FINDINGS OF THE 2017 NATIONAL FOOD HUB SURVEY

MARCH 2018

MICHIGAN STATE UNIVERSITY | Center for Regional Food Systems

Wallace Center AT WINROCK INTERNATIONAL

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Please note: The food hubs represented in the photographs in this report are not necessarily included in the survey sample.

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EXECUTIVE SUMMARY

Food hubs—businesses that actively manage the aggregation and distribution of source-identified food products—are an essential component of scaling up local food systems and a flagship model of socially conscious business.

This report presents the findings of the third National Food Hub Survey.

> **Food hub managers — do you really know how well you are doing?** Are you doing what you say you are doing? **The results of this survey force you to address these questions.** The findings provide a truly valuable set of data by which you can assess yourself and compare yourself to others.

— **DENNIS DERRYCK**, *Founder & President,* Corbin Hill Food Project

FOOD HUBS CONTRIBUTE TO THE ECONOMY

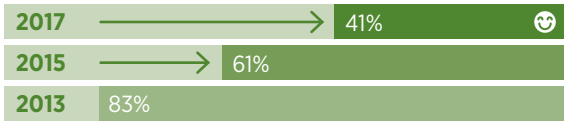
Food hubs create jobs.

The **119** responding food hubs employed **1,887 paid staff**, with an average of **16** and a median of **6 paid staff per hub** *(see Table 1)*.

As food hubs age, they are creating new jobs. Food hubs operating for more than two years had a slightly higher median and mean number of employees in each survey year *(see Table 1)*.

Hubs have fewer unpaid staff and more full-time positions.

Hubs are relying less on unpaid staff *(see Figure 6)*.



The proportion of full time, year-round positions grew slightly *(see page 16)*.

2017
47%
of paid food hub employees in full-time, year-round, non-management positions
(*n* = 112)

vs

2015
41%
of paid food hub employees in full-time, year-round, non-management positions
(*n* = 130)

78

Hubs link multiple businesses.

Hubs are sourcing from an average of **78 different producers and suppliers** (median, 40; *n* = 76) and marketing to an average of **4 different customer types** *(see Table 3 and discussion on page 20)*.

Hubs are demonstrating financial viability.

In 2017, **67% of food hubs reported breaking even or better** (n = *78; see Figure 28)*.

Food hubs appear to become **more profitable over time**. For the hubs with longitudinal data available over all three survey years (*n* = 9), **the average Operational Expense Ratio decreased by 21% from 2013 to 2017** *(see Table 14)*.

The formation of new hubs may be slowing, but **current hubs are showing longevity** *(see page 13)*.

2017
53%
of hubs were 6 years old or older (*n* = 131)

vs

2013
38%
of hubs were 6 years old or older (*n* = 106)

FOOD HUBS ARE BECOMING AN ESTABLISHED SECTOR

Older hubs appear to be scaling up to supply larger customers.

Hubs more than 2 years old are more likely to sell to wholesale customers *(see Figure 19).*

Food hubs were able to secure more start-up funds from federal government sources.

Food hub managers' personal capital played a smaller role as a source of start-up funds *(see page 46).*

FEDERAL GOVERNMENT FUNDS

2017	2015	2013
39%	**32%**	**23%**
(*n* = 94)	(*n* = 72)	(*n* = 91)

ORGANIZATION'S OR FOUNDERS' FUNDS

2017	2015	2013
31%	**48%**	**46%**
(*n* = 94)	(*n* = 72)	(*n* = 91)

More hubs are getting information from a wider range of sources.

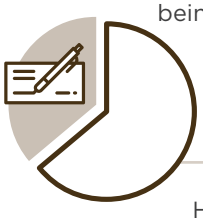
The proportion of hubs indicating that an **information source was important increased by** an average of **42% across nine information categories** (*n* = 79), such as formal and informal networks and education resources from government entities or nonprofits.

This suggests that **more hubs are seeking information** from a **wider range of sources**, that **more resources are available**, that **resources are becoming more relevant**, or all three *(see Table 16).*

> **"The National Food Hub Survey data is absolutely critical both for food hub operators and for those of us interested in investing in a new food paradigm.** At RSF Social Finance, we use the data to help underwrite our investments and to provide practical business support services to our clients."
>
> **— KATE DANAHER**
> Senior Director, Social Enterprise Lending & Integrated Capital
> RSF Social Finance

FOOD HUBS STILL FACE VIABILITY CHALLENGES

Grant funding still matters.



Although **64%** of hubs report being able to carry out their core functions without grant funding, **36% of hubs report being highly dependent on grants** *(n = 97; see Figure 26)*

However, of the 35 hubs reporting that they are highly dependent on grants, **26 (75%)** were nonprofit food hubs that may be **intentionally trading profitability for greater social impact** *(see page 40)*.

Labor costs are going up.

The average proportion of **payroll expenses as a percentage of revenue increased** *(see Figure 27)*.

2017	VS	2015
34%		24%
(*n* = 65)		(*n* = 77)

Balancing supply and demand is consistently the top-ranked challenge for food hubs *(see Figure 41)*.

Percentage of hubs rating balancing supply and demand as one of their top three challenges:

2017	2015	2013
55%	**48%**	**59%**
(*n* = 88)	(*n* = 109)	(*n* = 79)

Hubs are slightly less optimistic about future growth in demand for their products.

Although nearly the same proportion of hubs expected some growth (98% in 2015, *n* = 106; 94% in 2017, *n* = 93), **substantially fewer expected to see demand grow a lot** and, for the first time, a small proportion of hubs expected to see demand shrink *(see Figure 43)*.

> "Understanding how food hubs work is interesting, but **knowing how food hubs can be profitably sustainable is essential.** The National Food Hub Survey and the Food Hub Benchmarking Study are the two pillars of operator-supplied data that have allowed tracking and legitimizing the food hub sector."
>
> **— GARY MATTESON**
>
> Vice President for Young, Beginning, Small Farmer Programs and Outreach
> Farm Credit Council

46%

On average, **46%** (*n* = 66) **of a hub's producers and suppliers are considered beginning farmers or businesses**, meaning they began business in the last 10 years *(see page 21)*.

89% of hubs (*n* = 89) **source mostly or exclusively from small to mid-sized farms and ranches** *(see page 23)*.

68%

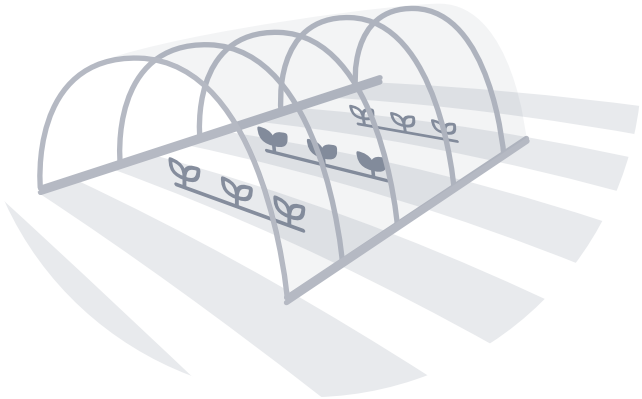
68% of hubs (*n* = 89) **report that that their purchases from small to mid-sized farms have increased over the life of the hub** *(see page 23)*.

Hubs are primarily sourcing from rural farms and ranches — 86% of farms supplying food hubs are rural *(n = 95; see Figure 30)*.

Support for producers and suppliers is a critical component of the mission for the vast majority of hubs *(see Figure 34)*.

82% of hubs say **increasing small and mid-sized farmers' and ranchers' access to markets** is strongly related to their mission (*n* = 129).

82% of hubs say **ensuring producers and suppliers receive a fair price is related to their mission** (*n* = 128).



"Early on, many of us struggled not only to find other food hub models, but to find benchmarks. **The National Food Hub Survey has been invaluable in providing insights on hub legitimacy and sustainability** that we can use both internally and with potential funding sources."

— EVAN SMITH

Managing Partner, Alden Services

FOOD HUBS SUPPORT THE TRIPLE BOTTOM LINE

More than 90% of hubs (n = 129) **consistently state that four values are related to their mission:**

1. Improving human health
2. Increasing small and mid-sized producers' access to markets
3. Ensuring that producers receive a fair price
4. Promoting environmentally sensitive production practices

More than half of hubs (between 55% and 87%) **report that the seven other listed value areas**, such as addressing racial disparities or ensuring fair wages for employees, **are related to their mission** *(see Figure 34)*.

A majority of hubs prefer their suppliers to have social and environmental certifications, though the number of hubs requiring these certifications is small *(see Figure 11)*.

HUBS' CAPACITY TO MEET FOOD SAFETY CERTIFICATION DEMANDS IS INCREASING

In 2017, 57% (n = 90) **of hubs had staff responsible for the hub's internal food safety compliance, up from 49%** (n = 107) **of hubs in 2015.**

Among the hubs without a dedicated food safety staff person, **a little more than half reported using one of the following sources of food safety information:**

- their state government (**54%**; n = 35)
- the USDA (**56%**; n = 34)
- university extension (**53%**; n = 36)

(see page 32).

Most hubs with wholesale customers did not require Good Agricultural Practices (GAP) and Good Handling Practices (GHP) certifications from their suppliers, but **the proportion of hubs requiring GAP** (**18%**; n = 89) **and GHP** (**10%**; n = 83) **rose slightly from 2015** *(see Figure 21)*.

On average, 34% of the customers of hubs with wholesale sales required GAP (n = 54)**, unchanged from 2015.**

However, the data splits between the high and low ends: for 17% of hubs selling to businesses or institutions, *none* of their customers required GAP; for 15% of hubs selling to businesses or institutions, *all* of their customers required GAP *(see page 30)*.

INTRODUCTION

> "Benchmarks provide important reference points by which other businesses can be measured or judged.
>
> Though benchmarks have long been available for many sectors, given the newness of food hubs, these data were never available before the National Food Hub Survey.
>
> **The survey data help aspiring and existing food hub businesses determine best practices for long-term viability."**

— BECCA JABLONSKI

Assistant Professor and Food Systems Extension Economist

Department of Agricultural and Resource Economics

Colorado State University

This report presents results from the 2017 National Food Hub Survey, the third national survey of food hubs, looking at food hub finances, structure, operations, markets, customers, suppliers, and challenges. Together with the findings from the 2013 National Food Hub Survey (Fischer et al., 2013) and the 2015 National Food Hub Survey (Hardy et al., 2016), we see an industry maturing into a strong, stable self-identity even while grappling with a range of operational challenges.

The 2017 survey included several new questions on nonfinancial goals, processes for tracking and identifying product origin, third-party certification requirements, and the utility of different information sources. We hope this third report in the series provides valuable information and insights for current and aspiring food hub operators, vendors, and customers, support organizations, policy makers, advocates, and researchers.

BACKGROUND

Food hubs are an essential component of scaling up local food systems and a flagship model of socially conscious business. Fundamentally, a food hub is a "businesses 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, p. 4). Food hubs have also been described as "financially viable businesses that demonstrate a significant commitment to place through aggregation and marketing of regional food" (Fischer, Pirog, & Hamm, 2015a, p. 97).

Food hubs are an essential component of scaling up local food systems and a flagship model of socially conscious business

This report presents the findings of the third National Food Hub Survey. After three biennial surveys, in 2013, 2015, and 2017, we are confident that this survey provides a representative sample and picture of food hubs in the United States. Based on estimated numbers of food hubs across the United States, we believe the survey has captured approximately a third of food hubs each year. Many of the findings are consistent across survey years, even though a substantial majority of the respondents are different each year. Furthermore, survey responses are reviewed by experts in the field to assess whether they make sense based on real-world experience and observations. Each year, we have adjusted the survey tool to get progressively better data.

2013 Survey

In 2013, when the first National Food Hub Survey was conducted, the number of food hubs was growing rapidly. A small survey in 2011 had provided initial insights on food hubs (Barham et al., 2012), but there was a desire to conduct a more robust and more comprehensive national food hub survey to better assess the state of food hubs as well as to inform a range of stakeholders, including existing hub businesses, technical assistance providers, and lenders and grant makers working with food hubs. The resulting report, *Findings of the 2013 National Food Hub Survey* (Fischer et al., 2013), and related presentations and articles provided an initial detailed picture of the food hub landscape.

2015 Survey

Two years later, the 2015 National Food Hub Survey was conducted to build on the 2013 findings and to initiate the first database tracking operational and fiscal health of food hubs over time. The 2015 survey was also designed to provide sound data to food hub operators and other stakeholders to inform decisions and research. The results were published in *Findings of the 2015 National Food Hub Survey* (Hardy et al., 2016).

2017 Survey

The 2017 National Food Hub Survey is a continuation of the biennial survey to provide continuing information about the state of food hubs. The 2017 survey aimed to expand our understanding of continued trends in food hub maturity and evolution toward profitability and expanded markets over time by providing comparable data points to the two preceding surveys. The 2017 survey was also conducted to explore new aspects of food hub operations. Previous surveys have deepened our understanding of hubs in ways that have enabled us to improve the survey tool to capture more accurate data and to identify new areas of inquiry.

Modifications to the survey tool were made judiciously, particularly because modifications can make comparisons across survey years difficult. Questions were changed when, on reflection, the research team felt that a past version of a question did not measure a construct as accurately or precisely as possible. This report documents substantive survey tool changes in the text or as a footnote.

In addition to modifications to previous survey questions, the 2017 survey included new questions on product traceability, federal loan and grant programs, the geographic location of hubs' farm and ranch suppliers, covered vs. exempt status of suppliers under the Food Safety Modernization Act (FSMA), ways hubs receive educational information, and hub intentions to serve various markets in the next two years.

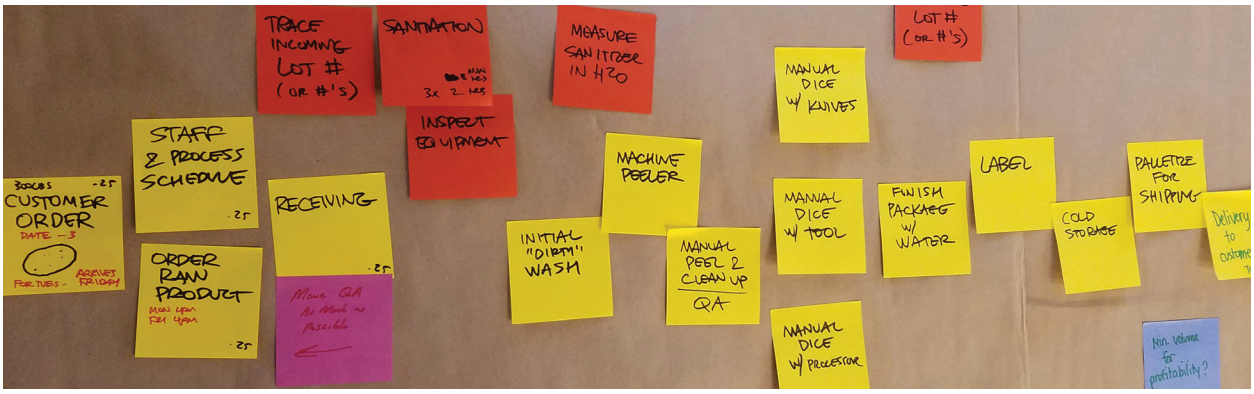
The web-administered survey was conducted in February, March, and April 2017. An invitation with a link to the survey was sent to 542 key U.S. food hub personnel, collectively representing 394 different food hubs. The 2013 and 2015 National Food Hub Survey responses, the USDA Food Hub Directory, and the National Good Food Network (NGFN) food hub database were used to create the invitation list. Although several key personnel from a single food hub may have received the survey invitation, only one completed survey was included for each food hub.

An invitation with a link to the survey was sent to 542 key U.S. food hub personnel, collectively representing 394 different food hubs

The response rate was 33% and represented 130 hubs. One additional individual associated with a food hub that was not identified in the initial sample responded via the generic survey link. In total, 131 completed and partial surveys were used in analysis. The 2015 and 2013 National Food Hub Survey data, which included 151 and 107 hub responses respectively, were used in some comparative analyses. Thirty-one hubs responded completely or in part to all three years of National Food Hub surveys. See the Appendix (page 67) for details of survey development, sampling, data collection, analysis, and response rate.

The final sample included 131 hubs, a response rate of 33%

This report refers to results from all three survey years. For clarification, 2013 results refer to the 2013 National Food Hub Survey, which asked respondents to report on fiscal year 2012. The 2015 results refer to the 2015 National Food Hub Survey, which asked respondents to report on fiscal year 2014. The 2017 results, the most recent, refer to the 2017 National Food Hub Survey, which asked respondents to report on fiscal year 2016.



FINDINGS 1: **OPERATIONAL CHARACTERISTICS**

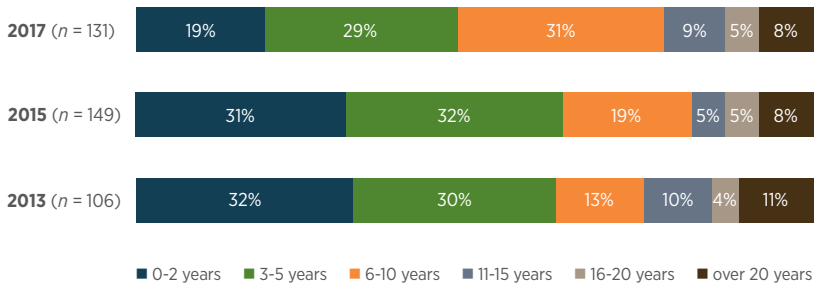
YEARS IN OPERATION

This section includes information on the general structural and physical characteristics of food hubs and a description of hubs' staff, suppliers, and products

Food hubs responding to the 2017 survey had been in operation from less than a year to more than 50 years. Similar to past years' responses, a large majority (just under 80%) had been in operation for 10 years or less. But across that entire 10-year band, in 2017 we observed more responses from hubs operating for 6–10 years. In 2017, the average length of time in operation was 9 years and the median 6 years, compared to an average of 8 years and a median of 4 years in 2015. In 2017, the 25 hubs indicating operations of 2 years or less are presumably hubs that opened since the 2015 reporting year. In comparison, in 2015, 47 hubs were presumably newly established since the 2013 survey. As a whole, then, this data indicates that the growth in new hubs may be slowing but previously existing food hub operations are continuing to operate. This observation is corroborated by other food hub research (Feldstein & Barham, 2017). Figure 1 compares the operational age of food hubs responding to each of the three survey iterations.

The relative proportion of new food hubs decreased in 2017

FIGURE 1: Food Hubs by Years in Operation



As in previous survey years, revenue for 2017 was significantly correlated to the age of the hub.[1, 2] This continued colinearity[3]—the number of years in business and hub revenue increasing proportionally together—indicates that even as new hubs form, many older hubs are able to maintain and even increase their revenue.

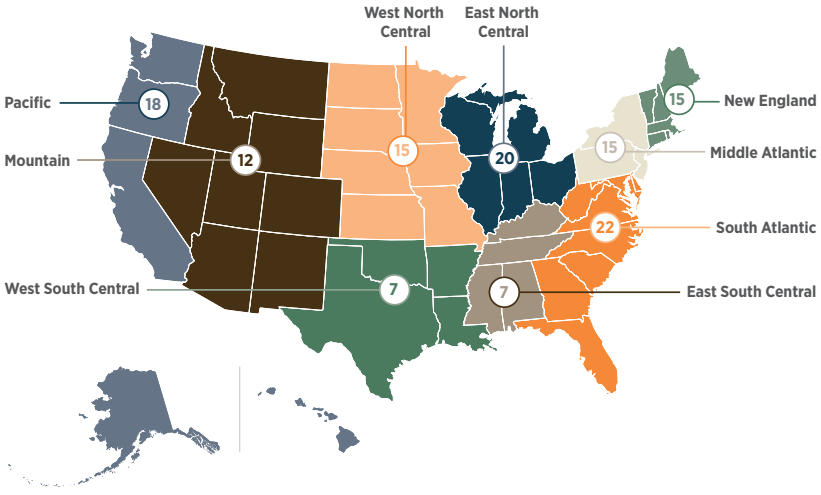
Throughout this report, we note instances where variables are correlated to both the age and revenue of the hub. Because hub age and revenue are colinear, it is uncertain which of these factors (or combination of factors) is driving the relationship with any third variable.

GEOGRAPHIC LOCATION

The hubs' geographic distribution in 2017 is shown in Figure 2. There is no evident correlation between the number of hubs responding to the survey from a census region and the population of the region. Although the hubs responding to the survey are not necessarily geographically distributed in proportion to the locations of all known hubs, the percentage of responses by region has been relatively stable across the three survey years.

