Food System Review: Fruit and Vegetable

South Dakota Local Growers Survey Data Summary

A SURVEY OF PRODUCERS IN SOUTH DAKOTA

South Dakota State University Extension & South Dakota Department of Health

Full Report March 2013

Preface:

This report of local fruit and vegetable producers in South Dakota is a part of the project entitled “Food Systems Review: Fruit and Vegetables in South Dakota”. The topic of local foods and instate purchasing of fruit and vegetable rose in preliminary surveys and interviews done for the Department of Health’s investigation. The survey was used to collect South Dakota local growers’ production and marketing information and examined factors that affect local growers’ fruit and vegetable sales and profitability.

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Introduction

This South Dakota Local Grower Survey was a collaborative effort between the South Dakota Department of Health and South Dakota State University Extension, as a part of a Food System Review of Fruit and Vegetables in South Dakota. The purpose of this survey was to collect the South Dakota local growers' production and marketing information and to examine factors that affect local growers' fruit and vegetable sales and profitability. This study was funded by South Dakota Department of Health.

The survey study was conducted between May-July, 2012. Surveys were distributed electronically through the SDSU Extension Farmer's Market LISTSERV. Additionally, the link was posted on Facebook inviting South Dakota produce growers to participate. Paper surveys were distributed at the Aberdeen Farmer's Market and at Local Food Entreprenuer trainings held in Philip and Kadoka. Electronic recipients of the survey questionnaires were informed the purpose of the study and invited to complete the questionnaires through the web link provided in the cover letter. Recipients receiving paper copies were provided a cover letter stating the purpose of the study and a self-addressed stamp return envelope. Recipients were also informed of a $40 gift card from Amazon provided to the first 60 returning completed surveys. After discarding the incomplete or illegible responses, a total of 44 usable surveys were included in this report. This included elliminating out-of-state growers and non-produce growers.

This report provides detailed information generated from the survey study. All the respondents were assumed to be local growers had the role of primary farm manager; therefore this report will refer to the survey respondents as "growers " or "respondents". This report divides the full sample into two sub-groups and examines their similarities and differences. The grower groups include those in the food desert areas and those in the non-food desert areas. The "food desert areas" in this report are defined as regions with limited access to healthy and affordable food (http://www.ers.usda.gov/data-products/food-desert-locator.aspx). Accordingly, 6 of the total 44 growers were in the food-desert areas and 38 growers were in the non-food desert areas. The following report will provide readers with the detail statistics collected from the full sample and as well as data from those respondents located in identified food deserts and non-food deserts. Readers will also find policy suggestions based on the study's findings.

The following report is organized as follows:

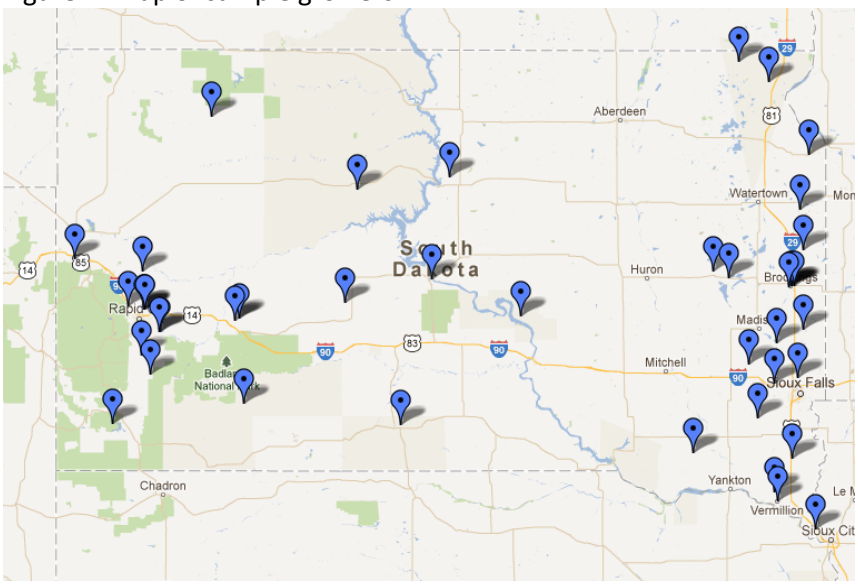
- Section 2— **Characteristics of Sample**: Demographics and characteristics of growers sample and their farms.
- Section 3—**Production Information:** Growers' production information, including acreages, production methods, and future production plans.
- Section 4—**Sales and Profitability:** Growers' marketing, sales and profitability information.
- Section 5—**Business Opportunities and Limitations to Direct Sales:** Growers' perceptions of business opportuities in their communities, reasons limiting their fruit and vegetable sales, and government policies that inhibit more fruit and vegetable sales.
- Section 6—**Conclusion and Recommendations.**

2. Characteristics of Sample

Section 2 provides information on growers's and their spouses' demographic characteristics. Includes information in regard to their involvement in the farm and other farm employment.

Location of the Growers Figure 1 shows a map of locations for the 44 sample repondents. Most growers are located in the east and west central parts of the state. Among these 44 growers, 6 were in the food-desert areas and 38 were in the non-food desert areas (see detail location at: https://maps.google.com/maps/ms?msid=207407480735619029375.0004c7b8074c6df84a2e6&msa=0&ll=44.339565,-100.360107&spn=5.209114,13.392334

Figure 1: Map of sample growers



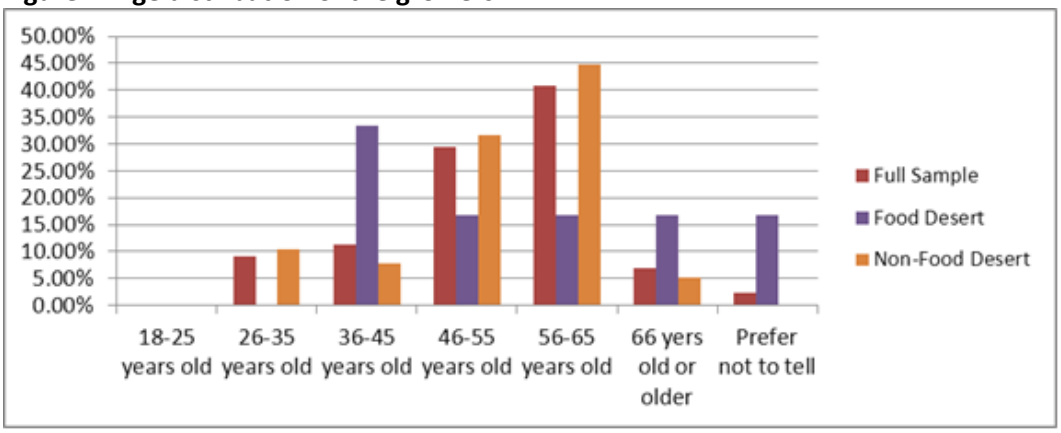
Demographic Information

Age: Table 1 and Figure 2 report the age distribution and corresponding number/percentage of growers for each age bracket. Table 1 shows 11.4% of the sampled growers were between 36-45 years old, 29.6% of growers were between 45-55 years old, and 40.9% of growers were between 56-65 years old. The majority of the growers in the non-food desert areas were between 46-65 years old, while the ages of growers in the food desert areas were more diverse. Although all the growers who belonged to the youngest age bracket (25-35 years old) were in the non-food desert areas, data indicated the food desert areas had a larger percent (33.3%) of growers between 36-45 years old. In addition, Table 1 shows 44.7% of the growers in the non-food desert areas were 56-65 years old, while only 16.7% of the growers in the food desert areas are in this age group.

Table 1: Age distribution of the growers

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
18-25 years old	0	0.00%	0	0.00%	0	0.00%
26-35 years old	4	9.09%	0	0.00%	4	10.53%
36-45 years old	5	11.36%	2	33.33%	3	7.89%
46-55 years old	13	29.55%	1	16.67%	12	31.58%
56-65 years old	18	40.91%	1	16.67%	17	44.74%
66 yers old or older	3	6.82%	1	16.67%	2	5.26%
Prefer not to tell	1	2.27%	1	16.67%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 2: Age distribution of the growers

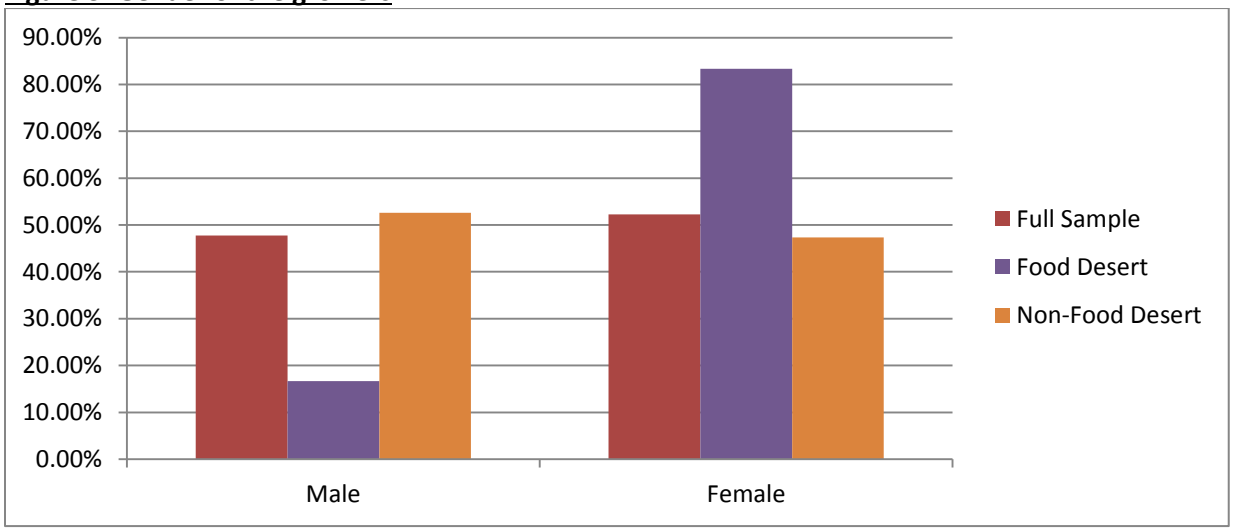


Gender: Table 2 and Figure 3 show the gender distbituion of the growers. The majority of the growers in the food desert areas were female (83.3%), while only one grower was male (16.7%). On the contrary, 52.6% of the growers were males and 47.4% of the growers were females in the non-food desert areas, which indcates a more even gender distribution.

Table 2: Gender of the growers

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Options	Numbers	Percentage	Frequency	Percent	Frequency	Percent
Male	21	47.73%	1	16.67%	20	52.63%
Female	23	52.27%	5	83.33%	18	47.37%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 3: Gender of the growers

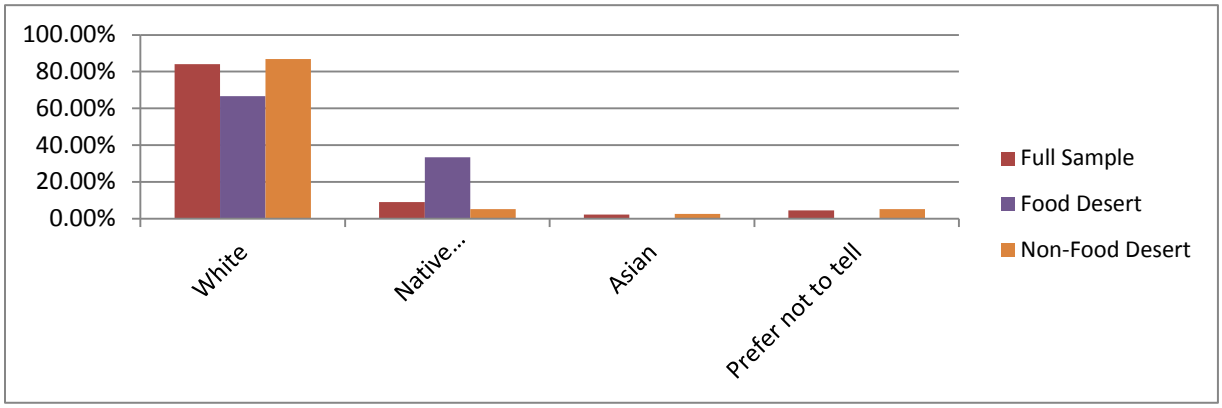


Ethnic background: Table 3 and Figure 4 indicate the majority of the growers were Caucasians (84.1%). Data shows two growers in the food desert areas (33.3%) and two growers in the non-food desert areas (5.26%) were Native Americans. The non-food desert areas, although having a higher percentge of white growers, also contained one Asian grower. Overall, our sample growers closely represented the racial composition in South Dakota.

Table 3: Ethnic background of the growers

	Full Sample		Food Desert		Non-Food Desert	
Options	Numbers	Percentage	Frequency	Percent	Frequency	Percent
White	37	84.09%	4	66.67%	33	86.84%
Native American/American Indian	4	9.09%	2	33.33%	2	5.26%
Asian	1	2.27%	0	0.00%	1	2.63%
Prefer not to tell	2	4.55%	0	0.00%	2	5.26%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 4: Ethnic background of the growers

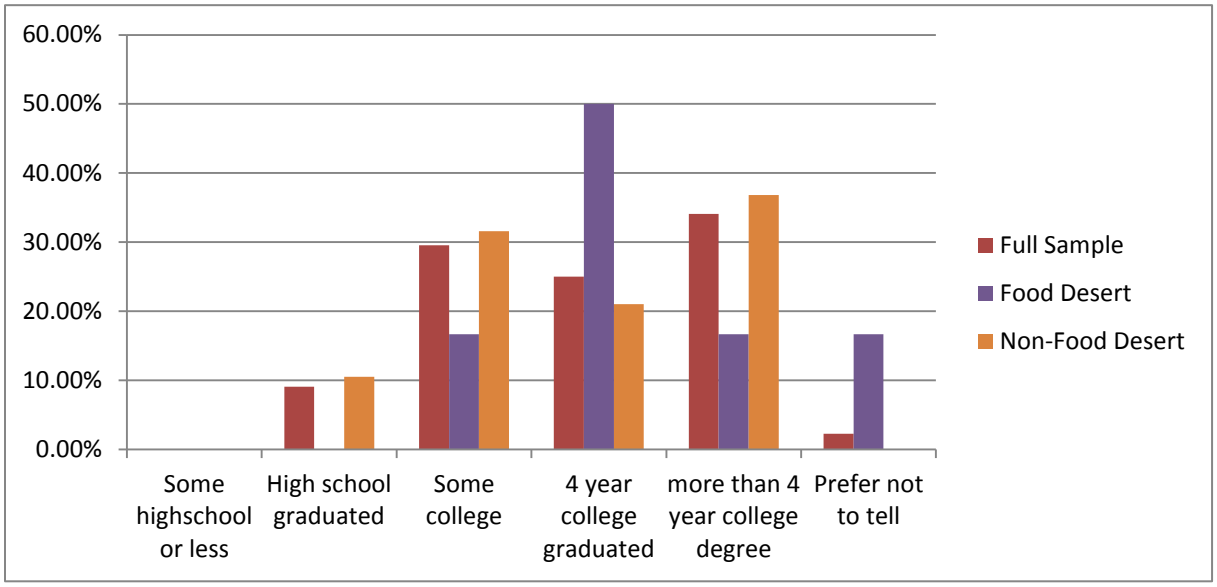


Education background: Table 4 and Figure 5 show 66.7% of the growers in the the food desert areas and 57.9% of the growers in the non-food desert areas had 4-year college or higher degrees. Table 4 also shows growers in the non-food desert areas had a relatively diverse educational background. While 36.8% of the growers had more than 4-year college degree, 10.5% only had a high school degree. Data also indicates a higher percentage (42.1%) of growers in the non-food desert areas had less than 4-year college degree (compared to only 16.7% in the food desert areas).

Table 4: Education background of the growers

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Some highschool or less	0	0.00%	0	0.00%	0	0.00%
High school graduated	4	9.09%	0	0.00%	4	10.53%
Some college	13	29.55%	1	16.67%	12	31.58%
4 year college graduated	11	25.00%	3	50.00%	8	21.05%
more than 4 year college degree	15	34.09%	1	16.67%	14	36.84%
Prefer not to tell	1	2.27%	1	16.67%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 5: Education background of the growers



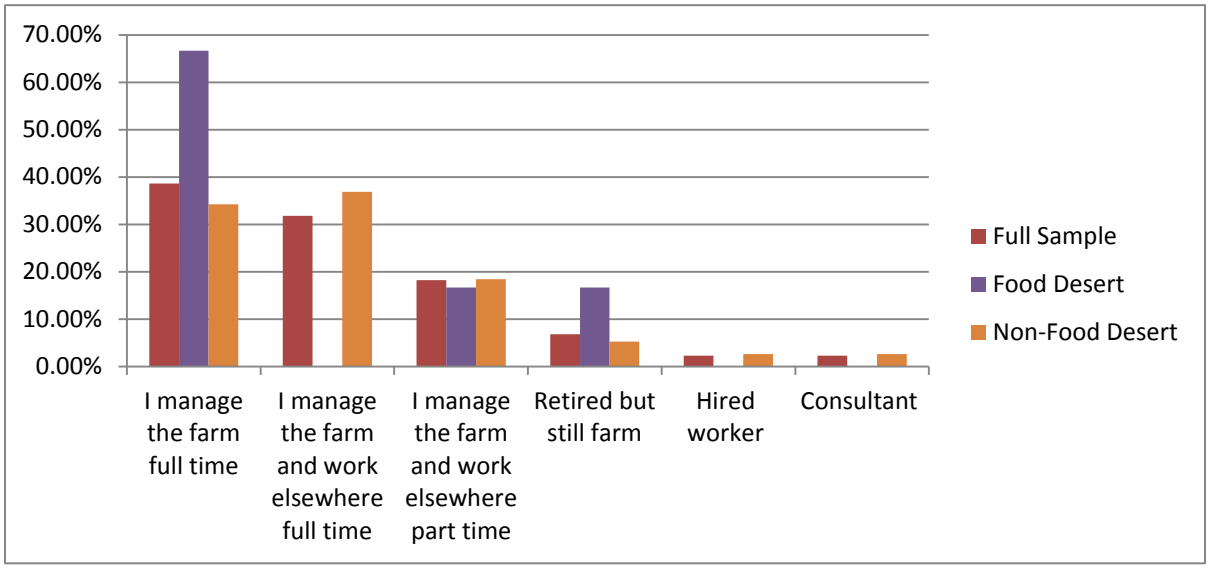
Management of the farm

It was requested that the primary farm manager complete the survey. Table 5 and Figure 6 show sample growers'time involvement in the farm management. The majority of the sample growers either managed the farm full time (38.6%) or managed the farm and worked elsewhere full time (31.8%). Figure 6 shows a noticeably higher percent of growers in the food desert areas (66.7%) worked full time at the farm without any off-farm jobs, compare to 34.2% in the non-food desert areas. In addition, data indicates 0.0% of the growers in the food desert areas and 36.8% of the growers in the non-food desert areas managed the farms and worked full-time jobs elsewhere.

Table 5: Respondents' invovement in the management of the farm

	Full Sample (N=44)		Food Desert (N=6)		ood Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
I manage the farm full time	17	38.64%	4	66.67%	13	34.21%
I manage the farm and work elsewhere full time	14	31.82%	0	0.00%	14	36.84%
I manage the farm and work elsewhere part time	8	18.18%	1	16.67%	7	18.42%
Retired but still farm	3	6.82%	1	16.67%	2	5.26%
Hired worker	1	2.27%	0	0.00%	1	2.63%
Consultant	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 6: Respondents' involvement in the management of the farm



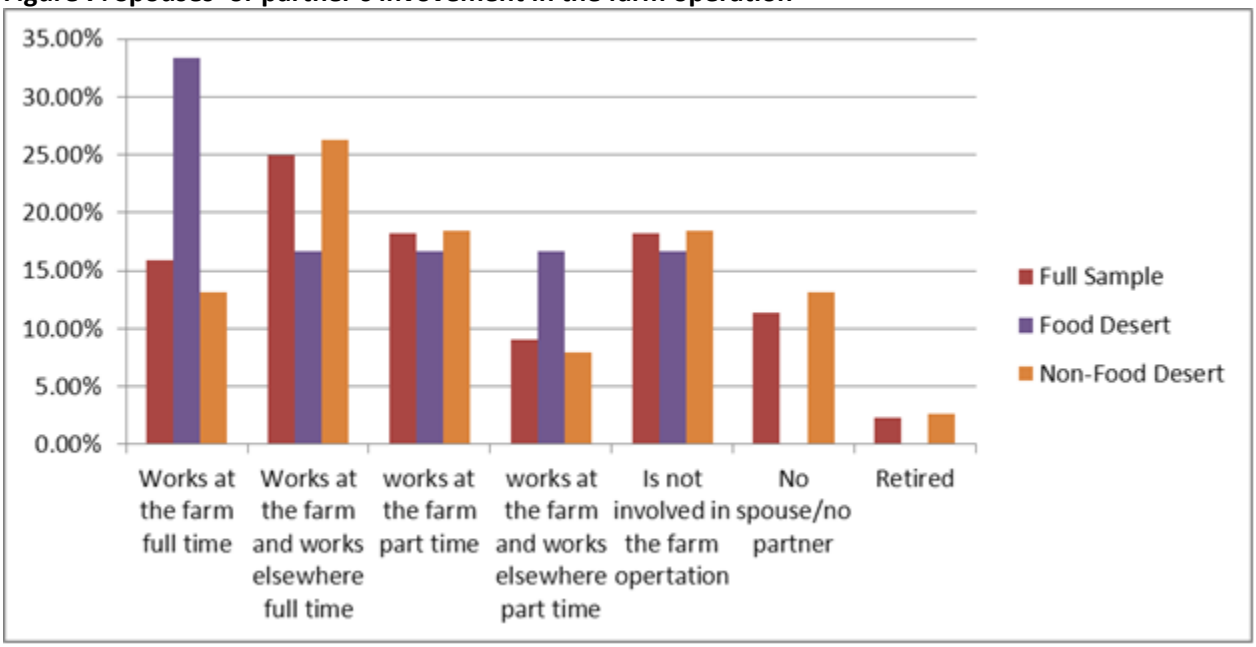
Spouse or partner's involvement

Table 6 and Figure 7 shows the involvement of the growers' spouse or partner in the farm operation. Compared to the growers themselves, Table 6 shows a more diverse pattern of involvement from spouses or partners. Moreover, Figure 7 suggests the food desert areas had more growers' spouses or partners working at the farm full time (33.3%) while only 13.2% of the spouses or partners in the non-food desert areas worked at the farms full time. On the other hand, data indicate 26.3% of spouses or partners in the non-food desert areas worked at the farm and elsewhere full time, but only one spouse or partner (16.7%) in the food desert area had the same career arrangement. Data suggests the spouses or partners in the food desert area had more evenly distributed employment arrangements. Table 6 also indicates that approximately 18% of the spouses were not involved in the farm operation at all.

