

FINDINGS OF THE 2013 NATIONAL FOOD HUB SURVEY

SEPTEMBER 2013

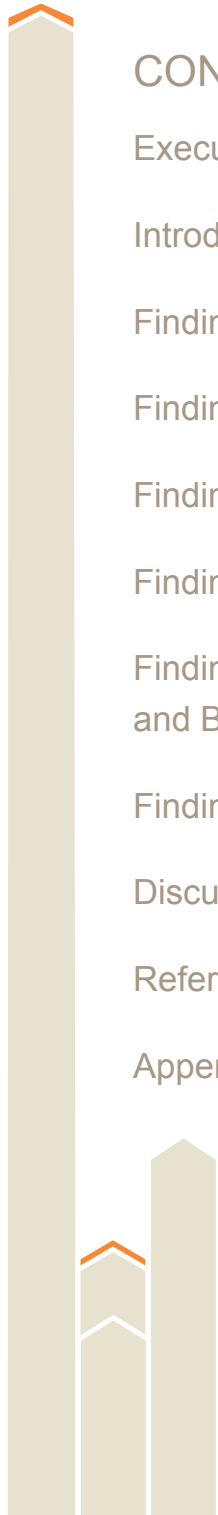


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FINDINGS OF THE 2013 NATIONAL FOOD HUB SURVEY



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ACKNOWLEDGEMENTS

For their invaluable guidance on the formation of the survey and this report, the authors would like to thank the following people:

- **Nicole Tichenor**—Agriculture, Food and Environment Program, Friedman School of Nutrition Science and Policy, Tufts University
- **Jim Barham**—Agricultural Economist, USDA Agricultural Marketing Service
- **Abigail Massey**—Intern, the Wallace Center at Winrock International
- **Shanna Ratner**—Principal, Yellow Wood Associates, Inc.
- **Marty Gerencer**—Principal, Morse Marketing Connections, LLC
- **Gary Matteson**—Vice President for Young, Beginning, Small Farmer Programs and Outreach, Farm Credit Council.

The authors would also like to thank the following individuals for their help in pilot testing and refining the survey:

- **Robin Morris**—Mad River Food Hub
- **Laurie Moore**—Moore Farms and Friends
- **Michelle Franklin**—La Montanita Co-op
- **Fenton Wilkinson**—Sandhills Farm to Table Cooperative.

Finally, the authors would like to thank the following individuals for their expertise in reviewing and editing this report:

- **Becca Jablonski**—Cornell University
- **Dr. Gail Feenstra**—University of California Sustainable Agriculture Research and Education Program
- **Tracy Lerman**
- **Malini Ram Moraghan**—Wholesome Wave
- **Jim Matson**—Matson Consulting.

FUNDING

Funding from the W.K. Kellogg Foundation and the C.S. Mott Endowed Chair in Sustainable Agriculture at Michigan State University was used to conduct the 2013 National Food Hub Survey and produce this report. Participation by the Wallace Center is supported by the Kresge Foundation and the Surdna Foundation.

PHOTO CREDITS

Page 6: Ben Vitale, Central New York Regional Market, Syracuse, New York

Page 9: Rich Pirog, Philadelphia Terminal Market, Philadelphia, Pennsylvania

Page 21: La Montanita Marketing, Albuquerque, New Mexico

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Page 36: Green B.E.A.N., Indianapolis, Indiana

Page 40: Appalachian Sustainable Development, Duffield, Virginia

Page 46: Eastern Market Corporation, Detroit, Michigan

Page 48: Eastern Market Corporation, Detroit, Michigan

SUGGESTED CITATION

Fischer, M., Hamm, M., Pirog, R., Fisk, J., Farbman, J., & Kiraly, S. (September 2013). Findings of the 2013 National Food Hub Survey. Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International. Retrieved from <http://foodsystems.msu.edu/activities/food-hub-survey>



➤ Food hubs are businesses or organizations that actively manage the aggregation, distribution and marketing of source-identified food products. Food hubs also operate within their own expressed value sets, and these values guide any additional activities that a food hub may undertake. In theory, food hubs may serve to provide much-needed, size-appropriate infrastructure and marketing functions for local food produced by small and midsized producers. However, the impact of food hubs has only recently been studied, and there is a lack of aggregated information on many of the characteristics of active food hubs. The 2013 National Food Hub Survey was conducted to collect this information from a broad sample of food hubs.

Findings from the survey showed that food hubs across the country are growing to broaden the distribution infrastructure for local food. From the survey, 62% of food hubs began operations within the last five years, 31% of food hubs had \$1,000,000 or more in annual revenue and the majority of food hubs were supporting their businesses with little or no grant assistance—including food hubs that identified as nonprofits. Financially, the most successful food hubs tended to be for-profit and cooperative in structure, in operation for more than 10 years and working with a relatively large number of producers. The values-based nature of food hubs makes it hard to judge many of them solely on their level of financial success.

The survey also revealed a number of persistent challenges and barriers to growth that even the most financially successful food hubs faced. For example, many food hubs indicated their needs for assistance in managing growth and identifying appropriate staffing levels for their hubs. They also often pointed to their need for capital and other resources to increase their trucking and warehousing capacity.

KEY FINDINGS FROM THE REPORT

- Food hubs exhibit a great deal of variety in their individual business models and core values. Responding food hubs did show some commonalities, such as their nascence. More than half of responding food hubs began operations in the past five years. Also, the majority of food hubs were located in or near metropolitan areas, suggesting reliance on a nearby highly populated center for customers.
- Beyond aggregating and distributing food, many food hubs offer a number of additional services through their operations to their producers, customers and communities. For example, more than 50% of food hubs indicated that they participated in product storage, marketing services for producers and food donation to local food banks. However, for many hubs (but not all), offering these services correlated with an increased reliance on outside sources of funding.
- Although grant funding remains important for many new and growing food hubs, most are able to sustain their core food aggregation and distribution functions without substantial outside grant funding. Food hubs of all ages and operational structures (including nonprofits) generated a positive cash flow, and most hubs that were observed in both the 2011 and 2013 surveys grew in their annual sales.
- Challenges still exist for food hubs. In particular, food hubs struggle in the areas of managing growth and balancing supply and demand. These issues are not limited to food hubs, and potentially, that struggle could be alleviated for many hubs through increased technical assistance with management and logistics.
- Almost all food hubs believe that the demand for their products and services is growing. However, very few food hubs indicated that they had no barriers to keep them from meeting this demand. Most often, food hubs indicated that they needed assistance overcoming operational barriers, such as accessing capital.

The increasing demand for local food explains the large numbers of food hubs that have recently emerged. But moving forward for these new hubs will necessarily mean going beyond simply providing local food. They will need to take steps to grow their businesses in ways that allow for financial viability as well as a continued commitment to the values under which the food hubs operate. As one food hub noted in its survey response, “We are now in a situation of deciding how much more to grow, not because of supply or demand, which we have plenty of both, but because of time, inclination, processes/ systems, etc.” Food hubs have indicated that they are looking for guidance on their growth decisions. Helping food hubs reach these next stages of operation will open many doors for new and renewed partnerships between food hubs, the government, universities and nonprofits. These relationships could be key to realizing expanded impacts from food hubs, such as increased accessibility for healthy and local food for those who demand it and better business opportunities for the small and midsized producers who wish to provide it.



➤ INTRODUCTION

This report presents results of a national survey of food hubs that was conducted in early 2013. The purpose of the survey was to collect a breadth of information regarding food hub financial viability, operational activities, characteristics, challenges and emerging opportunities. This information was gathered to inform a large pool of food systems stakeholders, including food hub operators, policy makers, academics and advocates.

BACKGROUND

Several experts in the field of sustainable agriculture have called for a more diverse agricultural landscape, with a continuum of production at all scales of operation (Lyson 2008; National Research Council 2010; Stevenson and Pirog 2008; Tagtow and Roberts 2011). This diversity of production scale is regarded as critical building block of a resilient food system, “much like various sized stones produce a firm roadbed” (Clancy and Ruhf 2010). However, American agriculture is bifurcated, with relatively few large farms producing much of the agricultural output and a great number of very small farms producing a relatively small amount of food products, mostly to direct and/or niche markets (Low and Vogel 2011).

Between these two extremes is a disappearing sector of midsize agricultural producers. These farms are defined as producing too little to actively compete in most commodity markets but producing

too much for direct sales at farmers markets or through community-supported agriculture shares (Agriculture of the Middle Initiative 2012; Gray 2011).

According to the USDA, “a regional food hub is a business or organization that actively manages the aggregation, distribution and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand” (Barham et al. 2012: 4). This definition is necessarily flexible and incorporates food hubs that employ a number of business strategies. For example, food hubs that may not aggregate or distribute food but only participate in the coordination of these activities would fit into this definition.

In theory, food hubs have great potential to meet the needs of midsized agriculture, in part due to the localized scale on which they operate, compared to most conventional, large-scale food distribution businesses. Sourcing products from multiple producers, food hubs aggregate (or coordinate the aggregation of) local foods, making them available to customers in wholesale-scale volumes. Food hubs, by definition, accomplish this while also retaining identification of the food's origin, including any special practices or circumstances under which the food was grown. Retaining this information is important, not only for food chain transparency but also because it carries a value that food hubs and producers can potentially use to realize premium prices for their products (Bloom and Hinrichs 2011).

In addition to acting as food distributors, food hubs generally exhibit values beyond achieving financial goals. These values fundamentally affect how a food hub operates and vary widely among food hubs. They may include, for example, sourcing food from within a defined area or food that is grown in ways that the food hub defines as healthy and/or environmentally friendly. Food hubs also commonly aim to sell food at a price that ensures a fair return to producers. Other food hubs also operate with specific commitments to their communities—by providing access to healthy food in underserved areas, for example.

The 2013 National Food Hub Survey was developed to better understand these values and to collect a breadth of information on the elements of “successful” food hubs, including the social and environmental conditions that aid their development. Understanding these elements will be key for researchers, investors and other stakeholders of local and regional food systems to inform food system investment strategies and, where appropriate, to create environments in which food hubs can thrive.

2011 FOOD HUB SURVEY

In 2011, the National Good Food Network's (NGFN's) Food Hub Collaboration—a project of the Wallace Center that coordinates networking between and dissemination of information to food hubs across the US—conducted an initial survey of 45 food hubs to gather information about the “scope and scale” of their operations (Barham et al. 2012, 74). This survey was undertaken in part to satisfy a growing desire to more fully understand how food hubs operate within values-based regional food chains. The 2013 National Food Hub Survey was developed to uncover similar operational details that would act as both follow-up to the initial findings of the 2011 survey and as the first data set of a larger, longitudinal database of food hub activities.

2013 NATIONAL FOOD HUB SURVEY

The 2013 National Food Hub Survey was conducted by the Michigan State University Center for Regional Food Systems in cooperation with the Wallace Center at Winrock International. Representatives from U.S. Department of Agriculture (USDA) also assisted in survey development. The survey and report authors intend that this survey will be repeated biennially so that a data set of food hubs' attributes can be built and monitored as existing hubs continue to mature and new hubs begin operations.

The 2013 National Food Hub Survey began in the first week of February 2013 and was sent to 222 food hubs identified by members of the NGFN's Food Hub Collaboration. Food hubs were identified by the Collaboration both through direct contact with the individual hubs and through other channels, such as news releases. Since October 2011, the Collaboration has used a questionnaire to gather additional information about new food hubs before including them on the Collaboration's larger food hub list.¹ This questionnaire is used to determine whether a new hub meets the Collaboration's criteria of a regional food hub. These criteria include the use of local food and the verification of products' sources.

The survey was Internet-based and built using Qualtrics Research Suite Software (Qualtrics 2013). Researchers e-mailed the survey link to each food hub. The survey included 90 questions on 9 topics: background information, financial information, employees and volunteers, producers and suppliers, local and regional aspects, operations activities and services, infrastructure, challenges and opportunities.² The survey remained open through the last week of March 2013. In total, 125 surveys were returned for a 56.3% effective response rate. Of these 125, 18 responses were not used in the analysis because they lacked responses to a majority (more than 90%) of the survey questions, leaving 107 usable surveys. See the Appendix of this report for more information about the survey methodology.

In this report, survey results are presented in five sections: operational characteristics, finances, values, services and activities and challenges, opportunities and barriers to growth. Thirty food hubs that responded to this survey also responded

to the 2011 National Food Hub Collaboration's survey. Aggregate information from both surveys is explored following the 2013 survey findings. Finally, recommendations for further food hub research and outreach are discussed.

The findings of this survey may prove useful to a wide array of individuals, businesses and organizations interested in food hubs. For example, individuals interested in initiating or managing food hubs or in providing assistance to existing food hubs, as well as individuals in the community and economic development sector, should all be able to find relevant information here. The authors have provided the survey findings in a format that will hopefully assist as many food hub stakeholders as possible. It is the hope of the 2013 survey authors that the data gathered will be useful for those exploring the conditions necessary to build robust regional food systems.

¹ The questionnaire can be found through NGFN's food hub website, <http://www.foodhub.info>, or directly through <http://www.surveymonkey.com/s/79HDYDV>.

² A PDF copy of the full 2013 National Food Hub Survey can be found on Michigan State University's Center for Regional Food Systems' website at <http://foodsystems.msu.edu/activities/food-hub-survey>.



➤ FINDINGS: OPERATIONAL CHARACTERISTICS

The 2013 National Food Hub Survey gathered information on a number of descriptive facets of food hubs, including the hubs' years in operation, location, producers and customers and infrastructure use. These topics provide a useful look into the operations of existing food hubs and a basis for the exploration of factors that may make for successful food hubs.

YEARS IN OPERATION

Nearly one-third (of $N=106$) responding food hubs began operations within the last 2 years, and most had been in operation for 5 years or less (66 hubs, or 62%). Of the remainder, 26% had been in operation between 6 and 20 years and 11% for more than 20 years. Of these new hubs (in operation 2 years or less), more than half (55.6%) were for-profit businesses, compared to 47% of all food hubs. The number of years a food hub has been in operation was found to be significantly correlated with the hub's annual

revenue for 2012 ($r_s = .42$, $p < .01$)^{3,4} with older hubs tending to have larger total revenues than younger hubs. See the Findings: Finances section on page 21 for more information.

³ Spearman's rho statistic was used to measure correlation between variables in this report. With Spearman's rho, a perfect positive correlation between two variables would have a measure (r_s) of 1.00, while a perfect negative correlation would have a measure of -1.00.

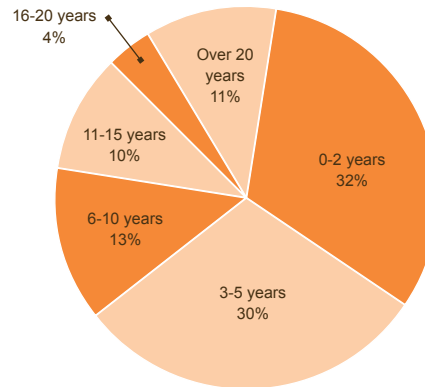
⁴ Significance of correlation is represented by the p-value. In this report, p-values less than .10 were considered significant, although many measures were significant at the .05 and .01 levels.

GEOGRAPHIC LOCATION

Geographic dispersion of the hubs was comparable to that of the National Food Hub Collaboration's 2011 survey, with 21% (of $N=107$) in the two Western regions of the U.S., 20% in the two North Central regions, 7% in the two South Central Regions, 21% in the South Atlantic and 32% in the Middle Atlantic and Northeast regions.⁷ See the map in Figure 2 for a finer breakout by Census Geographic Divisions. Seventy-five percent of food hubs were located in metro counties, as defined using USDA's 2013 Rural-Urban Continuum Codes data set (see Table 1)⁸.

There was no statistically significant relationship between the type of county in which a food hub was located and the hub's reported reliance on grant funding to carry out operations. However, the proportion of a region's food hubs that reported being "highly dependent" on grant funding was much higher for the regions that included nine food hubs reporting a location in nonmetropolitan counties and not adjacent to a metro area (33%) than for the average region (17%). This suggests that proximity to a highly populated area may be important for the financial success of food hubs.

FIGURE 1: FOOD HUBS BY YEARS IN OPERATION (N=106)



Average:⁵ 11 years
Median:⁶ 4 years
Range: Less than 1 year to 142 years

⁵ Average is the sum of all numbers in an ordered list, divided by the amount of numbers in the list.

⁶ Median is the midpoint of an ordered list of numbers.

⁷ Regions as defined by the U.S. Census Bureau. See http://www.census.gov/econ/census07/www/geography/regions_and_divisions.html for more information.

⁸ See USDA's 2013 Rural-Urban Continuum Codes data set at <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx#UcnQ85wmydk> for more information.

