the ledger system due to its cost effectiveness. The article also notes that another advantage of the ledger system is naturally, it is less expensive than using a computer, particularly in the case of small farmers, the some of whom may lack computer proficiency and may not even desire to be bothered by it. In Fonsah's opinion, records are recommended to be kept for at least five years. Another important step in traceability involves legibly stamping each packed box with a simple stamp code that can be traced to the farm. The article outlines the possibility of traceability during the transportation process as well as if mixed produce are packed in the same container. Overall, emphasis is made on how traceability can be managed in an effective and cost-efficient manner. Unfortunately, other than this article, very little academic literature exists on this topic.

5.1.2 Findings

Among interview respondents, there was a general consensus of the present lack of comprehensive records on the amount of ethnic crops being produced in the GGHR and that such information would be greatly beneficial. One respondent from FarmStart stated, "we definitely need more insights into the food supply chain".

Elaborating more on the benefits of keeping such records on supply, the Transition Crop Specialist from OMAFRA replied,

"the marketing of ethnic produce in Ontario is a challenge for farmers. Some of them are not familiar with the types of ethnic produce that can be grown in the region. Such records of how much is grown, the prices and where it's being marketed can definitely help inform farmers. If one farmer starts growing an ethnic crop and makes a profit, a few more farmers join him, and then soon other farmers see what's happening and the trend catches on".

However, another respondent from FarmStart, also commented on the potential difficulties of obtaining such information,

“overall, supply is very difficult to get an idea of – there is no much independent action (i.e. use independent brokers, operate in a vacuum) – it’s the nature of local food. It would be impossible to get an accurate picture of supply. Instead, look at proportions that distributors and retailers are buying – this information is much easier to access”.

This relates back to the previous recommendation in the Demand section of carrying out focus groups with retailers and processors to uncover the demand side of the equation thus, also illustrating the interdependence of supply and demand.

5.1.3 Recommendations:

It is evident that one of the main factors in identifying the opportunities for increasing local production of ethnic food depends on current supply. From the literature and interview responses, the following is a recommendation to address the key issues discussed.

1. Develop a supply survey to provide a current snapshot of ethnic crops being grown.

Identifying the volume and types of crops currently being grown in the GGHR is important in offering a better understanding of what and how much is being grown in the region. This information can assist farmers who may be interested in transitioning to ethnic crops by informing them of potential yields and even a sense of market demand of particular crops. Given the effort, and time involved in maintaining a long-term inventory system (as described by Fonsah 2006), it would be more practical to instead carry out a survey based on a random sampling of farmers in the Greenbelt. A financial incentive will be provided in order to encourage farmers to participate in the survey as well as to offset the time and efforts incurred from partaking in the research. In addition, access to the data obtained will only be permitted to participants.

5.2 Research and Development

5.2.1 Background

There is undoubtedly an important relationship between supply and demand. In particular, the interdependence between the two largely impacts the potential of a greater local production of ethnic food. As discussed earlier in the Demand section, Govindasamy et al. (2007) undertook a fairly rigorous study to document and quantify the current market (at the time of study) for selected ethnic vegetables and to assess the demand so that farmers can grow crops fuelled by a demand perspective. Their study encompassed two phases. The first phase involved the assessment and quantification of ethnic market demand to focus production efforts in the ensuing phase. That second phase used the demand findings to formulate production trials, grower recommendations, and strategies to coordinate year-round production of selected ethnic crops to serve this market niche. This study undertook the market-first approach and emphasized the importance of the interdependency between the two phases in addressing the existing local supply-demand gap. The identification of ethnic crops of interest for production trials was carried out through a selection process that involved a crop expert panel review that chose 42 produce items out of an initial list containing more than 100 ethnic crops. The choices were based on a combined assessment of the data collected on consumer demand with information on estimated production potential of particular crops. Research trials for crop production are currently underway in various sites along the East Coast and will be conducted over a period of two growing seasons. Results on crop quality and yield will be evaluated statistically to determine the suitability for commercial production of the crops. This second phase is estimated to be completed in 2009. There might be some similarities with the soil climate between the Rutgers study area and the Greenbelt. Therefore, further work needs to be conducted to see how results from the Rutgers study can be used as a starting point to guide research in the Greenbelt.

Other literature discusses several issues that need to be taken into consideration in the production of ethnic vegetable crops, once a market for them has been determined (Mangan, 2002). In addition to the fundamental understanding of whether a crop can be successfully grown in a local climate is the importance of yield, an issue also focused in the Govindasamy et al. study. Even if a crop can be grown in the local environment, the yield may not be as good compared to other parts of the country or world with more favorable climates for the crop. Another factor of

significant consideration is the degree of labour-intensiveness in crop production. As the cost of labour in many developing countries, where much of ethnic crops are imported, is often lower, crops that can be grown cost-effectively in such countries may not be produced cost-effectively elsewhere.

Currently there is no one organization tracking research and development of new crops in the region. Most new ethnic crops are being developed through a trial and error process on a small scale by some of the more entrepreneurial farmers (von Donkersgoed, personal communication, 2008). To make ethnic food production a viable option for a larger number of farmers, efforts should be made to increase farmers' access to crop information through research and development, perhaps similar to the crop science research conducted by Govindasamy et al. (2007). There have been small trials of singular crops such as FarmStart and the Harrow Research Station but nothing as extensive as the Govindasamy et al study has been carried out. The lack of comprehensive crops trials can make the crop development process very slow, rather than capitalizing on economies of scale.