FIGURE 2: Location of 2017 National Food Hub Survey Respondents by Census Geographic Division (*n* = 131)

Food hubs in this sample cover all nine census geographic divisions



LEGAL STRUCTURES, BUSINESS MODELS, AND ENTERPRISE TYPES

The breakdown of legal operating structures for food hubs, visualized in Figure 3, remained largely consistent with 2015 survey results. Forty-two percent of hubs characterized themselves as nonprofit, representing a slight uptick from 2015 (38%). Another 37% percent of hubs classified themselves as for-profit, which included (most frequently) LLCs as well as S, C, and B Corps and other self-described for-profit structures. Consumer, producer, and hybrid cooperatives accounted for 18% of hubs, and the remaining 3% were publicly owned or cited another legal structure.

[1] $r_s = .41$, $p < .01$.

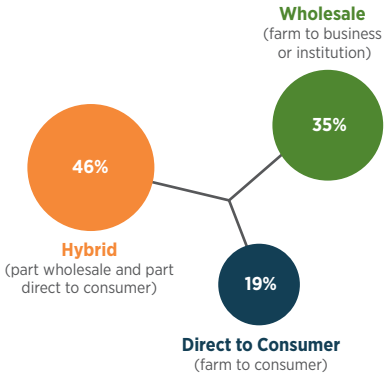
[2] Further explanation is provided in the Tutorial for Interpreting Statistical Test Results section of the Appendix.

[3] Two variables are considered colinear if (a) each variable can be graphed as approximately a straight line and (b) a change in one variable corresponds to a similar change in relative magnitude and direction of the other variable.

Nonprofit food hubs are most common in this sample

FIGURE 3: Food Hubs by Legal Structure (*n* = 131)

FIGURE 4: Food Hubs by Business Model (*n* = 131)



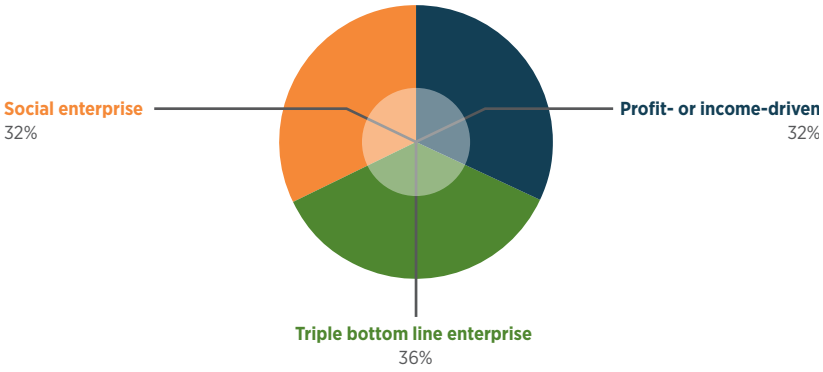
Hybrid food hubs are most common in this sample

Looking at food hubs by business model also showed many similarities to 2015.[4] The percentage of wholesale hubs—hubs selling to wholesale market buyers, such as grocery stores, restaurants, food service providers, and other distributors—rose slightly from 28% in 2015 to 35% in 2017. Hybrid business models continued to make up approximately half of food hubs (see Figure 4).

The 2017 survey introduced a new question asking respondents to identify whether their food hub was best described as a profit- or income-driven enterprise, a social enterprise, or a triple bottom line enterprise. These overarching mission categories relate to the concept of sustainability, which is often described as having three cornerstones: financial, environmental, and social sustainability. Extending this concept of sustainability to the marketplace, the mission and practices of a business can be located in relation to these three cornerstones. Although the definitions are not absolute and the terms were not defined in the survey, in general, profit- or income-driven enterprises typically focus on financial sustainability. Social enterprises typically focus on social and/or environmental goals and consider financial sustainability a means to an end. Triple bottom line enterprises typically try to balance the three cornerstones. The results showed that the hubs' enterprise focus split fairly evenly between profit/income, social enterprise, and triple bottom line (see Figure 5).

Food hubs split evenly by enterprise type in this sample

FIGURE 5: Food Hubs by Enterprise Type (*n* = 130)



[4] In 2015, the USDA introduced new business model categories for food hubs: wholesale, direct to consumer, and hybrid (Matson, Thayer, & Shaw, 2015b). The 2017 National Food Hub Survey adopted these terms, which were more a renaming than a reclassification, but provided the language from the 2013 and 2015 National Food Hub Surveys (farm to business or institution; farm to consumer) in parentheses.

Our sample may not reflect the broader population of food hubs

The distribution of legal structures and business models in our sample may not reflect the broader population of food hubs. The distribution of food hub models found in a working list of 360 active food hubs identified by the Wallace Center and USDA Rural Development is 28% wholesale, 33% hybrid, and 39% direct to consumer (Feldstein & Barham, 2017). Compared to these figures, our sample overrepresents wholesale and hybrid hubs and underrepresents direct to consumer hubs. However, these categories are not absolute and can overlap. For instance, in our sample, of the 46 hubs that self-identified as wholesale hubs, 17 (37%) also said they sell directly to consumers.

This report refers to the legal organization of the food hub as its *legal structure* and the market a food hub serves as its *business model*. Because these classifications represent such fundamental differences between hubs, they, together with the number of years a food hub has been in business, are used throughout the report to group and compare findings. Findings are also looked at by *enterprise type* in several instances.

EMPLOYEES AND VOLUNTEERS

Paid Employees

The mean and median number of hub employees is largely consistent across all three survey years (see Table 1). Food hubs operating for more than two years had a slightly higher median and mean number of employees in each survey year, indicating that as food hubs mature, they are creating new jobs.

TABLE 1: Number of Food Hub Employees

	All Hubs			Hubs in Business More Than Two Years		
	2013 (*n* = 77)	**2015** (*n* = 130)	**2017** (*n* = 119)	**2013** (*n* = 53)	**2015** (*n* = 86)	**2017** (*n* = 94)
Total number of employees	1,184	2,187	1,887	1,058	1,675	1,700
Mean	15	17	16	20	19	18
Median	6	6	6	9	9	7
Range	0–165	0–280	0.5–240	0–165	1–189	1–240

Older hubs employ more people on average

Food hubs continue to employ a mix of full- and part-time, seasonal and year-round positions. In 2017, nearly half (47%; *n* = 112) of food hub employees held non-management, full-time, year-round positions. This was a slight increase from the same type of position in 2015 (41%; *n* = 130). Two categories—full-time, part-time, and seasonal managers and part-time, year-round employees—each represented about one fifth of food hub employees in 2017. Seasonal paid employees made up just under 10%.

The vast majority of hubs reported having women in paid positions in both 2015 and in 2017 (see Table 2). However, among hubs with female employees, the ratio of female employees declined in 2017. The number of food hubs reporting employing people of color and the ratio of employees of color both remained largely unchanged from 2015. Although a minority of hubs are employing people of color, among those that do have employees or color, the ratio is slightly greater than found in the general U.S. population: approximately 3 out of 10 individuals are people of color, according to 2016 estimates (U.S. Census Bureau, 2017).

Among food hub employees, women[5] are better represented than people of color

TABLE 2: Demographics of Food Hub Employees

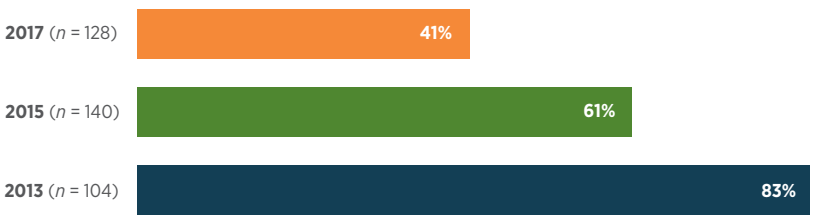
	Employees of Color		Female Employees	
	2015 (*n* = 59)	**2017** (*n* = 47)	**2015** (*n* = 127)	**2017** (*n* = 108)
Percent of hubs reporting employees in this demographic	46%	42%	99%	96%
Proportion of employees among reporting hubs	4 of 10	4 of 10	8 of 10	6 of 10

Unpaid Staff

The 2017 survey data indicate a decreasing reliance on unpaid staff, both overall and within specific subcategories (see Figure 6).[6] Use of unpaid interns declined slightly (from 27% in 2015 to 22% in 2017), as did use of regular volunteers (29% to 21%). Use of co-op members (22% to 9%) and use of occasional volunteers (39% to 24%) declined more noticeably.

Fewer hubs are relying on unpaid staff

FIGURE 6: Percentage of Hubs Using Unpaid Staff



In 2017, 22% of hubs (*n* = 88) indicated that finding reliable seasonal and/or part-time staff was one of the hub's top five challenges.[7] This is nearly identical to what was seen in 2015.

As in 2015, the hubs with the most volunteers (more than 100) tended to be either nonprofit or consumer-based cooperatives. Among the hubs with volunteers (*n* = 46), the mean ratio of volunteers to paid employees was 9:1 and the median was 2:1. This is similar to 2015, in which hubs with volunteers had a mean ratio of volunteers to paid employees of 10:1 and a median 2:1. Figure 7 shows that both the mean and median ratio of volunteers to paid staff increased for cooperative food hubs since the 2015 survey findings. For other legal structures, however, mean ratios decreased and median ratios stayed flat or nearly flat.

In 2017, 61% of hubs with volunteers (*n* = 46) had at least a 1:1 ratio of volunteers to employees, compared to 65% in 2015 (*n* = 86). Six percent of hubs in 2017 (*n* = 88) indicated that dependence on volunteers was among their top three challenges, compared to 11% in 2015 (*n* = 109) and 12% in 2013 (*n* = 79).

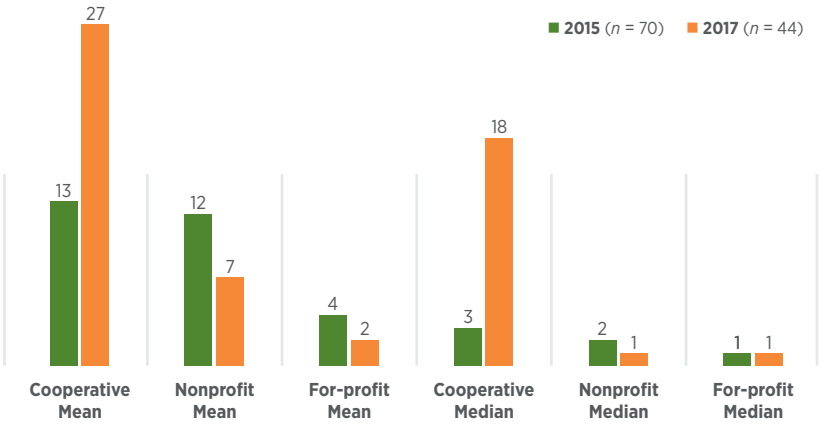
[5] Includes women of all races.

[6] These comparisons across years should be interpreted cautiously because the survey question was phrased slightly differently in each survey year.

[7] For more on food hubs' top challenges, see Figure 41.

Ratio of volunteers to paid staff increased for cooperative food hubs since 2015 but decreased for other legal structures

FIGURE 7: Ratio of Volunteers to Paid Staff by Year and Legal Structure



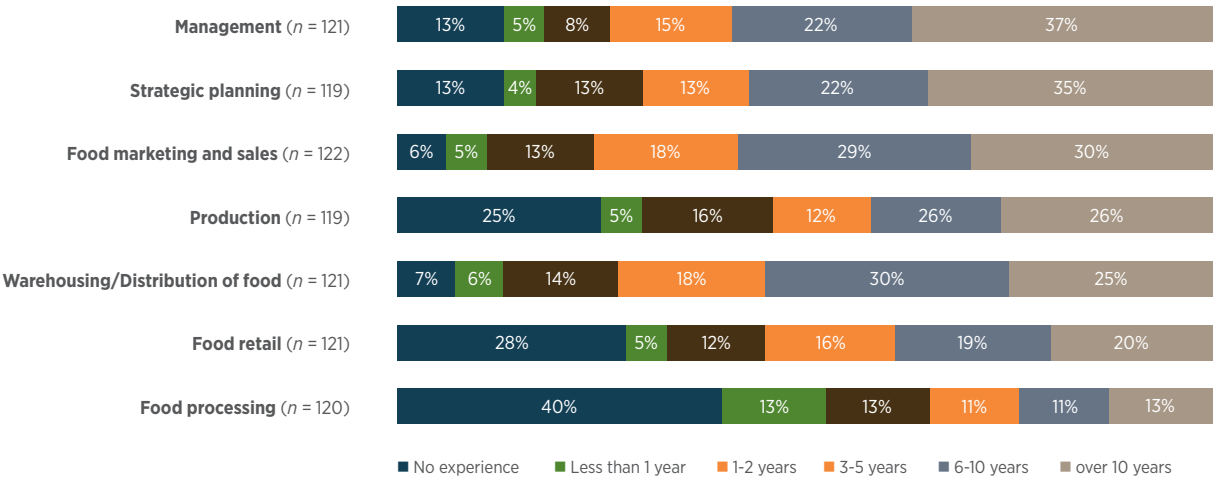
Senior Managers

Figure 8 shows hub managers' years of experience in seven key areas of expertise. Food hub managers tend to have more years of experience in strategic planning and management. They tend to have fewer years of experience in areas more specifically related to the food supply chain, including retail, processing, warehousing, marketing, and production. Presumably, this indicates a market for training opportunities in these areas. A review of applicants from the 2015 and 2016 University of Vermont Food Hub Management Certificate program by Rich Pirog (fourth author) corroborates this observation: many of the newer food hub managers had little to no formal food business or food value chain training.

Managers have more experience in strategic planning and management

For the most part, the 2017 survey findings on food hub managers' experience by area is largely consistent with what was seen in the 2015 and 2013 surveys. However, the data across survey years (not shown) do indicate a trend toward fewer managers with significant experience in production and food processing.

FIGURE 8: Food Hub Managers' Experience by Area

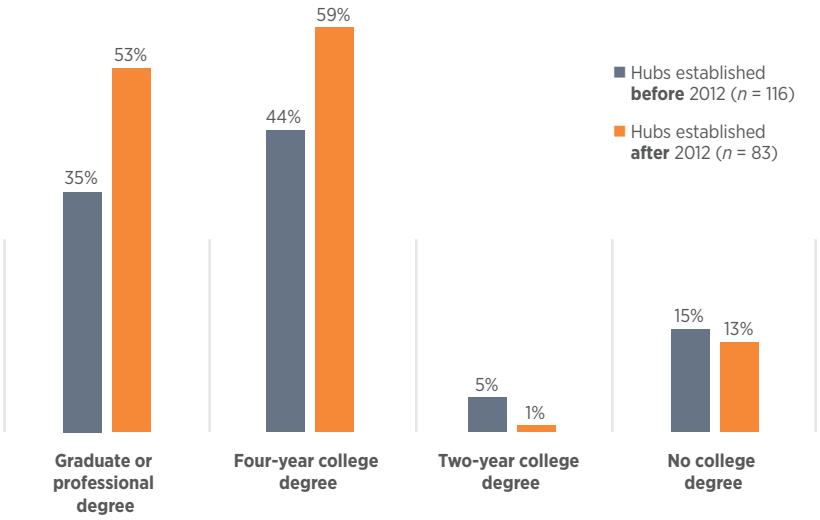


Across the three survey years, the average age of the hub's senior manager shows a narrow range: 48–51. A general trend identified in 2015, that hubs in business for a greater number of years have older senior managers, continued in 2017.[8]

As in 2015, survey responses in 2017 showed that food hub managers are a well-educated group. In 2017, among all food hubs, 82% (*n* = 79) of managers had completed a four-year, graduate, or professional degree, compared with 71% percent (*n* = 107) in 2015. Among these individuals, one third (33%) had a graduate or professional degree. Another 4% of responding food hub managers had completed a two-year or vocational degree, and 13% did not have a college degree. Figure 9 shows that newer food hubs are, on average, employing managers with more years of formal education.

Newer hubs are attracting managers with more formal education

FIGURE 9: Food Manager Education by Age of Hub



PRODUCERS AND SUPPLIERS

For the purposes of this survey, the category "producers and suppliers" includes farms or ranches, food processors, or nonfood-related businesses not owned by the hub as well as other distributors and the hub's own farms, ranches, or enterprises. The survey provided hubs an opportunity to report the breadth of their suppliers and producers. Although what follows is necessarily an estimate by the food hubs about their producers' and suppliers' activities, it offers useful insights into the supply side of food hub operations.

[8] The age of hub and the age of hub manager are weakly positively correlated, but significant: $r_s = .23$, $p < .01$.

Hubs were asked to indicate the number of producers and suppliers from which they procured or purchased product.[9,10] In 2017, 76 reporting hubs enumerated a total of 5,952 producers and suppliers, compared to 79 reporting a total of 6,255 producers and suppliers in 2015. In 2017, hubs procured or purchased from an average of 78 and a median of 40 producers and suppliers (see Table 3). Over the three survey years, the range, mean, and median number of suppliers are similar, indicating consistently wide variation between individual food hubs but a fairly consistent spread across the group as a whole. Table 4 shows that the median number of producers and suppliers increases with the age of the hub.

Hubs have a consistently large range of producers and suppliers

TABLE 3: Number of Hubs' Producers and Suppliers

	2013 (*n* = 79)	**2015** (*n* = 79)	**2017** (*n* = 76)
Mean	80	83	78
Median	36	37	40
Minimum—Maximum	5–2,000	3–1,500	1–1,800

Older hubs have a larger median number of suppliers

TABLE 4: Median Number of Suppliers by Age of Hub

Age of hub	Median number of producers and suppliers
0–2 years (*n* = 16)	29
3–5 years (*n* = 20)	31
6–10 years (*n* = 25)	50
11–15 years (*n* = 7)	72
16–20 years (*n* = 2)	38
Over 20 years (*n* = 6)	60

Representation of women and people of color in supplier and producer leadership remained consistent with 2015 findings. In both 2017 and 2015, on average, about one third of hubs' producers and suppliers were owned or operated by women (of any race) and one fifth by people of color (of any gender). Both years showed an increase in the percentage of producers and suppliers owned by women but a decrease in the percentage owned by people of color when compared to the 2013 findings (average of 16% of producers and suppliers owned by women and average of 29% owned by people of color). In 2017, nine food hubs did not have any producers and suppliers owned by people of color, but four hubs stated that all of their producers and suppliers were owned by people of color. In the same year, only one hub reported no producers or suppliers owned by women and only one hub reported that producers and suppliers were exclusively owned by women.

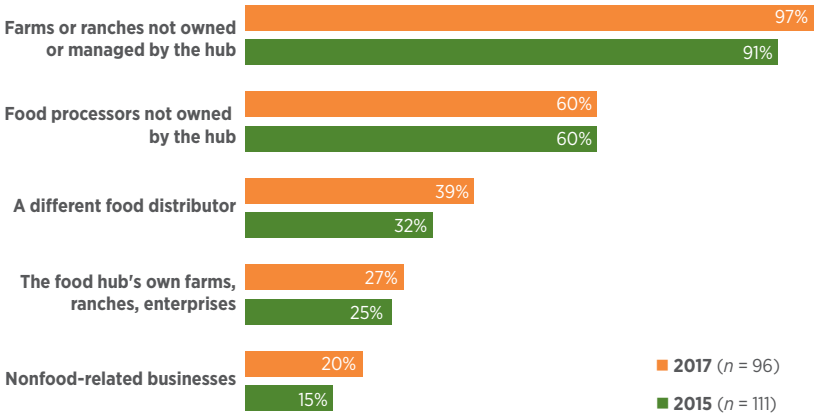
Figure 10 shows the percentage of hubs procuring or purchasing product from various sources for 2017 and 2015. In both years, independent farms and ranches were by far the most common type of supplier for food hubs, followed by independent food processors. The consistency across the two survey years indicates that this is a stable distribution of sourcing types for food hubs overall.

[9] The language of "procured or purchased" in the survey was intended to allow both hubs that paid for product and hubs that brokered product to better understand and answer questions.

[10] It is possible that two or more hubs could be working with the same supplier and thus a specific supplier may be counted more than once.

Procuring from farms and ranches not owned by the hub remains most common

FIGURE 10: Percentage of Hubs Purchasing or Procuring Product by Supplier Type



Beginning Producers and Suppliers

To further describe food hub suppliers, this survey captured the number of non-hub-owned food processors, nonfood-related businesses, and other distributors that began business in the last 10 years and from which a food hub purchased or procured product. On average in 2017, about half of a hub's producers and suppliers began business in the last 10 years (46%; n = 66), which is fairly consistent with 2015 (average of 50% new suppliers; n = 71) and 2013 (average of 47%; n = 77). Trends seen in 2015 were also evident in 2017: hubs in business for less time[11] and those with less revenue[12] were more likely to report that a higher percentage of their total producers and suppliers were beginners.

Producer Practices and Certifications

Hubs were also asked to indicate if they required, preferred, or had no preference for producers and suppliers to use particular practices or have specific certifications.[13] The percentage calculations exclude hubs responding "not applicable" for a certification or practice. As shown in Figure 11, though preferences are common, few hubs had explicit requirements. Compared to 2015, the percentage of hubs requiring many of these practices increased slightly, but the percentage with preferences for many of these practices decreased.