FIGURE 2: LOCATION OF 2013 NATIONAL FOOD HUB SURVEY RESPONDENTS

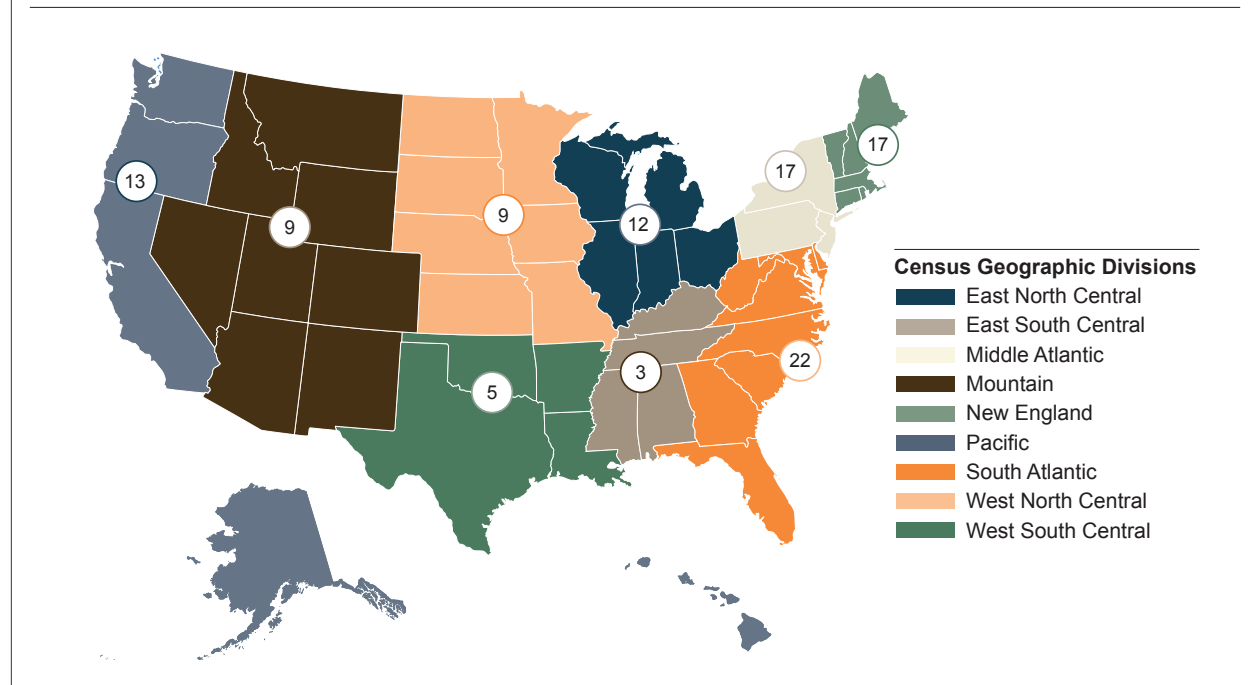


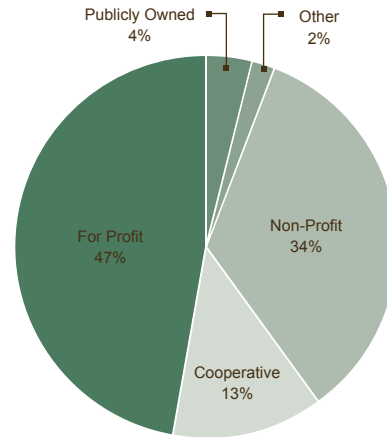
TABLE 1: FOOD HUBS BY COUNTY TYPE

	N	Percent of hubs	County type
Metropolitan counties	51	48%	Counties in metro areas of 1 million population or more
	18	17%	Counties in metro areas of 250,000 to 1 million population
	11	10%	Counties in metro areas of fewer than 250,000 population
Nonmetropolitan counties	8	7%	Urban population of 20,000 or more, adjacent to a metro area
	3	3%	Urban population of 20,000 or more, not adjacent to a metro area
	8	7%	Urban population of 2,500 to 19,999, adjacent to a metro area
	6	6%	Urban population of 2,500 to 19,999, not adjacent to a metro area
	2	2%	Completely rural or less than 2,500 urban population, adjacent to a metro area
	0	0%	Completely rural or less than 2,500 urban population, not adjacent to a metro area

OPERATIONAL STRUCTURE

Eleven distinct legal operating structures for food hubs were identified. For clarity, these were classified into five categories: nonprofit, for-profit, cooperative, publicly owned, and other. Of the 107 food hubs, most were either nonprofit (37, or 34%) or for-profit (50, or 47%) in structure. Of the remaining 20 hubs, 14 were cooperative in structure, 4 were publicly owned and 2 did not fall into any of these categories. This is comparable to the findings of the 2011 National Food Hub Collaboration’s survey, where 36% of food hubs identified as nonprofit, 33% as a type of for-profit organization and 27% as cooperative. The average age of food hubs in each structural category varied, with for-profit food hubs being generally the youngest (6 years), followed by cooperatives (8 years), nonprofits (11 years) and publicly owned food hubs (84 years).

FIGURE 3: FOOD HUBS BY OPERATIONAL STRUCTURE (N=107)

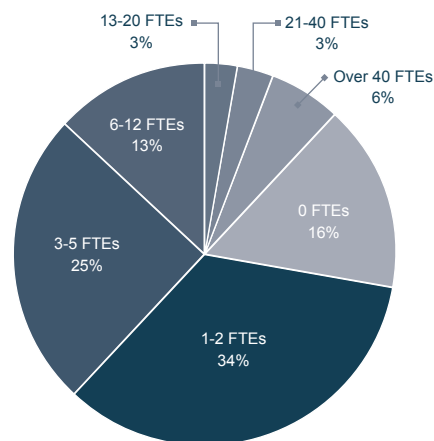


EMPLOYEES AND VOLUNTEERS

The 82 food hubs that responded to the question about numbers of employees had, in sum, 787 full-time, year-round workers. Most food hubs had five or fewer full-time employees. However, there were also a small number of very large food hubs, with the largest reporting 155 full-time employees. The number of years a food hub had been in operation was highly correlated to the number of full-time employees it had ($r_s = .30, p < .01$) with newer hubs more likely to have fewer or no full-time employees than older hubs. Many hubs also utilized part-time or seasonal staff, with 58 hubs indicating they had at least one part-time employee and 33 hubs at least one seasonal employee.

Many food hubs indicated that they struggled with increasing staff; 41 food hubs indicated that this was a barrier to growth for their operations. Further, 23 food hubs indicated that they had at least one regular volunteer. This is important because when asked about the operational challenges they faced, 11 food hubs indicated that “finding reliable seasonal and/or part-time staff” was one of their top three challenges. See the Challenges, Opportunities and Barriers to Growth section of the findings on page 40 for more information.

FIGURE 4: FOOD HUBS BY NUMBER OF FULL-TIME EMPLOYEES (FTEs) (N=82)



Average: 11 full-time employees
Median: 3 full-time employees
Range: 0 to 155 full-time employees

⁹ Dashes in Tables 2 and 3 indicate that fewer than three hubs responded to the number of employees or volunteers they had in this category. Therefore, an average and median could not be reliably computed.

TABLE 2: FOOD HUB EMPLOYEES

	N	Number of Employees					
		Full-time year-round		Part-time year-round		Seasonal	
		Average	Median	Average	Median	Average	Median
All sales sizes	104	11	3	3	2	5	1
\$500,000 or less	50	2	1	2	2	3	1
\$500,001 to \$2,000,000	23	5	4	4	4	2	2
\$2,000,001 to \$5,000,000	4	6	6	⁹	-	-	-
\$5,000,001 to \$10,000,000	4	42	16	3	4	-	-
Over \$10,000,000	5	106	117	-	-	-	-

TABLE 3: FOOD HUB VOLUNTEERS

	N	Number of Volunteers					
		Cooperative member ¹⁰		Regular		Occasional	
		Average	Median	Average	Median	Average	Median
All sales sizes	104	17	1	4	2	14	3
\$500,000 or less	50	26	7	4	2	12	3
\$500,001 to \$2,000,000	23	-	-	4	2	23	4
\$2,000,001 to \$5,000,000	4	-	-	-	-	-	-
\$5,000,001 to \$10,000,000	4	-	-	-	-	-	-
Over \$10,000,000	5	-	-	-	-	-	-

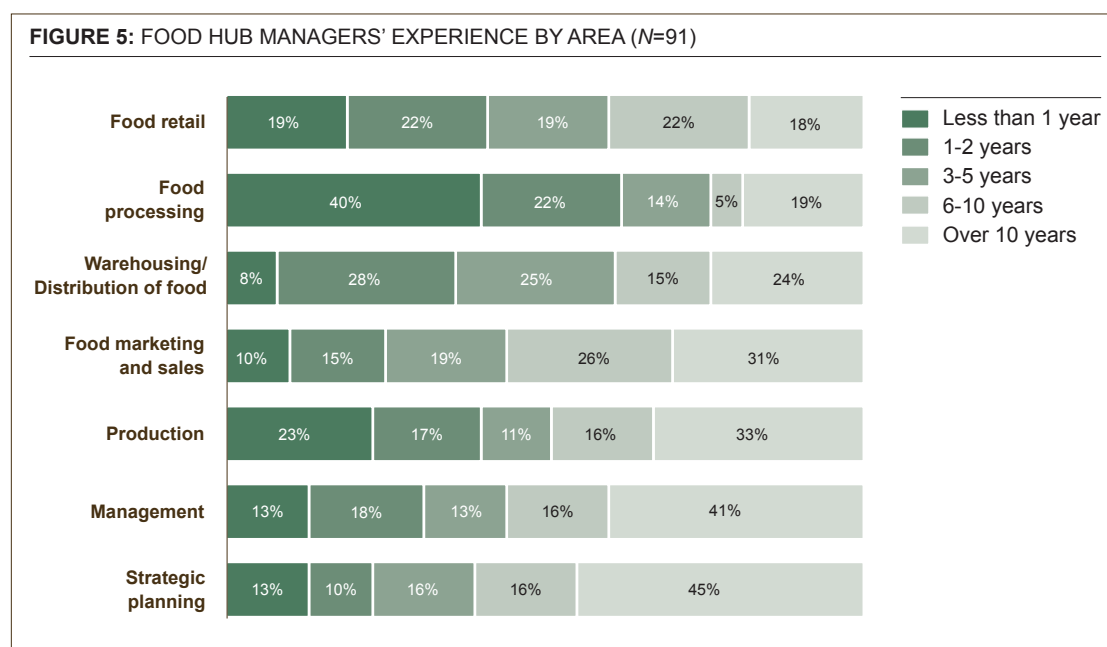
MANAGEMENT

Effective management of a food hub stands to be important for the hub’s success. However, on average, food hubs reported that their senior managers only had between 1–5 years of experience in all of the seven experience areas outlined in Figure 5. Of these areas, food hub managers tended to have less experience (between 1–2 years) in food retailing, processing and warehousing/distribution.

Food hub managers tended to have slightly more experience (between 3–5 years) in strategic planning, management, production, food marketing and sales. The average age of the food hubs’ most senior manager was 46, with ages ranging from 25 to 67.

¹⁰ Cooperative member volunteers are an important workforce for many food hubs organized as cooperatives, and volunteering may be a requirement of belonging to the cooperative.

FIGURE 5: FOOD HUB MANAGERS' EXPERIENCE BY AREA (N=91)

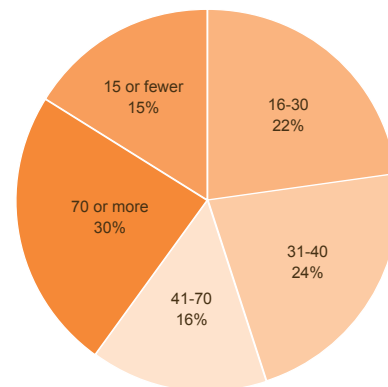


PRODUCERS AND SUPPLIERS

Because of the important role food hubs may potentially have in marketing food from small and mid-sized producers, several aspects of the producers that food hubs work with were explored. These aspects include the size and type of producers' operations and the diversity of producers that food hubs chose to work with. It is possible that the food hub operators filling out the survey may not have precise knowledge of producer characteristics, such as how long each producer had been in operation. The authors note that the findings regarding food hub producers and suppliers would benefit from further direct investigation.

Overall, food hubs worked with a large range of suppliers, with the majority (61%) working with 40 producers or fewer. These producers tended to be slightly more often women or people of color than the national averages for primary operators of farms (see Figures 7 and 8). Fifty-eight food hubs responded to the question about the percentage of producers who were women and, on average, 19% of the total of these hubs' producers/suppliers were owned or operated by women (compared to a 14% national average). For the question about producers

FIGURE 6: FOOD HUBS BY NUMBER OF PRODUCERS/SUPPLIERS (N=79)

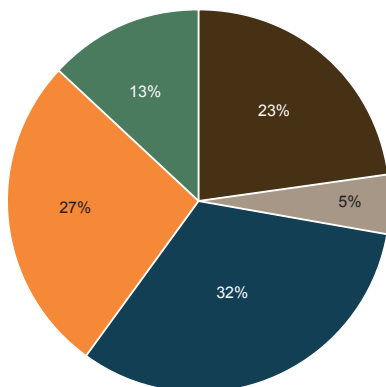


Average: 80 producers/suppliers
Median: 36 producers/suppliers
Range: 5 to 2,000 producers/suppliers

of color, 44 food hubs responded, and 29% of the total of these hubs' producers/suppliers were people of color (compared to a 17% national average)¹¹ (USDA 2007).

¹¹ The number of producers/suppliers for each hub who were women of color was back-calculated using the percentage of producers food hubs indicated were women, the percentage who were people of color, and the total number of producers a food hub indicated it purchased or procured from.

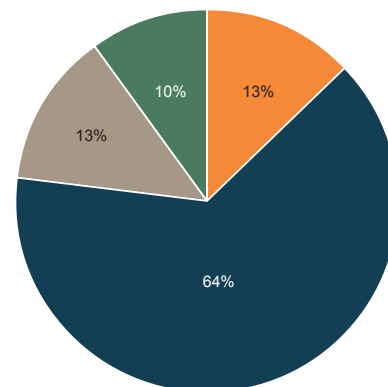
FIGURE 7: PERCENTAGE OF FOOD HUB PRODUCERS/SUPPLIERS OWNED OR OPERATED BY WOMEN (N=60)



Average: 29%; **Median:** 25%; **Range:** 1% to 63%

15% or less total producers
 16-30% total producers
 31-45% total producers
 46-60% total producers
 Over 60% total producers

FIGURE 8: PERCENTAGE OF FOOD HUB PRODUCERS/SUPPLIERS OWNED OR OPERATED BY PEOPLE OF COLOR (N=47)



Average: 21%; **Median:** 8%; **Range:** 0% to 100%

Beginning Producers

On average, 26% of producers that all food hubs purchased or procured products from had been in operations for less than 10 years. This percentage equals the national proportion of beginning farm operators¹² (USDA 2007). When looking at this information from the individual hub perspective, food hubs reported that, on average, 47% of their producers had been in operation for less than 10 years.

Small And Midsized Producers

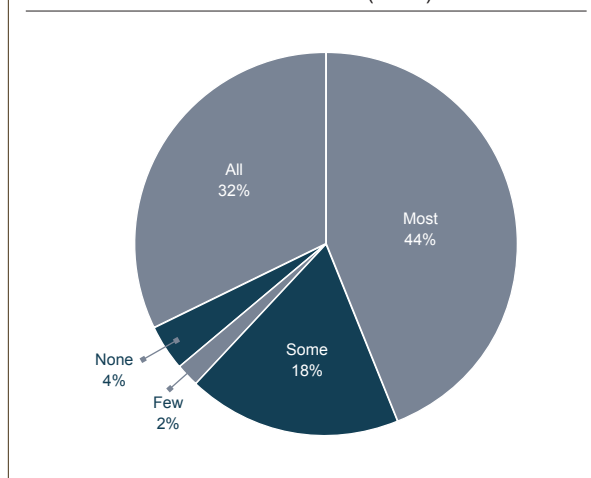
Food hubs were asked to estimate the number of small and midsized producers that they worked with (generally speaking, farms and ranches with gross annual sales less than \$500,000).

Seventy-six percent of food hubs indicated that all or most of their producers fit this small to midsized category. Further, 71% of these hubs working with small and midsized producers (at any level) indicated that they worked with an increasing number of these producers over the lifetime of the hub.

The value of the products purchased from small and midsized producers was compared to the food hubs' reported annual gross sales. On average, 60% of a food hub's total gross sales came from small and midsized producers' products. Eighty percent of food hubs also indicated that the proportion of sales from small and midsized producers' products had increased over the life of their food hub.

Both years in operation ($r_s = .30, p < .01$) and revenue ($r_s = .36, p < .01$) were significantly correlated to the amount of a food hub's producers that were small or midsized. Food hubs that had been in operation for 2 years or less and were earning an annual revenue of \$100,000 or less were the most likely to have indicated that all of their products were purchased or procured from small and midsize producers. Including farmer support language in a food hub's mission statement did not significantly correlate to the percentage of a food hub's producers that were small or midsized. For more information, see the section on mission statement analysis beginning on page 30.

FIGURE 9: PERCENT OF FOOD HUB PRODUCERS THAT ARE SMALL AND MIDSIZED (N=79)



¹² The number of producers/suppliers for each hub that had been in operations for less than 10 years was back-calculated using the percentage of producers a food hub indicated had been in operations for that amount of time and the total number of producers a food hub indicated it purchased or procured from.

