



**Supply Chain for Locally Grown Food Products:
A Research Report**

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Chapter 1: Introduction

The agricultural food system supply chain has been the subject of several research studies in the past few years. But most of these studies have been devoted to the supply chain system for large businesses and industries, and little attention has been given to the supply chain for locally grown food products. The purpose of the present study is to analyze the scope and performance of the supply chain for locally grown food products in three counties of southeast Michigan: Jackson, Lenawee and Monroe. The study was conducted to assist the Food Systems Economic Partnership (FSEP) in developing market opportunities for locally grown food products in southeast Michigan.

The specific objectives of the study were as follows:

- (1) Development of a comprehensive overview of the existing supply chain system that connects growers to wholesalers, retailers, processors, food service outlets, and institutional markets to market locally grown food products,
- (2) Identification and characterization of market structures and practices used within this supply chain including delivery arrangements, market size, nature of contracts and agreements, relationship building and other marketing strategies,
- (3) Understanding of the market characteristics that determine why a supply chain participant purchases, or not, locally grown food products,
- (4) Identification of the types of locally grown food products a specific market participant will potentially be carrying, and
- (5) Exploration of potential future supply chain related issues for locally grown food products.

Research approach and scope of work

The study utilized a mix of primary and secondary data collection. Secondary data was collected from publicly available resources. Primary data collection focused on a number of market participants within the supply chain system. Data was collected by conducting surveys and case studies at the production, processing, wholesale and retail level. Issues and topics covered in the surveys and case studies varied with the target group, but included topics like types of food products handled, sources of products, delivery systems, extent of collaborations, agreements and relationships among market participants, and attitudes towards buying and selling locally grown foods, and related challenges, obstacles, and opportunities in marketing these food products.

The following subsections outline the number of case studies and the sample size for the survey.

Growers: Production agriculture in the study area is dominated by grain production, with corn, wheat and soybean the major field crops grown. Fruit and vegetables are the major fresh market products in the region. These crops appear to be important food product categories in all counties. Therefore it was found appropriate to conduct surveys for the two categories of products (one for grain producers, and a second survey for fruit and vegetable growers). The specific objective was to identify the knowledge and experience of growers in selling their products. Survey topics included constraints, challenges and opportunities growers and producers perceive in selling their products using the existing market outlets; and linkages, relationships and strategies they are pursuing to expand their market opportunities. The grain survey focused on relatively small-size grain producers, and also added some livestock producers who also potentially produced grains. The fresh market produce survey considered all fruit and vegetable growers in the three counties. The Michigan Agricultural Statistics Service provided assistance in identifying and selecting the sample for the study. A total of 600 questionnaires were sent out to producers in the three counties (159 to vegetable growers, and 441 to grain and livestock producers). One hundred questionnaires were returned.

Case studies were conducted in the wholesale, processing and retail categories. The selected cases were located in the three counties and in southeast Michigan. An attempt was made to conduct as many interviews as possible in person in order to closely learn the role of each market player and the marketing practices applied for locally grown food products. Face-to-face interviews were conducted for most of the case studies, and phone-interviews were conducted for some of the cases. This approach helped to collect a complete and multi-faceted understanding of the local foods market in the study area. Interviews were conducted with the following market participants

Food retailers: There are different types of food retail stores located in the study area. These retailers use different channels to access locally produced food products. Most of them are large supermarkets. Others are small size local supermarkets, convenience stores and specialty retail stores. Overall, twelve case studies were conducted in this category.

Wholesalers, distributors and brokers: These are supply chain participants that purchase food products from different sources including products from local and regional food producers and processors. Some of the wholesalers are themselves brokers or use other brokers to buy food items from different sources. Some also conduct value-added activities, mainly in the packaging area. The focus of the research at this level was to understand their sourcing approaches for locally produced food products, and to learn more about required contractual arrangements, relationships, and agreements to move products through these buyers to the next stage. Therefore, some of the study wholesalers are located in southeast Michigan but not necessarily in the three counties. They are selected because their activities have impacts on food production and marketing in the three counties. Overall, seven case studies were conducted in this category.

Food processors: The focus in this part of the study was on facilities that are currently processing food products that have significant economic contributions to the region. The

study in this category was thus designed to address issues such as capabilities the food processors provide, interest and experience in working with local producers, and their challenges and obstacles to participate in collaborative efforts or contractual agreements with local suppliers or directly with producers. Altogether the number of food manufacturing plants in the three counties is relatively small and it is much diversified. Processing facilities in the counties include animal slaughtering and processing, animal food manufacturing, confectionary manufacturing, bakeries, flour mixing, etc. Given the small number of processing facilities and their relatively large size, case studies will be the appropriate approach to conduct the study. Overall three case studies were conducted in this category.

There are also some fresh produce packaging facilities in the three counties. But these produce packers have an extended wholesale activity. Therefore case studies in this category were included in the aforementioned wholesale, distribution and broker category.

Summary of surveys and case studies:

Grower survey	Selected case studies within each market segment		
	Food retailers	Wholesalers and distributors ^b	Processors
Contacted farmers: 600 # of farmers responded: 100 ^a	Upscale supermarket chains (1) Local supermarkets (4). Farm retail markets (1) Food specialty stores (3) Convenience stores (3)	National wholesale distributors (1) Ethnic-based wholesalers (4) Wholesale-retail operations (1) Grower-packer (1)	Small value-added processing (1) Large milling operation (1) Specialty processing (1)

- (a) 51 grain and livestock producers, 36 fruit and vegetable growers and 13 unclassified.
- (b) Some are packers and/or brokers.

Numbers of case studies conducted in each sub-category are shown in parentheses.

Structure of the paper

The remainder of this report is organized into the following major chapters.

Chapter 2 presents an overview of consumer demographics in the three-county region.

Chapter 3 has two sections. The first section provides an overview of production agriculture in the three counties. The second section provides a preliminary picture of the economic contribution of the agricultural food system. This sector in the region studied comprises a wide range of producers, wholesalers, processors, and retailers. An overall

economic impact analysis for this sector of the region requires a separate detailed study. The current study merely highlights the contribution of the sector and provides some examples.

Chapter 4 describes the results from the grower survey.

Chapter 5 presents a description of results from the case studies in the retail, wholesale and processing sub-sectors.

Chapter 6 analyzes and discusses the findings from the study.

Chapter 7 makes concluding remarks and provides recommendations to strengthen the regional food system economic development in southeast Michigan.

Chapter 2: Consumer demographics in the study area

The three-county study region encompasses approximately 2,009 square miles¹ in southeast Michigan. The region is characterized by micropolitan areas such as Jackson, Monroe and Adrian. It has also many small towns and a vast rural area with a diverse food and agricultural (crop and livestock) production.

Population growth is one of the main sources of increased demand for a wide range of food and agricultural products. Table 1 presents the population of each county and the region as a whole. In 2006, the total population in the three counties was estimated at 374,832. Jackson County, with nearly 164,000 inhabitants, has the largest population. Lenawee is the smallest county in terms of population.

Between 1990 and 2006, Michigan’s population grew by 8.6% while the population in the three-county region as a whole grew by 12.3%. This is mainly due to a significant population increase in Monroe County (a 16.0% increase between 1990 and 2006). Population in the other two counties has also shown an increase during this period of time.

Table 1: Population by County			
County	Population		Change 1990 - 2006
	1990	2006	
Jackson	149,756	163,851	9.4%
Lenawee	91,476	102,191	11.7%
Monroe	133,600	155,035	16.0%
Total – three counties	374,832	421077	12.3%

Source: U.S. Census

According to a USDA classification all counties (Jackson, Lenawee and Monroe) are “below average growth” counties. Other neighboring counties are also “below average growth counties, except Livingston, which is classified as a “high-growth” county.

¹ <http://mich.info/michigan/counties/county.htm>

Age, household size and ethnicity are other demographic characteristics that influence economic growth and regional food consumption patterns (Table 2). About 57% of the people in the three counties belong to persons with age groups between 18 and 64 years old. Nearly 31% are persons under 18 years old.

There is no significant difference in the household size in the three counties (2.61 persons per house hold on average). Monroe has the highest persons per household while Jackson registered the lowest (2.55 persons per household). In terms of ethnic composition, the three-county region has some minority and ethnic population. According to the 2000 U.S. Census, African Americans were the majority in the overall minority with more than 17,000 people. Hispanics were second with nearly 13,500 people. Jackson County has the largest minority and ethnic population followed by Lenawee County.

	Jackson	Lenawee	Monroe	Three-County total
Age group (2005 in %)				
Persons under 18 years old	30.8	30.1	30.3	30.4
Persons 18-64years old	56.5	56.9	58.3	57.2
Persons 65 years old and over	12.7	13.0	11.4	12.4
Persons per house hold (2000)	2.55	2.61	2.69	2.61
Persons by race and ethnicity (2000)				
White	136,267	84,600	136,154	357,021
African American	12,543	2,094	2,766	17,403
American Indian & Alaskan native	641	408	405	1454
Asian	840	450	679	1,969
Hispanic & Latino origin	3,493	6,884	3,110	13,487
Other*	4,131	4,454	2,831	11,416

* Includes two or more races, and some other races

Source: U.S. 2000 Census

A recent report by the U.S. Census Bureau indicates that ethnic population in the U.S. will increase in the coming years. Developments in the three-county region are also expected to follow the same trend. Hispanics will be the fastest growing of the minority population.

Table 3: Per capita income data for the five counties			
	Per capita income		Percent change 1990-2004
	1990	2004	
Jackson	16,104	26,902	67
Lenawee	17,025	28,408	67
Monroe	17,314	30,320	75

Source: U.S. Bureau of Economic Analysis

Table 3 shows per capita personal income² in the three county region. In 2004, Jackson County reported the lowest per capita income of \$26,902 while Monroe County reported the highest, \$30,320. Monroe trails Michigan's average, though only slightly, while Jackson and Lenawee counties trail more significantly the state average. Between 1990 and 2004, all three counties have shown a significant growth in per capita income. The highest percentage growth was observed in Monroe County. All other counties have also exhibited significant income growth.

² Per capita income is all income received by county residents (wages, dividends, social security payments, etc).

Chapter 3: Overview of the agricultural food system sector in the three counties

The agricultural food system sector in the study area is a complex network of producers, wholesalers and distributors, processors and packers, retailers (e.g., large supermarket chains, local and regional stores, direct markets such as roadside side stands and farmers' markets), food service providers (e.g. restaurants), and institutional markets (e.g., schools, prisons, hospitals). In addition, other service providers such as transportation agencies and warehouses play a significant role as food products move from producers to consumers. There is also a value-added process that takes place within this supply chain system.

Farmland and farm structure

Table 4 shows growth of farmland between 1987 and 2002 in the three counties. Overall, farmland in the three counties has a declining trend. In 1987, the counties as a whole had 772,891 acres of farmland. This was 763,515 in 2002, showing a loss of more than 9,300 acres in the fifteen-year period. This land might have been converted to non-agricultural uses.

There are, however, different growth trends in each county. Jackson and Lenawee counties have seen a steady farmland decline between 1987 and 1997. This was followed by a farmland increase in 2002. Monroe had seen an increase in the first ten years, then land area declined in the last five years.

	1987	1992	1997	2002
Jackson	218,375	210,638	181,287	193,011
Lenawee	344,801	336,273	336,468	353,083
Monroe	209,715	217,095	220,274	217,421
Total	772,891	764,006	738,029	763,515

Source: USDA Census

The number of farms in the three-county region has exhibited a slight increase during the fifteen-year period (Table 5). Altogether there were 3,748 farms in 1987 in the three counties. This number was 3,894 in 2002. Number of farms in Jackson and Monroe counties continued to decline until 1997. Then there was an increase between 1997 and 2002. The most significant increase in number of farms during this period of time was observed in Jackson County.

	1987	1992	1997	2002
Jackson	1,103	1,041	987	1,265
Lenawee	1,387	1,259	1,317	1,446
Monroe	1,258	1,135	1,058	1,183
Total	3,748	3,435	3362	3,894

Source: USDA Census

Table 6 shows trends in average farm size in the three county region. Between 1997 and 2002, farm size in Jackson County had a declining trend while farm size in Lenawee and Monroe counties remained relatively unchanged. Between 1997 and 2002, farm size in Lenawee and Monroe counties had declined only slightly. Overall, average farm size is highest in Lenawee County.

	1987	1992	1997	2002
Jackson	198	202	184	153
Lenawee	249	267	255	244
Monroe	175	191	198	184
Simple average	207	220	212	194

Source: USDA Census

In 2002, total market value of agricultural products sold in the three counties was estimated at \$248.7 million (Table 7). This was lower by 4.1% than sales in 1997. All three counties have shown loss, with Jackson County showing the highest loss. Loss in sales was the lowest in Lenawee County. This County had also the highest sales compared to the other two counties. The second highest sales came from Monroe County.

	Total farm sales (\$1,000)		Percent change 1997 - 2002
	1997	2002	
Jackson	45,462	43,096	-5.2
Lenawee	106,470	103,357	-2.9
Monroe	96,798	92,243	-4.7
Total	248,730	238,696	-4.1

Source: USDA Census

In terms of annual sales, most of the farms in the three county region are very small (Table 8). In 2002, about 71.6% of the farmers had annual sales of less than \$20,000. This figure was 70.7% in 1997. About 32.8% of the farmers had farm sales of less than \$1,000. On the other hand, large farms with sales over \$500,000 constituted only 2.1% of the farms in the three counties.

	Sales less than \$1,000	Sales \$1000 to \$19,999	Sales \$20,000 to \$99,999	Sales \$100,000 to \$499,999	Farming sales > \$500,000	Total # of farms
Jackson	474	537	172	64	18	1265
Lenawee	537	457	256	158	38	1446
Monroe	266	517	252	122	26	1183
Total	1277	1511	680	344	82	3894

Source: USDA Census

The following table compares percent of farms in each sales category between 1997 and 2002. It shows that the percentage of small farms has an increasing trend. In 1997, about 62% of the farms had sales income of less than \$20,000. This figure was more than 71% in 2002. On the other hand, percentage of farms with sales over \$500,000 remained unchanged.

	Jackson	Lenawee	Monroe
Large (\$500,000 or more)			
2002	17%	36%	24%
1997	18%	31%	25%
Medium (\$100,000 - \$499,999)			
2002	13%	33%	25%
1997	13%	37%	26%
Small (Less than \$20,000)			
2002	80.0%	68.7%	66.2%
1997	70.7%	57.8	57%

Source: USDA Census

The study area has a very diverse and strong agricultural production. A wide range of annual and perennial crops including grains, oil seeds, dry beans, fruits, vegetables, potatoes, and non-food plants (e.g. nursery and greenhouse plants) grow in the region. There is also a very diverse livestock sub-sector. Livestock and meat production in the region ranges from raising cattle, poultry, pig and hogs to the production of sheep and goats and their products.

The major agricultural sub-sectors in terms of their economic importance in the three county region are presented in Table 10. These sub-sectors have shown different patterns of growth and economic performance over the last few decades. Grain and livestock are the biggest revenue generating sub-sectors. Nursery and greenhouse, and fruit and vegetable production are also important sub-sectors. It appears that nursery and greenhouse is one of the fastest growing sub-sectors in some counties. The grain, poultry and eggs, and the pig and hog sub-sectors have declining trends. In particular, the pig and hog sub-sector has seen a sharp decline between 1997 and 2002. However, the dairy sub-sector in Lenawee County has seen a significant growth during this period of time.

Table 10: Sales revenue generated from major agricultural sub-sectors in the three county region (\$1,000)			
	Jackson	Lenawee	Monroe
Grains oilseeds, dry beans, and dry beans			
1997	16,542	64,279	44,308
2002	14,778	51,023	34,827
Vegetables, melons, potatoes, and sweet potatoes			
1997	1,768	9,456	6,974
2002	1,358	7,827	15,803
Fruits, tree nuts and berries			
1997	202	1,708	1,483
2002	271	1,488	505
Nursery and greenhouse			
1997	3,641	839	28,126
2002	2,453	2,088	33,900
Christmas trees including woody crops			
1997	NA	NA	NA
2002	176	20	195
Other crops and hay			
1997	NA	NA	NA
2002	2,158	1,819	917
Poultry and eggs			
1997	44	NA	119
2002	75	103	124
Cattle and calves			
1997	10,294	7,980	3,558
2002	11,909	8,738	3,285
Milk and other dairy			
1997	8,098	10,623	1,385
2002	8,199	27,086	1,072
Hogs and pigs			
1997	1,495	3,230	3,162
2002	481	2,815	617
Sheep, goats and their products			
1997	103	NA	67
2002	422	268	NA
Horses, mules,..			
1997	NA	NA	NA
2002	626	522	261

Source USDA Census

Note: NA indicates data not available

The fruit and vegetable sub-sector: Overview

The main goal of the present study is to assess and analyze the existing market structure and evolving alternative market structure and practices for locally and regionally grown food products focusing on the fresh produce (fruits and vegetables) and the grain sectors. The present section provides an overview of the overall production trend for fruits and vegetables produced in the three counties.

	Vegetables		Fruits/Orchards	
	1997	2002	1997	2002
	Jackson	1130	988	177
Lenawee	4154	3097	905	714
Monroe	2981	4479	337	299
Total	8265	8564	1419	1218

Source: USDA Census

Table 11 shows the area under cultivation in fruits and vegetables in the three counties. Overall, between 1997 and 2002, total vegetable acreage in the three counties has shown a slight increase. Monroe County has shown a substantial increase, while Jackson and Lenawee counties reported a decline in vegetable acreage. During the same period, Orchard acreage has shown a significant decline. All counties except Jackson have shown a declining trend in fruit production. Also, the census data indicates the following trends: (1) Most of the vegetables and fruits in the study area were grown as fresh market crops. (2) Almost all vegetables and fruits are grown on irrigated land.

	Vegetables		Orchards	
	1997	2002	1997	2002
	Jackson	45	48	22
Lenawee	44	40	46	41
Monroe	73	71	40	47
Total	162	159	108	122

Source: USDA Census

Between 1997 and 2002, the number of vegetable farms in the three-county region declined by 1%, while the number of fruit farms increased by 13% (Table 12). Jackson and County exhibited an increase in both vegetable and fruit farms. Lenawee County

exhibited a declining trend. Monroe County showed an increase in the number of vegetable farmers and a decrease in the number of fruit farmers.