Table 6: Spouses' or partner's invovement in the farm operation

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Works at the farm full time	7	15.91%	2	33.33%	5	13.16%
Works at the farm and works elsewhere full time	11	25.00%	1	16.67%	10	26.32%
works at the farm part time	8	18.18%	1	16.67%	7	18.42%
works at the farm and works elsewhere part time	4	9.09%	1	16.67%	3	7.89%
Is not involved in the farm opertation	8	18.18%	1	16.67%	7	18.42%
No spouse/no partner	5	11.36%	0	0.00%	5	13.16%
Retired	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 7: Spouses' or partner's invovement in the farm operation



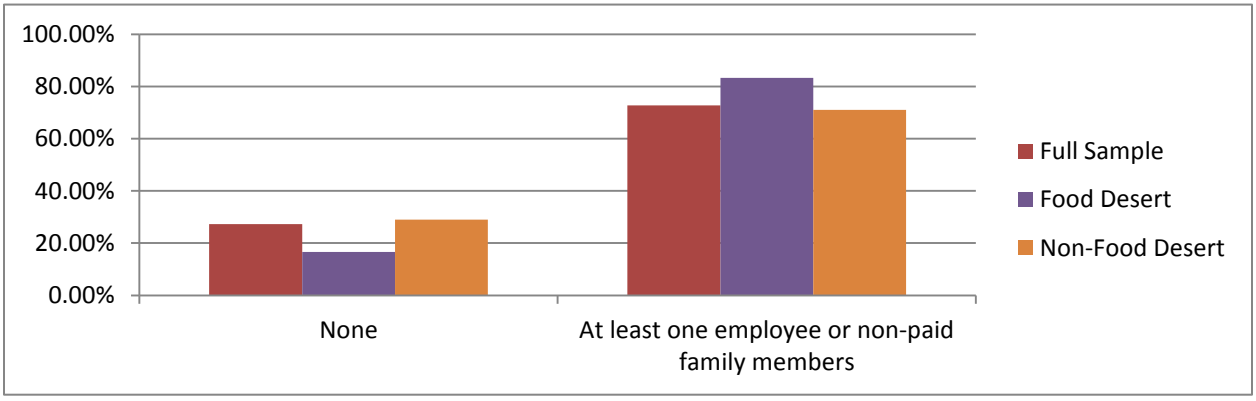
Numbers of farm employees

Table 7 and Figure 8 show 72.7% of the sample growers had hired at least one employee or unpaid family members to work at the farm. Compared to the food desert, the non-food desert areas had a higher percentage of growers who did not hire any employee or unpaid family members (29.0% vs. 16.8%).

Table 7: Percentage of farmers who did not hire any employee or non-paid family members

	Full Sample (N=44)		Food Desert (N=6)		n-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
No employee and no unpaid family member	12	27.27%	1	16.67%	11	28.95%
At least one employee or non-paid family members	32	72.73%	5	83.33%	27	71.05%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 8: Percentage of farmers who did not hire any employee or non-paid family members



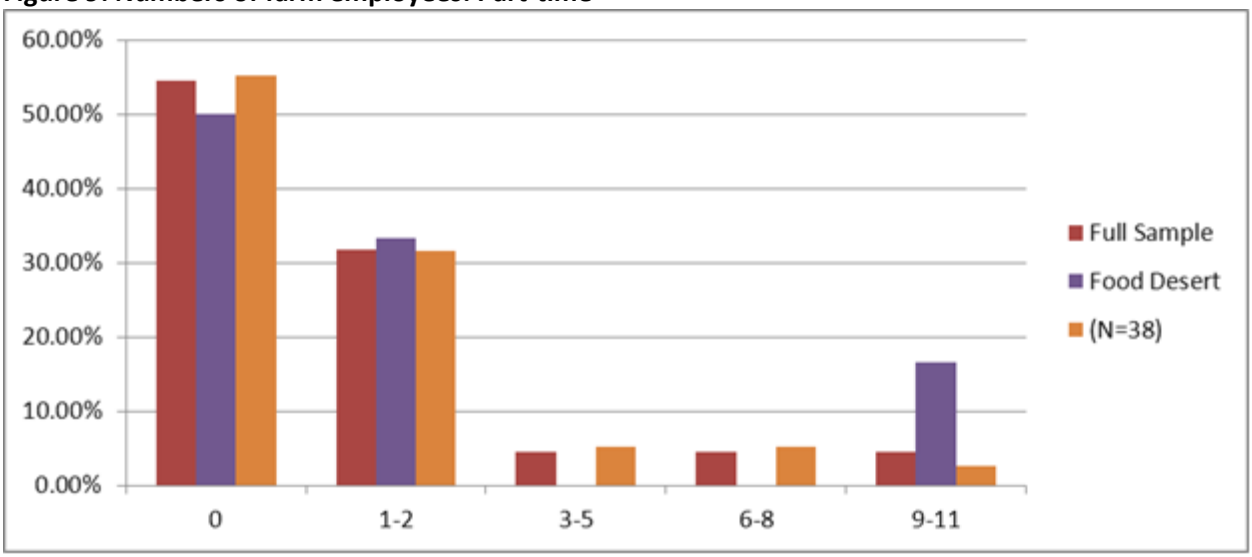
Numbers of employees: Part- time

Table 8 and Figure 9 show the majority of the growers did not hire any part-time employees (50.0% for the food desert areas and 55.3% for the non-food desert areas). For the growers in the food desert areas, we found 33.3% of growers had 1-2 part-time employees and one grower hired 9-11 employees. The non-food desert areas, on the other hand, had a wide range of hiring as shown in Table 8. This result suggests a difference in the labor management strategies between growers in the food desert and non-food desert areas.

Table 8: Numbers of farm employees: Part-time

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	24	54.55%	3	50.00%	21	55.26%
1-2	14	31.82%	2	33.33%	12	31.58%
3-5	2	4.55%	0	0.00%	2	5.26%
6-8	2	4.55%	0	0.00%	2	5.26%
9-11	2	4.55%	1	16.67%	1	2.63%
Toal	44	100.00%	6	100.00%	38	100.00%

Figure 9: Numbers of farm employees: Part-time



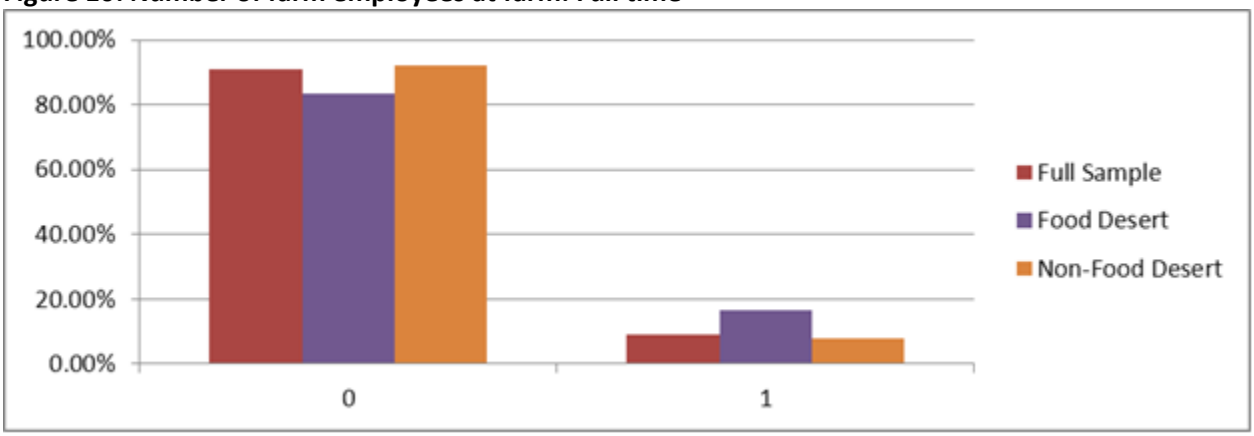
Numbers of employees: Full time

Table 9 and Figure 10 show the numbers and percentages of growers who hired full-time employees at the farm. We found 90.9% of the sample growers did not hire any full-time employees. For growers who hired full time employees (one grower in the food desert areas and three growers in the non-food desert areas), none of them had hired more than one full-time employee to work at the farms.

Table 9: Number of farm employees at farm: Full time

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	40	90.91%	5	83.33%	35	92.11%
1	4	9.09%	1	16.67%	3	7.89%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 10: Number of farm employees at farm: Full time



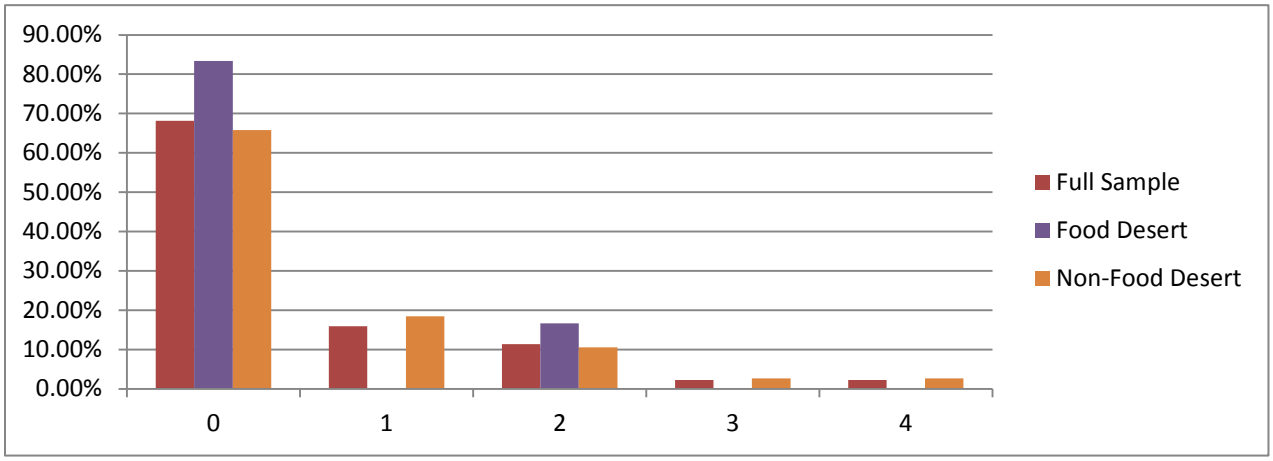
Numbers of employees: Unpaid family members

Table 10 and Figure 11 show the numbers and percentages of growers who hired unpaid family members to work at the farm. The majority of the growers did not have any family members who worked as unpaid employees (83.3% for the food desert and 65.8% for the non-food desert areas). For those who hired unpaid family members, Table 10 indicates none of them hired more than four unpaid family members.

Table 10: Numbers of farm employees: Unpaid family members

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	30	68.18%	5	83.33%	25	65.79%
1	7	15.91%	0	0.00%	7	18.42%
2	5	11.36%	1	16.67%	4	10.53%
3	1	2.27%	0	0.00%	1	2.63%
4	1	2.27%	0	0.00%	1	2.63%
Toal	44	100.00%	6	100.00%	38	100.00%

Figure 11: Numbers of farm employees: Unpaid family members



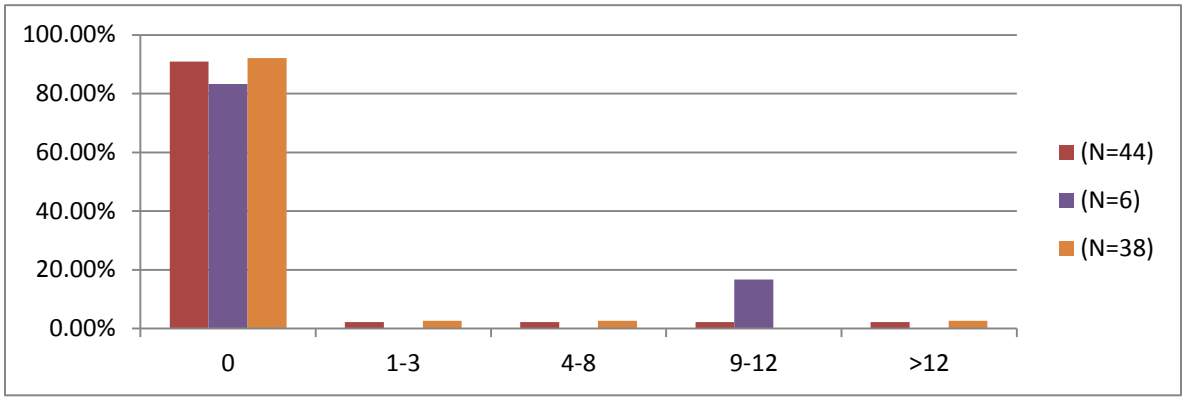
Number of employees: Others

Table 11 and Figure 12 show the numbers and percentages of growers who hired other types of employees at the farm were consistent with the patterns showed in the previous tables and figures. The majority of growers did not hire any other type of employees (83.3% of growers in the food desert areas and 92.1% of growers in the non-food desert areas). Table 11 shows most of the growers hired either zero or relatively small numbers of workers. Noticeably, Table 11 shows one grower in the food desert area and one grower in the non-food desert areas had hired more than nine employees.

Table 11: Number of farm employees: Others

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0	40	90.91%	5	83.33%	35	92.11%
1-3	1	2.27%	0	0.00%	1	2.63%
4-8	1	2.27%	0	0.00%	1	2.63%
9-12	1	2.27%	1	16.67%	0	0.00%
>12	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 12: Numbers of farm employees: Others



Overall, data suggest the ages of growers in the food desert areas were more evenly distributed (from 36 to over 66) compared to those in the non-food desert areas. On the contrary, the majority of the growers in the non-food desert areas were between 46-65 years old. However, about 10.5% of growers in these areas were 26-35 years old. The gender distribution showed noticeably difference between food desert and non-food desert areas, too. While the majority of the growers in the food desert areas were female (83.3%), the non-food desert areas had shown an even split between males and females. The racial distribution was very similar between food and non-food desert areas: the majority of the growers were Caucasians (84.1%) with a small percentage of Native Americans (9.1%) and Asian (2.3%) growers. The majority of the growers had some college (30%), a 4-year degree (25%) or beyond a 4-year degree (34.1%). The education background showed slightly difference between food desert and on-food desert areas as growers in the non-food desert ranged from having a high school degree to more than a 4-year college degree.

In terms of the time involvement in farm management, data indicate the majority of the growers either managed the farm full time or managed the farm and worked elsewhere full time. A noticeably higher percent of growers in the food desert areas worked full time at the farm without any off-farm jobs. Compared to the growers themselves, spouses or partners of growers had a more diverse pattern of involvement with the farm. Moreover, the food desert areas had more growers' spouses/partners working at the farm full time, but more spouses/partners in the non-food desert areas worked at the farm and elsewhere full time.

Data also shows 72.7% of the growers had hired at least one employee. While only 9.1% of the growers hired any full-time employees, 45.4% of the growers hired at least one part time worker. Data suggest 31.8% of the growers hired at least one unpaid family members to work with them. About 9.1% of the growers hired other types of workers.

3. Production Information

Section 3 provides the summary and discussion of growers' fruit and vegetable production-related information, including total acreages for production, acreages used for each specific product, production methods, season extension techniques and value-added products.

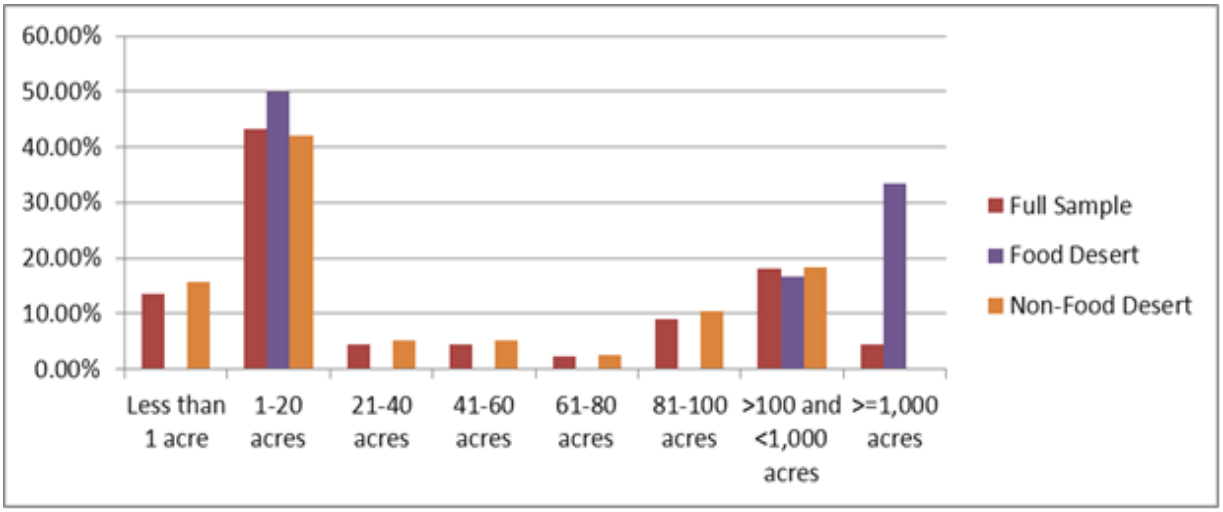
Total production acres

Table 12 and Figure 13 report the information of acreages for the total production and the corresponding numbers and percentage of growers who belonged to each acreage bracket. Table 12 shows the majority of the growers operated 20 acres or less (56.8%). However, data also indicate a significant number of growers operated large acres of land, especially for the growers in the food desert areas. Table 12 shows while three of the six growers (50.0%) operated 20 acres or less, two growers actually operated land over 1,000 acres. Moreover, data indicate the distribution of land acres over 20 acres was relatively even for growers in the non-food desert areas. All growers in the non-food desert areas operated at lands under 1,000 acres.

Table 12: Total production acres

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Less than 1 acre	6	13.64%	0	0.00%	6	15.79%
1-20 acres	19	43.18%	3	50.00%	16	42.11%
21-40 acres	2	4.55%	0	0.00%	2	5.26%
41-60 acres	2	4.55%	0	0.00%	2	5.26%
61-80 acres	1	2.27%	0	0.00%	1	2.63%
81-100 acres	4	9.09%	0	0.00%	4	10.53%
>100 and <1,000 acres	8	18.18%	1	16.67%	7	18.42%
>=1,000 acres	2	4.55%	2	33.33%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 13: Total production acres



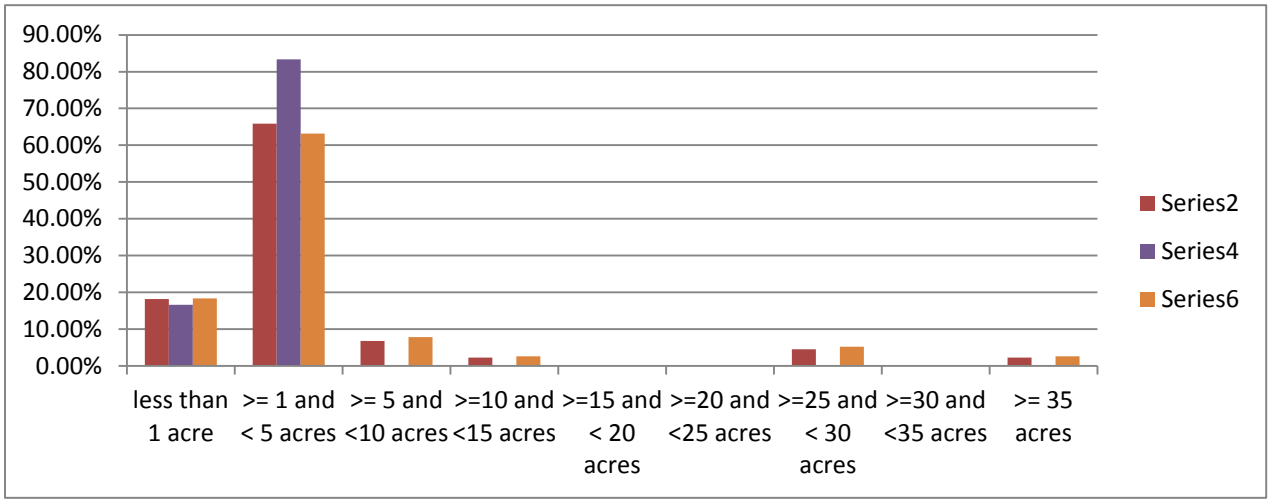
Production acres for fruit and vegetables

Table 13 and Figure 14 report the acreages for fruit/vegetable production and corresponding numbers/percentages of growers who belonged to each acreage bracket. The majority of the growers produced their fruit and vegetables on less than 5 acres: while 18.4% of the growers in the non-food desert areas farmed more than 5 acres. Although two growers in the food desert areas operated land over 1,000 acres, none of them produced more than 5 acres of fruit and vegetables. Table 9 indicates these two growers only utilized small portions of their land to produce fruit and vegetables.