Hayden et al. (1985) discuss the potential of “innovation centres” or agencies formed as a cooperative between “industry, university, and government to enhance product development.” He explains that innovation centres are focused on determining the productive capacity of certain agricultural products. Currently, efforts are being made to promote the Holland Marsh as a “Specialty Crop Area” with some new crop trials for ethnic foods being conducted at the incubator farm at the Muck Research Station (Bartram et al, 2007). While this is a start, trials are still done on a fairly small scale and are only focused on this one particular region within the Greenbelt. More thorough Greenbelt-wide research would help grow the body of knowledge surrounding crop production in the region, making it easier for more farmers to access current scientific findings.

FarmStart also runs an incubator farming program that

“supports new farm enterprises by offering access to land, equipment and infrastructure at reasonable rates, along with business planning support,

technical training, mentorship and experience with ecological and emerging farming methods” (FarmStart, 2008).

There are two incubator locations in southern Ontario; the Ignatius Incubator Farm located just north of the Guelph city limits, and the McVean Incubator Farm located in Brampton. This program is modeled after the Intervale Farms Program in Burlington, Vermont. FarmStart applicants are encouraged to pursue innovative, or alternative, farming techniques, which suggests that the development of ethnic speciality crops would fit well with this model, although not many are at this moment (Hadrer, personal communication). Farmers are also encouraged to share knowledge and other resources as they develop their crops. This type of knowledge transfer could speed up the testing phase of research as farmers could capitalize on the efforts put forth from the collective efforts of all incubator participants. Incubator farms take the innovation centre concept one step further by providing the business support training to new farmers, which can be useful to new immigrant farmers looking to start their own operations.

5.2.2 Findings

Our interviews related to research and development attempted to determine who was currently responsible for crop development in Ontario, and the Greenbelt, in order to determine if these same resources could be put to use developing ethnic specialty crops. Several informants indicated that there is really no one agency that is responsible for ethnic crop testing at this point in time. OMAFRA and Agri-Food Canada support testing but it seems that the majority of development in the ethnic food areas is the result of various research efforts at the University of Guelph, or comes out of “pet projects of local farmers”, as one respondent from the Holland Marsh Growers’ Association commented. While these fragmented, one-off projects have resulted in farmers exploring new ethnic crops, they are completed on a small scale and the knowledge gained through the process is not always made public for others to access, not really because there is a desire to keep findings secret, but because farmers are unaware that other people may be looking for similar information. Along this same vein, respondents were unable to identify any specific funding programs in place that support ethnic crop research specifically, although examples of trials for specific foods were noted of taking place at Holland Marsh and the Harrow Research Station.

A farmer who was interviewed mentioned that some agricultural research on local foods that is funded at the provincial and federal level might actually be overlapping, resulting in inefficiencies in the development process. While it was not known if this phenomenon applied specifically to ethnic crop testing, this suggests that there are some communication issues that could be addressed to ensure that limited research funds are being used effectively.

The timeline surrounding crop development research by OMAFRA was also pointed out as being less than ideal. Respondents indicated that development could take anywhere from 2-5 years with small amounts of information being made available throughout this time period. One informant from the Holland Marsh Growers Association suggested that the timeline for development research for specialty crops, including that of ethnic food, would benefit from being reduced to around 18 months so that farmers can adapt to changing market demands more easily. However, another respondent from FarmStart expressed scepticism of this timeline. Due to this uncertainty, a recommendation can not be made without further insight on this issue.

Several interesting responses were given when asked about the type of information needed to gain comprehensive understanding into the grow-ability of particular ethnic produce. A farmer noted that researchers seem to be very reactive, as they wait until the market comes to them. Rather, it would make more sense to try to identify new crops in advance and then work to develop a market for that. This perspective greatly contrasts the market-first approach that much of the literature on supply suggests and the view as supported by a representative from the Holland Marsh Growers Association that *“farmers are innovative. They are willing to try out new crops – provided they know that there is a market”*. It is uncertain whether farmers are willing to try out new crops without any growability information since it is erroneous to assume that farmers are a homogenous group. Once market demand information is ascertained, a few farmers might use this information to carry out “pet projects”. However, to encourage widespread adoption, detailed growability studies will need to be conducted once demand is ascertained.

When asked about the types of technological innovations that might be required to increase the level of ethnic produce in Ontario, the Transition Crops Specialist from OMAFRA suggested the

need for the development of Integrated Pest Management (IPM) schemes for most ethnic crops, since they are all ‘new crops’ and that IPM was the “biggest stumbling block towards increasing ethnic crop production”. The respondent also noted that new ways of harvesting might have to be developed for certain ethnic crops.

All respondents asked about investment for research and development indicated that there is not currently any dedicated financial assistance geared towards helping new farmers start growing ethnic crops or to help established farmers transition to growing ethnic crops. One farmer provided the example of the New Crop Development Fund, which was a trial program intended to help farmers with the costs associated with growing new crops. This fund, however, was not spread around to a large number of different farmers with unique projects, rather most of the money was given to the tobacco growers who were suffering from a slowing market. This respondent as well as a researcher from the University of Toronto and a representative from the Holland Marsh Growers Association suggested that funding is often very political and small growers do not have the same power to secure funding as larger co-operatives or organized growing associations.

Other issues of accessibility to funds were also mentioned. One respondent who works with farmers from the Holland Marsh Growers Association suggested that the process to apply for funding was seen as too complex and cumbersome by many farmers due to the lengthy requirements of the application package.

5.2.3 Recommendations

Based on key informant interviews, the following action items are recommended:

1. Funding for research similar to the Govindasamy et al. study conducted at Rutgers University

Many of the interview respondents were familiar with this study and due to its fairly comprehensive nature, most agreed that a similar study for the GGHR would be greatly beneficial. Once demand levels are quantified, production trials should be carried out similar to the Rutgers study. A cost estimate for the supply side of this study could not be obtained, but would be similar to the costs involved in production trials of new crops in general.