According to the USDA census, Michigan has the potential to grow more than 41 different kinds of vegetables. The three county region has also the potential to produce about 36 different kinds of vegetables. Table 13 shows major vegetables that are widely grown in southeast Michigan. There are about 16 vegetables that are relatively widely grown in the three-county region (These are vegetables with a minimum area of 20 acres in the three-county region). Production, however, varies across counties. For example, head cabbage and cucumber are mainly produced in Lenawee and Monroe counties. About 98% of the tomato, 89% of the Cantaloupes, and 95% of the watermelon production areas are in Monroe County. Most of the carrots come from Lenawee County. Sweet corn, pumpkins and squash are available in all counties. Fresh herbs and green peas are produced in large quantities in Jackson County. More than 96% of the bell peppers come from Monroe County.

Table13: Vegetables and melon harvested area for sale (acres)	
Vegetables	3-county total
Asparagus	22
Snap beans	136
Head cabbage	1,064
Cantaloupes	114
Carrots	268
Cauliflower	33
Cucumbers & pickles	945
Herbs fresh cut	142
Green peas	44
Bell peppers	136
All peppers except bell pepper	34
Pumpkins	998
Squash	156
Sweet corn	1,215
Tomatoes	1,759
Watermelons	131

Source: USDA Census

In terms of fruits, the study area has the potential to grow more than 19 different kinds of fruits, nuts and berries. Currently major crops grown in the region are in eight categories (Table 14). The crops that are widely grown in the region include apples, peaches, pears, cherries, grapes, plums and different kinds of berries. Apple is by far the leading fruit crop and is grown in all counties. It is followed by berries and peaches that are also grown in most counties. Cherries are mainly grown in Lenawee County.

	3-County total
Apples	970
Cherries sweet	24
Cherries tart	9
Grapes	21
Peaches	107
Pears	19
Plums and prunes	7
Berries, all	68

Source: USDA Census

Value of sales of fruits and vegetables

In terms of value of sales, vegetables are one of the most important crops in southeast Michigan. In 2002, total market value of vegetables in the three-county region was \$25.0 million (Table 15). Monroe County had the largest sales followed by Lenawee County. The smallest sales came from Jackson County, \$1.4 million. The region received a total \$2.3 million from sales of fruits. Again, the highest sales revenue was exhibited in Lenawee County and the lowest in Jackson County.

	Vegetables, melons, potatoes, and sweet potatoes (\$1,000)	Fruit, tree nuts and berries (\$1,000)
Jackson	1,358	271
Lenawee	7,827	1,488
Monroe	15,803	505
Total	24,988	2264

Source: USDA Census

The USDA census data also provides information on value of sales from products that are directly sold to consumers. In 2002, the total value of agricultural products sold directly to consumers in the three counties was about \$2.1 million. In 1997, this value was \$2.5 million (Table 16). Since direct sales of commodities and other specialty livestock products in the region is relatively small, it can be assumed that most of the sales came from fruits and vegetables. Overall, nearly 300 farms sold their food products directly to the consumer.

	1997		2002	
	# of Farms	Value of sales (\$1,000)	# of Farms	Value of sales (1,000)
Jackson	102	736	85	503
Lenawee	100	788	81	345
Monroe	111	993	116	1275
Total	313	2517	282	2123

Source : USDA Census

The grain production sub-sector: Overview

Corn, wheat, soybeans and oats are the major grains produced in the region (Table 17). Considering all counties, soybean is the leading crop in the region, followed by corn (both for grain and silage). Wheat (winter wheat) and oats are the third and fourth largest crops respectively. Lenawee is the largest producer of corn, soybean and wheat followed by Monroe County. Forage (land used for all hay, grass silage, and green chop) is the other major crop in the region. Jackson and Lenawee are leading in forage production.

Other specialty crops that are grown by a very small number of farmers in the region include potatoes and sugar beets. Most of these farms are located in Monroe and Lenawee counties. Other grains that have the potential to grow in the region include sorghum for silage, barley and dry bean.

	Corn for grain	Corn for silage	Wheat for grain	Oats for grain	Soybeans for beans
Jackson	46,912	3,765	8,094	873	38,180
Lenawee	92,204	10,391	28167	594	128951
Monroe	60,444	675	18435	1219	95809
Total	199,560	14,831	54,696	2686	262,940

Source: USDA Census

The 2002 USDA census data also provides information on the number of farms in the grain sub-sector (Table 18). The largest number of farmers in all counties are producing soybean. The second important crop in terms of the number of farmers is corn. Lenawee and Monroe counties have the largest number of farms in soybean and corn production.

Table 18: Number of farmers for selected grains					
	Corn for grain	Corn for silage	Wheat for grain	Oats for grain	Soybeans for beans
Jackson	348	50	143	41	250
Lenawee	488	55	354	35	598
Monroe	441	19	284	36	581
Total	1277	124	781	112	1429

Source: USDA Census

Census data was also available on the number of farms that produce and deliver commodities under production contracts in the region. For example, in 2002, there were about seven custom fed cattle growers, 21 grain producers, 9 hog and pig farms, and 3 poultry and egg farms that sold products based on contractual agreements. This indicates that relatively a small number of grain producers are selling products based on contractual agreements.

Chapter 4: Grower survey results

This chapter highlights the findings from the grower survey in Jackson, Lenawee and Monroe counties.

Major characteristics of surveyed farms

Table 21: Farm characteristics and profiles			
	All farms	Fruit and vegetable farms	Grain+ producers
<u>Respondents' age (% of respondents)</u>			
18 – 29	3	3	2
30 - 49	24	26	22
50 - 64	39	41	37
65+	35	30	39
<u>Years in farming</u>			
Average years in farming	31	30	31
Frequencies (% of respondents)			
Farming for more than 30 years	42%	39%	45%
Farming for 15-30 years	46%	52%	42%
Farming for less than 15 years	12%	9%	13%
<u>Production in 2006 (acres) (% of respondents)</u>			
> 1000 acres	7	4	11
501 – 999 acres	4	4	4
101 – 499 acres	17	21	16
< 100 acres	66	71	69
<u>Gross sales in 2006 (% of respondents)</u>			
Less than \$50,000	66	57	72
\$50,000 - \$99,999	12	20	6
\$100,000 - \$149,999	4	0	6
\$150,000 - \$199,999	3	3	21
\$200,000 - \$249,999	1	3	0
\$250,000 and above	14	17	12

Table 21 summarizes the demographic and income data from the farm survey, as also explained below.

- (a) **Age of farmers:** About 74% of the surveyed farmers were age 50 and above. Among this, thirty-five percent (35%) were 65 years old and above. Only 28% of the surveyed farmers were under 49 years old. These data indicate that farming in the study area is conducted by a larger share of older operators who continue to farm even after they reach their retirement age. This trend may have an impact on the agri-food sector's overall growth and operation.
- (b) **Years in farming:** Most of the surveyed farmers (88%) have been farming for more than 15 years. Out of this about 42% have been farming for more than 30 years. Only 12% of the respondents have been farming for less than 15 years. About 91% of the vegetable and fruit growers, and 86% of the grain producers have been farming for more than 15 years.
- (c) **Production area:** Area of land farmed by the farmers ranges from 1.5 acres to 2,500 acres. However, the majority of the farms in the study area are small to medium size farms. About 66% of the farmers have crop area of less than 100 acres. About 21% of the farmers have crop area between 101 and 1,000 acres. About 71% of the fruit and vegetable growers have land area of less than 100 acres, while 69% of the grain producers have similar land area. About 15% of the grain producers have land area of more than 500 acres, while only 8% of the fruit and vegetable producers have the same area.
- (d) **Gross sales in 2006:** In 2006, the majority of respondents (78%) had annual estimated gross sales of less than \$100,000. Only about 14% of the surveyed farms exhibited gross sales of \$250,000 and above. There is no significant variation in sales between the fruit and vegetable growers and grain producers. About 77% of the fruit and vegetable growers accounted for gross sales of less than \$100,000. This figure was 78% for grain producers.

Major crops grown by respondents: Survey respondents indicated a considerable diversity in their farm operation. Overall, the farmers listed more than 15 vegetables and seven fruits that are grown by them. The list of vegetables grown by the surveyed farmers include sweet corn, pumpkins, carrots, potatoes, peas, lettuce, melons, tomatoes, sweet beans, squash, cabbage, peppers, cucumbers, onions and cauliflower. Among these, frequently mentioned vegetables were sweet corn, tomatoes, squash, pumpkins, peppers, and melons. Fruits grown by the surveyed farmers include apples, berries, peaches, grapes, pears and plums. Frequently mentioned fruits were apples, peaches and blueberries. Apple appears to be the most common fruit crop grown in the region. Grains produced by respondents include corn, soybean, wheat, rye and different kinds of animal feed. The two leading and most frequently mentioned crops were corn and soybean. Wheat was the third most important crop by the surveyed farmers. Some grain producers have also livestock activities including cattle, poultry, sheep and goat rearing.

+ Includes livestock production

Overall, most of the surveyed farms (about 64%) have more than one production activity. For example, most of the vegetable growers are also producing fruits and different kinds of grains or have some kind of livestock activity. Some vegetable producers are also growing ornamental plants (both perennial and annual). Many grain producers are growing both corn and soybeans. More diversified activity has been observed with respect to the fruit and vegetable farmers than the grain producers.

Market channels used by surveyed farmers

Farmers in the three counties use a variety of market channels to sell their products (Table 22). Direct marketing (e.g. roadside stands and farmers’ markets), wholesale distribution, processors/packers and organized supply groups are major market outlets for the majority of the farmers. The first most frequently used market channel is farm retail and roadside market, used by 32% of the surveyed farms. The other most used market channels include sales through supply groups (22%), processors/packers (20%), and wholesalers and farmers’ markets (18% each).

The farm retail market plays a significant role for the vegetable and fruit growers. About half (47%) of the fruit and vegetable growers sell their products at farm retail and roadside stands. The second most important market channels for fruit and vegetable growers are farmers’ markets (27%).

	All producers	Fruit and vegetable growers	Grain+ producers
Farm retail or roadside market	32	47	22
Local farmers’ markets	18	27	12
Wholesale/distribution channel	18	16	20
Processor/and packer	20	18	16
Local restaurants/other institutional markets	2	2	2
Supermarkets, and other large retail chains	6	0	4
Small specialty retail stores	9	18	16
Through organized supply group	22	11	31
N	96	45	51

For grain producers, sales through supply groups appear to be the most important market channel. About 31% of the grain producers used this channel to sell their products. The wholesale market is the other most important market channel for these producers. Twenty two percent (22%) of the grain producers use on-farm markets to sell their products. Very few grain producers use farmers markets. These are mostly grain producers who also have some livestock production. The use of supply groups as a market outlet by the grain producers may indicate two cases: (1) Sales based on some kind of contractual agreements with elevators or (2) sales of some livestock products through (an organized) supply group. The wholesale distribution channel is used more by grain producers than by fruit and vegetable growers.

Results from the survey also showed the patterns and share of sales through each market channel (Table 23). Among those fruit and vegetable growers who used farm retail and roadside stand as one of their marketing channels, only 38% used it to sell all their products. Another 38% used this market outlet to sell the majority (51 – 99%) of their products. Altogether about 76% of the produce marketers used this channel as one of their market outlets. The use of local farmers’ markets by fruit and vegetable growers as a marketing channel has received a mixed response. Only very few farmers (16% of those who used this channel) used this marketing channel to sell all their products. Most of the respondents (67%) sell only a very small portion of their produce using this market channel. Similarly the wholesale market channel plays a very limited role in selling fruits and vegetables. No farmer used this channel to sell all produce. Most of them (86%) used it to sell only a very small portion of their products.

Market channel	100% sale	51-99% sale	Below 50% sale
Farm retail or road side market	38	38	24
Local farmers’ markets	16	17	67
Wholesale/distribution channel	0	14	86
Processor/packer	12	25	63
Local restaurants/other institutional markets	0	0	0
Supermarkets, and other large retail chains	0	25	75
Small specialty retail stores	12	13	75
Through organized supply group	0	40	60

The processor/packer category also plays an insignificant role. About 63% those who used this channel used it to sell a small portion of their produce. Only 12% used this channel to sell all produce. Some fruit and vegetable growers are also selling to restaurants and other institutional markets, although sales through market channels is very small. It appears that supermarkets and specialty retail stores have the same role as processors and packers by being insignificant market channels for fruit and vegetable growers. Among those who used these market channels for selling fruits and vegetables, about three-fourth used it to sell only a small portion of their produce. However, specialty retail stores show better performance compared to supermarkets. Farmers also use organized supply groups to sell a relatively small portion of their products

Table 24: Market share through each market channel used by the grain producers in 2006 (% of respondents)			
	100% sale	51-99% sale	Below 50% sale
Farm retail or road side market	20	30	50
Local farmers' markets	20	40	40
Wholesale/distribution channel	58	25	17
Processor/and packer	35	55	10
Local restaurants/other institutional markets	-	-	-
Supermarkets, and other large retail chains	-	-	-
Small specialty retail stores	-	-	-
Through organized supply group	60	20	20

In the case of grain producers, on-farm sales and sales through farmers' markets play a lesser role (Table 24). Among those who sell products through farm retail markets, only 20% mentioned that they sell all their products through this market outlet. These happened to be grain producers who also have some kind of livestock production activities. About 50% of those who used this channel sold less than 50% of their product through this market channel. Use of local farmers' markets has similar trends. Most of the grain products are sold either through wholesalers and processors or through organized supply group. No product is sold through the food service outlets, institutional markets or supermarkets. Wholesale distribution for grain producers is mainly sales to elevators. About 80% of those who used this channel used it to sell more than 50% of their grain products. The other key market channel for the grain producers is sales

through supply groups. About 80% of those who used this channel used it to sell most of their products.

Farmers’ satisfaction levels with their current market channel

The surveyed farmers were asked to rank their satisfaction/dissatisfaction levels in using the aforementioned market channels. Both fruit and vegetable growers and grain producers provided mixed responses. Regardless of what is produced, farmers who sell at farm retail stands or roadside markets are the most satisfied with their market outlets (Table 25). Farmers are also relatively satisfied with their sales to specialty retail stores. Farmers are dissatisfied in selling their products through wholesalers/distributors and the processor/packer channel.

It appears that fruit and vegetable growers are more satisfied with their on-farm sales operation than the grain producers. On the contrary, grain producers are more satisfied with their sales to processors and packers than their sales at farm retail stands or farmers’ markets. Both farm groups are equally satisfied/dissatisfied with their sales through wholesalers and organized supply groups. This may indicate the impact of prices and volume sales.

Table 25: Farmers’ average satisfaction level with the current market channel*			
Market channel	All farmers	Fruit and vegetable growers	Grain producers
Farm retail or road side market	1.57	1.39	1.90
Local farmers’ markets	2.29	2.42	2.00
Wholesale/distribution 1	2.56	2.57	2.56
Processor/packer	2.59	3.00	2.00
Local restaurants/other institutional markets	2.00	2.00	-
Supermarkets and other large retail chains	2.00	2.00	-
Small specialty retail stores	1.86	1.86	-
Organized supply group	1.94	2.00	1.92
Total average	2.10	2.15	2.06

*scale of 1 to 5 (1=very satisfied, 5=very dissatisfied)

Contractual agreements and special arrangements

Table 26 shows that about 23% of the farmers have contractual agreements or some kind of special arrangements with selected buyers to sell their products in recent years. The remaining 77% do not sell products based on contractual agreements or special arrangements. About 50% of the farmers who sell products through contractual agreements stated that they are satisfied with these arrangements.

There are, however, significant differences between the fruit and vegetable growers and the grain producers. Contractual agreements appear to be more common for grain producers than for fruit and vegetable growers. Only about 15% of the fruit and vegetable growers have these contractual agreements while about a third of the grain producers have contractual agreements with buyers.

Table 26: Contractual agreements and special arrangements

Responses	All respondents	Fruit and vegetable growers	Grain producers
Yes (%)	23	15	29
No (%)	77	85	71

Among those who have contractual agreements, about half (50%) have contractual agreements only with one buyer; another 15% have agreements with two buyers while the remaining 35% have agreements with three or more buyers. Among the grain producers with contractual agreements, 80% have agreements with two or more buyers. This figure was 40% for the fruit and vegetable growers.

Major challenges and obstacles in using the current market channels

Farmers are faced with many challenges when selling products (Table 27). The three most significant challenges facing the surveyed farmers in the region include (1) seasonality of production that does not meet year round demand, (2) small scale production that could not meet buyers’ demand, and (3) low price for products. The other important challenge is related to logistics and transportation.

Table 27: Challenges in using current market channels (All farmers - % of all responses)						
	Agree		Neither agree or disagree		Disagree	
	#	%	#	%	#	%
Seasonality of production	18	20	9	8	4	4
Small scale production	16	18	9	8	8	8
Small order/insufficient demand	9	10	8	7	13	13
Too much competition	4	4	13	12	12	12
Low price	18	20	11	10	3	3
Difficulty with buyers	3	3	11	10	14	14
Unique volume and grade criteria difficult to meet	3	3	14	13	11	11
Lack of buyers' interest	3	3	10	9	15	15
Limited product awareness by buyers	4	4	15	14	10	10
Logistics and transportation problem	13	14	9	8	9	9

According to the responses from the surveyed farmers, challenges in the following areas appear to be limited. (1) The farmers don't have difficulties with most of their buyers. (2) Volume and grade requirements are not the key problems for selling products. (3) Farmers do not see lack of buyers' interest in selling their products. (4) Their buyers appear to know their products. So, there is not product awareness problem. The other interesting result from this survey was the response concerning competition. Most farmers tend to agree that there is not too much competition in selling their products. This may partly be due to the small scale of production for most of them.

Product transportation to the next point of sale

Product transportation within the agri-food supply chain is part of a complex logistics system. At the producer level, the present study focused on two areas: (1) The product delivery system, particularly transportation arrangements from farm location to the next point of sale, and (2) the longest distance local farmers' products traveled to the next level.

Generally, respondents could be divided into two major categories: (1) Those who delivered products using their own vehicles, and (2) situations where buyers pick up most of the products from farm location. Altogether about 63% farmers use their own transport vehicles to transport products to the next point of sale (Table 28). But all these farmers are not using their vehicles to transport all their products. About 76% of them use their vehicles to transport most of their product (i.e. 51% - 100% of their product) while another 24% used their vehicles to transport only a small portion of the marketed product. Difficulties in transportation arrangements are common in the agri-food sector. In some

cases, trucks may travel empty affecting efficient use of vehicles. The present survey did not include number of trucks used and empty truck-travel rates.