Table 13: Production acres for fruit and vegetables

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
less than 1 acre	8	18.18%	1	16.67%	7	18.42%
>= 1 and < 5 acres	29	65.91%	5	83.33%	24	63.16%
>= 5 and <10 acres	3	6.82%	0	0.00%	3	7.89%
>=10 and <15 acres	1	2.27%	0	0.00%	1	2.63%
>=15 and < 20 acres	0	0.00%	0	0.00%	0	0.00%
>=20 and <25 acres	0	0.00%	0	0.00%	0	0.00%
>=25 and < 30 acres	2	4.55%	0	0.00%	2	5.26%
>=30 and <35 acres	0	0.00%	0	0.00%	0	0.00%
>= 35 acres	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 14: Production acres for fruit and vegetables



Percentages of fruit and vegetable acres over the total production acres

Table 14 and Figure 15 summarize the percentages of growers' fruit and vegetable production acres in relationship to total production acres. Data suggest different land usages between growers in the food desert and growers in the non-food desert areas.

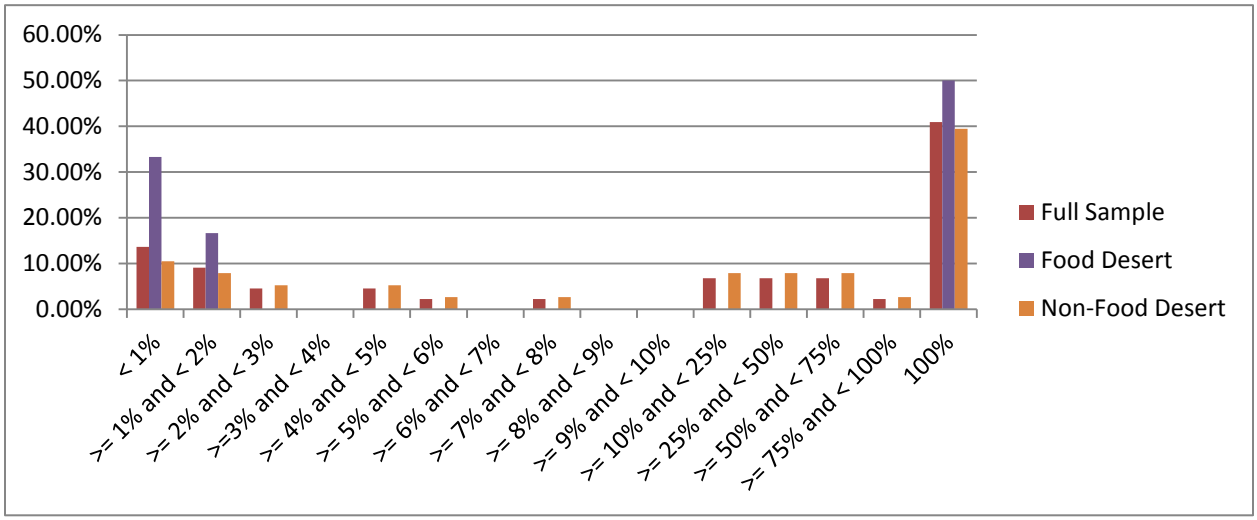
For the food desert areas, Table 14 shows a distinct difference between large and small growers. Fifty percent of the growers who farmed small acreages used all their land to produce fruit and vegetables. In contrast, the other three growers who owned noticeably large acreages only used 2% or less of their lands for fruit and vegetable production.

Although over 1/3 of growers (39.5%) used all their land for the fruit and vegetable production, data indicates the percentages of land used for fruit and vegetable production by non-food desert growers was more evenly distributed.

Table 14: Percentages of fruit and vegetables acres over the total production acres

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
< 1%	6	13.64%	2	33.33%	4	10.53%
>= 1% and < 2%	4	9.09%	1	16.67%	3	7.89%
>= 2% and < 3%	2	4.55%	0	0.00%	2	5.26%
>=3% and < 4%	0	0.00%	0	0.00%	0	0.00%
>= 4% and < 5%	2	4.55%	0	0.00%	2	5.26%
>= 5% and < 6%	1	2.27%	0	0.00%	1	2.63%
>= 6% and < 7%	0	0.00%	0	0.00%	0	0.00%
>= 7% and < 8%	1	2.27%	0	0.00%	1	2.63%
>= 8% and < 9%	0	0.00%	0	0.00%	0	0.00%
>= 9% and < 10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 25%	3	6.82%	0	0.00%	3	7.89%
>= 25% and < 50%	3	6.82%	0	0.00%	3	7.89%
>= 50% and < 75%	3	6.82%	0	0.00%	3	7.89%
>= 75% and < 100%	1	2.27%	0	0.00%	1	2.63%
100%	18	40.91%	3	50.00%	15	39.47%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 15: Percentages of fruit and vegetables acres over the total production acres



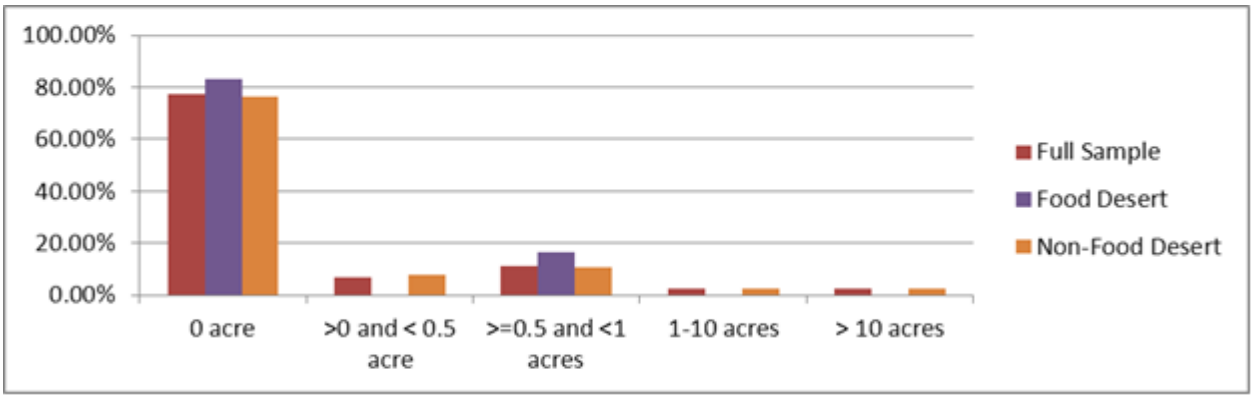
Acres: Berries

The survey further requested respondents to report the production acres for each fruit and vegetable they produced. Table 15 and Figure 16 show both the food desert areas and the non-food desert areas had small percentages of growers who produced berries (16.7% for the food desert and 23.7% for the non-food desert areas). The majority of the growers did not grow berries (83.3% in the food desert and 76.3% in the non-food desert areas) and only two growers in the non-food desert areas used lands larger than 1 acre for the berry production (5.2%).

Table 15: Total Acres: Berries

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	34	77.27%	5	83.33%	29	76.32%
>0 and < 0.5 acre	3	6.82%	0	0.00%	3	7.89%
>=0.5 and <1 acres	5	11.36%	1	16.67%	4	10.53%
1-10 acres	1	2.27%	0	0.00%	1	2.63%
> 10 acres	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 16: Total Acres: Berries



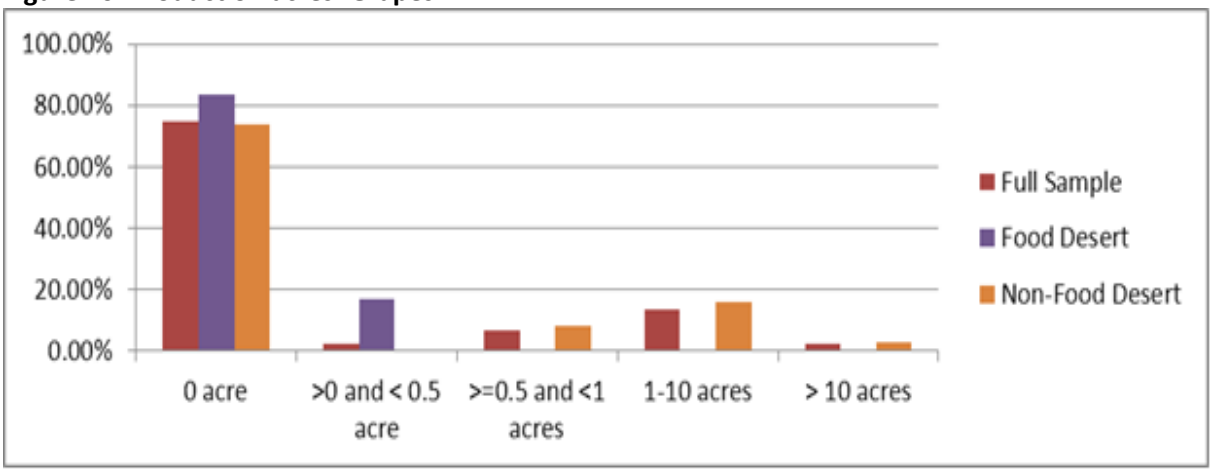
Acres: Grapes

Table 15 and Figure 16 show the acres and corresponding numbers/percentages of growers who belonged to each of the acreage brackets for grape production. Table 15 shows the majority of growers did not grow grapes (83.3% on food deserts and 73.7% on non-food deserts). Only one grower in the food desert areas grew grapes and utilized less than 0.5 acres. The non-food desert areas had 10 grape growers and most of these growers had less than 10 acres in production.

Table 15: Production acres: Grapes

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	33	75.00%	5	83.33%	28	73.68%
>0 and < 0.5 acre	1	2.27%	1	16.67%	0	0.00%
>=0.5 and <1 acres	3	6.82%	0	0.00%	3	7.89%
1-10 acres	6	13.64%	0	0.00%	6	15.79%
> 10 acres	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 16: Production acres: Grapes



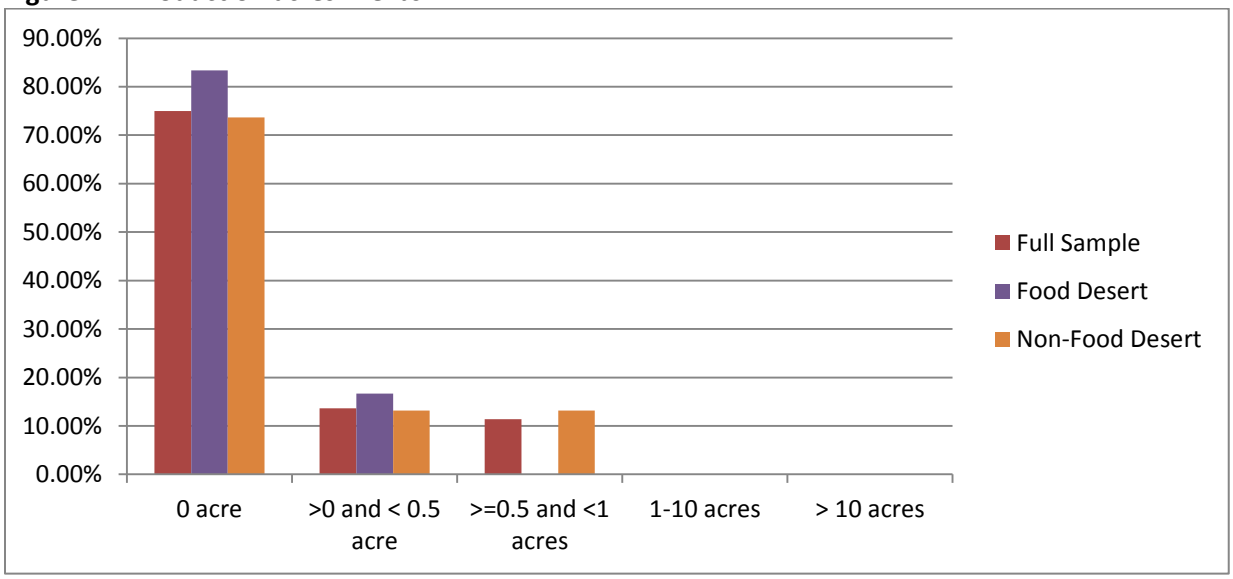
Acres: Herbs

Table 16 and Figure 17 reported the acres of herb production and corresponding numbers/percentages of growers who belonged to each acreage bracket. Table 16 demonstrates a similar pattern as shown in Table 14 and Table 15: the majority of growers did not grow herbs, and the non-food desert areas had more growers who grew herbs (26.3%), compared to the food desert areas (16.7%). Table 16 also shows the acres used for the herb production were slightly less with those used for the berry production, and noticeably smaller than those used for grape production.

Table 16: Production acres: Herbs

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	33	75.00%	5	83.33%	28	73.68%
>0 and < 0.5 acre	6	13.64%	1	16.67%	5	13.16%
>=0.5 and <1 acres	5	11.36%	0	0.00%	5	13.16%
1-10 acres	0	0.00%	0	0.00%	0	0.00%
> 10 acres	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 17: Production acres: Herbs



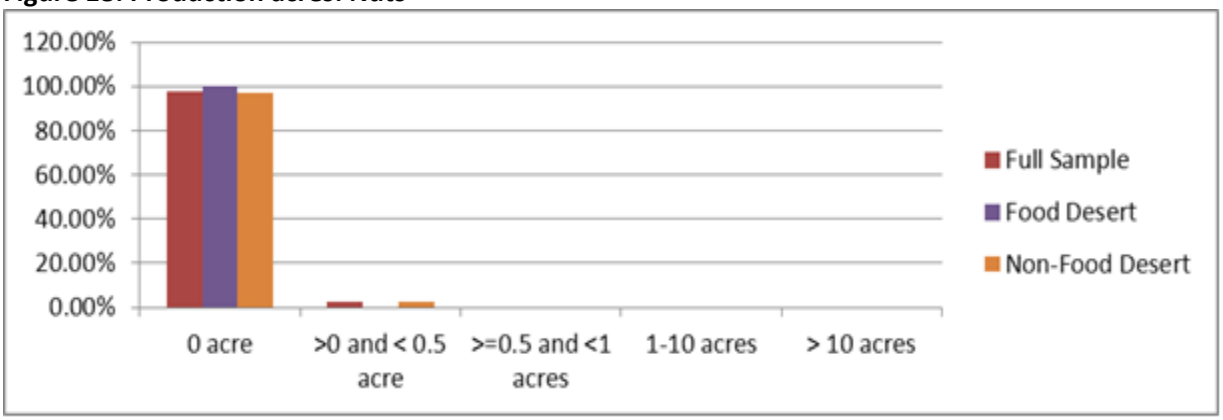
Acres: Nuts

Table 17 and Figure 18 show only one grower grew nuts and utilized less than 0.5 acre. Data suggest this grower had a wide range of fruit and vegetable product lines and all products were produced on land with a small number of acres. This specific grower was also activiely participating in various marketing outlets including farmers' markets, local-food Co-ops, and on-site processing (directly sold to the consumers).

Table 17: Production acres: Nuts

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	43	97.73%	6	100.00%	37	97.37%
>0 and < 0.5 acre	1	2.27%	0	0.00%	1	2.63%
>=0.5 and <1 acres	0	0.00%	0	0.00%	0	0.00%
1-10 acres	0	0.00%	0	0.00%	0	0.00%
> 10 acres	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 18: Production acres: Nuts



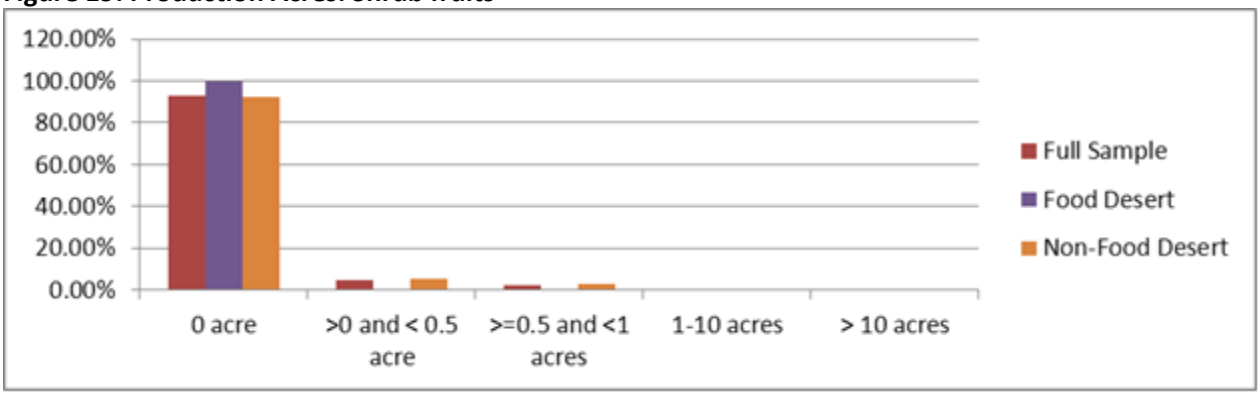
Acres: Shrub Fruits

Table 18 and Figure 19 report the production acres for the shrub fruits. Data shows only three growers had grown shrub fruits and the acres utilized were less than 1 acre. All three growers were in the non-food desert areas.

Table 18: Production Acres: Shrub fruits

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	41	93.18%	6	100.00%	35	92.11%
>0 and < 0.5 acre	2	4.55%	0	0.00%	2	5.26%
>=0.5 and <1 acres	1	2.27%	0	0.00%	1	2.63%
1-10 acres	0	0.00%	0	0.00%	0	0.00%
> 10 acres	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 19: Production Acres: Shrub fruits



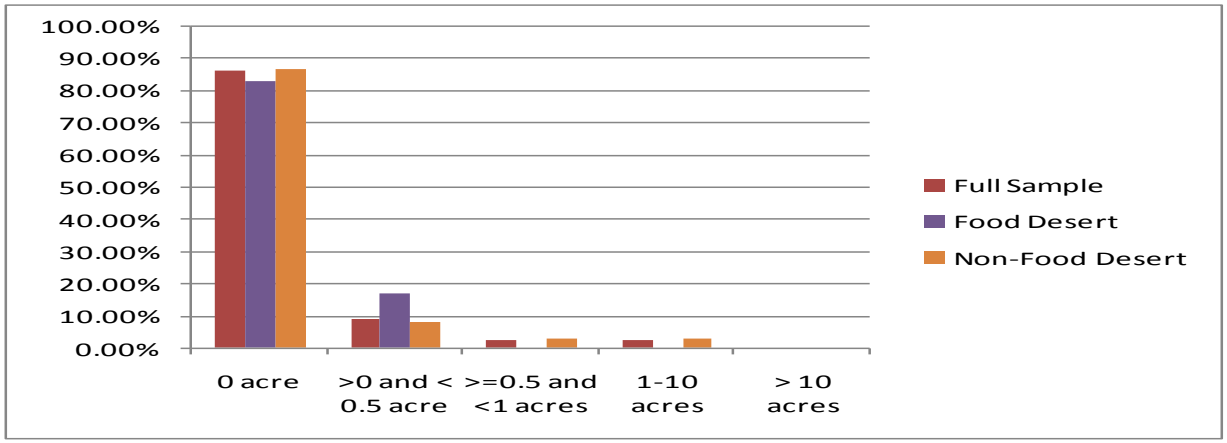
Acres: Tree Fruits

Table 19 and Figure 20 show the production acres for the tree fruits. The majority of the growers did not participate in any tree fruit production. For the six growers who reportedly grew tree fruit, one was in the food desert areas (16.7%) and five were in the non-food desert areas (13.2%). Most growers utilized less than 1 acre for tree fruit production.

