# NC Food Hub Economic Impact Assessment

**For**

# The Conservation Fund

**And the**

# NC Food Hub Collaborative

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# NC Food Hub Assessment

Matson Consulting is working to assist Farmer Foodshare on behalf of The Conservation Fund and NC Food Hub Collaborative with the development of a statewide economic analysis of food hubs in North Carolina. As part of this analysis, a survey was developed with the goal of gathering information about NC food hubs, their operations, and their impacts on the state and surrounding communities. A copy of the survey can be found in **Appendix A**. This document provides some initial framework and background information for the impact assessment, as well as the initial findings of the food hub survey.

## Food Hub Definition

USDA defines a food hub as "a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand."[1] Many times, individual farmers and producers do not have enough product to satisfy a large buyer, such as local grocery chains, restaurants, or institutions, including colleges, schools, and government institutions. Conversely, large buyers struggle to find local producers that can provide a consistent amount of locally grown food to meet consumer demand. By providing aggregation, distribution, and marketing services, food hubs play a critical role in satisfying the needs of both farmers and buyers.

Similarly, the National Food Hub Collaboration states that food hubs are defined as a "business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products, primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand." They aggregate producers to help them participate in markets that would otherwise be inaccessible to them individually, and are designed provide producers more power in the marketplace.

For the purposes of this study, we have defined a food hub as a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers for sale through at least two of the following market outlet categories; wholesale, institutional, or direct to consumer. The project team has identified about 20-25 entities within North Carolina that meet this definition.

We understand that the definition of food hub used for this study may leave out some entities or very large food distributors in the state, but it keeps the focus on small and medium-size food hub operations. The typical definition of a food hub can be broad and often includes any entity that aggregates food for sale through either wholesale, institutional, or direct-to-consumer outlets. This results in individual farm operations, grocery stores, and other entities being included that are not part of this assessment.

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[1] Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. *Regional Food Hub Resource Guide*. U.S. Department of Agriculture, Agricultural Marketing Service. Washington, DC. April 2012. Publication can be accessed at www.ams.usda.gov/foodhubs.

## Key Findings

Much can be learned from the 11 North Carolina food hubs surveyed and the information provided in their responses about the impacts of food hubs on the state. The National Food Hub Survey found that food hubs are: (1) contributing to the economy, for example by creating jobs; (2) supporting small- and medium-scale farmers in accessing markets and securing fair prices; and (3) supporting the triple bottom line, for example through programs that aim to improve human health and increase food access for marginalized populations. These findings are echoed in the results of the North Carolina Food Hub Assessment discussed in this document. The following are some other key findings from the survey.

**Food Access -** Food hubs help to alleviate food access issues in food deserts through mission and community driven food programs. Surveyed hubs are serving customers in 53 NC counties.

**Representative Survey Results** – Even with this percentage of food hubs answering, the number of years active mirrors the national average giving a good view of the activity in North Carolina.

**Market Access** - Food Hubs improve access to markets for small and medium-sized markets through their aggregation and marketing activities. The surveyed are serving a range of market channels with restaurants, grocery stores, individual consumers, and community-based organizations being the largest categories by dollar amount.

**Food Hub Sales** – Surveyed food hubs reported total food hub sales of over $8.2 million in 2022 with an average of $821,704 per food hub. Produce sales were the largest category at over $2.29 million. The median food hub in NC had $500,000 in sales based on the survey. This is almost identical to the $495,000 median size from the 2019 National Food Hub Survey Report.

**Small Farm Assistance** – The quantity and diversity of non-sales services offers significant aid to smaller producers in terms of areas like storage and marketing in addition to other assistance. The responding food hubs reported that they purchased a total of $5.35 million in food items from 496 farms in 2022. On average, responding food hubs returned 64% of sales to producers.

**Rural Location Support** – The impact on jobs and the economy in rural areas is noticeable in the increase of jobs at the hubs and on the farms. Surveyed food hubs reported a total of 85 positions with an average of 8 per food hub. The data shows these jobs are paid livable wage salaries which will boost the local economy. Even though the hub locations and the farm locations tend to be in rural areas, the impact of just these hubs affects 72% of the population of North Carolina.

**Statewide Direct Impacts** – Statewide, food hubs are conducting a total of $16.4 million - $20.5 million in sales, and purchasing an estimated $9.7 million and $12.2 million in produce from between 900 – 1,125 North Carolina producers annually.

**Statewide Indirect and Induced Impacts** – NC food hubs are providing an estimated $0.82 of addition indirect and induced effects for every dollar of food hub product delivered for a total of over $1 million per hub or between $20.02 million and $25.03 million overall.

## Importance of Food Hubs

Food hubs provide an avenue for communities to source healthy and local food options in a way that is profitable for the producers, distributors, and retailers. Food hubs provide a role like that of food distributors in the traditional food supply chain in that they provide the infrastructure and logistics to serve at-scale customers for locally grown items. They act as value-chain facilitators by utilizing a values-based approach to the food supply chain that allows all participants to benefit.[2]

Food hubs come in many different forms, sizes, and legal structures; however, most food hubs share many of the following core areas of operation. The following food hub operational areas were drawn from "A Racial Equity Implementation Guide for Food Hubs."[3]

- ***Supplier/Producer Relationships*** - By definition, food hubs serve to bridge the gap between food producers and consumers. Thus, a significant part of the work of all food hubs entails engaging with growers and producers to secure products to sell. This might include providing training to strengthen the capacities and skills of growers and suppliers.

- ***Transportation & Distribution*** - Food hubs largely purchase from small and mid-sized farmers. Collecting and moving crops from the farm to markets or distribution centers is a key component of the work of many food hubs. This is true even for those hubs which serve only as brokers, never actually receiving or handling product themselves, but which must still ensure that farmers deliver to customers.

- ***Facility Management*** - For those hubs which actively aggregate and distribute products, an appropriately outfitted physical plant is critical to their work. They must have the space and equipment to store, process, pack, palletize, and perhaps host retail space to sell the food they collect. Hubs also need facilities for other functions, including administrative offices and event spaces.

- ***Marketing & Sales*** - One of the key benefits that many food hubs provide to smaller producers is identifying and securing qualified buyers. Hubs sell to a wide range of customers including wholesalers, institutions (hospitals, schools, etc.), restaurants, grocery stores, retail customers, and other food hubs with larger capacity.

- ***Governance & Business Management*** - An important management function of many hubs is coordinating supply chain logistics. Business management services can go beyond what is required for the hub's own operations, to include a variety of services, such as accounting and production planning, to external partner producers.

- ***Financing & Capital*** - Food hubs secure capital and financing from a diverse array of sources, including public and private grants, bank loans, personal contributions by founders/managers, and individual donations.

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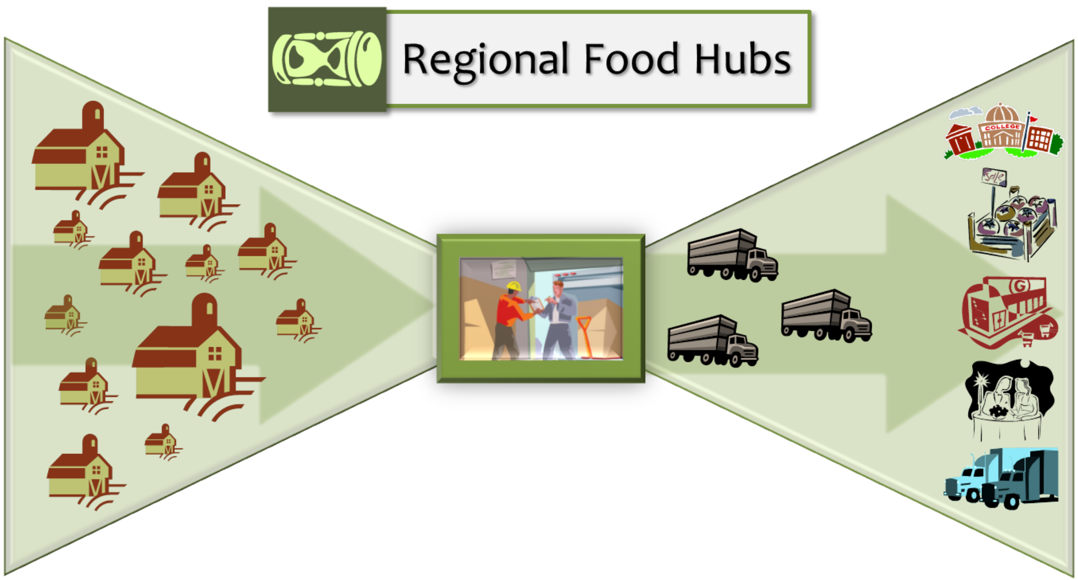
[2] Healthy Food Access. https://www.healthyfoodaccess.org/launch-a-business-models-food-hubs
[3] Tamara Jones, Dara Cooper, Simran Noor, Alsie Parks. June 2018. "A Racial Equity Implementation Guide for Food Hubs: A Framework for Translating Value into Organizational Action."

- ***Products & Services*** - Some food hubs go beyond selling produce as supplied by growers, to processing food to create value-added products which they then sell under their own brand. The types of products and services that a hub can offer are limited only by their imagination and the willingness of markets to pay.

The figure below shows the different elements of a food hub, how they function together, and the variety of producer, operational, and community services that a food hub can provide.

**Figure 1: Food Hub Services[4]**




| Producer Services | Operational Services | Community Services |
|---|---|---|
| ✓ Actively linking producers to markets | ✓ Aggregation | ✓ "Buy Local" campaigns |
| ✓ On-farm pick up | ✓ Distribution | ✓ Distributing to "food deserts" |
| ✓ Production and post-harvest handling training | ✓ Brokering | ✓ Food bank donations |
| ✓ Business management services and guidance | ✓ Branding and market development | ✓ Health screenings, cooking demonstrations |
| ✓ Value-added product development | ✓ Packaging and repacking | ✓ SNAP redemptions |
| ✓ Food safety and GAP training | ✓ Light processing (trimming, cutting, freezing) | ✓ Educational programs |
| ✓ Liability insurance | ✓ Product Storage | ✓ Youth and community employment opportunities |

Food hubs can provide opportunities for local growers to access buyers that may otherwise be too large for individuals to access on their own. Food hubs essentially function as a link in the logistical chain to help convey food products to mid-scale buyers who in turn provide the product for sale to the end consumer. As illustrated in Figure 1, food hubs can provide many of these services.

Along with providing core operational functions – including aggregation, distribution, and marketing – food hubs often coordinate efforts with producers in areas such as production planning and delivery logistics. They also provide training in areas such as post-harvest handling

[4] Barham, James, Debra Tropp, and Caryolyn Dimitri. *Regional Food Hubs and Food Value Chains: Improving Market Access for Local Producers through Innovative Distribution*. Presentation for National Small Farms Conference, September 2012. United States Department of Agriculture, Agricultural Marketing Service. Presentation can be accessed at www.ams.usda.gov/foodhubs.

and packing, season extension, and food safety. At the same time, food hubs often engage directly with their community through donations, educational programs, and health awareness campaigns.

## Food Hubs and Local Foods

The local foods market has been expanding in recent years as consumer interest in the origin of their food has grown and deficiencies in the traditional food supply chains have become more apparent. Food hubs are one model that helps with the issues associated with distributing local foods to mainstream markets. Food hubs are an important way for a group of producers to access local markets for their agricultural production. In many cases, food hubs share information with end users on where or how food was produced, providing a greater connection between producers and consumers. The importance of this role has been seen at many levels, from the growth in brick-and-mortar facilities and “virtual food hubs”, to support from many local, State, and Federal grants and loans programs. Continuing to support food hub development will be vital to the continued growth of these local food connections.

Food hubs represent a strategy for producers, particularly small and mid-sized producers, to market their products locally. Food hubs create new marketing opportunities for rural food producers. They help connect rural producers as directly as possible to rural, suburban, and urban markets. This creates a system of linkages, developed through food hubs, that enables not just rural to urban, but neighbor to neighbor connections. Entry into local food markets can prove difficult for many farmers, particularly small and mid-sized farmers, with capacity constraints and the lack of distribution systems most often being the largest hurdles to overcome. Food hubs are part of a growing local food system that strengthens rural economies by lowering entry barriers and improving infrastructure to create, as well as expand, regional food markets. They also create rural jobs. This rural on- and off-farm employment can expand opportunities and encourage skilled people, including youth, to remain in rural areas.

The growing demand for local food and the entities such as food hubs that support the food chain is vital to the continued support of small and mid-size farms, with farm numbers continuously decreasing and the median age of farmers growing. Studies have shown that the financial impacts of selling into regional markets are greater for fruit and vegetable farms with gross annual revenue under $350,000. Farms of that size that sell in regional markets are shown to be more likely to earn positive net farm income and have lower operating expense ratios, resulting in increased farm viability. An article from the Federal Reserve Bank of St. Louis reported that nearly 32 jobs are created for every $1 million in revenue generated by produce farms involved in some form of direct marketing, compared to only 10.5 jobs for those involved in wholesale channels exclusively. This larger local impact is likely the result of direct marketers purchasing a greater share of their inputs locally compared to producers not involved in direct marketing (89 percent compared with 45 percent).[5]

## Equity and Community Impacts

The community aspect of food hubs is one of the primary differentiating factors between them and traditional food distributors. Community engagement with the food system not only creates connections with local producers, but also helps increase access to fresh produce and locally

[5] Andrew Dumont. Federal Reserve Bank of St. Louis. https://www.stlouisfed.org/on-the-economy/2017/december/economic-impact-locally-produced-food

produced items. Food hubs are important in promoting access to healthy food options such as fruits and vegetables, which can be difficult to access for many living within food deserts. Mobile markets, community engagement, food as medicine programs, SNAP/WIC acceptance, home delivery, and tiered pricing are just some of the ways food hubs work to improve food access.