About 37% of the farmers responded that buyers pick up products from the farmers' location. Among these farmers, 58% pointed out that the buyers pick up most of the products. Another 42% responded that buyers pick up only a small portion of the marketed products. In addition, fresh produce growers and grain producers are using hired vehicles to transport products to the next point of sale. Comparing fruit and vegetable growers and grain producers, more grain producers use hired vehicles to transport their products to the next wholesale point.

Marketed product share	Use own vehicle(s) (% of responding farmers)	Buyers pickup (% of responding farmers)
76 -100 %	68	45
51 - 75%	8	13
26-50%	9	29
Up to 25%	15	13
n	53	31

Farmers were also asked to estimate distances their products traveled to the next point of sale. Respondents were particularly asked to provide the longest distance their products traveled to reach the next point of sale in 2006. Most of the food products (76%) were sold within the first 50 miles (Table 29). Only 10% of the products traveled more than 100 miles to reach the next point of sale. This indicates that most of the farmers are selling their products to buyers that are located closer or buyers are picking up products at farmers' locations.

Distances	All farmers	Fruits and vegetables	Grain producers
Below 10 miles	21	19	22
10-50 miles	55	41	64
51-100 miles	14	25	7
101-200 miles	4	6	2
201 - 1000 miles	5	6	4
1001 and above miles	1	3	
n	77	32	45

However, it appears that fruit and vegetable products travel longer distances than the grain products. This may be due to travel by small fruit and vegetable growers to sell

products at farmers' markets or make special deliveries to specialty retail stores or directly to end-consumers. On the other hand, most of the grain producers have volume-products that need to be sold either to the nearest grain elevator or picked up by buyers, if it is going to travel long distances. Therefore, most of the grain producers (86%) sell their products within the first 50 miles. Such sales could also be affected by contractual arrangements, which is a relatively more common practice by grain producers than by the fruit and vegetable growers.

Preferred future market channels to sell locally grown food products

The surveyed farmers were asked to make suggestions and recommendations on preferred future new or additional market channels that could improve sales of their products. Overall, about 43% of those who responded to this question noted that they want to continue with their current market channel (Table 30). This indicates that more than half of the respondents (57%) want to see some change in market channel to increase sales from their products. About 16% of the respondents feel that improving direct market operations (e.g., farmers' markets and farm retail markets) would help improve sales from their products. Another 13% feels strengthening the relationship with the wholesalers/distributors or supermarket chains may have a potential impact on their sales. Only about 7% of the farmers feel that creating joint marketing initiatives will increase sales from their products.

	All farmers	Fruits and vegetables	Grain producers
Satisfied with current buyers	43	34	52
Develop joint marketing initiatives for farmers	7	4	10
Create a distribution center specialized in local product	13	9	16
Improve sales to public institutions	10	15	4
Make better arrangements with supermarkets	13	17	8
Improve opportunity to increase sales through direct marketing	16	21	10

It appears that more grain producers (52%) are satisfied with their current market channel than the fruit and vegetable growers (34%). In addition, more grain producers wanted to see increased sales through the wholesale channel than the fruit and vegetable growers. On the other hand, more fruit and vegetable growers want to increase sales directly to consumers. This indicates the different market needs of agri-food producers in the region. However, both groups of growers have less interest for the creation of joint product marketing initiative.

Regarding preferred future products, most of the farmers want to continue with their current production. As mentioned in the previous sections, many farmers are producing more than one crop. One farmer, for example, grows more than 20 crops. Preferred

livestock products listed by the surveyed farmers include beef, lamb and wool, and pastured poultry. Most frequently mentioned preferred grain products include corn, soybeans and hay. Most frequently mentioned preferred vegetables include potatoes, sweet corn, pepper, watermelon, onion, cabbage, bean and garlic. Most frequently mentioned preferred fruits include apples, peaches, squash, strawberries and blueberries.

Surveyed farmers noted general challenges they are faced with in developing and marketing new products. Following are some of them:

- Property taxes are becoming a burden on farmers
- Some farmers who started developing new products (e.g., specialty cheese) have difficulties in legalizing their business and in getting markets.
- Some have already sold part or all of their farm land, because farming was not found to be profitable for these farmers. Some approached their retirement age.
- Some farmers wanted to establish and be part of a Community Supported Agriculture (CSA) program. However, they don't have the knowledge and the information how to start it. They feel that it will be a better way (at least, in terms of transportation costs) to have such organizations than selling at farmers' markets.
- Restrictions in some farmers' markets did not allow some farmers to sell their products at these markets (e.g., two weeks application period before one can sell at a farmer's market)

Chapter 5: Results from case studies

This chapter describes the results from the case studies at the retail, wholesale, and processing level in the region.

Food retail markets

The retail food industry comprises a wide range of local, regional and national retail and discount stores, and supermarket chains. The literature provides different approaches to categorize these markets and there is no agreement on the definitions and descriptions of them. For the purpose of this study, we classify these retail markets as follows.

National and regional upscale supermarket chains: Companies with many stores located in different parts of the nation, some with international representation (e.g. Whole Foods, Meijer)

Large discount merchandise chains: Chains with national representation and many stores selling goods and services at discount prices (e.g. Wal-Mart, Aldi)

Local supermarkets: Relatively small supermarket chains with up to 10 stores, mostly located in a specific region or state

Convenience stores: Stores that are relatively small in size and provide a limited line of durable and packaged food products

Direct retail markets: Markets where producers sell food products directly to the end-consumer (e.g., Farmers' markets, town markets, and roadside and retail farm stands).

Food specialty stores: Small retail stores known for some niche products available in their stores and mostly sell ready-to-consume foods and beverages.

The following case studies were conducted to highlight and illustrate the role and contribution of the food retail market channel on local food production and marketing in the region:

Case 1 represents national and regional upscale supermarket chains

Case 2 represents local supermarkets. Each case study supermarket has less than three stores located in Michigan counties

Case 4 represents farm retail markets

Case 3 represents food specialty stores

Case 5 represents convenience stores located in small towns and rural areas.

Interviews for these case studies were conducted with managers and/or owners of individual stores. The following sections highlight the results from the case studies.

National upscale supermarket chain

National supermarket chains are characterized by a huge selection of fresh fruits and vegetables, and a growing trend of organic, natural and specialty/niche products in their stores. The case study supermarket has retail stores in southeast Michigan. The present section describes the responses from an interview with the manager of one of the stores of this supermarket chain.

Buying local

Locally grown food products sold at the supermarket include a wide range of fresh produce, meat and meat products, and a local delicacy, recipe or products from well-known local manufacturers (e.g., Zingerman's). Many of the specialty livestock products come from Wisconsin. Food items at the supermarket are estimated to be one-third organic and natural, and the remaining two-third conventional. The bulk of the produce in the supermarket is not coming from the surrounding small growers and producers, and figures on volume of purchase of locally grown food products was not available.

Local foods are defined in different ways. The most widely accepted definitions for local food are used by farmers' markets to identify producers who are entitled to sell there. In one example, local food is defined as "food produced, processed, traded and sold within a defined geographic radius, often 30 miles."³ The case study supermarket chain has a broader definition of local food. For the supermarket, "local" represents a larger geographical area and local food items that are sold in stores located in southeast Michigan could include products purchased in other parts of Michigan and in neighboring states. It appears that, for this supermarket, the goal of a local food system, rather than a single definition, provides a framework for buying and selling local foods. Buying local foods from a broader geographical area would allow the supermarket to sell these food items with a clear and identifiable provenance within the region. That means, the food items can be sold within the specific region as "local" foods.

In general, the supermarket chain has two major food product sourcing arrangements:

- (1) The chain has its own regional food distribution centers that serve stores within a given region or state. The distribution centers purchase food items from a wide range of first and second line wholesalers and relatively large producers and manufacturers.
- (2) Stores at certain locations are allowed to buy food items directly from local farmers and food manufacturers. These are mainly seasonally grown fresh products and specialty food items that are manufactured in a given area. Fresh produce from local farmers is supplied mainly during the summer time. Produce includes any type of fruit or vegetable. According to the store manager, most of the farmers that supply fresh produce are farms between 10-50 acres.

³ http://www.defra.gov.uk/foodrin/foodname/lfood/pdf/Local%20Food%20Report%20_final_.pdf

The store has a produce procurement unit that is responsible for acquiring produce and establishing contacts with the local farmers and suppliers. The store also uses venues of large retail and wholesale farmers' markets (e.g., Eastern Market) to recruit farmers. In some cases, the farmers are also contacting individual stores. The supermarket manager indicated that the company has long-term relationships with some local farmers (in some cases for up to 10 years). Overall, it appears that the supermarket has its own sourcing policies, at least when it buys from big farms. This includes checking for insurance documents and other food safety and delivery issues. No clear information was given on contractual agreements. However, it appears the supermarket chain does not exclude having such kinds of arrangements depending on the magnitude and nature of food supply to be sold through its stores.

During the summertime, the supermarket focuses as much as possible on buying local rather than sourcing through its distribution centers. Organic produce appears to be given priority. Volume appears not to be a big factor in buying fresh produce. This supermarket chain has a reputation of working with small farmers, although the tendency is to buy from some bigger farms to reduce the cost of product collection, and payment and logistics administration for transactions with a large number of smaller farms.

Product delivery to this store does not appear to be complicated. It was, however, suggested that farmers need to know when and how to deliver. Product quality can be checked on the spot and then decisions could be made whether the store can buy it or not. The store prefers to have contacts with the supplier in advance before shipping products to make the process smooth and simple. The store's packaging and bagging requirements are minimal, as long as farmers bring their produce washed, cleaned and free of soil. It has well-trained employees who can sort and display the produce. They determine purchase based on what the store currently has in store. During off seasons the store receives fresh produce mainly through the regional distribution center, and in some cases from regional wholesalers.

The supermarket uses different approaches in promoting locally grown foods. (1) It does in-store promotion by hanging signs and banners that sometimes include pictures of local farmers. (2) The supermarket sometimes invites some local farmers to give talks about their produce. This happens mostly during the summer time. (3) It also uses in-store flyers and newspapers to advertise.

According to the manager of the supermarket, future purchase and sales of locally or regionally grown food products will be determined by the following factors:

- (1) Produce type, volume, quality and freshness: In terms of types of products, the supermarket can buy a relatively wide range of fruit and vegetable products. But local purchase will be limited to the summer time when there is enough supply at the local level. Priority by and large will be given to organic, natural and niche products. Each store may have, however, its own preferences and delivery arrangements depending on current consumer demand and availability of produce. Farmers need to adapt to these needs and develop

relationships with individual stores to make necessary adjustments and changes. Volume will not necessarily be a factor to sell produce through this supermarket chain, in particular, if farmers supply niche products that are not widely available. In fact, selling to this supermarket chain appears to be beneficial for such kinds of producers who otherwise may depend on farmers' markets and other direct marketing outlets which may be more labor-intensive and time-consuming to introduce new products.

- (2) The supermarket chain tends to pay better premium prices to local farmers compared to other national supermarket and discount merchandise chains. However, as any other large supermarket chain, the supermarket chain tends to have preferences for centralized purchasing of high volume food items. Thus the chain still prefers to buy from fewer, larger suppliers to remain price-competitive and to allow it to control and manage food quality and safety.

Overall, the supermarket would like to increase its future purchase of local foods mainly fresh produce and specialty/niche/gourmet products. According to the store manager, the following are some of the reasons that support the enhancement of this activity in the future:

1. Buying from local farmers reduce freight costs. The chain currently gets most of its food products through the regional food distribution center. With the current high fuel cost, however, delivering products from the distribution centers to the individual stores is becoming expensive. Therefore, if there is adequate local and regional supply, that will be supported by the chain.
2. The supermarket manger noted that the present consumer has an increasing interest in local foods. He stated that "buying local attaches us with the consumer locally". Having more local foods in the store means that food items are easily recognized by customers as local and regional, leading to more frequent customer visits to the store.
3. The supermarket has a great interest in working with the local community.

The supermarket manager has the following advice to farmers who want to sell their food products through the supermarket chain. Farmers should always be in a position to supply produce that is needed. Linkage and relationship development with the store is key in selling food items through the supermarket chain. The chain also wants to have some flexibility to respond to customer demands. Therefore, it was suggested that "it should not be necessarily big" what farmers can supply but they need to know how to react to meet "current demand". The supermarket has a preference to work with farmers who can provide quick responses to market demands and deliver products consistently as needed. According to the manager, the store doesn't have complicated buying procedures especially when buying from small farmers, as long as they have established relationships with the store.

Local supermarkets

Four case studies were conducted in this category and interviews were conducted with four supermarket managers and owners. Each interviewed supermarket has between one and three supermarket stores at various locations within Michigan. Case one has only one store. Case two has three stores located in different parts of the state. Case three has two stores. Case four has also only one retail store. These are much smaller grocery stores compared to some regional supermarkets such as Meijer or Farmer Jack. The annual estimated gross income for the case study supermarkets ranges between \$4 million and \$10 million. Some of the retail stores have inventory of up to 3000 different kinds of food and consumer products.

(1) General food supply sources

The regional supermarkets have different sources of supply.

Case one: The major source of products for this supermarket is Nash Finch – a national whole food distributor in the U.S. Nash Finch distributes food products to a variety of retail operations including supermarkets, institutional markets, and specialty retail stores. The case study supermarket buys from Nash Finch a variety of wholesale grocery items, and health and beauty items. The second source is Sherwood food distributor - a regional food distributor and supplier that is specialized in meat and meat product distribution. The retail operation buys from this supplier mainly meat and poultry products. The third supplier group for this particular retail operation includes a number of small suppliers.

The supermarket uses these supply channels for different reasons. (1) It has a long term relationship with some of the major suppliers that led to the development of trust in sourcing food items from them. (2) Price appears to be in most cases within an acceptable range. (3) Delivery arrangement from these suppliers meet the supermarket's volume needs and customers' demand at the store.

Case two: The major food supplier for this supermarket is Spartan Stores. According to the information on Spartan Stores web site, Spartan Stores supplies food to over 350 independent grocery stores. In addition, it owns and operates more than 68 supermarkets and 19 drug stores in Ohio and Michigan. Spartan Stores supplies a wide range of food products including fresh produce, meat, and other packaged and frozen food items. The case study supermarket selected Spartan Stores for its "expanded and excellent selection" of private label products. According to the manager of the case study supermarket, Spartan Stores has some general requirements buyers need meet when making first time orders. These include (1) store conditions in terms of cleanliness, safety, and square feet, (2) credit worthiness, (3) and purchase volume in different product categories.

Case three: Nash Finch is the major supplier of food products to the case study supermarket. It mainly supplies grocery items. The Wolverine Packing Company is the second supplier, mainly for meat and poultry products. Fresh produce is supplied by small regional distributors and through food brokers. These suppliers collect fresh

produce from other distributors and markets, and ship it to the store. Key factor for selecting these supply channels is the existence of long-term relationships with them.

Case four: The fourth case study retail operation mentioned that it has about 15-20 suppliers of food items and other consumer items, which is typical for such kinds of supermarkets, according to the manager of the supermarket. The retail operation has a list of vendors for different kinds of products. The major food product supplier is, however, Spartan Stores. It was learned during the interview that Spartan Stores needs 24-48 hours notice in advance to deliver products to the store. The case study supermarket also mentioned that it has always some kind of “back-up sources”, if Spartan Stores does not have the product. In such cases the supermarket is looking for a supplier that delivers products at competitive prices.

Major reasons for selecting the Spartan Stores as a major supplier include the following:

- Spartan Stores was described by the manager as the best known supplier of private label products, and
- It has a well established reputation and name recognition.

(2) Contractual agreements

The case study local supermarkets have different contractual agreements and arrangements when buying food items. All supermarkets agree that they have some kind of short-term arrangements in terms of volume and price. However, case one and case four has no any kind of long-term contractual agreements with their suppliers. They make orders when product is needed. Case two and three retail operations had special arrangements with their buyers in previous years: Case two with Spartan Stores and case three with a supplier from California. The major agreement was related to pricing and delivery arrangements of products. Currently, both supermarkets do not have such agreements.

(3) Buying local

All supermarkets in this category have local experience. They have been buying mainly fresh produce from local growers for the last many years.

Case one: This supermarket buys mainly fresh vegetables and fruits from local suppliers. It buys all kinds of fresh produce that is available locally. It has the experience with local food growers through its supplier. The major portion of its produce supply comes through a produce distributor in Detroit that also supplies the retail store with other food products through out the year. The produce supplier gets most of its fresh produce during the summer time from the Eastern Market. The overall volume of locally grown fresh produce coming to the store is not high. The Supermarket owner expressed that consumers are not coming to the store to primarily buy fresh produce. Demand for fresh produce in the store is assumed to be low. The store is relatively small and does not have adequate space to handle a variety of fresh produce.

Case two: Case two supermarket has also a local experience. It buys locally grown food items from few suppliers. These are local farmers that grow different fruits and vegetables. Spartan Stores is the major fresh produce supplier for this supermarket. Some of the fresh products that are bought locally include melon, sweet corn, asparagus, pumpkins, apples, small leafy vegetables, straw berries, raspberries, and flowers/plants. The manager of the supermarket expressed his interactions with the local farmers using the following illustrations.

A farmer contacted the supermarket eight years ago to supply sweet corn. The manager stated that “the farmer came to me and said, ‘I have a fine product here, why not buy mine’. I looked at the product. We talked about price and availability, and finally I agreed to buy his produce. I continued buying from him for the last eight years”. In the previous years the supermarket used to buy sweet corn through the Spartan Stores. Similarly a melon farmer contacted him a few years ago. He is currently buying melon from this farmer. The supermarket also had a long-term relationship with a local tomato producer. The farmer used to supply for few years. Then he disappeared for the last three years without any prior notification. The manager described such cases as one of the problems to work with local farmers. When such things happen, he stated “then you go out and establish new relationships. This costs time and money”.

According to the manager of this supermarket, the following are some of the questions a farmer needs to answer, if interested in selling to the supermarket.

- “How frequently can you supply?”
- “What is your expectation?” The manager described this giving the following example. A farmer approached him to sell watermelon. The store manager offered to pay 10% higher than the current wholesale price. But the farmer was not willing to accept this price. So it did not work out.
- “What is your season?” The manager wants a farmer who supplies to the store to “be the first and the last to supply in the season. Then I can buy from you!!” As an example, he mentioned that melon is a three-week supply. Fresh asparagus supply lasts for 7-8 weeks. He can buy melon for three weeks or asparagus for 7-8 weeks, if he can make sure that the farmer supplies these products in the three or seven to eight-week period as needed without any interruption. In general, the supermarket had strong relationships with local farmers in previous years. But now it “stopped” buying from some of these farmers because of “inconsistent supply” and inability of farmers to meet their commitments.