2. Work to improve communications between governments, farmers and researchers in order to direct research funding efficiently.

As mentioned earlier, the issue of a lack of communication amongst all stakeholders causing inefficiencies in funding mechanisms was raised by several respondents. This can be addressed by the provision of an 'ethnic food website' as will be detailed in Section 7.0 (Recommendation 1)

3. Create a dedicated financial aid program aimed at helping existing small to medium-sized farmers transition to new ethnic crops and new immigrant farmers start up ethnic crop farms

Both researchers and individual farmers looking at assessing the potential for ethnic crops require financial assistance, but currently the focus of funding is often on the research end with little support given to new farmers entering the business or established farmers looking to transition to ethnic crops.

5.3 Co-operatives

5.3.1 Background

The development of co-operatives for farmers is also an issue that should be considered. Even if farmers are able to access the types of information needed in producing their crops and getting them to retailers, the existence of some sort of network for farmers to work together can be extremely valuable. Sanderson & Fulton (2003) suggest that co-operatives can help farmers deal with the increased need to work within a vertically integrated agricultural supply chain. It is becoming more common for a single large farm to perform many of the functions within the supply chain, such as harvesting, packaging, and even processing. Farmers producing ethnic food, who currently tend to have small and medium sized farms, have a hard time competing with these producers but a collective can more easily perform all of these functions while achieving economies of scale. The authors point to new Canadian national certification and quality control specifications for classifying organic/non-organic and genetically modified crops that are placing heavier financial and administrative requirements on farmers, especially small and medium-sized growers. They also discuss the power co-operatives have when connecting

with buyers looking to deal with specialized products. This direct buyer-seller relationship is hard to develop if a single small producer cannot meet all of the needs of the buyer(s). The co-operative allows them to market themselves more effectively, based on their production volumes while at the same time, buyers can be more confident that their orders will be filled by the larger collective of growers.

An example of a successful co-operative is the Norfolk Fruit Growers Association (NFGA) in Ontario, which has been in existence for over a century and has achieved much success for its members. The function of the NFGA is:

“to continuously improve and maintain the quality and quantity of fruit and to create a more uniform system of packing, storing and marketing fruit on behalf of our member-growers.” (Norfolk Fruit Growers Association).

The NFGA (which currently does not have any farmers who participate in the ethnic food market) also has extensive and innovative facilities for the storage and packing of apples for its members (Ibid). It plays a significant role in conducting research work and then bringing this information back to the farmers, although at this point in time research is not focused on ethnic specialty crops (von Donkersgoed, 2008). These features bring benefits to NFGA members by enhancing the value-added components of the supply chain through economies of scale related to packing and storage as well as providing research support that can benefit the entire collective.. On the other hand, Klein et al. (1997) comment on how the “trend to fewer and larger farms may threaten the traditional co-operative membership base” as smaller producers are either being bought out by large operations or are simply expanding their own personal operations. These large farms are operating on a scale that makes it difficult for individual small and medium sized farms to compete with them. In the case of the NFGA, the whole group is not competing against one another to enhance their products; something that can result in the undercutting of prices. By working as a co-operative the NFGA achieves greater efficiencies in pricing through economies of scale due to increased crop volumes. They are working together to secure large contracts and negotiate prices that can compete with large operators. Co-operatives can also be

useful for managing financial risk since contracts and capital expenditures are shared among a broader membership (Klein et al., 1997; Sanderson & Fulton, 2003).

Due to the, often smaller, size of ethnic-focused farms in Ontario this co-operative model is useful to explore. The co-operative model may be a useful to connect new farmers looking to grow specialty crops, or just farmers exploring new crop production, in a way that will facilitate the development of a supply chain that is achieving greater economies of scale.

5.3.2 Findings

The research findings indicate that there are no co-operatives in Ontario that are dealing with ethnic produce specifically. When asked about the potential for ethnic crop-focused co-operatives, respondents had a diverse set of opinions. Three respondents felt that a traditional co-operative model would not be effective for ethnic food growers due to the short shelf-life of fresh produce. It was suggested that co-operatives for produce are less successful than for grains or livestock since these crops and animals can be stored in central locations for extended periods of time while large orders are being filled for contracts. It was also suggested that this might not work well because farmers are “inherently independent” and do not naturally come together to form business relationships. A respondent from the Holland Marsh Growers Association suggested that co-operatives can limit the entrepreneurial spirit of farming which might be detrimental for producers of ethnic crops since remaining on top of changing market demands and being able to come up with fresh, alternative business ideas is necessary for success. A local farmer said that growers might be more interested in joining a co-operative only once they could actually see a successful network in place. He felt that many growers need to see the working model in action before they will get involved themselves.

Arguing in favour of co-operatives, the respondent from NFVGA suggested that a scaled-down model that really only focused on the marketing side of the co-operative structure could be very useful in bringing together buyers and sellers, especially since the scale of ethnic farming is so small and producers are not all centrally located in one region of the Greenbelt. This type of agency could represent a group of farmers when negotiating contracts with buyers. Production would still be managed mostly individually but there would still be some production security for both buyers and sellers when fulfilling large contracts. Such a model also lends itself well to

online co-operative networks that plug buyers in to a group of producers, who may be scattered across a large region.

5.3.3 Recommendations

Recommendations involve exploring the potential for establishing an ethnic food growers' co-operative within the Greenbelt by taking the following two actions:

1. Identify farmers currently producing ethnic crops and conduct a survey designed to gauge the interest associated with co-operatives

A survey used for this exploratory study would have sections focused on: barriers small and medium-sized farmers encounter when looking for buyers; challenges associated with ethnic crop production, specifically looking at the value-added potential as seen by farmers in working within a co-operative model; and understanding the conditions that would make farmers want to get involved with an ethnic food co-operative. Analysis of this type of survey should provide insights into the feasibility of such a model with regards to ethnic crop production. This survey could be combined with the supply survey discussed in Section 4 (Supply, Recommendation 1).