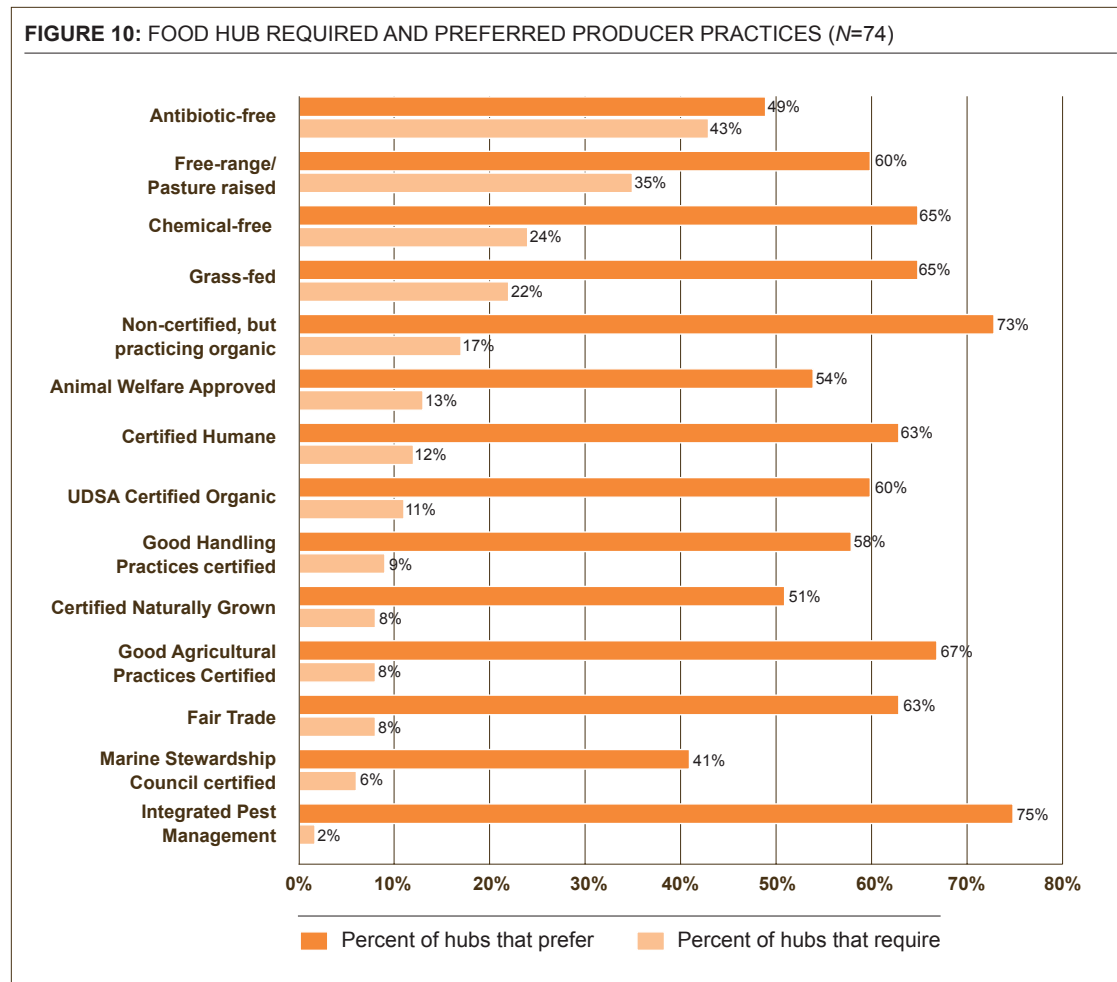
PRODUCER PRACTICES

Food hubs were provided with a list of producer certifications and practices and asked if they required them, preferred them or if they had no preference (see Figure 10). On average, the hubs most often cited “no preference” to Marine Stewardship Council Certified, Certified Naturally Grown, Good Handling Practices Certified and Animal Welfare Approved certifications/practices.

None of the practices listed in Figure 10 were required by more than half of food hubs, although antibiotic-free, free range/pasture raised, chemical-free and grass-fed were practices that were required the most, by between 43% and 22% of hubs. However, more than half of all food hubs indicated that they preferred all but two of the listed practices (Marine Stewardship Council certified and antibiotic-

free), with three-quarters of hubs indicating that they preferred their producers to be noncertified but practicing organic and/or using integrated pest management techniques.

Several food hubs also noted that their close relationships with producers and their localized operating area neutralized the need for outside certifications of producers’ products and practices. “These relationships supplant the need for certifications,” one hub wrote. “Although we do not require any of the outside certifications listed above—or any others, for that matter—we do require that our vendors be local enough to be at the hub on a regular basis to talk with customers about their practices,” wrote another.



CHANGES IN PRODUCER PRACTICES

Each food hub was provided with a list of options and asked if all, most, some, few or none of its producers had changed in specific operational practices since working with the food hub. The practices and results are displayed in Figure 11. Extending the growing season and diversifying product offerings were the top two ways in which food hubs indicated that their producers had changed their enterprises. In detail, 37% of hubs ($N=29$) reported that all or most of their producers had extended their growing season, and 31% of food hubs ($N=24$) reported that all or most of their producers had diversified their product offerings. Twenty-seven percent of hubs ($N=21$) reported that all or most of their producers had increased their financial literacy and/or business acumen, 25% ($N=19$) reported

all or most had hired additional people, 24% ($N=19$) reported all or most had adopted more sustainable production methods and 23% ($N=18$) reported that all or most had increased their acreage since beginning to work with their food hub.

Food hubs indicated that the fewest number of their producers had changed by becoming Good Agricultural Practices (GAP) certified. Only one hub reported that all of their producers had become GAP certified, and six food hubs reported that most had become GAP certified since working with their hub. Nearly a quarter of hubs reported that none of their producers had become GAP certified as a result of working with their hub or that they were unsure if producers had become certified or not.¹³

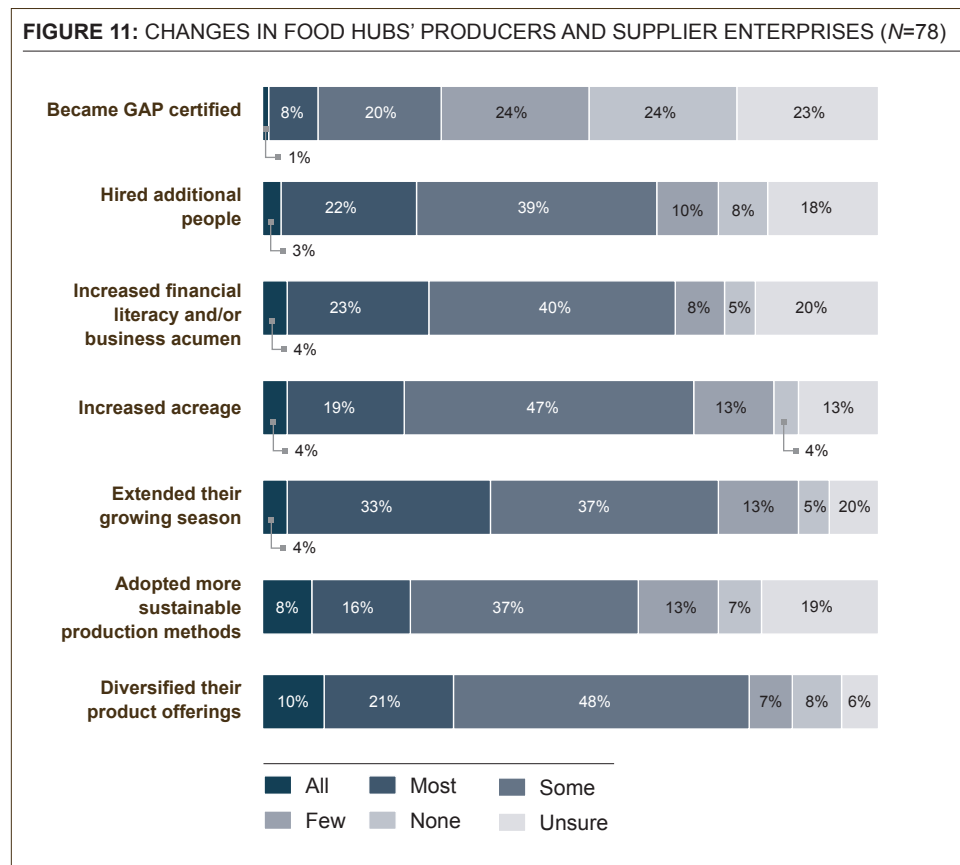
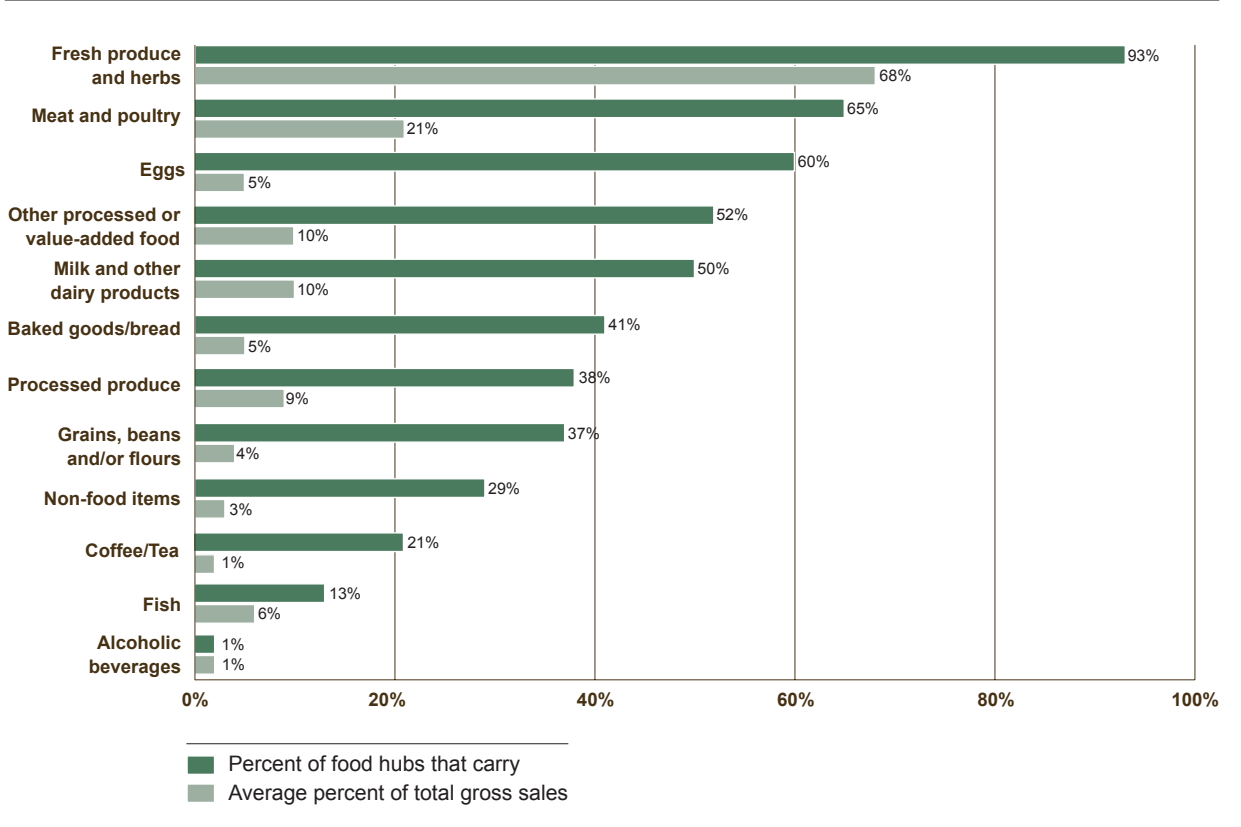


FIGURE 12: FOOD HUB PRODUCTS BY AVERAGE NUMBER OF HUBS THAT CARRY THEM AND BY THEIR PERCENTAGE OF THE FOOD HUB'S TOTAL GROSS SALES (N=81)

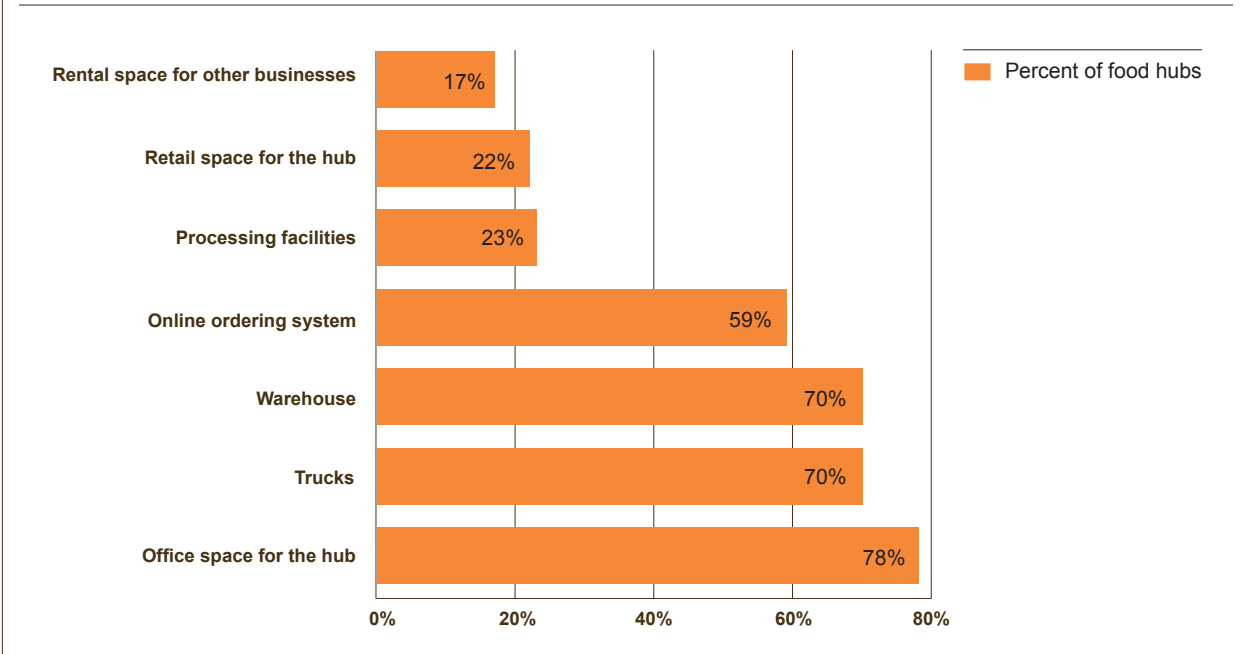


TYPES OF PRODUCTS SOLD

Food hubs worked with a wide range of products, with the average hub carrying items from five different product categories, outlined in Figure 12. The size of a food hub's annual revenue was not significantly correlated to the breadth of product types the hub carried. This is most likely due to a majority of food hubs focusing on only fresh produce and herbs. Twenty-two hubs (of N=81) concentrated their sales almost solely (95% or more) on fresh produce and herbs, while three hubs focused their sales almost solely on meat and poultry. Figure 12 shows that while many other food hubs carried products beyond fresh produce and meat and poultry, these products generally constituted a minimal amount of that food hub's overall sales compared to produce and meat.

¹³ The survey was conducted before rules were finalized to implement the FDA Food Safety Modernization Act. Under the Act, increased food safety practices will be required of food hubs and their producers. As such, there will likely be changes in the levels of GAP certification observed from future surveys after food hubs and their producers are required to come into compliance with the rules.

FIGURE 13: TYPES OF INFRASTRUCTURE USED BY FOOD HUBS (N=75)



INFRASTRUCTURE

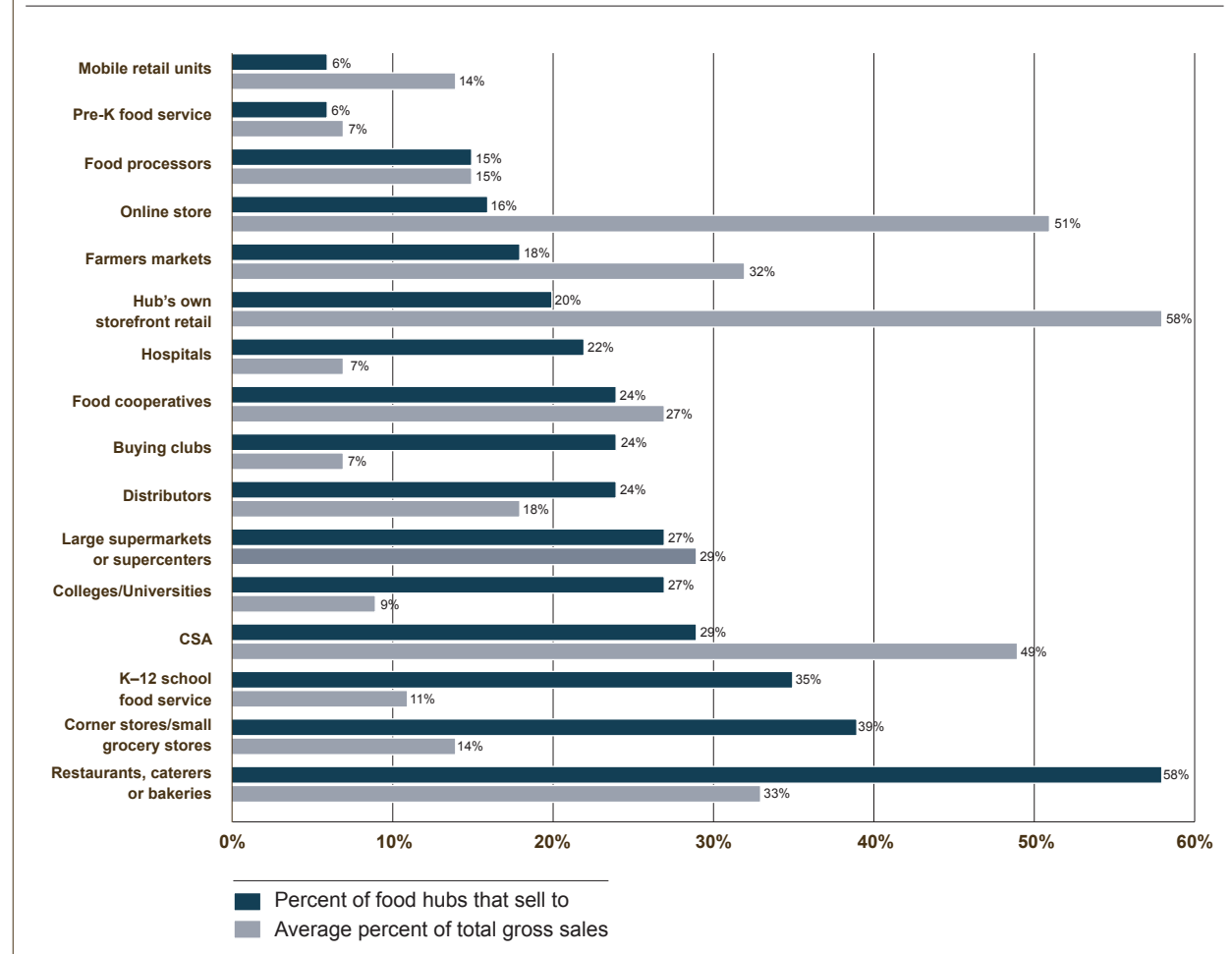
Seventy-five food hubs indicated that they utilized (either owned, rented or leased) some sort of physical space or assets, such as a warehouse facility, office space or trucks (see Figure 13 for the various types of infrastructure used by food hubs). Most food hubs made use of office space (78%), while rental spaces for other businesses were used by food hubs the least (17%).