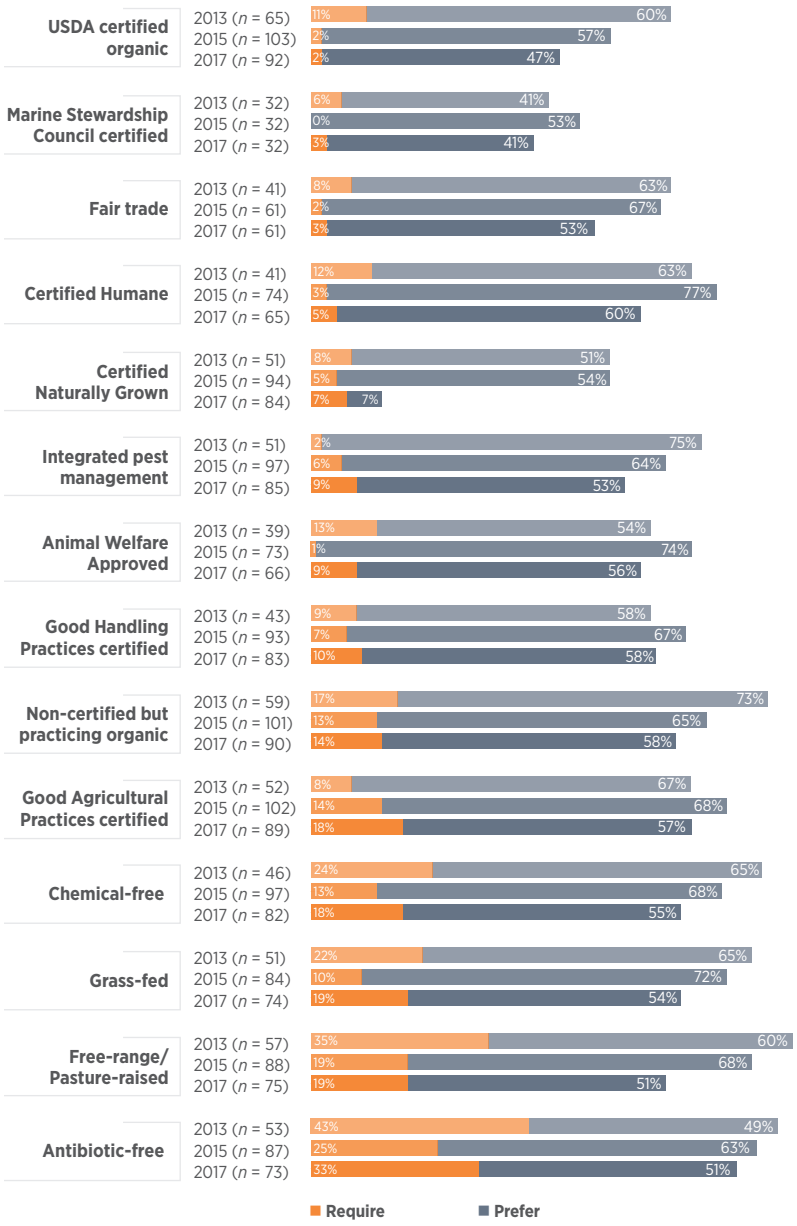
[11] 2017: $r_s = -.35$, $p < .01$; 2015: $r_s = -.45$, $p < .01$.

[12] 2017: $r_s = -.35$, $p < .01$; 2015: $r_s = -.32$, $p < .01$.

[13] Some hubs specialize in livestock and/or seafood or, conversely, carry only plant-based products. Recognizing that some certifications and practices may not apply to the producers and suppliers of some hubs, the survey allowed hubs to answer "not applicable" to any certification or practice.

Hub requirements in many categories increased since 2015, but preferences decreased

FIGURE 11: Food Hub Required and Preferred Producer/Supplier Certifications and Practices by Year



The directionality of many of the differences in requirements between new hubs (0–2 years) and established hubs (more than two years) flipped from 2015 to 2017, indicating that in most instances, age of hub will not be a strong predictor of likelihood to require specific practices or certifications. The exceptions are that hubs operating for more than two years are almost twice as likely to require GAP certification (20%, *n* = 70) and Certified Humane (6%, *n* = 54) than hubs operating for two years or less (GAP: 11%, *n* = 19; Certified Humane: 0%, *n* = 11). On the other hand, new hubs were more likely to require non-certified organic practices (20%, *n* = 20) than older hubs (13%, *n* = 70).

Following the same trend seen in 2015, wholesale hubs (35%, *n* = 34) were almost four times more likely to require GAP certification than hybrid hubs (9%, *n* = 45). None of the direct-to-consumer hubs in our sample (*n* = 10) required GAP certification. However, in contrast with 2015, direct-to-consumer and hybrid hubs were more likely to require several other practices—including antibiotic-free, free-range, chemical-free, grass-fed, and non-certified organic practices—than wholesale hubs.

The 2017 survey added a new series of questions asking hubs about overall changes in their third-party certification requirements for the practices listed in Figure 11. Since 2015, 16% of hubs have required more types of third-party certifications, 2% require fewer, and 82% have not changed the types of certifications they require (*n* = 95). Following a similar trend, 15% require a larger proportion of their producers and suppliers to have third-party certification in 2017 than in 2015, 2% require a smaller proportion, and 83% have not changed the proportion of producers and suppliers they require to have third-party certification (*n* = 95). In open-ended responses, hubs overwhelmingly cited buyers requiring Good Agricultural Practices (GAP) and buyer demands for certification as the forces driving their requirements.

89% of hubs buying from farm and ranch suppliers are supporting mostly or exclusively small or mid-sized producers

Small and Mid-Sized Farms and Ranches

In aggregate, hubs indicated that they are working with 3,658 farms and ranches, representing 61% of their total producers and suppliers.[14] The vast majority (89%, *n* = 89) of hubs reporting in 2017 indicated that most (55%) or all (34%) of their farm and ranch suppliers were small or mid-sized (defined as having gross sales less than $500,000). In 2013, 76% of hubs (*n* = 79) made the same claim, compared with 92% of hubs (*n* = 99) in 2015.

Food hub purchases from small and mid-sized farms and ranches continue to increase. In 2017, 68% of hubs (*n* = 89) said the total amount spent each year on purchases from small and mid-sized farms had increased either a lot (36%) or a little (32%) over the life of the hub. Nearly the same number (62%, *n* = 90) said the total yearly amount had increased in the last two years. In 2015, 70% of hubs (*n* = 97) indicated increased purchases from small and mid-sized farms over the preceding two years.

62% of hubs have increased their purchases from small and mid-sized farms in the last two years

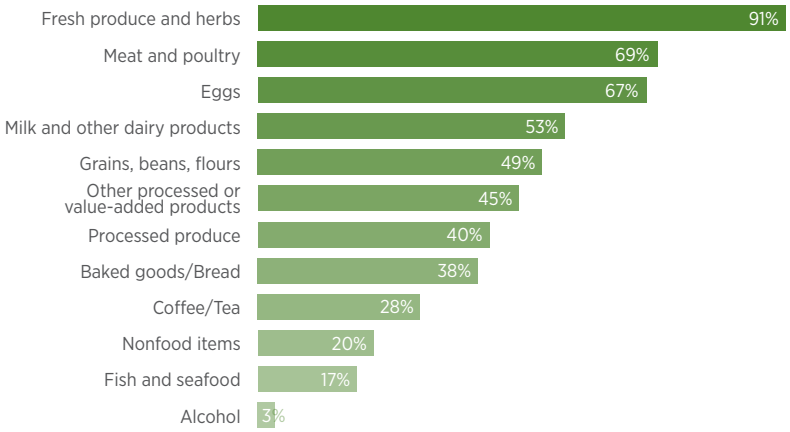
[14] As with the total number of producers and suppliers, two or more hubs may be working with the same farms and ranches, although this is unlikely.

TYPES OF PRODUCTS SOLD

Overall, food hubs reported carrying an average of five product categories. Nearly half of hubs (49%, *n* = 102) reported carrying six or more categories and a fifth of hubs (20%, *n* = 102) said they carry only a single category. As in 2015, direct-to-consumer hubs (*n* = 13) tended to carry more product categories, with an average of seven. Fresh produce and herbs remains the most commonly carried product category (see Figure 12). Produce also composes a large proportion of sales revenue on average (see Table 5). The percentage of hubs carrying different product categories changed little from 2013 and 2015 (data not shown).

Almost all food hubs carry fresh produce and herbs

FIGURE 12: Percentage of Food Hubs Carrying Products by Category



Produce composes a large proportion of sales revenue on average

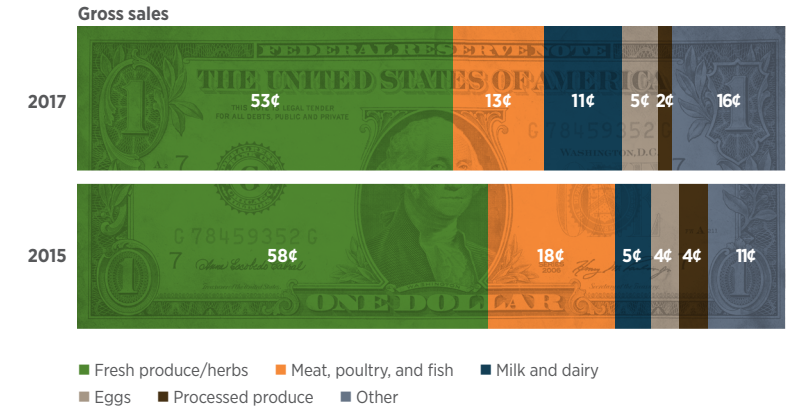
TABLE 5: Average Percentage of Sales Revenue for Meat and Produce

	Hubs selling meat, poultry, and fish	Hubs selling fresh produce	Hubs selling meat, poultry, fish, and fresh produce
Avg. % of sales revenue	20% (*n* = 65)	65% (*n* = 87)	75% (*n* = 93)

Comparing category sales as a proportion of $1 in sales across all food hubs in 2015 and 2017 shows that food hubs have a stable product mix on average. Figure 13 shows that in both survey years, the two largest sales-generating categories across all hubs were fresh produce or herbs and meat, poultry, and fish.

Produce and meat compose the largest proportions of food hub sales

FIGURE 13: Total Food Hub Sales as a Percentage of $1

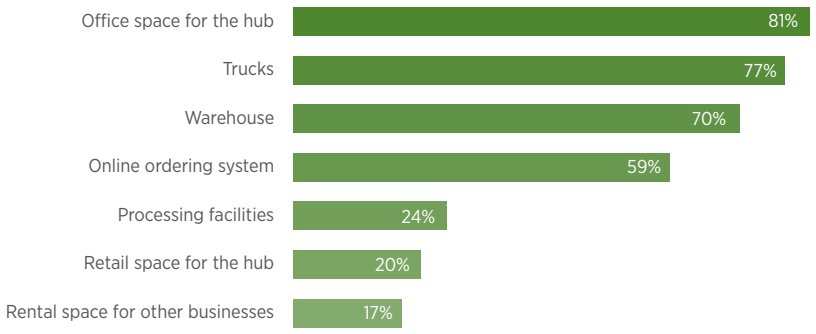


INFRASTRUCTURE

Food hubs' infrastructure utilization in 2017 (see Figure 14) followed the same patterns as 2013 and 2015, with office space, trucks, and warehouses as most prevalent. For the 26 hubs that provided responses in all three survey years, the percentage of hubs with their own office space and offering an online ordering system increased (see Figure 15). On the other hand, the percentage of hubs with warehouses and processing facilities decreased slightly each year.

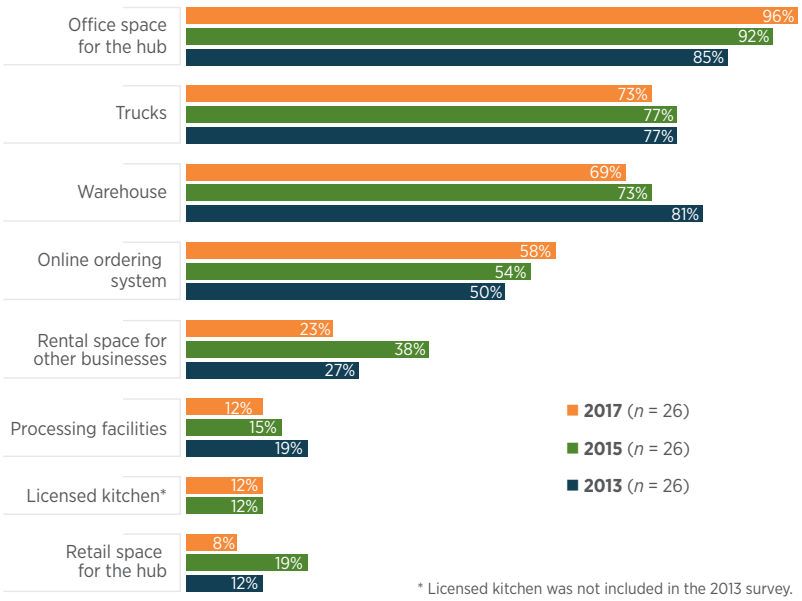
Office space, trucks, and warehouses are the most common infrastructure types

FIGURE 14: Food Hub Infrastructure Types (*n* = 127)



Hubs change their infrastructure over time[15]

FIGURE 15: Same Hub Infrastructure by Year (*n* = 26)



* Licensed kitchen was not included in the 2013 survey.

Among business models in 2017, hybrid hubs (*n* = 59) most often had processing facilities (34%) and online ordering systems (73%). Wholesale hubs (*n* = 46) most often had warehouses (78%) and trucks (82%). Direct-to-consumer hubs (*n* = 22) and hybrid hubs (*n* = 59) were equally likely to have retail space for the hub (27%).

Warehouse and delivery fleet size varied among hubs. In 2015, of the 91 hubs reporting on warehouse size, 25% had warehouse space under 1,200 square feet, and another 25% had warehouse space over 6,000 square feet. In 2017, of the 81 hubs reporting on warehouse size, 25% had warehouse space under 1,160 square feet, and another 25% had warehouse space over 7,700 square feet. Wholesale hubs were more likely than other hub types to have a warehouse. However, all three hub types had a similar warehouse size: wholesale (*n* = 33), 3,900 sq. ft.; hybrid (*n* = 38) and direct-to-consumer (*n* = 10), 3,000 sq. ft. As in 2015, in 2017 three fourths of hubs with trucks, vans, or other delivery vehicles (*n* = 97) had four vehicles or fewer. Sixty-two percent of all hubs (*n* = 125) offered transportation services for producers, irrespective of owning delivery vehicles.

[15] Between 2013 and 2015, three hubs ceased maintaining a warehouse. Between 2015 and 2017, two hubs ceased maintaining a warehouse.

SERVICES

Figure 16 shows the proportion of hubs offering various services or activities. The percentage of hubs engaged in most of these activities changed little since 2013 (data not shown),[16] with two notable exceptions. Packaging/repackaging and product storage both increased sharply. In 2013, 30% of hubs (*n* = 83) reported offering packaging/repackaging services, compared to 60% in 2017. In 2013, 58% of hubs (*n* = 83) reported offering product storage, compared to 80% in 2017.

FIGURE 16: Percentage of Hubs Offering Value-Added Services or Activities

Most hubs offer aggregation, distribution, and storage

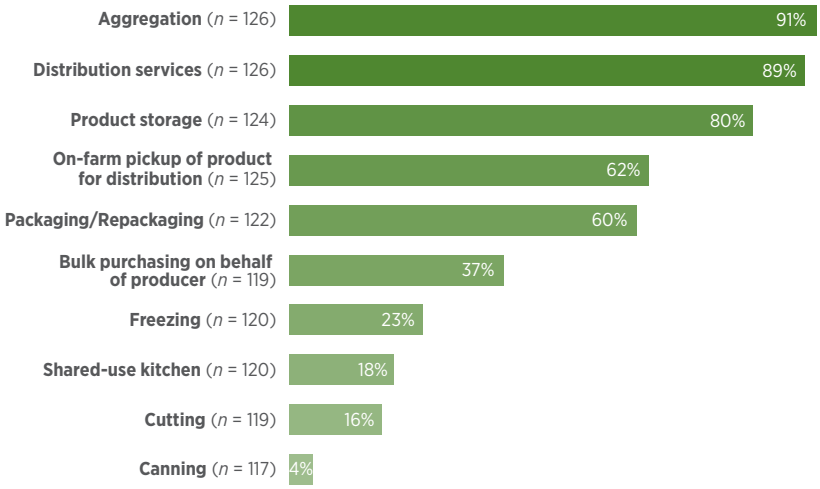
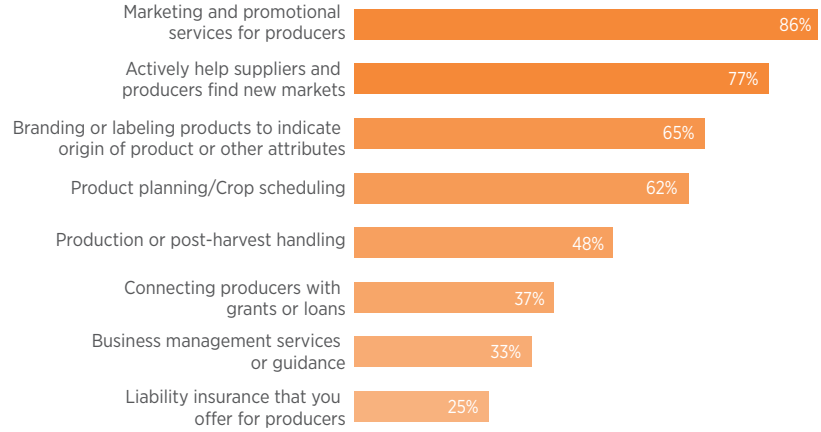


Figure 17 shows the services or activities hubs offer their producers and suppliers. As with the general services, the proportion of hubs engaging in these activities changed little from 2013 (data not shown).[17] The only noticeable change was for business management services or guidance: in 2013, 44% of hubs (*n* = 84) reported offering this service, compared to 33% in 2017.

FIGURE 17: Percentage of Hubs Offering Marketing Services (*n* = 122)

Most hubs provide promotional services and help suppliers find new markets



[16] This question was not included in the 2015 survey. In the 2013 survey, "bulk purchasing on behalf of producer" and "on-farm pickup of product for distribution" were not included as answer choices.

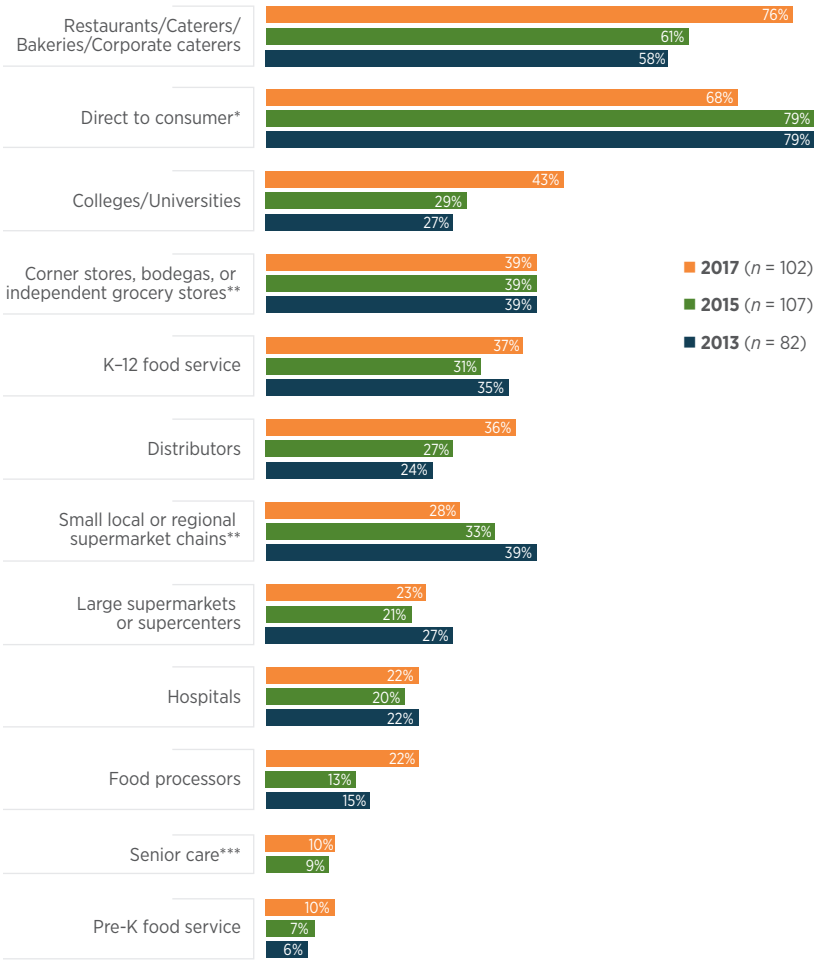
[17] This question was not included in the 2015 survey. In the 2013 survey, "connecting producers with grants or loans" and "product planning/crop scheduling" were not included as answer choices.