Case three: This supermarket buys different kinds of fresh food products during the summer time from local farmers (e.g., zucchini, squash, potato and corn). It purchases dairy products from a local supplier. It used to buy eggs from a local supplier in previous years. It doesn’t buy eggs now from this farmer anymore because of prices. The manager stated that egg prices are becoming higher because of increasing feed costs. This

supermarket also buys some flowers and plants from local farmers' markets. The supermarket, according to the manager, has a reputation for "meat".

The supermarket normally buys locally, if the farmer approaches the store. In the manager's words, "I don't buy it or go out and look for it unless a farmer approaches me". He mentioned that volume is not needed as long as price and quality meets his requirements. One unique character of this supermarket is that it sells food products not only at the retail store, but also delivers to different consumer groups in the surrounding areas. For example it occasionally delivers food items to parties for church groups, funerals, and at local schools. The manager wants to expand this potential niche market.

Case four: This supermarket buys a wide range of products from local producers and growers. Products mainly include fresh produce such as sweet corn, potatoes, tomatoes, apples, and sugar beet. It appears that the manager of this supermarket understands local food as food product that is grown within the state of Michigan. The major produce suppliers for this supermarket are local farmers and Spartan Stores. In the previous years this supermarket had contacts and relationships with about 12 local farmers. The store, however, as the manager described it "had the same farmers every year". But these days the number of farmers using this supermarket as their market channel is declining.

This supermarket does not have any specific requirement when buying from local farmers. Price competitiveness and quality appears to be key factors that determine the relationship between the supermarket and a local farmer. Volume, although important, appears not to be the decisive factor in buying local foods. The supermarket can buy even a small amount and can make arrangements with Spartan Stores on its purchases and delivery schedules. The store wants to improve its relationships with the community. As the manager described it, "we are community stores; it is nice to deal with communities".

Volume: Interviewees were not comfortable in providing financial information. However, they provided some estimates on their activities. For example, case one estimated per week fresh produce sales at one store to be \$35,000. The fresh produce market share in the retail store is estimated at 3%. Total volume of sales from all stores in case two was estimated at \$9 - \$10 million per year. Share of produce sales was estimated to be 2-5%. Case three described share of food product sales as follows: 55% meat, 9% produce and 6% deli. Total volume of sales in all stores was estimated at \$3.5 million. Per week fresh produce sales from local farmers during the summer time was estimated at \$6,000 - \$7,000. Case four has estimated gross sales of about \$4 million. Share of produce sales was estimated at 8% of total sales.

(4) Promotion

Case one does not have any specific promotional activity that focuses on local food items. All others have some kind of promotional activity. Case two promotes local food products during summer time using local newspapers and in-store flyers. Case three uses these methods and also advertises local farmers' produce by adding farmers' names on produce signs in the store. The manager stated that some consumers would like to buy

local foods and having some signs and in-store flyers help them identify these products. Case four also promotes local foods using in-store stands that also include names of suppliers or farms. Also, in some cases, names of farms are printed on packages and bags.

Future purchase of local foods

Interviewed local supermarkets mentioned different factors that will determine their future purchase of locally grown food products.

Case one: The manager stated that “if a farmer wants to sell produce to me he should have good quality, competitive price, and enough volume to cover supply in a given time frame.” For first time sellers to this supermarket, purchase will depend on how the farmers introduce their products, their price range, and above all their “personal approach” will determine whether to buy products from them. Establishing relationship is key to start selling food products to the store. The manager of this supermarket feels that the farmers need to be better organized in selling their products. As he described it, “farmers are not so organized, that does not work”.

Case two: The manager of this supermarket wants to see close relationship and coordination between producers and supermarket buyers. He felt there needs to be a clear understanding between the parties regarding supply time line, delivery schedule, product quantity, price, etc. Some of the descriptions made by the manager of this supermarket include the following: “I don’t like each time payment”. “I don’t like it”. As an example, the manager mentioned that, during the supply season, sweet corn producers deliver the product “fresh” every other day (afternoons). Payment is made “once every week”. ... “Some growers want to have their packaging or bagging material back every time they bring a product. I don’t like it to do every time. It must be arranged, once or twice a week”.

The manager of this supermarket is willing to buy any type of locally grown food products in the future as long as it meets his requirements. He stated his relationship with one small local hydroponic tomato producer as follows.

“I liked his product, like a garden product, supplied during winter time, did some kind of grading ... produced and supplied for years... I even connected him with the Spartan Stores. Suddenly started having inconsistent supply, couldn’t supply regularly – then stopped buying from him.”

According to the manager, if a local farmer wants to sell directly to the supermarket, he should be able to supply a product regularly the whole season. He stated that

“I can’t do it, if it is a one week supply, then it stops and restarts in the third week. Because I can’t go back to the Spartan Stores for only one week, and then back to the grower for the third week. Such breakdowns don’t work. That disturbs the supply system and incurs a huge transaction cost. It should work, for example, if

the farmers supply two months regularly, then I can go back to Spartan Stores for the rest of the season or for the nine-ten months.”

Price competitiveness is the other factor farmers need to consider, if they want to sell their products through this supermarket.

Supply arrangement and delivery schedules should be simple. The store manager stated “I like it simple”. He wants to have a direct relationship with farmers. If things go well, he does not want to see any intermediary. To make things easy, there has to be an arrangement and a time set up for delivery, for making calls, for returning bags, etc.

Despite the manager’s readiness to potentially buy all types of fresh produce from the local growers, the manager described that fruits may have a better market opportunity through his store. He thought because of a limited and inconsistent supply, it will be difficult to depend on local farmers for vegetable supply.

Case three: According to the manager of this supermarket, fresh products that have potential in the store mainly include cucumber, sweet corn and cabbage. His primary concern in buying local is quality and grading. Some kind of grading or sorting of produce is key in buying a produce. He mentioned that “it is all presentation; produce should be delivered clean, trimmed, free of soil, and in clean trucks.” Deliveries should be made regularly upon an agreed time and date (e.g. “Friday afternoon between 3 and 4 pm for the next three weeks/months”). Supplied quantities should be as agreed upon. There has to be some arrangements to reject spoiled produce, produce that is showing signs of age, torn packaging, bags, etc.

His second concern is packaging. He wants to see that farmers supply their products in acceptable bags, boxes or other packaging materials that could help grade or sort the product (e.g., tomatoes should be graded, sorted and put layered in boxes). Farmers should supply “ready to sell” products. His experience is that some farmers want to “dumb their products... The younger people don’t know how to sell, they dumb it”, according to him. He stopped buying tomatoes from local farmers because of lack of “uniformity in size”. Green beans need to be stemmed and packed. “They don’t do it”, he mentioned.

Case four: The manager of this supermarket feels that independent groceries are dying, making it more difficult for small farmers to sell to big boxes. His advice to farmers is the following;

- Farmers need to establish some kind of organization (e.g., a cooperative) to market their products. This will allow them to move large quantities of products.
- “I want to see from the farmer something like “I’m inspected”, said the manager. He feels that having some kind of state level product certification program that certifies small farms would have a great impact in improving sales. It could be some kind of letter of inspection from the

state saying that “this farm passes Michigan’s standard for safety and public health.”

- Expand the use of farmers’ markets and the markets themselves could also apply some sort of certification program to assure product quality and safety.
- Organic is a good concept that will support the local economy. “I continue buying organic, if price is lower”.

Farm retail market

The case study farm retail market represents relatively small farms that produce and sell their own products on site, at farm stands or at designated retail areas, along with sourcing different products from neighboring farmers. The farm has been in operation for 26 years. The primary focus of the business is to produce, buy, add value and sell different kinds of fruit and vegetable products. Sales activity takes place mainly in the June - October season. About 90% of the products marketed at the farm are fresh products. Sweet corn, pumpkin and tomato are the major fresh products that are sold at the retail market. Most of these products are grown on the farm. Other products that are bought and sold by the farm include peaches, blueberries, and apples. Depending on market demand and availability of labor and other logistical arrangements, the case study farm is sourcing fresh produce from a number of neighboring farmers. It buys produce not only from the small farmers but also occasionally from large produce wholesale companies in large containers and from the surrounding farmers’ markets (e.g., Down town Jackson farmers’ market). The value added process is mainly focused on the production and marketing of jams, and jellies. The farm also sells some baked items for a limited period of time.

The volume of sales through this market outlet is relatively small. It was estimated to be less than \$50,000 per year, half of it coming from own production.

One key factor that distinguishes the case study farm from other farm retail markets is its active involvement in regional farmers’ markets. In addition to selling produce at the farm retail market, the farmer also sells some produce at regional relatively large markets (e.g., Benton Harbor) that supply the Chicago market. Also, although relatively very small, it has some wholesale activity to very few neighboring grocery stores. Altogether most of the produce (about 80%) are sold on the farm while the rest 20% going to regional farmers’ markets and grocery stores.

The case study farmer has an interest in continuing to diversify produce supply from the region. So it has recently started collaborating with one large producer in the area to coordinate activities to supply produce that have demand at regional farmers’ markets. The farmers coordinate operations to supply produce at the Benton Harbor market, basically tapping into the Chicago market. This coordination allowed the case study farm to get large quantities of produce from one supplier rather than collecting it from a number of small farmers. The farmer considers this to be a more effective way of

sourcing local produce. The case study farm promotes fresh produce through local news papers and by developing different promotional products (e.g., calendars, rulers, etc.).

The farmer indicated different factors that will influence his future success and interest in operating the farm retail market. Following are some of the challenges that will affect future activities of the farm retail operation:

(1) Age of the farmer is an important factor that determines farm growth and continuity. The case study farmer wants to expand farm production by focusing on some niche products such as blueberries and some selected leafy vegetables. Although the farmer has an interest in developing the produce market that can supply the Chicago market, he mentioned that his age will not allow him to expand the market. It was also learned during the interview that his children are not interested in taking over the farm.

(2) At the moment, the retail operation is concentrated in the months between June and October. This requires the use of labor for an extended period of time that collects produce from the surrounding farmers as required. There is no adequate labor supply in the area. Therefore, labor is becoming a critical problem during this period of time to work on the farm.

(3) Transportation logistics is the other challenge mentioned by the respondent to collect produce from other farmers.

(3) The farmer lacks quick and adequate information on products that have demand or, from his perspective, “on products that sell by next day”.

(4) Overall there is lack of produce supply in his locality.

(5) Semi-processed products such as jams and jellies are not selling well at the farm. Many consumers are coming to the retail market to buy produce.

One key observation pointed out by the case study farmer was the shift in the consumer’s wants and needs. In previous times, the consumer used to buy in large quantities. The present consumer is interested in buying small sizes that are ready-to-consume. This requires development and use of appropriate packaging, grading and sorting of products to meet this consumer demand. This is not fully done at the farm level, thus limiting farm sales.

Following are some of the suggestions made by the case study farmer to support local producers to expand market for their products.

(1) Producers need to have established contracts with existing buyers (e.g., retailers, restaurants, etc.). That may help grow local production and market.

(2) Also, subscription markets such as Community Supported Agriculture (CSAs) will help farmers expand their direct marketing efforts. The case study farmer has heard about it. But it did not materialize until now in his area. He wants to see that happen.

(3) Creation of a regional “central market” (e.g., Benton Harbor Market) where farmers can deliver their products will also be useful in sourcing products from the region. The case study farmer feels that, due to the small number of farmers in the area, there is less competition among small farmers. There is not enough production that can satisfy the market.

Specialty retail store

Interviews were conducted with three specialty stores. This section describes results from one case study that provided applicable information for the study. This case study retail operation represents specialized small food retail stores targeted to categories of customers buying specific types of food products. The store carries only very limited selected food items. This special operation was purposely selected to learn about the role and contribution of such kinds of very specialized retail establishments in developing regional food system economies.

The operation is a retail franchise that purchases and sells different lines of products. Major food items that are being bought and sold at the retail facility include fresh fruit juices, cookies, ice cream, pretzel, butter, pizza sauce, cheese sauce, and carbonated beverage. The business estimates its annual sales to be between \$350,000 and \$360,000. Its three major suppliers of food items are Sysco, Samsclub, and Gordon Foods. The owner has various reasons for selecting these three suppliers. Sysco is believed to be a true wholesaler and developed trust by the company. “There is no competition when buying at Sysco” said the owner and manager of the operation. Convenience in delivery is key to have Sysco as supplier. Also a marketing representative from Sysco comes every week out and asks about the market situation and what is working and not working. The representative provides advice in many areas and by doing so Sysco provides more services than only selling products. Gordon does not send out marketing representatives to the retail store.

The store owner does not have any contractual agreement with these suppliers. But there are some minimum requirements that need to be met when buying from the suppliers. For example, the retail operation must buy a minimum of \$1,000 when making orders from Sysco. Previously it was \$500. Gordon Food Service’s minimum requirement is \$500 per week. Dawn Food Products has also a minimum requirement of \$400 when you order any time. Sam’s Club supplies food items worth of \$1500 - \$1800 per week. Sysco delivers twice a week from distribution centers in Canton and Grand Rapids.

The store owner does not have any direct relationship with local food suppliers. It didn’t buy food items from local producers because of the nature of products it is currently selling. There is no local supplier of semi-processed food products. No relationship at all with local growers since no fresh produce is being sold in the store except lemon that is

bought year round from second line wholesalers. At the moment, there is no direct interest in buying and selling locally grown products. Even if the retail store needs some local products, there is no interest in buying it directly from farmers mainly for safety reasons. The retail store wants to see some kind of intermediary that assures quality and safety of products.

There is no big product marketing and promotion activity for the retail operation. It makes limited marketing and promotion in local news papers. The current main marketing activity is establishment of contacts and networking to expand market share through institutional markets. This activity led to the creation of new market outlets. It is currently selling food items not only to individual customers, but also, although occasional, supplies cookies to hospitals or to Christmas time family or group parties and celebrations. The retail operation has also started occasional supplying of cookies to elementary schools in the area.

The retail operator suggested the following to improve the regional food system:

- Farmers need to establish strong linkages and communication with their buyers.
- It would help farmers, if they come together to establish some kind of central point where buyers can collect products instead of trying to reach out to a number of small farmers.

Convenience store

Convenience stores carry a very small amount of fresh produce. Three convenience store owners and managers were interviewed for this study. These owners and managers were interviewed to learn if there is a potential to create a market outlet for locally grown food products through these stores. Most of the interviewed convenience stores are located in rural and farm communities and have different product assortments in their stores.

Case one is a convenience store which could also be categorized as a small independent grocery store that carries different food products and other consumer items. It carries grocery items (mainly packed and bagged food products), and beverages. It has even a small section for fresh produce. Total annual volume of sales in two stores is estimated at \$850,000. The fresh produce share is estimated at 1-2%.

Case two carries mainly beverages and also sells some prepared sandwiches, cookies, and canned and bagged food products. The store buys half-baked dough to prepare fresh cookies. Major products in this store include beer, wine, liquor, cigarettes. Its specialty product is Michigan wine. Total annual volume of sells in three stores is estimated between \$2 and \$3 million.

Case three mainly sells food products – packed food items and beverages. The owner has two other convenience stores. Total volume of sales from food products in the three stores is estimated at \$1 million.

Supply sources

Case one's major suppliers are (1) Great North Food Distribution located in Alpena. It is a distributor that supplies different kinds of grocery items including canned and frozen products. (2) Meat is bought at the Eastern Market warehouse. (3) The convenience store uses different sources for beverages. The store selected these channels because of long term relationships with the companies.

Case two's major suppliers include the regional supplier E.B. Brown. The store buys mainly grocery items including canned and frozen foods, candies, and cigarettes from this company. The store has long-term relationship with this supplier. It purchased most of these products from this company for the last 16 years. Again, the ability of the supplier to solve emerging delivery issues and problems as quickly as possible has been the key factor that enabled the store to be a long time customer of the supplier. Price plays a secondary role in buying products from the supplier.

Case three's major supplier is Great North Food Distribution. It has been purchasing food items from this supplier for the last five years. The store has also many other small suppliers that carry small grocery items and have cheap prices.

The convenience stores have no contractual agreements with their suppliers. But some of them have special arrangements with their suppliers when making orders. In some cases, it is the suppliers who monitor stores' inventories and make decisions on deliveries. The convenience store owners and managers liked this service.

Regarding marketing and promotion, the interviewed convenience stores do not have strong promotion programs for local foods. They normally provide discount prices on some food products they carry. Some have specific advertisements on processed meat products that are supplied from regional suppliers.

Buying local

Some convenience stores are carrying very small amount of locally grown food products including fresh produce. Most frequently mentioned fresh produce carried by the stores includes green peppers, lettuce, celery, tomato and cucumber. These are seasonal supplies and they are sourcing them mainly from farm markets (e.g., Eastern Market and other local farm markets), and nearby supermarkets. No convenience store owner mentioned purchase of fresh produce directly from growers. Some have bought some fresh produce items from area schools that grow vegetables during the summer time.

Major reasons for convenience stores carrying only a small amount of fresh produce include the following:

- Their stores are relatively small and do not have adequate in-store facility that allow them to carry fresh produce.

- Very limited demand for fresh produce. They are located within a farm community that produces and supply other communities.
- Purchasing power of consumers in the area is not strong and fresh produce is usually expensive. As one store owner described it, “I don’t want to buy tomato for \$20 to sell it for \$10”.
- Some stores are also located in areas where there are no fruit and vegetable growers. They see only some corn, bean and hay growers.

Overall, according to the interviewed convenience store owners and managers, there is no adequate demand for fresh produce in their stores. People are not coming to these stores to buy fresh produce, rather some other food items including processed/package meat and beverages.

In terms of local produce preferences, the store owners and managers suggested that lettuce, tomatoes, peppers, potatoes and onions will have some limited market opportunities through their shops. Price will be the key factor that will limit purchase of locally grown food products.