A food hub analysis conducted by Michigan State University found that the motivations behind the creation of food hubs varied from one hub to the next. "Some organizations had practical concerns to meet the immediate food needs in a community or create a viable economic outlet for local farmers. Meeting the economic needs of a specific community, such as providing a site for local farmers to store their produce, was often the initial motivation for starting a hub. Others identified values-based motivation, including ownership of land historically denied based on race, systemic food system changes, or concern for environmental sustainability. The identity of those present at the outset largely affected their progress towards prioritizing values-centered work. A subset of organizations began their food hub with community partnerships in the form of a community needs assessment, and horizontal decision-making practices among founders and in consultation with other local food organizations."[6]

Food hubs have the potential to create a more equitable food system that values quality jobs, healthy food access, local economic growth, small business development, and sustainable agriculture through their community engagement. The following methods of community engagement from Healthy Food Access demonstrate ways in which food hubs help instill ideas of equity in their activities, differentiating themselves from traditional food supply chain aggregators.[7]

- **Engaging residents and community groups in the food hub planning process.** Food hubs involve diverse community members in food hub and food system planning.
- **Connecting to small- and mid-sized farmers and producers.** Food hubs locate farmers and growers in the region who have had difficulty accessing broader urban markets, especially low-income farmers.
- **Prioritizing local farmers of color.** Food hubs identify and reach out to farmers and vendors of color to support historically marginalized producers and strengthen a diverse regional farm economy.
- **Employing members of the community.** Food system jobs are often an opportunity to employ workers who have previously been excluded and overlooked. Local hiring helps unemployed or under-employed residents of underserved communities benefit from the economic development brought by the food hub.
- **Investing in higher, family-sustaining wages for employees.** Food hubs often include paying sustainable wages as a means of supporting the development of a local labor force, which has long term positive economic impacts for food hubs and communities.
- **Making the food hub a community asset.** Food hubs often engage their community beyond simply offering healthy food. Many hubs provide broader services such as educational opportunities and community programming.

[6] https://www.canr.msu.edu/foodsystems/uploads/files/Delivering-More-Than-Food-Understanding-and-Operationalizing-Racial-Equity-in-Food-Hubs.pdf
[7] https://www.healthyfoodaccess.org/launch-a-business-models-food-hubs

## Survey Response Summary

After a kickoff call on January 18, 2023, the final survey was distributed to the 15 participating food hubs on January 20. Surveys were distributed in an editable Microsoft Word document allowing for each hub to fill out the survey thoroughly. Completed surveys were returned to The Conservation Fund which provided them to the consultants. Survey collection was closed on March 13, with **11** hubs having submitted responses.

- WNC Farm to Table
- Tractor Food and Farms
- Sandhills Aginnovation Center
- ByWay Foods/ Working Landscape
- Men and Women United for Youth & Families, CDC
- Foothills Food Hub - McDowell LFAC
- High Country Food Hub
- Freshlist LLC
- Firsthand Foods
- Feast Down East
- Farmer Foodshare

The following are some initial findings and summaries of the data collected from the surveys. This information will be used to inform the economic impact assessment.

### General Hub Information

**Year of Food Hub Foundation**

Surveyed hubs were asked to provide the year they began operations. The oldest hub surveyed was founded in 2012 while the newest started in 2020. The average start year for the 11 responding hubs was 2016. The age of operations of the food hubs in this survey follows the lines of a large-scale survey done in 2019 and reported in “Findings of the 2019 National Food Hub Survey” published by Michigan State University Center for Regional Food Systems and The Wallace Center at Winrock International. With 109 respondents nationwide, the national survey with a median length of operations being six years largely corresponds with North Carolina’s average year of food hub foundation of 2016.

**Table 1: Start Year**

| | |
|---|---|
| Oldest Hub | 2012 |
| Newest Hub | 2020 |
| Average Year of Foundation | 2016 |

**Sales Summary**

Survey participants were asked to provide their 2022 and 2021 sales estimates. It should be noted that the sales totals provided here differ from those provided later on in the survey for many hubs. This could be due to them including other revenue categories in this sales question which were broken down into more categories later in the survey. The hubs reported total combined 2021 sales of over $6.8 million, increasing to over $8.2 million for 2022. Based on the survey respondents, the food hubs sold an average of $685,000 per hub in 2021, and an average of $822,000 per hub in 2022.

**Table 2: Past Two Years of Sales**

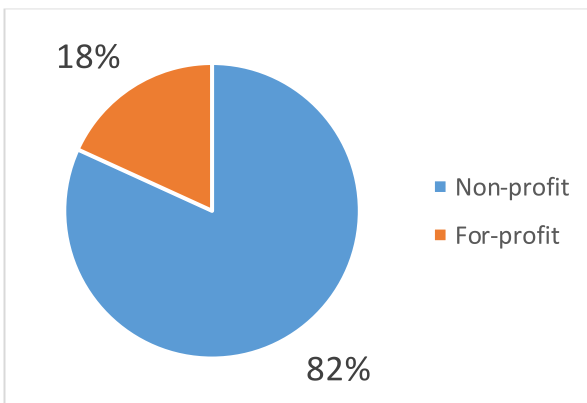
| | Total | Average Per Hub |
|---|---|---|
| **2022 Sales** | $8,217,039 | $821,704 |
| **2021 Sales** | $6,849,548 | $684,955 |

The median sales figures for the two years were $350,000 in 2021 and $550,000 in 2022. The national median revenue found in the 2019 National Food Hub Survey was $495,000 which is a number that has been steadily increasing since the survey began. North Carolina is very much in line with the national median. Also of note, the lower 2021 figures compared to 2022 may reflect the immersion from the worst of the Covid years and mark a steady return to pre-Covid sales figures.

### Tax Structure

Food hubs were asked to provide whether they were organized as a non-profit or a for-profit entity according to the IRS. About **82%** of hubs reported that they are organized as a non-profit, with the remaining **18%** being for-profit. From this, you can infer that these food hubs are trying to maintain a community-based focus and perhaps place less emphasis on only profit generation.

**Figure 2: Tax Structure**

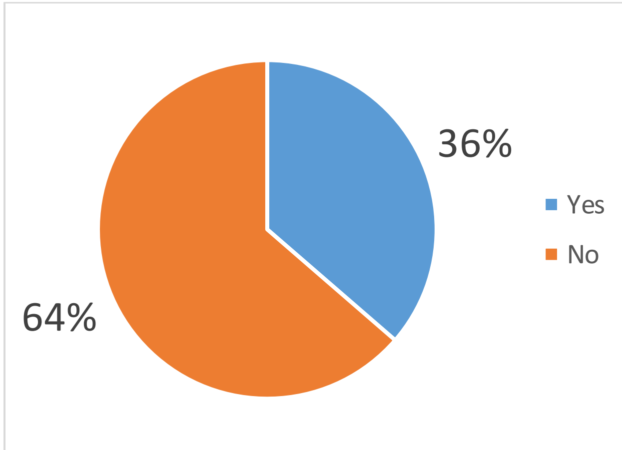



### Is your food hub farmer-led?

Responding food hubs were asked whether they were farmer-led. The survey defined this as meaning that the food hub is managed by a farmer and/or the hub has farmers on its advisory committee. The majority of the responding hubs are not farmer-led at **64%** or 7 respondents, with the remaining **36%** noting they are farmer-led.

Farmers are participating in and benefiting from food hubs regardless of if the food hub is led by farmers or not. Both farmer-led and nonfarmer-led food hubs offer the same variety of services. Many food hubs list social change as part of their mission whether it be providing more options in food deserts or providing food for low-income residents in addition to sales. This is further discussed in the publication, “Values-Based Food Supply Chains”, which was part of the “Food Hub Development Workshop: The Value Chain Conundrum”.

**Figure 3: Farmer-led Food Hub**

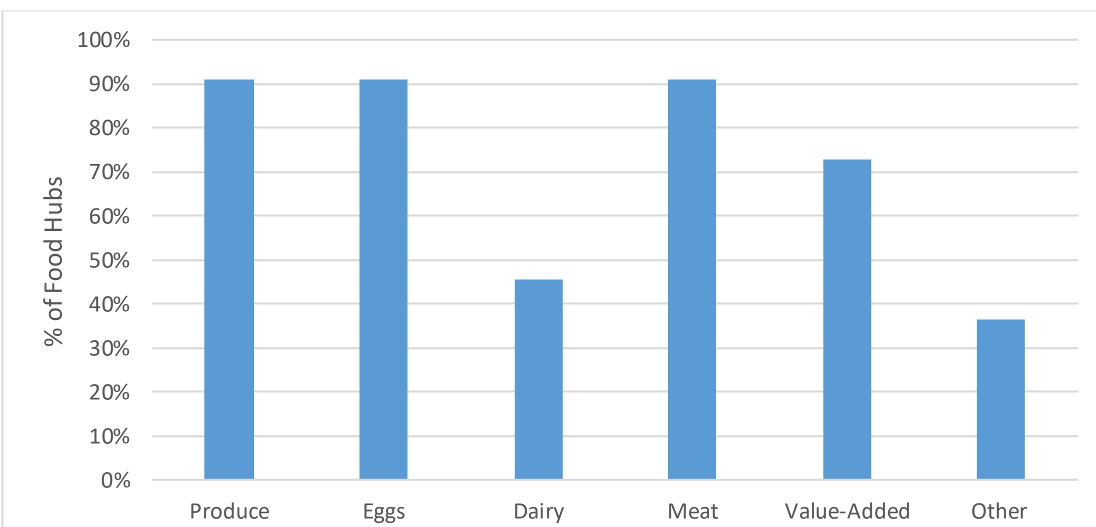



## Food Hub Activities

### Types of Products Sold

Surveyed food hubs were asked about the types of products they sell. The majority of the hubs sell produce, eggs, and meat, at about 91% each. About 73% of responding hubs sell value-added products, while about 45% sell dairy. A specific description of the value-added products was asked in a later question. 36% of hubs sell other items as well, including farm products, flowers, prepared meals, and lawn & garden items. Though heavily focused on pantry essentials like produce, eggs, and meat, food hubs provide smaller farms with value-added products and dairy products a conduit to more purchasers.

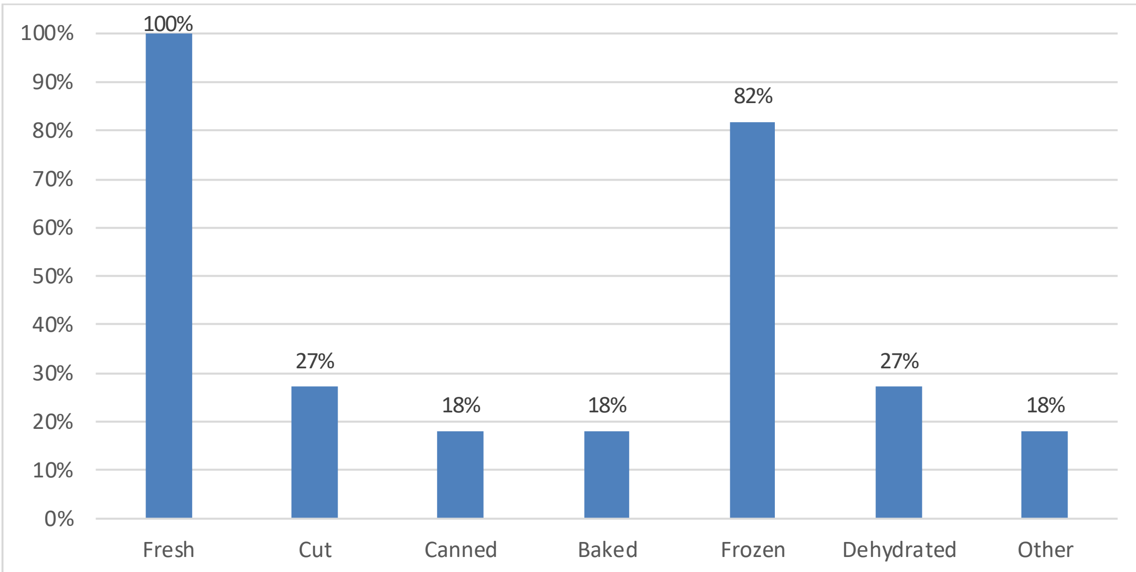
**Figure 4: % of Food Hubs Selling Each Product Type**




### How Are Products Sold?

Food hubs were asked how the products they carried are sold. As shown in the figure, 100 percent of the hubs reported selling fresh products. Another 82 percent sell their products frozen. Only 27% sell cut or dehydrated products, while 18% sell canned or baked items. 18% of respondents (2 hubs) also noted other, writing in fermented, and prepared meals. This shows how food hubs are providing fresh food directly to their local communities. Also, this fresh product is one way for local food hubs to differentiate themselves from national or even international competition.

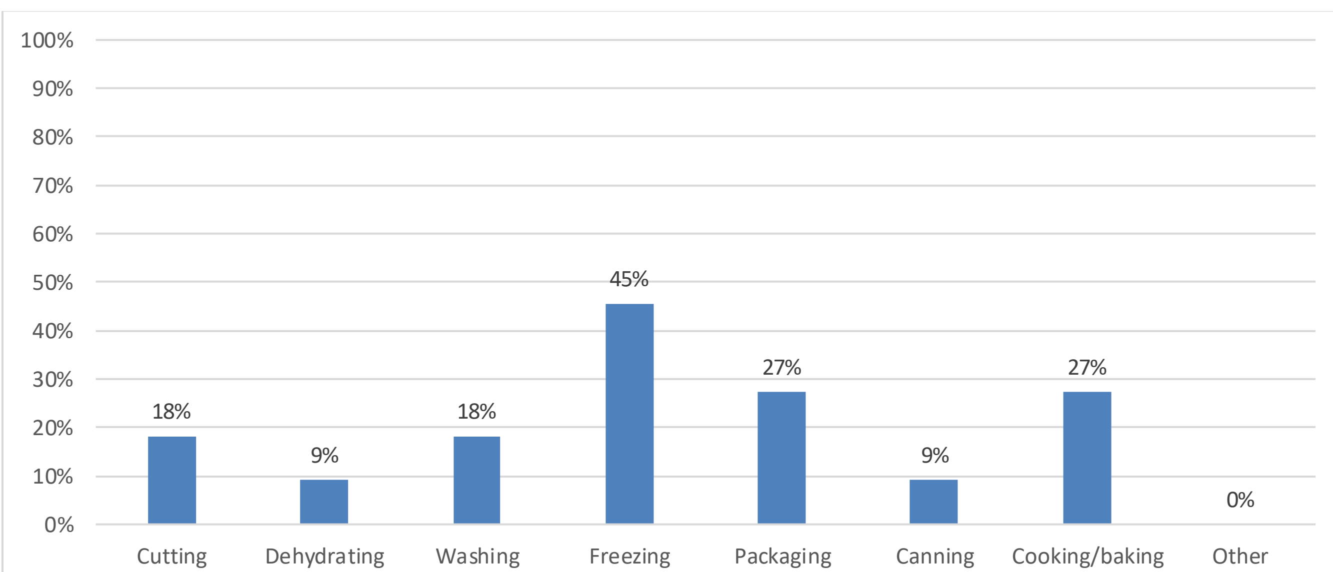
**Figure 5: How Products are Sold**




**Value-Added Services Offered**

Responding food hubs were asked what types of value-added services they offer their producers. Less than half of the hubs offered any value-added services, with freezing being the most common service at 45% of responding hubs. Packaging and cooking/baking were offered by 27% of hubs each, while cutting and washing were offered by 18% of hubs. Dehydrating and canning were both offered by only 9% of hubs.

