

**Identifying Farm Barriers to Wholesale Distribution of Fresh Produce
To Inner-City Corner Stores
FY 2011**

Healthy corner store initiatives have increased in popularity across cities in the United States over the last decade. The primary focus of these programs is to increase access to healthy food for low-income urban residents. Many of these programs have a secondary goal of increasing sales opportunities for local farms. This study focused on the second goal and explored barriers to wholesale distribution of produce to corner stores in Massachusetts. To do so the study incorporated interviews with corner store program coordinators, surveys with corner store shoppers and local farmers, and a comparison of produce prices between corner stores and full-service supermarkets. The study found that nine out of ten of the most commonly purchased fruits and vegetables were available at corner stores and the price competitiveness varied by item. From the program management perspective delivery of products, seasonal limitations on product availability and program profitability were the largest challenges. For farmers the time and cost of delivery was the largest barrier to working with corner stores. Farmers also found the low and inconsistent order volume to be a significant challenge. To address these challenges the researchers recommend that local purchasing focuses on a small number of items that are in demand by clients and have a long shelf life. Additionally, the researchers recommend aggregating orders from corner stores so that collectively they can reach an economy of scale that brings down the per-unit price while still offering farmers a meaningful profit.

FINAL REPORT

Contacts:

Jennifer Obadia, PhD
Food Systems Consultant
Tufts University
Jennifer.obadia@tufts.edu

Sarah Ryan
Program Coordinator
Massachusetts Dept. of Agricultural Resources
Sarah.ryan@state.ma.us

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

March 2014

Financial support provided by:

United States Department of Agriculture
Federal-State Marketing Improvement Program

Submitted by:

The Massachusetts Department of Agricultural Resources

Contacts:

Jennifer Obadia, PhD
Food Systems Consultant
150 Harrison Ave.
Boston, MA 02111
Jennifer.obadia@tufts.edu

Sarah Ryan
Program Coordinator
Massachusetts Department of Agricultural Resources
251 Causeway Street, Suite 500
Boston, MA 02114
Sarah.ryan@state.ma.us

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Table of Contents

Abstract.....	3
Introduction	4
Overview of Healthy Corner Store Initiatives in the United States	4
<i>Barriers and Lessons Learned from Corner Store Interventions</i>	6
<i>Farm to Corner Store</i>	7
Study Purpose and Rationale.....	8
<i>Study Rationale</i>	9
Study Approach.....	10
<i>Project Manager Interviews</i>	10
<i>Farmer Surveys</i>	11
<i>WIC surveys</i>	11
<i>Price Comparison</i>	12
Findings	13
<i>Healthy on the Block Project Overview</i>	13
<i>Barriers to Farm-to-Store Sales</i>	15
<i>Cost Competitiveness of Produce at Corner Stores</i>	19
Discussion and Recommendations	20
Conclusion.....	21
References	23
Appendices.....	25
<i>Appendix I. Farmer Survey</i>	25
<i>Appendix II. Follow-up Farmer Survey</i>	28
<i>Appendix III. WIC Survey</i>	29
<i>Appendix IV. Program Manager Interview Questions</i>	32

Tables

Table 1. Reasons Wholesale Produce Growers Do NOT Sell to Corner Stores.....	16
Table 2. Challenges for Wholesale Produce Growers Who DO Sell to Corner Stores.....	17
Table 3. Perception of Fresh Produce at Corner Stores by WIC Participants.....	18
Table 4. Prices for Popular Fruits and Vegetables at Supermarkets and Corner Stores.....	19

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Abstract

Healthy corner store initiatives have increased in popularity across cities in the United States over the last decade. The primary focus of these programs is to increase access to healthy food for low-income urban residents. Many of these programs have a secondary goal of increasing sales opportunities for local farms. This study focused on the second goal and explored barriers to wholesale distribution of produce to corner stores in Massachusetts. To do so the study incorporated interviews with corner store program coordinators, surveys with corner store shoppers and local farmers, and a comparison of produce prices between corner stores and full-service supermarkets. The study found that nine out of ten of the most commonly purchased fruits and vegetables were available at corner stores and the price competitiveness varied by item. From the program management perspective delivery of products, seasonal limitations on product availability and program profitability were the largest challenges. For farmers the time and cost of delivery was the largest barrier to working with corner stores. Farmers also found the low and inconsistent order volume to be a significant challenge. To address these challenges the researchers recommend that local purchasing focuses on a small number of items that are in demand by clients and have a long shelf life. Additionally, the researchers recommend aggregating orders from corner stores so that collectively they can reach an economy of scale that brings down the per-unit price while still offering farmers a meaningful profit.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Introduction

Healthy corner store programs have been implemented in numerous cities across the United States over the last decade. The primary focus of these programs has been to increase access to healthy food for low-income individuals. A secondary goal of some of corner store programs has been to increase access to local produce, which is hypothesized to be advantageous for both consumers and farmers. In Boston, Healthy on the Block (HoB), the local corner store initiative, began in 2008. Similar to other corner store programs, the primary goal was to increase access to healthy foods for low-income residents. However, the project included a farm-to-store component to increase sales of local produce at corner stores. This study looked at the potential of farm-to-store efforts to increase sales options for mid-sized farmers in Massachusetts and identified barriers to these efforts.