Table 19: Production acres: Tree fruits

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	38	86.36%	5	83.33%	33	86.84%
>0 and < 0.5 acre	4	9.09%	1	16.67%	3	7.89%
>=0.5 and <1 acres	1	2.27%	0	0.00%	1	2.63%
1-10 acres	1	2.27%	0	0.00%	1	2.63%
> 10 acres	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 20: Production acres: Tree fruits



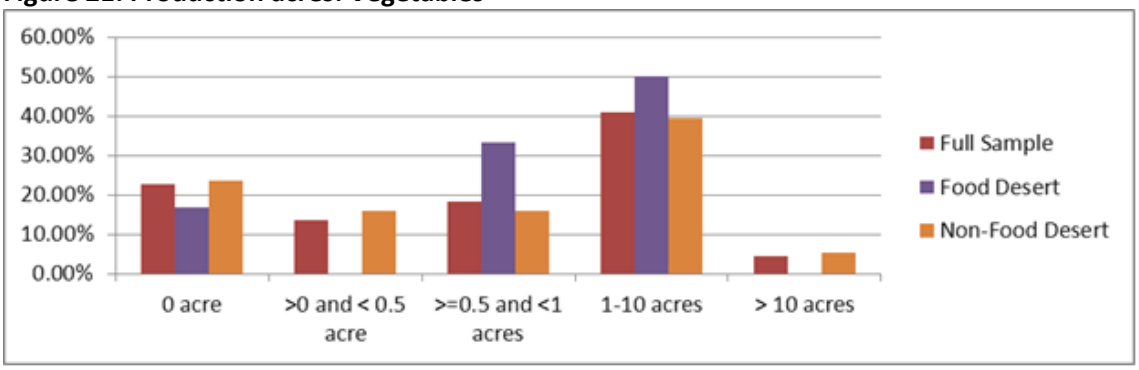
Acres: Vegetables

Table 20 and Figure 21 show a wide range of acres used for vegetable production: 10 growers (22.73%) did not produce vegetables, 14 out of the total 44 growers (31.8%) had less than 1 acre in production, 18 growers (40.9%) had 1-10 acres in production, and 2 growers had more than 10 acres in production. Data also show a slightly different pattern of acreage distributions between the food desert areas and the non-food desert areas. For the food desert areas, 3 growers (50%) had land between 1-10 acres in vegetable production and the remaining vegetable growers (33%) had less than 1 acre. For the non-food desert areas, 39.5% of the growers had 1-10 acres in vegtable production and 2 growers with over 10 acres in production (5.3%).

Table 20: Production acres: Vegetables

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0 acre	10	22.73%	1	16.67%	9	23.68%
>0 and < 0.5 acre	6	13.64%	0	0.00%	6	15.79%
>=0.5 and <1 acres	8	18.18%	2	33.33%	6	15.79%
1-10 acres	18	40.91%	3	50.00%	15	39.47%
> 10 acres	2	4.55%	0	0.00%	2	5.26%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 21: Production acres: Vegetables



Production Methods:

Tables 21-23 summarize growers' production methods for each product. The majority of the growers were practicing the 'conventional' or 'natural, sustainable, or chemical-free (without certification)' methods of production. Except for the berry and grape production, Table 21 shows more growers identified their production methods as 'natural, sustainable or chemical-free (without certification).' Data indicated only three of the total 44 growers grew certified organic products: one grower reportedly produced organic berries, herbs, and vegetables, while the other two growers grew organic grapes and vegetables, respectively. They farmed both in food desert and non-food desert areas. All the growers who were in transitioning to certified organic production were in the non-food desert areas.

Table 21: Production method for each crop: Full sample

Crops	Certified Organic	Conventional	Natural, Sustainable, or Chemical-Free without Certification	Transitioning to Certified Organic	Others
Berries	1	8	3	2	0
Grapes	1	6	4	1	0
Herbs	1	3	10	1	0
Nuts	0	0	0	1	0
Shrub Fruits	0	0	3	2	0
Tree Fruit	0	1	6	1	0
Vegetables	2	10	21	2	2

Table 22: Production method for each crop: Food desert

Crops	Certified Organic	Conventional	Natural, Sustainable, or Chemical-Free without Certification	Transitioning to Certified Organic	Others
Berries	1	1	0	0	0
Grapes	0	0	1	0	0
Herbs	1	1	0	0	0
Nuts	0	0	0	0	0
Shrub Fruits	0	0	0	0	0
Tree Fruit	0	0	2	0	0
Vegetables	1	2	3	0	0

Table 23: Production method for each crop: Non-food desert

Crops	Certified Organic	Conventional	Natural, Sustainable, or Chemical-Free without Certification	Transitioning to Certified Organic	Others
Berries	0	7	3	2	0
Grapes	1	6	3	1	0
Herbs	0	2	9	1	0
Nuts	0	0	0	1	0
Shrub Fruits	0	0	3	2	0
Tree Fruit	0	1	4	1	0
Vegetables	1	8	18	2	2

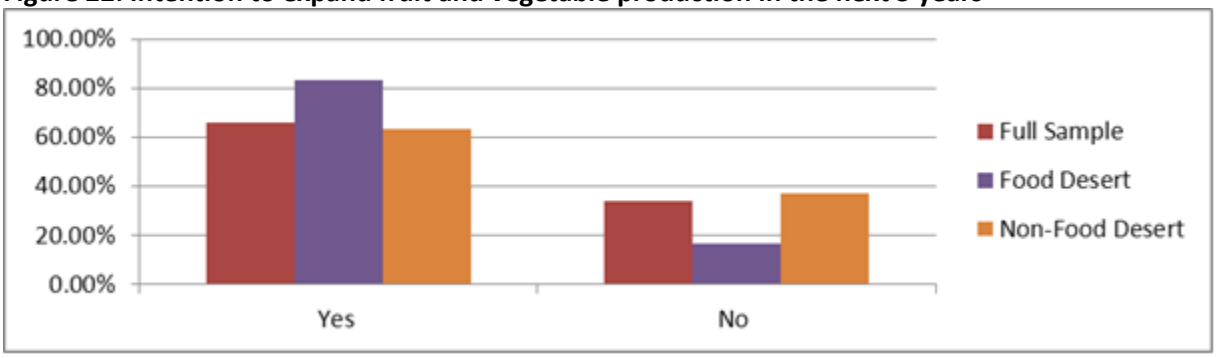
Expanding fruit and vegetable production

Table 24 and Figure 22 show 29 out of total 44 growers (65.9%) have intentions to expand their fruit and vegetable production in the next three years. Data shows the food desert areas had a higher percentage of growers (83.3%) who reportedly planned to expand their production, compared to the non-food desert areas (63.2%).

Table 24: Intention to expand fruit and vegetables production in the next 3 years

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	29	65.91%	5	83.33%	24	63.16%
No	15	34.09%	1	16.67%	14	36.84%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 22: Intention to expand fruit and vegetable production in the next 3 years



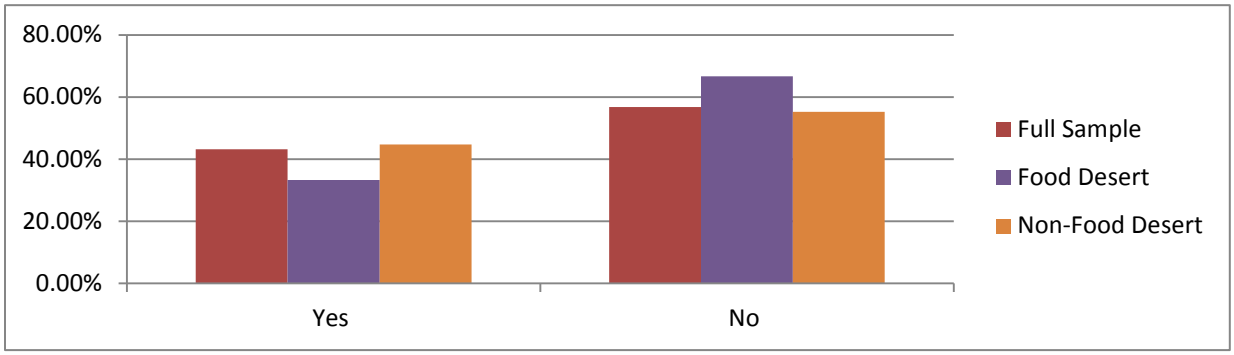
On-farm value-added fruit and/or vegetable products

Table 25 and Figure 23 report the numbers and percentages of growers who produced on-farm, value-added fruit and vegetable products such as jellies or pickles. Data shows the non-food desert areas had a higher percentage of growers who produced value-added products (44.74%), compared to the food-desert areas (33.3%).

Table 25: Numbers/Percentages of growers who produced value-added fruit and vegetable products

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	19	43.18%	2	33.33%	17	44.74%
No	25	56.82%	4	66.67%	21	55.26%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 23: Percentages of growers who produced value-added fruit and vegetable products



The list of on farm value added products

The survey further asked growers who answered "yes" in the previous question (i.e., whether they produced value-added products or not?) to list all the value-added products they produced. Table 26 reports the final nine products after organizing/combining growers' answers. Data suggest jellies/jams, processed/dried vegetables, salsa, and pickles were the most commonly produced value-added products. Table 26 shows growers had also explored other products such as bread, popcorn, relish and tomatoes sauces.

Table 26: On-farm value-added products

Item	Frequency
Jellies and Jams	5
Salsa	2
Pickles	2
Bread	1
Popcorn	1
Processed Vegetables/Sauerkraut/Grated Horseradish	3
Dried Vegetables/Dried herb	2
Relish	1
Tomatoes Sauces	1

Season extension techniques

The survey asked growers to disclose their involvement or plans to utilize high tunnels and/or other season extension techniques to extend their production period. For growers who reportedly utilized these techniques, the questionnaire further requested them to list the weeks of extension in production.

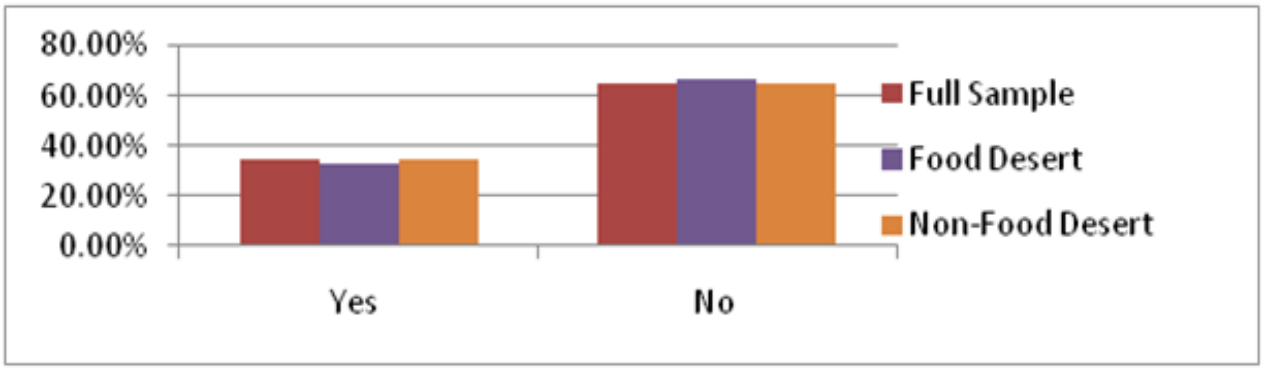
Growers currently utilizing high tunnel

Table 27 and Figure 24 indicate 34.9% of the growers were utilizing the high tunnels to extend their fruit and vegetable production. Data show very similar percentages of growers who utilized high tunnels in the food desert areas (33.3%) and in the non-food desert areas (35.1%).

Table 27: The number and percentage of growers who currently utilizing high tunnel

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	15	34.88%	2	33.33%	13	35.14%
No	28	65.12%	4	66.67%	24	64.86%
Total	43	100.00%	6	100.00%	37	100.00%

Figure 24: The percentage of growers who currently utilizing high tunnels



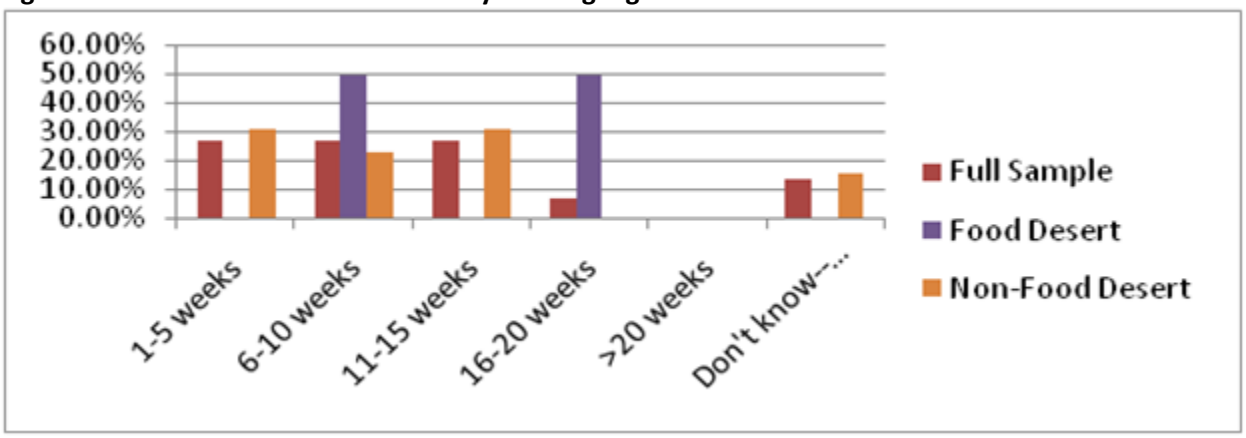
Extension of the production period using high tunnels

Table 28 and Figure 25 show how long (in weeks) the high tunnels helped growers extend their production. For the food desert locations, data indicate one grower had 6-10 weeks extended production and the other grower had 16-20 weeks of extended production. For the non-food desert areas, four growers (30.8%) extended the production by 1-5 weeks, three growers (23.1%) extended the production by 6-10 weeks, and four growers (30.8%) extended production by 11-15 weeks.

Table 28: Weeks of season extension by utilizing high tunnels

	Full Sample (N=15)		Food Desert (N=2)		Non-Food Desert (N=13)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-5 weeks	4	26.67%	0	0.00%	4	30.77%
6-10 weeks	4	26.67%	1	50.00%	3	23.08%
11-15 weeks	4	26.67%	0	0.00%	4	30.77%
16-20 weeks	1	6.67%	1	50.00%	0	0.00%
>20 weeks	0	0.00%	0	0.00%	0	0.00%
Don't know--this is the first year, no data	2	13.33%	0	0.00%	2	15.38%
Total	15	100.00%	2	100.00%	13	100.00%

Figure 25: Weeks of season extension by utilizing high tunnels



Installation of high tunnels in the next year

Table 29 shows 50.0% of the growers in the food desert areas and 44.7% of the growers in the non-food desert areas planned to install a high tunnel in the next year. This implies South Dakota had a significant number of growers who understood and budgeted to invest in high tunnels (and possibly other techniques) to extend their fruit and vegetable production.

Table 29: Plan to install high tunnel in the next year

	Full Sample (N=44)		Food Desert (N=6)		Non-Food Desert (N=38)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	20	45.45%	3	50.00%	17	44.74%
No	24	54.55%	3	50.00%	21	55.26%
Total	44	100.00%	6	100.00%	38	100.00%

When asked to report whether they were utilizing other season extension techniques (other than high tunnels), Table 30 indicates a higher percentage of growers in the food-desert areas (50.0%) were adapting the new techniques as compared to non-food desert areas (34.2%).

Table 31 reports the techniques adopted by the growers. Data show row covers and greenhouses were the most commonly used techniques (43.8% and 37.5%). Other techniques, such as geothermal heating and the use of multiple techniques (row covers within a greenhouse), had also been adopted by a small number of growers in the non-desert areas.

Table 30: Are you utilizing other season extension technique?

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	16	36.36%	3	50.00%	13	34.21%
No	28	63.64%	3	50.00%	25	65.79%
Total	44	100.00%	6	100.00%	38	100.00%

Table 31: Season extension technique adopted by the growers

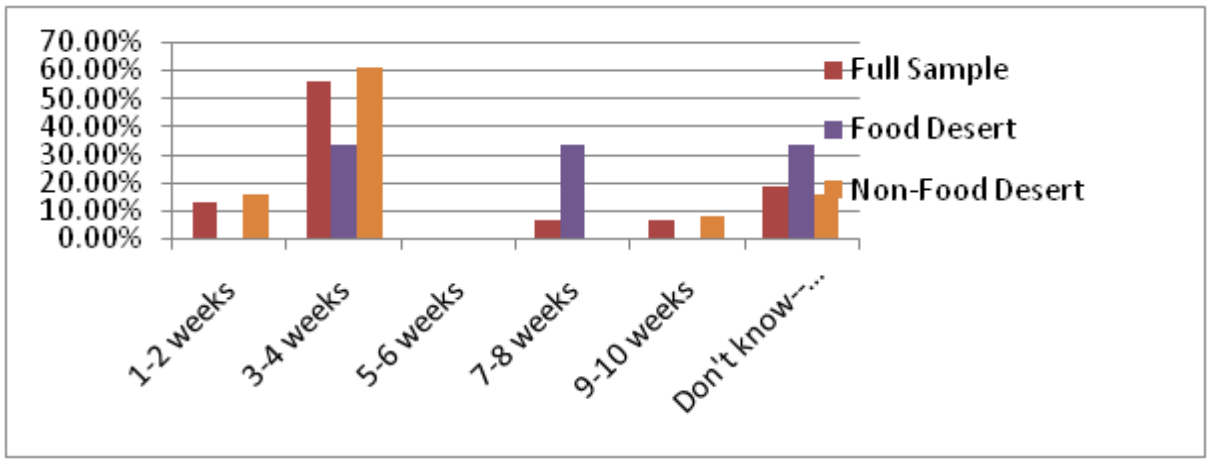
	Full Sample (N=16)		Food Desert (N=3)		Non-Food Desert (N=12)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Row cover	7	43.75%	2	66.67%	4	30.77%
Green House	6	37.50%	1	33.33%	5	38.46%
Raised beds	1	6.25%	0	0.00%	1	7.69%
Geothermal Heating	1	6.25%	0	0.00%	1	7.69%
Row cover + Green house	1	6.25%	0	0.00%	1	7.69%
Total	16	100.00%	3	100.00%	12	92.31%

Table 32 and Figure 26 report weeks of extension in production by adopting the techniques listed in Table 31. Most growers reportedly extended their production by 1-10 weeks. Table 32 suggests 3-4 weeks was the mostly experienced period of extension by the growers (56.3%), followed by 1-2 weeks of extension (12.5%). One grower in the food desert area was able to extend production 7-8 weeks, while another grower in the non-food desert area extended their production period by 9-10 weeks.

Table 32: Weeks of extension in production by adapting new techniques other than high tunnels

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-2 weeks	2	12.50%	0	0.00%	2	15.38%
3-4 weeks	9	56.25%	1	33.33%	8	61.54%
5-6 weeks	0	0.00%	0	0.00%	0	0.00%
7-8 weeks	1	6.25%	1	33.33%	0	0.00%
9-10 weeks	1	6.25%	0	0.00%	1	7.69%
Don't know--this is the first year, no data	3	18.75%	1	33.33%	2	15.38%
Total	16	100.00%	3	100.00%	13	100.00%

Figure 26: Weeks of extension in production by adopting season extension techniques other than high tunnels



Other products

The survey requested the respondents list the products they produced (other than fruit and vegetables), along with the outlets used to sell those products. Out of the 44 growers, 3 growers in the food desert areas and 11 growers in the non-food desert areas responded that they sold crops/products besides fruit and vegetables. Tables 33 to 35 reports the information gathered from growers' responses. The number in any individual cell of these three tables reflects the total number of growers who reportedly produced a specific product and sold it by a specific market outlet. For example, Table 33 suggests four growers had produced corn and sold it to the elevators (see the cell of "4*" in Table 33). An empty cell suggests no grower had produced the product represented on the same row and sold it by the market outlet shown on the same column.

Data indicates the growers had produced a large variety of products other than fruit and vegetables. Except for bulk crops such as corn, oats, soybeans, and wheat, most growers who produced other products often sold their products directly to consumers or to sales barns. Compared to those in the food desert areas, Table 34 and Table 35 suggest growers in the non-food desert areas had explored more market outlets to sell their products (such as on farm processing and restaurants), compared to growers in the food desert areas.