CUSTOMERS

In 2017, the percentage of food hub sales to most wholesale categories increased, except for grocery stores, including large supermarkets (decrease), small supermarkets (decrease), and independent stores (flat; see Figure 18). Food hubs' sales to institutions increased substantially in every category except hospitals, which remained flat. Overall, in 2017, 61% of food hubs (*n* = 102) indicated selling to institutions of any type, up slightly from 54% of hubs (*n* = 107) in 2015. The percentage of hubs selling to distributors and processors increased notably in 2017, reflecting the beginning of a trend toward food hubs' partnerships with other supply chain intermediaries. The number of hubs selling directly to consumers—through brick-and-mortar grocery stores or co-ops, online grocery stores or co-ops, CSAs, farmers markets, mobile retails units, or buying clubs—has decreased.[18]

FIGURE 18: Average Percentage of Hubs Selling to Customer Types by Year

Restaurants and direct to consumer remain the most common customer types



* The 2017 survey combined seven distinct categories into a single direct-to-consumer category. In light of this change to the survey instrument, the comparison across survey years should be interpreted with caution.

** In 2013, these two categories were listed as single category: *corner stores/small grocery stores*.

*** This category was not given as an option in 2013.

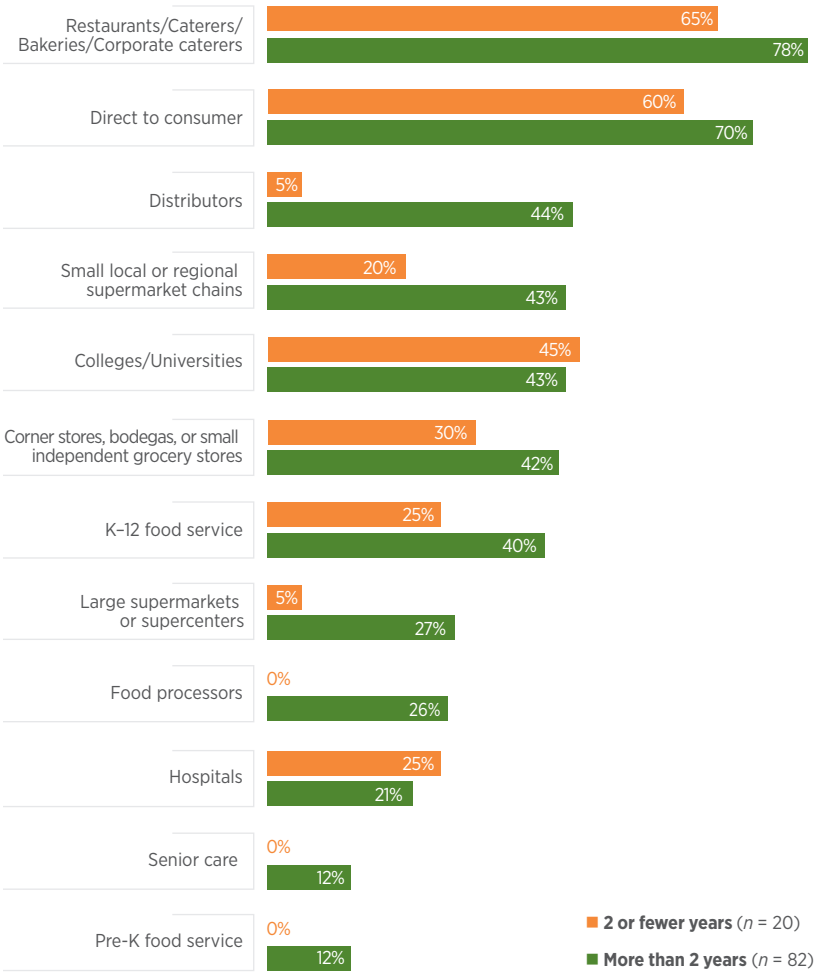
[18] The 2017 survey introduced a new way of asking about direct-to-consumer sales in order to avoid conflating types of customers with types of outlets. For example, in 2015 and 2013, hubs were asked if they sold via the internet, but the question did not specify whether or not this was to consumers. For this reason, it is possible that some hubs provided non–direct-to-consumer sales data when reporting by outlet in previous years.

Overall, hubs served an average of four customer types in 2017. Hubs in operation less than two years served four customer types on average, while hubs in operation more than two years served an average of five customer types. As in 2013 and 2015, the total revenue of the hub[19] and the number of years a hub has been in operation[20] are positively correlated to the number of customer types a hub serves. Both wholesale and hybrid hubs sold to an average of five customer types. Direct-to-consumer hubs, as implied by the name of the business model, primarily sold only to consumers, though three direct-to-consumer hubs reported that a small percentage of their sales (1%–8%) were to restaurants or colleges.

Figure 19 shows that, in general, it is more common for hubs more than two years old to have sales to wholesale customers. This trend holds true across most wholesale customer types. The differences are especially striking with supply chain intermediaries—distributors and processors.

Hubs more than two years old are more likely to sell to wholesale customers

FIGURE 19: Food Hub Customers by Average Number of Hubs Selling to Them by Years in Operation



[19] All hubs: r_s = .26, p <.01; hubs with > 1 customer type: r_s = .37, p < .01.

[20] All hubs: r_s = .31, p < .01; hubs with > 1 customer type: r_s = .24, p < .05.

FINDINGS 2: **FOOD SAFETY**

This section looks at how food hubs are responding to food safety requirements and certification requests

With the passage of the Food Safety Modernization Act (FSMA) in 2011, many of the vendors supplying food hubs as well as food hubs themselves, depending on the nature of their operations, became subject to federal food safety regulations for the first time. Though FSMA set uniform minimum food safety standards for growing and handling fresh produce, buyers can require additional certifications, such as Good Agricultural Practices (GAP) or Good Handling Practices (GHP) (Tocco, 2014).

Among hubs that sold product to businesses or institutions, the 54 responding food hubs[21] indicated that, on average, 34% of their customers required GAP certification, nearly identical to the average in 2015 (35%). Approximately 17% of hubs selling to businesses or institutions had no customers who required GAP. For eight wholesale hubs (15%), all of their customers required GAP.

Similarly, among responding food hubs selling to businesses or institutions, on average, 28% of their customers required GHP. As with GAP requirements, the data here appear to be bimodal: for 28% of hubs (n = 36), none of their customers required GHP. On the other hand, almost one fifth of hubs (17%; n = 36) reported that all of their customers required GHP. Six food hubs reported requiring both GAP and GHP.

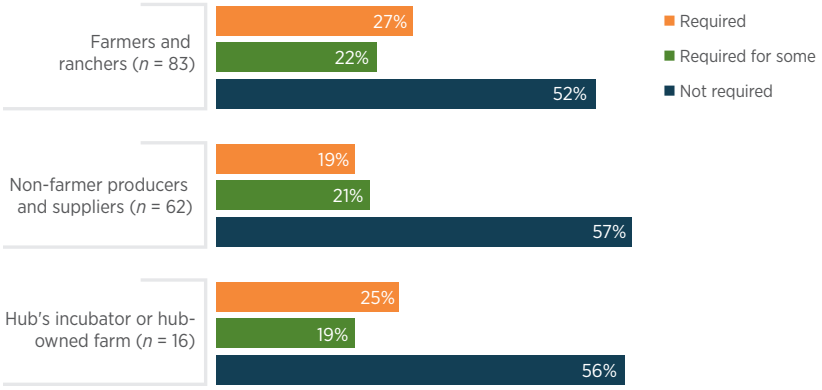
Food hubs are also directly responsible for complying with food safety requirements under FSMA. Hubs' overall top five challenges reflect concern with this responsibility. Approximately 27% of hubs (n = 89) said meeting GAP or another food safety certification was a challenge, a slight decrease from the proportion of hubs specifying this concern in 2015 (31%, n = 117).

[21] There were 106 hybrid or wholesale food hubs in the survey sample, but only 54 of these responded to this survey question.

In order to meet FSMA requirements and accommodate buyer requests for certification, about half of food hubs are requiring food safety training for some or all of their producers and suppliers. Whereas in 2015, more hubs were requiring trainings for their own incubator or farm than for other suppliers, this was not seen in 2017 (see Figure 20).

Fewer than half of hubs required producer and supplier food safety training

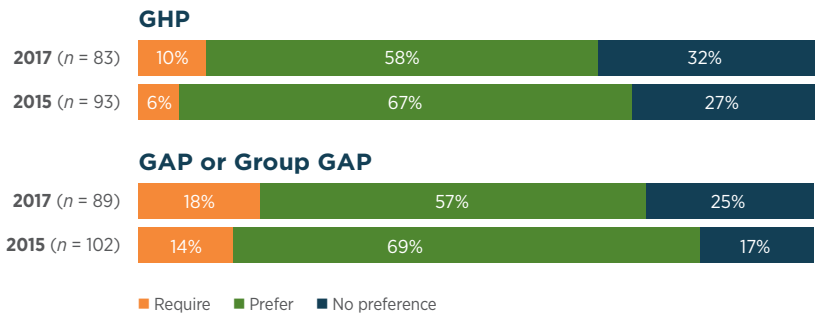
FIGURE 20: Hubs' Requirements for Producer and Supplier Food Safety Training



The 2017 findings show that the proportion of hubs requiring GAP and GHP certifications increased slightly (see Figure 21). As seen in 2015, hubs are more likely to require internal monitoring methods than GAP or GHP certification. Between 30% and 53% of hubs have internal food safety monitoring requirements for at least some of their producers and suppliers (see Figure 22).

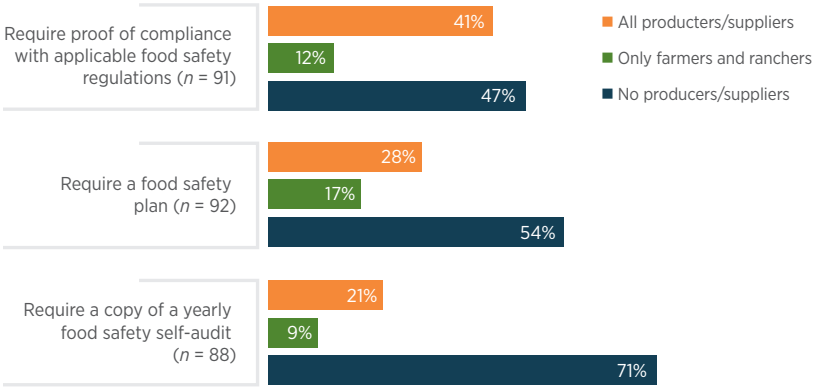
More hubs are requiring GHP and GAP

FIGURE 21: Hub Preferences for Producer and Supplier Food Safety Certification



Between 30% and 53% of hubs have internal food safety monitoring requirements

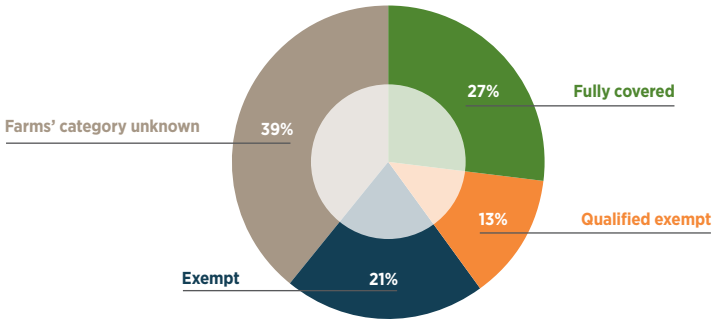
FIGURE 22: Hub Food Safety Requirements for Producers and Suppliers Handling Food Products



Under FSMA Produce Safety Rules, farms that grow, harvest, pack, or hold produce are classified as fully covered by the rule, qualified exempt, or exempt. As FSMA rules take effect and their interpretation is agreed upon, it will be important for hubs serving certain retail and institutional customers to know the status of their suppliers. The proportion of farm suppliers for which hubs that knew the coverage status varied by business model: on average, direct-to-consumer hubs (*n* = 9) did not know the coverage status of 83% of their farm suppliers, hybrid hubs (*n* = 39) did not know the coverage status of 63% of their farm suppliers, and wholesale hubs (*n* = 27) did not know the coverage status of 39% of their farm suppliers. Since wholesale hubs were most likely to know the coverage status of their farm suppliers, Figure 23 shows the average percentage of their farm suppliers falling into the three different FSMA Produce Rule categories or for whom the status was unknown.

Wholesale hubs know how FSMA impacts the majority of their farm suppliers

FIGURE 23: Average Percentage of Wholesale Hubs' Farm Suppliers by FSMA Produce Rule Status (*n* = 27)



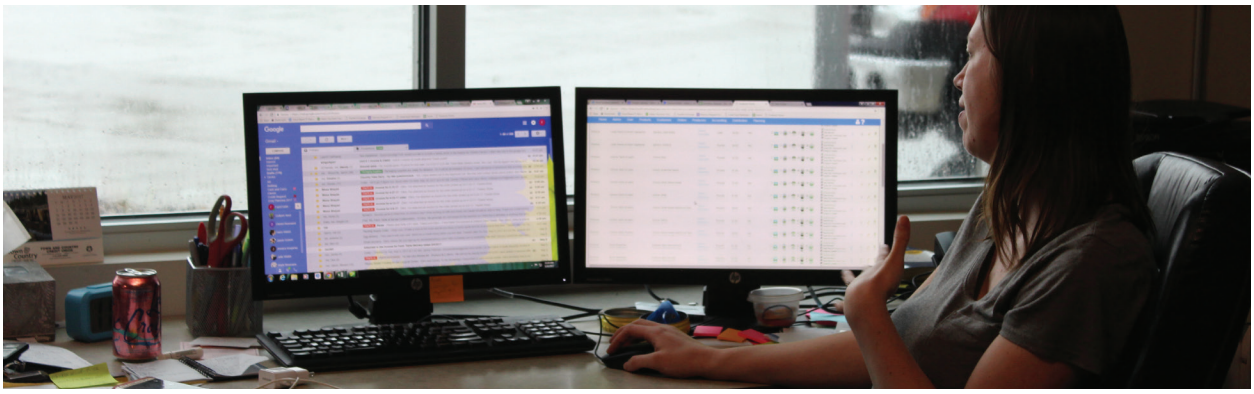
Hubs are investing in food safety. Fifty-seven percent (*n* = 90) have staff responsible for the hub's internal food safety compliance, up from 49% (*n* = 107) in 2015. Among the hubs without a dedicated food safety staff person, a little more than half reported using their state government (54%; *n* = 35), the USDA (56%; *n* = 34), or university extension (53%; *n* = 36) as a source for food safety information. A smaller number of hubs without food safety staff reported using these institutions for food safety training: 18% (*n* = 34) use the USDA for training, 23% (*n* = 35) use their state government, and 39% (*n* = 36) use university extension.

Hubs are continuing to provide personnel and services to support producers and suppliers to engage in food safety practices (see Table 6). The number of hubs offering different types of support are largely similar to those seen in 2015, with the exception of assisting with or providing GAP training and certification. This may reflect the increase in GAP training and certification assistance from other sources. Overall, 80% of hubs (*n* = 91) stated that they take a clear position on the importance and value of voluntary food safety programs, very similar to the finding that 82% of hubs (*n* = 105) did so in 2015.

Hubs continue to support producers' and suppliers' engagement with food safety practices

TABLE 6: Hubs' Food Safety Services for Suppliers and Producers

	2015 percentage of hubs offering service (*n*)	2017 percentage of hubs offering service (*n*)
Assist producers and suppliers in developing or reviewing food safety plan	61% (105)	59% (91)
Incentivize producer engagement with food safety	35% (105)	37% (89)
Provide staff person responsible for food safety training and producers' and suppliers' compliance	33% (105)	34% (88)
Assist with or provide GAP training and certification	43% (105)	38% (89)



FINDINGS 3: **FINANCES**

This section examines sales and non-sales revenue as well as operational expenses[22]

Although food hubs differ from similar businesses in the conventional supply chain because of their social and environmental missions, they share a need for financial viability in order to be sustainable in the long term.

Recognizing that every hub is unique, a calculated financial ratio, Operating Expense Ratio (OER), is used to make financial viability comparisons. This section concludes with discussions concerning profit and loss balance, loan readiness, and start-up funds.

GROSS REVENUE

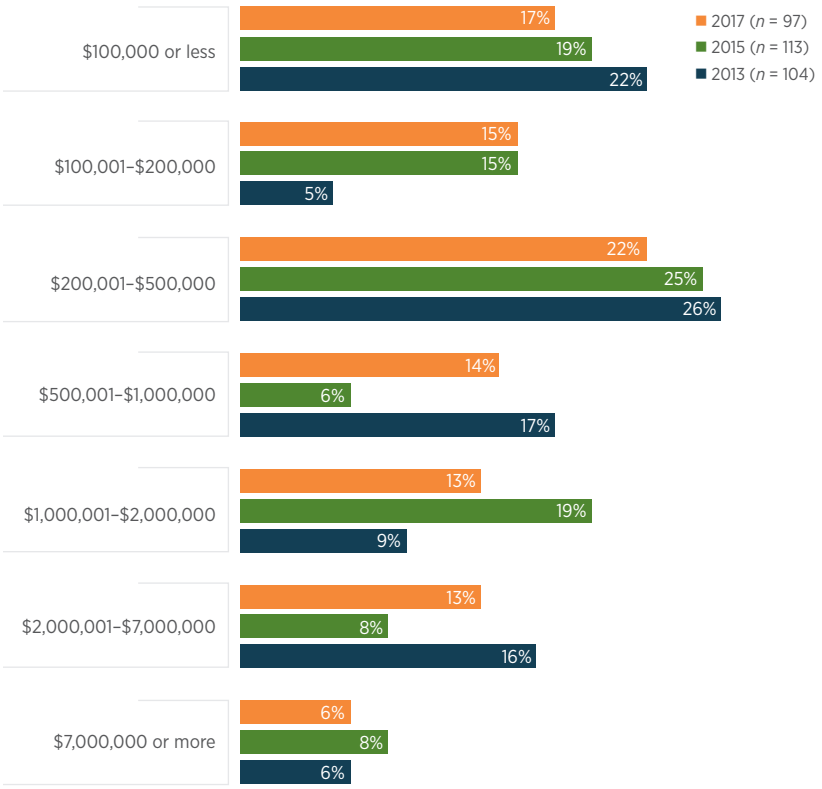
In 2017, 97 responding food hubs reported total gross revenues in excess of $235 million. In 2015, 113 food hubs reported gross revenues in excess of $371 million, meaning that 2017 saw a 27% decrease in average gross revenue. The average gross revenue from all sources was $2.4 million per hub in 2017, compared to $3.3 million in both 2013 and 2015. However, 2017 had the highest median revenue of all three survey years—$489,000 compared to $450,000 in 2013 and $351,000 in 2015.[23] Figure 24 shows that the spread across gross revenue categories has been fairly consistent over the three survey years.

[22] In this report, *gross revenue* is defined as the total revenue generated from all sources and may be referred to as *revenue*. *Total gross sales revenue* is defined as the revenue generated from sale of products to customers and may be referred to as *sales*. *Operating expenses* is defined as the amount of revenue used to conduct business and may be referred to as *expenses*. All other definitions are included in the text.

[23] Medians have been rounded to the nearest $1,000.

Gross revenue by category is fairly consistent over time

FIGURE 24: Food Hub Gross Revenue by Category and by Year



In 2017, hubs reported a range of total gross revenues from less than $1,000 to $90 million. Table 7 shows the number of hubs reporting and the median and range of total revenue by various categories for both survey years.