Overview of Healthy Corner Store Initiatives in the United States

Most households in the United States conduct their primary food shopping at full-service supermarkets. One study of Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) households found that 93% of all households conducted their primary food shopping at supermarkets (Rose and Richards, 2004). Despite the high use of full-service supermarkets for primary shopping, low-income households often face challenges in accessing affordable, nutritious food. One study found that low-income zip codes have 25% fewer full-service supermarkets when compared with middle-income zip codes (Bell et al, 2013). Furthermore, a U.S. Department of Agriculture study found that

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

prices are typically higher at supermarkets in low-income urban neighborhoods (Kaufman et al, 1997).

Difficulty traveling to full-service supermarkets leads many low-income households to use neighborhood grocery and corner stores for “fill-in” shopping (Bodor, et al, 2010). These “fill-in” trips are smaller shopping trips for staple products such as bread and milk. A study from New Orleans found that residents conducted these shopping trips at corner stores an average of 12 times a month (Bodor et al, 2010). The primary reason provided for the frequent use of these stores was their proximity to home. Given the prevalent role of corner stores in the food purchasing behavior of low-income urban households they are a logical target for healthy food interventions.

In addition to purchases by heads of households, researchers in Baltimore and Philadelphia have found that elementary- and middle-school students purchase snacks at corner stores both before and after school with great frequency (Gittelsohn et al, 2013 and Borradaile et al, 2009). Furthermore, Philadelphia researchers found that the snacks purchased at corner stores make a significant contribution to the caloric intake of the youth (Borradaile et al, 2009). This finding provides additional incentive to use corner stores for healthy eating interventions targeted at vulnerable youth.

Despite the prevalence of corner stores in the urban environment, they are less likely to stock healthful food options (whole grain products, low-fat dairy and produce) than full-service supermarkets (Gittelsohn et al, 2010; Laska et al, 2009; and Larson et al, 2009).

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

This lack of healthy food options makes it difficult to promote sound diets in many low-income urban neighborhoods, providing yet another reason corner stores are prime locations for public health interventions.

Barriers and Lessons Learned from Corner Store Interventions

Given the numerous reasons for using corner stores as healthy food retail outlets multiple cities across the country have attempted to develop healthy corner store initiatives. These programs have run into a variety of challenges including the need for improved infrastructure, limited produce handling knowledge, linguistic and cultural barriers, and small profit margins for store owners.

Training and education about produce handling and inadequate infrastructure were the two most common barriers for corner store programs. Many stores had limited refrigerated space and needed new or expanded refrigeration to carry a larger selection of fresh produce and other healthy food items (Song et al, 2009 and Sandoval et al, 2012). Additionally, most store owners did not have sufficient knowledge about how to handle fresh produce, which often led to spoilage and profit loss. To address this issue many programs offered training to store owners about how to select and store produce (Gittelsohn et al, 2012).

In many communities corner store owners were of a different ethnic group than their customers. For example, in Baltimore the majority of store owners were Korean while the majority of their customers were African American. These ethnic differences caused

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

linguistic and cultural barriers that needed to be addressed in order for stores to provide the appropriate products and educational materials to encourage their customers to purchase more healthful items (Song et al, 2011).

Another common challenge for corner store programs was the thin profit margin associated with healthy products, particularly fresh produce. The wholesale prices for these items were typically higher than for the less healthful alternatives. However, to encourage customers to purchase these items they had to be sold at competitive rates. The desire to keep the retail price low combined with high wholesale cost left store owners with little room for profit. As several studies reported, the financial feasibility of these initiatives is critical for success (Bodor et al, 2010).

Farm to Corner Store

All of the corner store initiatives found in the peer-reviewed literature incorporated the addition of fresh produce to the inventory of participating stores. However, sourcing of these items was only discussed in the grey literature from The Food Trust in Philadelphia and the New York City Department of Health and Mental Hygiene.

A report by The Food Trust discussed sourcing of fresh produce for the Healthy Corner Store initiative in Philadelphia (Sandoval et al, 2012). The Food Trust manages the program in a network of 600 corner stores. To participate in the program, each store stocked a minimum of two new items from each of the following categories: fresh fruits and vegetables, low-fat dairy, lean meats and whole grains.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

The Food Trust assisted stores in identifying sources of fresh produce and other healthy items, without a focus on local products. They identified 18 suppliers and distributors who offered the desired products and connected store owners with these companies (Sandoval et al, 2012).

In New York City the Department of Health and Mental Hygiene (DoHMH) operated the Healthy Bodegas Initiative in over 1,000 corner stores, known as bodegas in NYC. The DoHMH aimed to improve the availability of healthy food options in corner stores located near schools, WIC offices and day care centers. The Healthy Bodega Initiative included a farm-to-bodega component that directly connected stores with area farmers through neighborhood farmers markets (DoHMH, 2010). However, much of the produce sold at corner stores was procured independently by individual stores from both local and non-local sources. The DoHMH (2010) report states that store owners were pleased by the longer shelf life of local produce and the customer interest. However, the DoHMH was clear that they did not have the capacity to manage the relationships between stores and farmers or distributors.