These case study convenience store owners and managers made some suggestions to develop the regional food system. Following are some of their comments:

- Growers should let end customers and other buyers know more about their production activities.
- Growers need to establish strong linkages and relationships with their buyers.
- Growers may need to have some kind of central market where people can access local products at a central location.
- Overall, the distribution system for locally grown food products need to be improved.
- Farmers’ markets will help to increase sales of locally grown food products (e.g. improve activities of the Chelsea farmers’ market).
- Growers may need to establish some kind of organizations that help them improve production and marketing of their products
- A local and regional agri-food product tracking system needs to be developed to show who is doing what and when in the sector, and to identify production volumes, prices, and year-round supply and availability.

Wholesalers, distributors and packers

Seven food wholesalers and distributors were interviewed for this study. Following is a result summarized from six wholesalers.

Case 1: Large national wholesalers and distributors

These are wholesalers and distributors that represent large national wholesalers and distributors. For the purpose of this study, we interviewed one national distributor. Major characteristics of this distributor include the following: (a) It carries a wide range of raw, processed and packaged food products. (b) Food products are sold to a wide range of retailers, food service outlets, institutional markets and state or regional level second line wholesalers. (c) The distributor has its own product delivery systems and distribution centers that supply products to the distributor's individual stores and other markets in a given state or region.

Case 2: Ethnic-based wholesalers and distributors

We interviewed four owners and managers in this category. Results from three case studies that provided applicable information has been included in the analysis. Some of these wholesalers are also working as brokers. These wholesalers represent medium to large-scale regional partly specialized wholesalers and distributors. The main characteristics of these wholesalers include the following: (a) Food products are not for distribution to large supermarkets. They mainly target small-specialized retail stores, food service providers and ethnic markets. (b) Distribution is limited to Michigan locations, and in most cases to buyers within a few miles radius from the location of the store. (c) In order to meet special demands of their customers, these wholesalers are partly involved in importing and distributing food products from foreign countries. But they are also involved in buying and selling local food products (mainly fresh produce) that have demand by their customers. (d) They are relatively specialized in specific food products. These wholesalers buy and sell relatively small number of products that are not necessarily carried by large national distributors. (e) Some of these wholesalers are also operating as brokers. (f) Some also provide labeling services for some products.

Case 3: Wholesale-retail operation

One wholesale-retail operation manager was interviewed for this study. The case study operation represents operations that do a wide range of activities including wholesaling to next line wholesalers, retailers and selling food items directly to individual consumers. The operation has also its own packaging operation. It is relatively small in size than the case studies in the first two wholesale categories. It is also characterized by a large selection of products.

Case 4: Grower-packer

We interviewed one wholesaler in this category. Major characteristics of this grower-packer include the following: (1) Most of the food products marketed come from own production. It also buys food products, mainly vegetables and fruits from the surrounding small farmers. (2) It has a packaging operation for some of the vegetables. About 40% of the products are distributed packaged. Packaging is done mainly on fresh vegetables including potato, sweet corn, pepper and cabbage. (3) It provides different services to other farmers in the area. This includes a storage service if product is going to be marketed through its channel. It also sells containers, bags, pallets, etc. to these farmers.

The grower-packer produces and markets small number of products that include potato, sweet corn, cabbage and grains. About half of the vegetables are sold through brokers to large grocery stores including Wal-Mart, Farmer Jack and Kroger. The remaining half goes to smaller grocery stores, restaurants, and small distributors. The grower-packer's preference is to deal with the small grocery stores and small distributors for price reasons. Grains are sold to three different elevators in the region.

The responses from the above wholesale case studies on local food production and marketing are described and summarized as follows.

Buying local

In general, all wholesalers including the national distributors are interested in buying local foods. The general consensus among these wholesalers and distributors is that they want to support local food production and marketing. But there are major differences in their approach and in their understanding of local.

For large national distributors, local food means food that is produced and marketed in relatively large geographical areas, mainly at the regional level. For some of these distributors the word "local" includes food supply not only from southeast Michigan but also from neighboring states. The interviewee from the national distributor, for example, considers food imported from Canada to be local. This distributor obtains its fresh produce from first line wholesalers or from relatively large growers and producers who can deliver to one of its main regional storages or distribution centers. It has a strong relationship with first line wholesalers through its distribution centers. It may also buy produce from some farmers during the summer season. The national distributor is aware of high costs of shipping food from one region to the other. Therefore, regional independent purchasing decisions are seen as one of the future solutions to reduce transportation costs.

For ethnic-based wholesalers "local" represents fresh produce that can be ordered and delivered from a local supplier, in some cases, over a 24-48 hour period. These wholesalers want to have their suppliers located very close within a few miles radius. For example, ethnic-based wholesalers located in Detroit area want to source their produce directly from suppliers in Detroit area. Their buyers are mostly restaurants and other food

service providers located in the same area. So these wholesalers do not have large stores or are not interested to store fresh produce for many days. That is why some of them also have a significant broker role.

For the wholesale-retail operation, local food supply has both a local and a regional meaning. For them, if something is not produced in the locality and imported from other regions within the state that could also be considered local.

For grower-packers, local represents buying food items supplied from neighboring farmers and counties.

This variation in the definition and understanding of local has an impact on the role and participation of each market participant. For example, the interviewed large national wholesaler located in southeast Michigan has bought some produce (e.g., apples) from “local” farmers. These products were actually bought not from farmers in southeast Michigan but from regions in Northwest Michigan. This national distributor feels that it is not getting the products it needs from local suppliers or farmers. Normally, it wants to buy large volumes from a small number of farmers or first line wholesalers. Therefore, it has limited direct relationships with small farmers. But, as mentioned during the interview, there is a possibility to buy from small farmers as long as the “quality” meets the distributor’s requirements.

The wholesale-retail operation has also the feeling that it doesn’t get the product it wants from the region (e.g., some specialty or niche products such as dried fruits are not available from local suppliers). So the wholesaler buys these produce from first line suppliers in other parts of the state.

Overall, most of the interviewed wholesalers, except the grower-packer, mentioned that their local purchase is very small. In addition, most of them do not have direct contact and relationship with local small farmers. Only some have contact with few farmers that produce some kind of specialty produce.

Most of the wholesalers were not willing to provide information on sales. But they gave data on some of their operations. For example, the case study wholesale-retail operation estimates its annual sales of selected dried fruits to be \$50,000. It carries about 40,000 tons of dried cherries per year. The grower-packer has annual estimated sales of \$2.5 million for produce, \$600,000 for grain.

The wholesalers do not have a systematic and organized way to promote locally grown food products. There are different reasons for this very little or no promotion and marketing activity. (1) They carry small amount of local foods, so there is no need to invest in promotion. (1) If promotion is needed, it is done at the retail (or at the next customer) level. (3) Most of the products are sold to customers where prices and supply arrangements are negotiated and long-term relationship exists. Some promotion activity is done on new products through direct mailing to retailers.

Following are some of their experiences in buying local.

Large national wholesalers are mostly buying locally grown products through brokers. These wholesalers also buy produce directly from large farmers. But farmers selling to these wholesalers need to meet their requirements. Ethnic-based wholesalers and wholesale-retail operations (in effect second line wholesalers) purchase produce from first line wholesalers and also at local and regional warehouses and at farmers' markets. Ethnic-based wholesalers are buying local food items from relatively few small local and regional suppliers and warehouses. On the other hand, the wholesale-retail operation buys from a wide range of suppliers. It buys produce from major Michigan suppliers located in the Traverse City area. It also buys some food products from out of state suppliers (e.g., from suppliers in New Jersey and California). The only regional produce supplier to this wholesale market is one farmer in Wayne County that produces black walnut. The operation started buying the product from this farmer in 2006. Other food items that are bought from local suppliers include candies, bakery items, and salad dressing. Brokers play a major role in supplying food products to this particular operation. The grower-packer has an extensive relationship with other local growers. It has in recent years worked with about 12 local growers. This wholesaler has contacts with different food buyers. These were mainly vegetable growers. Some of these farms are not selling produce through the grower-packer anymore.

Product is delivered to these wholesalers in different ways:

- The large national wholesalers have their own delivery system from their distribution centers
- The suppliers deliver most of the products to the wholesale-retail operation. Some local products are self-picked by the wholesale-retail operation.
- Products are also delivered to the grower-packer. Products are delivered either to its Eastern Market warehouse or at the farm. It does not go out and collect products from other farmers.

Contractual agreements

Wholesalers and distributors have different contractual agreements and special arrangements when buying and selling agri-food products. These arrangements are very critical particularly for the large national distributors. However, this particular distributor was not interested in providing detailed information.

Ethnic-based wholesalers have mixed approaches. Some of these wholesalers are working as brokers and provide service mainly to the food service providers. Most of the food service operations, in general, do not use contracts, as some studies suggest⁴. They want to call their suppliers when there is demand for a specific product. Ethnic-based wholesalers that supply this specific group would thus like to have some flexibility in buying and selling products. In addition, these wholesalers are carrying relatively small volumes that do not necessarily require contractual arrangements. Despite this condition,

⁴ <http://www.newfarm.org/features/2006/0106/leopold/maulsby.shtml>

these wholesalers still want to buy products from a supplier they know and with whom they have a long-term relationship. Because they want to make sure that they get the product they want in terms of quality, price and quantity. Since they buy produce from first line wholesalers, they don't exactly know whether the product comes from the region or not.

Some of the ethnic-based wholesalers have strict long-term contractual arrangements with their export suppliers. This is specifically a distribution agreement within a given locality or region. Once the ethnic-based wholesaler started receiving product from the supplier, the supplier is obliged not to sell the same product to other wholesalers in the region for 3-5 or 10 years depending on the product. They have also special agreements for new products that are going into the marketplace through the wholesaler. Such agreements are normally made to protect the wholesaler that it continues to be the sole supplier of this product after market is developed. As one of the wholesalers described it, "you don't want to let it go after you established the market".

The wholesale-retail operation does not have any contractual arrangements with the suppliers. In addition, there is no long-term relationship with its suppliers. The grower-packer case study has also no contractual arrangements with other farmers. But it does have a contractual agreement with processors on price, quality and volume. Major products in the agreement are potato, pepper, and grain with grain elevators. Contract with grain elevators include amount of bushels, price, delivery and supply schedule, and quality standard.

The wholesalers mentioned a wide range of challenges and issues that limited their participation in the regional food system. Some of the major reasons for their limited purchase of local food items include the following.

- Some are looking for large supply and they are not getting it from local suppliers. For example, in recent years, the grower-packer wanted to expand its market and deliver products to Cleveland. But it could not find enough supply from the surrounding farmers that could fill its truck that is running to this market.
- Some wholesalers, in particular, those in ethnic-based industry do not have enough information and understanding about the local food production. As described by one wholesaler in the ethnic-based category "there is no production in Michigan except corn". This particular wholesaler buys, therefore, tomatoes and peppers from other regions to distribute it in Michigan markets.
- Some wholesalers can take smaller volumes, but they are looking for very quick and efficient deliveries that are, as they describe it, "almost impossible from local producers".

- Some large wholesalers mentioned that southeast Michigan, for that matter, Michigan doesn't meet their quality requirements when it comes to fresh produce. So they are buying fresh produce from other states such as California or they are importing from Canada.
- Some wholesalers (e.g., grower-packers) argue that they are being used by other farmers as back-up buyers. Farmers are coming to us at the end of the season, after they make sure that they can't sell the product somewhere else. The manager stated that "they call us when they don't have other markets for their produce". This partly may indicate that these wholesalers provide relatively lower prices.
- Some wholesalers have difficulty in understanding the organic certification process. They mentioned lack of certifying agencies in Michigan have hampered their purchase of organic products in Michigan. They wanted to help some farmers in the certification process. But they did not know where to go and could not find any information about it.
- FDA labeling regulations are becoming complex making it difficult for some wholesalers to carry some products.

Future role in buying local

Most of the wholesalers have shown some kind of interest to be involved in the regional food system by purchasing locally grown food products. They were asked to rank the most important requirements that need to be met, if they were to buy locally. Following are some of the responses from the case studies.

For large national wholesalers, price, quality, volume, and supply consistency are the key factors that should be met in order to increase their involvement in the local food system. Product price, quality, relationship and supply consistency are also important for the ethnic-based wholesalers. Volume, although important, plays a less significant role compared to quality and price. For the wholesale-retail operation price, quality and delivery are important.

Wholesalers and distributors made different comments and suggestions to improve their role in the regional food system economic development.

The grower-packer has established relationships with some local farmers, although the number of farmers selling through this channel declined in recent years. The grower-packer wants to continue its relationships with farmers that didn't quit. It has, however, some reservations whether it wants to work with new farmers. The main argument here was that it is better to work with the "farms you know". One unique advantage of this wholesaler group is its close connections with many buyers and sellers. It knows the needs of most of its buyers. It knows what is produced in the region. Depending on the

market trend, it can help farmers produce what is demanded at the market place. The manager stated that “very rarely we promise the farmers before we get the buyer”.

The wholesale-retail operation wants to strengthen the relationship with the farmers that sell produce in the surrounding farmers markets. But its potential to accommodate many farmers appears to be limited.

Ethnic-based wholesalers feel that their participation in the regional food system will be based on price and quality. There may also be some requirements farmers need to meet, if they want to sell through this market channel.

There are different suggestions and preferences in terms of the types of produce that could be bought from local suppliers or farmers.

- For the large national wholesalers, fresh products that could be bought at the local level could mainly be leafy or green vegetables. Currently the case study distributor is buying these products from other states, mainly because of the quality problem. The distributor feels Michigan’s produce quality is not consistent, compared to California.
- Ethnic-based wholesalers would also like to focus on vegetables. They feel that most of the vegetables in the region have the potential to be sold through their market channel. Some key vegetables that could be most demanded through this market channel include tomato, broccoli and cabbage.

In addition, the wholesalers and distributors gave the following general comments to improve the regional food system economic development.

- Larger farms need to improve their network and connections with the regional packers, processors and distributors in order to increase sales. These farms need to be ready to provide quick and adequate responses when a buyer calls.
- Smaller farms should be ready to effectively exploit the opportunities at different direct markets. They have to use Eastern Market to directly connect with the consumer or other buyers.
- Southeast Michigan needs to improve Eastern Market and other regional and local farmers’ markets to expand sales. Currently the infrastructure at Eastern Market does not support market growth and product quality.
- A lot of farmers don’t have established delivery systems. They also don’t have the knowledge how to sell. If a group of farmers work together they can supply a better quantity that couldn’t be easily achieved by one small farm.

Food processors

Most fruits and vegetables in the region come into the marketplace as fresh market products. Therefore, the study focused more on the fresh produce market within this sub-sector. In addition, the study considered a packaging operation that has been described

and discussed as grower-packer in the previous section. However, food processing also plays an important role in southeast Michigan's grain industry. Therefore, the present section will focus on processing facilities that manufacture grain products. Altogether interviews were made with managers of three large processing facilities.

Case one is a relatively small-scale value-added company that manufactures different kinds of batter mixes using flours and other ingredients. Major markets for this company's products are food service outlets (mainly restaurants), regional supermarkets, wholesalers and distributors. It also uses brokers to sell some of its products.

Case two is a large-scale milling and processing operation. It has primarily wheat flour milling operation. Then it adds value to the wheat flour through an operation that manufactures different kinds of retail prepared baking mixes using different kinds of ingredients. The company first started selling products to a wide range of customers: Food service outlets (e.g., restaurants, hotels), institutional markets (e.g., prisons), senior homes. Currently it has a growing market through wholesalers (e.g., Spartan Stores), and large regional supermarkets (e.g., Meijer). It is also working to expand its export market and retail branding. Altogether the company currently serves about 3500 customers. This mainly comprises a wide range of retail customers (e.g., in pizza production such as Domino pizza) and others. Its export market has grown in 30 countries. An increasing number of wholesalers and distributors from these countries are currently interested in buying products from the company. Regarding branding of its products in export market, the company is in the process of developing some product based brand names that will meet consumer needs in specific countries/regions.

Case three is a plant that is specialized in manufacturing and selling bakery items. Primary products for the company are breads and rolls. Secondary products include different kinds of muffins, bagels, donuts, cake muffins and other related products. The company has three bread manufacturing plants in Michigan. The company serves regional large-scale retail stores in Michigan, Ohio, Illinois, and Indiana. The company sells its products to regional grocery stores, fast food chains (e.g., Wendy's and Burger King) and other retailers.

Major ingredients used in processing

In case one, main ingredients used in the batter mix processing operation include wheat flour, corn flour, salt and different spices. Wheat and corn flour are used at a ratio of 11:1.5 to prepare batter mixes. Case two plant has multiple food processing, storage and distribution operations. It has a wheat flour milling operation. It has a wheat storage operation. It prepares batter mixes as value-added products to be distributed to regional retail stores. Overall about 47 different ingredients are used to prepare different kinds of batter mixes. The four major ingredients are wheat flour, sugar, shortening and corn meal. Case three also uses different ingredients to manufacture bread and related bakery products. Major ingredients include flour, grain mix (crushed or cracked), softeners, enzymes, corn syrup and molasses.

The food processing companies have their own organized product delivery systems. They have trucking and logistics units that are responsible for efficient product delivery.

Manufacturing performance

Interviewed managers were reluctant to provide financial information about their business. However, it was possible to get some figures regarding their operation. Case one uses approximately 40,000 tons of wheat flour, 15,000 tons of corn flour and 5,000 tons of salt.

Case two prepares about 1.6 million boxes of batter mixes per day. The company purchases about 2 million bushels of wheat per year. Case three uses half a million pound of flour per week only in one of its bakeries. The other two uses each 300,000 pounds of flour per week. Manufacturing capacity in one of the bakeries is 160 loafs per minute. It is a fully automated process with very little use of human labor.

Sources of supply

The processing facilities are sourcing products from different suppliers. The case one plant imports some part of the wheat flour it uses in processing from Indiana and Illinois. The major Michigan wheat flour suppliers are King milling company in Lowell, Knappen milling company in Augusta and Star of the West Company in Frankenmuth. The manager noted that protein content is key when buying wheat flour. So the challenge is to get wheat with the required protein content on the marketplace. All corn flour is coming from Indiana. It was learned that there are not known Michigan companies that could supply corn flour. The company used to buy salt from a Michigan company. But currently it also purchases from other states and New Zealand through brokers.