2. Conduct further research into the feasibility of implementing a market-focused co-operative network

There are some co-operatives that have more of an online presence than a physical presence. The Equity Co-operative Livestock Sales Association (ECLSA, <http://www.equitycoop.com/>) is an example of an American co-operative model that makes use of the Internet for connecting buyers and sellers across large distances. This is a very large organization with a 10-member board of directors and over 375 full and part time employees working to serve the needs of the membership. The co-operative is funded by the membership. While this model is much larger than a Greenbelt-focused ethnic co-operative would likely be, it's online structure provides a clear picture of what a market-focused co-operative could look like. Ethnic crop producers could use this type of online model as a way to connect with diverse markets with minimal overhead. One main objective of the ECLSA is to maintain a semi-real time online database of members' available stocks for purchase so buyers can go to one online location to access products from

many regions. This style of selling would be useful since currently, ethnic producers are not necessarily located near to each other or to their buyers.

6 Barriers

6.1 Policy and Physical

6.1.1 Background

Previous research has collected information regarding barriers that farmers, consumers, and institutions may encounter when looking to grow the local ethnic food network (Mendez, 2008). General barriers were identified as being one of two types, institutional/policy and physical. Institutional barriers include limits on seed imports, fragmentation between government agencies and their policies towards farmers, restrictive financial aid requirements, and free trade policies that make it harder for small farms to compete in international markets. Physical barriers are mostly related to climate such as temperature and the short length of the growing season (Mendez, 2008; Mills, 2004; Urquhart, 2004).

While some of these barriers relate to farming in general, there are direct impacts on ethnic speciality crop production since these niche crops are not currently given as much attention through direct policy such as seed or pesticide considerations. The different needs of ethnic crops must be identified so policy can more directly address the obstacles to ethnic crop producers.

6.1.2 Findings

Most of the findings from the key informant interviews were consistent with findings identified in the literature. The barriers to ethnic crop production identified fall under two general categories, institutional/policy and physical.

Institutional/Policy Barriers

There were many policy issues that were identified as hindering the expansion of ethnic crops in the Greenbelt. One of the most challenging issues identified was the limits on seed imports. Even if farmers had decided to diversify into ethnic crops they may not be able to obtain the seeds required due to strict regulations in place to limit potentially invasive new species from

entering the country. Seed imports must pass inspection by the Canadian Food Inspection Agency Saskatoon Laboratory – Seed Science and Technology Section before they can be germinated. One academic said that “...*people have been growing that type of produce illegally. They go back home and they bring it back with them.*” Farmers are also required to register to grow new crops and one respondent saw this process as a “minefield” with respect to the details producers are required to submit for approval. There are also strict pesticide regulations in place. There are complex procedures in place for testing and approving pesticides and if a specific pesticide is only going to be used on small volumes of very specific ethnic crops it can be difficult for the chemicals to be approved in a timely fashion, if at all. Two informants indicated that many ethnic crops require specific pesticides whose use is banned in Canada.

On top of these regulations, policy is complicated due to differences that exist within the provincial and federal agricultural agencies. Six respondents felt that different rules and standards that exist between these two bodies make it very difficult for farmers to branch out into non-traditional crop production. One respondent from the City of Toronto stressed that there was too much focus in the government on rural issues rather than food issues. Both the provincial and federal level combine rural and agricultural issues into one ministry and this was seen as a problem due to the way resources were distributed between the rural and agricultural interests within each ministry. In this case, the respondents were discussing the fact that rural issues, such as infrastructure for small communities or supporting commodity crop producers, were given much more attention than the fact that production in rural areas is closely connected to urban spaces. It was suggested that, since agricultural issues affect both urban and rural inhabitants, that the current 80/20 rural/agriculture resource split in the ministries was not able to effectively address the relationship between urban demands and rural supply. There was the suggestion that the ministries operate in a heavily charged political environment; that if they were to adopt policies that were seen to favour urban food issues over rural production issues that they would be damaging themselves politically. One respondent felt that, “*OMAFRA is too big to realize what their needs really are. They are blind.*” Another informant felt that OMAFRA was simply “too reactive” which is not a helpful approach when you are looking at pushing alternative crop development.

Related to this was the general feeling that government agencies are really more in the business of helping prop up farmers rather than providing support to help them capitalize on emerging markets. A respondent from the George Morris Centre stated that the bureaucracy simply “*does not see the need to change.*” The open markets that come with agreements like NAFTA can make it very difficult for small to medium-sized farms to compete with imports of ethnic produce, primarily due to economies of scale. It was suggested that governments should focus less on keeping commodity markets competitive on a global scale and look to diversify crops at home for local markets first. There seemed to be a general consensus by the non-governmental respondents that, “*people [governments] do not seem to be grounded in what the [current food] issues are.*”

Physical

The physical barriers around ethnic crop production are not as limiting as they may initially seem. Ontario contains 52% of Canada’s class 1 (the highest class) soil, even though only 6.8% of the province is suitable for agriculture. The majority of this soil is located in the GGHR. (Caldwell & Hiltz, 2005). The soil in the Greenbelt is of high enough quality that almost any crop can be grown in the region. The restrictive physical attribute is the climate and length of growing season. It was suggested that ethnic crops from warmer climates can actually grow more productively within the peri-urban fringe since the temperature of the city significantly affects the growing season in the immediate periphery although it was unclear in the literature how accurate this impression is. It was also suggested that efforts be made to help farmers identify specific ethnic crops that are more suitable for growing within a certain distance of the city.