Study Purpose and Rationale

The purpose of this research was to evaluate the use of corner stores as a sales outlet for Massachusetts farmers. The study explored three questions:

1. What are the barriers for local farmers to sell fresh fruits and vegetables at corner stores?

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

2. What types of fruits and vegetables are customers most likely to purchase at corner stores?
3. Is the price of fruits and vegetables a barrier to purchasing produce at corner stores?

Study Rationale

Mid-sized farmers are uniquely vulnerable in today's market. They are too small to produce under contract for major agribusiness or to compete in commodity markets. At the same time they are too large to take full advantage of direct sales opportunities that have revitalized many smaller farmers (Kirschenmann et al, 2004 and Stevenson, 2009).

Polarization of the marketplace has made it difficult for mid-sized farms to create a niche for themselves. However, their size can provide a competitive advantage in some instances. Farms of the middle have the capacity to produce in larger quantities than small-scale farms enabling them to provide fresh produce on a reliable basis (Hoshide, 2007). Additionally, mid-sized producers maintain flexibility in their production systems. Compared to larger farms, they retain the ability to react to changing customer demand and provide a diversity of products to retail outlets (Kirschenmann et al, 2004).

Public health officials and community activists have aimed to increase the amount of produce available at corner stores in low-income urban areas. They view this as a health intervention to improve the diet of low-income, urban residents. If they are successful in

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

creating an increase in demand for fresh produce, corner stores may represent a market opportunity for mid-sized growers who can supply produce for these stores.

In 2011, Boston had 265 corner stores (US Census Bureau), 17 of which participated in health corner store initiatives. These stores represent a unique business opportunity for farmers across the Commonwealth. However, to date few local farms have developed relationships with corner stores and little research has been conducted to assist in the advancement of this farm-to-store relationship. This research aimed to address this gap by exploring barriers to direct sales of farmers to corner stores in Boston.

Study Approach

Researchers took a multi-pronged approach to this study to ensure that the perspective of stores, farmers and customers were captured. Interviews with program managers were conducted to capture the management and implementation perspective. Farmers' views were captured through surveys. Surveys with Special Supplemental Nutrition Program for Women, Infants and Children (WIC) participants were used to capture the customer point-of-view. Finally, price observations were conducted to determine whether produce at corner stores was competitive with that at full-service supermarkets.

Project Manager Interviews

Interviews were conducted with all individuals responsible for managing the Healthy on the Block program in Boston. This included the city-wide program manager housed at the Boston Public Health Commission and a neighborhood manager from East Boston,

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Mattapan and Dorchester; the three neighborhoods in which the program was implemented. The purpose of these interviews was to understand the scope of the program and any challenges that arose in implementation.

Farmer Surveys

The Massachusetts Department of Agricultural Resources (MDAR) sent surveys to 675 produce growers in the Commonwealth of which 265 responded (39%). Surveys inquired about the types of products produced, sales outlets for fruits and vegetables, experience with small groceries and corner stores, and challenges to selling direct to corner stores. A second follow-up survey was conducted with farmers who sell to corner stores to gather more in-depth information. Surveys were sent via email to 47 farmers and 15 responded (32%).

WIC surveys

Surveys were implemented at three Boston-based WIC offices. The WIC population was targeted to understand the types of produce they might purchase at corner stores, since WIC certified corner stores are required to carry at least one fresh fruit and one fresh vegetable (MA Health and Human Services). Given this mandatory minimum stocking requirement certified corner stores have the opportunity to capture a greater portion of WIC checks by offering affordable, high quality produce.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

WIC surveys captured information about the frequency with which participants shopped at corner stores, whether they purchased produce at corner stores and why or why not.

Information about the types of fruits and vegetables typically purchased was also collected.

Sixty-four surveys (response rate of 85%) were completed at three offices in the neighborhoods of Mattapan and Dorchester.

Price Comparison

Higher prices at corner stores are often cited as a reason for low-income residents not to purchase more produce at these outlets (Larson et al, 2009). Therefore, a comparison of prices for fruits and vegetables at corner stores and area full-service supermarkets was conducted.

A list of ten fruits and vegetables¹ was developed based on the products most commonly purchased by WIC participants. Prices for these products were collected from 11 corner stores and three supermarkets in the Boston neighborhoods of Mattapan, Dorchester and East Boston. These neighborhoods were selected because of their participation in the Healthy on the Block program. When more than one of a given item was available, the least expensive option was captured. Prices were captured in all stores on two separate occasions in the spring of 2013. The two prices were averaged to provide a single price point for each item.

¹ The top ten fruits and vegetables desired by WIC participants are bananas, apples, oranges, carrots, tomatoes, lettuce, onions, broccoli, potatoes, and pineapple.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Findings

Healthy on the Block Project Overview

Healthy on the Block was a project of the Boston Public Health Commission (BPHC) funded through a three-year (2008-2011) Strategic Alliance for Health grant from Centers for Disease Control and Prevention (CDC). The program was implemented in the Boston neighborhoods of Mattapan and East Boston. Additionally, BPHC staff provided technical assistance to the Bowdoin Street Health Center for implementation of a similar healthy corner store initiative in the Bowdoin-Geneva neighborhood of Dorchester.