TABLE 7: Revenue by Category for 2015 and 2017[24]

Median revenue increased in 2017 overall; changes by category vary

	2015			2017		
	Percentage of Hubs Reporting	Median Revenue*	Minimum/ Maximum Revenue*	Percentage of Hubs Reporting	Median Revenue* (% change from 2015)	Minimum/ Maximum Revenue*
Overall	100% (*n* = 113)	$351,000	$5,000–$96,000,000	100% (*n* = 98)	$489,000 (+39%)	< $1,000–$90,000,000
By Years in Operation (*n* = 113)						(*n* = 97)
0–2 years	30%	$172,000	$5,000–$12,000,000	21%	$384,000 (+123%)	$6,000–$12,500,000
3–5 years	31%	$370,000	$18,000–$6,000,000	30%	$260,000 (–30%)	< $1,000–$9,200,000
6–10 years	20%	$509,000	$75,000–$8,000,000	32%	$604,000 (+19%)	< $1,000–$7,500,000
11+ years	19%	$1,810,000	$17,500–$96,000,000	17%	$1,600,000 (–12%)	$38,000–$90,000,000
By Legal Structure (*n* = 108)						(*n* = 94)[25]
For-profit	39%	$1,020,000	$26,000–$70,000,000	39%	$890,000 (–13%)	< $1,000–$90,000,000
Nonprofit	36%	$232,000	$5,000–$13,916,000	43%	$288,000 (+24%)	< $1,000–$14,633,000
Cooperative	25%	$266,000	$18,000–$96,000,000	18%	$389,000 (+46%)	$6,000–$3,519,000
By Business Model (*n* = 113)						(*n* = 97)
Direct to consumer	16%	$197,000	$5,000–$12,000,000	16%	$670,000 (+240%)	< $1,000–$7,500,000
Hybrid	53%	$270,000	$7,000–$16,527,000	46%	$380,000 (+41%)	< $1,000–$14,000,000
Wholesale	31%	$1,077,000	$50,000–$96,000,000	38%	$728,000 (–32%)	$6,000–$90,000,000

* Rounded to the nearest $1,000.

[24] Although mean revenue was reported in 2013 and 2015, we have excluded it from this report because means can be misleading when the range of values is so large and because feedback on previous reports has questioned the inclusion of mean revenue.

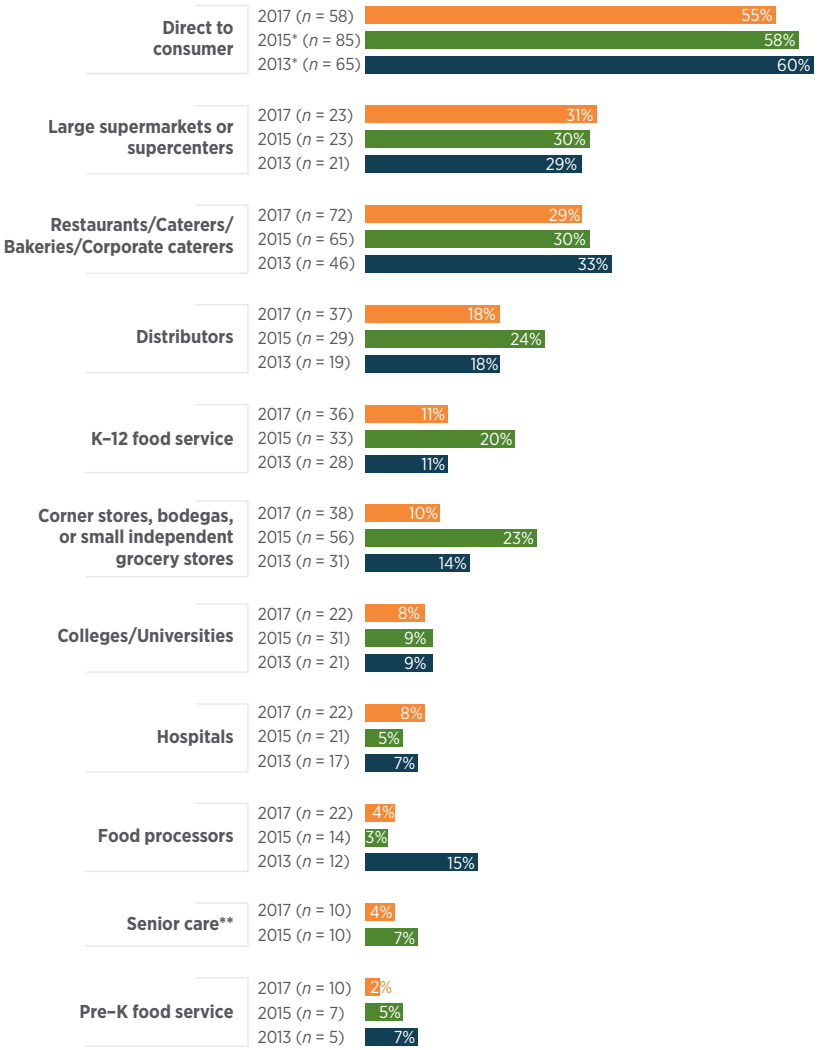
[25] Three publicly owned hubs with reported revenue are not included in the analysis by legal structure.

Sales Revenue

Looking at gross revenue from product sales alone, the average per hub was $2.3 million in 2017.[26] In aggregate, 99 food hubs reported gross sales in excess of $229 million in 2017, compared to 2015, in which 107 food hubs reported aggregate gross sales in excess of $333 million. Figure 25 shows the average percentage of total gross sales for hubs selling to a particular customer category in each of the survey years. For context, refer to Figure 18, which shows the percentage of hubs that sold to a particular category. The percentage of total gross sales going to the categories of distributors, independent grocers, and K–12 schools increased substantially in 2015 compared to 2013, but in 2017, they returned to near 2013 levels. Other than those categories, the average percentage of sales going to different customer categories has remained fairly consistent.

Average percentage of sales to different customer categories remains fairly consistent

FIGURE 25: Average Percentage of Total Gross Sales for Hubs Selling to a Particular Customer Category by Year



* The percentages of direct-to-consumer sales for 2013 and 2015 were calculated as the sum of percentage sales to co-op, buying club, online, own retail storefront, CSA, farmers market, and mobile retail unit.

** This question was not asked in 2013.

[26] Although it is counterintuitive for average gross sales average to be higher than average gross revenue, this is explained in part by four hubs acting as brokers and reporting estimated sales value based on the wholesale value of the product, which is larger than the commission (revenue) they received from the sale. Also, note that six hubs reported sales but not revenue (ranging from $20,000 to $7.9 million) and four hubs reported revenue (ranging from less than $1,000 to $1.6 million) but not sales. Finally, three hubs reporting $0.00 in sales were excluded from the analysis.

Non-Sales Revenue

Among the 67% of hubs breaking even or better (see page 42), 70% of hubs (*n* = 50) covered all operating expenses with product sales–generated revenue. The remaining 30% used non-sales-generated revenue to fill the gap and would not otherwise generate a profit. Across all hubs reporting revenue in excess of product sales (*n* = 54), non-product revenue-generating sources account for, on average, 29% of total gross revenue, compared to 22% of total gross revenue (*n* = 67) in 2015.

Table 8 summarizes food hub revenue outside of product sales. In comparing across years, the data shows that the percentage of hubs with particular revenue sources decreased from 2015 in all categories. For example, in 2017 only one fifth of hubs (20%) reported that they had foundation grants, compared to nearly half (46%) of hubs in 2015. However, among the food hubs reporting receipt of grants, the percentage of the hubs' gross revenue from each source remained fairly consistent across most categories. There are three exceptions to this: the average percentage of gross revenue from state government grants and from commissions and broker fees increased from 2015, and the average percentage of gross revenue from in-kind support decreased from 2015.

Percentage of hubs with non-sales revenue decreased in most categories

TABLE 8: Non-Sales Revenue Categories by Year

	2013	2015		2017	
	Average percentage of gross revenue (*n*)	Percentage of food hubs with revenue source* (*n* = 61)	Average percentage of gross revenue (*n*)	Percentage of food hubs with revenue source* (*n* = 54)	Average percentage of gross revenue (*n*)
Grants					
Foundation grants	18% (22)	46%	18% (28)	20%	19% (25)
Federal government grants	11% (15)	25%	15% (15)	15%	13% (19)
State government grants	6% (16)	15%	13% (9)	6%	24% (8)
Local government grants	2% (3)	13%	7% (8)	6%	6% (6)
Donations					
Donations from individuals	6% (9)	28%	4% (17)	15%	5% (19)
Other donations	Not asked	26%	5% (16)	Not asked	Not asked
Donations from businesses/organizations	5% (7)	13%	3% (8)	9%	5% (11)
In-kind support	4% (9)	10%	18% (6)	5%	7% (4)
Non-Sales Programs, Services, and Fees					
Other services/operations of the food hub	Not asked	34%	8% (21)	14%	5% (17)
Membership fees	11% (16)	25%	4% (15)	4%	2% (5)
Income from other programs of the organization	3% (13)	18%	8% (11)	6%	9% (12)
Renting space to other businesses	17% (8)	16%	8% (10)	9%	7% (7)
Commissions and broker fees not accounted for in product sales**	Not asked	10%	15% (6)	5%	41% (5)

* Based on data collection differences, the percentage of hubs with each revenue source could not be calculated in 2013 in a way that made it comparable to the same calculation in 2015 and 2017.

**Only asked of hubs involved in brokering.

Among food hubs with non-sales revenue, 59% (*n* = 54) reported receiving grant revenue from a foundation, federal, or state grant,[27] similar to the proportion in 2015 (54%, *n* = 61).[28] Of hubs that reported having revenue from foundation, federal or state grants (*n* = 32), 44% reported either one or two types of grants and 13% reported grants from all three sources.

Table 9 shows that nonprofit hubs relied more heavily on grants than hubs with other legal structures did, which was also shown in the 2015 findings. Across hubs that reported both total revenue and product sales, foundation, federal, and/or state grants were a source of income for 56% of nonprofits (*n* = 39), 31% of cooperatives (*n* = 16), and 14% of for-profit hubs (*n* = 36).

Nonprofit hubs relied more heavily on grants

TABLE 9: Percentage of Hubs With Grant Type by Legal Structure

	Foundation	Federal	State
Nonprofit (*n* = 29)	69%	45%	24%
Cooperative (*n* = 11)	36%	27%	9%
For-profit (*n* = 13)	15%	31%	0%

As in 2015, hubs were asked if grants were critical to their ability to carry out the core functions of aggregation, distribution, and marketing of local or regional foods. The question and response options were phrased as follows:

Q *Thinking about core food hub functions: aggregation, distribution, and marketing of local foods, how dependent is your food hub on grant funding from public and/or private sources to carry out these core functions?*

A

- **Highly dependent** — We could not carry out these core functions without considerable grant funding.
- **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 service a particular market/customer base).
- **Not at all dependent** — We do not require any grant funding to carry out these core functions.

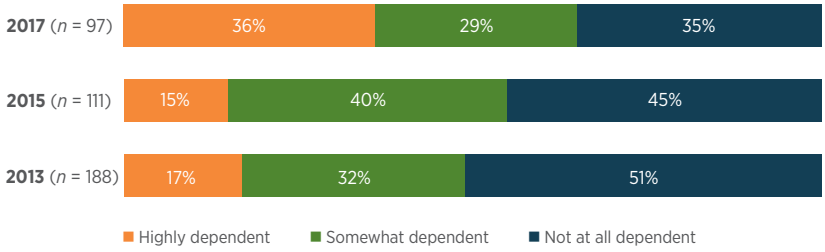
[27] Including local grants increases the proportion of food hubs with non-sales revenue from at least one grant source to 61%.

[28] Number of sources does not indicate number of grants. A hub may have multiple grants from one source.

Figure 26 shows that in 2017, the proportion of hubs not at all dependent on grants decreased and the proportion of hubs highly dependent on grants increased from the previous survey year, pointing toward an overall increased reliance on grants. Even so, 64% of hubs report being able to carry out their core functions without grant funding. Furthermore, of the 35 hubs reporting being highly dependent on grants, 26 (75%) were nonprofit food hubs who may be intentionally trading profitability for greater social impact.

The percentage of hubs highly dependent on grants increased from 2013 and 2015

FIGURE 26: Food Hub Reliance on Grant Funding



Half (50%) of hubs in operation for two years or less were highly dependent on grants, and 35% were somewhat dependent. Hubs in operation more than two years were split: a third (33%) were highly dependent, and 40% were not at all dependent on grants.

Hubs who stated that they were highly or somewhat dependent on grants most often applied to two of the nine federal grant programs listed in the survey: Local Food Promotion Program (73% of hubs; *n* = 60) and Specialty Crop Block Grants (43%; *n* = 60).[29] Hubs reporting that said they were not at all dependent on grants most often did not apply to any of the federal grant programs named in the survey. Hubs describing themselves as profit- or income-driven (18%, *n* = 28) were less likely than hubs identifying as triple bottom line enterprises (35%, *n* = 37) or social enterprises (55%, *n* = 31) to state they were highly dependent on grants.

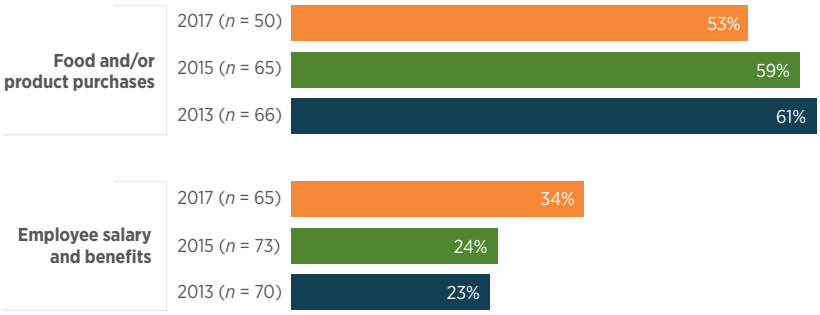
OPERATING EXPENSES

As in 2013 and 2015, the largest category of food hub expenses was for product purchases; however, the percentage did decrease slightly (see Figure 27). On the other hand, the average proportion of payroll expenses increased in 2017. The next largest category of expenses was payments for facility space (6%). All other categories—credit card and bank service charges; payments for trucks, utilities, gasoline, and tolls; consulting services; packing equipment and supplies; advertising and promotional material; repairs/maintenance; data and computer services; insurance; telecommunications and other administration expenses—represented between 1% and 4% of hubs' operating expenses.

[29] The survey listed the following grant programs: Business and Industry Guaranteed Loans (Rural Development), Community Facilities Grants and Loans (Rural Development), Community Food Projects Grants (National Institute of Food and Ag), Farm to School Grant Program (Food and Nutrition Service), Farmers Market Promotion Program (Agricultural Marketing Service), Local Food Promotion Program (Agricultural Marketing Service), Rural Business Development Grants (Rural Development), Specialty Crop Block Grants (Agricultural Marketing Service), and Value Added Producer Grant Program (Rural Development).

Labor expenses as a percentage of revenue have increased

FIGURE 27: Major Food Hub Expenses as a Percentage of Revenue



Looking at aggregate food hub expenses by survey year, we see that median expenses increased by 59% from 2015 to 2017 (see Table 10). However, some of this increase could have come from changes to the 2017 survey tool that were made to more accurately capture hubs' expenses.[30]

Median expenses increased in 2017[31]

TABLE 10: Food Hub Expenses by Survey Year

	2013 (*n* = 79)	2015 (*n* = 87)	2017 (*n* = 78)
Mean expenses*	$3,345,000	$2,173,000	$1,234,000
Median expenses*	$311,000	$238,000	$378,000

*Rounded to the nearest $1,000.

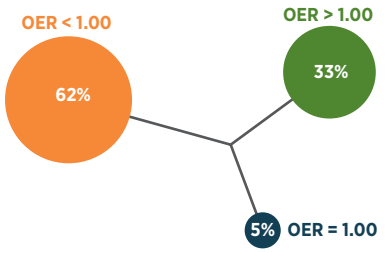
[30] We examined answers to the expense questions across years to determine if changes in reporting of miscellaneous expenses may be a result of changes to the format of the question. In 2013 and 2015, respondents provided expenses in dollars by category but did not provide total expenses; total expenses were calculated as the sum of individual categorical expenses. In 2017, respondents first provided total expenses and then broke down total expenses by category in either dollars or percentages. In all three years, respondents had three spaces to enter miscellaneous expenses and create unique expense category names. In the analysis, we reclassified expenses in any of the miscellaneous categories that clearly fit into other survey-provided categories. In 2013 and 2015, respondents had one additional open-ended question to further explain "any other expenses." Expense amounts in this open-ended question were not included in the analysis of total expenses. However, examining these verbatim responses indicated that many hubs had miscellaneous expenses they did not know how to classify. In 2017, when hubs were forced to categorize expenses to meet the total expenses they reported, some hubs reported a substantial proportion of their expenses as miscellaneous, again indicating that previous surveys may have under-captured miscellaneous expenses. Indeed, in comparing all three surveys, the aggregate miscellaneous expenses as a percentage of total expenses was highest in 2017, although not by a large margin. In 2013, the percentage of total expenses captured in the combined miscellaneous categories was 7.4% (*n* = 41), in 2015 it was 11.7% (*n* = 50), and in 2017 it was 12.6% (*n* = 44). Also, the percentage of hubs within the survey sample that reported miscellaneous expenses in 2017 (58.7%; *n* = 75) was larger than in 2015 (50%, *n* = 88) or in 2013 (51.3%, *n* = 80). All of this together suggests that some hubs may have failed to report some miscellaneous expenses in 2015 and 2013. If this is the case, then the average OER may have been underestimated in 2013 and 2015, meaning that more hubs were measured as profitable than was warranted.

[31] This table includes all hubs who reported total revenue and expenses by category (2013 and 2015) or total expenses (2017).

OPERATIONAL EFFICIENCY

An OER is a common measure of a business's financial health. It is calculated by dividing total operating expenses by total gross revenue.

FIGURE 28: Operating Expense Ratio (*n* = 78)



Two thirds of hubs report breaking even or better

When a business is covering all of its expenses with total gross revenue, OER will equal 1.00. A business with an OER greater than 1.00 has expenses in excess of its revenue and a negative profit margin. A business with an OER less than 1.00 has revenue in excess of its expenses and a positive profit margin.

In 2017, one third of hubs (33%) had an OER greater than 1.00 (see Figure 28), meaning their expenses exceeded their revenue, compared to one fourth of hubs in 2015. Conversely, two thirds of hubs (67%) were breaking even or better, with an OER of 1.00 or less, compared to three fourths of hubs in 2015. While this appears to indicate that fewer hubs were profitable in 2017, this may reflect changes in the question format (see footnote 30). In other words, it could be that the 2017 data better captures food hub expenses, resulting in a lower OER for some food hubs.

Table 11 shows OER by legal and business model for 2015 and 2017. The mean OER in most categories was higher (hubs were less profitable) in 2017 than in 2015. However, the high end of the range in most categories was substantially higher in 2017 compared to 2015. In other words, the 2017 survey captured more hubs with very high OERs, which inflates the mean for the full sample. The median OER for 2015 and 2017 shows much less movement. Table 11 also shows that cooperative food hubs have the lowest mean, the lowest median, and the narrowest range in OER in both survey years.

Table 12 shows OER by years in operation. While there appears to be a general trend suggesting that the longer a hub has been in operation, the lower its OER (the more profitable it is), the large range of responses makes it difficult to confirm this as a significant trend.[32] Similarly, the number of product categories carried,[33] the number of employees,[34] warehouse square footage,[35] and the total revenue received from government or foundation grants[36] are not individually predictive of OER. The implication is that there may be some other factor that has yet to be investigated or is hard to measure that is associated with OER and/or that there is a general OER trend dependent on some mix of variables. The Food Hub Benchmarking Study (Farm Credit East, Wallace Center at Winrock International, Morse Marketing Connections, & Farm Credit Council, 2015) analyzes food hub financials in ways that complement this study and may help illuminate factors that influence OER.[37]

$$\text{Operating Expense Ratio (OER)} = \frac{\text{Total Operating Expenses}}{\text{Total Gross Revenue}}$$

[32] $r_s = -.18$, $p = .11$

[33] $r_s = .07$, $p = .57$.

[34] $r_s = -.22$, $p = .06$.

[35] $r_s = -.19$, $p = .19$.

[36] Federal: $r_s = .12$, $p = .66$; state: $r_s = -.12$, $p = .8277$; foundation: $r_s = .01$, $p = .97$.

[37] Visit http://foodhub.info for the forthcoming benchmarking study, expected in the third quarter of 2018.

TABLE 11: Operating Expense Ratio by Legal and Business Model

Food hubs have a wide range of operating expense ratios in our sample

	2015				2017			
	n	Mean	Median	Range	*n*	Mean	Median	Range
All hubs	86	0.88	0.94	0.01–3.10	78	1.13	0.97	0.06–7.18
Legal Structure								
Nonprofit	29	1.00	0.90	0.17–3.10	34	1.26	1.01	0.15–7.18
Cooperative	22	0.74	0.88	0.04–1.21	14	0.61	0.45	0.15–1.18
For-profit	32	0.92	0.98	0.01–1.53	27	1.29	0.97	0.19–6.67
Business Model								
Wholesale	28	0.82	0.94	0.01–1.53	26	1.13	0.93	0.15–7.18
Hybrid	43	0.92	0.92	0.04–3.10	41	1.21	0.99	0.06–6.67
Direct to consumer	15	0.89	0.92	0.18–2.66	11	0.82	0.92	0.15–1.31

TABLE 12: Operating Expense Ratio by Years in Operation

Operating expense ratios show a trend toward greater profitability as hubs mature

	2015				2017			
	n	Mean	Median	Range	*n*	Mean	Median	Range
All hubs	86	0.88	0.94	0.01–3.10	78	1.13	0.97	0.06–7.18
0–2 years	27	0.99	0.82	0.27–3.10	17	1.44	0.97	0.15–7.18
3–5 years	25	0.89	0.98	0.18–1.53	23	1.16	0.99	0.16–5.41
6–10 years	17	0.83	0.94	0.01–1.50	25	1.03	0.92	0.15–6.67
11–15 years	4	1.00	0.99	0.96–1.06	5	1.14	0.99	0.84–1.57
16–20 years	4	0.77	0.95	0.17–0.99	2	0.57	0.57	not reported
21+ years	9	0.66	0.83	0.04–1.00	6	0.71	0.77	0.06–1.01

Although the overall average OER improved from 2013 to 2015, this was not the case in 2017 (see Table 13). The average OER for all responding food hubs increased in 2017, meaning food hubs were less profitable on average. However, looking at the subset of hubs that responded to multiple survey years, we see clear increases in profitability (see Table 14). Over the three survey years, this group of hubs (*n* = 9) had an average OER decrease of 21% from 2013 to 2017.