The case two processing plant sources food ingredients from a wide range of suppliers. Most of the wheat milled at the facility comes from Michigan suppliers. The manager estimates that 50% - 75% of the wheat crop comes from Michigan. Most of it comes from Northern Michigan. Purchase in southeast Michigan is very insignificant. Overall there are three types of wheat sources: (1) Wheat from elevators. These are established wholesalers that have long-term relationship with the processing facility. (2) Wheat purchase through brokers who buy the product from the surrounding farmers or from wholesalers who do not have direct relationship with the processing company. (3) Wheat purchase directly from farmers. The company purchases wheat from some selected large farmers. In recent years, between 38 and 42 Michigan farmers supplied wheat directly to the processing plant. These are relatively large farms. However, the manager noted that the number of farmers from southeast Michigan is very small. Sugar for processing comes from Michigan Company. Corn meal and shortening come from Indiana and other states respectively.

Major suppliers of flours for case three include ADM, Kansas Flour and Bay State milling. Bay State milling mainly supplies bleached flour, white flour and whole-wheat flour. The American bakery and Dawn Food products also supply some bakery ingredients. The company also buys other bakery ingredients and packaging and bagging

materials from different sources. One unique character about this case study is its need for special grain mixes to prepare bakery items. The manager noted that in order to keep quality and consistency in its bakery products, it uses mainly one source for buying wheat flours. Therefore, the major source for its wheat flour is Kansas Flour.

Contractual agreements

The case study processing companies have some kind of contractual agreements with their suppliers and buyers. Case one, for example, has a 3-9 months agreement with one of its major supplier (Knappen Milling). Although there is no specific contractual agreement, the company has long-term relationships with its other suppliers. Corn flour is purchased on the marketplace without entering any contractual agreement. Price competitiveness is a key factor in choosing suppliers. Spring is assumed to be the best shopping time allowing the processor to buy flour at discount prices. The manager of case one mentioned that flour is not a scarce resource. It is a commodity available year-round. Therefore, price is the determining factor when buying the product.

Case two has a procurement department that makes contractual and other related arrangements with suppliers. This department selects the products that must be purchased, check product quality and make decisions on price and other delivery arrangements. Price adjustments are made based on the quality of product that is supplied to the facility. The company considers itself as value-added processing facility. Because it has both flour milling and batter mixing operations. This company also has its own processed product delivery and logistics unit. Trucking is available for distributing batter mixes to groceries in many Midwest states.

Case three has no contractual agreements with suppliers. Volume and price are key factors that determine purchase. The company has stable and good relationships both with its suppliers and buyers. Meijer is the major bread buyer from the baking company. The company delivers its products to the retail stores using its own trucks.

Major challenges, issues and advice to farmers

Following are some of the challenges for case one: Flour mix development, packaging (quality and investment in packaging because of year-to-year changing labeling requirements), and price. In terms of the batter mix market, the manager described that the restaurant market is growing. But sales through the retail market did not show a significant growth for the last 10-15 years.

For case two, some ingredients are not available in Michigan. Volume, quantity and price are the three important factors that determine whether or not to buy an ingredient from a supplier. The manager feels that enough wheat is available in the state to supply mills located in Michigan. The other problem is related to the export market. There are no adequate resources that help identify market opportunities in different countries. Support and assistance is needed in establishing sustainable relationships with importers and in

promoting products in these countries. The manager of this plant suggested that the state needs to improve its export marketing services. Service should be more than providing statistical data. More is needed in establishing contacts and relationships, and in identifying competitors and relevant market segments in different geographical locations.

The company wants to establish firm relationships with importers of its products before it starts selling products to them. Therefore, it invites potential importers to come to the facility and visit the company to share with them about the company's principles, goals and values. The idea is not to focus on selling a product, but on establishing a long term "reputation" that helps the industry grow and expand. So it primarily promotes and develops "relationships" not "sales".

Interviewed managers have different views on the local and regional food development. Overall, they feel that farmers in the region need to improve their relationships not only with elevators but also with mills. Case one mentioned that recently a farmer from Canada approached him. The farmer was looking for a grain mill. Michigan farmers need to do the same thing, looking for new markets and opportunities.

According to these managers, volume production is one key factor to be successful in the grain processing industry.

Some stated that the new biofuel industry will have an impact on the production and processing of food products.

These companies need a wide range of ingredients in the processing activity. Farmers and entrepreneurs in southeast Michigan have the opportunity to supply some of these ingredients (e.g., corn syrup, yeast, molasses).

Chapter 6: Local food production and market opportunities: Analysis and discussion

Success in regional food systems can be achieved through the development of a supply chain system that ensures local food production, processing and marketing. Such developments will allow the value from local food products return to the region to support economic development and remain circulating within the local communities. The present study identified different market channel characteristics that included a wide range of market participants. This chapter analyzes and discusses the importance of each market channel for locally grown food products and its impacts on creating a sustainable regional food system in southeast Michigan.

The local food concept: No single definition of “local”

There is no clear definition of local and there are actually very few definitions available⁵. The UK National Association of Farmers’ Markets (NAFM) recommends using the definition of local food as food produced and supplied to farmers’ market within 50 miles of radius or the county boundary. Most of its members use the 30-mile radius as their definition of local. Some farmers’ markets restrict trading at the market to producers who “have raised, made, grown, produced, caught or baked products that they are selling within 100 miles of radius”. There are also some extreme definitions. Following are some examples: (1) In some farmers’ markets, for meat production, animals must have spent at least 50% of their lives in the area. (2) In case of processed products, the majority of its ingredients should originate from the area.

In the present study, there are discrepancies among market participants in defining and describing local food. The general perception and understanding of consumers, small farmers and most of the local retailers is that local food is food item that is produced and sold to the end-consumer within a very short radius. But national and regional wholesalers and large supermarket chains seem to have a broader definition of local food. Whole Foods, for example, defines local to be “within a seven hour truck ride or within about a 200-mile radius”⁶. For some regional supermarkets local food represents food that is produced, processed and sold within the county, or in some cases including produce from neighboring counties.

Local food production

Following are some of the major findings regarding production agriculture in the study area.

⁵ http://www.defra.gov.uk/foodrin/foodname/lfood/pdf/Local%20Food%20Report%20_final_.pdf

⁶ <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/07/26/FDG3NK2LMV1.DTL>

The study area has a large and diverse consumer base

According to the USDA study, a more diverse population is likely to consume more fruits and vegetables⁷. The study area has a broad consumer and demographic base that will shape future markets for locally grown food products. The region has also a very diverse population with a growing income base. This growing diversity will open new production and market opportunities for farmers in the region.

The region's agricultural production is not diversified enough to cope with the growing consumer demand

Currently, the region produces a very limited number of fruits and vegetables. The grower survey in the present study and the USDA census data indicate that the region has fewer than 20 economically important vegetables and fewer than 10 fruit and nut crops. The consumer wants to see a wide range of vegetable and fruit products in the marketplace and currently there is a large number of selections available in supermarkets. Farmers in the study area grow approximately only one-fifth of the vegetables, compared to the number of vegetables that are consumed in the Northeastern part of the U.S. Given the growing demand for fresh produce consumption, the region can benefit from expanding the production of different fruit and vegetable varieties.

Farmland in the region has a declining trend

Overall, farmland acreage in the study area has been declining for the past few decades. Fruit and vegetable farms remain relatively unchanged. A continuous farmland decline will have an impact on creating and developing a sustainable regional food system. In particular, such trends will hamper diversification efforts to meet the growing demand for a variety of agricultural products.

Farmers in the region are getting older

Overall farming in the five-county region, according to the present survey, is operated by farmers who are getting older. The data show that both the produce and grain sectors were not able to attract new younger growers and producers for the past few decades. It also appears that, it is not only the production sector that is affected by this situation. Some of the farmers that are actively involved in the retail and wholesale operations are also getting older. Their exit from the marketplace without any succession planning will have negative effects on the agri-food development in the region.

⁷ <http://www.ers.usda.gov/Amberwaves/April03/Features/ConsumerDrivenAg.htm>

Most of the farm operations in the study area are very small

According to a recent USDA report, farm size and age of farmer are the two major causes for farm exits in the U.S.⁸ Most of the farmers in the three-county region are very small, in most cases with annual income of less than \$20,000 from farming. This annual income will not provide the farm family enough cash security and livelihood support. This will lead to a continuous farm exit in the future as more small farmers look for other options that can provide them better income opportunities. There is no actual data and information on the number of farm exits and entries in the region in recent years. But the present grower survey identified that most of the farmers have many years of experience on farming. This may indicate a very small number of entries in the farming sector in recent years, if any at all.

There is a very limited value-added activity at the farm level

The present study identified that most of the small farms in the region are selling their products raw, without adding value to it. There is a growing recognition that value-added operations improve small farmers' income. Value-added operations for small-scale farmers could include semi-processing of fruits and vegetables, and small-scale packaging and bagging operations. Some retailers and wholesalers indicated that, in order to buy from local farmers, product packaging and bagging should be in an acceptable form, product should be clean and free of soil, and delivered in a clean and safe vehicle. In sum, the product should be "ready-to-sell".

The retail, wholesale and processing sub-sector

Following are some of the major findings from the case studies with wholesalers, processors and retailers in the region.

Number of farmers selling to supermarkets and wholesalers is declining

Some regional wholesalers and supermarket chains noted that they had better relationships with local farmers in the past. In recent years, the number of farmers selling through these retail stores is declining. No retail establishment reported an increase in the number of local suppliers in recent years. The growing number of farmers' markets may be part of the reason for this decline. It could also be because of an increased number of farms going out of business.

Most wholesalers and retailers have an interest in buying local

Overall, the regional food market provides a broader market opportunity for a large product mix. Most of the market participants within the regional food system expressed their interest in buying and selling locally grown food products. These market

⁸ http://www.ers.usda.gov/publications/err21/err21_reportsummary.pdf

participants noted that they would be open in purchasing any local fruit or vegetable offered at market prices. Wholesalers and retailers identified a wide range of locally grown food products that could have growing market potentials through their establishments. Products described by the majority of these market participants include wide variety of fresh produce, meat and meat products, and local delicacy or recipe from local small manufacturers. Most of these wholesalers and retailers noted that there is not enough variety and diversity in the vegetable and fruit supply from the region.

Risk management is a significant concern for retailers and wholesalers when dealing with local suppliers and small farmers

Although most of the market participants want to buy local, their active participation depends on many factors. There are many risk factors that limit participation of some of the wholesalers and retailers in southeast Michigan. Some of these include the following:

- (1) For some buyers the small farmers do not have enough quantity to supply. Therefore, these buyers are not interested in buying from small farmers.
- (2) Buyers highlighted honesty and integrity of farmers as key to building relationship. Inconsistent supply and delivery is one of the factors that made purchase difficult for some buyers. For example, some retailers mentioned that some farmers have a problem meeting a commitment. Farmers start supplying products for some weeks and then they suddenly disappear without notifying the retailer. In such cases, the retailer has to look for new suppliers. This incurs additional transaction costs and results in losses of money and trust. Therefore these retailers place high priority on purchases from their long-term suppliers who can assure them adequate and reliable quantity, quality, and timely delivery.
- (3) Some wholesalers and retailers have concerns regarding food safety and liability risk when buying directly from small farmers. Such buyers want to see some kind of certification before buying products from small farmers.

Buyers want to access locally grown food products using different channels

Despite the general interest in buying local, market participants want to use different channels to buy local food products.

- (1) One group of retailers and supermarkets prefers to buy local food items directly from growers. This group is willing to buy products that even come in smaller volume. But this retailer group is not automatically open to new suppliers or farmers. The group wants to buy products from those farmers who have established relationships with the retailer and are known for a long period of time.

- (2) The second group of retailers has the capacity and willingness to buy larger volumes. However, in order to buy from farmers, this group wants to see some kind of arrangements and safety assurances from the supplier. Therefore, in order to minimize risk and make operations simple, this group prefers to buy local products through a broker or a first line wholesaler.
- (3) A third group represents those retailers who have set different requirements for farmers to meet, if they want to sell to the retailer.
- (4) Regional and national distributors prefer to have some kind of first line wholesalers who can collect and deliver to these distributors.

The idea of “volume purchase” varies from buyer to buyer

Supply quantity is known to be one of the main factors that affect agricultural sales. But buyers of local food products have different understandings and definitions for it.

- (1) For some buyers it is a one-time fixed amount that should be available when they call the farmer and this product should be delivered immediately.
- (2) For others, it is about consistency of supply. The amount that could be delivered at one time could be small. But the farmer should be in a position to supply on a regular basis as agreed upon. Supply could run for one week, one month or for part of the season.
- (3) There is a third group of buyers that wants to see a large volume of supply that should also run through an extended period of time covering a significant part of the season. These are real volume purchasers and want to have a relationship with large farmers who can meet these large supply requirements. In addition, these buyers want to have some kind of formal agreements and delivery arrangements with the supplier.

Similarly, required quality standards vary from buyer to buyer

- (1) National supermarkets and wholesalers appear to have strict quality standards and requirements when buying locally grown food products. Suppliers need to have some kind of product liability insurance when selling to these buyers.
- (2) For local supermarkets, it is enough if the farmers pay close attention while harvesting, collecting and delivering. There appears to be some variation among this group. Some want to see better grading, sorting, trimming, cleaning, etc. of products by the farmers while others seem to accept bulk products. The former group also wants that farmers supply products in “ready-to-sell” forms, grades and packaging (boxes or bags).

The current market channel commands no premium prices for local producers

Overall, wholesalers and retailers want to pay local producers and growers prices that are comparable with non-local foods. They want to pay commodity prices unless the product from the local is some kind of specialty or niche products. The majority of these wholesalers, distributors and retailers noted that they are facing stiff competition in the marketplace, and their ability to pay more for local fresh vegetables and fruits is very limited. In particular, large wholesalers and distributors are not willing to pay a premium price for locally grown food products. Some local retailers are willing to pay a price that is comparable with the wholesale price. In some cases, farmers were not ready to accept prices that are comparable with the wholesale prices, even with some premium. In other cases, farmers have been asking prices that are much higher than the expectation of the retailer. These are farmers who either have received better prices through direct marketing (e.g., farmers' markets) or want to have high prices to cover their increasing operating costs (e.g. increasing feed costs for animals). It, however, appears that some niche producers will have the opportunity to receive a price premium.

Current supply chain from the perspective of selected market participants

This section highlights and summarizes how the different market participants see their role and relationship with others in the food purchasing and selling process within the supply chain. Specifically, the section illustrates current supply chains and market channels from the perspective of selected market participants.

Case I: Supply chain from the perspective of grower-packer

The grower-packer is a combined wholesale and value-added operation. It sells food products mainly from own production (Figure 1). It also collects food items from a number of farmers in the surrounding area. This wholesale group provides a wide range of benefits to the regional food system development. For example, the case study grower-packer has a packaging facility, which can be used to add value to farmers' products.

The grower-packer uses different market outlets to sell food products. It sells products to large regional supermarkets, small specialty stores, food processors, food service providers, institutional markets, and at farmers' markets. This wholesales operation is also working with brokers to identify new state and regional market opportunities

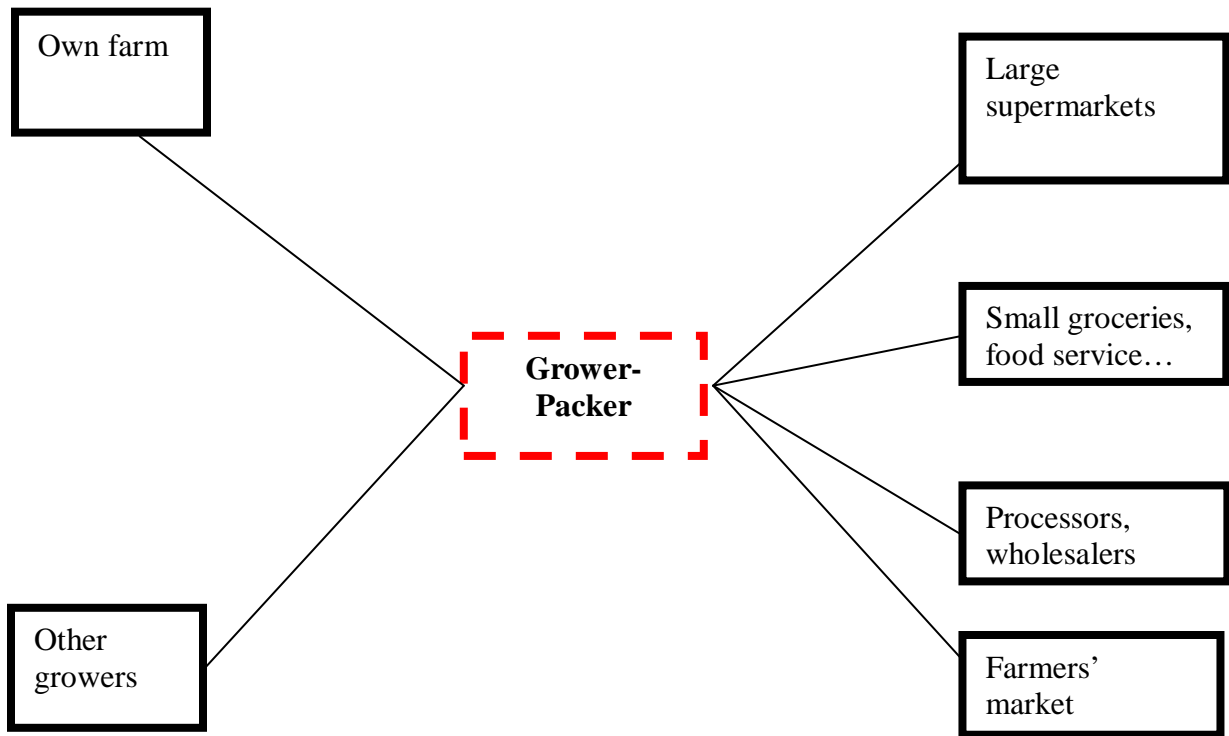


Figure 1: Supply chain from the perspective of grower-packer

Case II: Supply chain from the perspective of a ethnic-based wholesalers

Figure 2 shows the supply chain from the perspective of ethnic-based wholesalers. These wholesalers do not have direct contact and networking with local growers. Rather they prefer to buy produce from an intermediary, preferably, from a relatively large first line wholesaler that has control on volume, price, delivery schedule, etc. Currently these wholesalers are primarily dependent on few local warehouses to buy locally grown food products that are demanded by their customers. The wholesalers noted that lack of adequate supply from these primary wholesalers is limiting their purchase of locally grown food products.