In order to recruit corner stores for participation in the HoB program community groups reached out to store owners to gauge their level of interest. In Mattapan, the primary community group was the Mattapan Food and Fitness Coalition; in East Boston the primary organization was the East Boston Neighborhood Health Center. A total of 17 stores were enrolled in the program; four in Mattapan, eight in East Boston and five in Dorchester.

Participating stores were required to meet basic criteria established by the BPHC and community organizations. Stocking requirements included at least \$20 of fresh fruit, at least \$20 of fresh vegetables, whole grain cereal, whole grain bread, and brown rice.

Additionally, the stores had to display marketing materials provided by BPHC, label and promote healthier items, and engage the community about healthy food options.

Community engagement ranged from cooking demonstrations and taste tests to recipe cards.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Healthy on the Block stores received materials and technical assistance from BPHC and the supporting community-based organizations. Materials included in-store displays, posters and other promotional items. Technical assistance included training on store layout, product placement and produce handling. Stores also received shelving and baskets for display of healthier food options, including fresh produce. Sufficient funding was not available to provide refrigeration for the stores.

A subcomponent of the Healthy on the Block program included a seasonal farm-to-store project, which was implemented in a slightly different manner in each neighborhood. The season ranged from a maximum of 18 weeks to a minimum of six weeks depending on the neighborhood and year.

In Mattapan a single farmer was connected with the corner stores. The farmer delivered a small number of products (kale, carrots and scallions) directly to the stores. In East Boston a youth program was used to connect farmers to the corner stores. Produce was delivered to the Neighborhood Health Center and high school students hand delivered produce to each of the participating stores. In Dorchester, stores were provided with a list of available produce and were asked to place their orders a week in advance of delivery. Produce was made available through farmers who sold at the Health Center farmers market. Farmers brought the produce to the Health Center on market day and health center staff delivered the produce to the corner stores. Dorchester offered 15 products to the corner stores, the most extensive variety of the three neighborhoods.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Barriers to Farm-to-Store Sales

Interviews with program managers highlighted a variety of challenges to providing stores with produce direct from area farmers. From the program management perspective one of the largest challenges was delivery of produce. In two of the three neighborhoods, the program managers were personally responsible for delivering the produce to each store. This approach was extremely time intensive and the program managers were uncertain whether they could continue to invest the same level of resources in future years.

The second largest challenge mentioned by program managers was the variety of products available through area farmers. This included both the type of products grown locally and the portion of the year during which these products are available. Stores and customers expressed a desire for greater consistency in the products on a year-round basis.

Furthermore, Healthy on the Block neighborhoods had large Latino and Caribbean communities who desired tropical products such as pineapples and bananas that cannot be grown in Massachusetts.

Finally, program managers did not feel that the program was cost effective. Data on produce sales was not available from the stores; however, anecdotally program managers stated that store owners were losing money on produce. One reason for this was that they could not sell most items at enough of a mark-up to earn a profit. Additionally, many items would spoil before they were sold because of low customer demand or poor storage techniques. The program managers did not believe that offering fresh produce was

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

providing stores with a net profit, and they all agreed that the financial viability of the program was critical for its success.

Farmers identified an additional set of challenges to selling direct to corner stores. Sixty of the farmers surveyed sold to small groceries and/ or urban corner stores. Another group of 55 farmers sold fruits and vegetables through wholesale channels, but not to corner stores.

Of wholesale farmers that did not currently sell to corner stores, 16.4% had previously tried to sell to corner stores but had difficulty establishing relationships; 36.4% had sold to corner stores in the past but had stopped. These farmers listed the time and cost of delivery and low prices as the primary reasons they no longer sold to corner stores (Table 1). Low wholesale prices combined with the small quantities of produce ordered by corner stores made the burden of delivery too costly to be worth the time and effort of these farmers.

Reason	Percent of farmers (N)
Time and cost of delivery	34.4 (22)
Prices are too low	35.9% (23)
Demand is higher than can accommodate	6.3 (4)
Demand is too low	29.7 (19)
Don't grow the desired products	7.8 (5)
Under contract and cannot sell non-contract outlets ²	15.2 (7)
Other	31.3 (20)

² Farmers under contract were cranberry growers for Ocean Spray.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Farmers who did sell direct to corner stores still listed time and cost of delivery as well as the low order volume as the primary challenges (Table 2). However, these farmers believed that the effort was still worthwhile.