TABLE 13: Operating Expense Ratio by Year

Mean and median operating expense ratios are similar across survey years

	n	Percentage in business two years or less	Mean	Median	Range
2017 — All hubs	78	19%	1.13	0.97	0.06–7.18
2015 — All hubs	86	31%	0.88	0.94	0.01–3.10
2013 — All hubs	77	32%	1.09	1.00	0.04–6.79

TABLE 14: Operating Expense Ratio by Year for Same Hubs

Hubs with multi-year data show a clear trend toward greater profitability

Hubs with OER for Two Years	*n*	Mean	Median	Range
2017	35	0.76	0.90	0.16–1.45
2015		0.80	0.83	0.09–1.50

Hubs with OER for Three Years	*n*	Mean	Median	Range
2017	9	0.82	0.99	0.19–1.45
2015		0.91	1.16	0.04–1.50
2013		1.04	1.00	0.11–1.85

ACCOUNTING PRACTICES AND LOAN READINESS

Access to capital remains a challenge for a significant number of hubs

Approximately 27% of hubs identified access to capital as one of their top three challenges in 2017, down slightly from the 29% including it in their top three challenges in 2015. Debt capital, or loans, can be one source of capital.

Loan activity for food hubs was very similar in 2017 and 2015. In 2017, nearly half (44%, *n* = 97) of hubs indicated that they met with lenders to discuss debt capital in the last two years, compared to 46% in 2015. One third (29%; *n* = 97) went on to apply for debt capital (compared to 30% in 2015; *n* = 111). Approval rates for the full loan decreased in 2017: 68% (*n* = 28), compared to 82% in 2015 (*n* = 33). However, approval for partial loans increased in 2017 to 21% (*n* = 28) from 12% in 2015 (*n* = 33).

Lenders and granting agencies require businesses applying for loans to provide various financial documents. While the large majority of hubs were prepared with current income statements (90%) and balance sheets (83%), far fewer had marketing plans updated within the last two years (45%) or business plans updated within the last year (41%). These rates were very similar to those found in 2015.

REVENUE SOURCES TO BEGIN OPERATIONS

Fewer hubs are using their own capital to begin operations

In 2017, the number of hubs that began operations using the overarching organization's or the founders' funds decreased substantially (31%, *n* = 94) compared to 2015 (48%, *n* = 72) and 2013 (46%, *n* = 91). The proportion of hubs drawing on bank loans to begin operations also decreased in 2017 (6%, *n* = 94) compared to 2015 (14%, *n* = 72). On the other hand, the proportion of hubs using federal government funds to begin operations increased in 2017 (39%, *n* = 94) relative to 2015 (32%, *n* = 72). Food hubs that began operation two years ago or less were more likely to use grants, whether from private, state, or federal sources, a trend that was also seen in 2015. On average, hubs overall had slightly more than three beginning funding sources in both 2017 and 2015. The percentage of hubs beginning business with funds from one or two sources increased slightly: 44% of hubs (*n* = 72) in 2015 and 47% (*n* = 95) in 2017.

Figure 29 compares the percentage of recently established hubs using various beginning revenue sources by survey year, providing insights into how the ways new hubs fund their operations might change over time. As in the full sample, there appears to be movement away from using personal capital and toward federal government funds to begin operations. State government funding, income from other programs, and business loans seem to be growing in prevalence as a source of start-up funds for new hubs. In-kind support and private investors may be decreasing in prevalence.

In 2017, new hubs were more likely to use government funds to begin operations

FIGURE 29: Primary Revenue Sources to Begin Food Hub Operations for New Hubs (Less Than 2 Years Old)

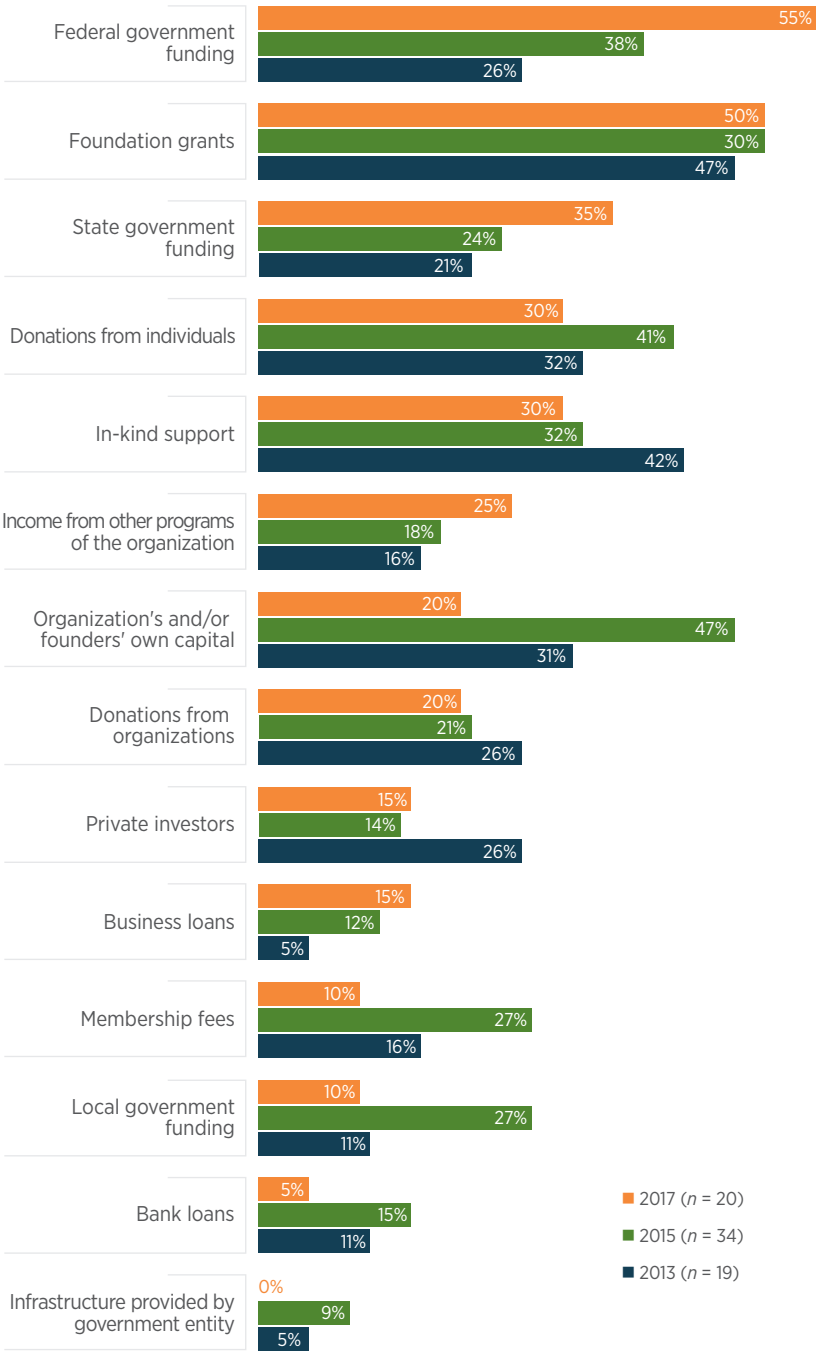


Table 15 shows the top three funding sources hubs used to begin operations according to the hubs' legal structure. The table reveals that the top funding source is consistent across survey years in each of the legal structure categories. However, this is not necessarily true for the second and third most significant revenue sources. Note also that bank loans were not a top source of start-up revenue for any of the legal structures.

TABLE 15: Top Three Start-up Funding Sources by Legal Structure
(Percentage of Hubs Utilizing Funding Source)

Top funding source by legal structure is consistent across survey years

2015			2017		
Nonprofit (*n* = 26)	**Co-op** (*n* = 14)	**For-profit** (*n* = 25)	**Nonprofit** (*n* = 42)	**Co-op** (*n* = 15)	**For-profit** (*n* = 34)
» Foundation grants (75%)	» Membership fees (64%)	» Own capital (76%)	» Foundation grants (79%)	» Membership fees (60%)	» Own capital (50%)
» In-kind support (50%)	» Federal funding (43%)	» Private investors (32%)	» Federal funding (57%)	» In-kind support (47%)	» Private investors (26%)
» Federal funding (50%)	» Own capital (38%)	» State funding (20%)	» State funding (45%)	» Foundation grants (33%)	» Federal funding (24%)
				» Federal funding (33%)	» Infrastructure from government entity (24%)

FINDINGS 4: **VALUES AND MISSION**

LOCAL AND REGIONAL ASPECTS OF FOOD HUB PRODUCERS AND SUPPLIERS

Food hubs include a variety of social and environmental goals in their business mission and carry out these goals in a variety of ways. This section explores some of these differences.

Supporting farms and producers and supplying customers within their region are arguably essential defining characteristics of a food hub: "Food hubs are, or intend to be, financially viable businesses that demonstrate a significant commitment to place through aggregation and marketing of regional food" (Fischer et al., 2015a, p. 97).

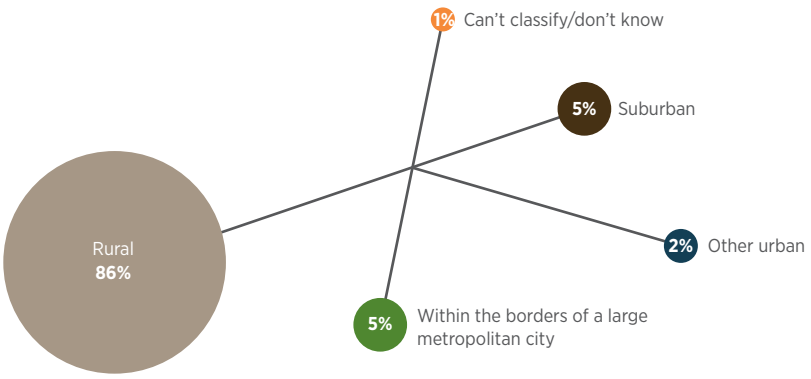
In 2017, ninety percent of hubs (*n* = 89) reported that all of the farms and ranches from which they procured product were 400 miles or less from the hub's main facility, a slight increase from the 87% making this claim in 2015 (*n* = 95). Overall, an average of 89% of the farms and ranches from which hubs purchased product were within 400 miles of the hub, compared to 94% in 2015.

Overall, fewer food hubs exclusively sourced from nonfarm suppliers within 400 miles, although the number went up from 2015. Seventy-six percent of hubs (*n* = 54) reported that all of their nonfarm/ranch suppliers were located within 400 miles of the hub in 2017, compared to 68% in 2015 (*n* = 56). Overall, the average percentage of nonfarm suppliers within 400 miles was 89%, compared to 82% in 2015. In 2013, 82% (*n* = 76) of hubs stated that all of their suppliers, including farm and nonfarm suppliers, were located within 400 miles of the hub.

New to the 2017 survey, hubs were asked to characterize the location of the farms and ranches from which they purchased or procured products in 2016. As shown in Figure 30, hubs are overwhelmingly sourcing from rural farms and ranches. Thirty-five hubs reported sourcing exclusively from rural farms and ranches. Large proportions of hubs (*n* = 95) reported that none of the farms and ranches they source from were in metropolitan areas (64%), in other urban areas (79%), or in suburban areas (59%). Only five hubs reported that they were unable to classify the location of some or all of the farms and ranches they procure from.

FIGURE 30: Average Percentage of Farms and Ranches Supplying Hubs by Location (*n* = 95)

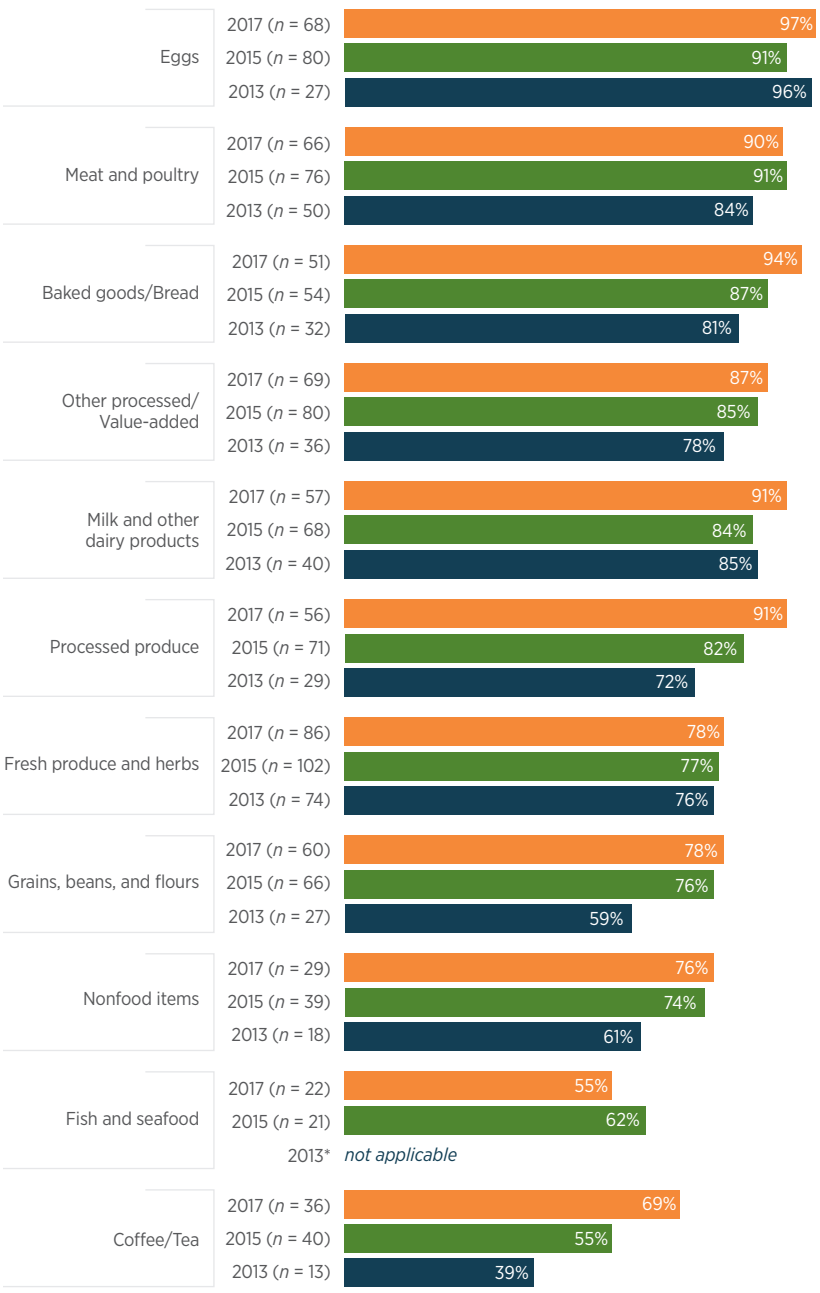
Hubs are primarily sourcing from rural farms and ranches



In looking at the percentage of hubs carrying exclusively local products by category and by survey year, we see that more hubs are defining themselves as sources for all local products (see Figure 31). In 2017, the percentage of hubs sourcing only within the region increased in every category except fish and seafood. In the case of grains, beans, and flours and coffee/tea, these increases were substantial. Whereas a trend toward direct-to-consumer hubs carrying more local product compared to wholesale and hybrid hubs was seen in the 2015 survey findings, this was not evident in the 2017 survey findings.

The majority of food hubs carry exclusively local product in all categories

FIGURE 31: Percentage of Food Hubs Carrying Exclusively Local Product Categories by Year



Note: *Exclusively local* was not defined in the survey. Based on hubs' answers, it appears that hubs defined *exclusively local* as locally grown and/or local final stage processing.

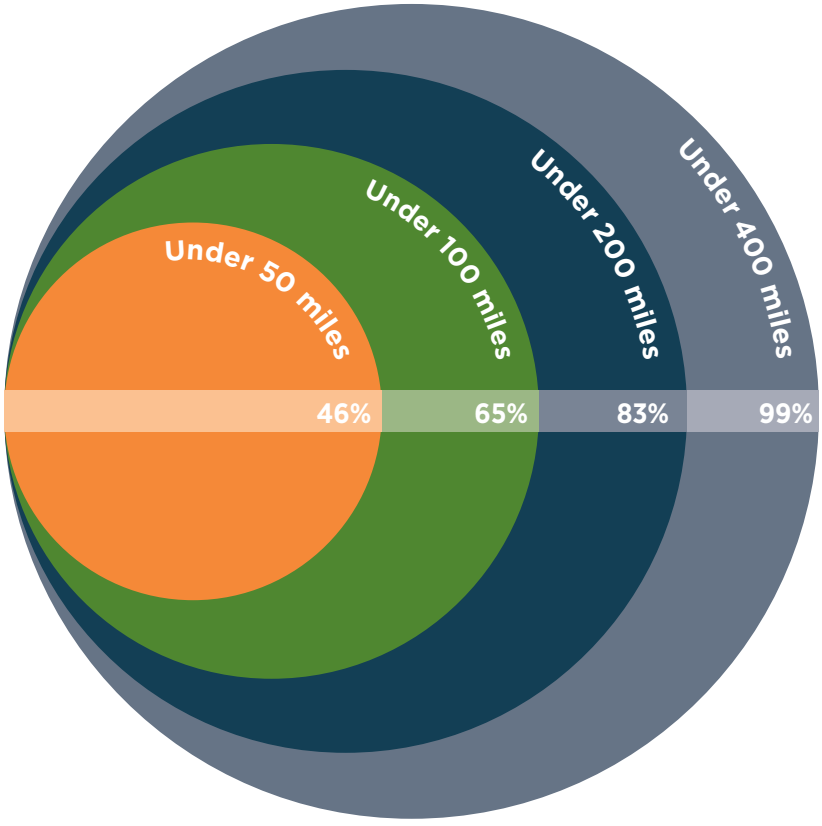
* Fish and seafood was not included as a category in the 2013 survey.

LOCAL AND REGIONAL ASPECTS OF FOOD HUB CUSTOMERS

In addition to sourcing within the region, food hubs also sell their products within the region. Figure 32 shows the proportion of hubs indicating that the majority of their customers were within a particular radius. Almost half (46%) of hubs said the majority of their customers were located within 50 miles of the hub. Nearly all hubs (99%) reported that the majority of their customers were located within a 400-mile radius. The distribution of hubs across these distances was nearly identical to what was reported in 2015. As was seen in 2015, the hubs serving only business or institutional markets tended to have the most geographically distant customers. Among wholesale hubs responding, 51% (*n* = 18) indicated that the majority of their customers are located under 100 miles away. Approximately three fourths of hybrid hubs (73%, *n* = 35) and direct-to-consumer hubs (75%, *n* = 9) made the same claim.

FIGURE 32: Distance From Hub Where the Majority[38] of Customers Are Located (*n* = 95)

For two thirds of hubs, the majority of their customers are located within 100 miles



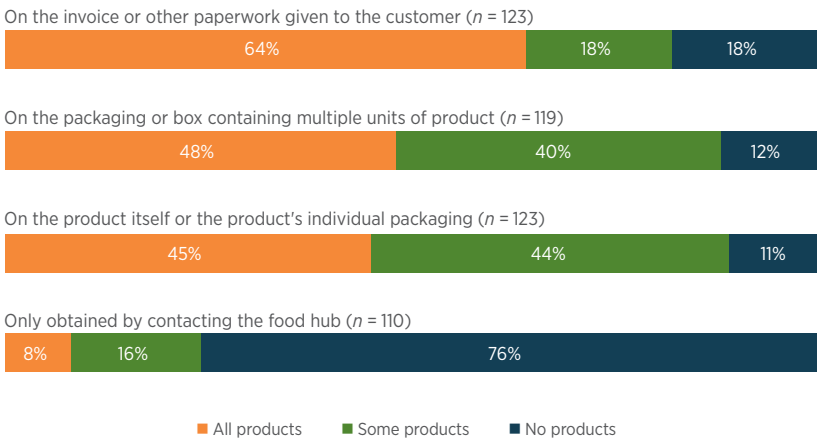
[38] For the purposes of this survey question and analysis, *majority* refers to 75% or more of a food hub's customers.