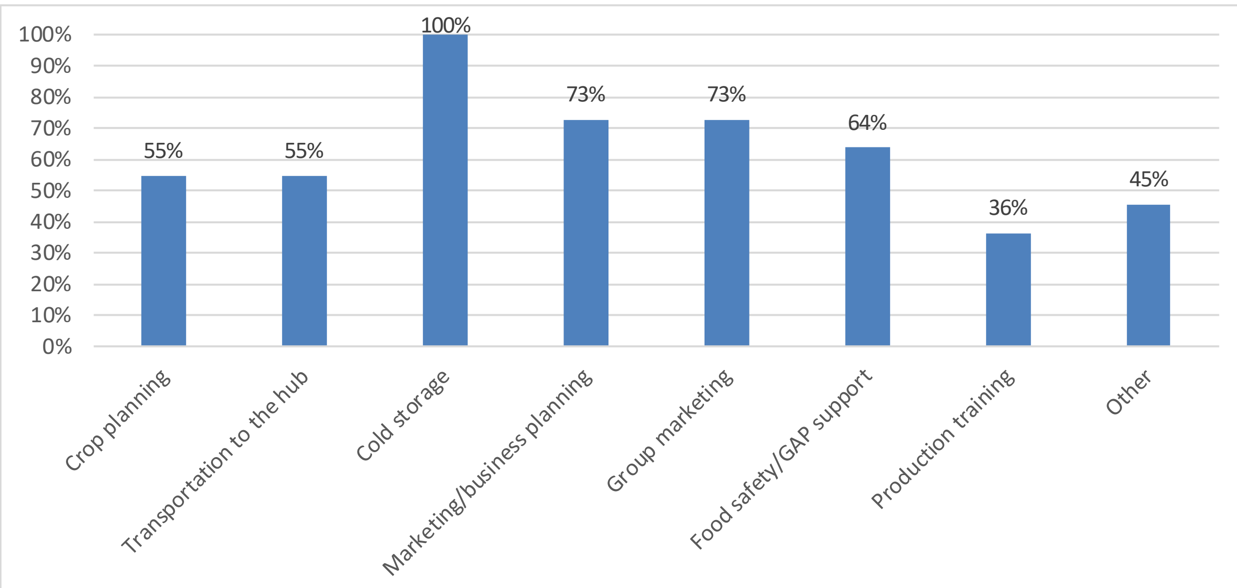
**Figure 6: Value-Added Services**



**Non-Sales Services Offered**

Surveyed food hubs were asked what types of non-sales services they provide their farmers. All of the hubs reported that they offer cold storage to their producers. Marketing/business planning and group marketing services were both offered by 73% of respondents, while 64% offered food safety and GAP certification support. Crop planning and transportation to the hub were both offered by 55%. Only 36% of the hubs offer production training. 45% offer other services, including home drop-off, scholarships, p2p educational opportunities, job postings, advocacy, youth engagement, and others. Offering services as a food hub assists smaller farmers and the communities they are in. Many food hubs support a significant number of beginning farmers. In an article published by Puget Consumers Co-op in 2019 – "Food Hubs Provide "Farmers Market Values" On a Bigger Scale" by Rebekah Denn, they point to food hub surveys suggesting 46% of producers and suppliers have been in business less than 10 years. Food hubs providing extra services aid the growth of these newer producers.

**Figure 7: Non-Sales Services Offered**

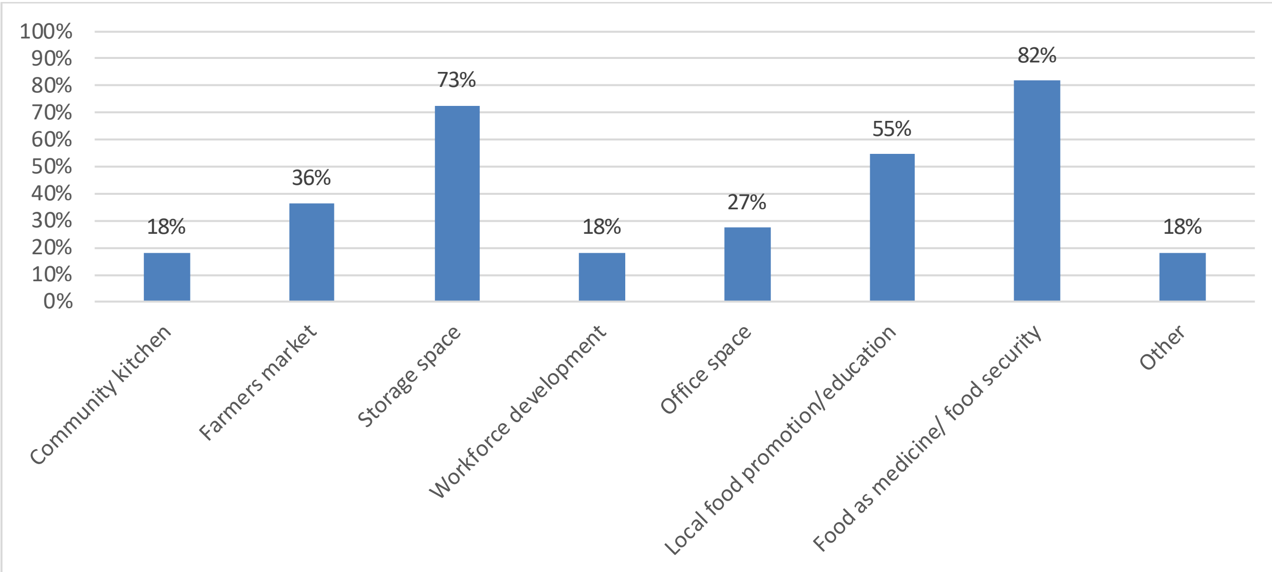



**Community Services Offered**

The survey asked food hubs what types of services they provide to the community at large. The most commonly offered services were food as medicine/food security programs, and storage space, at 82% and 73% of respondents respectively. Local food promotion and educational programs such as cooking classes are offered by 55% of food hubs. None of the other categories were offered by more than half of the hubs. Farmers markets and office space are offered by 36% and 27% respectively, while community kitchens, workforce development, and other each are offered by 18% of hubs. Other community services include home and business delivery, and participation in farmer mentorship programs.

Many food hubs operate with a mission that goes beyond being revenue focused. Providing an array of programs, such as cooking classes, farm development programs, livable wages for employees, and access to food in food deserts in turn assists the community. Another indication that food hubs are serving low-income customers is the acceptance of Supplemental Nutrition Assistance Program (SNAP) benefits.

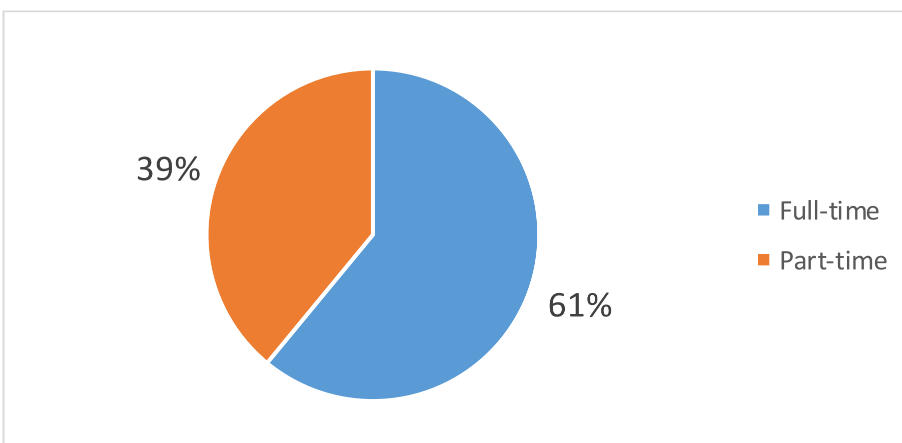
**Figure 8: Community Services**




## Food Hub Labor

**Total Hub Labor**
Surveyed food hubs were asked to provide their total number of people who currently work at the hub, including both employees and contractors, as well as provide a breakdown of those individuals by part-time or full-time status. In total, hubs reported **85** individuals working for the hubs, with an average of about **8** people per hub. With many of these food hubs located in rural areas, adding employment only serves to benefit the community it is located in.

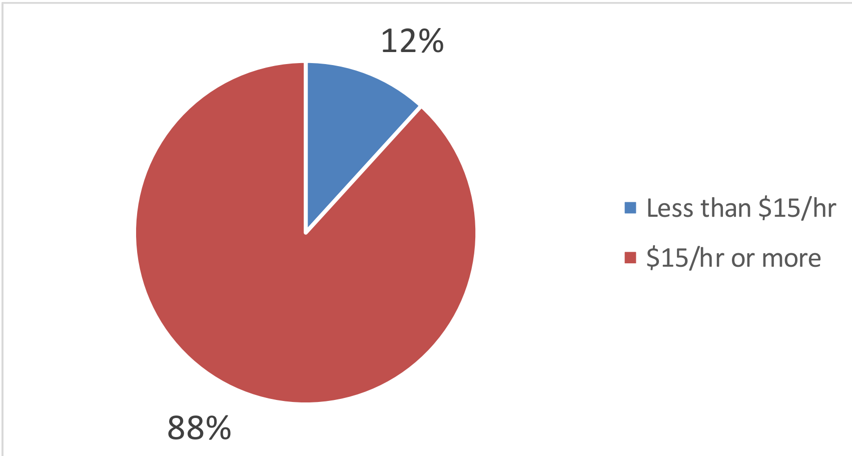
**Figure 9: Labor Status**




**Food Hub Wages**
The surveyed food hubs were asked how many of their labor positions are being paid a livable wage, defined as at least $15 per hour or more. The hubs reported that 88% of their labor positions are paid a livable wage. According to ZipRecruiter, part-time workers in North Carolina averaged $10.18 an hour in May 2023. With 88% of the labor being paid at over $15,

food hubs provide significant income for their workers in a state with a lower average part-time wage. As shown later in the document, the 11 surveyed hubs reported total annual personnel expenditures of over $2.5 million, or an average of over $250,000 per food hub of salary impact.

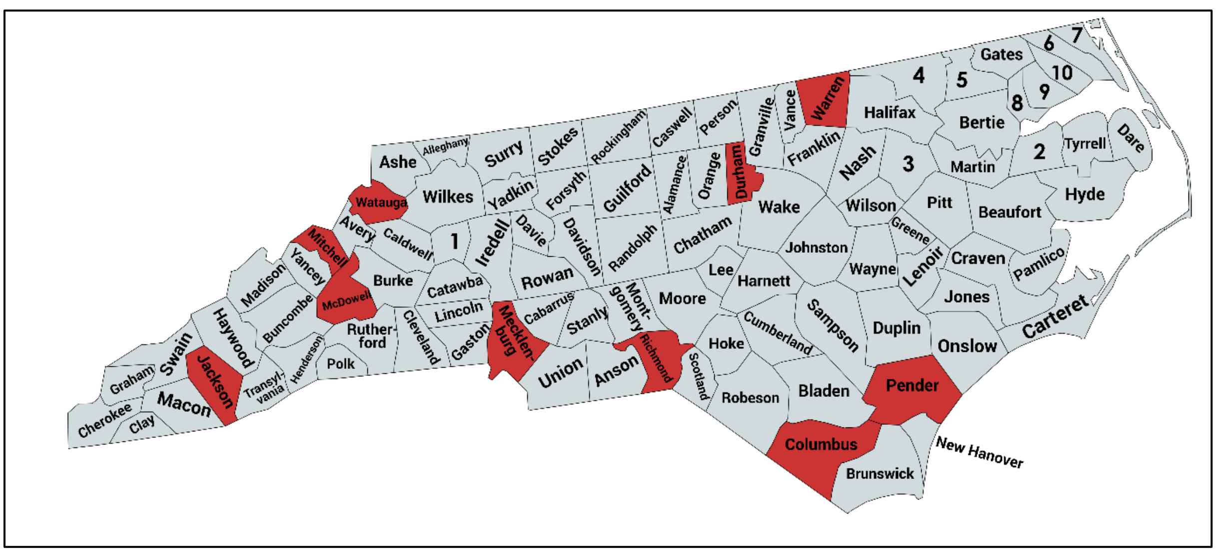
**Figure 10: Labor Wages**




## Geographic Presence

As illustrated by this map, the majority of the food hubs completing this survey are located in rural areas, which often lack the same kinds of investments made in more suburban and urban communities. Nationwide more than half of food hubs are located in low-income low access communities.[8] This is reflected in the locations of the hubs for the North Carolina survey. Food hub operators often state that their community plays some role in their decision-making process or governance, and in turn, the hub makes investments in the community where they are located.

**Figure 11: Food Hub Locations**

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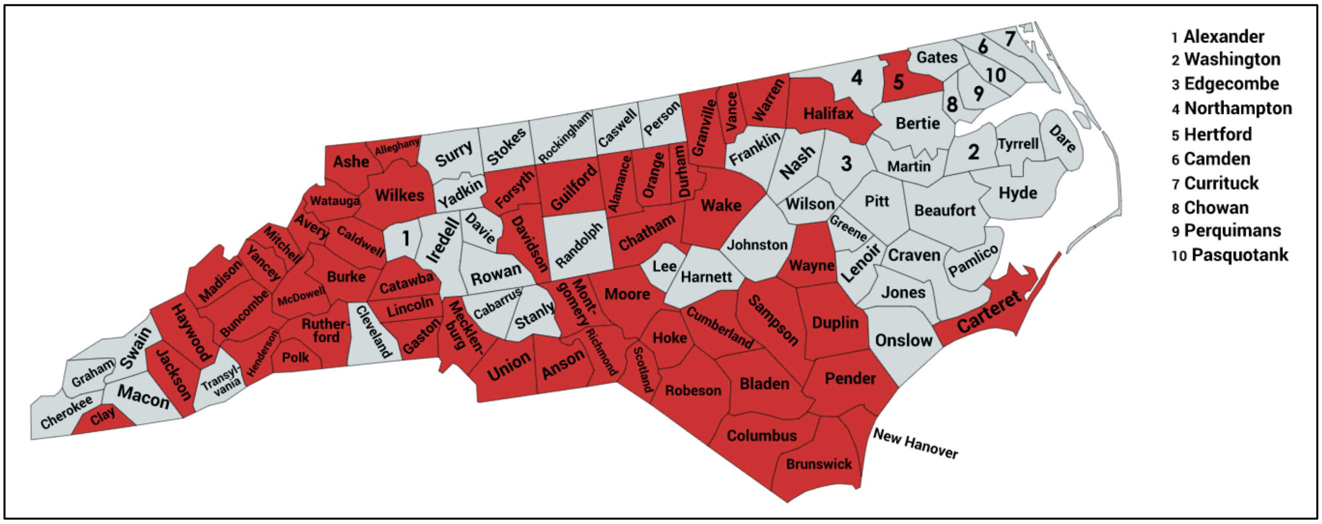
8 2019 Findings of the National Food Hub Survey

**Customers by County**

Hubs reported serving customers in 53 North Carolina counties. Within those 53 out of 100 NC counties, 72% of the population of North Carolina is being served by these food hubs based on 2021 census data.