Table 2. Challenges for Wholesale Produce Growers Who DO Sell to Corner Stores (N=56)	
Reason	Percent (N)
Time and cost of delivery	63.2 (36)
Prices are too low	21.2 (12)
Requires additional staff	5.3 (3)
Don't have sufficient supply	17.5 (10)
Order volume is too low	28.1 (16)
Difficult to maintain quality	8.8 (5)
Other	26.3 (15)

Follow-up surveys with farmers confirmed that low wholesale prices were a big challenge to selling to corner stores and small groceries. Prices seemed particularly low to farmers because most of them were also selling direct-to-consumers through farmers markets and community-support-agriculture programs which provide robust sales. One farmer mentioned that he viewed corner stores as an outlet for surplus product that wasn't sold via his direct-to-consumer outlets. Follow-up surveys also confirmed that the time and cost of delivery was a problem for farmers working with corner stores. This was in large part because farmers were hand delivering small amounts of products multiple times per week. Despite these challenges, the majority of farmers who participated in the follow-up surveys felt that it was worth the effort to maintain their relationship with corner stores.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Surveys with WIC participants offered yet another perspective on fresh produce at corner stores. WIC customers shopped at corner stores on average once a week and fewer than half purchased fruits or vegetables at a corner store (47.5%).

WIC clients who did purchase fruits and vegetables at their area corner store did so primarily for convenience. Nearly three-quarters (72.4) said they bought produce at a corner store because it was close to home or work. The next most common reason for purchasing produce at a corner store was because WIC checks were accepted (37.9%).

The primary drawbacks cited by WIC participants who purchased fresh produce at corner stores were the selection, quality and price. None of the survey respondents felt the produce was “very bad,” but only one felt the produce was “excellent.” Most felt the selection, quality and price were just “fair” (Table 3).

	Excellent	Good	Fair	Bad	Very Bad
Selection	3.4% (1)	37.9% (11)	58.6% (17)	0% (0)	0% (0)
Quality	3.4% (1)	34.5% (10)	48.3% (14)	13.8% (4)	0% (0)
Price	3.4% (1)	37.9% (11)	51.7% (15)	6.9% (2)	0% (0)

For those who did not to purchase produce at a corner store the main reason was because the products they wanted were not available (32.3%). In addition to the limited selection of products, poor quality (23%) and high prices (19%) were listed as the primary drawbacks.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Cost Competiveness of Produce at Corner Stores

The literature on food access places a large emphasis on the price barrier for healthy food. In addition to limited physical access to healthy food, low-income households cite cost as a limitation to purchasing foods they know are good for their health (Martin et al, 2012). To address the cost barrier, researchers compared the cost of popular fruits and vegetables at corner stores and supermarkets (Table 4).

All but one of the preferred items listed by WIC participants was available at both corner stores and supermarkets. Fresh broccoli was not available at the surveyed corner stores. All but two products, onions and potatoes, were more expensive at corner stores than at supermarkets. However, the sample size was too small to determine if these price differences were statistically significant.

	Supermarket (\$/ lb)	Corner Stores (\$/ lb)
Tomatoes	\$1.89	\$2.08
Potatoes	\$0.75	\$0.74
Apples	\$1.56	\$1.72
Pineapple	\$0.86	\$1.27
Oranges	\$1.21	\$1.33
Lettuce	\$0.76	\$1.15
Onions	\$1.19	\$0.98
Carrots	\$0.75	\$1.06
Broccoli	\$1.96	Not available
Bananas	\$0.61	\$0.76

Based on this data, price sensitive shoppers will find better deals on their preferred produce at supermarkets than at corner stores. Therefore, store owners will need to find a way to reduce prices if they are to be competitive on produce.

Discussion and Recommendations

From the store and farmer perspectives price point and delivery are the hurdles that must be overcome to develop sustainable farm-to-store relationships. Additionally, stores face challenges with handling and storage of fresh produce. From the customer perspective, there is demand for fresh produce at corner stores, but the current selection, quality and price of the produce are barriers to purchasing these products at corner stores.

Finding a price point that works for farmers, stores and customers is challenging. Farmers must charge enough to cover the expensive of production and delivery. However, stores must be able to purchase products at a low-enough price to make the products affordable for customers while still earning a profit. One strategy that can be used to address this issue is aggregation of orders from multiple corner stores. This would enable the stores to reach an economy of scale that would drive down the per-unit cost of items without driving down farmer income.

The researchers are unaware of this approach being used in any of the cities implementing corner store programs. Food hubs exist in many areas of the country; however thus far they have focused on aggregating from multiple small farmers to meet larger orders from individual purchasers. The researchers suggest piloting the inverse approach, sourcing a single large order and distributing to multiple small stores. This strategy would require an intermediary organization to coordinate orders and delivery, alleviating another barrier faced by farmers.

Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to Inner-City Corner Stores

Over half of those surveyed stated that the selection of produce at corner stores was only fair. However, the researchers found that all but one of the items typically purchased were available. The researchers hypothesize that the perception of a limited selection comes from challenges with store displays. Therefore additional training on store displays and provision of needed refrigeration and shelving are recommended.

It is recommended that stores interested in increasing fresh produce sales source from a combination of local and other sources in order to meet the full demand of customers. Given the New England climate tropical products must be sourced from non-local suppliers. Additionally, non-local suppliers can fill in the during the winter months when local production is limited to greenhouses. It is recommended that relationships are developed with farmers around items that are in high demand by customers, are suitable for the northeast climate, and have a long shelf life. Based on this research the three items that meet these criteria are apples, potatoes and onions. Shelf life of these products is critical because it will reduce spoilage and profit loss for stores and increases the portion of the year that these products are available.