6.1.3 Recommendations

The main focus of these recommendations is to address the disconnect between farmers, government agencies, and local markets for ethnic food. These recommendations will be challenging to implement since the issues require shifts in the thinking and/or operations of government ministries.

1. Push to have urban ethnic food issues recognized as ‘valid’ in the eyes of rural agricultural ministries in order to encourage more funding for ethnic crop agricultural matters in general

A significant shift in mindset is required before the rural ministries will become more willing to address urban ethnic food issues with more energy than they are currently perceived to. Less focus should be placed on rural infrastructure issues and more on innovative speciality crop development in order to better serve the diverse food needs of the local, GGHR, population.

2. Provide alternate research groups with more policy-affecting power

There is also the fact that researchers do not have a lot of power to actually affect policy changes. It is recommended that research groups and other nongovernmental organisations dealing with ethnic market research and small and medium sized farms work more aggressively to have their ideas surrounding ethnic food seen as viable options for diversifying farm production and meeting the needs of an increasingly diverse GGHR population.

3. Lobby to have changes made to the seed import and pesticide approval processes.

Efforts should be made to increase the efficiency of the seed import process. With the current program, it can be very cost prohibitive for small producers to have new seeds approved. Studies should be done that examine international seed regulations and work to incorporate research that has already been completed in order to understand how new ethnic crop seeds could be integrated into Canadian agricultural production. Similarly, pesticide testing done in other countries could be used to approve limited use of new pesticides for ethnic crops. Since there would not be as widespread use of pesticides for ethnic crops, compared to commodity crops, this could be used as an initial step, and if production of a certain crop type reached a certain level, more Canadian testing could be used to assess pesticide safety.

7 Extension of Knowledge

7.1 Background

An extremely important issue in developing a framework that focuses on local ethnic food production is the extension and transfer of knowledge. This refers to strategies that maximize the transfer of data and knowledge to and between current and potential producers, distributors, processors, retailers, and consumers of ethnic food.

The importance of networking through sharing information, and explorations of different technologies and strategies that effectively transfer knowledge have been well documented in business-orientated research (Liebeskind, 1996; Grant, 1996). A number of private company reports identify effective knowledge transfer as not only having quantifiable economic benefits, but also longer term indirect benefits for those involved, including the development and improvement of social and cultural connectivity (Deloitte Report, 2007).

Researchers have broken the process of knowledge transfer into distinct stages that focus on knowledge: these include creation, sharing, evaluation, dissemination, and adoption (Levine and Gilbert, 1999). The experience from case studies where knowledge practices have not accomplished their objectives to manage and improve group knowledge has led to the identification of various barriers to effective knowledge transfer and information sharing. These barriers include using unsuitable/inappropriate methods of communicating information to a particular audience and the willingness of actors to share knowledge and information, which was found to be largely dependent on factors relating to the relationships between the actors in a knowledge-transfer process (Szulanski, 1996). A number of reports have focused on the additional difficulty associated with complex knowledge transfer, which is the knowledge and abilities that people accrue through experience (Lambe, 2004).

There is a general absence of literature that focuses specifically on effective knowledge-transfer methods in the agricultural industry. Potential knowledge transfers between the farming community, agricultural organizations, and prospective consumers can often be hindered by spatial disconnection and fragmentation. A number of studies have been carried out that examine different methods of transferring and spreading knowledge throughout the farming community

via web-based information-sharing systems (Jensen et al, 2000; Flores, 2003), however, no comprehensive model to maximise multiple communication and information sharing between food producers, food organizations, and ethnic communities exists.

Currently, there is no mechanism in place for coordinating the communication of local ethnic food issues and access in Toronto. OMAFRA was previously the central point of information sharing and knowledge extension for the farming community in Ontario. However, OMAFRA underwent restructuring in the late 1990's, which resulted in many cut-backs to their programs and services. This included the closure of OMAFRA's regional extension offices and consequent removal of a centralized point for knowledge extension for farmers throughout Ontario (Frakes, 2000). In the absence of OMAFRA, a number of organizations, such as Farmstart and Toronto Environmental Alliance have attempted to publish and disseminate piece-meal information to food growers and consumers throughout the province, with limited success. A comprehensive system of knowledge transfer is crucial to increase participation in local ethnic food production. A number of methods to communicate information need to be developed to address this current shortcoming.

7.2 Findings

Key informants from both Holland Marsh Growers Association and from FarmStart confirmed that current methods of communication about ethnic food to the farming community is insufficient, and acts as a major barrier to sharing knowledge and participating effectively in the production of local ethnic food. A local farmer, and interviewees from FarmStart and OMAFRA identified the internet as a major method currently used to communicate information on ethnic food to current and potential future ethnic food producers. However, it was also pointed out that no centralized site exists that pools resources and information. The appropriateness of using the internet as a major method of sharing information throughout the farming community was questioned by many interviewees, who voiced concerns about the accessibility of such a method for older farmers with limited knowledge or interest in computer technology. A respondent from FarmStart stated that farming organizations have listserves to share publications and reports on ethnic food issues, but that the farming community generally has no access to this. The respondent also acknowledged that universities have partnered with farmers and farming

associations for research purposes in the past, which can result in research outcomes and information on ethnic food reaching some members of the farming community, but that no proper information dissemination channels exist between researchers and the farming community to ensure widespread distribution of knowledge. Respondents from George Morris Centre and from the Holland Marsh Growers Association mentioned the need for face-to-face communication of knowledge and information between farming organizations, crop researchers and the farming community. However, no interviewees suggested how could be achieved.

Directions for future research and action suggested by interviewees include the need to increase understanding as to how to collect and spread knowledge about ethnic food production effectively, a need to increase and diversify methods used to share ethnic food information between farmers, researchers and organizations, and a need for an overarching agency to manage ethnic food knowledge and to actively encourage and recruit farmers into production. Current communication gaps and shortcomings identified in interviews, and suggestions made in interviews for future advancement in ethnic food knowledge-transfer has been used to create a number of recommendations that will improve and develop communication and transfer-of-knowledge in this field.