COMMUNICATING LOCAL AND REGIONAL SOURCES

The 2017 survey included two new questions about whether and how food hubs communicate product origin. The vast majority of food hubs (95%, *n* = 127) reported having a process in place to let customers know which specific farm, ranch, or supplier a product originates from. Figure 33 shows the percentage of hubs using different communication mechanisms for some or all of their products. Identifying product origin on the product itself or the product's individual packaging, was the most common overall, practiced by 89% of hubs for at least some products and by 45% of hubs for all products. Additional open-ended descriptions of processes used to communicate product origin referenced newsletters and online ordering systems.

Most hubs use processes to communicate product origin

FIGURE 33: Most Hubs Use Processes to Communicate Product Origin



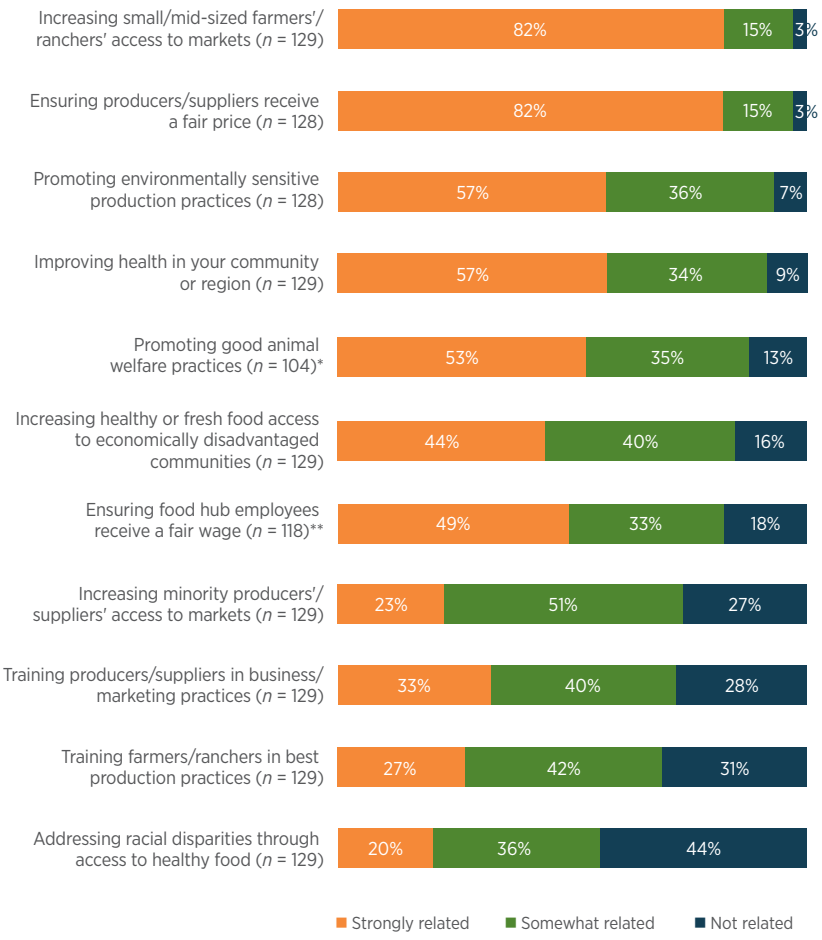
STATED MISSIONS AND DAILY EXPRESSION OF MISSION VALUES

When asked whether their food hub mission was intentionally related to 11 different value areas, a majority of food hubs reported that each value area was related (see Figure 34). The percentage of hubs reporting that a value area was somewhat or strongly related to their mission changed little from 2015 (data not shown).

In the 2017 survey, hubs were asked a new question: if they record metrics on their nonfinancial mission goals. Of the 129 responding hubs, 54% replied affirmatively. The remaining hubs either reported they did not record metrics on nonfinancial goals (37%) or did not have nonfinancial mission goals (9%).

Support for producers and suppliers is a critical mission component for the vast majority of hubs

FIGURE 34: Percentage of Hubs With Missions Related to Select Nonfinancial Goals



* Food hubs that did not sell animal products did not respond to this question.

** Food hubs that did not have paid employees did not respond to this question.

Looking at the incorporation of value areas within missions across food hub legal structures shows that for most areas, the differences in the proportion of hubs acknowledging inclusion of these value areas within their mission is small. However, Figure 35 shows that the four value areas for which the proportion of hubs stating a value was somewhat related or very related to their mission differed across legal structures by 20% or more. For-profit food hubs were least likely to include addressing racial disparities, training producers or suppliers, or increasing healthy food access within their missions. Cooperative food hubs, given their volunteer-based structure, were least likely to include employee fair wages within their missions.

Nonprofit hubs are more likely to include select values in their missions

FIGURE 35: Percentage of Hubs With Missions Related to Select Values by Legal Structure

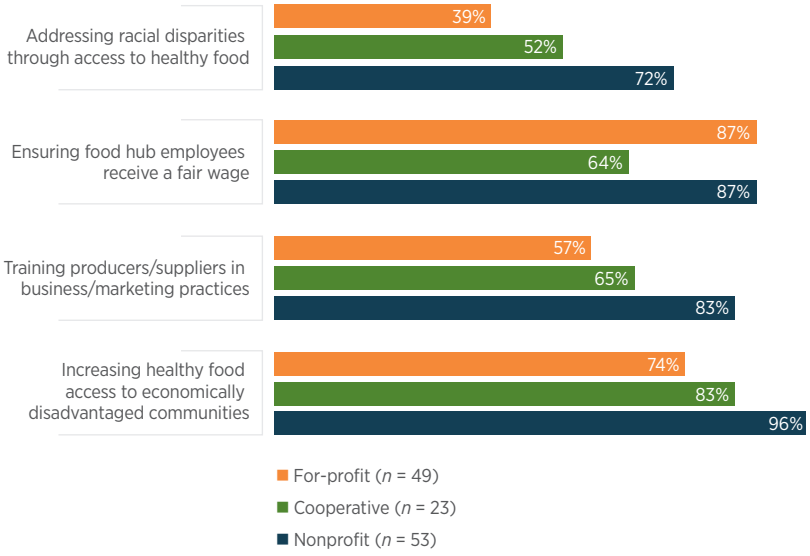
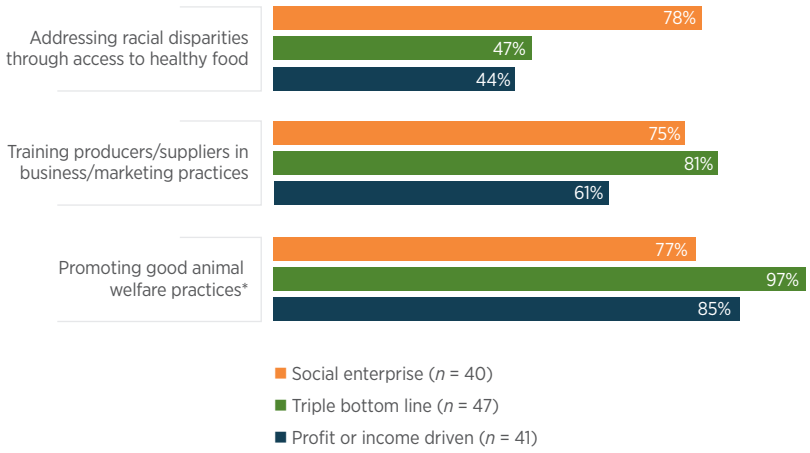


Figure 36 shows the three value areas for which the proportion of hubs stating that a value was somewhat related or very related to their mission differed by enterprise type by 20% or more. Hubs identifying as social enterprises were most likely to include addressing racial disparities in their mission. Hubs identifying as triple bottom line enterprises most often included training producers/suppliers in business and marketing practices and promoting good animal welfare practices in their mission.

Values vary by enterprise type

FIGURE 36: Percentage of Hubs With Missions Related to Select Values by Enterprise Type

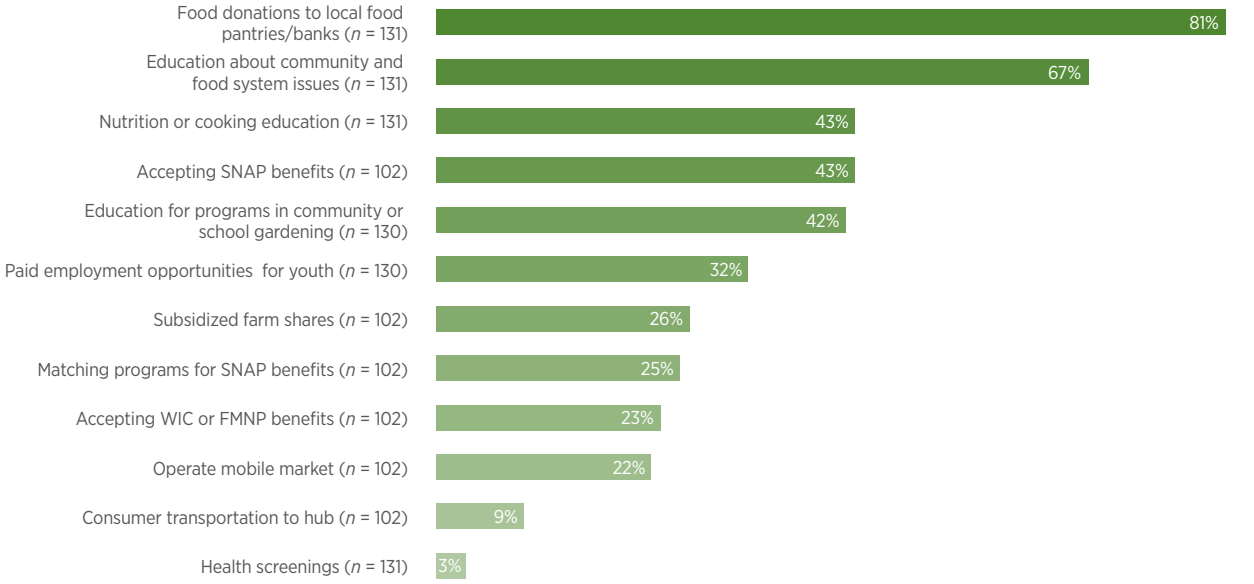


*The sample size differs for this question because hubs who did not sell animal products were instructed not to answer: social enterprise (*n* = 30), triple bottom line (*n* = 39), and profit- or income-driven (*n* = 34).

Hubs are continuing to engage in other activities that may promote sales but arguably also represent a social mission (see Figure 37). Over 40% of hubs reported engaging in five different social mission activities, providing evidence of hubs putting mission-related values into practice. In open-ended responses, hubs mentioned other social mission activities such as training new producers on business practices, partnering with local schools, hosting farm tours, providing transportation for homebound customers, hosting community gatherings, and teaching skills such as canning, home gardening, and safe food handling. Many hubs noted a focus on low-income or low-access populations in the community or in schools. The 2017 survey included several new activities in the answer choices for this question. However, for the answer choices that were consistent with the 2013 and 2015 surveys, there was minimal change across survey years (data not shown).

Food donations are the most common social mission activity

FIGURE 37: Percentage of Hubs Engaging in Social Mission Activities



FINDINGS 5: NETWORKS, CHALLENGES, OPPORTUNITIES, AND BARRIERS TO GROWTH

This section explores hubs' perspective on the value of different information sources and delivery mechanisms as well as hubs' perception of the current business climate, including opportunities for growth and intentions for market expansion

NETWORKS AND INFORMATION SOURCES

Hub respondents were given a list of information sources and asked to rank them from most to least important.[39] Informal networking with food hubs was the information source most often noted as important in 2015. This continued to be a frequently mentioned source of information in 2017 but was surpassed by annual meetings or conferences in the most recent survey (see Table 16).

Despite the increasing number of hubs getting information from annual meetings or conferences, this information source was only ranked as the *most* important source of information by 19% of hubs, compared to 44% of hubs in 2015 (see Figure 38). The increase in the number of food hubs mentioning educational resources from the federal government in 2017 corresponds with the availability of a new food hub technical report series from the USDA (Matson, Thayer, & Shaw, 2015a, 2015b, 2016).

[39] Hubs could choose and rank up to nine named and two hub-specified information sources. The lower the rank, the more important that information source is. A rank of 1.0 had the highest importance.

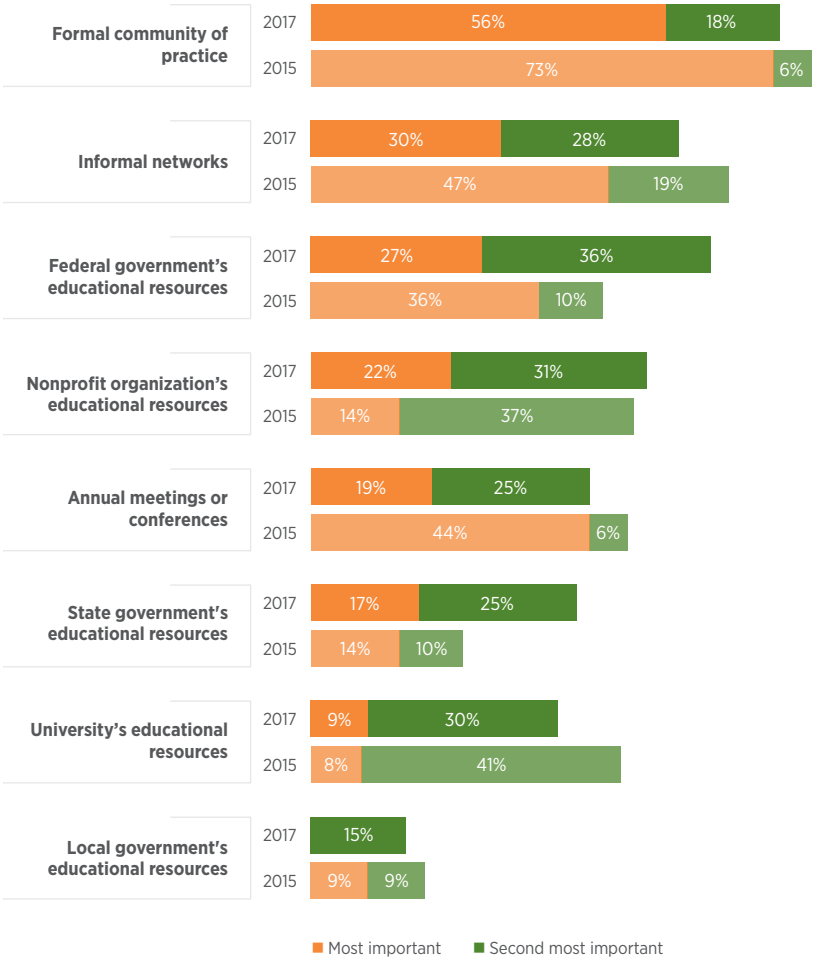
Hubs indicating information source was important increased across all categories

TABLE 16: Percentage of Hubs Mentioning Information Sources as Important

2015 (*n* = 109)	2017 (*n* = 79)	
52%	63%	Informal networking with food hubs
47%	49%	Formal communities of practice
44%	66%	Annual meetings or conferences
39%	54%	University's educational resources
36%	57%	Federal government's educational resources
32%	46%	Nonprofit organization's educational resources
27%	30%	State government's educational resources
16%	29%	Food policy council
10%	17%	Local government's educational resources

Formal communities of practices ranked as most important information resource

FIGURE 38: Most and Second Most Important Information Resources



Note: *n* = 109 in 2015 and *n* = 79 in 2017.

Overall, the proportion of hubs indicating an information source was important increased by an average of 42% across the nine categories, suggesting that more hubs are seeking information from a wider range of sources, that more resources are available, that resources are becoming more relevant, or all three. Figure 38 also shows a broader distribution in the information sources ranked as most important or second most important compared to 2015. Educational resources—from the federal government, nonprofits, or universities—were most often ranked as the second most important information sources.

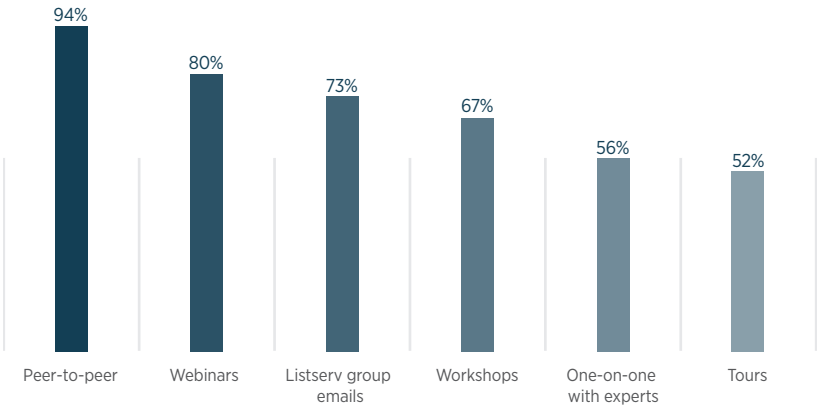
While annual meetings or conferences were mentioned as a source of information by more hubs in 2017 (66%) than in 2015 (44%), fewer hubs ranked these events among their top two information sources. This finding points to continued challenges for meeting and conference organizers to ensure that their content is relevant and useful to participants. It also suggests that informal networking opportunities within meetings or conferences would be valuable.

Hubs that used formal networks or communities of practice (*n* = 29) ranked these considerably higher as a source of information (average rank of 1.76) than informal networks (average rank of 3.38). This finding highlights the utility of formal networks for learning and exchanging ideas and may also reflect the growing number of formal food hub networks. The Michigan Food Hub Network, formed in 2012, was one of the first formal regional communities of practice specific to food hubs (Pirog, Harper, Gerencer, Lelle, & Gerencer, 2014). Outside of this survey, we have observed the formation of more formal and informal regional food hub networks, such as the Iowa Food Hub Managers Working Group, a California network coordinated by the UC Sustainable Agriculture Research & Education Program at the University of California-Davis, and the Tap Root Collaborative in Colorado. There are now at least eight networks operating and at least two emerging networks.[40]

New in 2017, hubs were also asked about ways in which information is delivered and their utility. Figures 39 and 40 show that peer-to-peer information sharing is both the most common and seen as the most useful.