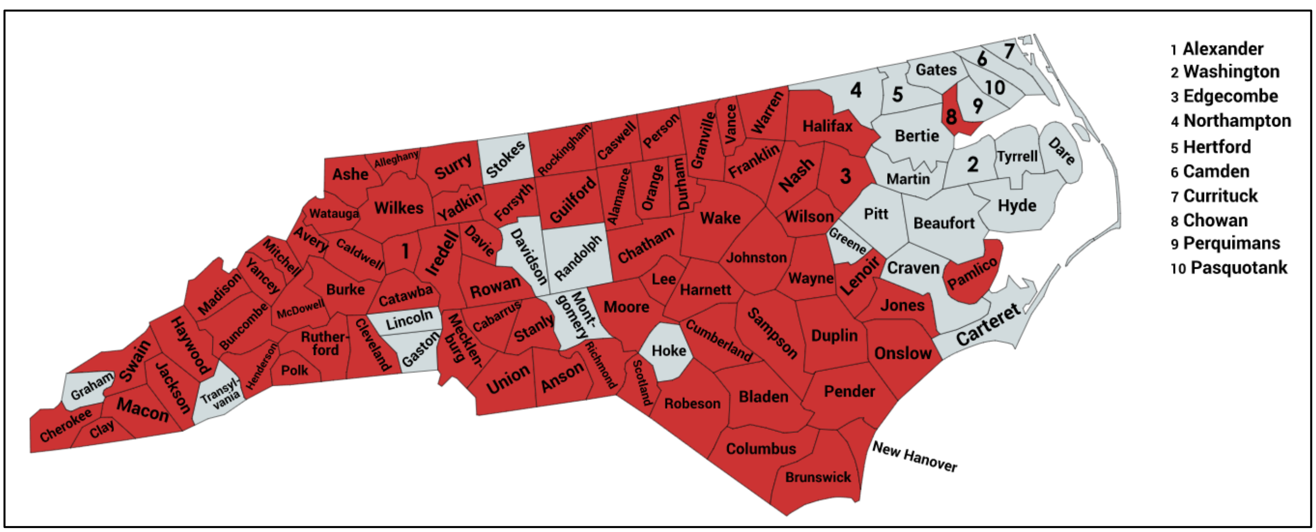
**Figure 12: Food Hub Customer Locations**




**Producers by County**

Hubs reported purchasing from 496 producers in 73 North Carolina counties. This represents approximately 1.1% of the state's over 45,000 producers. When looking at the 24,800 farms that fall between \$1,000 and \$10,000 in sales, this percentage rises to 2% of farms.

**Figure 13: Food Hub Producer Locations**



## Producer Information

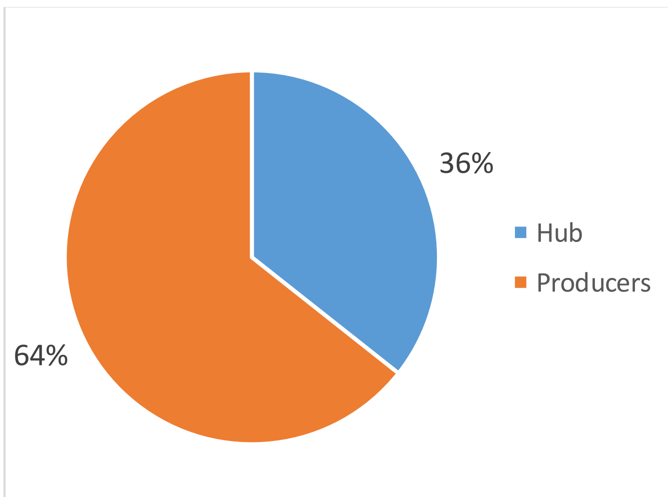
### Farm Purchases

The responding food hubs reported that they purchased a total of **$5.35 million** in food items from **496** farms in 2022. This is an average of over **$486,500** paid per hub and an average of about **$10,800** received per farm. On average, each food hub purchased from about 45 producers.

### Sales Split

The following figure displays the average sales split between producer and food hub for the responding hubs. On average, the responding hubs returned 64% of sales to producers and retained an average of 36%. The percentage of sales being returned to producers ranged from 30% to 83% amongst responding food hubs. 75% of the 496 farms noted by the surveyed food hubs were receiving over 70% of the revenue split, indicating that the overall range favors the higher end of the revenue split. These ranges are in line with national trends reported by the National Food Hub Survey.

**Figure 14: Average Revenue Split**




### Other Farm Support

Surveyed food hubs reported that they supported a total of **659** farms through activities and services beyond only purchasing food, for an average of **60** farms per food hub.

### Minority Producers

Surveyed food hubs reported an average of **28%** of the farms they purchase from are minority-owned operations. USDA figures from the most recent Census of Agriculture show only 3% of North Carolina farms are Black-owned. This indicates that the food hubs are able to capture a higher proportion of minority producers than the state average. The ability of minority producers to gain access to markets can be greatly improved with support from food hubs.[9]

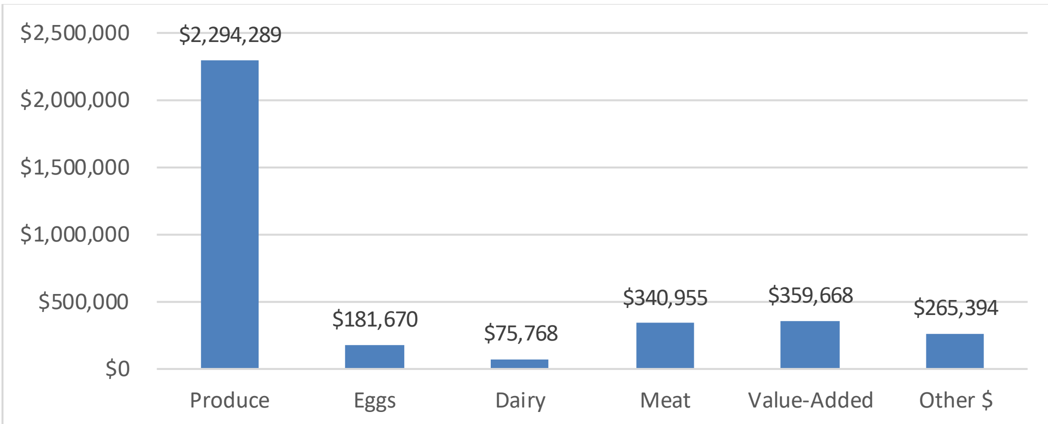
[9] https://www.canr.msu.edu/foodsystems/uploads/files/Delivering-More-Than-Food-Understanding-and-Operationalizing-Racial-Equity-in-Food-Hubs.pdf

## Financials

**Total Sales**

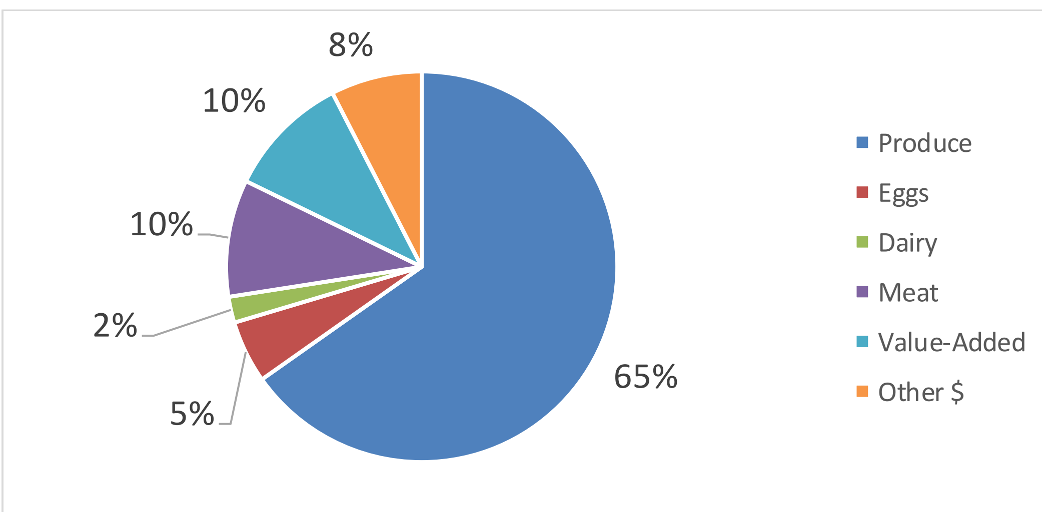
The following figure displays the total sales by product type for all responding food hubs. Other responses included flowers, gifts, lawn & garden, and farm products. Total sales for produce, the most prevalent product type, reached nearly $2.3 million. Meat and Value-Added were the next highest at about $341,000 and $360,000 respectively.

**Figure 15: Total Sales by Product Type**



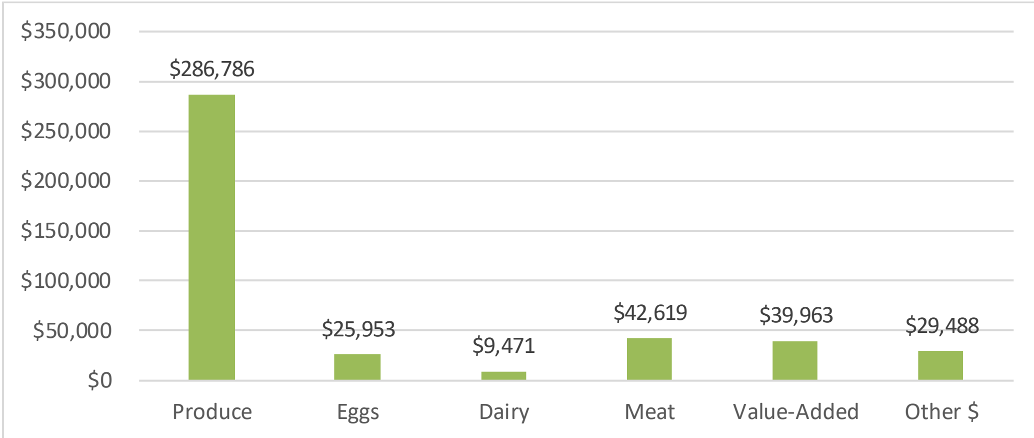

The following figure displays the breakdown of the percent of total sales by product type. Other responses included flowers, gifts, lawn & garden, and farm products. Produce accounted for 65 percent of total sales, with no others being higher than 10 percent. Meat and Value-Added products tied for the second highest percentage, followed by Other.

**Figure 16: % of Total Sales by Product Type**




The following figure displays the average sales per food hub by product type based on the survey responses. Other responses included flowers, gifts, lawn & garden, and farm products. Average sales of produce were reported at about $287,000 per food hub.

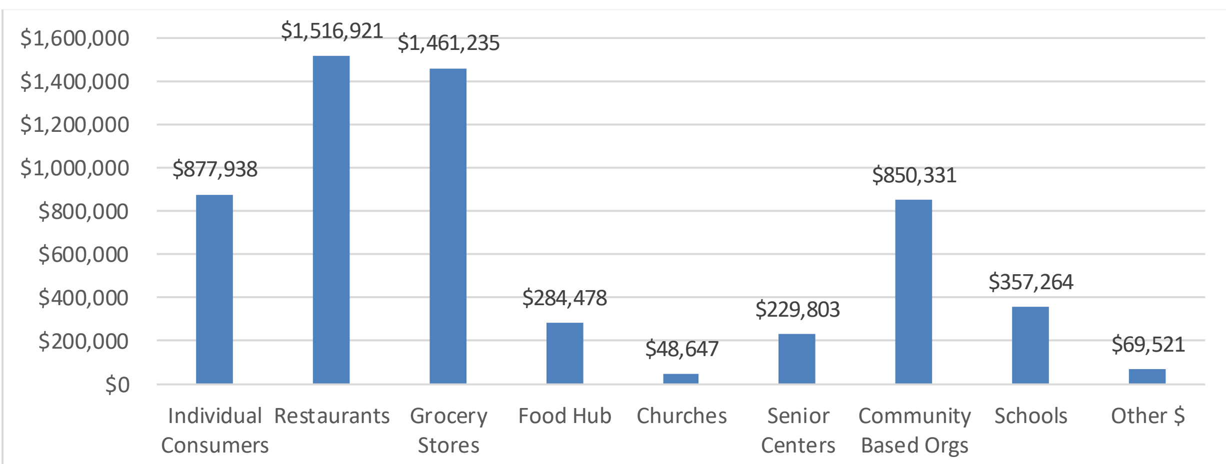
**Figure 17: Average Sales Per Food Hub by Product Type**




**Sales by Market Channel**

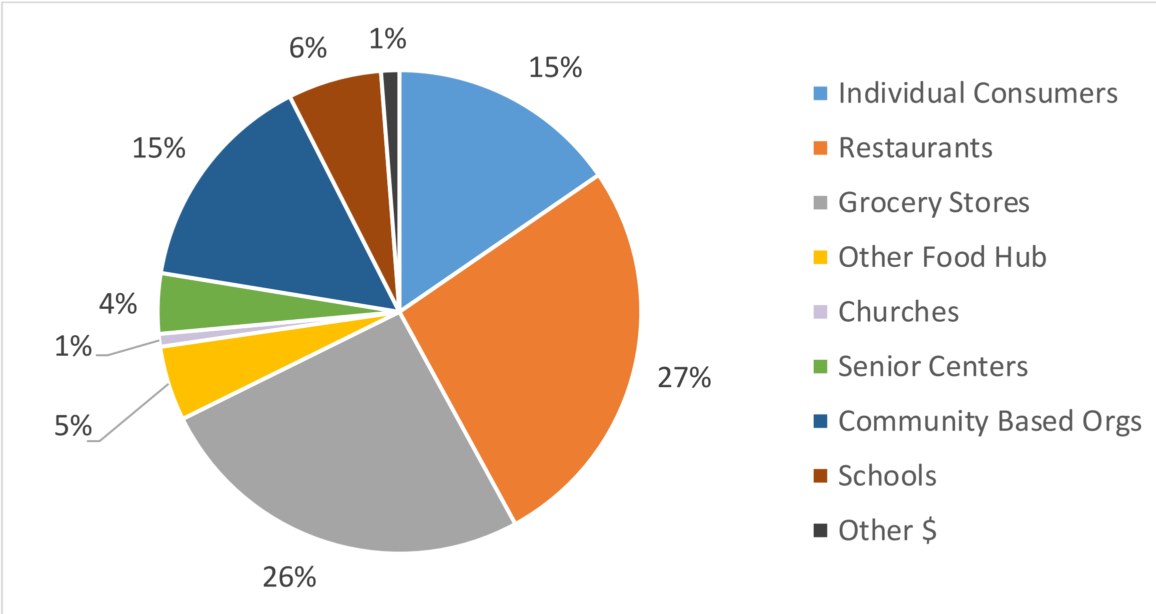
The following figure displays the total sales in each market channel by all responding food hubs. Responses in the Other category included distributors, HOP boxes, and childcare services. Restaurants were the largest market channel, purchasing $1.52 million in food from responding food hubs. Grocery stores were the second largest market at $1.46 million. Food hubs go beyond helping farmers as evidenced by the largest channel being restaurants. Allowing restaurants easier access to local produce often grows business in small downtowns, along with the overall restaurant industry, thereby creating many jobs in rural counties.