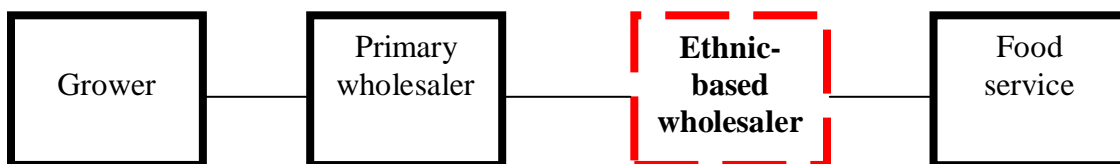


Figure 2: Supply chain from the perspective of ethnic-based wholesalers

Case III: Supply chain from the perspective of a regional wholesale–retail operation

These wholesale-retail operations are not necessarily large establishments but they distribute diverse group of food products. Therefore, they have relatively large number of suppliers that include small farmers, farmers’ markets, and regional and national distributors (Figure 3). They also use brokers to buy different products. Most of their food items are coming from the national and regional suppliers. Purchase decisions are made based on volume, quality and price. They will not be carrying large volume of products. But these market outlets will be useful to create market access for new products that come in small size to the marketplace.

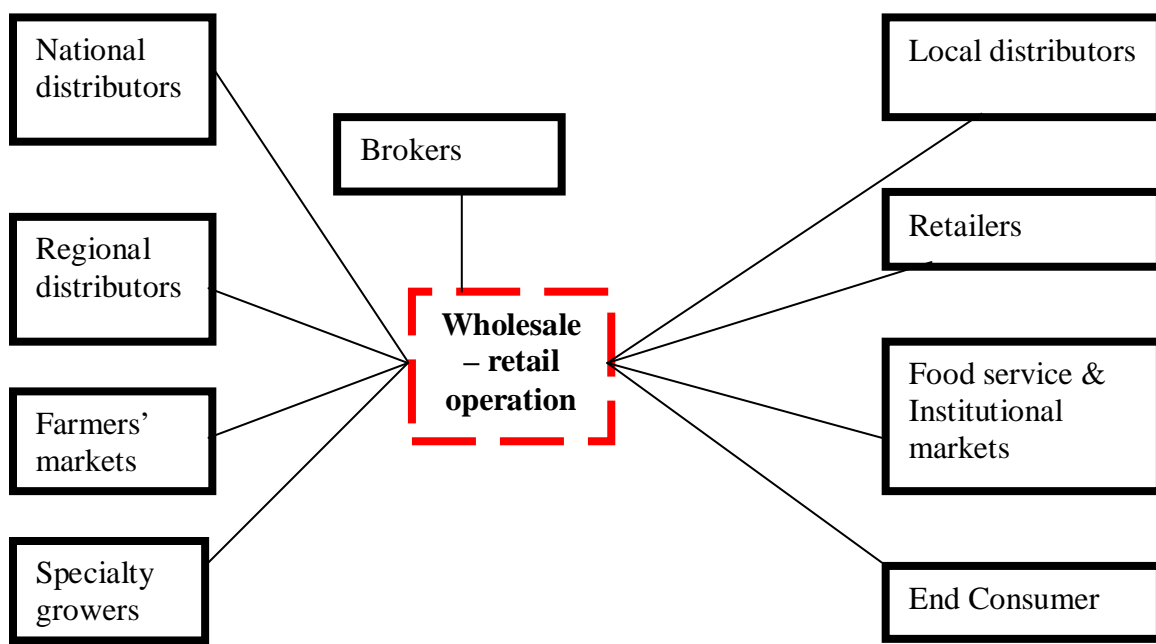


Figure 3: Supply chain from the perspective of wholesale-retail operations.

This wholesale-retail operation has linkages and relationships with a wide range of buyers. It sells products directly to the end-consumer or to retailers, food service outlets, institutional markets, and other local distributors.

Case IV: Supply chain from the perspective of national wholesale and supermarket chains

The supply chain for the national wholesale and retail chains show some kind of similarities (Figure 4). Both chains have their own distribution centers. The distribution centers buy products from different sources including first or second line wholesalers, processors, and large farmers or through brokers. In case of supermarket chains,

individual stores are also allowed to buy directly from local farmers. But the share of purchase from the local farmers is relatively small.

The major difference between the two chains is in terms of their market outlets. The national wholesale chains distribute products to a wide range of retailers, regional wholesalers, food service outlets and institutional markets while the retail chains mainly supply their own individual stores.

Buyers and consumers are going to these chains because of the availability of large choices of products. In terms of volume, these market outlets account for the largest share fresh produce sales. But, although, there is no enough data available to substantiate, the role of both chains in local food purchase is limited.

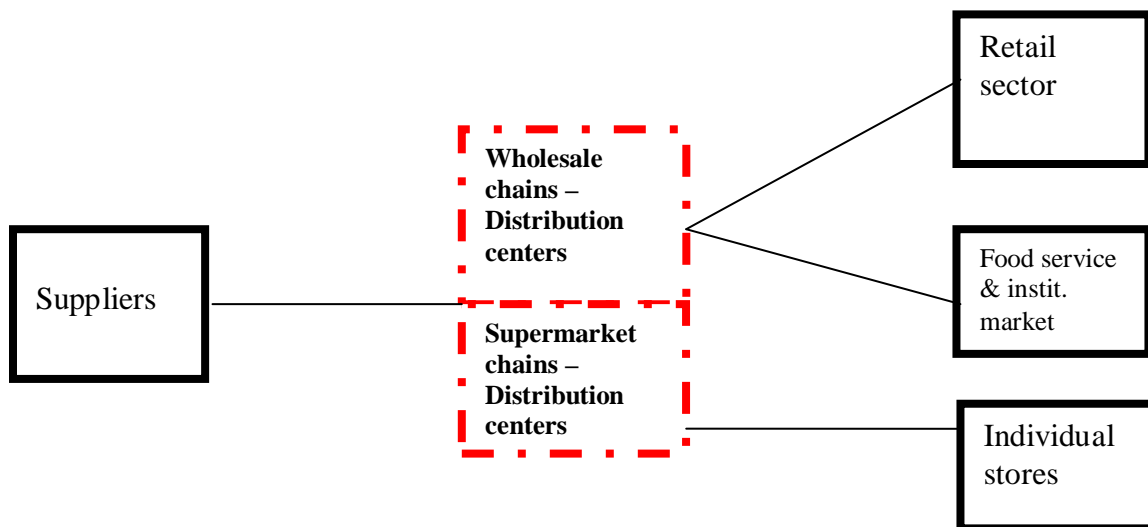


Figure 4: Supply chain from the perspective of large national wholesalers and supermarket chains

Case V: Supply chain from the perspective of local supermarkets

These supermarkets buy their food items from large regional food distributors and a wide range of local suppliers (Figure 5). Local suppliers could include small and large farmers and specialty product manufacturers. Some of them have also started buying food products from farmers' markets.

These supermarkets provide the second shortest path (next to direct marketing) to connect farmers with consumers. They are mainly selling products to individual end-consumers. But the present study identified some new trends and developments. Some local

supermarkets have started providing some limited services to organized groups such as church groups, funeral gatherings, and other occasional community ceremonies and parties. Some even have started supplying schools in some occasions. The broken lines in the diagram show the new supply chains and market outlets that are currently being developed by some of these local supermarkets.

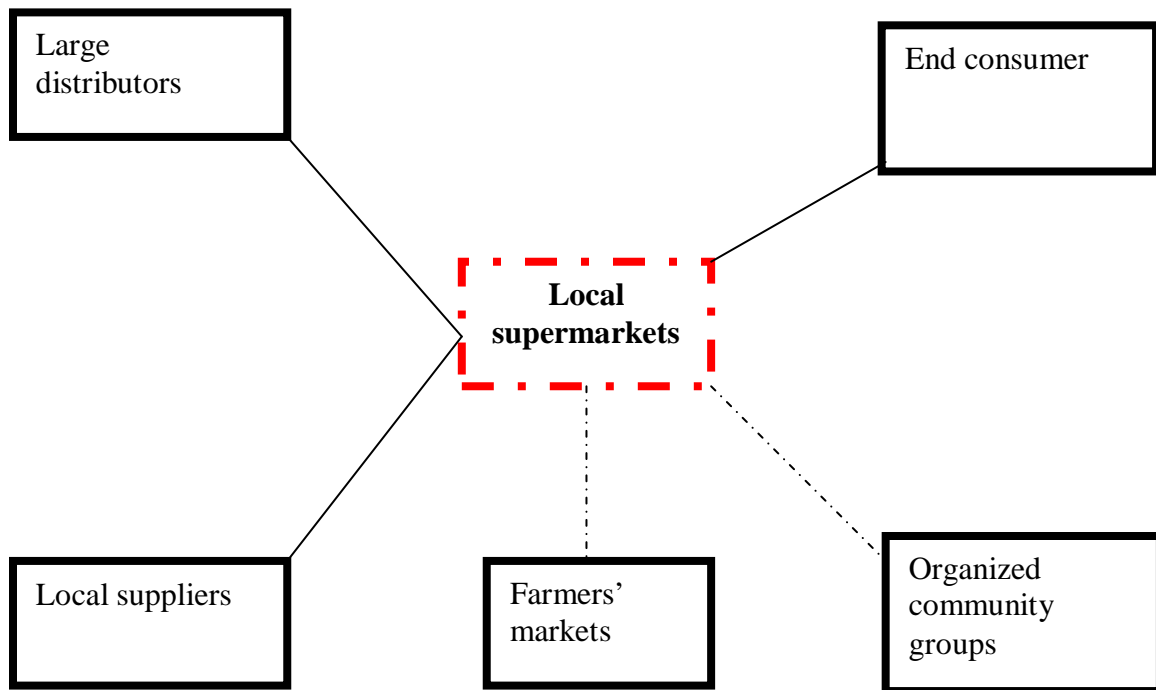


Figure 5: Supply chain from the perspective of local supermarkets

Case IV: Supply chain from the perspective of a farm retail market operator

Farm retail markets are normally used to sell own production. But as the activities of the case study farm retail market operator show, these operators provide a much broader marketing service to their community (Figure 6). From the perspective of the case study farmer, the retail operation collects products from own production and from other farmers. It buys and sells products at farmers markets. It also buys products from some wholesalers.

It sells products directly to end-consumers. It delivers products to regional markets and supplies some area retail stores. Some of the market operation is conducted in cooperation with other neighboring farms that have the capacity to deliver volume

products. The broken lines in the diagram reflect the current loose cooperation between different farmers to sell their products.

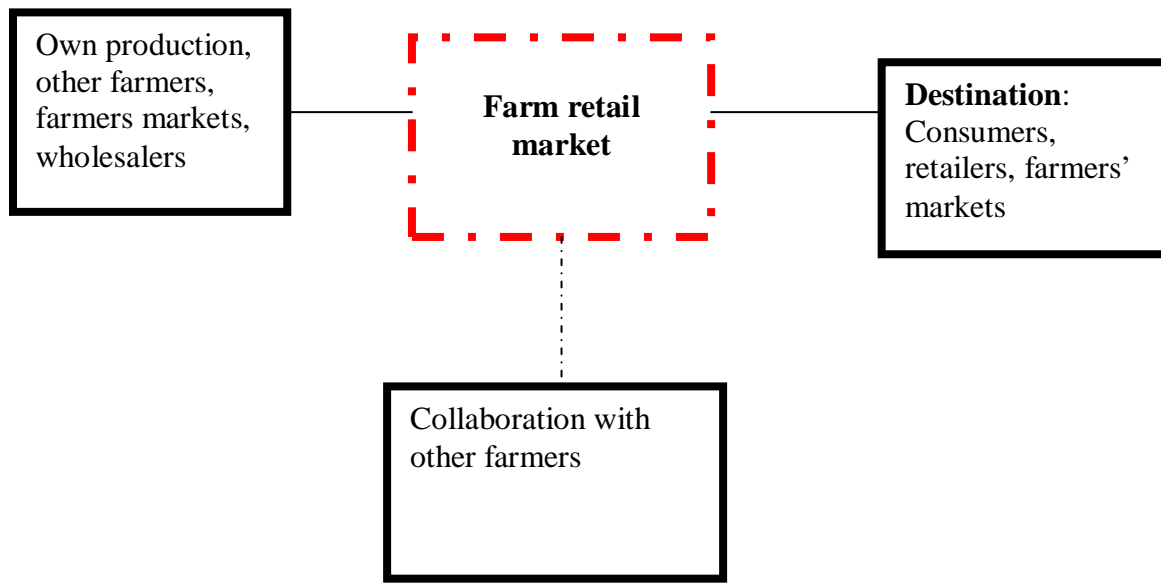


Figure 6: Supply chain from the perspective of farm retail market operator

Future market opportunities through selected market channels

This section summarizes market opportunities through selected market channels for fresh market products grown in southeast Michigan. Opportunities are ranked as broad, selective and limited (Matrix 1). A broad opportunity represents the existence of a high potential to raise gains from sales by selling fresh market produce through this specific market channel. Opportunities are selective, if the market channel does not provide broad opportunities to raise sales from fresh market produce. Limited market opportunities reflect low probabilities of raising sales in the specific market segments or by selling the product through the specific market channel. This may be due to market channel’s limited capacity or interest to carry fresh product. But “limited” does not mean that there are no opportunities at all. It only reflects the existence of a range of constraints to expand sales through this channel.

Market opportunities through national distributors

Currently, local supply appears to be insufficient to meet all demands of customers of national distributors. The case study national distributor, for example, has a large customer base including large supermarkets, food service outlets, and institutional markets (e.g., schools) that are demanding a continuous and consistent supply of fresh produce that may not be met from locally grown fruits and vegetables. It may thus be difficult for the national distributor to rely on small local suppliers.

In addition, farmers have to meet some specific requirements, if they are going to deliver fresh market products to these establishments. The case study national distributor did not provide information regarding specific requirements when buying from local growers and producers. But it appears that, there are some requirements that need to be met if farmers want to sell to these distributors. For example, Sysco can only “purchase foods from producers with whom they have “whole-harmless agreement”, including \$2 million in insurance coverage, which is carried by the producer. Purchasing such a large amount of insurance coverage poses an insurmountable obstacle for many local producers.”⁹

These factors may emphasize that large farms who can meet the volume requirements of large national distributors can increase sales through this market channel. Due to ever increasing fuel and transportation costs, in the future, national distributors may be interested to buy locally. As fuel price increases, the case study national distributor, for example, tends to buy from local suppliers in order to avoid high costs of shipping food long distances. Large farmers can benefit from this trend, as the national distributors expand their purchasing activities from these farmers. Market access for small farmers through this channel will be limited. Niche producers will have selective opportunities.

Market opportunities through ethnic-based wholesalers

The ethnic-based wholesalers interviewed are relatively small size wholesalers that do not have large markets and storage capacities to carry a large volume of diverse food products. They tend to be occasional buyers of local food products and they do not have enough information and knowledge about the local food production. They appear to be satisfied with their current supply chain system. They normally buy food items when a customer wanted it. The interviewed wholesalers in this category will buy vegetables like broccoli, cabbage and leafy vegetables that are frequently demanded by their customers. This wholesaler group generally will provide selective opportunities to increase sales from locally grown food products mainly small fruit and vegetable growers. Large farmers’ sales through this market channel will also have selective opportunities through this market channel.

The ethnic-based wholesalers will not be buying food products directly from local farmers. They prefer to have a first line wholesaler or central distribution center where they can pick up products when their customers (ethnic restaurants and specialty retail stores) want them. Currently, there is lack of consistent supply to meet demands of this customer group. They are buying from smaller regional wholesalers that collect produces from local farmers and from other regions during off seasons. Because of their limited market outlets, these wholesalers will provide limited opportunities for niche producers.

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Matrix 1: Market opportunities for locally grown fresh products through selected market outlets

Scale of operation	Market opportunities through wholesalers and distributors			Market opportunities through the retail market		
	National distributor	Ethnic-based wholesalers	Grower-packer	National supermarket chains	Local supermarket chains	Direct marketing chains
General: Buying local	Selective	Selective	Selective	Selective-broad	Selective	Selective
Niche product	Selective	Limited	Limited	Broad	Selective	Selective
Conventional: Small-to-medium-size farms	Limited	Selective	Selective	Selective	Selective-Broad	Selective-Broad
Conventional: Large farms	Broad	Selective	Broad	Broad	Limited- Selective	Limited-Selective

Market opportunities through grower-packers

The grower-packer wholesaler group provides broad market opportunities for relatively large farms. Since these wholesalers have better knowledge about the market trend, they can also assist these farms to gain access to new markets.

These wholesalers prefer to buy large volumes of products at competitive prices. Therefore they provide only selective opportunities for small-to-medium size farms. Niche producers have limited market access through this channel. The wholesalers have established contacts with other wholesalers, institutional buyers and a wide range of retail stores. Therefore, the channel could be used to promote some new products.

These wholesalers are located relatively close to other farms. As a result growers have to spend less time in delivering their products to these establishments. This reduces their transportation cost. The establishments also provide other services such as packaging and storage services for the farmers in the surrounding area. The case study grower-packer, for example, provides storage services, if products are to be sold through the firm.

Market opportunities through national supermarket chains

Some selected national supermarket chains have the potential to provide better market access for locally grown food products. These supermarkets, however, may want to buy local foods from a larger geographical location and from relatively larger farms. The case study national supermarket chain prefers to deal with fewer, larger suppliers. But upscale supermarket chains like the one in this case study will also buy produce from small farmers especially if the farmers are supplying niche and new products.

National supermarket chains such as Whole Foods can provide a great potential for growing the regional food system. Whole Foods is currently supporting small farmers by providing market access for their products and establishing loan programs to expand local food production. For example, Whole Foods now requires its stores to buy “out the back-door” from at least four individual farms directly¹⁰. The move is to support a sustainable growth in local food systems. Whole Foods also plans to:

- “give \$10 million a year in low-interest loans to help small, local farmers and producers of grass-fed and humanely raised meat, poultry and dairy animals,” and
- “set up Sunday farmers' markets in the parking lots of some Whole Foods stores, including about 10 in Northern California.”

According to a report, in 2005, about 45% of Whole Foods produce suppliers were considered to be local (within 200 miles), and 34% were regional (within 400 miles) — only 21% fell into the category of “Big Organic” national producers. “Of the top 150 suppliers/brokers in the produce category, 22% of the purchases were from large

¹⁰ <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/07/26/FDG3NK2LMV1.DTL>

corporate farms and 78% were from independent and family farms (some of these smaller farms pool together under one brand name to help improve marketing and distribution). 60% of these 150 suppliers grow organically, and/or represent growers who do so. Economies of scale are important at all levels of the organic food chain in order to lower costs and improve distribution.”¹¹

National upscale supermarket chains such as Whole Foods will provide broad market opportunities for large growers. Because of their upscale nature such supermarkets tend to offer unique and gourmet products to their customers who also want to pay high prices for quality products. In this regard, niche producers will also have broad market opportunities to enter this market channel. Small farms will only have selective opportunities through this market outlet.