Conclusion

There is demand from corner store customers for fresh produce; however, the Healthy on the Block program has not yet fully captured this demand. This is due to barriers from the store, farmer and customer perspectives. These include price point, delivery and storage, and selection. These challenges exist for fresh produce procured from local and non-local sources. To develop corner stores as a market for local produce growers the research

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

recommend focusing on a small number of items and aggregating orders. Aggregation will improve the delivery burden and achieve an economy of scale that reduces the per-unit price for stores and customers while achieving a volume of sales that still provides a profit for farmers.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

References

Bell, J; Mora, G.; Hagam E.; Rubin, V.; and Karpyn, A. (2013). Access to Healthy Good and Why it Matters: A Review of the Research. The Food Trust. Philadelphia, PA.

Bodor, J.N.; Ulmer, V.M.; Dunaway, L.F.; Farley, T.A. and Rose, D. (2010). The rationale behind small food store interventions in low-income urban neighborhoods: insights from New Orleans. *Journal of Nutrition*. 140: 1185-1188.

Borradaile, K.E.; Sherman, S.; Vander Veur, S.S.; McCoy, T.; Sandoval, B.; Nachmani, J.; Karpyn, A.; and Foster, G.D. (2009). Snacking in Children: The Role of Urban Corner Stores. *Pediatrics*. 124 (5): 1293.

Department of Health and Mental Hygiene. New York City Healthy Bodegas Initiative: 2010 Report. New York City Department of Health and Mental Hygiene.
<http://www.nyc.gov/html/doh/downloads/pdf/cdp/healthy-bodegas-rpt2010.pdf> Last accessed 1/30/2014

Gittelsohn, J.; Suratkar, S.; Song, H.; Sacher, S.; Rajan, R.; Rasooly, I.R.; Bednarek, E.; Sharma, S.; and Anliker, J.A. (2010). Process evaluation of Baltimore healthy stores: A pilot health intervention program with supermarkets and corner stores in Baltimore City. *Health Promotion Practice*. 11 (5): 723-732.

Gittelsohn, J.; Rowan, M.; and Gadhoke, P. (2012). Interventions in small food stores to change the food environment, improve diet and reduce risk of chronic disease. *Preventing Chronic Disease*. Vol. 9.

Gittelsohn, J.; Dennisuk, L.A.; Christiansen, K.; Bhimani, R.; Johnson, A.; Alexander, E.; Lee, M.; Lees, S.H.; Rowan, M.; and Coutinho, A.J. (2013). Development and implementation of Baltimore Healthy Eating Zones: A youth targeted intervention to improve the urban food environment. *Health Education Research*. 28 (4): 732-744.

Hoshide, Aaron. (2007). Values-based and value-added chains in the Northeast, Upper Midwest, and Pacific Northwest. University of Maine. Orono, ME.

Kaufman, P.K.; MacDonald, J.; Lutz, S.M.; and Smallwood, D.M. (1997). Do the Poor Pay More for Food? Item Selection and Price Differences Affect Low-Income Household Food Costs. Economic Research Service, USDA. Economic Report No. 759.

Kirschenmann, Fred; Stevenson, Steve; Buttel, Fred; Lyson, Tom; and Duffy, Mike. (2004). *Why worry about the agriculture of the middle?* www.agofthemiddle.org Last accessed January 31, 2011.

Larson, N.I.; Story, M.T.; and Nelson, M.C. (2009). Neighborhood environments: disparities in access to health foods in the U.S. *American Journal of Preventive Medicine*. 36 (1): 74-81.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Laska, M.N.; Borradaile, K.E.; Tester, J.; Foster, G.D.; and Gittelsohn, J. (2009). Healthy food availability in small urban food stores: a comparison of four US cities. *Public Health Nutrition*. 13 (7): 1031-1035.

Martin, K.S.; Havens, E.; Boyle, K.E.; Matthews, G.; Schilling, E.A.; Harel, O.; and Ferris, A.M. (2012). If you stock it, will they buy it? Healthy food availability and customer purchasing behavior within corner stores in Hartford, Ct. *Public Health Nutrition*. 15 (10): 1973-1978.

Massachusetts Department of Health and Human Services. *WIC Information for Retailers*. <http://www.mass.gov/eohhs/consumer/basic-needs/food/wic/retailers/> Last accessed 2/12/2014.

Pearson, T.; Russell, J.; Campbell, M.J.; and Barker, M.E. (2005). Do food deserts influence fruit and vegetable consumption? A cross sectional study. *Appetite*. 45: 195-197.

Rose, D. and Richards, R. (2004) Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public Health Nutrition*. 7 (8): 1081-1088.