**Figure 18: Total Sales by Market Channel**



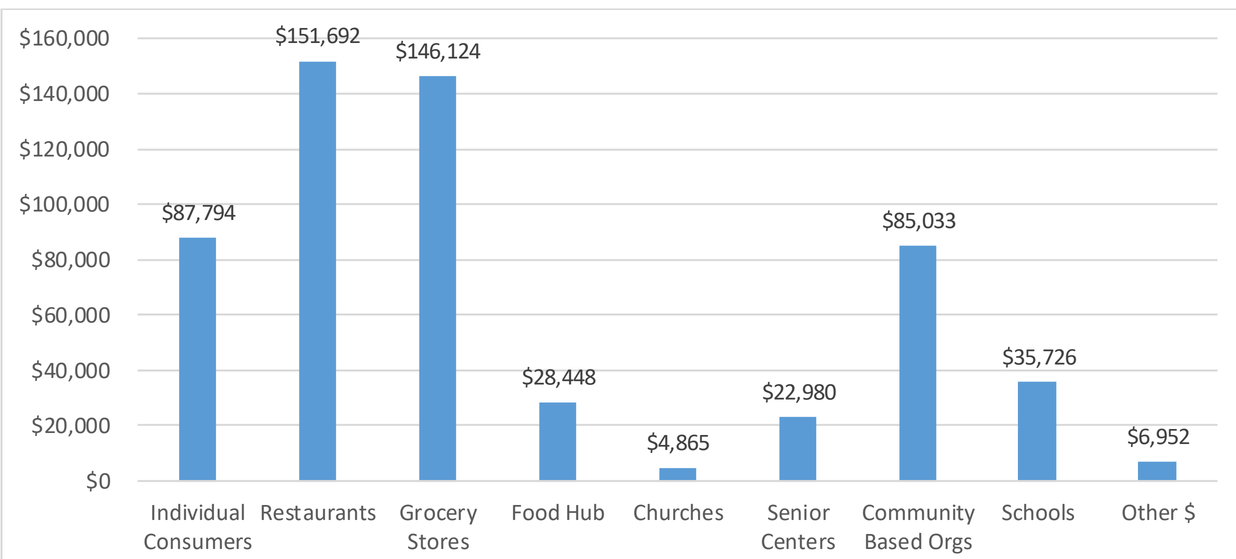

The following figure displays the breakdown of the percent of sales by market channel. Responses in the Other category included distributors, HOP boxes, and childcare services. Restaurants accounted for 27 percent of sales, followed by grocery stores at 26 percent. Individual consumers and community-based organizations both accounted for 15 percent of sales.

**Figure 19: % of Sales by Market Channel**




The following figure displays the average sales per food hub by market channel. Responses in the Other category included distributors, HOP boxes, and childcare services.

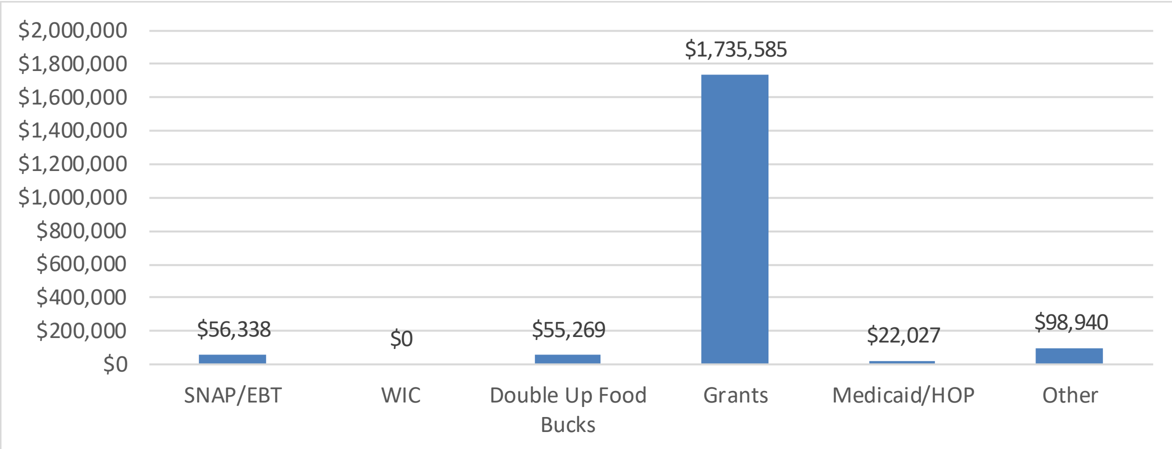
**Figure 20: Average Sales Per Food Hub by Market Channel**




## Subsidies Received

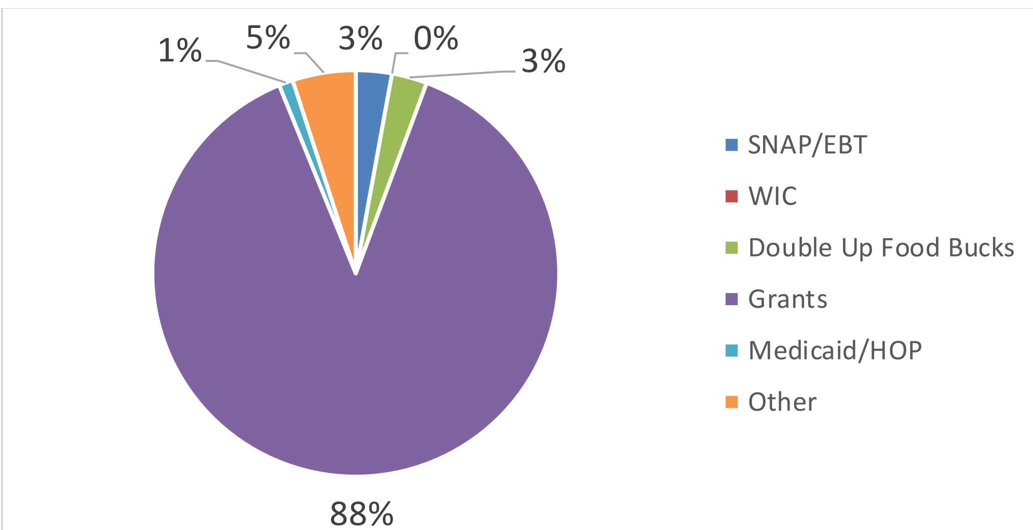
The following figure displays the total subsidies received in each category by all responding food hubs. Responses to the Other category included senior mobile market loyalty program food vouchers, and funds that other agencies received and used to purchase. Grants accounted for the largest category at over $1.7 million in total for the 11 food hubs. Many food hubs receive grant funds for infrastructure investments like cold storage, equipment, and vehicles, as well as training for producers, marketing to new customers, and hiring staff. Analysis from the "Findings of the 2019 National Food Hub Survey", mentioned previously, illustrates that food hubs typically reduce their dependency on grant funds as they age in years, though they remain an important part of a revenue portfolio.

**Figure 21: Total Subsidies Received**



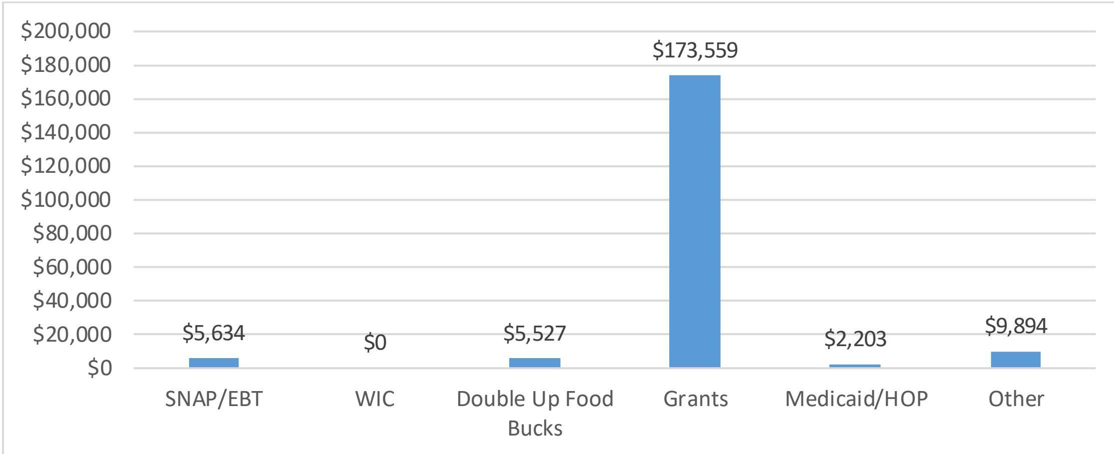

The following figure displays the breakdown of the percentage of subsidies received by type. Responses to the Other category included senior mobile market loyalty program food vouchers, and funds that other agencies received and used to purchase.

**Figure 22: % of Subsidies by Type**




The following figure displays the average subsidies received per food hub by type. Responses to the Other category included senior mobile market loyalty program food vouchers, and funds that other agencies received and used to purchase.

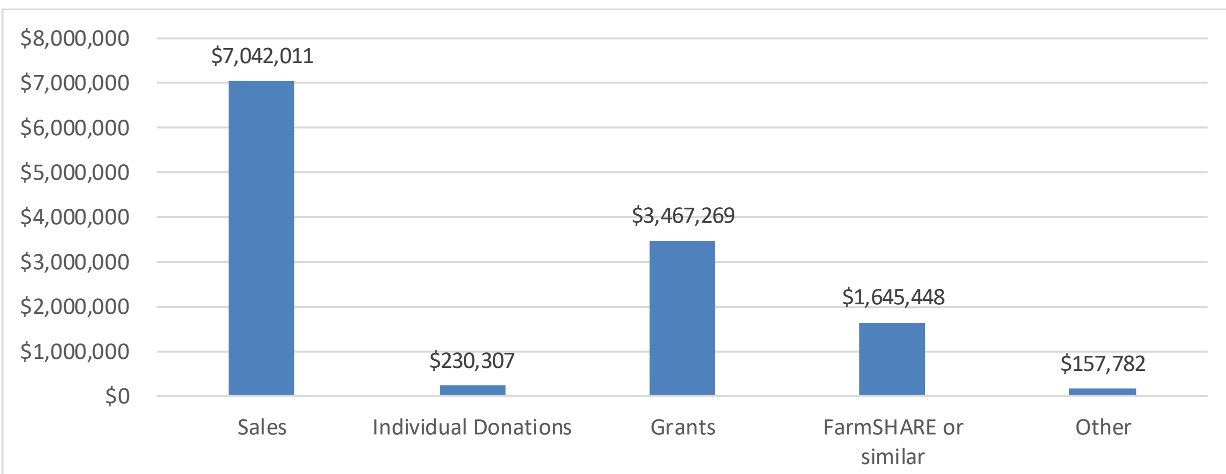
**Figure 23: Average Subsidies Per Food Hub by Type**




## Annual Income

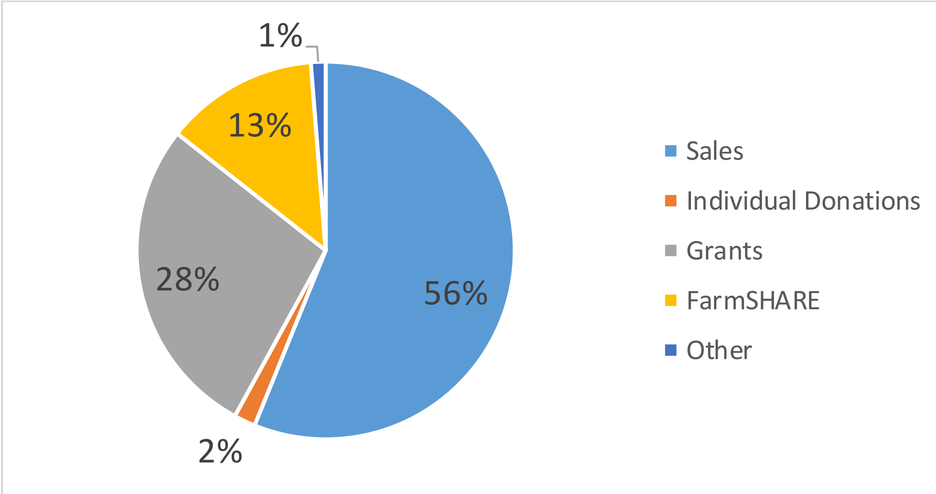
The following figure displays the total annual income of all responding hubs by category. Responses to the Other category included tickets for events, Healthy Opportunities Pilot (HOP) programs supporting healthy food access. Most respondents did not provide further details on their Other income. Sales accounted for a reported $7.04 million of combined annual income of the responding hubs. While grants do account for a large share of the annual income of food hubs at $3.5 million, food sales are still double the annual total grant investment for these 11 hubs.