FOOD HUB CUSTOMERS

Food hubs' three most commonly reported customer types were restaurants, small grocery stores and kindergarten through 12th grade school food service. Food processors, pre-K food service and mobile retail units were the three least common. Community-supported agriculture (CSA), the food hub's own retail and/or online stores all accounted for around half of the sales of the food hubs that utilized them. In other words, food hubs that utilize these three outlets for their products seem to rely on them for a larger portion of their sales than do other food hubs that work with other types of customers.

There was no correlation between the revenue size of a food hub and the individual types of customers they worked with. However, the revenue size of a food hub was significantly correlated with number of customer types that food hub worked with ($r_s = .41$, $p < .01$). Food hubs with smaller overall revenues (less than \$500,000 annually) were more likely to only work with one or two types of customers than those with larger revenues, which tended to have a more diverse customer base.

FIGURE 14: FOOD HUB CUSTOMERS BY AVERAGE NUMBER OF HUBS SELLING TO THEM AND BY AVERAGE PERCENT OF TOTAL HUB SALES (N=82)





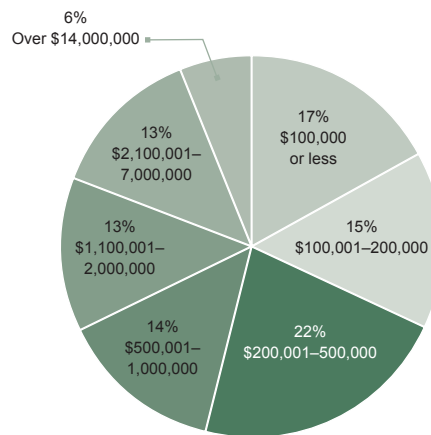
➤ FINDINGS: FINANCES

Financial solvency is of utmost importance to the continuing operations of any business, and food hubs are no exception. This section reveals findings regarding revenue, sales, reliance on outside funding and other factors that are key to a food hub’s financial viability.

REVENUE AND SALES

For many food hubs, revenue is representative of a mix of income from food hub operations and outside funding sources. The range of revenue reported for the 2012 calendar year varied widely among the food hubs surveyed, with \$450,000 as the median amount. Revenue was significantly correlated with years in operation ($r_s = .42, p < .01$), with older hubs tending to have larger total revenue than younger hubs. To illustrate, 8 of the 12 hubs in operation for over 20 years had revenue of more than \$2 million for 2012, and 10 of the 33 hubs in operation for 0–2 years had revenue of \$100,000 or less.

FIGURE 15: FOOD HUB REVENUE FOR 2012 CALENDAR YEAR (N=104)



Average: \$3,284,632
Median: \$450,000
Range: \$1,500 to \$75 million

A business efficiency ratio was calculated for food hubs that were able to enumerate their revenue and all operating expenses. An efficiency ratio measures the proportion that total expenses are of total revenue. Operations with an efficiency ratio less than 1.00 have revenues that exceed their expenses (in other words, are profitable), while operations with an efficiency ratio greater than 1.00 have expenses that exceed their revenues. On average, the business efficiency ratio was 1.07 and the median was 1.00 for all hubs. In general, cooperatives and food hubs that had been in operation for more than 10 years had the lowest efficiency ratios and therefore brought in the most revenue in relation to their expenses. See Tables 4 and 5 for more details.

SALES

As with revenue, the range of food hubs' total gross sales for 2012 varied widely, with \$324,500 the median amount. The average sales amount for all food hubs was \$3,747,044, and the range was \$3,206 to \$75 million. Most food hubs were on the small side of the sales spectrum, with more than half of food hubs moving \$500,000 or less in 2012.

For most food hubs (69%), total gross sales represented between 90–100% of the hub's annual revenue. Nine food hubs had sales that exceeded their reported revenue by amounts ranging from 2% to 8,400%. These vast differences could be attributed to some hubs not taking ownership of food products and, therefore, not accounting for sales in their revenue, although the survey did not directly ask about this. The 26 remaining hubs had sales that represented between less than 1% and 89% of their revenue, with an average of 60% and a median of 74%.

TABLE 4: BUSINESS EFFICIENCY RATIOS BY FOOD HUB TYPE¹⁴

	N	Average	Median	Range
All hubs	75	1.09	1.00	0.04–6.79
Nonprofits	29	1.20	1.00	0.04–6.79
Cooperatives	12	0.94	1.00	0.11–1.85
For-profits	34	1.06	1.00	0.33–3.53

TABLE 5: BUSINESS EFFICIENCY RATIOS BY YEARS IN OPERATION

	N	Average	Median	Range
All hubs	77	1.09	1.00	0.04–6.79
0–2 years	24	1.14	1.00	0.11–4.21
3–5 years	24	1.03	1.00	0.04–3.53
6–10 years	8	1.68	1.05	0.29–6.79
11–15 years	7	0.89	1.00	0.09–1.10
16–20 years	4	0.82	0.96	0.33–1.01
Over 20 years	10	0.74	0.94	0.17–1.00

¹⁴ Neither publicly owned nor "other" types of food hubs are displayed because there were less than three hubs in each category available for analysis.

FIGURE 16: FOOD HUB TOTAL GROSS SALES FOR 2012 CALENDAR YEAR (N=86)

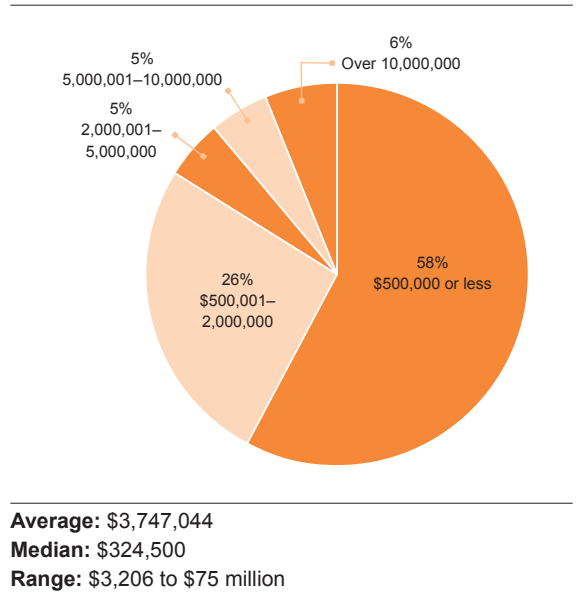
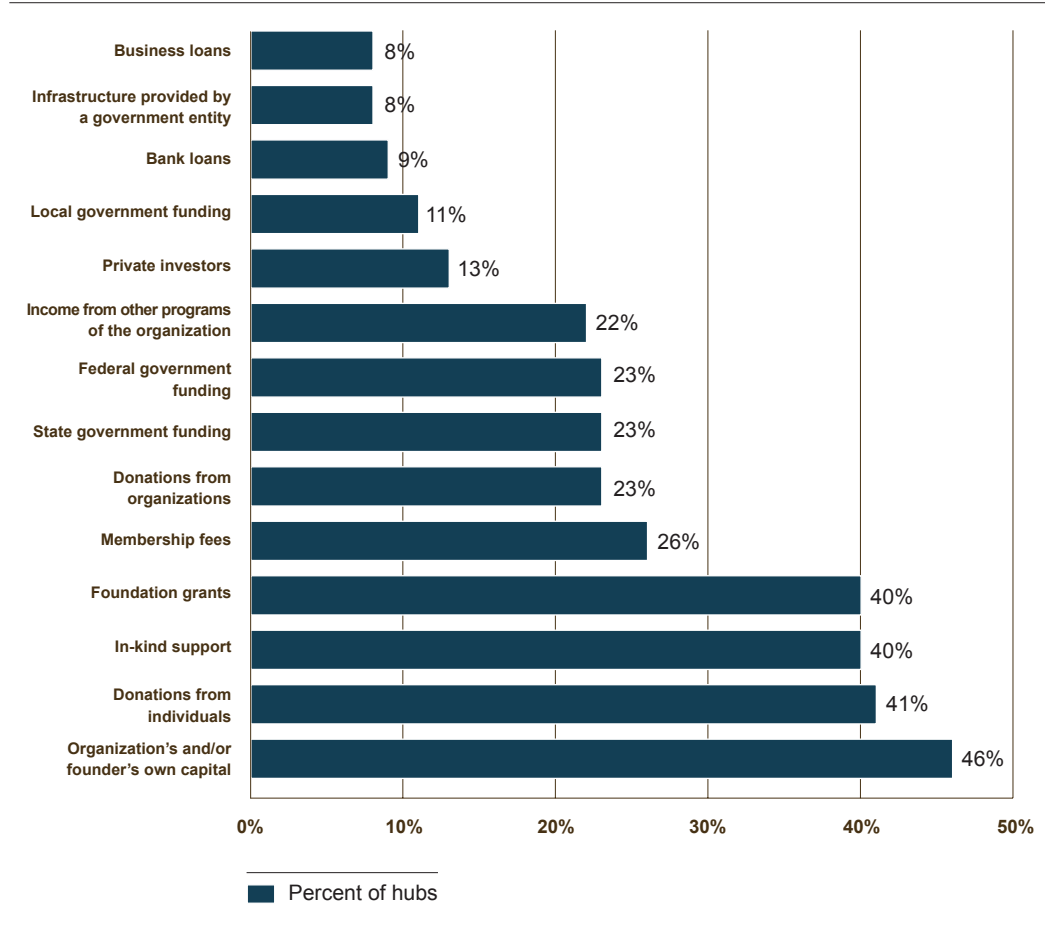


FIGURE 17: PRIMARY REVENUE SOURCES TO BEGIN FOOD HUB OPERATIONS (N=91)



REVENUE SOURCES TO BEGIN OPERATIONS

Food hubs were asked to identify the different types of capital that they used to begin their operations and the revenue streams their hub used during the 2012 calendar year. Capital from the food hubs' parent organizations and/or founders was the most common source of revenue used to begin operations, with 46% of hubs indicating that they used this source. Loans, revenue from private investors and infrastructure provided by the

government were the three least cited sources of revenue, each used by 15 or fewer food hubs. The food hubs were not asked to provide the amount of funding from each source to begin operations, so while relatively few hubs may have used certain types of revenue streams, there is a possibility that these streams' contribution to starting those food hubs may have been relatively large.

REVENUE SOURCES FOR 2012

Current revenue sources offered in the survey belonged to one of two categories: “inside sources,” which included funding streams that stemmed from activities of the hubs and debt equity such as bank loans, and “outside sources,” which included funding streams stemming from grants or donations from individuals or groups outside of the food hub. Income from services and/or operations provided by the food hub represented the vast majority of revenue for most food hubs, representing on average 86% of total revenue sources. No other source accounted for more than 5% of total revenue sources.

Inside sources:

- Income from services and/or operations provided by the food hub
- Income from renting space to other businesses
- Bank loans
- Income from any membership fees
- Income from other programs of the food hub's organization
- Private investors

Outside sources:

- Federal state and/or local government funding
- Foundation grants
- In-kind support
- Donations
- Infrastructure provided by a government entity

For all food hubs ($N=86$), inside funding represented an average of 92% of average food hub revenues. Sixty-six percent of food hubs (57) reported not receiving any funding from outside sources. Food hubs with mixed inside and outside revenue sources (29 hubs) reported an average of 77% of their funding coming from inside sources. Only 6 of the 87 food hubs had more than half of their funding stemming from outside sources. This is surprising, considering that 35% of responding food hubs were nonprofits.

FIGURE 18: AVERAGE OF INDIVIDUAL FOOD HUB REVENUE SOURCES AS A PERCENT OF THEIR TOTAL REVENUE ($N=100$)

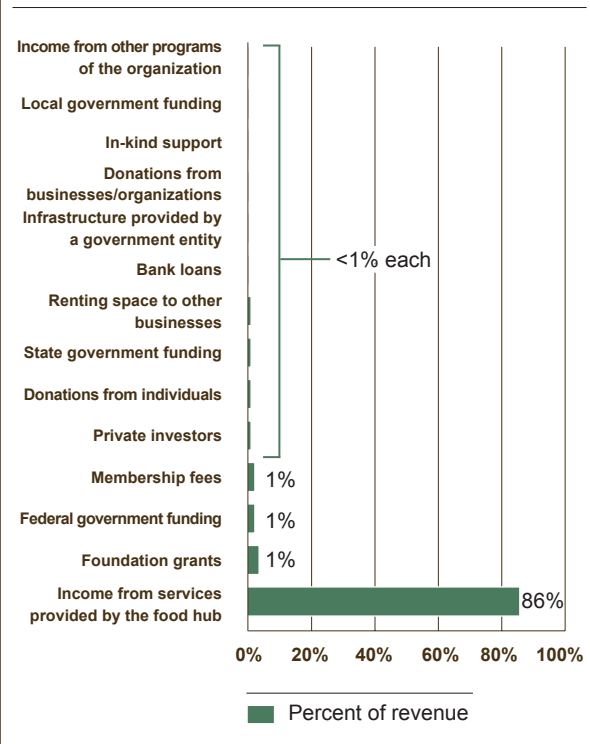


FIGURE 19: FOOD HUB RELIANCE ON GRANT FUNDING (N=88)



PERCEIVED RELIANCE ON OUTSIDE FUNDING

Food hubs were given three choices to indicate how dependent they were on grant funding from public and/or private sources (outside sources) to carry out core food hub functions (aggregation, distribution and marketing of local food products). The three answer choices were 1) highly dependent: we could not carry out these core functions without considerable grant funding; 2) somewhat dependent: we could carry out these core functions without grant funding but would need to scale back certain aspects of our operation (e.g., not working with certain producers or not serving a particular market/customer base); 3) not at all dependent: we do not require any grant funding to carry out these core functions. The majority of hubs (51%) indicated that they were not at all dependent on outside funding.

These results corroborate the finding that 66% of food hubs reported not receiving any funding from outside sources as well as the finding that average and median business efficiency ratios for all food hubs is close to 1.00. Further confirming this measure, the perceived dependence on grant funding was substantially correlated ($r_s = .63, p < .01$) with the actual percent of inside funding, where hubs with a relatively smaller proportion of funding from inside sources are more likely to have indicated that they were somewhat or highly dependent on grant funding to carry out core food hub functions.

NONSIGNIFICANT RELATIONSHIPS TO RELIANCE ON GRANTS

No significant relationship between reliance on outside funding was found for a number of variables, including location, total sales amount, types of products sold, number of full-time employees, number of producers, percentage of beginning producers, percentage of small and mid-sized producers and percent of sales from products of small and mid-sized producers. Types of physical infrastructure used, location of customers, requirements for particular growing practices and certifications and customer types also showed no significant relationship to a food hub’s reliance on outside funding.

Statistically, the age group of a food hub was not significantly related to its perceived reliance on outside funding. However, it is interesting to note that among all age groups, more of the food hubs in operation for 6–10 years and 11–15 years indicated they were somewhat dependent on outside funding than indicated they were not at all dependent. See Table 6 for more details.

TABLE 6: FOOD HUB RELIANCE ON OUTSIDE FUNDING BY YEARS IN OPERATION

	N	Highly dependent	Somewhat dependent	Not at all dependent
		Number of hubs (%)		
0-2 Years	27	5 (19%)	10 (37%)	12 (44%)
3-5 Years	26	6 (23%)	5 (19%)	15 (58%)
6-10 Years	11	2 (18%)	7 (64%)	2 (18%)
11-15 Years	9	1 (11%)	5 (56%)	3 (33%)
16-20 Years	4	0	0	4 (100%)
Over 20 Years	10	1 (10%)	1 (10%)	8 (80%)
Total	87	15 (17%)	28 (32%)	44 (51%)

SIGNIFICANT RELATIONSHIPS TO RELIANCE ON GRANTS

Operating structure was, unsurprisingly, significantly related to hubs' dependence on outside funding ($r_s = .45, p < .01$), with nonprofit food hubs much more likely to have indicated they were highly reliant on outside funding (38% of nonprofits) and other types of food hubs more likely to have indicated that they were not at all reliant on outside funding (64% of cooperative hubs, 69% of for-profit hubs and 100% of publicly owned hubs.)

The number of producers a food hub had was slightly correlated with a hub's reliance on outside funding ($r_s = .20, p < .10$). Food hubs that had larger numbers of producers were more likely to have indicated that they were not at all dependent on outside funding.

Four of the value themes identified in food hub mission statements were slightly correlated to a hub's dependence on grant funding.¹⁵ Food hubs that had language related to the environment in their mission statement were more likely than hubs in the whole group to have indicated that they were not at all reliant on grant funding and, further, no food hubs in this environment group indicated that they were highly dependent on outside funding. On the other hand, food hubs with language in their mission statements related to consumer awareness, justice and/or equity or reshaping the food system were more likely to have indicated that they were highly dependent on grant funding than the larger group. See Figure 20 for more details.