Table 33: Other products (besides fruit and vegetables): Full Sample

Crop, Livestock or Product	Total	Broker	Elevator	Farm to Farm	Direct to Consumer	Direct to Processor	Direct to Retail, Food Service	On-farm Processed to Processor	On farm Processed to Consumer	On farm Processed to Retail, Food Service	Sales Barn	Other *Please list:*
Barley												
Corn	7		4*	1	1	1						
Oats	1		1									
Sorghum												
Soybean	3		2	1								
Sunflowers												
Wheat	3		3									
Beef	6				3						3	
Dairy (Milk)	1				1							
Dairy (Cheese)												
Sheep/Lamb	3				1		1				1	
Swine	2										1	1
Turkey	2				1				1			
Wildlife (e.g. Pheasants)	2				1				1			
Honey	2				1				1			
Other	4				2	1					1	

Table 34: Other products (except fruit and vegetables): Food desert areas

Crop, Livestock or Product	Total	Broker	Elevator	Farm to Farm	Direct to Consumer	Direct to Processor	Direct to Retail, Food Service	On-farm Processed to Processor	On farm Processed to Consumer	On farm Processed to Retail, Food Service	Sales Barn	Other *Please list:*
Barley												
Corn	2		1		1							
Oats	1		1									
Sorghum												
Soybean												
Sunflowers												
Wheat												
Beef	2				1						1	
Dairy (Milk)												
Dairy (Cheese)												
Sheep/Lamb												
Swine												
Turkey												
Wildlife (e.g. Pheasants)	1			1								
Honey	1			1								
Other	1			1								

Table 35: Other products (except fruit and vegetables): Non-food desert areas

Crop, Livestock or Product	Total	Broker	Elevator	Farm to Farm	Direct to Consumer	Direct to Processor	Direct to Retail, Food	On-farm Processed to Processor	On farm Processed to	On farm Processed to Retail, Food	Sales Barn	Other *Please list:*
Barley												
Corn	5		3	1		1						
Oats												
Sorghum												
Soybean	3		2	1								
Sunflowers												
Wheat	3		3									
Beef	4				2						2	
Dairy (Milk)	1				1							
Dairy (Cheese)												
Sheep/Lamb	3				1		1				1	
Swine	2										1	1
Turkey	2				1				1			
Wildlife (e.g. Pheasants)	1								1			
Honey	1								1			
Other	3				1	1					1	

Overall, although the majority of the growers (56.8%) operated a total of 20 acres or less, data also indicates 4.6% of growers operated farms over 1000 acres. These larger growers were located in the food desert areas. About 65.9% of growers utilized one to less than five acres of total farmland for fruit and vegetable production. The percentages of growers' fruit and vegetable production acres in relationship to total production acres suggest different land usages between growers in the food desert and growers in the non-food desert areas. In the food desert areas, 50.0% of the growers who farmed smaller acreages used all their land to produce fruit and vegetables, while the other three growers who owned noticeably large acreages only used 2% or less of their lands for the fruit and vegetable production. In the non-food deserts areas, 39.5% of growers used all their land for fruit and vegetable production, while the remaining growers had an even distribution of land usage, ranging from less than 1% to less than 100% (of the total farmland) in fruit and vegetable production. Survey data suggest South Dakota growers were producing a wide variety of products. Production includes berries (22.9% of growers), grapes (25% of growers), herbs (25% of growers), nuts (2.27% of growers),

shrub fruits (6.8% of growers), tree fruits (13.6% of growers), and vegetables (77.3% of growers.)

The majority of the growers were practicing the 'conventional' or 'natural, sustainable, or chemical-free (without certification)' methods of production. Data shows only 3 of the total 44 growers grew certified organic products and they farmed both in the food desert and non-food desert areas. All the growers who were in transitioning to certified organic production were in the non-food desert areas. About 35% of growers both in the food desert and non-food desert areas were utilizing the high tunnels to extend the production period, and 44.5% of growers revealed the intention to install a high tunnel during the next year. This technology was expanding the grower's season by 1-20 weeks. The data also shows 36.4% of the growers (in all locations) reportedly were adopting other season extension techniques. These technologies were expanding the production season for 1-10 weeks.

The majority of growers (65.9%) expressed the intension to expand their fruit and vegetables production in the next three years, especially for the food desert areas (83.3% indicated the intension to expand). Data shows the non-food desert areas had a higher percentage of growers who produced value-added products (44.7%), compared to the food-desert areas (33.3%). Currently, the most commonly produced value-added products are jellies, jams, and processed vegetables. Fourteen growers also produced agricultural products other than fruits and vegetables.

4. Sales and Profitability

The survey included a series of questions aiming to solicit growers' fruit and vegetables sales and profitability information. Section 4 provides the resulting statistics and discussion from growers' responses to these questions.

Fruit and vegetable income contribution to the total family income

Table 36 and Figure 27 suggest 56.8% of growers' fruit and vegetable income contributed to less than 5% of their total family income. For 33.3% of the growers in the food desert areas and 31.6% of the growers in the non-food desert areas, income earned by producing fruit and vegetables had contributed to less than 1% of their total family income. Table 36 suggests the non-food desert areas had a higher percentage of growers whose income from fruit and vegetable production had contributed to more than 5% of their total family income. Furthermore, Table 36 shows six growers, all in the non-food desert areas, had made more than 30.0% of their family income by producing/selling fruit and vegetables.

Table 36: Fruit and Vegetable income contribution to total family income

	Full Sample (N=44)		Food Desert (N=6)		ood Desert (N=38)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
< 1%	14	31.82%	2	33.33%	12	31.58%
>= 1% and < 5 %	11	25.00%	2	33.33%	9	23.68%
>= 5% and <10 %	4	9.09%	0	0.00%	4	10.53%
>=10% and <15 %	5	11.36%	1	16.67%	4	10.53%
>=15% and < 20 %	1	2.27%	0	0.00%	1	2.63%
>=20% and <25 %	2	4.55%	1	16.67%	1	2.63%
>=25% and < 30 %	1	2.27%	0	0.00%	1	2.63%
>=30% and <60%	2	4.55%	0	0.00%	2	5.26%
>=60% and <80%	2	4.55%	0	0.00%	2	5.26%
>=80% and <=100%	2	4.55%	0	0.00%	2	5.26%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 27: Fruit and Vegetable income contribution to total family income

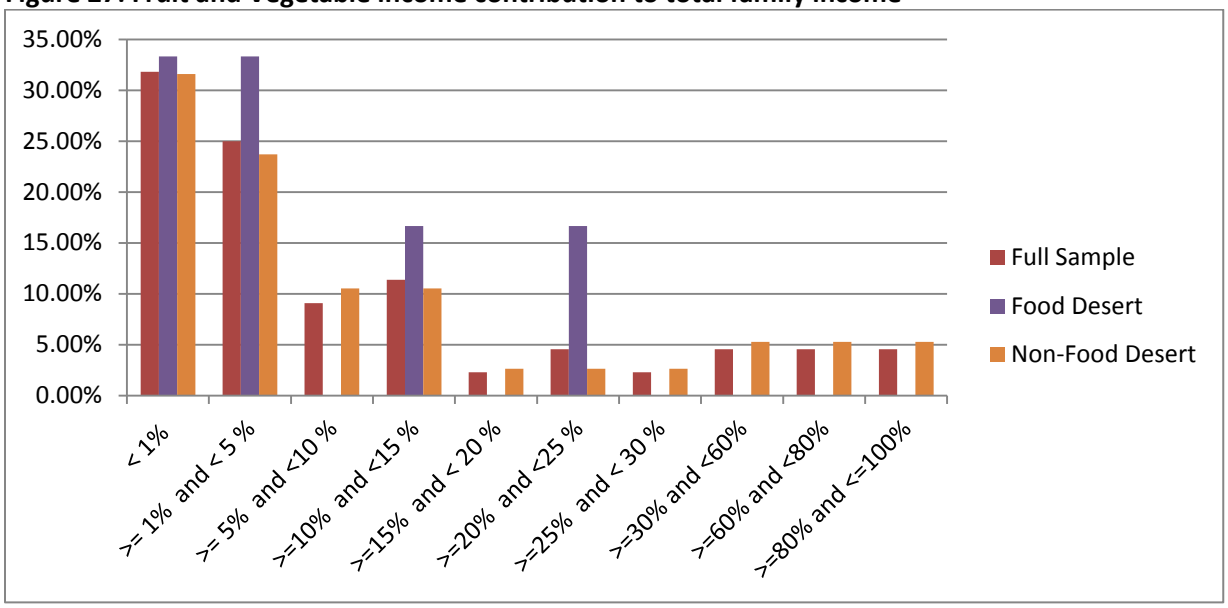
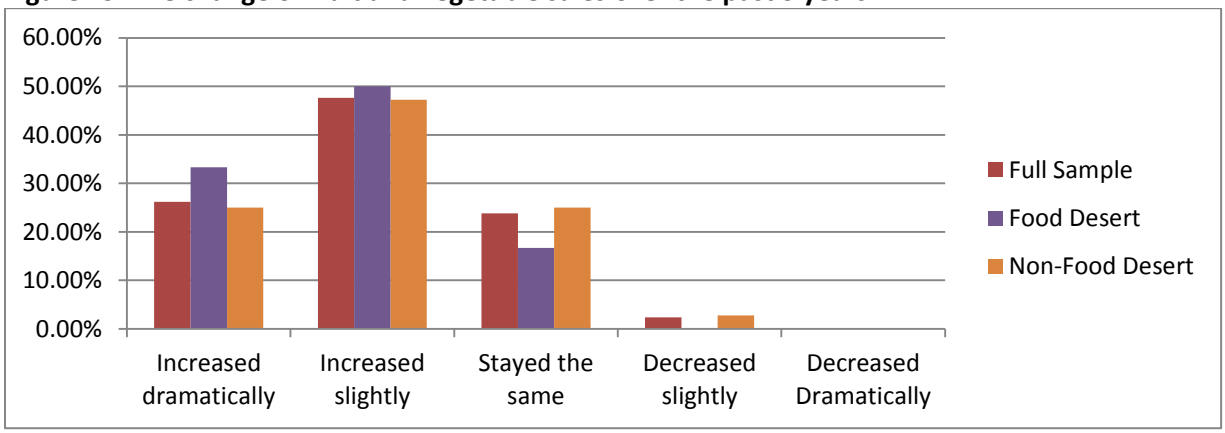


Table 37 and Figure 29 show growers' self-reported changes in fruit and vegetable sales for the past three years. Data suggest 26.2% of the growers had experienced dramatic increases and 47.6% of the growers had experienced slight increases in fruit and vegetables sales. Approximately 83.3% of the growers in the food desert areas and 72.2% of the growers in the non-food desert areas had experienced increases in sales from the past three years. Table 37 indicates the majority of the growers, regardless of their farm locations, had experienced increases in fruit and vegetable sales. Data shows only one seller (2.8%) in the non-food desert areas had experienced a slight decrease in sales.

Table 37: The change of fruit and vegetable sales over the past 3 years

	Full Sample (N=42)		Food Desert (N=6)		Non-Food Desert (N=32)	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Increased dramatically	11	26.19%	2	33.33%	9	25.00%
Increased slightly	20	47.62%	3	50.00%	17	47.22%
Stayed the same	10	23.81%	1	16.67%	9	25.00%
Decreased slightly	1	2.38%	0	0.00%	1	2.78%
Decreased Dramatically	0	0.00%	0	0.00%	0	0.00%
Total (Missing: 2)	42	100.00%	6	100.00%	36	100.00%

Figure 29: The change of fruit and vegetable sales over the past 3 years



The survey asked growers to disclose how the sales income generated by a specific market outlet had contributed to their total sales income (in percentages). Growers were also requested to reveal their profitability (i.e., not profitable, break even, or profitable) for each of the market outlets.

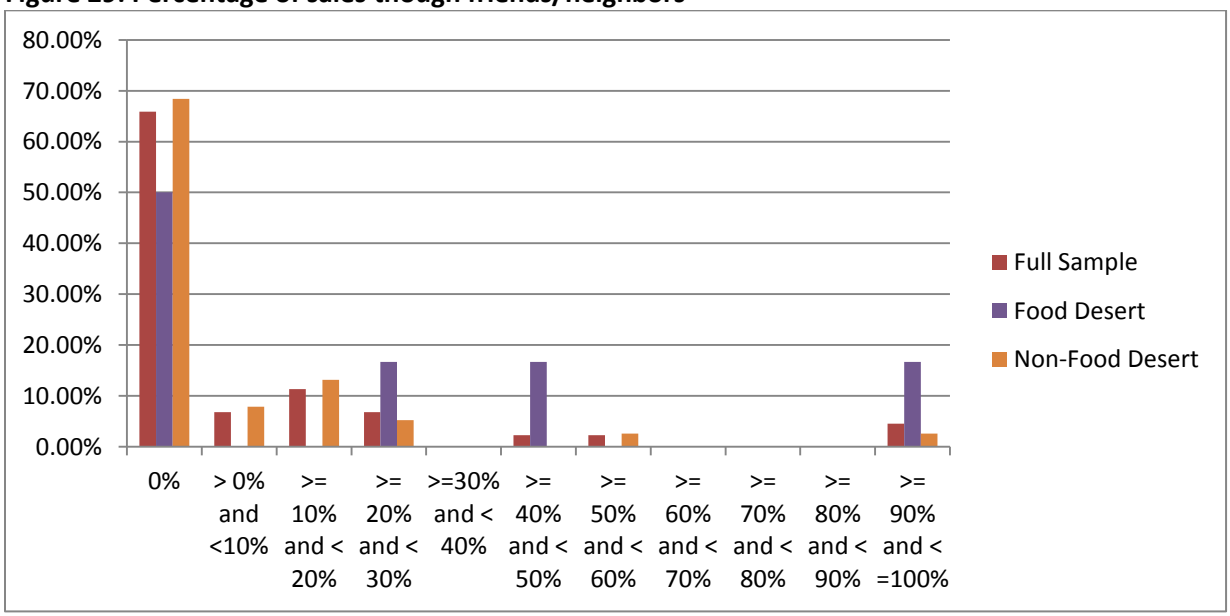
Friends/Neighbors

Table 38 and Figure 29 show the percentage of contribution to the total sales made from the purchases of friends and neighbors. Out of the 44 growers, 15 (34.1 %) made positive contribution to sales through selling their products to friends and neighbors. Data indicate 50.0% of the growers in the food desert areas and 68.4% of the growers in the non-food desert areas did not earn sales income through friends or neighbors. On the other hand, Table 38 shows one grower in the food desert areas and one grower in the non-food desert areas had made 90.0% to 100.0% of their sales income by selling to friends and neighbors.

Table 38: Percentage of sales through friends/neighbors

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	29	65.91%	3	50.00%	26	68.42%
> 0% and <10%	3	6.82%	0	0.00%	3	7.89%
>= 10% and < 20%	5	11.36%	0	0.00%	5	13.16%
>= 20% and < 30%	3	6.82%	1	16.67%	2	5.26%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	1	2.27%	1	16.67%	0	0.00%
>= 50% and < 60%	1	2.27%	0	0.00%	1	2.63%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	2	4.55%	1	16.67%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 29: Percentage of sales though friends/neighbors

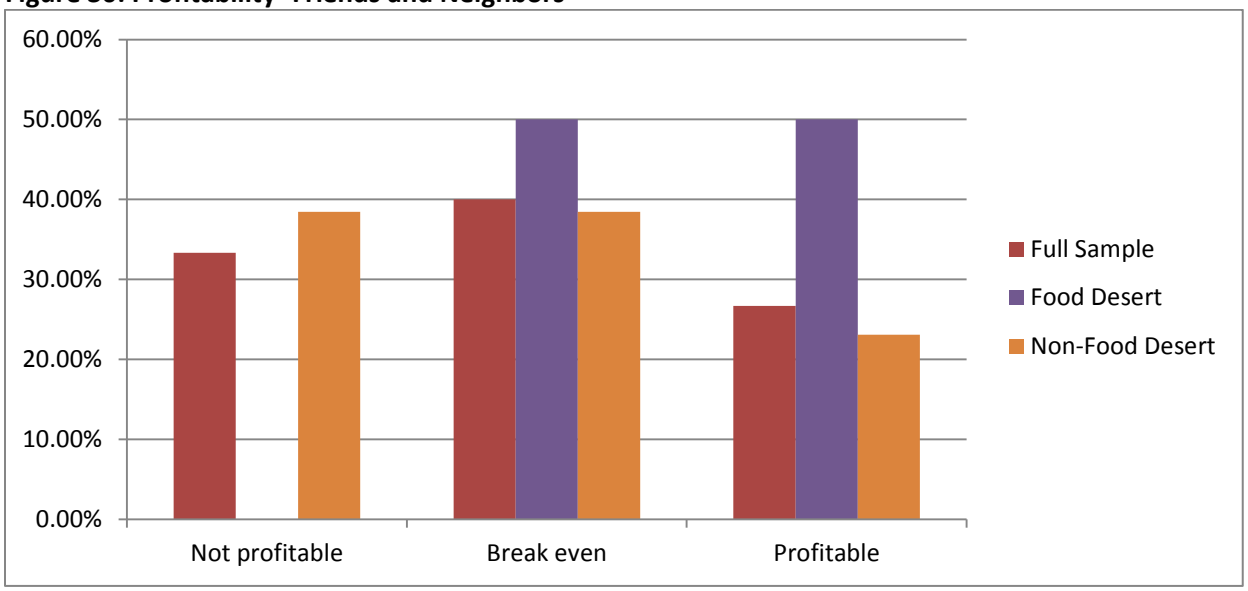


Although five growers in the non-food desert areas indicated selling through friends and neighbors was not profitable, Table 39 and Figure 30 suggest one grower in the food desert areas and three growers in the non-food desert areas had earned positive profits.

Table 39: Profitability- Friends and Neighbors

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	5	33.33%	0	0.00%	5	38.46%
Break even	6	40.00%	1	50.00%	5	38.46%
Profitable	4	26.67%	1	50.00%	3	23.08%
Total	15	100.00%	2	100.00%	13	100.00%

Figure 30: Profitability- Friends and Neighbors



K-12

Table 40 shows only one out of the 44 growers (2.27 %) sold fruit and vegetable products through K-12 schools. Data also indicates this specific grower had earned 50.0% - 60.0% of the total sales from this market outlet. However, Table 41 indicates three growers had answered the next question regarding the profitability selling to K-12 schools. Although one grower confirmed to earn positive profits, the other two growers who answered "not profitable" in Table 41 had also reported zero sales in the previous question. Possibly these three growers had all sold their fruit and vegetable products to the K-12 schools in the past, but only one made positive profits and continued to utilize this market outlet, while the other two growers chose to stop selling to K-12 schools due to the lack of profitability.

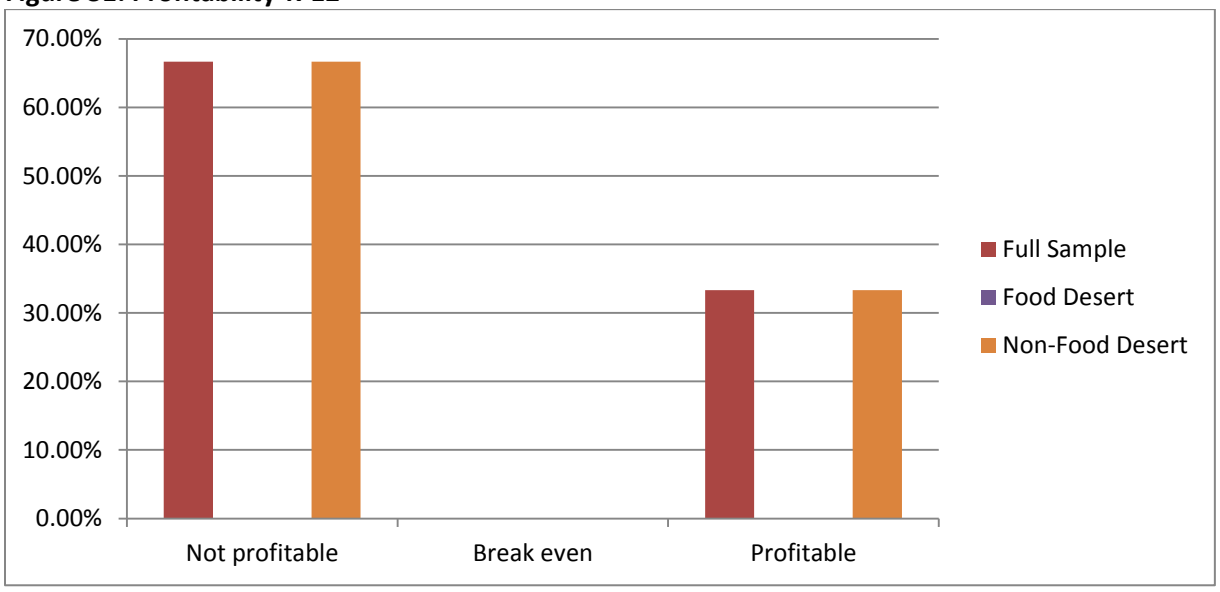
Table 40: Percentages of sales of fruit and vegetables though K-12 schools

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	43	97.73%	6	100.00%	37	97.37%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	0	0.00%	0	0.00%	0	0.00%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	1	2.27%	0	0.00%	1	2.63%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Table 41: Profitability-K-12

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	2	66.67%	0	0.00%	2	66.67%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	1	33.33%	0	0.00%	1	33.33%
Total	3	100.00%	0	0.00%	3	100.00%

Figure 31: Profitability-K-12



Colleges and Universities

Table 42 indicates none of the growers made any contribution to the total sales income by selling fruit and vegetables to the colleges and universities. However, Table 43 shows one grower reportedly earned positive profits and one grower had negative profits from selling fruits and vegetables to this outlet. These two growers possibly had explored this market outlet in the past but discontinued sales.