**Figure 24: Total Annual Income by Category**



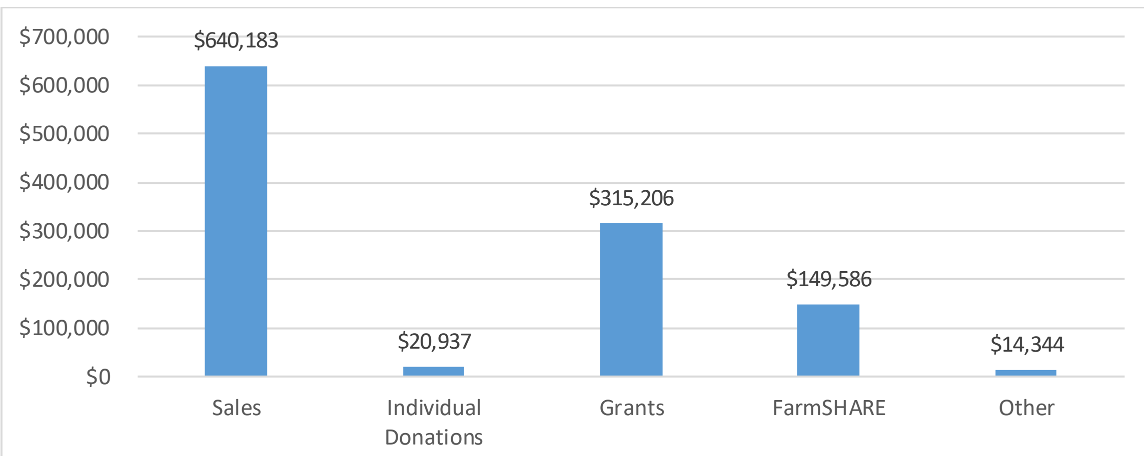

The following figure displays the breakdown of the percent of annual income for responding food hubs by type. Responses to the Other category included tickets for events, and Healthy Opportunities Pilot programs supporting healthy food access. Most respondents did not provide further details on their Other income. Sales accounted for 56% of combined total annual income, followed by grants at 28 percent, and FarmSHARE (an emergency food assistance program launched by CFSA to provide CSA-style food boxes) or similar at 13 percent.

**Figure 25: % of Annual Income by Category**




The following figure displays the average annual income per food hub by category. Responses to the Other category included tickets for events, and HOP. Most respondents did not provide further details on their Other income.

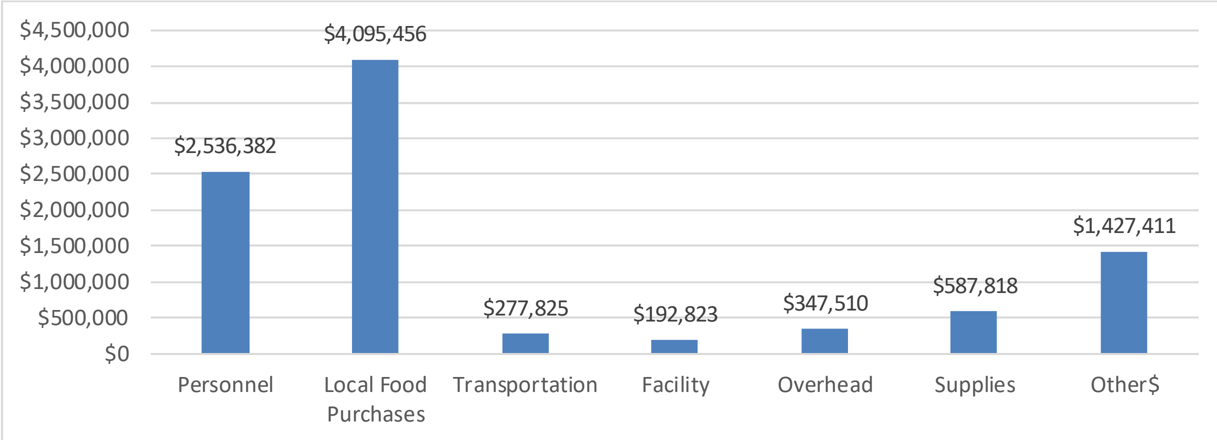
**Figure 26: Average Income Per Food Hub by Category**




**Annual Expenditures**

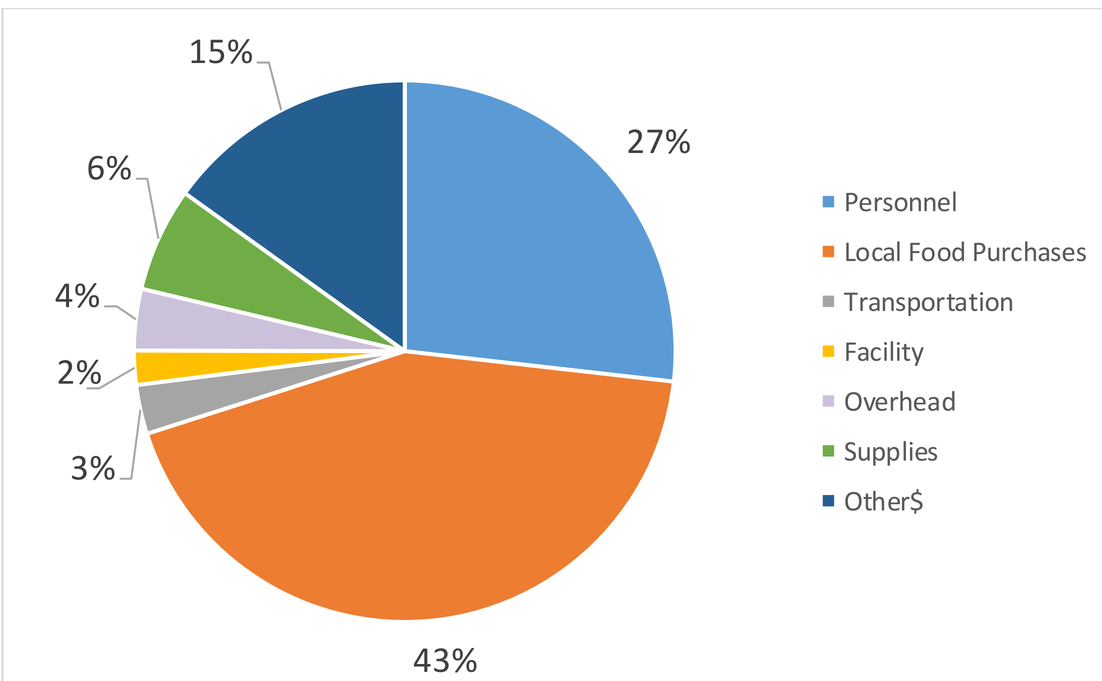
The following figure displays the total annual expenditures of all responding hubs by category. Responses to the Other category included ingredients, construction, equipment, cold storage space, slaughter and processing fees, events, and contractual expenses. Local food purchases accounted for the largest expense category at a combined total of nearly $4.1 million. This was followed by Personnel at $2.54 million, and Other at $1.43 million.

**Figure 27: Total Annual Expenses by Category**



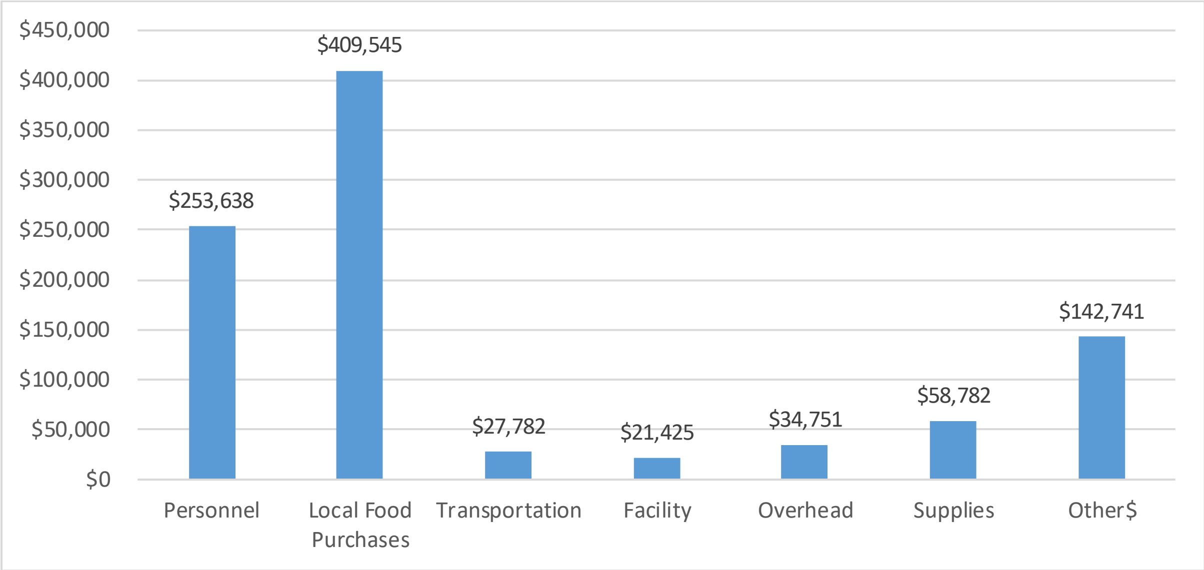

The following figure displays the breakdown of the percent of annual expenses for responding food hubs by type. Responses to the Other category included ingredients, construction, equipment, cold storage space, slaughter and processing fees, events, and contractual expenses. Since the goal of many food hubs is to improve communities, the answers to this question illustrate, with the largest expenses being labor and food purchase, that food hubs have a significant impact on improving the areas they serve.

**Figure 28: % of Annual Expenses by Category**




The following figure shows the average annual expenses per food hub by category. Responses to the Other category included ingredients, construction, equipment, cold storage space, slaughter and processing fees, events, and contractual expenses.

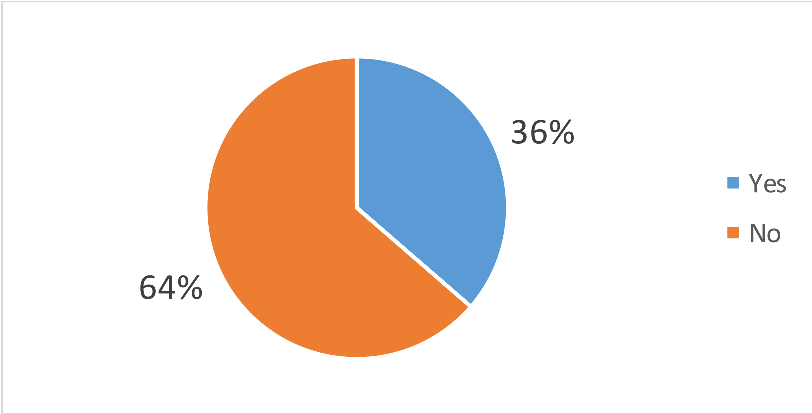
**Figure 29: Average Annual Expenses Per Food Hub by Category**




**Food Purchases from Other Hubs**

Surveyed food hubs were asked if they purchase food from other food hubs, and if so, to provide a total annual estimated amount. Only 36% of the food hubs reported purchasing from other food hubs. Those food hubs reported a total of **$311,148** in purchases from other hubs in the past year.

**Figure 30: Do You Purchase from Other Food Hubs?**

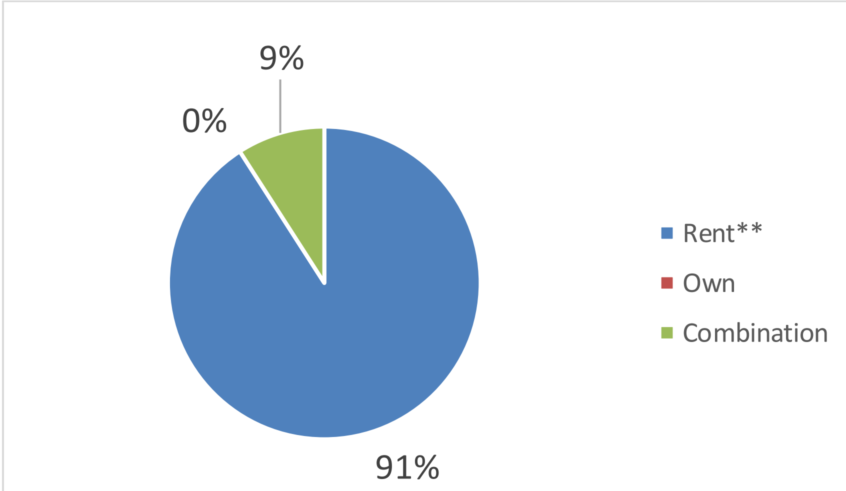



## Facilities and Infrastructure

**Facility Ownership Status**

The food hubs were asked if their facilities were owned by the hub or rented, and to provide more information on their situation if renting. It should be noted that one entity is currently renting but is a rent-to-own agreement. As shown in the figure, 91 percent of responding food hubs are renting. One facility, or 9%, operates under a combination, owning their processing facility but renting their kitchen. None of the responding hubs own all their facilities.