¹⁵The four value themes were the environment ($r_s = .19, p < .10$), increasing consumer awareness ($r_s = -.19, p < .10$), justice and/or equity ($r_s = -.20, p < .10$) and reshaping the food system ($r_s = -.21, p < .10$).

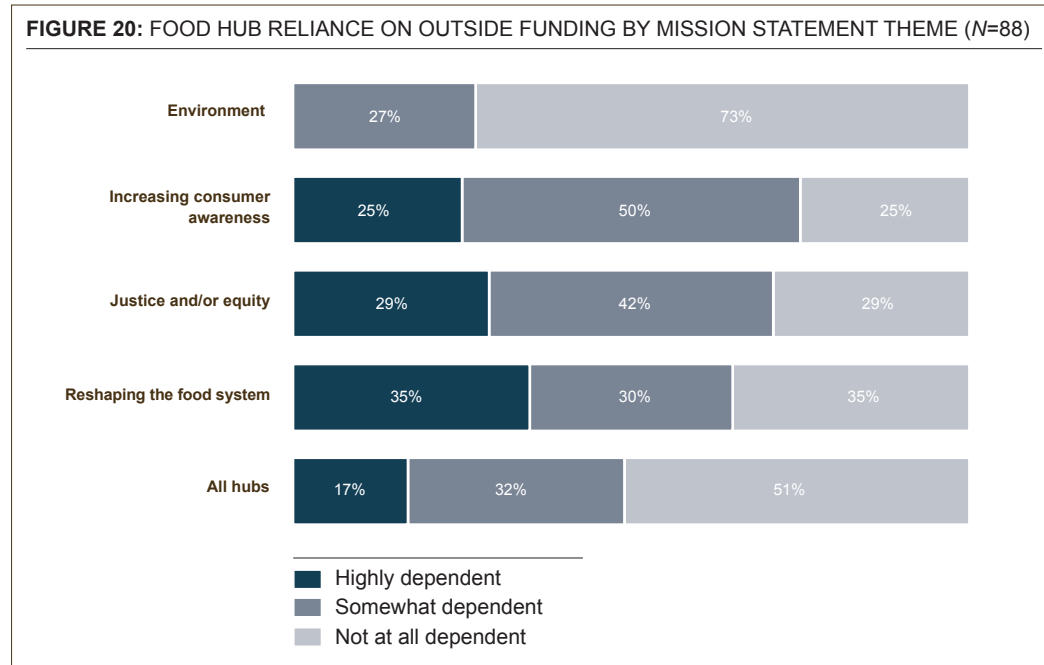
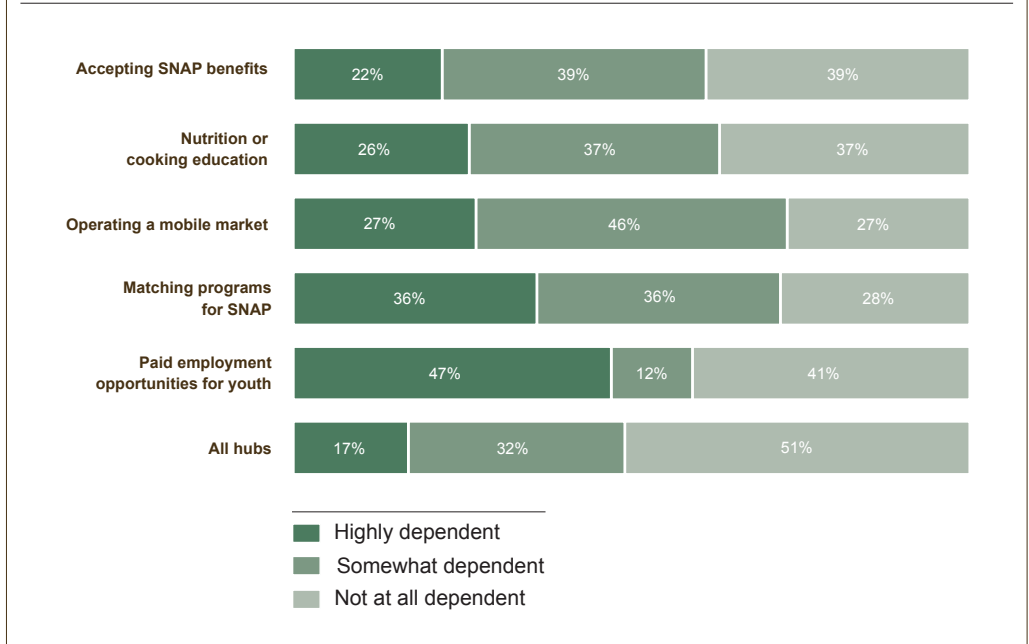


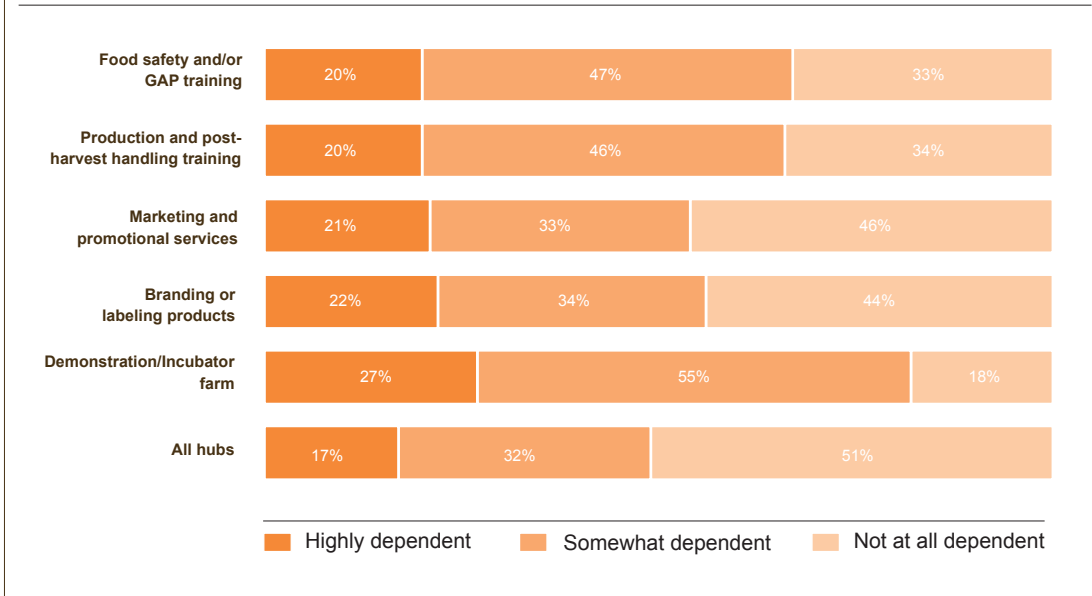
FIGURE 21: FOOD HUB RELIANCE ON OUTSIDE FUNDING BY COMMUNITY ACTIVITY (N=88)



Five community-related activities (out of 10) had slightly significant relationships with reliance on grant funding.¹⁶ Hubs undertaking any one of these five activities were more likely to have indicated that they were also highly dependent on outside funding than those in the larger group. See Figure 21 for more details.

¹⁶ The five community-related activities with significant relationships to reliance on grant funding were paid employment opportunities for youth ($r_s = -.22, p < .05$), accepting SNAP benefits ($r_s = -.19, p < .10$), matching programs for SNAP ($r_s = -.22, p < .10$), nutrition or cooking education ($r_s = -.28, p < .05$) and operating a mobile market ($r_s = -.18, p < .10$). The other five with no significant relationships were accepting WIC or FMNP benefits, offering transportation services for consumers to access the hub, offering subsidized farm shares, providing education about community and food systems issues and food donation to local food pantries/banks.

FIGURE 22: FOOD HUB RELIANCE ON OUTSIDE FUNDING BY PRODUCER RELATED ACTIVITY (N=88)

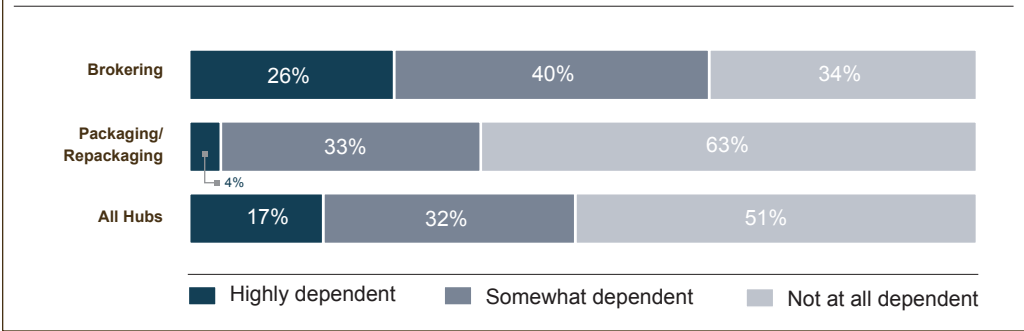


Five producer-related activities (out of 9) had slightly significant relationships with reliance on grant funding.¹⁷ Hubs undertaking each of these five activities were very slightly more likely to have indicated that they were also highly dependent on outside funding than hubs in the larger group. See Figure 22 for more details.

¹⁷The five producer-related activities with a significant relationship to reliance on grant funding were food safety and/or GAP training ($r_s = -.26, p < .05$), production and post-harvest handling training ($r_s = -.25, p < .05$), marketing and promotional services for producers ($r_s = -.22, p < .05$), branding or labeling products to indicate origin of product or other attributes ($r_s = -.19, p < .10$) and operating a demonstration or incubator farm ($r_s = -.24, p < .05$). The four activities with no significant relationship to reliance on grant funding were actively helping producers find new markets, offering business management services or guidance, offering liability insurance to producers and offering transportation services for producers.

Only two of 13 food hub operational activities had slightly significant relationships with reliance on grant funding.¹⁸ Food hubs that participated in packaging or repackaging of products were far less likely to have indicated they were highly dependent on grant funding. On the other hand, food hubs that offered brokering services were much more likely to have indicated that they were highly dependent on grant funding. See Figure 23.

FIGURE 23: FOOD HUB RELIANCE ON OUTSIDE FUNDING BY OPERATIONAL ACTIVITY (N=88)

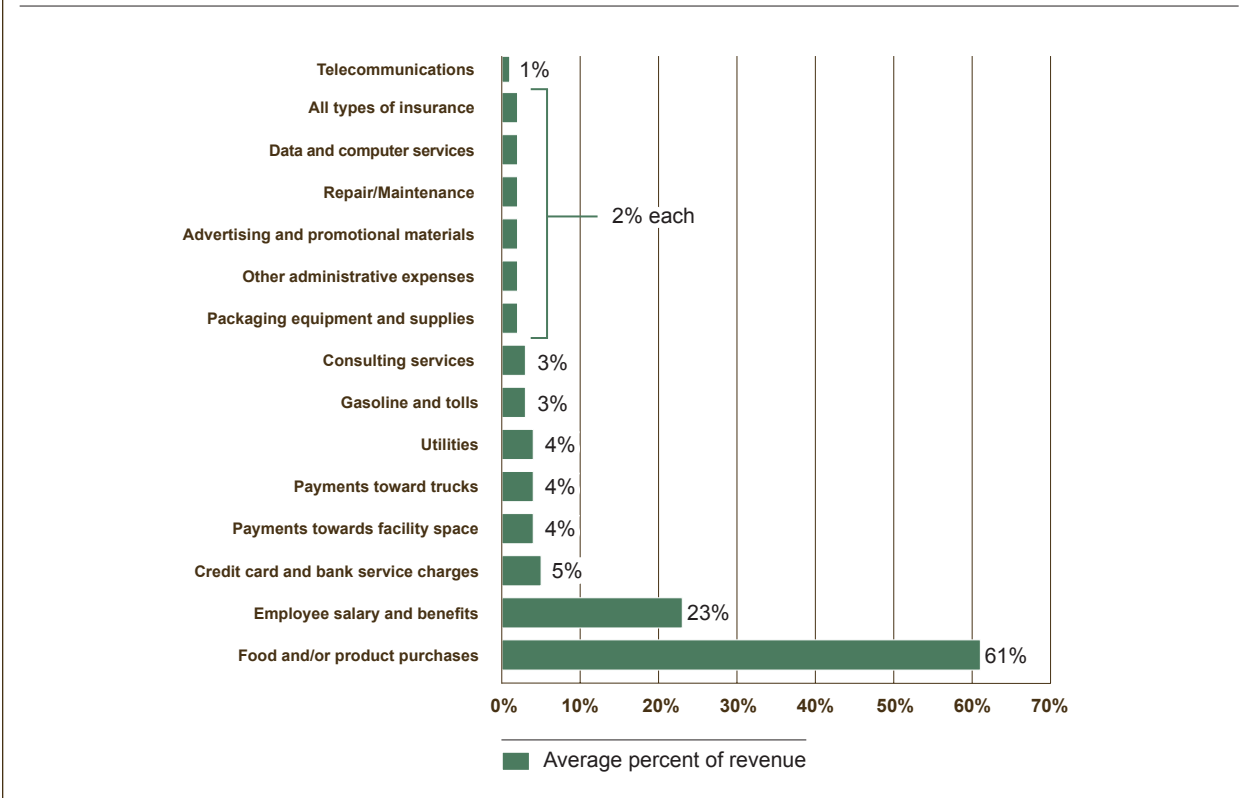


EXPENSES

Food and other product purchases from producers was most food hubs’ major expense. These purchases represented, on average, 61% of the hub’s total revenue. Salaries occupied the second largest expense for most hubs, at a 23% average of total revenue. All other expense categories averaged 5% or less of food hub revenue.

¹⁸ The two operation-related activities that were significantly related to reliance on grants were packaging/repackaging ($r_s = .21, p < .10$) and offering brokering services ($r_s = -.28, p < .05$). The other 11 operation-related activities that were not significantly related to reliance on grants were aggregation, production such as operating a farm or ranch, distribution services, selling wholesale to consumers, selling retail to consumers, operating a shared-use kitchen, product storage, canning, freezing, cutting and other processing.

FIGURE 24: FOOD HUB EXPENSES AS A PERCENT OF REVENUE (N=78)





➤ FINDINGS: VALUES

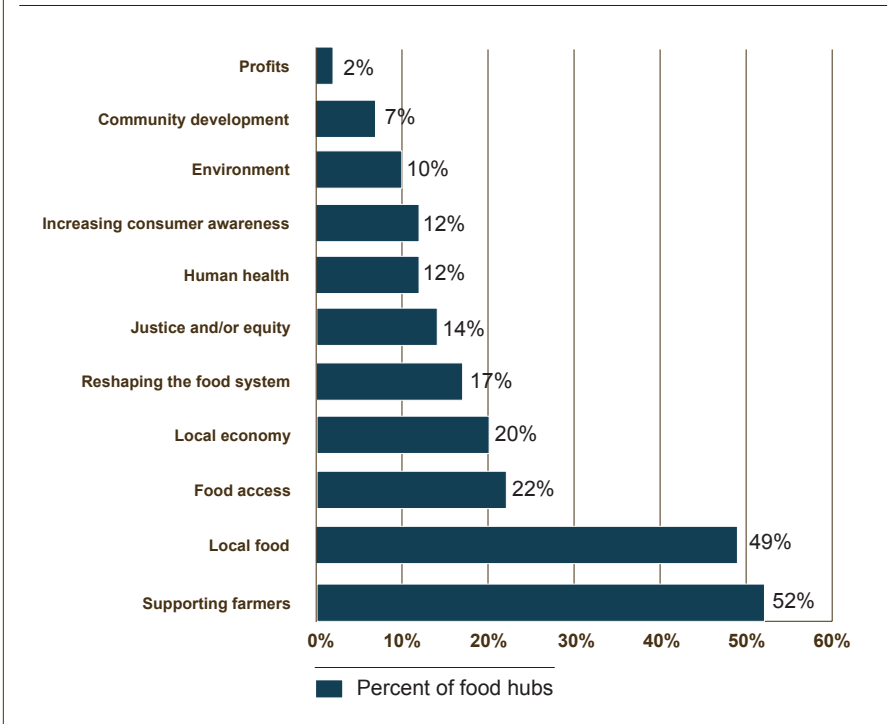
The set of values that each individual food hub embraces shapes the hub's business structure and the services the hub offers. These values may also affect how food hubs define success. Importantly, these values define the relationships a food hub has with its producers, its customers and the community within which it operates. The following section is an overview of survey findings regarding these values.

MISSION STATEMENT ANALYSIS

Mission statements are an obvious first choice to explore the operational values of food hubs. These mission statements should give some insight into the purpose and guiding principles that undergird each food hub's goals. Mission statement analysis should be taken with a grain of salt, however. It is almost certain that the values reflected in a food hub's mission statement language are not inclusive of all the values and aspirations of the leadership of the food hub. Furthermore, it is likely that as food hubs grow, their values may also change due to circumstance and, thus, mission analysis should not be considered to reflect concrete characteristics of food hubs. However, mission statement analysis can be very useful when used as a snapshot of the issues food hubs prioritized at the time of the survey. It is within this context that the mission statements were examined.

To identify these priority issues, the mission statement language for each food hub was coded using qualitative data analysis software to see if it included any of the following nine themes: supporting farmers, local food, food access, local economy, justice and/or equity, consumer awareness, human health, environment and community development. Of these themes, supporting farmers and local food were by far the most common themes found in food hubs' mission statements.

FIGURE 25: VALUE THEMES IN FOOD HUB MISSION STATEMENTS (N=107)



The nine chosen themes were then compared to food hub operating structures and age groups. The results can be seen in Tables 7 and 8. Interestingly, no cooperatives had language about food access in their mission statements; however, of all types of operating structures, cooperatives had the highest amount of language regarding consumer awareness and the environment.