7.3 Recommendations

The first step to developing effective information-sharing methods for disseminating information and knowledge through the farming community is to identify the most successful methods of communicating information to potential producers and consumers of ethnic food. Although, as pointed out by our key informants, sharing information through the internet may not be accessible to all members of the farming community, it may be combined with other methods to provide information sharing, community connection and an increase in the participation of ethnic food production. Specific examples of information sharing mechanisms that are worth exploring are described below:

1. A centralized internet website specifically for ethnic food

Currently, no such website exists in Ontario. Instead, information and research on ethnic food is spread across a number of organization websites. The development of a centralized ethnic food

website would allow the internet-using farming community quick and easy access to basic information about ethnic food. It would also allow farmers interested in ethnic food production to connect to others who have experience and knowledge and to connect to potential funding opportunities for ethnic food production. A basic ethnic food website could potentially include

- General information on ethnic food produce, on the growability of produce in Ontario, and online purchasing of seeds
- current update reports and research reports on ethnic food production
- upcoming event listings and registration forms – of workshops and information sessions
- listings and contact details of organizations and farming community groups involved in ethnic food production who are willing to share information
- links to funding sources for equipment/training

2. An ethnic food newsletter for the farming community

To ensure that members of the farming community with little/no access to the internet can also access information on ethnic food, an ethnic food newsletter could replicate internet information, disseminating information to farmers about ethnic food, relaying experiences that farmers have had with ethnic food production and creating and increasing awareness about upcoming workshops and information sessions on ethnic food. Registration forms for upcoming events could be included in this publication. This newsletter could be published on a quarterly basis to ensure that included information is up to date and could be disseminated through a number of channels. These would include:

- Mailing out newsletters to farmers registered with farming community groups and farming organizations willing to participate
- Handing out newsletters at farmers markets and farming related events
- Dropping off newsletters in rural community stores, at farmers credit unions, drop-in organizations etc.

3. Farmer-led group discussions and workshops on ethnic food

Web-based and printed documents about ethnic food production are good methods to introduce farmers to the potential for farming ethnic food in Ontario. However, regular group meetings

and workshops on ethnic food are essential for face-to-face contact between those involved with ethnic food, and those with an interest in ethnic food production. A number of interviewees who participated in this research stated that information seminars run by academic researchers and organizations have limited impact on farmers who may be suspicious of the reliability of research outcomes and information sources. Informants explained that farmers are more likely to trust other farmers who have direct farming experience with ethnic food. Therefore, ethnic food workshops and information sessions would need to include a new format to maximize potential impact on attendees. This new format would focus on farmer-led sessions and workshops with the aim of connecting farmers involved in ethnic food production with farmers who have an interest in its potential. Sessions could be facilitated by an established team of organizers, but would focus on farmers' experiences of and knowledge on ethnic farming – these sessions would be led by the farmers themselves. This could result in more trust in information on ethnic food shared between farmers, and could encourage connections and exchanges between members of the farming community with an interest in ethnic food beyond workshops and group discussions.

Essential features of such workshops and group discussions would include:

- Establishing a team of organizers to plan and facilitate workshops and information sessions
- Sourcing a panel of farmers involved in ethnic food production who are willing to participate and share the knowledge and experiences. Financial compensation would most likely be necessary.
- Advertising workshops and sessions on the internet and in newsletters to farmers. A fee for attendance could apply to cover costs.

4. A Mentor Program for Ethnic Food Farmers

One way to increase knowledge transfer between ethnic farmers and farmers with an interest in ethnic crops would be to establish a mentor program for ethnic food. Mentor-programs are a popular strategy used in the business world to transfer knowledge from employees with experience to junior employees. This could easily be adapted and applied to transfer knowledge about ethnic food throughout the farming community. A number of steps would need to be taken

to establish an ethnic food mentor program in the Greater Golden Horseshoe. These would include:

- Establishing a team of organizers to plan and facilitate the mentor program
- Establishing the aims of the program and the different formats that the program will take.
- Contacting and recruiting farmers involved in ethnic food production.
- Training and financial compensation may be required, depending on the aims and intensity of the program
- Recruiting farmers who have an interest in hands-on learning about ethnic food. These farmers may be recruited through workshops, over the internet and by mailout.
- Pairing mentors and mentee farmers together. Organizing an initial meeting session between mentors and mentees and introducing them to the program

5. Ethnic food farm visits

Many interviewees stated that although crop-trials on ethnic food are being carried out throughout the province, successful outcome information rarely reaches farmers in effective ways. Interviewees stressed the importance of showing farmers visible results of ethnic farming to persuade farmers to produce ethnic food. The establishment of crop-trial farm visits could encourage interested farmers to grow ethnic crops. This would involve establishing farm visits for farmers to experience ethnic food production first-hand. Monthly farm visits to crop-trial farms could be advertised to farmers on the internet, through newsletters, and at workshops and information sessions, to offer them the opportunity to see what and how ethnic food can be successfully grown in the Greater Golden Horseshoe. These visits could be incorporated as parts of workshop sessions. They would connect farmers directly to research experiments and may result in them developing trust in research outcomes.

These five recommendations to develop and improve communication methods are crucial to creating an interest and increasing participation in ethnic food production in the Greater Golden Horseshoe. Without using multiple communication methods that focus on connecting people together, many members of the diverse farming community in Ontario will not have access to the

information they need to make an informed decision as to whether or not ethnic food production is a viable and profitable option.