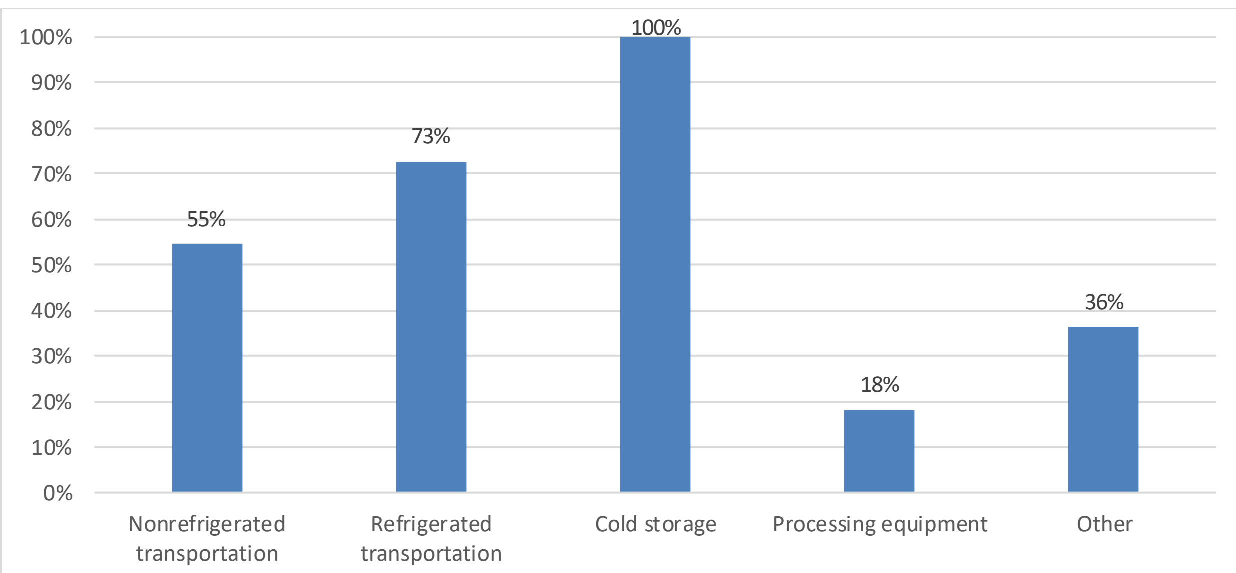
**Figure 31: Facility Ownership Status**




### Existing Infrastructure Access

The surveyed food hubs were asked what types of infrastructure their hubs currently have access to for use by themselves and their producers. 100% of the hubs have access to cold storage. Refrigerated transportation and nonrefrigerated transportation are accessible to 73% and 55% of respondents respectively. Only 18% of the responding hubs reported access to processing equipment. 36% of food hubs noted other infrastructure which included things such as loading docks, dry storage, forklifts and pallet jacks, and kitchen space.

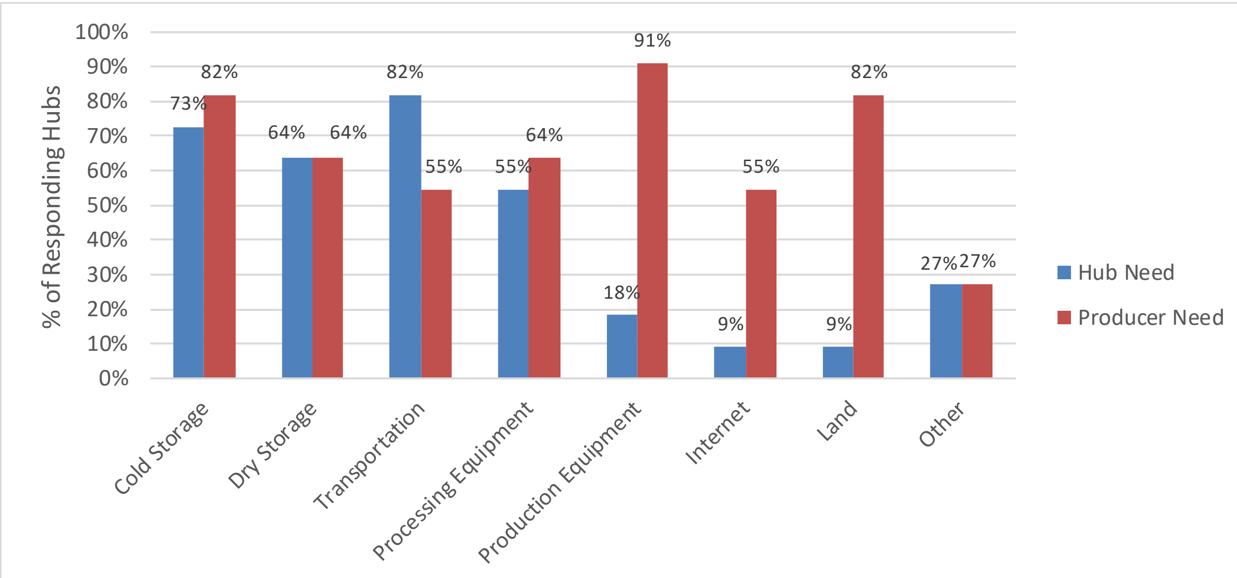
**Figure 32: Existing Infrastructure Access**




### Infrastructure Needs Moving Forward

The survey asked food hubs about the types of infrastructure they or their producers need in the future to continue to grow their operations. The food hubs reported that transportation was the most common food hub need at 82%, followed by cold storage at 73%, and dry storage at 64%. Respondents reported that production equipment was the most common producer need at 91% of respondents, followed by both land and cold storage at 82% each, and both dry storage and processing equipment at 64% each. 27% of food hubs noted other needs for both producers and food hubs. These include IQF, reusable packaging, labor, food hub facility space, post-harvest handling equipment, and composting infrastructure.

**Figure 33: Infrastructure Needs**

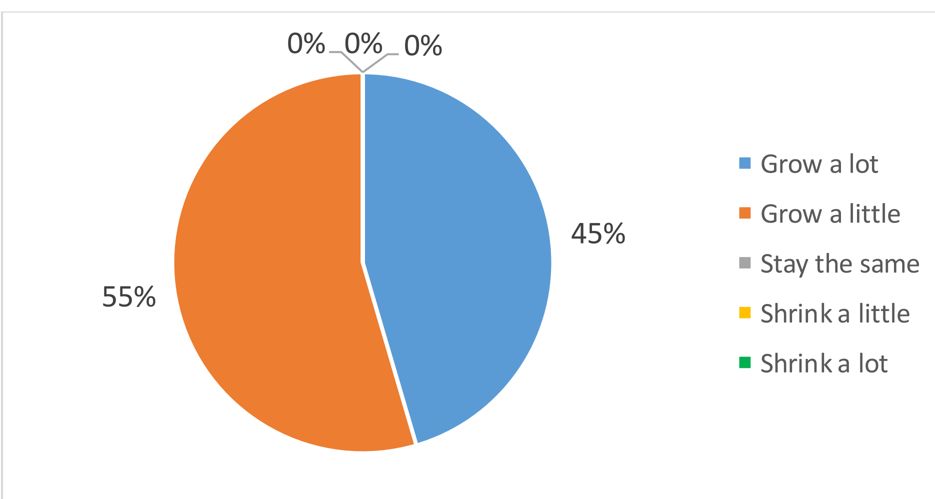



## Future Market Changes

**Expected Future Demand for Products and Services**

Surveyed food hubs were asked to describe the expected change in demand for their products over the next two years. 45% said they anticipated demand to grow a lot, while 55% said they anticipated demand to grow a little. None expected it to remain the same or shrink. Nationwide the top challenges identified by food hubs to growth were meeting buyer pricing requirements, meeting product volume needs, and struggling with the seasonality of fruits and vegetables.[10]

**Figure 34: Expected Future Demand**



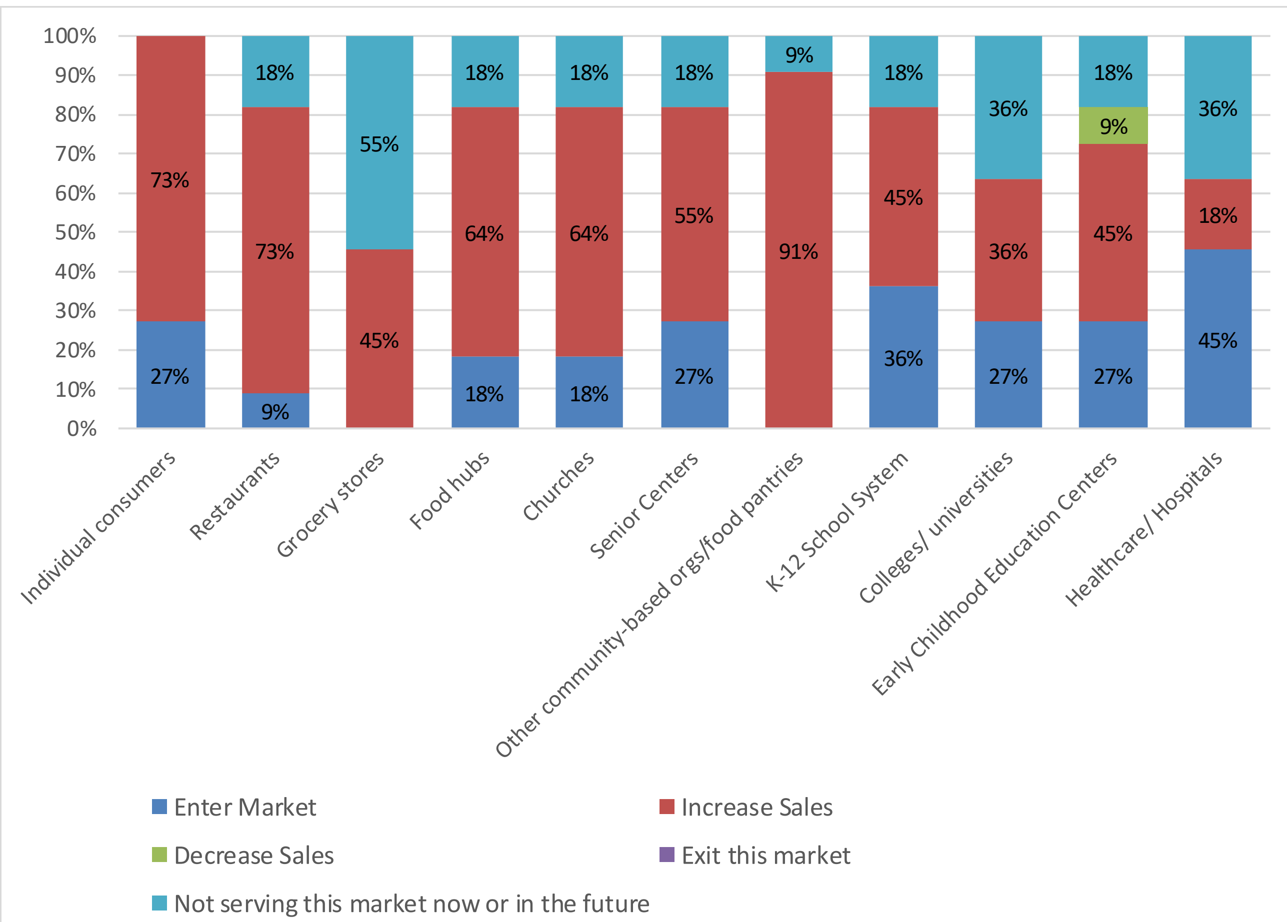

[10] 2019 Findings of the National Food Hub Survey

**Future Market Presence**

Food hubs were asked to indicate what their plans were for serving different customer groups in the future. As shown in the figure, across all market channels, the food hubs indicated they would primarily be growing their sales. None of the hubs indicated that they planned to exit any markets, and only one market, early childhood education centers, had a hub respond that it would be decreasing sales in that segment. Excluding markets not being served, increasing sales or entering the market were the most commonly selected choice in all categories.

Hospitals/healthcare saw the largest percentage of hubs planning to enter the market at 45%, while community-based organizations (which includes food pantry and food bank activities) saw the largest percentage of hubs planning to increase sales at 91%. All responding food hubs indicated that they plan to enter or increase sales to individual consumers. This is important to note as it balances with small-wholesale market channels that food hubs have participated in traditionally, and balances the funding-dependent healthcare and community-based organization buyers with local demand.

**Figure 35: Future Market Presence**



## Multipliers and Statewide Impacts

Food hubs can have multiple and diverse impacts on their local food systems and communities. These impacts can be categorized into three main areas: social, environmental, and economic. *Social impacts* refer to the effects of food hubs on the well-being, health, equity, and empowerment of the people involved in or affected by their activities. *Environmental impacts* refer to the effects of food hubs on the natural resources, ecosystems, and climate that support food production and consumption. *Economic impacts* refer to the effects of food hubs on the income, employment, productivity, and competitiveness of the food sector and the local economy. This assessment focuses on the economic impacts of food hubs.

### Statewide Economic Impacts

While the survey received responses from 11 food hubs in the state, the goal of this assessment is to also identify the statewide economic impacts of community-focused food hubs in North Carolina. For the purposes of this section, the project team has identified about 20-25 entities within North Carolina that meet the definition of food hub defined at the beginning of this document. This range has been used to estimate statewide impacts from data extrapolated from the averages of survey respondents' answers. We understand that this may not provide exact impact values, but it allows for a general conservative estimate based on real figures.

**2022 Total Sales**
2022 statewide total food hub sales range between $16.4 million - $20.5 million based on an average of $821,704 per hub with an estimate of 20-25 food hubs in the state.

**Food Hub Labor**
Total food hub labor ranges between 160 – 200 individuals based on an average of 8 people per hub with 20-25 food hubs.

**Farm Purchases**
Statewide, food hubs are purchasing between $9.7 million and $12.2 million annually from an average of between 900 – 1,125 North Carolina producers annually.

**Other Farm Support**
Statewide, food hubs are working to provide support to approximately 1,200 – 1,500 North Carolina producers annually through activities and services beyond only purchasing food.

**Food Hub Purchases from Other Hubs**
Statewide, food hubs are purchasing an average of $565,720 - $707,150 in food items from other food hubs.

**Sales by Product Type**
The following are the estimated statewide sales by product type based on an estimate of 20-25 food hubs in the state.

- Produce: $5,735,723 - $7,169,654
- Eggs: $519,058 - $648,822
- Dairy: $189,421 - $236,776
- Meat: $852,388 - $1,065,485

- Value-Added: $799,263 - $999,079
- Other: $589,765 - $737,207

**Sales by Market Channel**
The following are the estimated statewide sales by market channel based on an estimate of 20-25 food hubs in the state.

- Individual Consumers: $1,755,876 - $2,194,845
- Restaurants: $3,033,841 - $3,792,302
- Grocery Stores: $2,922,471 - $3,653,088
- Food Hub: $568,956 - $711,195
- Churches: $97,293 - $121,617
- Senior Centers: $459,605 - $574,506
- Community Based Orgs: $1,700,661 - $2,125,827
- Schools: $714,528 - $893,160
- Other: $139,041 - $173,802

**Annual Income by Category**
The following are the estimated statewide annual income ranges by category based on an estimate of 20-25 food hubs in the state.