Table 42: Percentages of sales of fruit and vegetables through colleges and universities

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	44	100.00%	6	100.00%	38	100.00%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	0	0.00%	0	0.00%	0	0.00%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Table 43: Profitability-colleges and universities

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	1	50.00%	0	0.00%	1	50.00%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	1	50.00%	0	0.00%	1	50.00%
Total	2	100.00%	0	0.00%	2	100.00%

Community supported Agriculture (CSA) System

Out of the 44 growers, 5 (11.4%) made positive contribution to the total sales by selling their produce through CSA's. Table 44 shows the majority of the growers (66.6% for the food desert areas and 92.1% of the non-food desert areas) did not generate any contribution to their total sales income by selling their products through CSA's. However, data also shows two growers in the food desert areas had earned 10%-20% and 70%-80% of their total sales income through CSA's, respectively. On the contrary, growers in the non-food desert areas had earned relatively less by this market outlet: two growers had made less than 10% of their total sales and one grower had earned less than 30% of the total sales by selling though CSA's. Table 45

shows four growers indicated selling though CSA's had all made positive profits.

Table 44: Percentages of sales of fruit and vegetables through CSA

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	39	88.64%	4	66.67%	35	92.11%
> 0% and <10%	2	4.55%	0	0.00%	2	5.26%
>= 10% and < 20%	1	2.27%	1	16.67%	0	0.00%
>= 20% and < 30%	1	2.27%	0	0.00%	1	2.63%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	1	2.27%	1	16.67%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 32: Percentages of sales of fruit and vegetables through CSA

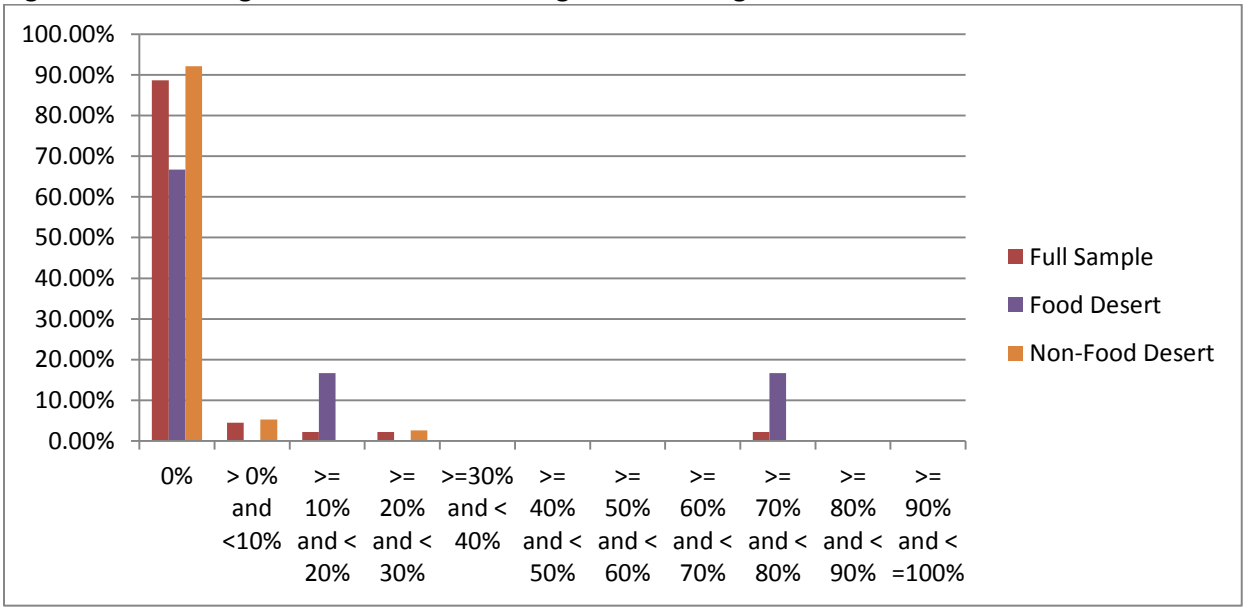


Table 45: Profitability-CSA

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	4	100.00%	1	100.00%	3	100.00%
Total	4	100.00%	1	100.00%	3	100.00%

Farm stores/On farm Pick-up

Out of the 44 growers, nine (20.4%) made positive contribution to their total sales by selling their produce through farm stores or on farm pick-up. Table 46 shows none of the growers in the food desert areas had utilized farm stores or on-farm pick-up to sell their fruit and vegetables. For the non-food desert areas, 5.3% of growers had earned less than 10% of their total sales, 10.5% of growers had earned 10%-20% of their total sales, and 2.6% of growers had earned 20-30% of their total sales through farm stores and on-farm pick up.

Table 47 indicates 50.0% of the growers had earned positive profits and 50.0% of growers (all in the non-food desert areas) simply broke even.

Table 46: Percentages of sales of fruit and vegetables through farm stores/on farm pick-up

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	35	79.55%	6	100.00%	29	76.32%
> 0% and <10%	2	4.55%	0	0.00%	2	5.26%
>= 10% and < 20%	4	9.09%	0	0.00%	4	10.53%
>= 20% and < 30%	1	2.27%	0	0.00%	1	2.63%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	1	2.27%	0	0.00%	1	2.63%
>= 90% and < =100%	1	2.27%	0	0.00%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Table 47: Profitability-Farm store/On farm Pick up

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	4	50.00%	0	0.00%	4	50.00%
Profitable	4	50.00%	0	0.00%	4	50.00%
Total	8	100.00%	0	0.00%	8	100.00%

Farmer's Markets

Out of the 44 growers, 25 (56.8%) made positive contribution to the total sales by selling their produce at farmer's markets. Table 48 and Figure 33 summarize how the sales for fruit and vegetables at farmer's markets had contributed to growers' total sales income (in percentages). While 43.2% of the growers did not contribute to their total sales by selling at farmer's markets, 31.8% of the growers had reportedly made

90% or more of their total sales income from this outlet. On the other hand, despite 34.2% of the non-food desert growers making 90%-100% of their total sales through farmers markets, Figure 33 suggests growers in the non-food desert areas had received a wide range of contribution (from 10.0% to 100.0%) to their total sales income by selling at farmers' markets.

Table 48: Percentage of sales of fruit and vegetables through farmers markets

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	19	43.18%	1	16.67%	18	47.37%
> 0% and <10%	1	2.27%	1	16.67%	0	0.00%
>= 10% and < 20%	3	6.82%	2	33.33%	1	2.63%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	1	2.27%	0	0.00%	1	2.63%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	2	4.55%	1	16.67%	1	2.63%
>= 60% and < 70%	1	2.27%	0	0.00%	1	2.63%
>= 70% and < 80%	1	2.27%	0	0.00%	1	2.63%
>= 80% and < 90%	2	4.55%	0	0.00%	2	5.26%
>= 90% and <= 100%	14	31.82%	1	16.67%	13	34.21%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 33: Percentage of sales of fruit and vegetables through farmers markets

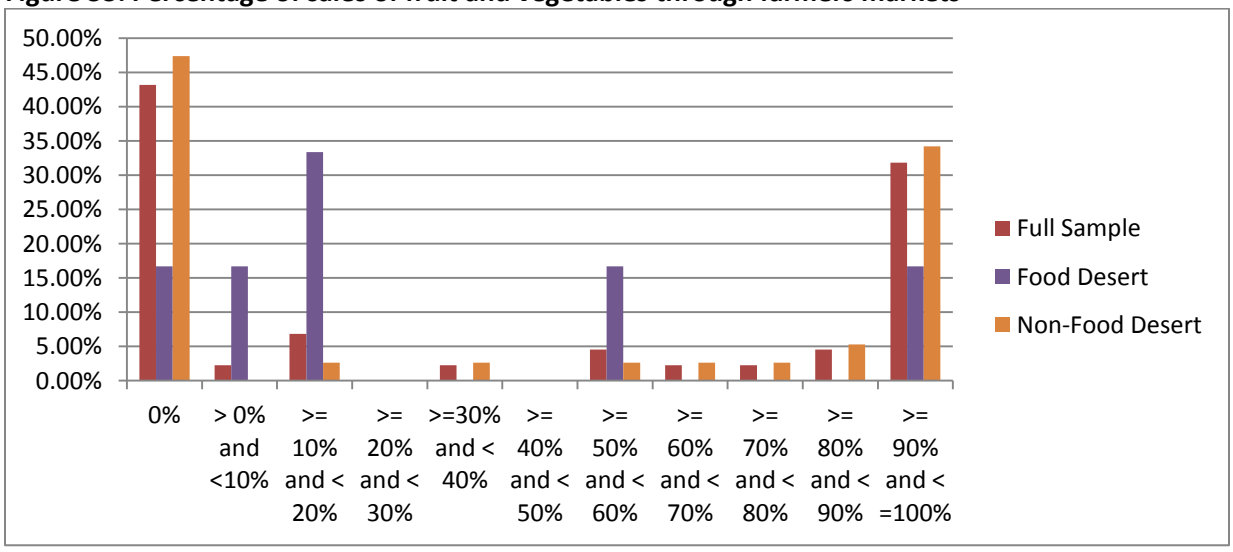
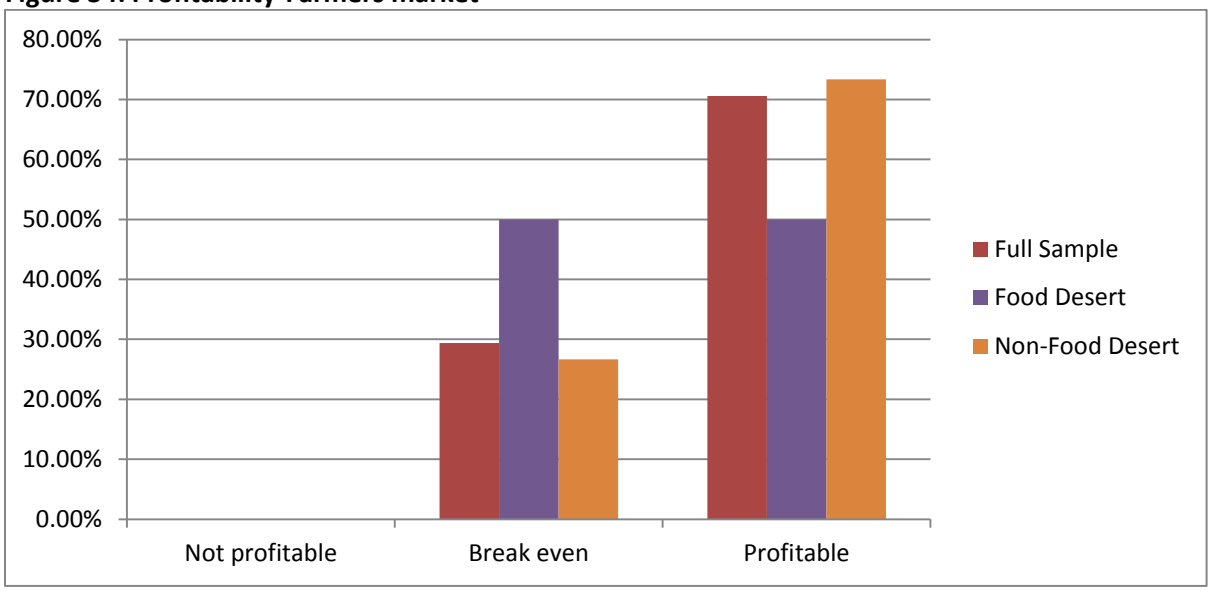


Table 49 and Figure 34 show 50.0% of the growers broke even and 50.0% of growers had made positive profits through selling at farmers market in the food desert areas. For the non-food desert areas, 26.7% of the growers broke even and 73.3% of the growers had made positive profits. None of the growers who actively participated in farmers markets had reported negative profits.

Table 49: Profitability-Farmers market

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	5	29.41%	1	50.00%	4	26.67%
Profitable	12	70.59%	1	50.00%	11	73.33%
Total	17	100.00%	2	100.00%	15	100.00%

Figure 34: Profitability-Farmers market



Roadside stands (not on-farm)

Table 50 and Figure 35 show the percentage of contribution growers made to their total sales through roadside stands. Out of the 44 growers, five (11.4%) made positive contribution to their total sales by selling their produce at roadside stands. Data indicate growers in the food desert areas had relied relatively more on this market outlet: one grower had earned 50.0% -60.0% of the total sales and another grower had earned 90.0%- 100.0% of the total sales through roadside stands. In contrast, most growers in the non-food desert (92.1%) did not utilize this market outlet, although one grower reportedly earned 90.0%-100.0% of the total sales from roadside stands. Table 51 and Figure 36 show all the growers who utilized roadside stands made positive profits.

Table 50: Percentage of sales of fruit and vegetables through roadside stands

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	39	88.64%	4	66.67%	35	92.11%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	0	0.00%	0	0.00%	0	0.00%
>= 20% and < 30%	1	2.27%	0	0.00%	1	2.63%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	1	2.27%	0	0.00%	1	2.63%
>= 50% and < 60%	1	2.27%	1	16.67%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	2	4.55%	1	16.67%	1	2.63%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 35: Percentage of sales of fruit and vegetables through roadside stands

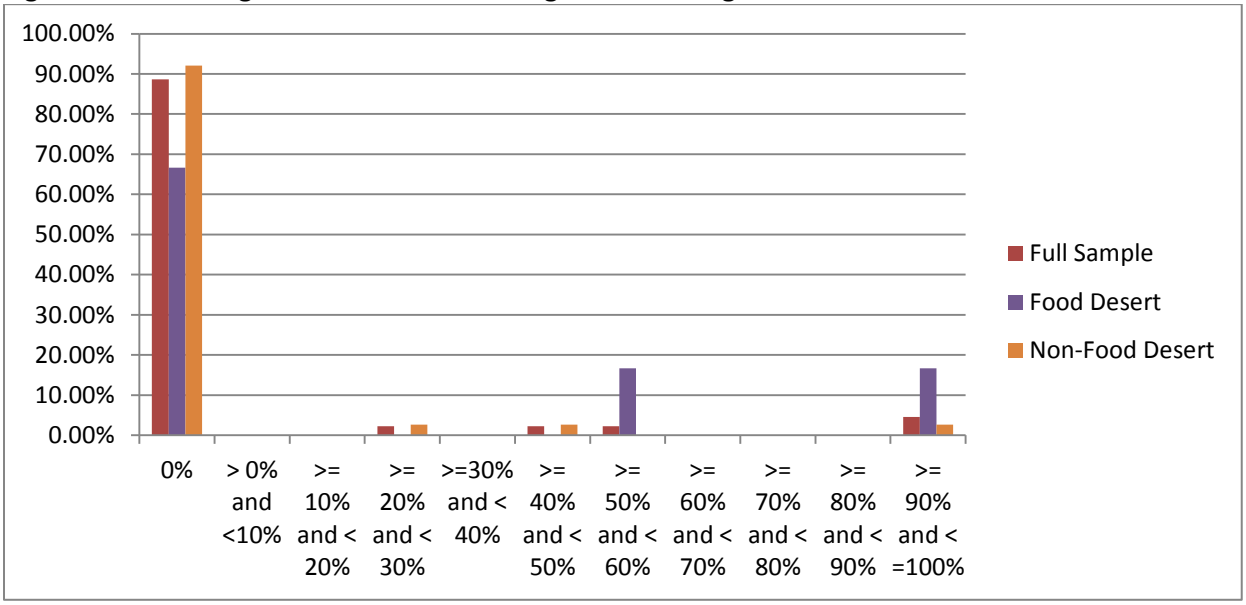
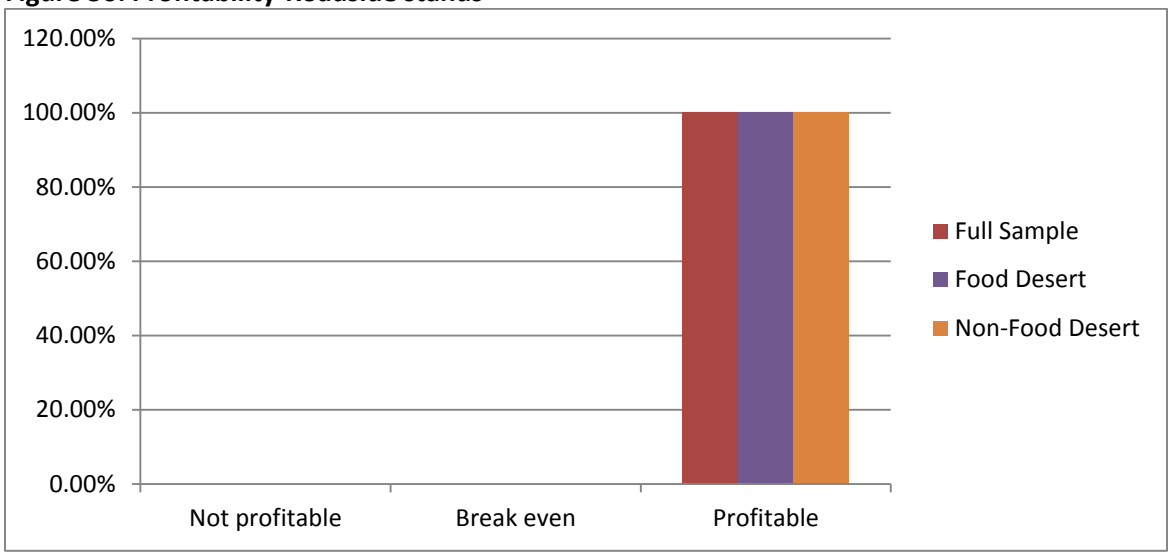


Table 51: Profitability-Roadside stands

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	4	100.00%	1	100.00%	3	100.00%
Total	4	100.00%	1	100.00%	3	100.00%

Figure 36: Profitability-Roadside stands



Grocery/Retail/Co-Op Stores

Out of the 44 growers, eight (18.2%) made positive contribution to the total sales by selling their produce to Grocery, retail or co-op stores. Table 52 shows none of the growers in the food desert areas used grocery/retail/co-op stores as outlets to sell their fruit and vegetables. On the contrary, 21.1% of the growers in the non-food desert had made a positive contribution to their total sales income by these outlets. However, Table 52 also suggests although two growers had made 90.0%-100.0% of their total sales by utilizing grocery/retailer/co-ops, most of the other growers in the non-food desert areas had made less than 40.0% of their total sales though these outlets.

Table 52: Percentage of sales of fruit and vegetables through Grocery/Retail/Co-Op Stores

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	36	81.82%	6	100.00%	30	78.95%
> 0% and <10%	2	4.55%	0	0.00%	2	5.26%
>= 10% and < 20%	2	4.55%	0	0.00%	2	5.26%
>= 20% and < 30%	1	2.27%	0	0.00%	1	2.63%
>=30% and < 40%	1	2.27%	0	0.00%	1	2.63%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	2	4.55%	0	0.00%	2	5.26%
Total	44	100.00%	6	100.00%	38	100.00%

Table 53 shows 60.0% of the growers were profitable and 40.0% of the growers reportedly broke even by selling their products via grocery/retail/co-ops. All of these growers were in the non-food desert areas.

Table 53: Profitability- Grocery/Retail/Co-Op Stores

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	2	40.00%	0	0.00%	2	40.00%
Profitable	3	60.00%	0	0.00%	3	60.00%
Total	5	100.00%	0	0.00%	5	100.00%

Nursing homes or Hospitals

Table 54 shows only one grower (2.27%), located in the food desert areas, had reported sales made to nursing homes or hospitals (16.7%). However, Table 55 suggests one grower in the non-food desert areas who did not utilize this market outlet had reported a positive profit. In contrast, the grower in the food desert areas who reported a positive percentage to the total sales in Table 54 had chosen not to answer this question. Therefore, we recommend readers to remain cautious when interpret the numbers in Table 55.

Table 54: Percentage of sales of fruit and vegetables through nursing homes or hospitals

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	43	97.73%	5	83.33%	38	100.00%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	1	2.27%	1	16.67%	0	0.00%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Table 55: Profitability-Nursing homes or Hospitals

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	1	100.00%	0	0.00%	1	100.00%
Total	1	100.00%	0	0.00%	1	100.00%

Restaurants

Table 56 and Figure 37 show the percentages of contributions to the total sales income made by selling fruit and vegetables at restaurants. Out of the 44 growers, four (9.1%) made positive contribution to the total sales by selling their produce to restaurants. Data suggest only a small number of growers had utilized this outlet and the contributions made were mostly less than 30.0% of their total sales.

Table 56: Percentage of sales of fruit and vegetables through restaurants

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	40	90.91%	5	83.33%	35	92.11%
> 0% and <10%	1	2.27%	0	0.00%	1	2.63%
>= 10% and < 20%	2	4.55%	1	16.67%	1	2.63%
>= 20% and < 30%	1	2.27%	0	0.00%	1	2.63%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 37: Percentage of sales of fruit and vegetables through restaurants

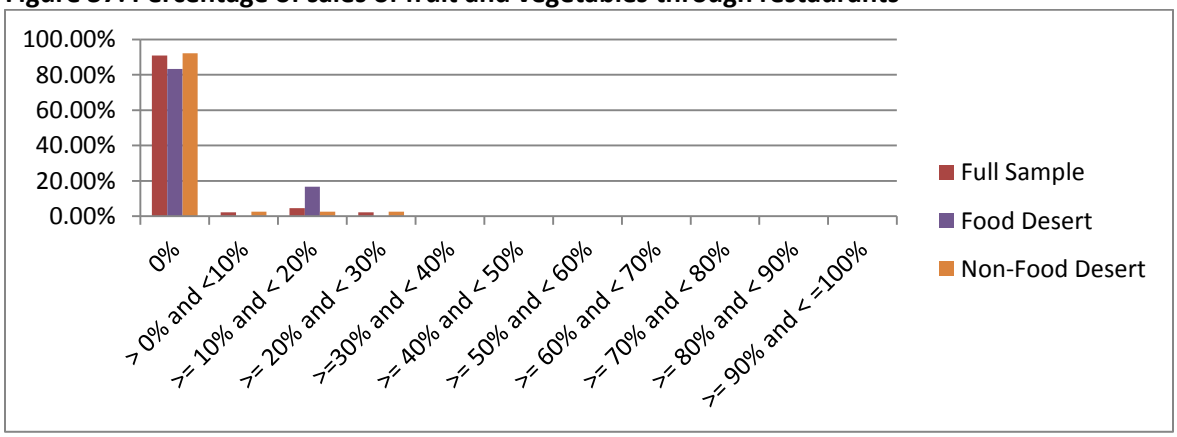


Table 57 indicates that three growers in the non-food desert areas who reported a contribution in the previous question had all made positive profits. The grower who answered "break even" in Table 57 did not sell fruit and vegetables at restaurants. The grower in the food desert areas who utilized this outlet chose not to answer this question.