8 Conclusion

This report has identified multiple areas of focus that must be addressed to ensure that ethnic food production can develop and thrive throughout Toronto's Greenbelt. A summary of all the recommendations and their respective costs and implementation time can be found in matrix form in Appendix C. Accurate understanding of the current demand for local ethnic food, along with a comprehensive understanding of the current production and supply of local ethnic food are highlighted in this study as crucial factors in understanding the future potential of locally grown ethnic crops. This study also highlights the need for the development of information and knowledge sharing to and within the farming community on ethnic food issues, and recognizes the institutional and policy barriers that may hinder its development, offering strategies to address these.

While it is recognized that all of these areas of focus are relevant to the development of a comprehensive local ethnic food system within the Greenbelt, some recommendations made in this report are of particular significance to the advancement of local ethnic food production.

1. The need for demand and supply surveys to be conducted, and
2. the need for communication networks between farmers to be developed

These are the most important next steps that must be taken to maximize the likelihood of future local ethnic food production to satisfy a market in the Greater Golden Horseshoe Region. This report outlines and highlights the essential actions that must take place to carry these out.

References

- Agricultural Adaptation Council Homepage*. Accessed 8 October 2008.
<http://www.adaptcouncil.org/>
- Argote, L. (1999), *Organizational Learning: Creating, Retaining and Transferring Knowledge*, Kluwer, Boston, MA
- Brown, C., Miller, S., Boone, D., Gartin, S., McConnell, T., (2006). The Importance of Farmer's Markets for West Virginia's Direct Marketers. *Renewable Agriculture and Food Systems*. 22(1): 20-29
- Caldwell, W. & S. Hilt. (2005) Farmland preservation: Innovative approaches in Ontario. *Journal of Soil and Water Conservation* 60(3): 66-69A.
- Coupe, K. (1996). A Fine Line. *Progressive Grocer* 75(5): 211
- Deloitte. 2007. *The Business Case for Knowledge Transfer*, Prepared for the Business, Industry and Higher Education Collaboration Council, Canberra.
- Donald, B., Blay-Palmer, A. (2006). The Urban Creative Food Economy: Producing food for the urban elite, or social inclusion opportunity. *Environment and Planning* 38: 1901-1920
- Equity Cooperative Livestock Sales Association Homepage*. Accessed 10 November 2008.
<http://www.equitycoop.com/>
- Farmer's Markets Ontario Homepage*. Accessed 12 October 2008.
www.farmersmarketsontario.com
- FarmStart*. Accessed 1 November 2008. <http://www.farmstart.ca/>
- Flores, A. 2003. Speeding up data delivery for precision agriculture, *Agric. Res. Mag.: The United State Department of Agriculture (USDA)* 51(6), p. 17.
- Fonsah, E.G. 2006. Traceability: Formulation and Implementation of an Economic Efficient System in the Fruit and Vegetable Industry. *Choices* 21(4):243-248.
- Frakes, T. 2000. Cuts to OMAFRA Advisory/Technology Transfer Services. *Memorandum to OMAFRA Board of Directors*. Accessed 1 November 2008. www.ofa.on.ca/policyissues/issues/OMAFRA%20Changes.pdf
- Fung, F. & T. Conway. (2007) Greenbelts as an environmental planning tool: A case study of Southern Ontario, Canada. *Journal of Environmental Policy & Planning* 9(2): 101-117.

- Govindasamy, R., Nemana, A., Puduri, V., Pappas, K., (2006). Ethnic Produce Marketing in the Mid-Atlantic States: Consumer Shopping Patterns and Willingness To Pay Analysis. *Choices* 21(4): 237-242
- Grant, R. (1996) Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organizational Science* 7(4): 375-387.
- Halweil, B. (2002) *Home Grown: The case for local food in a global market*. World Watch Institute: Stanford.
- Hayden, F.G., D.C. Kruse & S.C. Williams. (1985) Industrial Policy at the State Level in the United States. *Journal of Economic Issues* 19(2): 383-396
- Intervale Centre. Accessed 1 November 2008. <http://www.intervale.org/>
- Jensen, A. et al. 2000. PI@ntelinfo: a web-based system for personalized decision support in crop management. *Comput. Elect. Agric.*, 25(1): 271-293.
- Jonsson, I., Hallberg, L., Gustafsson, I., (2002). Cultural Foodways in Sweden: Repeated Focus Group Interviews with Somalian Women. *International Journal of Consumer Studies* 26(4): 328-339.
- Klein, K., T. Richards & A. Walburger. (1997). Determinants of co-operative patronage in Alberta. *Canadian Journal of Agricultural Economics* 45: 93-110.
- Lambe. 2004. *Practical Techniques for Knowledge Transfer: A Case Study*,
- Levine, D. and A. Gilbert. *Managerial Practices Underlying One Piece of the Learning Organization*, Univeristy of California, Berkley.
- Liebeskind, J. (1996) Knowledge, strategy and the theory of the firm. *Strategic Management Journal* 17: 77-91.
- Mangan, F. (2002). Producing and Marketing Vegetable Crops for Ethnic Markets. *UMass Vegetable Notes*, 13(1), 1-6. Available online: http://www.worldcrops.org/documents/vegnotes_jan_02.pdf
- Mills, A. (2004) In the greenbelt, a bitter harvest. *Toronto Star*. 25 November 2004.
- Ontario Fruit and Vegetable Growers' Association (via SOS Cuisine). Local Products Ontario (Farmer's Markets & Supermarkets) Availability Guide. Accessed 11 October 2008. http://www.soscuisine.com/local_products_availability_table.php?sos_l=en&sos_r=CA-ON&territory_code=ONTARIO_1,