- Food Sales: $12,803,656 - $16,004,570
- Individual Donations: $418,740 - $523,425
- Grants: $6,304,125 - $7,880,157
- FarmSHARE or similar: $2,991,724 - $3,739,655
- Other: $286,876 - $358,595

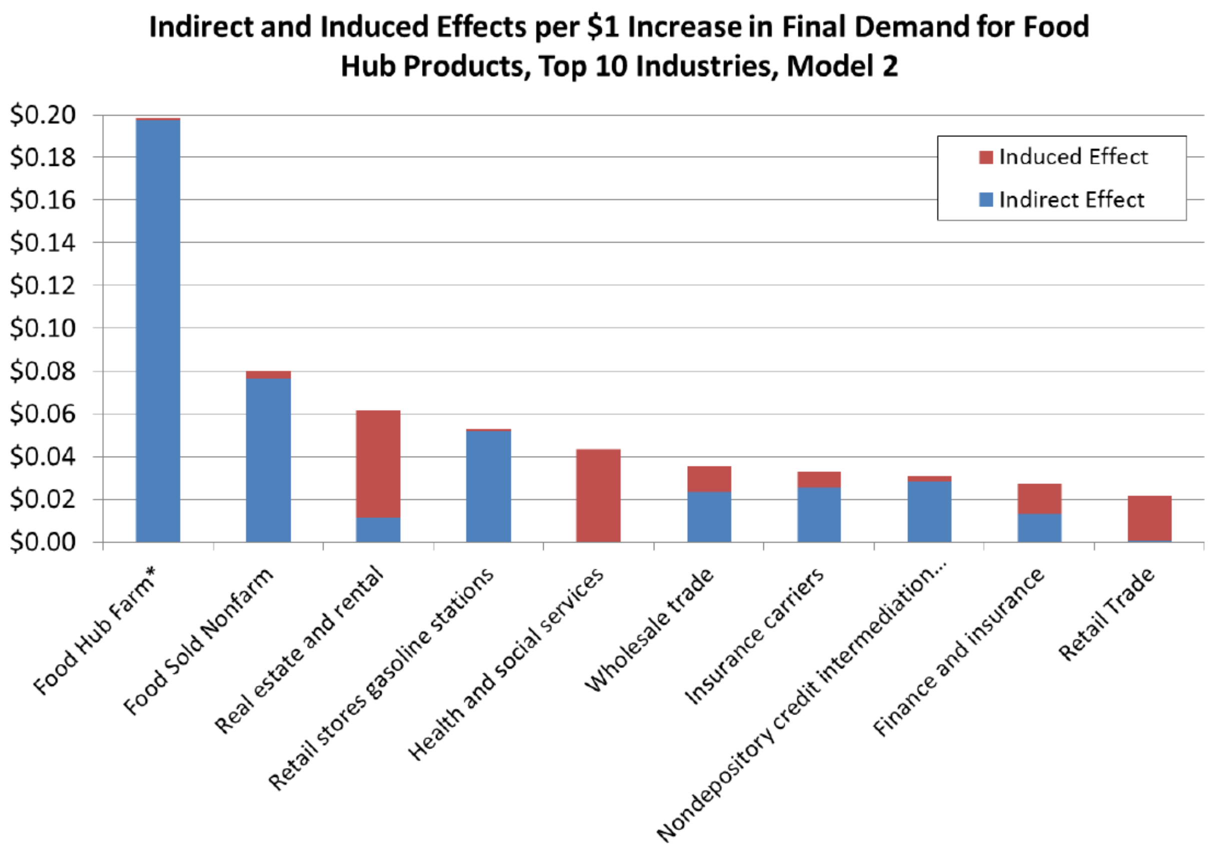
**Annual Expenses by Category**
The following are the estimated statewide annual expense ranges by category based on an estimate of 20-25 food hubs in the state.

- Personnel: $5,072,764 - $6,340,955
- Local Food Purchases: $8,190,910 - $10,238,637
- Transportation: $555,649 - $694,562
- Facility: $428,496 - $535,619
- Overhead: $695,019 - $868,774
- Supplies: $1,175,636 - $1,469,546
- Other$: $2,854,822 - $3,568,528

## Indirect and Induced Effects

In addition to the direct economic impacts discussed in the above section, food hubs have a large impact beyond the hub and farm through their inter-industry transactions and connections. Numerous studies have looked at different ways these impacts can be measured. For the purposes of this study, we have utilized the input-output method discussed by Tod Schmit, Becca Jablonski, and David Kay in their study, "Assessing the Economic Impacts of Regional Food Hubs: the Case of Regional Access. "The IO methodology's analytical capacity lies in its ability to estimate the indirect and induced economic effects stemming from the direct expenditures associated with a change in final demand for the goods and services produced by an economy. These indirect and induced changes in economic activity result from what are now commonly known as 'multiplier' effects."[11] The direct impacts are those created from the demand for the food hub's product or services; indirect impacts are those created by additional expenditures in other sectors that are due to the direct impacts; while induced impacts are additional effects that are the result of the additional income that is created through direct and indirect impacts being spent within the local economy.

**Figure 36: Indirect and Induced Multipliers[12]**




Industry Sectors with Greatest **Indirect** Impacts:

- Total farm sectors (food hub farm and other farm) (36%)
- Food sold nonfarm (14%)
- Retail stores gasoline stations (9%)
- Nondepository credit intermediation (5%)
- Insurance carriers (4%)

Industry Sectors with Greatest **Induced** Impacts: Real estate and rental (19%)

- Health and social services (16%)
- Retail trade (8%)

[11] Schmit, T.M., B.B.R. Jablonski, and D. Kay. 2013. "Assessing the Economic Impacts of Regional Food Hubs: The Case of Regional Access." Cornell University. September. <http://dx.doi.org/10.9752/MS145.09-2013>
[12] Schmit, Jablonski, and Kay.

- Meals and entertainment (7%)
- Finance and insurance (5%)

For each dollar of food hub products or services delivered to final demand, an additional **$0.82** of output is produced in the related industries (indirect + induced effects). If we use the ***median*** sales for 2022 provided by the 11 surveyed food hubs of **$550,000**, we can extrapolate out an overall impact (direct plus indirect and induced effects) of a little over **$1 million** per food hub, or a total of between **$20.02 million** and **$25.03 million** of statewide impacts for community-based food hubs. As was noted earlier, this is only looking at small and mid-size community focused food hubs. The impacts would be even larger when considering all entities that meet the USDA definition of food hub and larger food hubs in the state such as Happy Dirt or Produce Box.

If we use the ***average*** total 2022 sales figures provided by the surveyed food hubs of **$821,704** per hub to extrapolate out overall impacts, we get **$1.5 million** per food hub, or a total range of between **$29.91 million** and **$37.39 million** of statewide impacts for community-based food hubs.

## Appendix A: Survey Instrument

**Hub Info**

1. What is the name of the food hub you represent?
2. What year did the food hub begin operations?
3. What is your position at the food hub?
4. Is the food hub farmer-led? (Meaning, is the food hub manager also a farmer, and/or is there an advisory committee of farmers?)
    a. Yes
    b. No
5. What is the tax structure the hub uses?
    a. Non-profit
    b. For-profit
6. In what North Carolina counties are your producers located? And, how many producers are in each county?
7. In what counties are your customers located? Please list.
8. What types of products does your food hub sell? (Check all that apply and include $ amount)

| Check | | $ amount |
|---|---|---|
| | **Produce (Fruit + Vegetables)** | |
| | **Eggs** | |
| | **Dairy** | |
| | **Meat** | |
| | **Value-added/processed** | |
| | **Other (please specify):** | |

9. How are the products your hub carries sold? (Select all that apply)
    a. Fresh
    b. Cut or chopped
    c. Canned
    d. Baked
    e. Frozen
    f. Dehydrated
    g. Other (please specify):____________________________

10. Are any of your food purchases subsidized? If so, please check all that apply and include an estimated dollar amount of subsidies for food purchases. If a breakdown cannot be provided, please provide an estimated total.

| Check | | $amount |
|---|---|---|
| | **SNAP/EBT** | |
| | **WIC** | |
| | **Double Up Food Bucks** | |
| | **Grants (FarmsSHARE, BCBS, etc.)** | |
| | **Medicaid/HOP** | |
| | **Other (please specify):** | |

**Financials**

11. Can you provide the last two years of your hub's product sales/distribution in **$ amount and/or pounds** of product? Include dollar amount to donations, if subsidized by outside grants.

| | 2022 | 2021 |
|---|---|---|
| **$ amount** | | |
| **Pounds of product** | | |

12. In 2022, through what market channels are your products sold/distributed? In other words, what types of customers does your hub serve? Select all that apply and provide a $ amount and number of customers if available.

| Select | | $ amount | Number |
|---|---|---|---|
| | **Individual consumers** | | |
| | **Restaurants** | | |
| | **Grocery stores** | | |
| | **Food Hub** | | |
| | **Churches (for their congregations)** | | |
| | **Senior Centers** | | |
| | **Community-Based Organization/ Food pantries (*not churches*)** | | |
| | **Schools** | | |
| | **Other (please specify):** | | |
| | **TOTAL:** | | |

13. What percentage of sales revenue is remitted to farmers on average?
14. Can you provide a breakdown of the hub's operational **income** by category?

| | $ amount |
|---|---|
| **Sales** | |
| **Individual Donations** | |
| **Grants** *(include corporate donations and government funding)* | |
| **Farmshare and similar programs** | |
| **Other income sources** *(rent, table fees, etc.) Please Describe* | |
| **TOTAL:** | |

**Sales** – Direct or wholesale customers, may include food pantries if *they* are purchasing products with *their* funds
**Donations** – Frequently unrestricted gifts from individuals or businesses
**Grants** – Often restricted (unless for general operating support) with clear programmatic outcomes. Organization/business apply for grant funds through a competitive process/schedule and provide a report to the grantor, often at the completion of the project.
**Other programmatic income sources (rent, table fees, etc**.) – Can include storage fees, consultation/technical assistance with producers, revenues from trainings hosted etc.

15. Can you provide a breakdown of the hub's operational expenses by category?

| | **$ amount** |
|---|---|
| **Personnel** | |
| **Local Food Purchases** | |
| **Transportation** | |
| **Facility (rent or mortgage)** | |
| **Overhead** | |
| **Supplies** | |
| **Other (Please specify):** | |
| **TOTAL:** | |

16. Do you purchase food from other food hubs?
    a. Yes
    b. No
17. If you answered yes to the previous question, please describe how much food in dollar value was purchased from other hubs in the past year, and which food hubs food was purchased from.

**Other Services**

18. What value-added services do you offer to producers? (Select all that apply)
    a. Cutting
    b. Dehydrating
    c. Washing
    d. Freezing
    e. Packaging
    f. Canning
    g. Cooking/baking
    h. Other (please specify):

19. What types of other non-sales services do you provide farmers? (Select all that apply)
    a. Crop planning
    b. Transportation to the hub
    c. Cold storage
    d. Marketing/business planning
    e. Group marketing
    f. Food safety/GAP certification support
    g. Production training
    h. Other (please specify):

20. What community services do you provide? (Select all that apply)
    a. Community kitchen
    b. Farmers market
    c. Storage space availability
    d. Workforce development
    e. Office space availability
    f. Local food promotion/education (e.g. Cooking demonstrations)
    g. Food as medicine/ food security programs
    h. Other (please specify):

**Employment**

21. How many total people (employees and/or contractors) currently work at the hub?
22. How many are full time?
23. How many are part time?
24. How many (both FT and PT) are paid $15+/hour (self-sustaining wage)?

**Producer Information**

25. How many farmers do you purchase products from in 2022?
26. How many farmers do you support through other activities and services in 2022?
27. What is the total $ amount paid to local producers in 2022?
28. What is the estimated total acreage your producers have in production?
29. What certifications does your food hub facility have? List all.
30. What certifications do the producers you work with have and roughly what percentage of your producers have each? (Select all that apply)

| Check | Certifications | % of Producers |
|---|---|---|
| | **None** | |
| | **GAP** | |
| | **Primus** | |
| | **Certified Organic** | |
| | **Certified Naturally Grown** | |
| | **Other (Please specify)** | |

31. Of the producers you work with, what percentage of them are you their largest market channel?
32. Of the producers you regularly purchase from, what is the estimated percentage of them that are minority owned operations?

**Customer Information**

33. What types of customers does your hub serve in 2022? Select all that apply and provide a $ amount.

| Select | | $ amount |
|---|---|---|
| | **Individual consumers** | |
| | **Restaurants** | |
| | **Grocery stores** | |
| | **Food Hub** | |
| | **Churches** | |
| | **Senior Centers** | |
| | **Community-Based Organization/ food pantries** | |
| | **Schools** | |
| | **Other (please specify):** | |

34. How do you predict demand for your food hub's products and/or services will change in the next 2 years?

a. Grow a lot
b. Grow a little
c. Stay the same
d. Shrink a little
e. Shrink a lot

35. Please indicate your food hub's market intentions for the next 2 years:

| | Enter Market | Increase Sales | Decrease Sales | Exit this market | Not serving this market now or in the future |
|---|---|---|---|---|---|
| Individual consumers | | | | | |
| Restaurants | | | | | |
| Grocery stores | | | | | |
| Food hubs | | | | | |
| Churches | | | | | |
| Senior Centers | | | | | |
| Other community-based organizations /food pantries (not churches) | | | | | |
| K-12 School System | | | | | |
| Colleges/ universities | | | | | |
| Early Childhood Education Centers | | | | | |
| Healthcare/ Hospitals | | | | | |

**Infrastructure Access**

36. Does your hub own or rent its facility?
    a. Own
    b. Rent
37. If your food hub RENTS its facility, who owns the facility, and do you pay market rate? Please describe.
38. What types of infrastructure does your hub have access to? (Select all that apply)
    a. Nonrefrigerated transportation
    b. Refrigerated transportation
    c. Cold storage space
    d. Processing equipment
    e. Other (please specify):
39. What types of infrastructure needs and gaps in accessibility do your hub or producers face? (Check all that apply)

| | Hub Need | Producer Need |
|---|---|---|
| **Cold Storage** | | |
| **Dry Storage** | | |
| **Transportation** | | |
| **Processing Equipment** | | |
| **Production Equipment** | | |
| **Internet** | | |
| **Land** | | |
| **Other (please specify):** | | |

**Partners**

40. Who would you say are your top three key partners as a food hub?

    Name: ________________________________________________

    Entity Description: ______________________________________

    Relationship and description of services: ______________________

**Open Response**

41. As a food hub, what industry information or data do you need to know to better make the case for food hubs and make more informed operational decisions?

42. What would happen if your food hub was not available to your community?