Table 57: Profitability-Restaurants

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	1	25.00%	0	0.00%	1	25.00%
Profitable	3	75.00%	0	0.00%	3	75.00%
Total	4	100.00%	0	0.00%	4	100.00%

Off-farm Processors (non-winery)

Table 58 and Table 59 indicate that, although one grower in the non-food desert perceived a potential positive profit, none of the growers had contributed to their total sales income through the off-farm processors (non-winery).

Table 58: Percentage of sales of fruit and vegetables through off-farm processors

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	44	100.00%	6	100.00%	38	100.00%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	0	0.00%	0	0.00%	0	0.00%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Table 59: Profitability-off farm processors

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	0	0.00%	0	0.00%	0	0.00%
Profitable	1	100.00%	0	0.00%	1	100.00%
Total	1	100.00%	0	0.00%	1	100.00%

On-farm Processing (non-winery)

Table 60 and Table 61 indicate only one grower in the non-food desert area had reported a contribution to the total sales (>=10.0% and <20.0%) through selling to an on-farm processing facility. Data indicates this specific grower earned positive profits through this outlet (Table 61). Data shows the one grower who did not utilize on-farm processing markets, reported a "break-even" profitability in Table 61, which may explain why this grower does not utilize this market outlet currently.

Table 60: Percentage of sales of fruit and vegetables through on-farm processing

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	43	97.73%	6	100.00%	37	97.37%
> 0% and <10%	0	0.00%	0	0.00%	0	0.00%
>= 10% and < 20%	1	2.27%	0	0.00%	1	2.63%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total	44	100.00%	6	100.00%	38	100.00%

Table 61: Profitability- On-farm processing

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	1	50.00%	0	0.00%	1	50.00%
Profitable	1	50.00%	0	0.00%	1	50.00%
Total	2	100.00%	0	0.00%	2	100.00%

Winery

Out of the 44 growers, six (13.6%) made positive contribution to the total sales by selling their produce to wineries. Table 62 and Figure 38 show the contribution made by the growers though the sales of fruit and vegetables to the winery. All the growers who reported a positive contribution to the total sales in Table 62 were in the non-food desert areas. Figure 38 suggests although two growers (5.3%) in the non-food desert areas had made less than 10.0% of their total sales, one grower had contributed 70.0% - 80.0% of their total sales and one grower had contributed 90.0% -100.0% to their total sales by selling to wineries.

Table 62: Percentage of sales of fruit and vegetables through winery

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	38	86.36%	6	100.00%	32	84.21%
> 0% and <10%	2	4.55%	0	0.00%	2	5.26%
>= 10% and < 20%	0	0.00%	0	0.00%	0	0.00%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	1	2.27%	0	0.00%	1	2.63%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	3	6.82%	0	0.00%	3	7.89%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 38: Percentage of sales of fruit and vegetables through winery

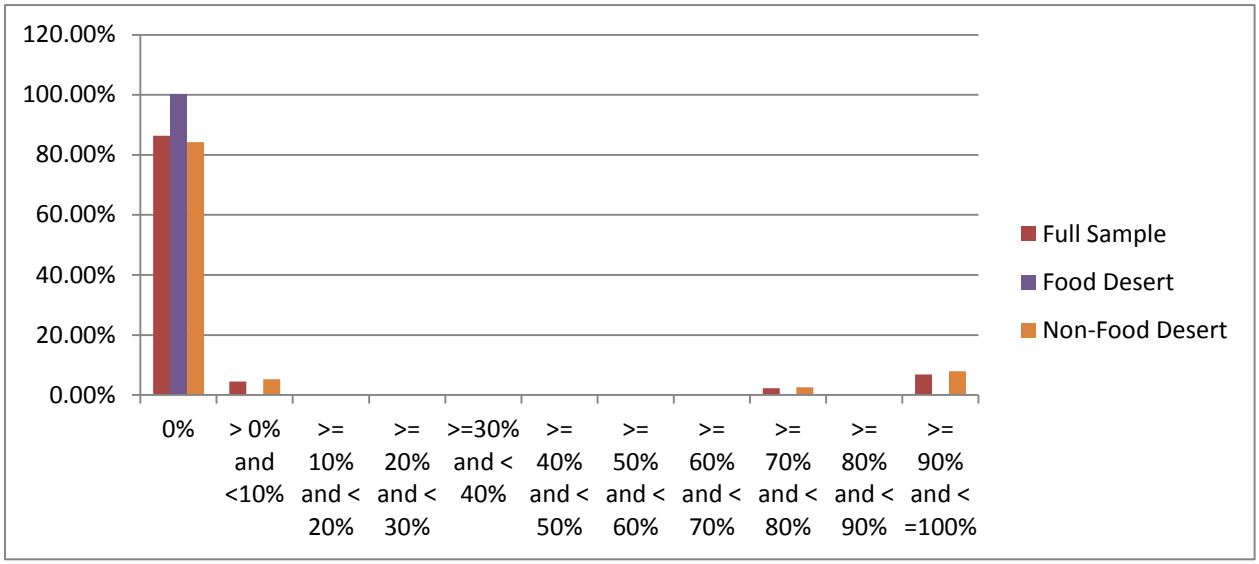


Table 63 indicates 66.7% growers reported making positive profits and 33.3% of growers just broke even. All these growers were in the non-food desert areas. None of the growers in the food desert areas had answered this question.

Table 63: Profitability-winery

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	2	33.33%	0	0.00%	2	33.33%
Profitable	4	66.67%	0	0.00%	4	66.67%
Total	6	100.00%	0	0.00%	6	100.00%

Wholesale Distribution

Out of 43 growers, three (7%) made positive contribution to their total sales by selling their produces via wholesale distributors. Table 64 indicates three growers in the non-food desert areas had made a small contribution to their total sales through the wholesale distribution: one grower had made less than 10.0% and two growers had made less than 20.0% of the contributions to the total sales via wholesale distribution.

Table 65 suggests two growers had earned positive profits and one grower broke even. None of the growers in the food desert areas had answered the question regarding the profitiability.

Table 64: Percentage of sales of fruit and vegetables through wholesale distribution

	Full Sample	(N=43)	Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
0%	40	93.02%	6	100.00%	34	91.89%
> 0% and <10%	1	2.33%	0	0.00%	1	2.70%
>= 10% and < 20%	2	4.65%	0	0.00%	2	5.41%
>= 20% and < 30%	0	0.00%	0	0.00%	0	0.00%
>=30% and < 40%	0	0.00%	0	0.00%	0	0.00%
>= 40% and < 50%	0	0.00%	0	0.00%	0	0.00%
>= 50% and < 60%	0	0.00%	0	0.00%	0	0.00%
>= 60% and < 70%	0	0.00%	0	0.00%	0	0.00%
>= 70% and < 80%	0	0.00%	0	0.00%	0	0.00%
>= 80% and < 90%	0	0.00%	0	0.00%	0	0.00%
>= 90% and < =100%	0	0.00%	0	0.00%	0	0.00%
Total (Missing:1)	43	100.00%	6	100.00%	37	100.00%

Table 65: Profitability-wholesale distribution

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Not profitable	0	0.00%	0	0.00%	0	0.00%
Break even	1	33.33%	0	0.00%	1	33.33%
Profitable	2	66.67%	0	0.00%	2	66.67%
Total	3	100.00%	0	0.00%	3	100.00%

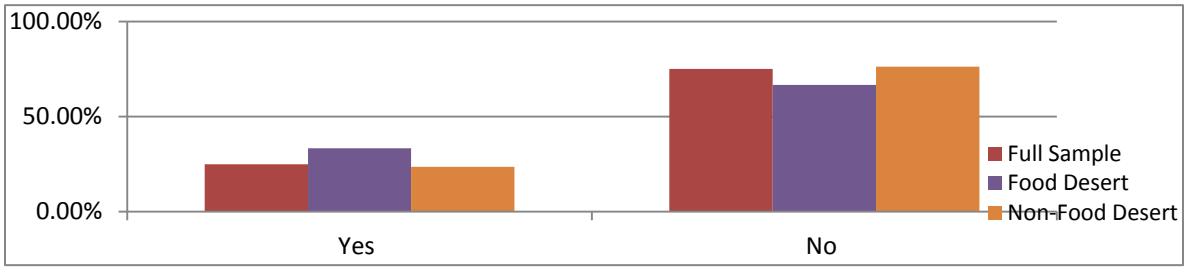
SNAP

Out of the 44 growers, 11 (25%) accepted Supplemental Nutrition Assistance Program (SNAP) benefits. Table 66 and Figure 39 indicate the majority of the growers did not accept SNAP. Data indicates 10% more growers accepted SNAP in the food desert areas, compared to those in the non-food desert areas (33.3% vs. 23.7%).

Table 66: Accept SNAP

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	11	25.00%	2	33.33%	9	23.68%
No	33	75.00%	4	66.67%	29	76.32%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 39: Accept SNAP



In short, data indicates 56.8% of growers' sales income from fruit and vegetable contributed to less than 5% of their total family income. Only 9.1% of growers had a contribution of 60% or more. The non-food desert areas had a higher percentage of growers whose income came from the fruit and vegetable production. All six growers (13.7%) who made more than 30% of their family income by producing/selling produce were in the non-food desert areas. Data indicates 83.3% of the growers in the food desert areas and 72.2% of the growers in the non-food desert areas had experienced increases in fruit and vegetables sales from the past three years.

The most commonly utilized market outlets were farmers markets (56.9%) and through friends/neighbors (34.1%). However while farmer's markets were considered to be profitable for 70.6%, selling to friends/neighbors was considered profitable by only 26.7% of growers. Data shows smaller percentages of growers had made contributions to their total sales through other outlets such as on-farm stores/pick-up (20.4%), grocery stores/co-ops/retail (18.2%), winery (13.6%), CSA's (11.4%), roadside stands (11.4%), restaurants (9.1%), wholesale distribution (7%), nursing homes/hospitals (2.3%), on-farm processing (non-winery) (2.3%)and K-12 (2.3%). No growers were utilizing colleges/universities and off-farm processors. Growers believed that some of these markets were profitable: CSA's (100% of growers), roadside stands (100%), nursing homes/hospitals (100%), restaurants (75%), wineries (66.7%), wholesale distribution (66.7%), grocery/retail/co-op (60%), farm store/on farm pick up (50%), on-farm processing (50%), and K-12 (33.3%). About ⅓ of the growers in the food desert areas and ¼ of the growers in the non-food desert areas accepted SNAP.

5. Business Opportunities and Limitations to Direct Sales

Market opportunities in their communities

The survey provided a list of potential marketing opportunities and requested growers select any opportunities they agreed existed in their community or closest community. Based on growers' response, Table 67 reports the accumulated points and ranks of these marketing opportunities. For each opportunity, the accumulated points were calculated by adding the numbers of growers who selected each opportunity. For example, the accumulated points "16" for the K-12 in Table 67 (i.e., the cell of "16*") indicate 16 sample growers had selected this market opportunity. The market opportunity with the highest accumulated point was assign the rank "1", which implies this this opportunity was perceived as an available marketing outlet by largest numbers of growers.

Table 67 shows the most commonly selected market opportunities are #1-farmers' markets, #2-friends/neighbors, tied for #3-Grocery, retail, and co-op stores and K-12, and #4-restaurants. On the other hand, institutions (colleges/universities and nursing homes), off-farm processing, on-farm processing, and distributors were not considered available to the growers.

Table 67: Accumulated points and ranks of the market opportunities existing in communities

	Full Sample		Food Desert		Non-Food Desert	
Item	Points	Rank	Points	Rank	Points	Rank
Farmers' market	29	1	6	1	23	1
Friends/Neighbors	26	2	5	2	21	2
K-12	16*	3	4	3	12	6
Grocery/Retail/Co-op	16	3	2	4	14	3
Restaurant	15	5	2	4	13	4
Farm Store	14	6	1	5	13	4
Road side stands	13	7	2	4	11	7
CSA	12	8	1	5	11	7
Winery	9	9	1	5	8	9
Nursing Homes/Hospitals	7	10	1	5	6	10
College/University	5	11	2	4	3	12
Not Sure	5	11	0	12	5	11
Distributors	2	13	0	12	2	13
Processing+Distribution	1	14	0	12	1	14
Off farm processor	0	15	0	12	0	15
On farm processing	0	15	0	12	0	15

Factors limiting direct local sales

The survey listed eight possible reasons that may limit direct local sales and asked growers to rank these reasons by using a Likert scale (i.e., 1: strongly disagree; 3: neutral; 5: strongly agree). Table 68 to Table 76 report the ranks determined by the sample growers.

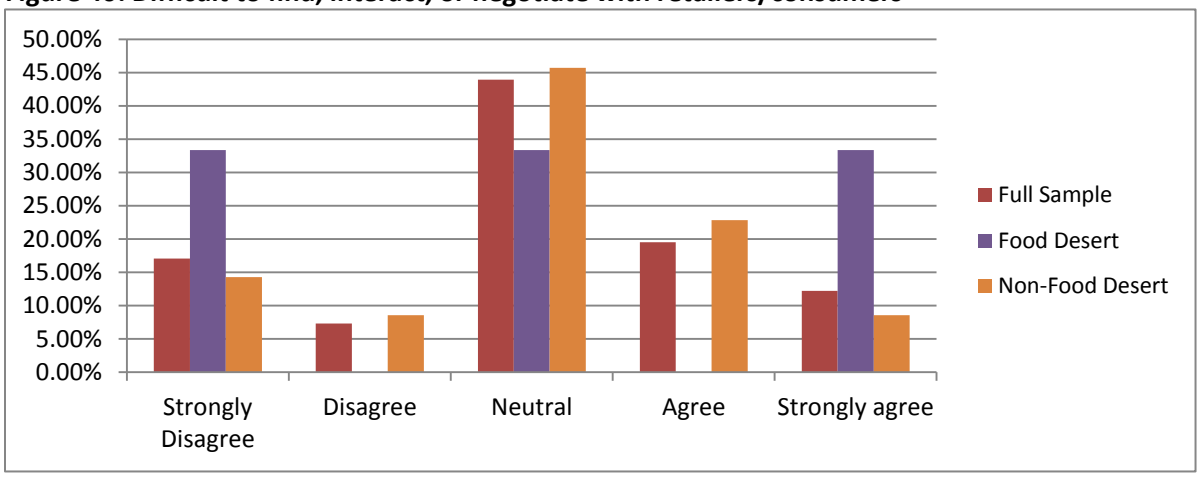
Difficult to find, interact, or negotiate with retailer or consumers.

Table 68 and Figure 40 indicate the answers to this question for growers in the food desert distributed relatively even: 33.3% of the growers strongly agreed, 33.3% of growers selected "neutral", and 33.3% of the growers strongly disagreed with this factor. On the contrary, growers in the non-food desert were more diverse for their opinions of this question: 45.7% of the growers selected neutral, 22.9% of the growers either disagreed or strongly disagreed, and 31.4% of the growers either agreed or strongly agreed.

Table 68: Difficult to find, interact, or negotiate with retailers/consumers

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	7	17.07%	2	33.33%	5	14.29%
Disagree	3	7.32%	0	0.00%	3	8.57%
Neutral	18	43.90%	2	33.33%	16	45.71%
Agree	8	19.51%	0	0.00%	8	22.86%
Strongly agree	5	12.20%	2	33.33%	3	8.57%
Total (missing 3)	41	100.00%	6	100.00%	35	100.00%

Figure 40: Difficult to find, interact, or negotiate with retailers/consumers



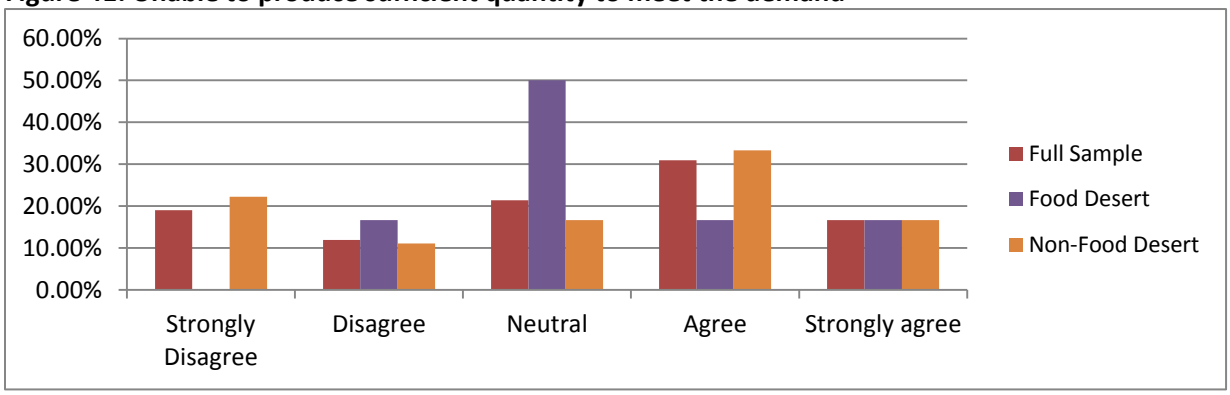
Unable to produce sufficient quantity to meet the demand

Table 69 and Figure 41 suggest the capability to produce sufficient quantity to meet consumers' demand was more likely to be a problem for the growers in the non-food desert areas: 50.0% of the growers either agreed or strongly agreed with this factor. On the contrary, only 33.3% of growers in the food desert areas either agreed or strongly agreed with the factor. A possible explanation for this result is that growers in the non-food desert areas had more varied demand, which contributed to the situations in which some growers are unable to produce enough products or are unable to successfully plan the production correctly in advance.

Table 69: Unable to produce sufficient quantity to meet the demand

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	8	19.05%	0	0.00%	8	22.22%
Disagree	5	11.90%	1	16.67%	4	11.11%
Neutral	9	21.43%	3	50.00%	6	16.67%
Agree	13	30.95%	1	16.67%	12	33.33%
Strongly agree	7	16.67%	1	16.67%	6	16.67%
Total (missing 2)	42	100.00%	6	100.00%	36	100.00%

Figure 41: Unable to produce sufficient quantity to meet the demand



Lack of distribution system for local producers

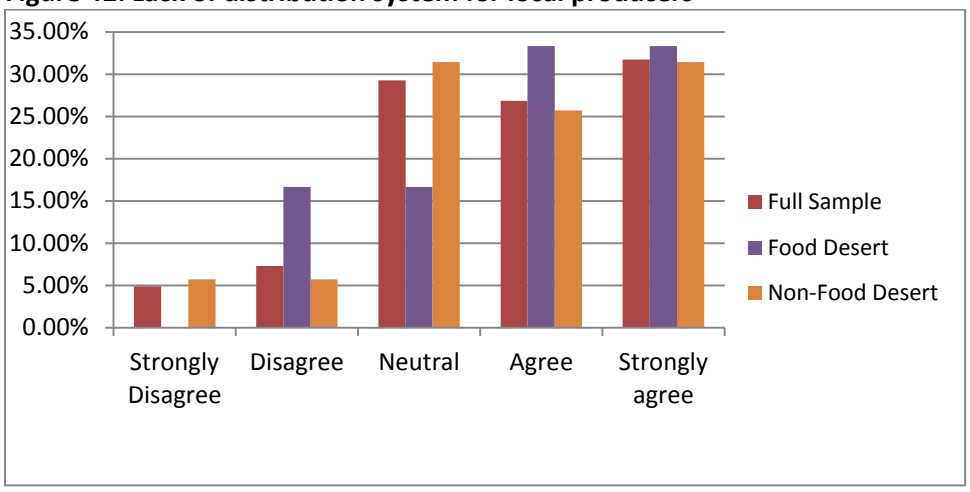
Table 70 and Figure 42 suggest the majority of the growers, both in the food desert areas and the non-food desert areas, either agreed or strongly agreed the lack of distribution system was a factor to inhibit more fruit and vegetable sales: 66.7% for the food desert and 57.1% for the non-food desert. Compared to the growers in the food desert areas, however, a higher percentage of growers in the non-food desert areas selected "neutral" for this factor (31.4% vs. 16.7%). Possibly because most growers in the food desert areas faced lower demand and

higher transportation costs that limited their options to choose or work with distributors. On the other hand, it is also very possible that growers in the non-food desert areas had better access to their customers, which reduced their concern of the distribution system.