Peer-to-peer is the most common means of information delivery

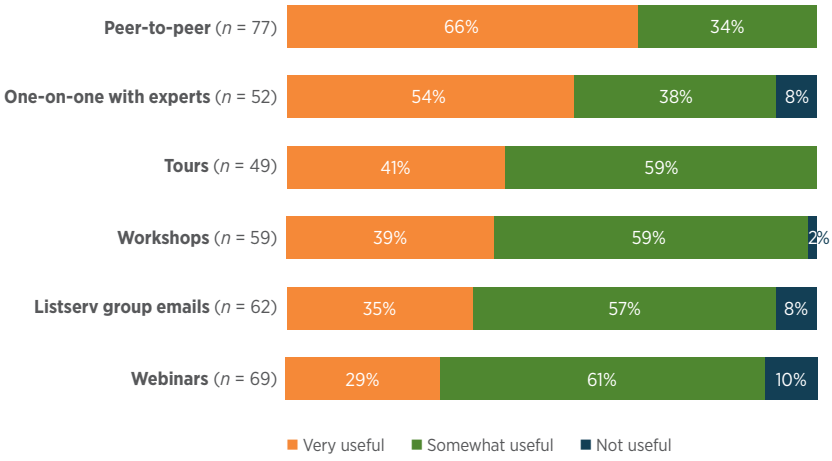
FIGURE 39: Percentage of Hubs Receiving Information by Means of Delivery (*n* = 79)



[40] Jim Barham, Agricultural Economist, USDA Rural Development (personal communication, January 19, 2018, and February 8, 2018)

Peer-to-peer seen as the most useful form of information delivery

FIGURE 40: Perceived Utility of Various Means of Information Delivery



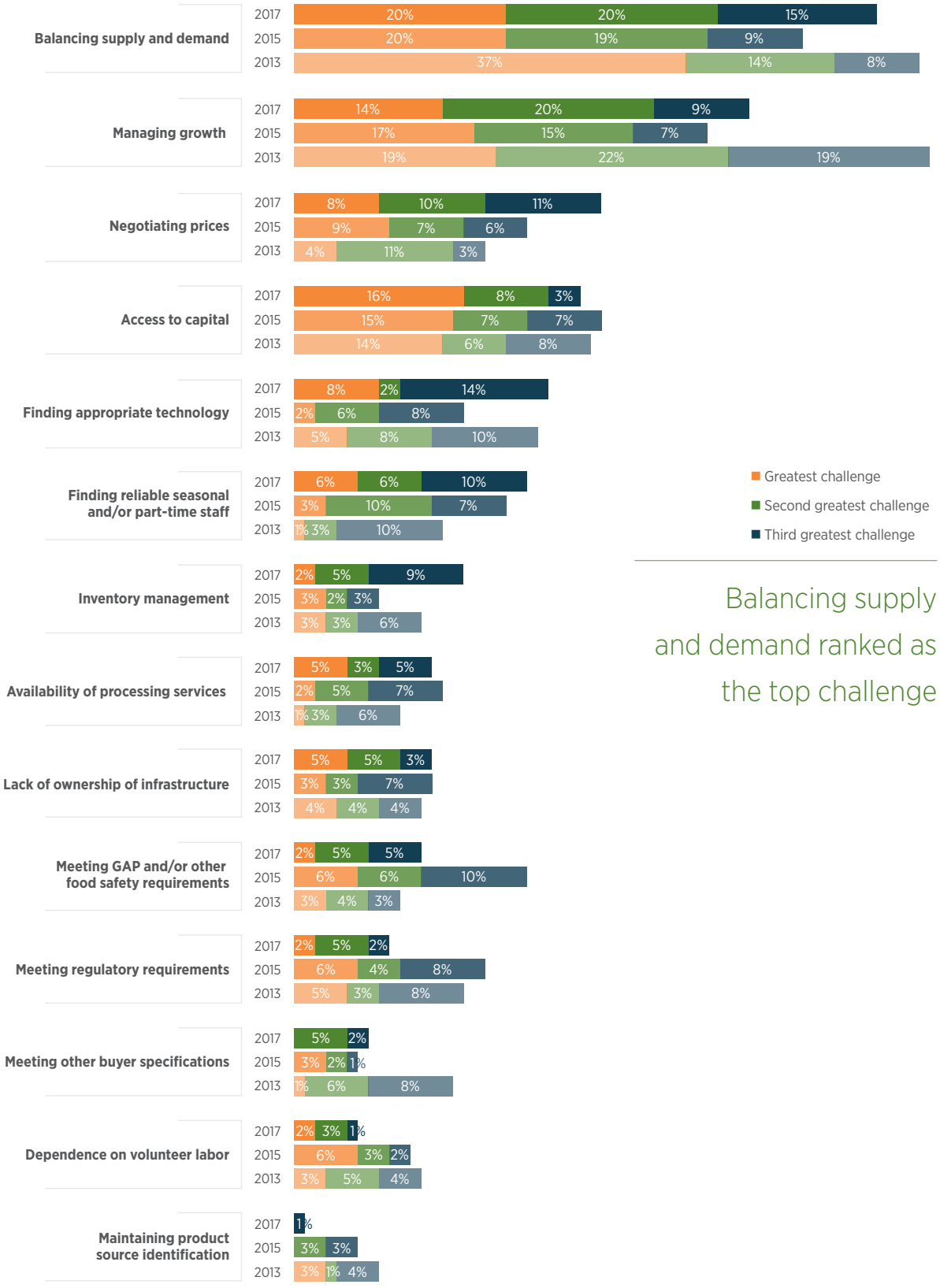
TOP CHALLENGES

Survey respondents were asked to rank up to five identified challenges facing their food hub. Figure 41 shows the percentage of hubs including a particular challenge among their top three in 2013, 2015, and 2017. Balancing supply and demand was in the top three challenges for the largest proportion of food hubs in all three survey years. However, 37% of hubs identified this as their top challenge in 2013 and only 20% identified it as such in 2015 and in 2017. The 2017 survey added a new open-ended follow-up question asking hubs to explain the specific challenges they were experiencing regarding the challenge they ranked the highest. Analyzing these responses for the challenge of balancing supply and demand revealed three themes:

- **Supply limitations:** not enough product, not enough of the right kind of product, seasonality constraints
- **Customer limitations:** not enough customers, not enough consistent customers, customers want one-stop shopping, customers don't understand seasonality
- **Supplier limitations:** working with suppliers who are not willing to commit to the food hub model

In 2017, negotiating prices overtook access to capital as the third most common challenge among food hubs, although the percentage change was small. In 2015, the percentage of hubs ranking GAP certification or other food safety requirements as one of their top three challenges doubled from the 2013 findings. However, in 2017, the percentage went back to near 2013 levels, which could reflect heightened awareness of FSMA implications or increased buyer demand for food safety certifications at the time of the 2015 survey or could indicate greater comfort with meeting food safety requirements among food hub managers in 2017. In 2017, the percentage of hubs indicating challenges with finding appropriate technology and with inventory management rose substantially compared to 2015, though the increase was smaller compared to the percentages seen in 2013.

FIGURE 41: Top Challenges for Food Hubs



Balancing supply and demand ranked as the top challenge

Note: *n* = 79 in 2013, *n* = 109 in 2015, and *n* = 88 in 2017.

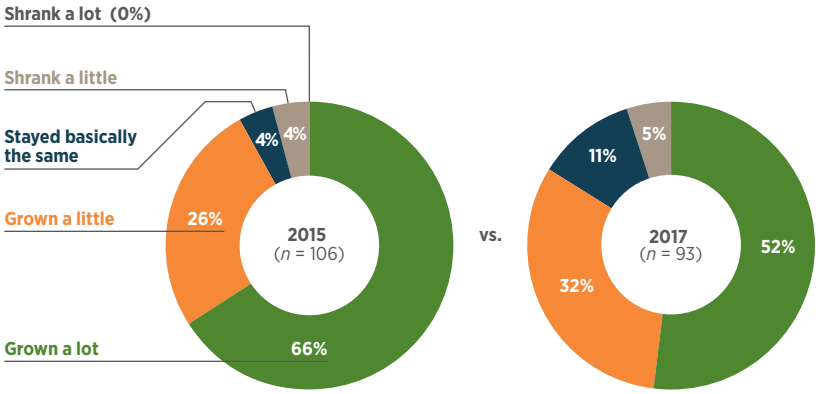
OPPORTUNITIES FOR GROWTH

Opportunities for growth are essential for food hub viability. Food hubs were asked about perceived changes in demand for their products over the last two years as well as expected changes in demand over the next two years. The 2017 survey findings indicate that the growth in demand for food hub products may be slowing slightly.

In the first food hub survey (2013), 96% of hubs felt that demand for their products was growing. In 2015, 92% felt that the demand had grown since 2013. In 2017, 84% said that demand had grown since 2015. Just over half of food hubs said that demand had grown a lot, compared with two thirds who made the same claim in 2015 (see Figure 42). In 2015, almost all hubs (98%) said that demand would continue to grow, and two thirds expected demand to grow a lot (see Figure 43). This indicates that the expectations held in 2015 were not matched by reality for a proportion of the hubs. The 2017 survey findings also showed less optimism about future growth in demand for food hub products. Although nearly the same proportion of hubs expected some growth (98% in 2015; 94% in 2017), substantially fewer expected to see demand grow a lot and, for the first time, a small proportion of hubs expected to see demand shrink (see Figure 43).

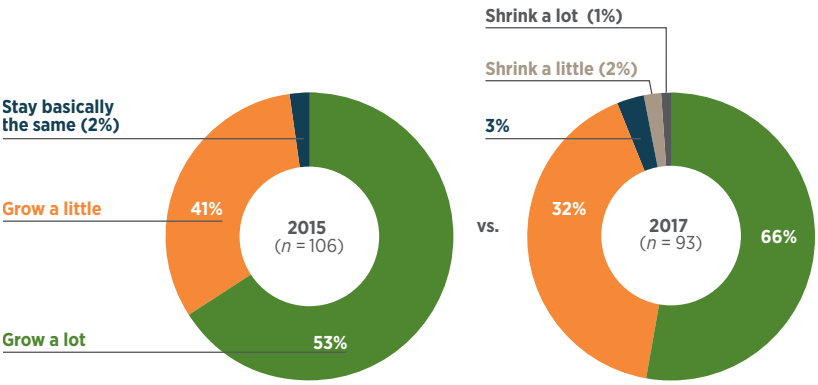
Slightly fewer hubs perceived growth in demand in 2017

FIGURE 42: Perceived Historical Change in Demand for Food Hubs' Products



Slightly less optimism about future growth in demand for food hub products

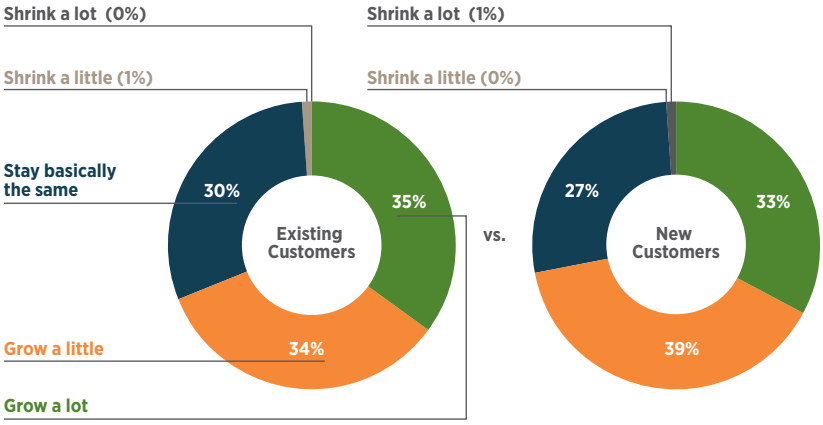
FIGURE 43: Perceived Future Change in Demand for Food Hubs' Products



As demand for local food continues to grow (Tropp & Moraghan, 2017), food hubs may encounter a more competitive food distribution landscape. The 2017 survey findings showed that roughly 70% of hubs expect competition to increase for both new customers (72%) and existing customers (68%; see Figure 44). These figures represent slight decreases from 2015, where 80% of hubs expected competition for new customers to grow and 77% of hubs expected competition for existing customers to grow (*n* = 106). When hubs were asked to indicate the business types that they expected to be their competitors during the next two years, traditional wholesale distributors were seen as a threat by the largest proportion of hubs (see Figure 45).

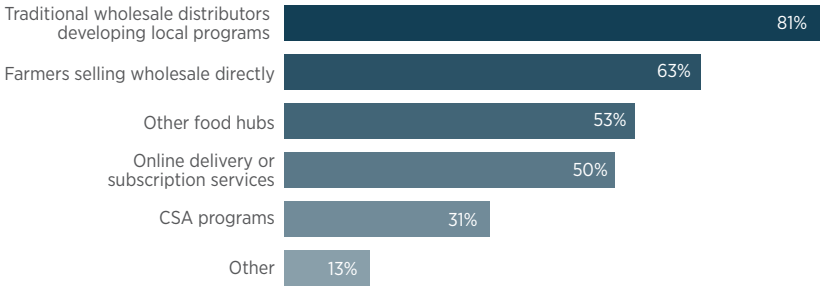
Most food hubs expect competition for new and existing customers to grow

FIGURE 44: Perceived Change in Competition for New and Existing Customers Through 2019 (*n* = 90)



Largest percentage of hubs expect competition from traditional distributors

FIGURE 45: Percentage of Hubs Expecting Competition by Source (*n* = 64)



Along with two-year estimations of product demand and competition for customers, hubs were asked to make a two-year estimate of market mix by customer type. As with competition for customers, it is not surprising that expectations for market mix varied by business model. Ninety-two percent (*n* = 12) of direct-to-consumer hubs intended to increase their share in the direct-to-consumer market. Some direct-to-consumer hubs intended to diversify; 36% intended to enter or increase their existing share in the restaurant market and 27% intended to enter or increase their share among food processors and hospitals. For all other market segments, more than 80% of direct-to-consumer hubs did not anticipate serving the market at all in the next two years.

Tables 17 and 18 show two-year market intentions by market segment for wholesale hubs and hybrid hubs, respectively. Other than convenience stores and direct-to-consumer sales, one third or more of wholesale hubs intended to increase their market share in all other listed market segments (see Table 17). Hybrid hubs anticipated a more diversified market outlook than wholesale or direct-to-consumer hubs. Other than direct-to-consumer and convenience store markets, 50% to 70% of hybrid hubs expected to enter a market segment or increase their share in that market segment.

In general, hubs' market mix intentions reflected their prediction of customer demand over the next two years. Notwithstanding markets that would not be expected to be served by certain business models (e.g., wholesale hubs would not be expected to serve consumers directly), few hubs anticipated reducing their share in or exiting market segments.

TABLE 17: Two-Year Market Intentions for Wholesale Hubs

Many wholesale hubs intend to increase their market share across a range of customer types

	Enter market	Increase share	Decrease share	Exit market	Not in market in next 2 years
Large retail grocery (*n* = 32)	28%	44%	6%	3%	19%
Corner stores, bodegas (*n* = 33)	15%	61%	6%	18%	0%
Convenience stores (*n* = 31)	7%	13%	3%	3%	74%
Direct to consumer (*n* = 31)	10%	23%	3%	13%	52%
Restaurants (*n* = 34)	6%	77%	9%	3%	6%
Food processors (*n* = 29)	28%	48%	0%	3%	20%
Pre-K (*n* = 30)	20%	37%	3%	3%	37%
K–12 (*n* = 46)	7%	41%	0%	0%	52%
Colleges/Universities (*n* = 32)	19%	66%	0%	3%	13%
Hospitals (*n* = 32)	31%	44%	0%	0%	25%

TABLE 18: Two-Year Market Intentions for Hybrid Hubs

Hybrid hubs anticipated diversified market outlook

	Enter market	Increase share	Decrease share	Exit market	Not in market in next 2 years
Large retail grocery (*n* = 43)	33%	21%	2%	2%	42%
Corner stores, bodegas (*n* = 43)	16%	54%	14%	2%	14%
Convenience stores (*n* = 42)	10%	5%	5%	0%	81%
Direct to consumer (*n* = 44)	86%	7%	0%	2%	5%
Restaurants (*n* = 41)	0%	83%	5%	0%	12%
Food processors (*n* = 42)	21%	33%	2%	0%	43%
Pre-K (*n* = 40)	15%	40%	0%	0%	45%
K–12 (*n* = 27)	12%	38%	3%	2%	45%
Colleges/Universities (*n* = 41)	15%	59%	0%	0%	27%
Hospitals (*n* = 39)	23%	36%	3%	0%	39%

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APPENDIX

DATA COLLECTION AND ANALYSIS PROCEDURES

This appendix lists procedures for data collection and analysis and gives a tutorial for interpreting statistical test results

The following sections describe how the survey was distributed and how results were analyzed.

Survey Development

The 2017 National Food Hub Survey was a combination of questions, both verbatim and modified, from the 2015 and 2013 National Food Hub Surveys and new questions to clarify topics, address emerging topics, or address topics not covered in the 2015 and 2013 surveys. Topical sections of the survey included general characteristics of the food hubs, their mission and community, employees and volunteers, infrastructure and services, farms and producers/suppliers, finances, local and regional aspects of the hubs, food safety, and challenges and opportunities. Experts at the U.S. Department of Agriculture, Michigan State University's Center for Regional Food Systems, and the Wallace Center at Winrock International reviewed the survey questions for suitability. This research was reviewed and determined exempt by the Michigan State University Human Research Protection Program (IRB# x12-1251e).

Listed Sample

The survey population (P), the finite number of organizations that can be defined as food hubs, is unknown. In such cases, the sampling frame should include as many members (i.e., food hubs) of the population as possible. In theory, the more thorough and broad the search for food hubs to include in the sampling frame, the more confidence researchers can have that their sampling frame represents the population. In the case of all years of the National Food Hub Survey, every identified hub was included in the sample (p).

The sources used to compile the 2017 sample were the 2015 and 2013 National Food Hub Survey responses, the USDA Food Hub Directory, and the NGFN food hub database. These sources resulted in a list of 542 email addresses for key food hub personnel. For the purposes of the survey, key food hub personnel are any individuals listed as contacts for a hub that included an email address as a source of contact. A food hub may have several key personnel listed in the sample. Food hubs completing the survey were asked to provide business names and key personnel email addresses for other food hubs of which they were aware. As new key personnel were identified, they were added to the listed sample and email invitation/reminder queue.

A PDF copy of the full 2017 National Food Hub Survey can be found on Michigan State University's Center for Regional Food Systems website: www.canr.msu.edu/resources/2017-national-food-hub-survey-questions

Data Collection

The survey was programmed and administered and output for this report generated using Qualtrics software. The survey was administered via the web with the opportunity to download, complete, and return it via fax, scanned email attachment, or postal mail. Following a modified version of Dillman's method (Dillman, Smyth, & Christian, 2014), key personnel were sent an initial invitation, and key personnel from non-responding hubs were sent multiple, varied email reminders. Data collection began February 22, 2017, and ended April 24, 2017. The first or most complete response received from an individual representing a hub was used as that hub's response in analysis.

Response Rate

Response rate was calculated using American Association for Public Opinion Research guidelines for internet surveys of specifically named persons and guidelines for establishment surveys (AAPOR, 2015). Of the 542 key personnel initially identified, 127 people were identified as ineligible to participate because of duplicate associations with a single food hub. An additional 19 people indicated their hub was ineligible for other reasons, including that it was no longer in business or no longer a food hub. This left 396 individuals who remained eligible. Of these 396 key personnel, 130 provided complete or partially complete survey answers on behalf of their food hub. The response rate (RR2), which counts partial completes as responses, was 33%. One additional individual, verified to be associated with a food hub but not identified in the listed sample, responded via generic survey link. In total, 131 completed and partial surveys were used in analysis.

Data Processing and Analysis

Quantitative analysis of survey responses was carried out using IBM's SPSS Statistics 24 for Windows. Due to the nature of the data collected from the survey, all statistical tests utilized are non-parametric. Spearman's rho was used to measure correlations between continuous and ordinal variables.

TUTORIAL FOR INTERPRETING STATISTICAL TEST RESULTS

Throughout this report, various statistical tests have been chosen depending on what is appropriate for a pair of variables. The statistical tests measure the strength of the association between the two variables, the direction of the association between the two variables, and the odds that the association is simply random rather than real. In statistics, association is usually called correlation.

The footnotes present the statistical test results in notation standard for a specific test, but all footnotes give an *r*-value and a *p*-value. The *r*-value specifies the strength and direction of the correlation, and the *p*-value specifies the odds that the statistical test results are random.

r-Values

Regardless of whether an *r*-value is notated with a sub- or superscript, it is always a number with an absolute value between 0 and 1. The higher the *r*-value is, the stronger the correlation between two variables. An *r*-value also shows the direction of the correlation as positive or negative. A positive *r*-value means both variables increase or decrease together. For example, as the maximum number of produce boxes that can fit in a truck increases, the total cubic space of the truck increases. A negative *r*-value means one variable increases as the other variable decreases, or vice versa. For example, as the number of people picking apples from a tree increases, the number of apples on the tree decreases.

p-Values

A *p*-value less than .01 is considered extremely reliable in virtually all research fields. A *p*-value less than .05 is considered very reliable in most research fields. Any *p*-value less than .05 means that the results of the test are statistically significant and the results are almost certainly not random but real.

Correlation Does Not Imply Causation

When interpreting the results of statistical tests, it is important to know that just because two variables are correlated, one does not necessarily cause the other. For example, the number of vehicles using a road may be correlated to the number of potholes on that road, but the weight of the vehicles, the quality of the paving job, the amount of precipitation, and the number of freeze/thaw cycles might be causes of potholes. Establishing what makes something happen (causation) is complex and can rarely be accomplished by showing that two variables that happen to change in similar ways explain the problem.

MICHIGAN STATE UNIVERSITY CENTER FOR REGIONAL FOOD SYSTEMS

The Michigan State University Center for Regional Food Systems (CRFS) is an applied research, education, and outreach organization. CRFS unites the expertise of MSU faculty and staff to strengthen understanding of and engagement with regional food systems. Since 2010, CRFS has advanced food systems rooted in local regions and centered on food that is healthy, green, fair, and affordable in order to build a thriving economy, equity, and sustainability for Michigan, the country, and the planet. More about CRFS can be found at foodsystems.msu.edu.

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. Our work seeks to expand the availability of healthy, fair, affordable and environmentally sustainable food to improve the health and wealth of all community members. By identifying and disseminating promising models at many scales, we seek to support, guide, and inspire practitioners and supporters of Good Food activity.

The National Good Food Network (NGFN), coordinated and supported by the Wallace Center, is a cross-sector center of learning and networking for individuals and organizations from all aspects of the food system, from production through distribution and processing, to consumption as well as supporters such as government and funders and investors. The NGFN Food Hub Collaboration is a partnership between the Wallace Center at Winrock International, USDA, NGFN, Michigan State University, and others. The Collaboration is working to ensure the success of existing and emerging food hubs in the U.S. by building capacity through connection, outreach, research, technical assistance, and partnerships. By supporting this crucial player in the value chain, the Collaboration aims 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 its work can be found at wallacecenter.org and at ngfn.org.