Except for the theme of supporting farmers, few of the hubs in operation for over 20 years included mission statement language that fit the nine chosen themes. This could be because the term “food hub” came into common parlance sometime in the last five years. Many smaller food aggregating and distributing businesses that had been in operation for several decades before the idea of a “food hub” came into existence are included in this “over 20 years” age group. These businesses fit the food hub definition (aggregation and distribution of food from producers within their region) but were not necessarily founded with goals similar to those of younger food hubs, such as increasing food access or human health.

TABLE 7: VALUE THEMES IN FOOD HUB MISSION STATEMENTS BY OPERATING STRUCTURE

	Nonprofit (N=37)	For-profit (N=50)	Co-op (N=14)	Publicly owned/Other (N=6)
	Percent of food hubs			
Supporting farmers	62%	42%	57%	67%
Local food	46%	50%	50%	50%
Food access	27%	26%	0%	17%
Local economy	24%	16%	29%	0%
Justice/equity	19%	14%	7%	0%
Consumer awareness	16%	6%	29%	17%
Human health	19%	10%	7%	0%
Environment	8%	8%	29%	0%
Community development	11%	2%	14%	0%

TABLE 8: VALUE THEMES IN FOOD HUB MISSION STATEMENTS BY AGE GROUP

	2 years or less (N=34)	3-5 years (N=32)	6-20 years (N=28)	Over 20 years (N=12)
	Percent of food hubs			
Supporting farmers	41%	47%	68%	58%
Local food	59%	53%	43%	17%
Food access	24%	22%	25%	17%
Local economy	12%	22%	29%	17%
Justice/equity	12%	16%	18%	8%
Consumer awareness	9%	16%	18%	0%
Human health	6%	16%	21%	0%
Environment	6%	9%	18%	8%
Community development	3%	6%	11%	8%

MISSION ANALYSIS: ANOTHER VIEW

As an alternative to mission statement analysis, food hubs were asked the extent to which their mission was related to improving human health in their community or region. Three choices were given: not related, somewhat related and strongly related. All 107 hubs responded, with 60% indicating that their mission was strongly related to improving human health and 36% indicating that it was somewhat related. These results contrast with the mission statement analysis, which found that only 13 of the 107 mission statements contained specific language related to human health.

One hundred two food hubs gave written examples showing how the hub was engaged in improving human health. However, many of these responses

simply indicated that the food hub was providing healthy food to its customers. This, while admirable, is the function of most produce-focused food hubs. A number of hubs did offer examples other than providing healthy food, though. For example, some hubs wrote about nutrition and education classes they offered and others about their commitment to working in “food deserts” and/or underserved areas. These broad interpretations illustrate the difficulty in teasing out meaning from the stated values of food hubs. These values, whether explicit or not, may not represent the issues a food hub prioritizes, nor will they always account for the types of services that a food hub offers outside of food aggregation and distribution.

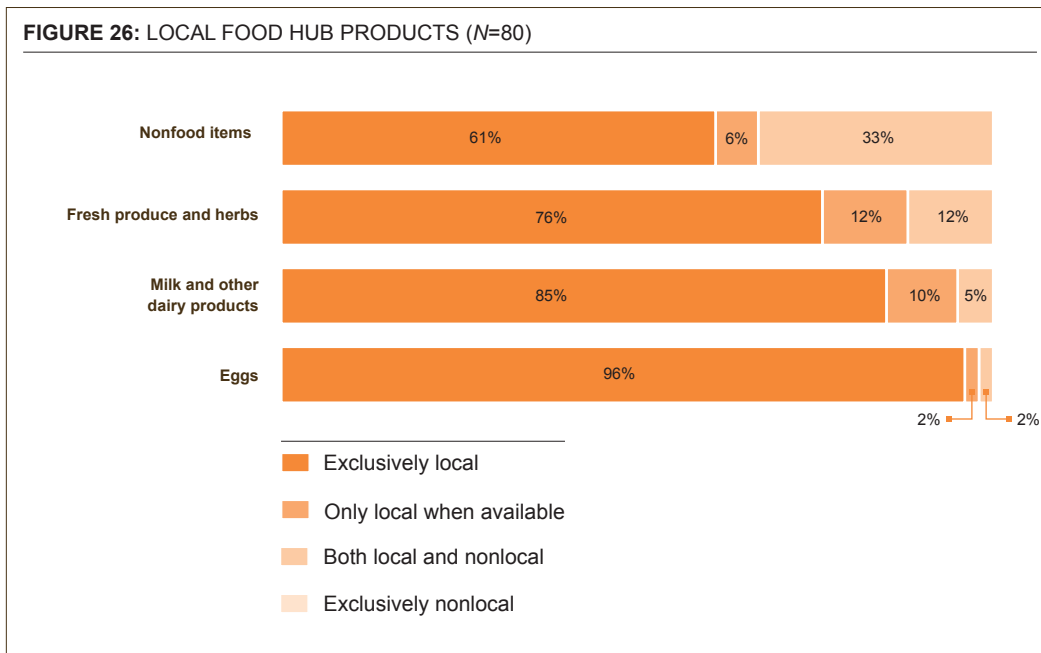
LOCAL AND REGIONAL ASPECTS: DIFFERENT DEFINITIONS

The food hubs were asked to volunteer any specific definitions they had for local or regional. Twenty-six food hubs identified a specific radius in miles for what they considered local or regional. These radii ranged from 30 to 250 miles, with an average of 130 miles and a median of 110 miles. Forty-one other food hubs defined local or regional more qualitatively. Eighteen hubs answered that local included multiple states or a region. Fourteen hubs defined local products as originating within their state. Eight hubs defined local as within a multi-county or watershed area. One limited the definition of local to the hub's home county, and another reported that it let its customers define local or regional.

LOCAL AND REGIONAL ASPECTS: PRODUCERS, CUSTOMERS, PRODUCTS AND EXPENDITURES

Sixty-two (of 76) food hubs indicated that they obtained all of their products from producers within 400 miles of the hub. The food hub's number of years in operation was significantly correlated with the percent of producers that were local ($r_s = .33, p < .01$), with newer hubs being more likely to source all of their products from producers within 400 miles of the hub. To illustrate, 42 of the 62 food hubs that indicated all of their producers were within this range had been in operation for 5 years or less. Further, annual revenue was also significantly correlated with the percent of producers that were local ($r_s = -.37, p < .05$), with smaller hubs more likely than larger hubs to utilize product from producers within 400 miles of the hub.

FIGURE 26: LOCAL FOOD HUB PRODUCTS (N=80)



A food hub's reliance on grant funding was also slightly, but significantly, correlated with the percent of producers that were local ($r_s = -.25, p < .05$). All six food hubs indicating that fewer than 90% of their producers were located within 400 miles of the hub also indicated that they were "not at all" dependent on grant funding. Also, all but one of the 13 hubs indicating that they were "highly dependent" on grant funding also indicated that all of their producers were located within 400 miles of the hub.

Again using the 400-mile radius definition of local, the survey asked if the products food hubs carried were exclusively local, only local when available, both local and nonlocal or exclusively nonlocal.¹⁹ Figure 26 shows food product categories by the average reported level of "localness." No food hubs that carried fish responded to this question. More than 75% of food hubs indicated that they carried exclusively local versions of fresh produce and herbs, milk and other dairy products and eggs.

Regarding the localness of food hub customers, 44 hubs (53% of $N=83$) responded that the majority of their customers (at least 75%) lived less than 50

miles away from the food hub. Twenty-one percent of hubs responded that the majority of their customers lived within 100 miles of the food hubs, and no more than 10% of hubs responded affirmatively to any of the other distance categories.

Food hub expenditures were also analyzed for the amount of each expenditure made in the same state as the food hub. The averaged results are displayed in Figure 28. The ranges for each expense category were large, with each spanning from less than 5% to 100%. As Figure 28 shows, however, no expenditure averaged less than 50% spent in-state. This information may be useful for those interested in the economic impact that food hubs have on the state in which they operate.

¹⁹Any processed products were eliminated in the analysis on this question. The results for these products were potentially not valid because the question did not delineate whether local meant that all ingredients of the products were produced within 400 miles of the hub or that only the last step in processing occurred within 400 miles. These processed products included coffee and tea, flours, any processed produce, other processed or value-added food products, baked goods, meat and poultry and alcoholic beverages.

FIGURE 27: LOCATION OF THE MAJORITY OF FOOD HUB CUSTOMERS (N=83)

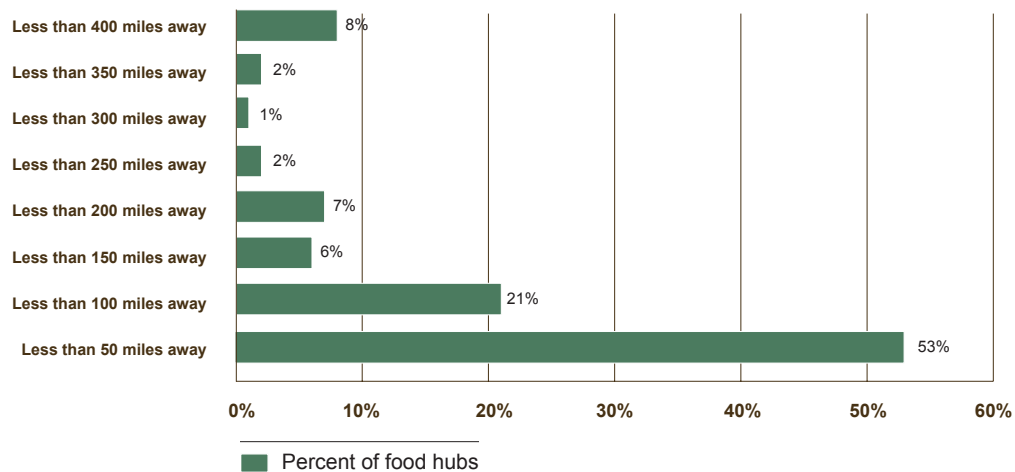
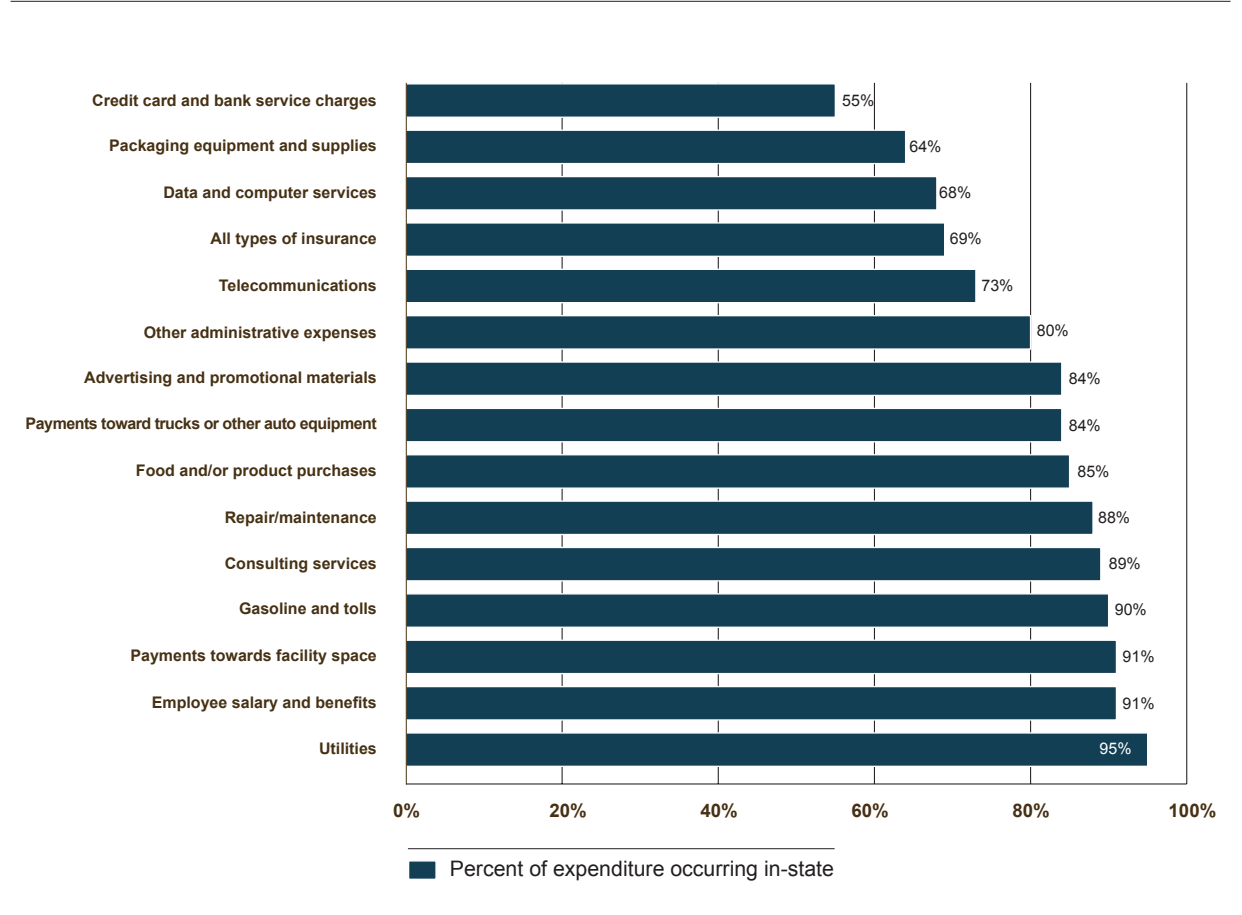


FIGURE 28: PERCENT OF FOOD HUBS EXPENDITURES FROM WITHIN THE STATE OF THE FOOD HUB (N=77)





➤ FINDINGS: SERVICES AND ACTIVITIES

Food hubs vary greatly in the scope of services and activities that they provide to their customers, producers and communities. The survey did not go as far as asking why the food hubs offered some services rather than others, however, and so the findings in this section only represent a snapshot of the activities and services food hubs are currently offering.

OPERATIONAL SERVICES AND ACTIVITIES

The majority of food hubs offered aggregation and distribution services, and more than half of all food hubs indicated that they sold wholesale and/or retail to consumers. On the other hand, very few food hubs offered any types of food processing, with less than 20% of hubs offering canning, cutting or freezing services. More than half of the food hubs indicated that they offered product storage.

Seven food hubs indicated that they did not perform aggregation or distribution—two functions that many would consider to be primary to a food hub. However, two of these seven food hubs indicated that they performed brokering services between

producers and customers, and the other five indicated that they sold retail and not wholesale to customers. By not aggregating, distributing or offering brokering services, these five hubs stretch the idea of what many consider a food hub to be. However, the language “actively manages” and “marketing” in the Food Hub Collaboration’s definition of a food hub may cover the food chain coordination activities these five operations are undertaking that are outside of traditional aggregating, distributing or brokering services. Because the definition of a food hub is ever-evolving, we opted to include these five hubs in our analysis.

FIGURE 29: OPERATIONAL SERVICES OFFERED BY FOOD HUBS (N=83)

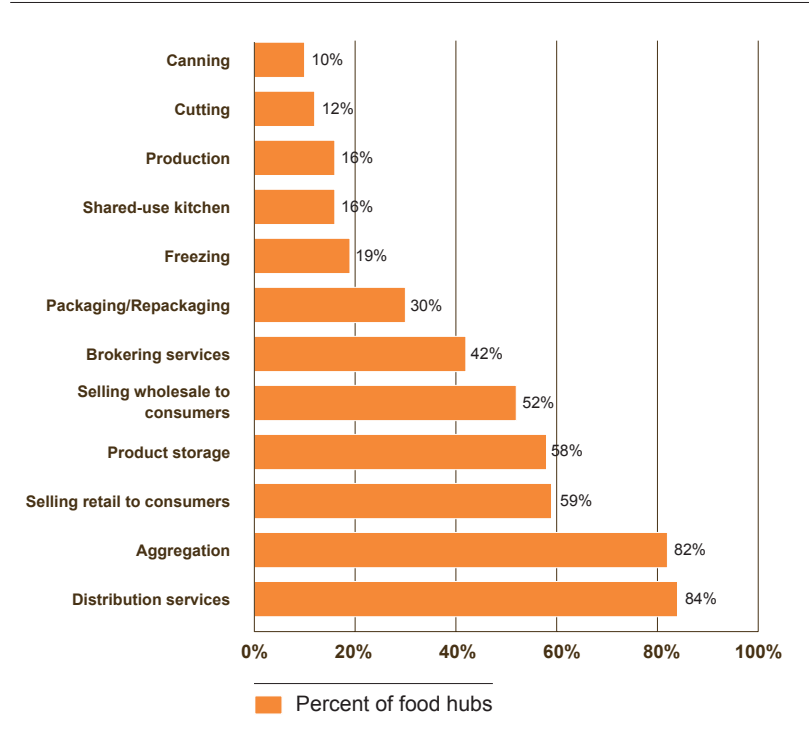


FIGURE 30: PRODUCER-ORIENTED SERVICES OFFERED BY FOOD HUBS (N=84)

