

2019 Workforce Assessment of Michigan's Local and Regional Food System

A scan of jobs in Michigan's food systems:
employment, wages, the future, and more

Michigan's 2019 local and regional food system workforce assessment series
Part 2 of 4

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Executive Summary

This report is the second in a series summarizing a 2019 workforce assessment of Michigan's local and regional food system.

Availability of quality jobs is critical to improving communities and the economy. Over 1 million (29%) of Michigan's households are categorized as Asset Limited, Income Constrained Employed (ALICE); in other words, people who work to make a living but still have insufficient income to make ends meet.¹

To make ends meet, the Michigan ALICE report states that a single adult needs to earn \$21,036 (\$10.52/hour) and a family of 4 (2 adults, 1 infant, and 1 preschooler) needs to earn \$61,272 (30.64/hour) to be above the ALICE bracket.¹

There is limited information on the types of jobs and earnings in the local and regional food system. **This food systems job scan provides a better understanding of the labor market and enables us to see the types of jobs in different sectors, what the earnings for those jobs are, where there is projected growth in employment, and where there is unfilled demand.**

The data shown is not necessarily exclusive to local and regional food systems. This is due to the limitations of this project and the inability to disaggregate data available from broader food systems data. Still, **these findings provide a basis for understanding the types of jobs that exist both in broader food systems and in local and regional food systems**, including wage data, skills required, and growth opportunities within the workforce.

The scan of local and regional food systems related jobs was conducted by a Corporation for a Skilled Workforce using food systems employment statistics from Economic Modeling Specialist, Inc. (Emsi) 2019.2 - QCEW Employees, Non-QCEW Employees and Self-Employed datasets and job posting data from Burning Glass Technologies proprietary dataset.

The goal of this analysis was to better understand:

- the local and regional food system job categories that represent the most significant areas of employment within the food system,
- the wage data associated with those jobs,
- the skills that are required to fulfill those jobs, and
- growth projections in specific fields of employment.

¹ Michigan Association of United Ways. (2019). *ALICE in Michigan: A Financial hardship study*. 2019 Michigan Report. Retrieved from www.uwmich.org/alice

This job scan analyzed the following core industries within local and regional food systems:

- food production,
- farm inputs,
- wholesale distribution,
- manufacturing and processing, and
- food retail.

Allied industries were also included in the data analysis.

Occupations span multiple industry categories. This shows that there is opportunity to follow career pathways and for employees to move between sectors within the food system. This also means that there are education opportunities to train across sectors for careers in the food system. For example, there is a high demand for heavy and tractor-trailer truck drivers in several sectors: food production, manufacturing, and processing and wholesale distribution.

Our findings show **that food retail represents the largest proportion (79%) of food systems jobs in the state of Michigan**. However, due to challenges in disaggregating the local and regional food systems data from the broader food systems data, food retail may not be proportionally as high in local and regional food systems.

Results showed that the food retail sector employed the most individuals by far in Michigan's food system (Table 1), but the average earnings were the lowest (\$25,738 per year). **Within food retail, the median wage of the majority of key occupations fell below the minimum livable salary** identified in Michigan's ALICE report. According to the ALICE report, earnings need to be a minimum of \$10.52/hour for a single person to make ends meet. The majority of people work within the retail sector, but large numbers (235,533 people) are paid below \$10/hour.

The highest average earnings were in the wholesale distribution sector (\$64,889 per year) and food manufacturing and processing sector (\$55,189 per year).

The level of education required by employers tends to vary depending on the job role. **Many jobs in all sectors of the food system require no higher than a high school diploma for entry-level positions. However, on-the-job training is required for all entry-level jobs in all sectors.** Jobs in the food manufacturing and processing sector require the most on-the-job training.

Table 1. Number of People Employed and Average Earnings in Each Sector of Michigan’s Food System

Sector	Total Employment (number of people working)	Average earnings (\$)
Food production	37,178	25,822
Farm inputs	18,048	30,096
Wholesale distribution	27,095	64,889
Manufacturing and processing	43,203	55,189
Retail	268,825	25,738

Source: Economic Modeling Specialists, Inc. (Emsi) 2019.2 – QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Michigan food systems wages have risen at a higher annual rate than other industries in the state. Wages increased 3.2% from 2017 to 2018 compared to 2.4% on average across all industries in the state. **Wages for food systems jobs in Michigan are increasing at an equal or greater rate than similar jobs nationally.**

Our analysis showed that employers are seeking a broad array of skill sets. We analyzed job posting data over from 2017 and 2018 and showed that there were commonly requested skill clusters (similarly grouped individual skills) across all food systems industry sectors. These skill clusters included food service skills (such as food safety, handling, and preparation) and skills in customer service, sales, and business management.