Sandoval, B.A.; Karpyn, A.; and Aquilante, J. (2012). Philadelphia's Health Corner Store Initiative: 2010-2012. The Food Trust. <http://www.healthycornerstores.org/philadelphias-healthy-corner-store-initiative-2010-2012-report> Last accessed 1/30/2014

Song, H.; Gittelsohn, J.; Kim, M.; Suratkar, S.; Sharma, S.; and Anliker, J. (2009). A corner store intervention in a low-income urban community is associated with increased availability and sales of some healthy foods. *Public Health Nutrition*. 12 (11): 1060-2067.

Song, HJ; Gittelsohn, J; Kim, M; Suratkar, S; Sharma, S; and Anliker, J. (2011). Korean American storeowners' perceived barriers and motivators for implementing a corner store-based program. *Health Promotion and Practice*. 12 (3): 472-482.

Stevenson, Steve. (2009). *Values-based food supply chains: Executive Summary*. Center for Integrated Agricultural Systems. <http://www.cias.wisc.edu/archives/> Last accessed February 1, 2011.

U.S. Census Bureau. Fact Finder. <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml> Last accessed 2/7/2014.

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Appendices

Appendix I. Farmer Survey

Farm name: _____

Owner/Operator Name: _____

Address: _____

Phone Number: _____

Section I. Farm Characteristics

1. Total Size/Acres _____ (owned & rented) Size/Acres in Production _____

2. What products have you produced and sold in the last season?

Please rank products according to approximated value in sales.

_____ Fruits & Vegetables	_____ Non-Edible Farm Products (nursery)
_____ Dairy	_____ Honey or Maple Syrup
_____ Meat (beef, poultry, pork, etc)	_____ Other: _____
_____ Eggs	_____
_____ Hay/Silage/Corn for animal consumption	

3. What marketing channels do you use for your farm products? (check all that apply)

_____ Retail/Direct Marketing	_____ Wholesale
___ Farmstand/roadside stand	___ Distributor/co-packers
___ Farmers' markets	___ Direct to other farm
___ CSA	___ Schools/universities/food service
___ Other: _____	___ Restaurants
_____	___ Grocery stores/corner stores
	___ Other: _____

4. Do you produce and sell fruits & vegetables? ___ Yes ___ No

If NO, STOP HERE AND RETURN SURVEY IN PROVIDED ENVELOPE

If YES, PLEASE CONTINUE

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Section II. Fruit & Vegetable Production/Sales

5. Please list the types of fruit and vegetable products you sell.

6. What is your primary sales outlet for fruits & vegetables?

<input type="checkbox"/> Retail/Direct Sales	<input type="checkbox"/> Wholesale
<input type="checkbox"/> Farmstand/roadside stand	<input type="checkbox"/> Distributor/co-packers
<input type="checkbox"/> Farmers' markets	<input type="checkbox"/> Direct to other farm
<input type="checkbox"/> CSA	<input type="checkbox"/> Schools/universities/food service
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Restaurants
_____	<input type="checkbox"/> Grocery stores/corner stores
<input type="checkbox"/> Other: _____	

**IF YOU DO NOT SELL WHOLESALE PRODUCE STOP HERE AND RETURN
SURVEY.**

IF YOU DO SELL WHOLESALE PRODUCE PLEASE CONTINUE.

Section III. Wholesale Sales

7. What is your gross income from retail fruit & vegetable sales? (in thousands)

Less than \$50 \$50-100 \$100-150 \$150-200 > \$200

8. What is your gross income from wholesale fruit & vegetable sales? (in thousands)

Less than \$50 \$50-100 \$100-150 \$150-200 > \$200

9. Approximately what percentage of farm income comes from wholesale fruit & vegetables sales?

_____ %

10. Please rank wholesale outlets for fruits & vegetables sold:

Distributor/co-packers

Direct to other farm

Schools/universities/food service

Restaurants

Larger Grocery stores/supermarkets

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

____ Small grocery stores / corner stores
____ Other: _____

11. Do you currently sell to small grocery stores / corner stores?

____ yes

If yes, what types of stores do you sell directly to?

____ Small/Medium Rural Grocery Stores

____ Medium Urban Grocery Stores

____ Small Urban Corner Stores

____ no

If no, why not? Please select all that apply

____ I am not interested in selling to grocery stores/supermarkets/corner stores

____ I have attempted to sell to grocery stores/supermarkets/corner stores but have not been

able to

____ I used to sell to grocery stores/supermarkets/corner stores but no longer do so

11a. If you currently do not sell produce to small grocery stores/ corner stores, why not?
(check all that apply)

____ Their location is not accessible/too far

____ The purchase price is too low

____ The quantity demanded is too high

____ The quantity demanded is too low

____ Distribution to urban area stores is too time consuming

____ I did not have types of products demanded

____ Other, please specify.

11b. If you do sell produce to small grocery stores/ corners stores, what types of challenges have you encountered? Check all that apply.

____ Inconsistent orders

____ The purchase price is low

____ The quantity demanded is low

____ The quantity demanded is high and difficult to obtain

____ Lack of understanding about the seasonal nature of production

____ Distribution location is challenging

____ Other, please specify. _____

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Appendix II. Follow-up Farmer Survey

If you currently sell fresh fruits and vegetables to small grocery stores/ corner stores (or if you have in the past), please answer the following questions:

1. How do you deliver/ distribute your produce?
2. How often do you deliver produce?
3. What types of produce do you sell?
4. Is the amount of profit worth the time and effort involved?
5. In as much detail as possible, please describe the barriers you encounter to selling fresh fruits and vegetables to small grocery/ corner stores? (ie. delivery method, customer demands, time involved, cost of deliver, pricing, order volume, etc.)
6. Do you have any suggestions regarding potential solutions to these barriers?