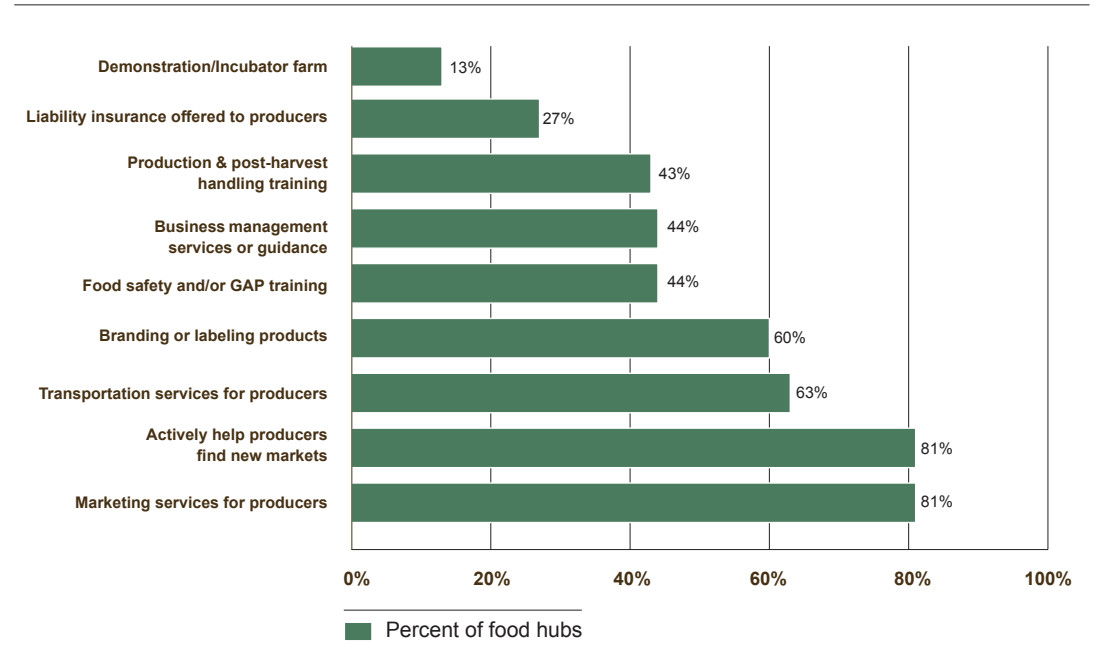
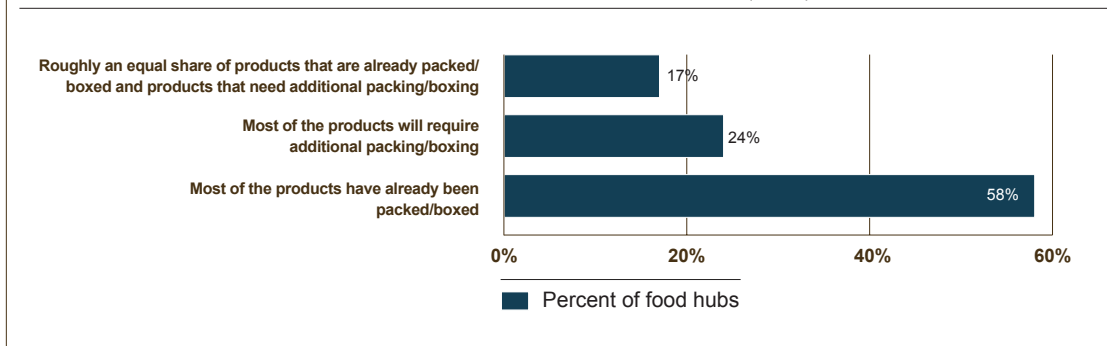


FIGURE 31: FOOD HUB INVOLVEMENT IN PACKING/BOXING PRODUCT (N=71)



PRODUCER-ORIENTED SERVICES AND ACTIVITIES

The majority of food hubs indicated that they offered marketing and promotional services to their producers and that they actively help producers find new markets. However, less than a third of food hubs operated a demonstration or incubator farm or offered liability insurance to their producers.

Packing/Boxing of Product

Some hubs offer food product packing services for farmers and other producers. This service can come with a substantial cost of time and money for either party, so the level of packing that a food hub takes part in was explored separately from other producer-oriented services. Food hubs were given three choices to indicate their level of involvement in packing/boxing the products of their hub:

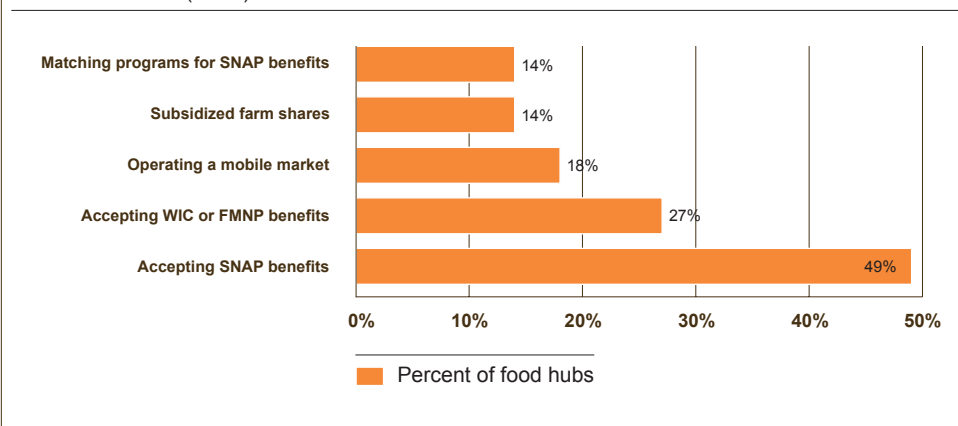
- Most of the products received or picked up by the food hub have already been packed/boxed on farm in accordance with buyer specifications.
- Most of the products received or picked up by the food hub require additional packing/boxing to occur at the food hub facility in order to meet buyer specifications.
- The food hub facility handles roughly an equal share of products that are already packed/boxed and products that need additional packing/boxing to meet buyer specifications.

Of these choices, 58% of responding food hubs indicated that most of their products had already been packed at the farm level. This is potentially a large cost savings for the hubs (and an added cost for producers). Several hubs wrote in the comments section that they provided boxes and other packing materials. However, when it came to the actual act of packing, a few hubs raised concerns. “This is a huge thorn in our side right now,” wrote one hub. “Packaging (bagging of greens) is time-consuming for farmers, who are not interested in doing it for wholesale buyers. Some of the groups we work with, however, don’t want to take on the food safety liability of doing the bagging when filling their CSA-style weekly boxes.” Another hub wrote that most of their products “still require repacking simply because we’re new and the training takes a long time, but the goal is to not have to repack anything.”

COMMUNITY SERVICES AND ACTIVITIES

Most community services that food hubs offered are only relevant to food hubs that sell to retail customers. These services and the percentage of food hubs selling retail to consumers that are performing them are displayed in Figure 32.

FIGURE 32: COMMUNITY-ORIENTED SERVICES OFFERED BY FOOD HUBS SELLING RETAIL TO CUSTOMERS (N=49)



Of the food hubs that sold retail (N=49), the largest amount (49%) indicated that they accepted SNAP (Supplemental Nutrition Assistance Program) benefits, and fewer than half of those hubs had matching programs for SNAP benefits. Twenty-seven percent of food hubs that sold to retail customers accepted WIC (Women, Infants, and Children) or FMNP (Farmers Market Nutrition Program) benefits. Fewer than 20% of these retail hubs indicated that they operated a mobile market or offered subsidized farm shares.

Food donation to local food pantries/banks and education about community and food systems issues were the two most common community-oriented services offered by food hubs, whether the hubs sold to retail or wholesale customers. Respectively, 75% and 56% of hubs (N=84) offered these services. Food hubs were asked about three other services that could be performed by hubs working with both retail and wholesale customers. These services and the percent of food hubs offering them were nutrition and cooking education (47%), paid employment opportunities for youth (21%) and transportation services for customers (8%). Health screenings were also an option that food hubs could have chosen as a community-focused activity, but no food hubs indicated such programs in use.



» FINDINGS: CHALLENGES, OPPORTUNITIES AND BARRIERS TO GROWTH

Despite their growing popularity, food hubs identified a number of current operating challenges. They also noted barriers to meeting the growing demand for their products and services. This section explores those challenges and barriers as well as some potential avenues for growth.

CHALLENGES

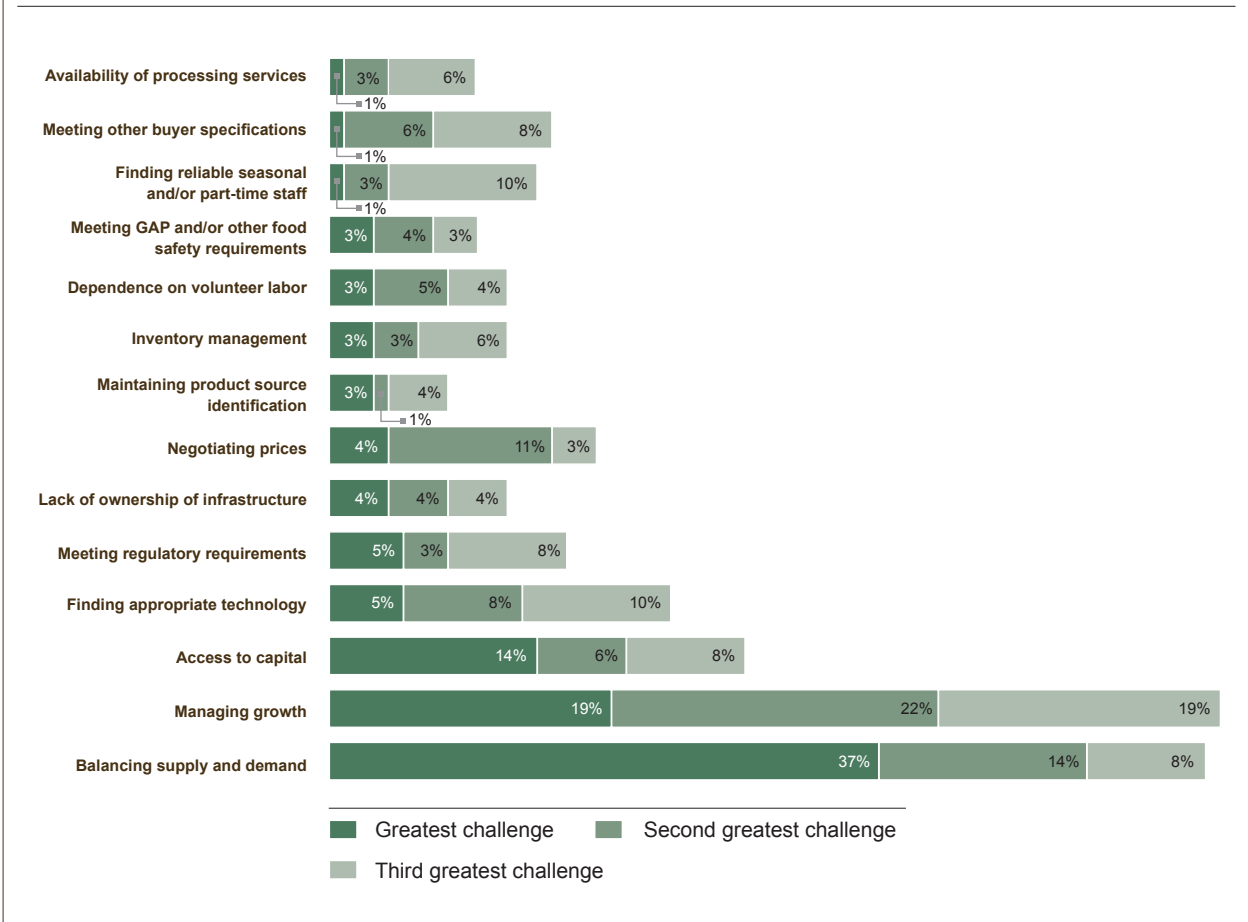
Food hubs were given a list of potential operational challenges and asked to identify their greatest, second greatest and third greatest operational challenges. Six challenges were identified by at least 10 hubs:

- Managing growth
- Balancing supply and demand
- Access to capital
- Finding appropriate technology to manage operations
- Negotiating prices with producers and/or customers
- Finding reliable seasonal and/or part time staff

Eight other challenges were all reported by fewer than 10 food hubs each.²⁰ Managing growth and balancing supply and demand were both challenges frequently selected by hubs. However, balancing supply and demand was picked as a top challenge more often than managing growth.

²⁰ These challenges were inventory management, issues resulting from the lack of ownership of infrastructure, dependence on volunteer labor, availability of processing services, meeting GAP and/or other food safety requirements, meeting regulatory requirements, meeting other buyer specifications and maintaining product source identification.

FIGURE 33: TOP CHALLENGES OF FOOD HUBS (N=79)



Only slightly more than 20 hubs identified access to capital as a challenge, but these hubs often ranked it as their greatest challenge. Further analysis of those 20 hubs revealed that their population characteristics were similar to the rest of the survey respondents. They were mostly less than 5 years old and brought in less than \$1 million in revenue in 2012. Unlike the larger group, however, these 20 hubs were mostly for-profit or cooperative in operational structure (N=15).

Year-Round Versus Seasonal Operations

It has been suggested that it is less than optimal for food hubs to aggregate and/or distribute food only seasonally (Barham et al. 2012). From the survey, 94 of the 107 responding food hubs indicated that they aggregate or distribute food year-round. Of the 13 hubs not operating year-round:

- Nearly 70% had been in operation for five years or less.
- Nearly 70% were nonprofits.
- Three indicated they were “not at all reliant” on grant funding for their core operations, and four indicated that they were “highly reliant” on funding.
- Four indicated that they had no full-time paid employees.

These results suggest that food hubs that do not aggregate and distribute food year-round are also potentially not operating as efficiently as they could be. However, that does not suggest that operating year-round is without challenges. Of note, one hub wrote that in order to operate year-round, they were forced to occasionally source their products nonlocally. “We strive for and always select the most sustainable product, but we also do want to operate year-round, which means that sometimes the most sustainable choice will be citrus from Florida.” This food hub is not alone in its need to source some nonlocal products. For more information, see the section on local and regional aspects of food hubs beginning on page 33.

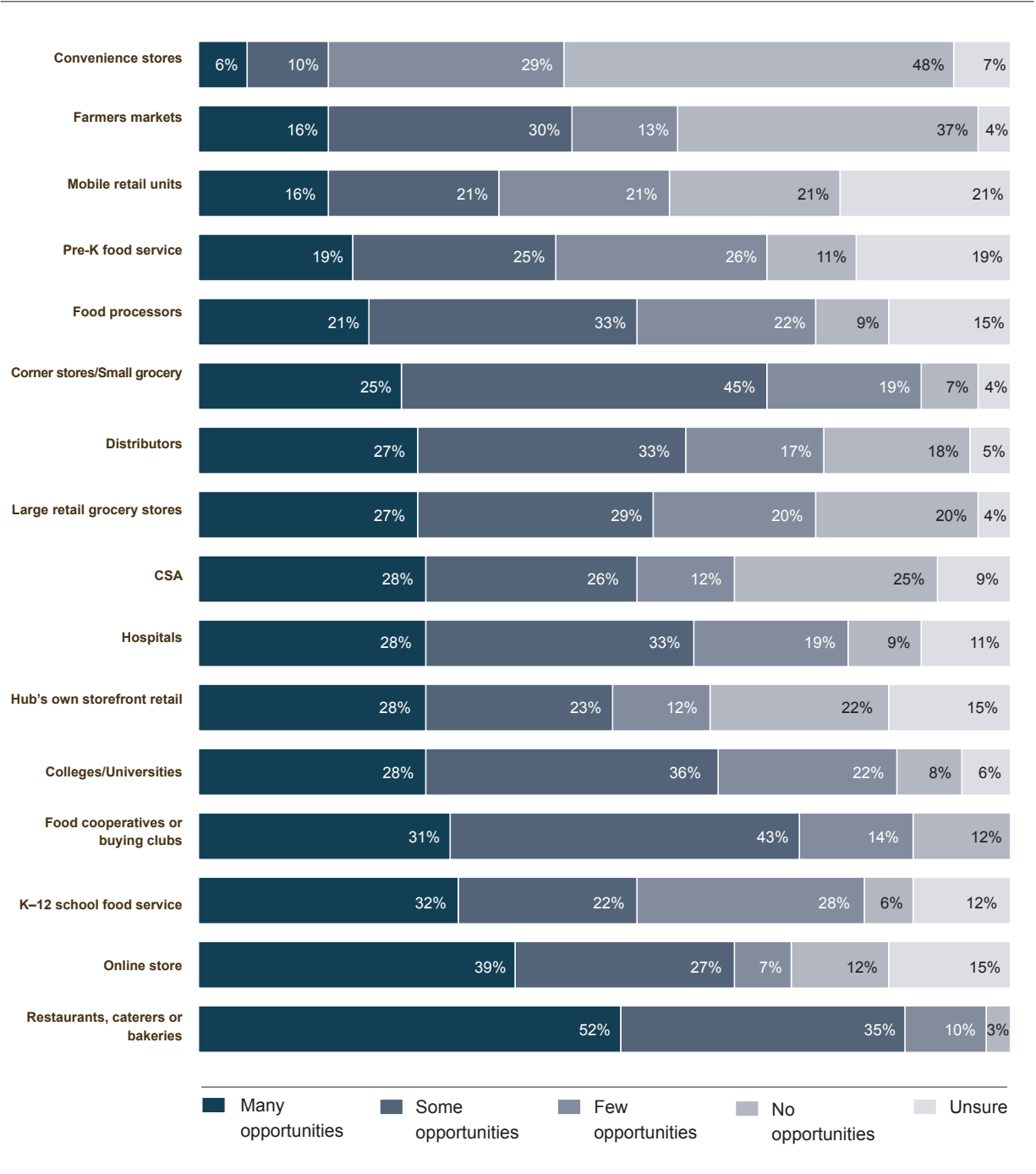
OPPORTUNITIES

Ninety-six percent of food hubs (of $N=83$) indicated that demand for their hubs’ products and services was growing. When asked about the types of customers with whom they saw expansion opportunities, 50% or more of hubs indicated that they saw “many” or “some” expansion opportunities with 12 different customer types (see Figure 34 for more details).