- Ontario. Ontario Ministry of Agricultural Foods and Rural Affairs. Area, Production and Farm Value of Specified Commercial Vegetable Crops, Ontario, 2007. Accessed 2 October 2008. http://www.omafra.gov.on.ca/english/stats/hort/veg_m07.htm
- Ontario. Ontario Ministry of Agricultural Foods and Rural Affairs. Foodland Ontario Vegetable Availability Guide. Accessed 10 October 2008. <http://www.foodland.gov.on.ca/availabilityv.htm>
- Mendez, M. (2008) Local production of ethnic food. Is this a viable alternative to strengthen the connection between farmers and food processors of the GTA? *Unpublished Current Issues Paper*. Department of Geography & Program in Planning, University of Toronto.
- Mussel, A. *George Morris Centre*. 29 October 2008.
- New Jersey. Department of Agricultural Food and Resource Economics. Survey Methods and Identification of Ethnic Crops for the East Coast in the USA: A Procedural Synopsis. By Govindasamy, R., R. VanVranken, W. Sciarappa, A. Ayeni, V. Puduri, K. Pappas, J. Simon, F. Mangan, M. Lamberts, G. McAvoy. May 2007.
- Nelson, R.R., Winter, S.G. (1982), *An Evolutionary Theory of Economic Change*, Harvard Business School Press, Boston, MA, .
- Norfolk Fruit Growers Association. Accessed 8 October 2008. <http://www.nfga.ca/>
- Pretty, J. (2005) *Regenerating Agriculture: Policies and Practice for Sustainability and Self-Reliance*. Joseph Henry Press: London.
- Sanderson, K. & M. Fulton (2003) *Producer Adaptation to the New Agriculture: Application of the Co-operative Model to Changes in Market Specifications, Regulation and Service Acces*. Prepared for: Canadian Co-operative Association. University of Saskatchewan.
- Statistics Canada. 2006. *Canada's Ethnocultural Mosaic 2006 Census: Major Census Metropolitan Area*. Statistics Canada Catalogue no. 96F0030XIE2001002. Ottawa. July 16. Analysis Series, 2006 Census. <http://www12.statcan.ca/english/census06/analysis/ethnicorigin/toronto.cfm> (accessed October 16 2008)
- Szulanski, G. 1996. Exploring Internal Stickiness: Impediments To The Transfer of Best Practice Within the Firm. *Strategic Management Journal*. 17(1): 27-44.
- Toronto. Friends of the Greenbelt Foundation Occasional Paper Series. Planting the First Seed: Creating Opportunities for Ethnic Farmers and Young Farmers in the Greenbelt. By Mitchell, P., S. Hilt, J. Asselin, B. Mausberg. July 2007.

- Toronto. Friends of the Greenbelt Foundation Occasional Paper Series. The Holland Marsh: Challenges and Opportunities in the Greenbelt. By Bartram, J., S. Lloyd Swail, B. Mausberg. April 2007.
- Toronto. Toronto Environmental Alliance. Use and Buying Preferences of Produce By Asian Communities in Toronto: Survey Conducted with Chinese and South Asian Residents. By Serugendo, A. & K. Howe. (no date)
- Uphoff, N. (2002) *Agroecological Innovations* Earthscan: London.
- Urquhart, I. (2004) Opposition to Greenbelt Plan Grows. *Toronto Star*. 8 November 2004.
- von Donkersgoed, E. *Greater Toronto Area Agricultural Action Committee*. 8 October 2008.
- Wolfson, M. Creating an Infrastructure to Enhance Ethnic Food Processing and New Crop Production. Presentation, Growing International Conference, Toronto Follow-Up. November 28, 2007.
- Wright, L., Nancarrow, C., Kwok, P. (2001). Food Taste Preferences and Cultural Influences on Consumption. *British Food Journal* 103(5): 348-357

APPENDIX A

Key Informant List

Informant	Affiliation	Area of Expertise			
		Supply	Demand	Institutional Opportunities /Barriers	Extension of Knowledge
Jamie Reaume	Holland Marsh Growers' Association	x		x	x
Michael Wolfson	City of Toronto, Food & Beverage Specialist			x	x
Malena Mendez	MScPI			x	x
Shauna Bloom	University of Guelph	x	x	x	
Al Mussell	George Morris Centre		x	x	x
Filip Hadrer	Former FarmStart employee		x		x
Phil Mathewson	local farmer	x		x	x
George Schrijver	WCM Consulting	x	x		
Martin Gooch	George Morris Centre	x		x	x
Jim Todd	OMAFRA, transition crop specialist	x		x	x
Asumani Serugendo	Toronto Environmental Alliance		x		
Tom O'Neill	Norfolk Growers' Association			x	
William Sciarappa	Rutger's University	x	x	x	
Mike Shriener	LocalFoodPlus		x		
Christie Young	Director, FarmStart	x	x		
anonymous		x	x		x
Sridharan Sethuratnam	FarmStart, University of Guelph	x			

APPENDIX B

Questions addressed by the Rutgers study (2006 & 2007):

1) Greatest potential for local crop production:

Average weekly expenditures on ethnic produce by each community were documented. Specific expenditure data was collected for thirteen ethnic produce items for each respective ethnic group. The crops of interest were selected based upon their potential for production in the Mid-Atlantic states and larger Northeast region, with specific consideration for the growing cycle of specialty crops and their conduciveness to the climatic patterns in the area. The top 5 produce items demanded were then ranked on the basis of expenditure.

2) Understanding their shopping patterns:

Respondents were asked how often they shopped for ethnic produce as well as to list the establishments they frequented the most.

3) Willingness to pay (WTP) a price premium:

A WTP variable is modeled against relevant consumer 'belief' and related practice variables, demographic variables (age, gender, number of adults in the household, education, income, number of years in the United States), and fixed effects for the states and ethnicities (dummy variables).

APPENDIX C