If you haven't previously sold fruits and vegetables to small grocery/ corner stores, but would be interested in the opportunity, please answer the following:

1. Why are you interested in selling produce to small grocery stores/ corner stores?
2. Have you been in contact with any store owners/ buyers?
3. Do you anticipate any barriers to selling fresh fruit and vegetables to small grocery stores/ corner stores?
4. What would be helpful to you in pursuing this opportunity?

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Appendix III. WIC Survey

Demographic Information

1. Age _____ 2. _____ Male _____ Female

3. What is your race? (You can specify one or more)

- _____ Asian
- _____ Black
- _____ Hispanic/ Latino/ Black
- _____ Hispanic/ Latino/ White
- _____ Hispanic/ Latino/ Other
- _____ White
- _____ Other (specify _____)
- _____ Unknown/ not specified

4. What is the highest level of education you have completed?

- _____ Some high school
- _____ High school
- _____ Some college
- _____ College
- _____ Masters degree or higher

Food Purchasing Habits

5. On average, how much do you spend on **groceries each week**? Please select one.
Please include money from all sources including WIC, SNAP, credit card, cash, etc.

_____ Less than \$25 _____ \$26-50 _____ \$51-75 _____ \$76-100 _____ More than \$100

6. On average, how much do you spend specifically on **fruits and vegetables each week**?
Please select one. Include money from all sources including WIC, SNAP, credit card, cash, etc.

_____ Less than \$10 _____ \$10-20 _____ \$21-30 _____ \$31-40 _____ More than \$40

7. What type of fruits and vegetables do you typically purchase? Circle all that apply.

- | | | | | | | |
|-----------|--------|----------|--------|---------|--------------|--------|
| Avocado | Banana | Broccoli | Squash | Cabbage | Carrots | Celery |
| Garlic | Onions | Lettuce | Mango | Orange | Plantain | Bell |
| Peppers | | | | | | |
| Pineapple | Apples | Tomato | Yucca | Potato | Sweet potato | |

Other, please
list. _____

8. What types of fruits and vegetables would you like to purchase at a corner store, but are unavailable?

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

9. How often do you shop at a corner store? Please select one.

- Everyday
- 4-5 times a week
- 2-3 times a week
- Once a week
- Every two weeks
- Less than once a month

10. Have you purchased fruits or vegetables at a corner store in the **last TWO weeks**?

- Yes No

If no, why not? Please select all that apply

- They are not available
 - The quality is poor
 - The selection is poor
 - They are too expensive
 - Other, please explain
-

**IF YOU DO NOT PURCHASE FRUITS AND VEGETABLES AT CORNER STORES
PLEASE STOP HERE. THANK YOU.**

**IF YOU DO PURCHASE FRUITS AND VEGETABLES AT CORNER STORES PLEASE
CONTINUE.**

11. How often do you purchase **fruits and vegetables** at a corner store? Please select one.

- Everyday
- 4-5 times a week
- 2-3 times a week
- Once a week
- Every two weeks
- Less than once a month

12. What are the main reasons you shop at a corner store? Check all that apply.

- They have a good selection of items
- The prices are reasonable
- It is close to where I live or work
- The products are of good quality

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

- _____ I'd rather shop elsewhere, but transportation is difficult for me
 - _____ They accept my WIC checks
 - _____ Other, please specify
-

13. How would you rate the **selection** of produce at the corner store?
_____ Excellent _____ Good _____ Fair _____ Bad _____ Very
Bad

14. How would you rate the **price** of produce at the corner store?
_____ Excellent _____ Good _____ Fair _____ Bad _____ Very
Bad

15. How would you rate the **quality** of produce at the corner store?
_____ Excellent _____ Good _____ Fair _____ Bad _____ Very
Bad

*Identifying Farm Barriers to Wholesale Distribution of Fresh Produce to
Inner-City Corner Stores*

Appendix IV. Program Manager Interview Questions

1. Please describe what the Healthy on the Block program looked like in your neighborhood.
2. What type of infrastructure did store owners need/ want? Were they interested in additional refrigeration?
3. How were stores identified for participation in the Healthy on the Block program?
4. Where there any interested stores that did not meet the criteria for participation?
5. What, if any, new products were introduced to corner stores through this initiative?
6. What types of promotions were used to increase customer awareness of the project?
7. Did the stores track sales of the products targeted by the Healthy on the Block program?
8. Was local produce included in the Healthy of the Block program? How was it delivered to the corner stores?
9. What did the Healthy on the Block program look like from the customer perspective? If a customer walked into a participating corner store would they know that there was something special about the store?
10. What were the main challenges to implementing the program?
11. What are the main successes of the program?
12. If you had it all to do over, what would you do differently?