Food hubs were also given a chance to write in any potential customers not listed in the survey. In that space, eight of 13 hubs noted that they saw expansion opportunities with elder-care programs, such as retirement communities or the Meals on Wheels program.²¹

²¹The Meals on Wheels program is administered by the Meals on Wheels Association of America (MOWAA) and delivers food to seniors in need. According to the Association’s website, “there are some 5,000 local Senior Nutrition Programs in the United States. These programs provide well over one million meals to seniors who need them each day.” See <http://www.mowaa.org/about> for more information.

FIGURE 34: EXPANSION OPPORTUNITIES BY FOOD HUB CUSTOMER TYPE (N=81)



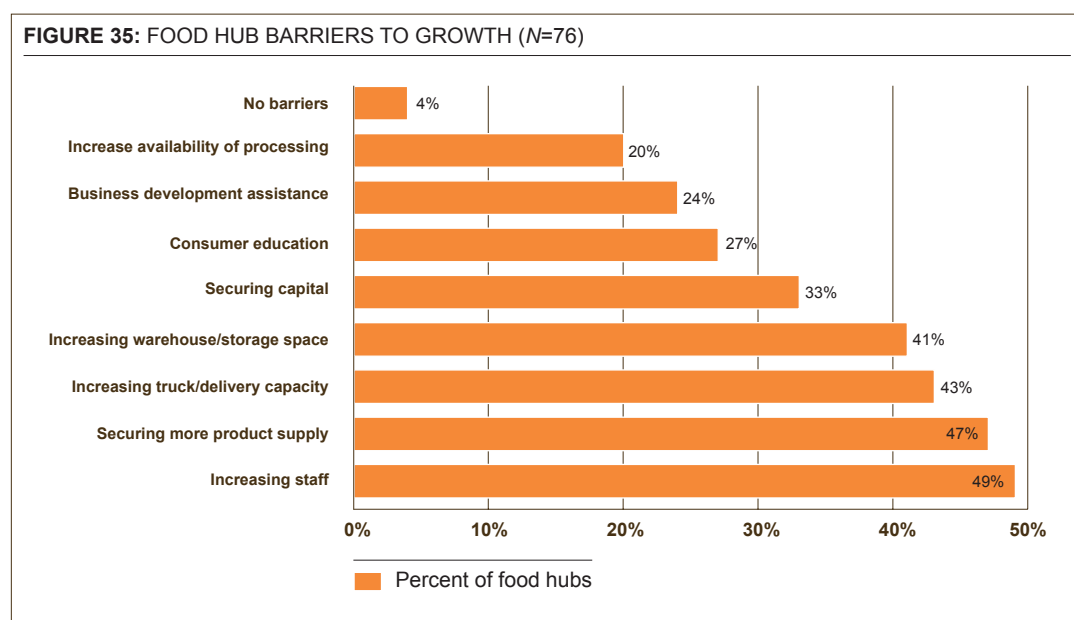
BARRIERS TO GROWTH

Some food hubs indicated that the demand for their hubs' products and services was growing. Those hubs were provided with a list of potential barriers to achieving that growth and asked to check all the barriers that applied to them. The results are shown in Figure 35.

Increasing staff was the barrier to growth that the most food hubs noted (41 hubs, or 54%). Of these, 19 hubs estimated the amount of money it would take to increase their staff to an appropriate level. These hubs estimated costs ranging from \$10,000 to \$250,000, with an average of nearly \$67,000. The 41 hubs had a wide range of sales, from \$17,000 to \$45,000,000 annually, with an average of \$3,000,000 and a median of \$300,000. This suggests that simply increasing cash flow will not be enough to assist food hubs with their staffing challenges. Rather, it may be that food hubs need to find ways to increase their revenue in proportion to their expenses in order to afford hiring appropriate numbers and types of staff people. Another possibility is that rather than hiring more staff, food hubs need to find more efficiencies within their current staff, such as better training or streamlining workloads.

Further, when asked about the operational challenges they faced, 11 food hubs indicated "finding reliable seasonal and/or part-time staff" was one of their top three challenges (see Figure 33 on page 41). In addition, eight other food hubs indicated "dependence on volunteer labor" in their top three. Of these eight hubs, the average ratio of full-time employees to regular volunteers to occasional volunteers was 1 to 6.4 to 8. These hubs had a much higher reliance on volunteers than the overall survey population, with ratios of 2.75 to 1 to 3.5.

Food hubs also noted securing more product supply and increasing delivery capacity as top barriers to growth. The food hubs were asked to estimate, if they could, a cost to overcome each of these barriers. Fifteen hubs estimated a cost for increasing truck/delivery capacity at an average of \$79,000 per hub. Only three hubs were able to estimate a cost for securing more product supply, so a reliable average cost could not be computed.



CHALLENGES

Food hubs were given a list of potential operational challenges and asked to identify their greatest, second greatest and third greatest operational challenges. Six challenges were identified by at least 10 hubs. They were:

- Managing growth
- Balancing supply and demand
- Access to capital
- Finding appropriate technology to manage operations
- Negotiating prices with producers and/or customers
- Finding reliable seasonal and/or part time staff

Eight other challenges were all reported by fewer than 10 food hubs each. Managing growth and balancing supply and demand were found to both be highly selected by hubs as a challenge. However, balancing supply and demand was more often picked as a top challenge over managing growth.



➤ FINDINGS: COMPARISONS WITH 2011 SURVEY

Thirty food hubs responded to both the 2013 National Food Hub Survey and a similar survey by the National Food Hub Collaboration in 2011. Questions on each survey were similar enough for comparisons on three major topics: sales, full-time employees and number of producers. The questions from each survey and comparisons of the surveys' results are presented here.

SALES

The questions regarding sales differed slightly between the 2013 and 2011 surveys. In 2013, the hubs were asked, "Please indicate (in dollars) the total gross product sales for your food hub during the 2012 calendar year." In 2011, the food hubs were asked, "Please describe the volume of business your organization does, such as the number of orders per week/month or sales in dollar amount." Seventeen of the 30 food hubs provided sales figures for both years, and 15 indicated an increase of sales between the two surveys by an average of 109%. The median, average and range of sales amounts reported are displayed in Table 9.

TABLE 9: FOOD HUB SALES, 2011 AND 2013

	2011 Sales	2013 Sales
Median	\$580,000	\$914,700
Average	\$4,562,558	\$4,895,410
Range	\$24,000 to \$40,000,000	\$185,323 to \$41,325,000

FULL-TIME EMPLOYEES

Twenty-four food hubs responded to a question about the number of full-time employees on both surveys. Of these 24 hubs, seven had lost between 1 and 10 full-time paid employees, nine had neither lost nor gained any full-time paid employees and eight had increased their number of full-time paid employees by between 1 and 4 employees. Of the seven hubs that lost employees between the two surveys, four still managed to increase their overall sales. While the causes of changes in employment numbers were not asked about in the 2013 survey, the increasing sales and decreasing employee numbers for these latter four hubs may indicate gains in efficiencies of operations. Overall results are reported in Table 10.

TABLE 10: FOOD HUB FULL-TIME PAID EMPLOYEES, 2011 AND 2013

	2011 Full-time employees	2013 Full-time employees
Median	4.0	4.0
Average	14.9	13.9
Range	0 to 112	0 to 114

NUMBER OF PRODUCERS

Eighteen of the 30 hubs provided an answer on both years' surveys to the question asking how many producers they worked with. Six food hubs increased the number of producers they worked with by between 6 and 175 producers (an average of 120% increase in the number of producers), one hub neither increased nor decreased its number of producers and eleven hubs reported working with fewer producers by between 6 to 72 producers (an average of 39% decrease in the number of producers).

TABLE 11: FOOD HUB PRODUCER NUMBERS, 2011 AND 2013

	2011 Producers	2013 Producers
Median	50.0	41.0
Average	66.3	75.0
Range	26 to 225	15 to 400



➤ DISCUSSION

The 2013 National Food Hub Survey sought to observe the operations and impacts of food hubs across the United States. Findings from the survey showed that food hubs are growing to meet the need for distribution infrastructure for local food, but they are growing in a wide variety of ways and with varying degrees of financial success.

From the survey, 62% of food hubs began operations within the last five years, 31% of food hubs had \$1,000,000 or more in annual revenue and the majority of food hubs were supporting their businesses with little or no grant assistance—including food hubs that identified as nonprofits. Financially, the most successful food hubs tended to be for-profit and cooperative in structure, in operation for more than 10 years, and working with a relatively large number of producers. The values-based nature of food hubs makes it hard to judge many of them solely on their financial success. The survey also revealed a number of persistent challenges and barriers to growth that even the most financially successful food hubs faced. For example, many food hubs indicated a need for assistance in managing growth and in identifying appropriate staffing levels for their hubs. They also often pointed to a need for capital and other resources to increase their hub's trucking and warehousing capacity.

KEY FINDINGS

- Food hubs exhibit a great deal of variety in their individual business models and core values. Responding food hubs did show some commonalities, such as their nascence. More than half of responding food hubs began operations in the past five years. Also, the majority of food hubs were located in or near metropolitan areas, suggesting reliance on a nearby highly populated center for customers.
- Beyond aggregating and distributing food, many food hubs offer a number of additional services through their operations to their producers, customers and communities. For example, more than 50% of food hubs indicated that they participated in product storage, marketing services for producers and food donation to local food banks. However, for many hubs (but not all), offering these services correlated with an increased reliance on outside sources of funding.

- Although grant funding remains important for many new and growing food hubs, most are able to sustain their core food aggregation and distribution functions without substantial outside grant funding. Food hubs of all ages and operational structures (including nonprofits) generated a positive cash flow, and most hubs that were observed in both the 2011 and 2013 surveys grew in their annual sales.
 - Challenges still exist for food hubs. In particular, food hubs struggle in the areas of managing growth and balancing supply and demand. These issues are not limited to food hubs, and potentially, that struggle could be alleviated for many hubs through increased technical assistance with management and logistics.
 - Almost all food hubs believe that the demand for their products and services is growing. However, very few food hubs indicated that they had no barriers to keep them from meeting this demand. Most often, food hubs indicated that they needed assistance overcoming operational barriers, such as accessing capital.
- These findings give a snapshot of the food hub landscape from 2012 and serve as a natural springboard for further investigative work on food hubs' role in existing and emerging local food systems. While outside the scope of this survey, better measurement of the impacts (financial and otherwise) that food hubs are having on local food systems is a natural next step for further investigation. Based on the findings from this survey, the authors offer this and the following as suggestions for future research outreach and technical assistance related to food hubs:
- While these food hubs were in the minority of respondents, some hubs relied heavily on outside funding. A few hubs also brought in less revenue in 2012 than they did two years earlier. Teasing out the roots of these food hubs' struggles could provide valuable "lessons learned" for those planning to open new food hubs in the future.
 - More research is needed to identify practices that lead some food hubs to more success than others—specifically, better understanding of practices that lead to gains in food hubs' operational efficiency would be useful. Further, the survey did not explore relationships that food hubs may have with other organizations whose goals align with theirs. There is a chance that, through these partnerships, more services and activities are being offered to food hubs' producers, customers and communities than was captured by the survey. A better understanding of the existence and impact of these partnerships will be crucial for getting a more holistic picture of many food hubs' local impacts.
 - The 2013 survey relied on food hubs to provide information regarding their producers, suppliers and customers. However, these producers and patrons will need to be directly engaged in order to inform more valid conclusions about the impacts that food hubs have on growing, purchasing and business practices.
 - A need for effective management skills appears to be at the root of many of the challenges noted by food hubs (managing growth, balancing supply and demand and planning for appropriate staffing levels). While traditional sources of technical assistance through university extension and nonprofit organizations have been helpful in starting many food hubs, these sources may not have the knowledge and skills that food hubs need to expand beyond the start-up phase. Consultants, university partners and others with small business experience should be identified as potential partners for food hubs seeking to grow the size and efficiency of their businesses.
 - Further, as training programs specifically for food hub managers emerge, these programs should focus on building the skills that will help managers overcome problems identified as common to many food hubs and on issues specific to the individual hub the managers will oversee.

- Many food hubs also identified accessibility to capital as a challenge to their current operations. This indicates the need for either more funding opportunities or for better outreach around existing opportunities. Given the need for increased management skills, new funding sources for food hubs could also come with requirements for increased management trainings that may help the food hub grow beyond the life of the funding.
- Increased investigation of how food hubs affect local economies is needed, since further investment will be predicated, at least partially, on the ability of food hubs to create jobs and increase income.

The increasing demand for local food explains the large numbers of food hubs that have recently emerged. But moving forward for these new hubs will necessarily mean going beyond simply providing local food. They will need to take steps to grow their businesses in ways that allow for financial viability as well as a continued commitment to the values under which the food hubs operate. As one food hub noted in its survey response, “We are now in a situation of deciding how much more to grow, not because of supply or demand, which we have plenty of both, but because of time, inclination, processes/systems, etc.” As observed from the survey responses overall, food hubs have indicated that they are looking for guidance on their growth decisions. Helping food hubs reach these next stages of operation will open many doors for new and renewed partnerships between food hubs, the government, universities and nonprofits. These relationships could be key to realizing expanded impacts from food hubs, such as increased accessibility for healthy and local food for those who demand it and better business opportunities for the small and midsized producers who wish to provide it.

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» APPENDIX

DATA COLLECTION PROCEDURES

To gather information about food hubs on a wide variety of subjects, researchers assembled a national sample of food hub managers and e-mailed them a link to an Internet-based survey, which was built and administered using Qualtrics Research Suite software (Qualtrics 2013). Before administering the survey, experts at USDA, Michigan State University's Center for Regional Food Systems and the Wallace Center at Winrock International reviewed the survey questions for suitability. The survey also underwent a "test run" with four volunteer food hubs to determine the duration of the survey and to ascertain its overall functionality. The surveys were sent out in the first week of February 2013 to 222 food hubs identified by representatives of the National Good Food Network's (NGFN) Food Hub Collaboration, a project coordinated by the Wallace Center that encourages networking between and dissemination of information to food hubs across the US. Food hubs were identified by the Collaboration both through direct contact with the individual hubs or through other channels such as news releases. Since October 2011, the Collaboration has used a questionnaire to gather additional information about new food hubs before including them on its larger food hub list.²² This questionnaire is used to determine whether a new food hub meets the Collaboration's criteria of a regional food hub. These criteria include the use of local food and the verification of products' sources. These questionnaires are reviewed by Collaboration staff at a periodic meeting, and hubs meeting the criteria are then added to the list.

²² The questionnaire can be found through NGFN's food hub website, <http://www.foodhub.info>, or directly through <http://www.surveymonkey.com/s/79HDYDV>.

An anonymous link was also given out during an NGFN webinar introducing the survey, posted on both NGFN's and Michigan State University's Center for Regional Food Systems' websites and included in an NGFN member e-mail. The survey remained open through the last week of March 2013. Utilizing a modified Dillman method (Dillman 2008) for survey follow-up, non-responding food hubs were sent reminders about the survey weekly while the survey remained open. Overall, 125 surveys were returned for a 56.3% effective response rate. Of these 125, 18 responses were not used because respondents did not answer a majority (more than 90%) of the survey questions. This left a usable response set of 107.

DATA PROCESSING

Quantitative analysis of survey responses was carried out using IBM's SPSS Statistic Data Editor 19 for Windows (SPSS 2010). Due to the nature of the data returned from the food hub survey, all statistical tests utilized are non-parametric. Spearman's rho was used to measure correlations between continuous and ordinal variables. Qualitative coding of food hubs' mission statements was carried out using QSR International's NVivo 10 (NVivo 2012).

COPY OF THE 2013 SURVEY

A PDF copy of the full 2013 National Food Hub Survey can be found on Michigan State University's Center for Regional Food Systems' website at <http://foodsystems.msu.edu/activities/food-hub-survey>.

MICHIGAN STATE UNIVERSITY'S CENTER FOR REGIONAL FOOD SYSTEMS

The Michigan State University Center for Regional Food Systems unites the applied research, education and outreach expertise of faculty and staff members at MSU to advance understanding of and engagement with regional food systems. CRFS organizers envision a thriving economy, equity and sustainability for Michigan, the country and the planet through food systems rooted in local regions and centered on food that is healthy, green, fair and affordable. More about the Center can be found on its website at <http://foodsystems.msu.edu>.

THE WALLACE CENTER AT WINROCK INTERNATIONAL

The Wallace Center at Winrock International serves the growing community of civic, business, and philanthropic organizations involved in building a new, good food system in the United States. In particular, the Wallace Center is focused on advancing regional, collaborative efforts to move good food—healthy, green, fair, affordable food—beyond the direct-marketing realm into larger scale, wholesale channels. The Center works from a market-based strategy to scale up the supply of healthy food; to do this, we apply research from our own field and the work of others to understand, document, and disseminate viable enterprise models. The National Good Food Network (NGFN), coordinated and supported by the Wallace Center, is a cross-sector center of learning and networking for food systems experts and organizations, as well as members of all aspects of the food system, from production through distribution and processing, to consumption as well as supporters such as government and funders. The NGFN Food Hub Collaboration is a partnership between the Wallace Center at Winrock International, USDA, National Good Food Network, Michigan State University, and others. The Collaboration is working to ensure the success of existing and emerging food hubs in the US by building capacity through connection, outreach, research, technical assistance and partnerships. By supporting this crucial player in the value chain, we aim to accelerate the growth of regional food systems that make healthy and affordable food available to all communities while fostering viable markets of scale for regionally focused producers. More about the Wallace Center and our work can be found at <http://wallacecenter.org> and at <http://ngfn.org>.