Market opportunities through local supermarkets

Local supermarkets have high interest in buying food from local farmers. Currently, most of them are buying produce from local farmers. But they do not want to take the risk of losing their established relationship with their suppliers. This market channel will provide selective-to-broad market opportunities for small fresh market growers, if producers are able to meet some of their basic requirements; for example, consistent delivery as agreed upon, better product quality and grade, and clean products in appropriate packaging or box. Some of these supermarkets have limited capacity to buy large volumes of fresh produce. Therefore, they will provide limited to selective market opportunity for large fresh market producers. These market outlets will also provide selective market opportunities for niche producers. Farmers need to improve their linkages and communications to improve their market access through this channel.

Market opportunities through direct marketing

Regarding farmers’ markets, the results from the grower survey and the case studies indicated the following trends:

- A relatively small percentage of the farmers are currently selling produce at local farmers’ markets. Some farmers commented that regulations in some farmers’ markets are prohibiting their active participation.
- The results from the case studies indicated that some wholesalers and retailers are purchasing food items in some farmers’ markets. This indicates the growing market potential through these channels. Farmers’ markets are not only places for retailers who sell directly to end-customers but they are also becoming wholesale markets where large quantities are being sold to some retail groups.
- The farmers’ markets are more than just a place for selling food items. Some wholesalers are using them as a source to establish networks and linkages with

¹¹ http://www.wholefoods.com/blogs/jm/archives/2006/05/an_open_letter_1.html

farmers or to recruit local suppliers of specific products. It is also becoming a community place.

Therefore, farmers' markets and farm retail stands will provide selective to broad market opportunities to expand farm sales for small-to-medium producers. Niche producers will have limited-to-selective market opportunities. These are high-value products that will normally be purchased by high income groups. Therefore, sales of niche products at farm stands and at farmers' markets will depend on the consumer category purchasing in this particular market. Large farms will have limited to selective opportunities to raise income from sales through this market channel.

Comparing vegetable production and consumption in the region

The development of an agricultural supply chain in southeast Michigan can be accelerated if local and regional producers respond to the consumers' needs, wants and interests. The sector also needs to pay attention to the health effects and food consumption patterns in the region, and the capacity of the regional agricultural sector to meet consumers' dietary requirements. The goal of this section is to just show an example that relates local production with local consumption. It provides preliminary assessment of the economic importance of the vegetable sector in the region. In particular, here an attempt is made to compare current vegetable production level with the regional vegetable consumption pattern. The following assumptions were made in making these comparisons.

Production assumptions

- As mentioned in Chapter 3, in 2002, there were about 37 vegetables that have been grown by farmers in southeast Michigan. However, only 17 vegetables appeared to have significant economic importance in the region. Production and yield data were available for most of these crops. Therefore it was assumed that the region produces 17 vegetables. Production area was assumed to be the total harvested acreage for these vegetables in the 2002 USDA census, which was about 80% of the total vegetable acreage in the five counties.
- Yield per acre was estimated using different sources including a five-year average for some of the vegetables from the Michigan Agricultural Statistics Services 2006 statistical report.
- Performing such comparisons requires accounting for losses that occur until the product reaches the end-consumer. Loss in production and inedible portion estimates were taken from the USDA database.
- Finally consumable equivalent production was estimated by making production adjustments for losses and inedible portions.

Vegetable consumption assumptions

Michigan consumers have access to a wide range of vegetables. But there is no actual data available that show current vegetable consumption pattern in the state. A study by Cornell University¹² listed nearly 100 vegetables that are consumed in Northeast U.S. The following assumptions were considered to estimate current vegetable consumption patterns in southeast Michigan.

- Vegetable consumption pattern in Northeast U.S. has been considered to be applicable for the study region. Data was adjusted adding some vegetables that were not included in the data but consumed in Michigan.
- A total of 2.8 million people have been used as consumers in the region. This includes some additional tourist consumers.

Based on these assumptions, the consumable equivalent production of vegetable for the region was estimated to be 24.9 pounds per person per year. The annual per capita consumption in the five-county region was estimated at 472.27 pounds per year. According to these production and consumption estimates, the five-county region has the capacity to meet about 5.3% of the current vegetable consumed in the region. Some changes in the production level and area of vegetables in the region showed an increase in the percent of the regional food production. In general, depending on various assumptions, it can be assumed that the region currently has the capacity to meet between 3% and 10% of the vegetable supply consumed in the region. But detailed research has to be conducted in order to find out the vegetable production capacity and actual vegetable consumption patterns in the region.

¹² <http://aem.cornell.edu/research/researchpdf/rb0207.pdf>

Chapter 7: Conclusions and recommendations

The present study has shown many paths that locally grown food products in southeast Michigan can take as they move through the supply chain to reach the end-consumer. Market channel choices for local growers are complex and require better knowledge and information on the supply chain and market needs and requirements to gain from sales. The building of relationships and good understanding of the role of key players within the supply chain is key for success.

Following are some of the major **conclusions** from the present study:

Production agriculture

1. The region is experiencing a shift in demographic patterns with an increase in the ethnic population. This creates a strong consumer base for locally grown food products. Production potentials are in particular immense, if the region attempts to meet part of the current consumption patterns and dietary requirements from local and regional production.
2. Preliminary analysis in this study estimates that the region meets about 5% of the vegetable supply currently consumed in the region.
3. The region's agricultural production currently lacks diversity to cope with the growing consumer demand for product selections and varieties.
4. Farming in the study area has generally a declining trend.
5. Production agriculture in the region tends to be less growth oriented.
6. It appears that there are very few or no new entrepreneurs who entered the agri-food sector in recent years. According to the results from the grower survey in this study, about 88% of the farmers have been farming for more than 15 years.
7. Market participants within the regional food supply chain have different understandings and definitions of "local foods" and regional food systems.
8. There are very limited value-added activities at the farm level in the region.
9. Most farmers in the region are selling their products within the first 50 miles.
10. It appears that farmers in the region have less interest in creating a joint marketing initiative at the farm level. However, some farmers have expressed interest to join some form of organizations including Community Supported Agriculture (CSAs).

Supply chain

1. Wholesalers and retailers expressed high support for locally grown food products. Most supply chain participants perceive the local and regional food system as part of a community building effort.
2. However, most of the wholesalers do not have direct contact with the small farmers in the region, and their purchase of locally grown food products is relatively very small.
3. Some wholesalers have limited knowledge about the local and regional food production.
4. Some wholesalers are not interested in buying local foods directly from farmers. They preferred to buy locally grown food products through a first line wholesaler or at a warehouse that carries these products.
5. Local supermarkets play a significant role in retailing local food, and have direct contacts and established relationships with a number of fresh market producers.
6. But, the number of local fresh market producers selling to these retailers and wholesalers has a declining trend.
7. Large national and regional wholesalers appear to be more interested in buying leafy and green vegetables from local suppliers.
8. Some retailers and wholesalers want to see state or county level product certification programs, which assures product quality and safety when buying from local farmers.
9. An increasing number of farmers are participating in direct marketing (e.g. farmers' markets, although market share through this channel still appears to be low). However, fruit and vegetable farmers are more satisfied with this retail outlet than other producers.
10. Fruit and vegetable growers use more diverse market outlets compared to grain producers.
11. For local farmers, relationship building is the first step to enter a new market. No buyer (retailer or wholesaler) expressed interest to buy local foods unless it makes sure that the farmer's activity fits well with its operating values, guidelines and principles.
12. Wholesalers and retailers feel that local farmers lack the knowledge and information to deliver the right form of product and service to the marketplace.

13. Some wholesalers have difficulty in understanding the organic certification process. Information on certifying agencies is lacking.
14. Southeast Michigan's grain production sector has very little or no connection with the food manufacturing plants located in the region.
15. Grain mills have relationships with a number of large farms, but mostly with farmers not from southeast Michigan.
16. It appears that there are some unrealized product development and market opportunities that could be supported through the manufacturing sector in the region. The food manufacturing industry in the region uses a wide range of ingredients that could potentially be supplied from the region. But currently the processing facilities are sourcing these ingredients from large distributors outside of the region.
17. Overall, local fresh market producers in the region have varying product market opportunities through the current supply chain system:
 - a. Upscale national supermarket chains provide selective to broad market opportunities both for small and large farms. These retail chains will also provide ample opportunity to introduce new products.
 - b. Large distributors provide broad market opportunities for large farms. But small farms have limited market opportunities to increase sales through this channel.
 - c. Ethnic-based wholesalers provide selective market opportunities for small farms that produce selected fresh market products. Large farms have limited potential to expand sales through this market outlet. The ethnic-based wholesalers prefer to buy fresh produce from distributors.
 - d. The grower-packer operation provides broad market opportunities for relatively large farms. Because of its established linkages with a wide range of buyers, this wholesaler group can also assist small farms in finding new markets for their products.
 - e. Local supermarkets provide selective market opportunities for small-to-medium size farms.
 - f. Direct marketing at farmers' markets and farm retail stands provide selective market opportunities for small-to-medium size farms.

Recommendations

Following are some of the next steps suggested to improve the economic contribution and performance of the supply chain within southeast Michigan's agricultural food system.

1. ***Create and support growth oriented agricultural food entrepreneurs.*** The two major strategies for agricultural food economic development in southeast Michigan are business retention and expansion, and business creation. However, growth and expansion of existing agricultural food businesses, as mentioned in previous sections, is very limited. Currently, the region is also creating very few new businesses in the agricultural food sector. In the future, the only viable strategy for a sustainable agricultural food economic development in the region is the creation of new businesses. The current FSEP system of assistance to agricultural food entrepreneurs is fragmented. Future agricultural food entrepreneurship development in the region should involve multiple players to support the development and implementation of a comprehensive entrepreneurship program and support system in the region.

2. ***Support innovation and new product development in the region.*** This has two aspects (a) supporting entrepreneurial activities by conducting product development and market opportunity assessments in collaboration with partners, and (b) identification and assessment of potential niche sectors and industrial clusters that could help the regional agricultural food sector to take the lead in the production, technology and marketing of specific products. For example, from a very preliminary observation, it can be hypothesized that Wayne County may have the potential to be a leader in the floriculture industry. Detailed studies have to be conducted to find out what this potential would be. Similarly, the other counties or the region as a whole may have its unique potential to be a leader in some technologies and markets. Some of the important steps that need to be taken to meet this goals include the following:
 - a. The region needs to assess and examine to find out feasible and appropriate models of industrial clusters for the agricultural food sector of the region.
 - b. This process requires inventory of new and existing high-tech companies in the region and their close collaboration to transform the region's agricultural food sector to the next level.
 - c. Conduct detailed studies that focus on the development of a specific product, market or technology cluster that connects producers with manufacturers and marketers, and analyze the potential economic impact of such measures
 - d. Work on the development of strategies and policy frameworks that support to realize specific goals in this area.

3. ***Develop and implement effective farm succession planning educational and outreach programs to support and improve operations of existing farms.*** The majority of the farmers in the region are getting older and it appears that the next generation does not have interest to work on farms. Such programs will reduce loss of farmland in the region. FSEP could play a lead role in developing programs and projects to assist farmers in succession planning.

This should also include the development of appropriate strategy to reduce the number of farm exits in the region.

4. ***Th region needs to diversify its fruit and vegetable production system to meet the growing demand for locally grown food products:*** Considering Michigan’s fruit and vegetable consumption pattern, southeast Michigan has great opportunities to expand production of a variety of fruits and vegetables. A concerted effort should also be made to identify new crops and varieties that have economic potential to diversify southeast Michigan’s fruit and vegetable sub-sector.
5. ***In addition, in order to raise market shares of locally grown food products, the region needs to develop a strategy to expand availability of fresh products during the winter season.*** Two approaches that could be examined include the following:
 - a. The technical and economic feasibility to create a warehouse and storage operation that can make local fresh produce available for consumption for an extended period of time. The creation and development of a pilot food distribution center that particularly support small-to-medium size farmers to market their products will be useful.
 - b. The region also needs to assess the potentials and opportunities of expanding more greenhouse production operations to supply fresh produce during the winter season.
6. ***Strengthen business skills of local growers and producers.*** In addition to meeting buyers’ supply needs, small farmers need to provide additional value-added services to their buyers to create a strong market base by supplying the right kind of product. Farmers can in particular improve their market share through the local supermarkets by doing some of the value-added functions that are required by the retailers. This includes some kind of preliminary product sorting, grading, packing, bagging, or using appropriate boxes and transportation systems to maintain product quality. These operations will also improve sales through the food service providers and institutional markets. These approaches will eventually help farmers to get higher prices for their products. FSEP can help develop value-added programs designed for small farmers tailored by different product categories.
7. ***Strengthen relationship-building programs and strategies between farmers and buyers (wholesalers and retailers) to create new markets or expand existing markets for locally grown food products.*** Local farmers need to establish bonding relationships with their buyers based on trust, values, principles, and expectations. Strong programs that particularly enable farmers to learn more about their potential buyers’ values, principles and goals will

help them develop a product and service that can gain access through these establishments.

8. ***Strengthen and support operations of farmers' markets in the region.***

Although this study did not specifically address the full market opportunity through farmers' markets, it appears that these markets have a great potential to expand the market for a wide range of agricultural food products. The present study indicated that an increasing number of market participants are currently visiting farmers' markets to meet different goals: (a) Farmers are using them to sell their products. (b) Small retailers such as local supermarkets and convenience stores are using them to source fresh produce. (c) Wholesalers such as grower-packers are showing interest to establish some kind of warehouses in selected farmers' markets. (d) Food purchasers from national chains (mainly supermarket chains) are using them as a place to meet and recruit local suppliers and producers. Overall, the role of farmers' markets is expanding. They are not places to sell products only to end-customers directly; but they are also becoming distribution centers for some products that are sourced by some retailers and wholesalers. Farmers' markets in the region are, however, at the early stage of development. Following are some of the recommendations to improve farmers' market operations in the region:

- a. There is a need to conduct detailed farmers' markets studies to understand their challenges, potentials and economic impacts in the region.
- b. There is a need to analyze and understand their linkages with farmers, consumers and area businesses in order to meet their structural, organizational and infrastructure needs.
- c. There is a need to develop a regional policy and strategy that specify operation of farmers' markets in the region.
- d. There is a need to identify and expand potential future farmers' market sites and create collaboration efforts to plan and implement the facilities.

9. ***Develop strategies and programs that link the grain production sub-sector with the manufacturing industry in the region.*** This will require additional detailed studies to identify the actual product development and market opportunities through existing and new manufacturing industries in the region.

10. ***Develop a comprehensive regional agricultural food development policy and strategy*** in southeast Michigan that should address future trends and developments: Following are some examples:

- a. Map the region's agricultural food sub-sectors and their development potentials with the goal to create production and market innovation clusters.
 - b. Introduce regional farm inspection programs to enhance the market potential for locally grown food products, assure food quality and safety, and strengthen the relationship between farmers and food buyers.
 - c. Provide directions in agricultural food future development (e.g., food vs. non-food).
11. ***Conduct studies to specifically analyze the distribution and impacts of local and relatively small regional supermarkets on the local and regional food system.*** The present and previous studies indicated that local and regional supermarkets can play a significant role in supporting the local and regional food system. In particular, their location and distribution patterns within a given area affect availability of food and eventually the potential market for locally grown food products.
12. ***Strengthen the creation of local and regional agricultural food directory and databases.*** Some wholesalers and retailers noted that they have little or no knowledge about the regional food system and on products that area available from local suppliers. Such databases should also provide a full picture of the regional production, processing and marketing infrastructure and capability.
13. ***Support and strengthen the development of small- and medium-scale value-added and processing operations that specifically provide services to small- and-medium size farms in the region.*** This study identified that buyers from local farmers prefer that products be supplied to them in a better form and be ready-to-sell. One approach to improve this situation is to create some kind of small-to-medium-scale incubator operation(s) that can provide different services and education and mentoring programs including product packaging, grading, labeling, etc. These services are currently being provided by the other market participants (mainly retailers and wholesalers). FSEP can help in developing programs that could help identify the right kind of operation(s) in the region and in assessing its feasibility.
14. ***Examine and explore the development of targeted processing and marketing operations that can support the activities of food processors and marketers in the grain sector of region.*** For example, interviewed food processors in this study are currently buying food products and ingredients from large national distributors. Most of these ingredients (most of them developed from grain and other food products) are not coming from the grain production

sector in the region. The interviewed processors noted that there are no local processors and suppliers that meet their needs. In addition, specialized retail operations (e.g., bakeries, pizza operations, etc.) are sourcing their food ingredients (e.g., oil and dough which constitute the major inputs in making bakery items) from large distributors and processors. Large distributors such as Sysco have experience of buying such items from local and regional processors. For example, Sysco had the experience of buying soybean oil from farmers' cooperatives in Iowa¹³. Soybean oil called "Asoya" was first developed and produced by farmers' cooperatives in Iowa, but now it is processed by Cargill. Therefore, the region needs to develop a long-term strategy how to supply these processors, wholesalers, and retailers with the required food ingredients from the region's production.

15. Some of the steps that could be examined in this area include

- a. Development of a list and a better understanding of food ingredients,
- b. An assessment of the region's potential to produce and supply these food ingredients, and
- c. An assessment of the technology and the market situation and opportunities for new entrepreneurs.

16. ***Development of market-specific "local product purchasing guidelines" to increase sales from local farmers.*** Such guidelines will be useful in order to streamline and meet the needs of each buyer (wholesaler, retailer, food service producer or institutional market representative). This guideline needs to include listing of specific buyers' requirements that need to be met by each farmer when supplying food products to individual stores or establishments. Details could include formalities and procedures on contractual agreements, product quality, delivery arrangements, etc. Such guidelines could be developed in cooperation with the retailers and wholesalers in each locality. FSEP with other partners in the region could lead the initiative to encourage market participants to develop these guidelines, if they want to buy directly from a small farmer in the region. For example, hanging such guidelines in the store could be one option to inform local suppliers about the involvement of the retail shop in local food. Store owners can also use such signs to promote their active involvement in the regional food system. In addition, such programs will help to educate farmers on the development of "marketable products and services" targeted for sale through specific market channels.

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