Table 70: Lack of distribution system for local producers

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	2	4.88%	0	0.00%	2	5.71%
Disagree	3	7.32%	1	16.67%	2	5.71%
Neutral	12	29.27%	1	16.67%	11	31.43%
Agree	11	26.83%	2	33.33%	9	25.71%
Strongly agree	13	31.71%	2	33.33%	11	31.43%
Total (missing 3)	41	100.00%	6	100.00%	35	100.00%

Figure 42: Lack of distribution system for local producers



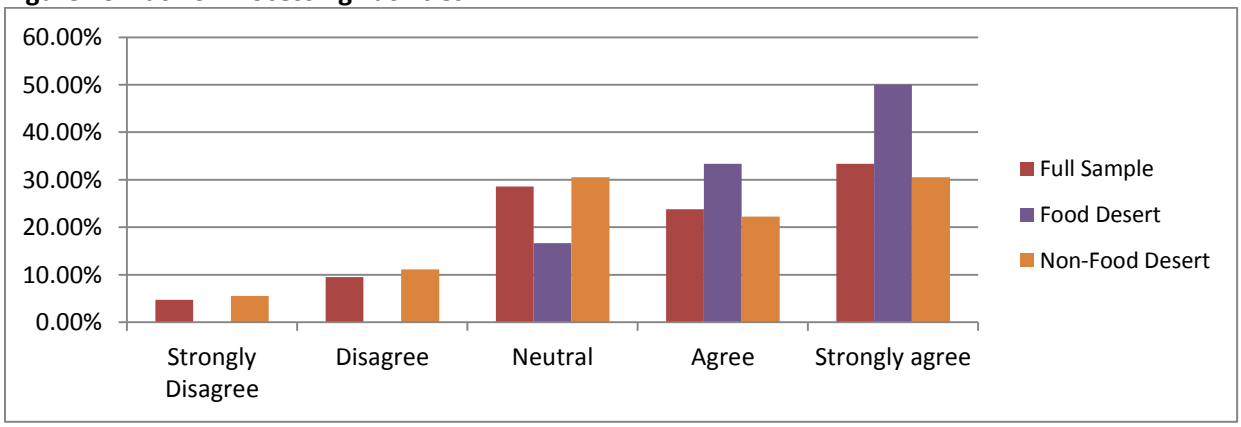
Lack of processing facilities

Table 71 and Figure 43 strongly suggest the lack of processing facilities was a problem for all growers, especially for the growers in the food desert areas: 83.3% of the growers in the food desert areas and 52.8% of the growers in the non-food desert areas either agreed or strongly agreed with this factor.

Table 71: Lack of Processing Facilities

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	2	4.76%	0	0.00%	2	5.56%
Disagree	4	9.52%	0	0.00%	4	11.11%
Neutral	12	28.57%	1	16.67%	11	30.56%
Agree	10	23.81%	2	33.33%	8	22.22%
Strongly agree	14	33.33%	3	50.00%	11	30.56%
Total (missing 2)	42	100.00%	6	100.00%	36	100.00%

Figure 43: Lack of Processing Facilities



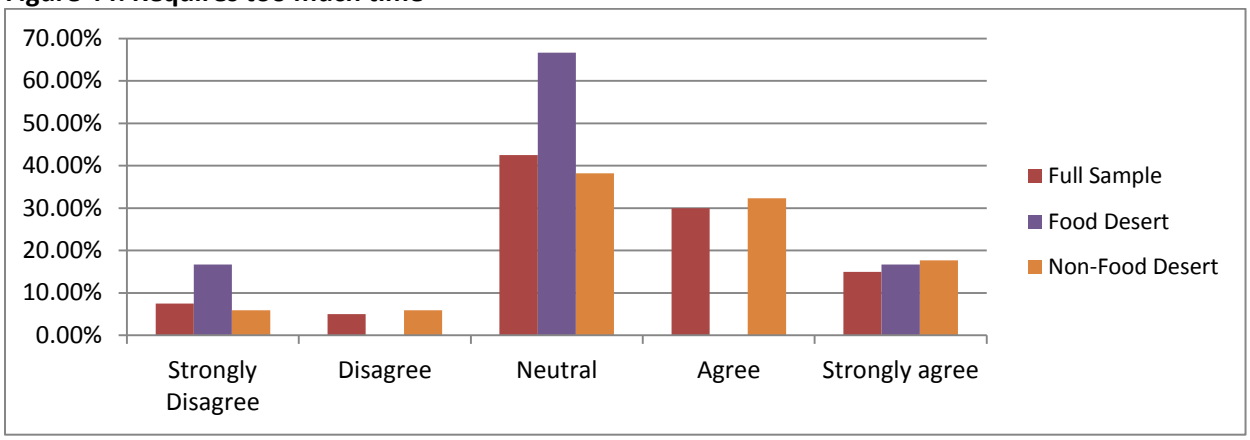
Requires too much time

Overall, time was more likely to be a concern for growers in the non-food desert areas. Table 72 and Figure 44 show 50.0% of the growers in the non-food desert areas either agreed or strongly agreed with this factor, while only 16.7% of the growers in the food desert areas had the similar attitudes. In addition, Data show 66.6% of the growers in the food desert areas and 38.2% of the growers in the non-food desert areas selected neutral for this factor.

Table 72: Requires too much time

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	3	7.50%	1	16.67%	2	5.88%
Disagree	2	5.00%	0	0.00%	2	5.88%
Neutral	17	42.50%	4	66.67%	13	38.24%
Agree	12	30.00%	0	0.00%	11	32.35%
Strongly agree	6	15.00%	1	16.67%	6	17.65%
Total (missing 4)	40	100.00%	6	100.00%	34	100.00%

Figure 44: Requires too much time



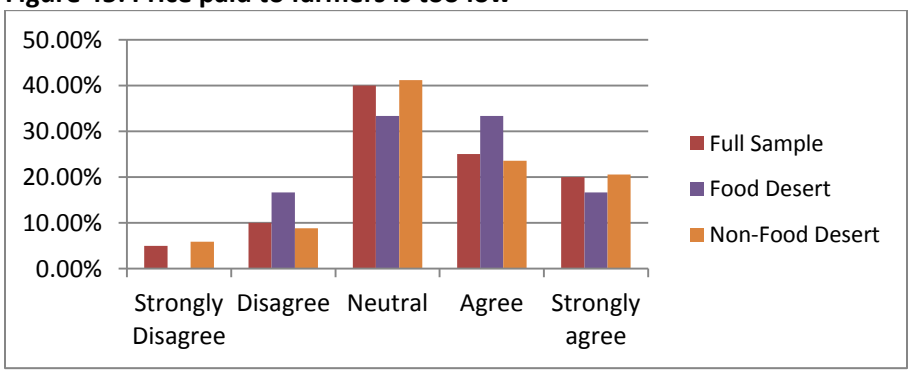
Price paid to the farmer is too low:

Table 73 and Figure 45 suggest low price might be a factor to limit more fruit and vegetable sales: 50.0% of the growers in the food desert areas and 44.1% of the growers in the non-food desert areas either agreed or strongly agreed with this factor. However, data show a rather high percent of growers who selected "neutral" to this question (33.3% for the food desert areas and 41.2% for the non-food desert areas). Table 73 also suggests low price was a slightly more important issue for the growers in the food desert areas.

Table 73: Price paid to farmers is too low

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	2	5.00%	0	0.00%	2	5.88%
Disagree	4	10.00%	1	16.67%	3	8.82%
Neutral	16	40.00%	2	33.33%	14	41.18%
Agree	10	25.00%	2	33.33%	8	23.53%
Strongly agree	8	20.00%	1	16.67%	7	20.59%
Total (missing 4)	40	100.00%	6	100.00%	34	100.00%

Figure 45: Price paid to farmers is too low



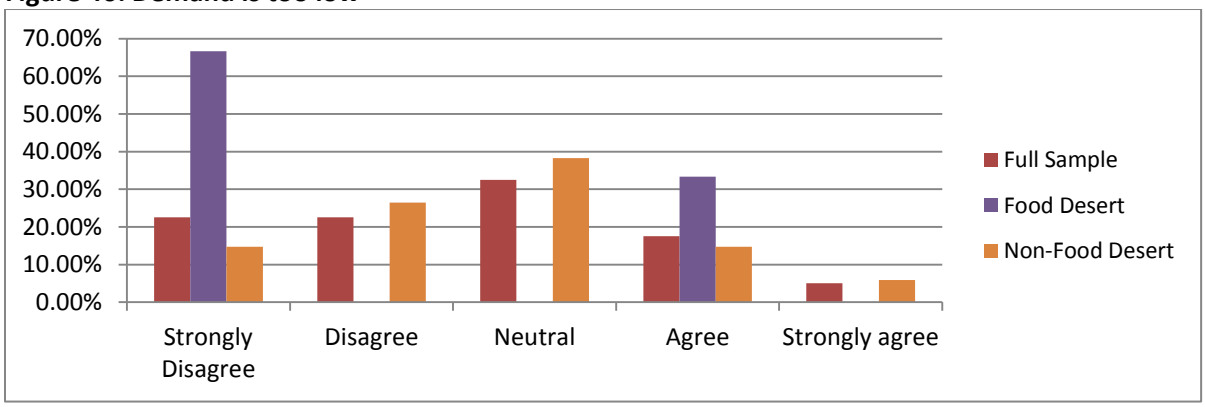
Demand for products is too low

Table 75 and Figure 46 show most growers did not consider low demand as a factor to limit their fruit and vegetables sales: 66.7% of the growers in the food desert areas and 41.2% of the grower in the non-food desert areas either disagreed or strongly disagreed with the factor. On the other hand, Table 75 shows seven growers in the non-food desert areas (20.6%) and two growers in the non-food desert areas (33.3%) either agreed or strongly agreed with the statement that low demand was a factor to prevent them from selling more fruit and vegetables.

Table 75: Demand for products is too low

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	9	22.50%	4	66.67%	5	14.71%
Disagree	9	22.50%	0	0.00%	9	26.47%
Neutral	13	32.50%	0	0.00%	13	38.24%
Agree	7	17.50%	2	33.33%	5	14.71%
Strongly agree	2	5.00%	0	0.00%	2	5.88%
Total (missing 4)	40	100.00%	6	100.00%	34	100.00%

Figure 46: Demand is too low



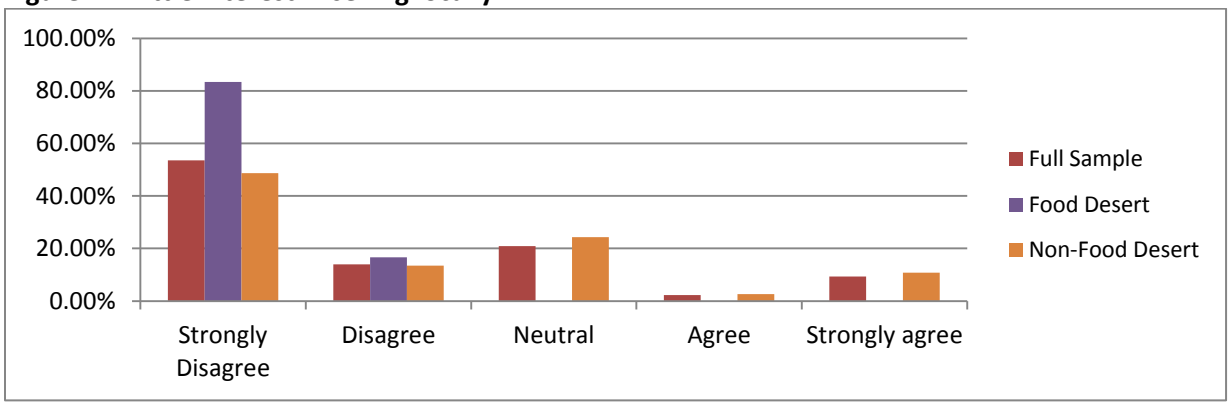
Little interest in selling locally

Table 46 and Figure 47 suggest 100.0% of the growers in the food desert areas and 62.2% in the non-food desert areas either disagreed or strongly disagreed with the statement that low personal interest was the reason to prevent them from selling more fruit and vegetables. This suggests most growers were interested in exploring the local fruit and vegetable markets.

Table 76: Little interest in selling locally

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	23	53.49%	5	83.33%	18	48.65%
Disagree	6	13.95%	1	16.67%	5	13.51%
Neutral	9	20.93%	0	0.00%	9	24.32%
Agree	1	2.33%	0	0.00%	1	2.70%
Strongly agree	4	9.30%	0	0.00%	4	10.81%
Total (missing 1)	43	100.00%	6	100.00%	37	100.00%

Figure 47: Little interest in selling locally



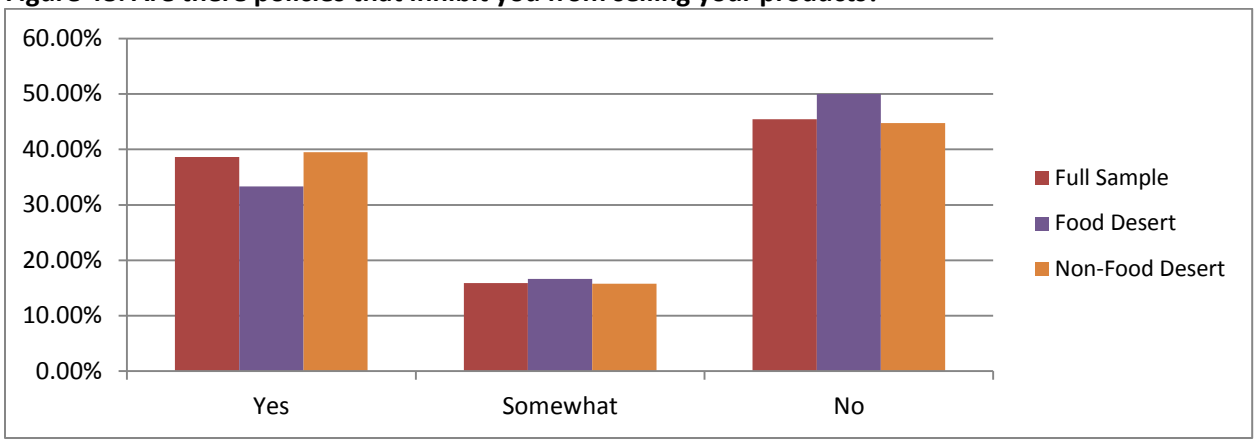
Policies that inhibit growers from selling products

The survey asked respondents whether the current policies (local, state or federal) had affected their fruit and vegetables sales. Table 77 and Figure 48 shows 61.4% of the growers believed policies had a negative impact on their fruit and vegetable sales. Data show 50.0% of the growers in the food desert areas and 55.3% of the growers in the non-food desert areas answered either "yes" or "somewhat" to this question.

Table 77: Are there policies that inhibit you from selling your products?

	Full Sample		Food Desert		Non-Food Desert	
Item	Frequency	Percent	Frequency	Percent	Frequency	Percent
Yes	17	38.64%	2	33.33%	15	39.47%
Somewhat	7	15.91%	1	16.67%	6	15.79%
No	20	45.45%	3	50.00%	17	44.74%
Total	44	100.00%	6	100.00%	38	100.00%

Figure 48: Are there policies that inhibit you from selling your products?



Policies that inhibit more sales

The survey further requested growers who answered "Yes" or "somewhat" in the previous question write down the policies that negatively affected their sales. Data shows one growers in the food desert areas and 15 growers in the non-food desert had participated in this question and listed several policies accordingly.

Table 78 shows five growers suggested regulations regarding food safety, food tasting and certification had a negative impact on their ability to sell. Four growers believed rules of what they could sell at the farmers markets was a negative factor. Moreover, two growers in the non-food desert areas and one grower in the food desert areas listed "costs to get certified" as an obstacle to sell more local produce.

Table 78: Policies that inhibit more sales

	Full Sample		Food Desert		Non-Food Desert	
	Frequency	Percentag	Frequency	Percent	Frequency	Percent
Regulation, food safety, processing, food tasting, certified for value added	5	31.25%	0	0.00%	5	33.33%
Cost to get certified	3	18.75%	1	100.00%	2	13.33%
Regulation + Cost	2	12.50%	0	0.00%	2	13.33%
Institutions' rules to purchase local	1	6.25%	0	0.00%	1	6.67%
Regulation of what can be sold in the farmers' market	4	25.00%	0	0.00%	4	26.67%
Government knows nothing about real world production	1	6.25%	0	0.00%	1	6.67%
Total	16	100.00%	1	100.00%	15	100.00%

Overall, the survey listed 16 potential market outlets and invited growers to choose the ones that existed in their communities. The results were consistent with growers' reported percentages of sales: farmers markets and friends/neighbors were the top two outlets selected by growers. Growers also selected

other outlets including K-12, farm stores, grocery stores/retail/co-ops, and restaurants as potential market outlets existing in their communities.

When asked to evaluate the reasons that limited their sales, the majority growers agreed or strongly agreed the lack of distribution system (58.5%) and processing facilities (57.1%) were the important factors that hinder their sales. Data suggest a higher percentage of growers in the non-food desert areas concerned about the capability to produce sufficient quantity to meet consumers' demand (50%) and the amount of time involved in selling local (50%) than those in the food desert areas (33.4% and 16.7% respectively). On the other hand, growers expressed different opinions toward other reasons, such as low prices paid to the farmer, low consumer demand, and the difficultly to find, interact, or negotiate with retailers/consumers. However, the majority of growers disagreed or strongly disagreed the little interest was the reason preventing them from selling more fruit and vegetables.

Growers (61.4%) also listed policies that had negative impacts on their fruit and vegetable sales. Five growers suggested regulations regarding food safety, food tasting, and certification had a negative impact on their ability to sell. Four growers believed rules of what they could sell at the farmers markets was a negative factor. Two growers in the non-food desert areas and one grower in the food desert areas listed "costs to get certified" as an obstacle to sell more local produce.

6. Conclusion and Recommendations

This survey of local fruit and vegetable producers in South Dakota is a part of the project entitled "Food Systems Review: Fruit and Vegetables in South Dakota". The topic of local foods and instate purchasing of fruit and vegetable rose in preliminary surveys and interviews done for the Department of Health's investigation. This survey collected South Dakota local growers' production and marketing information and examined factors that affect local growers' fruit and vegetable sales and profitability.

Data indicates the majority of growers expressed the intention to expand their fruit and vegetables production in the next three years, especially for those in the food desert areas. This may be essential if growers expect to make a more positive contribution from fruit and vegetables to their total family income. Full time careers growing fruit and vegetables seems challenging when data shows 56.8% of growers contributed to less than 5% of their total income by selling produce. To have a more sustainable business without having to work a second full or part time job, growers will likely need to expand or change their production and markets. On a positive note for the industry, 83.3% of the growers in the food desert areas and 72.2% of the growers in the non-food desert areas

had experienced increases in fruit and vegetables sales over the past three years. The demand appears to exist.

Growers in South Dakota are producing a wide variety of products, although some are at very limited levels. As market expands, how to continue growing the producer base or levels of production is an important subject for the policy makers and stakeholders to consider. Production education for producers, as well as education on season extension and developing value-added products will continue to be critical to expand the fruit and vegetable supply in South Dakota.

Growers indicated farmers markets was the top outlets available in communities. Additionally, with 70.6% of producers indicating that farmer's markets are a profitable outlet, agencies working to help with the development and enhance farmer's markets should continue their efforts. Friends and neighbors were also an outlet that was readily available; however, continued guidance for producers to develop a way to make this outlet more profitable is needed. Other outlets that are readily available and considered profitable include grocery stores/retail/co-ops and restaurants. Training on marketing to these outlets as well as opportunities for grower-buyer networking will help increase selling and purchasing in these areas. The final outlet that that is readily available in communities is the K-12 schools. However, the majority of growers indicated that it was not profitable. Farm-to-school success stories are heard from across the nation, so further investigation into what barriers are existing that are keeping producers from being successful with this outlet would be recommended. Although mostly under-utilized, other outlets such as CSA's, roadside stands, and nursing home/hospital outlets were considered profitable by growers. Continued education on these outlets could increase grower awareness and utilization of these approaches. An insightful economic study for the South Dakota's local food market outlook can also be helpful to assist growers to identify the potential business opportunities from these outlets.

About ⅓ of the growers in the food desert and ¼ of the growers in the non-food desert areas accepted SNAP. Assistance from state agencies to identify locations where SNAP usage is high may help growers determine if SNAP implementation could be a benefit. Education on setting up convenient systems for SNAP utilization at farmer's markets or other local food venues could help with the expansion of the program and to increase growers' fruit and vegetable sales. Providing information to SNAP users on the location of food vendors could also help expand its use.

The majority growers agreed or strongly agreed the lack of distribution system and processing facilities in the state were important factors that hinder their sales. Regional working groups to focus on development of these systems could help

increase local produce sales across the state.

Growers' opinion regarding policies that created barriers to sell local suggest clear resource guides identifying agencies, key regulations and resources for that information should be easily and readily accessible for growers. Several barriers may be results of the fact that growers are not familiar with the regulations or do not have the capability to comply with the rules under their current production and financial limitations. Ensuring that agencies are aware of services each other offer in the state will help when referring consumers. Additionally, educational trainings to break down perceived barriers related to food safety, regulations and certification should help growers move through these obstacles.

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