Growth is projected in numerous food system job areas. Jobs with the highest predicted growth are meat, poultry, and fish cutters, with a projected need for 19% more cutters over the next five years. The next highest projected growth areas are labor and freight material movers (11%); veterinary technologist (11%, although it is likely that not all these jobs will be within the food system); industrial truck and tractor operators (10%); institutional and cafeteria cooks, for example, at schools or hospitals (10%); and heavy tractor-trailer drivers (10%).

A helpful next step in this work would be to further identify challenges and potential solutions to wage disparities and skill shortfalls by engaging in more discussions with workforce development organizations, food businesses, workers and advocates. This is particularly important to local and regional food systems where businesses are prioritizing quality jobs.

Introduction

Why conduct a workforce assessment in local and regional food systems in Michigan?

Over 1 million (29%) of Michigan's households are categorized as Asset Limited, Income Constrained Employed (ALICE), people who work to make a living but still have insufficient income to make ends meet.² To make ends meet, the Michigan ALICE report identifies that a single adult needs to earn \$21,036 and a family of 4 (2 adults, 1 infant and 1 preschooler) needs to earn \$61,272.³

Michigan's local and regional food system development work is designed to improve lives and provide equitable outcomes for all. It is rooted in communities and seeks, through those communities:

- improved health through better healthy food access, and
- economic development through increased sales for Michigan businesses and better jobs.

Building collaboration infrastructure around the goals of the Michigan Good Food Charter⁴ has been a focus for local and regional food system development in Michigan. As this work grows, it is vital to understand how employment supports the communities. Quality jobs are critical to strengthening communities and the economy. With better information on the type and scope of jobs, training opportunities, and future growth opportunities within local and regional food system sectors, we hope to better understand where improvements and work can be done to ensure communities are strengthened with food as a driver.

Defining the local and regional food system

Local and regional food systems can be defined in a number of ways. For the purposes of this workforce assessment study, the local and regional food systems encompass organizations that produce, process, or distribute food from Michigan that is available to Michigan consumers and/or organizations that support this system. Where:

- *Produced* refers to crops grown or animals raised in Michigan.
- *Processed* refers to food products processed or manufactured in Michigan using primarily Michigan-produced foods.
- *Distributed* goods are ones that originate in Michigan but may cross state boundaries.
- *Consumption* is the end point for Michigan food products. Consumers can be individuals, households, or institutions. These consumers do not need to be in Michigan but the majority should be in the Upper Great Lakes region.

The purpose of this definition was to provide boundaries for this work. It was created by Corporation for a Skilled Workforce (CSW), the Michigan State University (MSU) Center for Regional Food Systems (CRFS), MSU Extension, and Kalamazoo Valley Community College (KVCC).

² Ibid.

³ Ibid.

⁴ Colasanti, K., Cantrell, P., Cocciarelli, S., Collier, A., Edison, T., Doss, J., George, V., Hamm, M., Lewis, R., Matts, C., McClendon, B., Rabaut, C., Schmidt, S., Satchell, I., Scott, A., Smalley, S. (2010). *Michigan Good Food Charter*. Retrieved from <https://foodsystems.msu.edu/resources/michigan-good-food-charter>

Core industries within the local and regional food system

We studied labor market data from core industries associated with local and regional food. Bureau of Labor Statistics North American Industry Classification System (NAICS) codes for these core industries were used to pull available labor market data from Emsi⁵ and Burning Glass Technologies.⁶

The selection of core industries was supported and influenced by food systems literature, including MSU’s “A Replicable Model for Valuing Local Food Systems;”⁷ Vermont’s Farm to Plate Strategic Plan Chapter 2, “Getting to 2020: Goals and Indicators”;⁸ the Michigan Good Food Fund;⁹ and the Michigan Department of Agriculture and Rural Development.¹⁰

Description	NAICS Code	Industry
	111	Crop production
Food production	112	Animal production and aquaculture
	114	Fishing, hunting, and trapping
	1151	Support activities for crop production
Farm inputs	1152	Support activities for animal production
	54194	Veterinary services
Manufacturing and food processing	311	Food manufacturing
	3121	Beverage manufacturing
Wholesale distribution	4244	Grocery and related product merchant wholesalers
	4245	Farm product raw material merchant wholesalers
	42491	Farm supplies merchants wholesalers
	49312	Refrigerated warehousing and storage
	49313	Farm product warehousing and storage
	4451	Grocery stores
Retail and service	4452	Specialty food stores
	4453	Beer, wine, and liquor stores
	7223	Special food services (e.g., catering and mobile food truck/carts)
	7225	Restaurants and other eating places

Allied industries associated with local and regional food systems were also included in the workforce assessment. These allied industries could not be included in the job scan due to an inability to

⁵Emsi. (2019). *Emsi 2019.2 – QCEW employees, non-QCEW employees, and self-employed dataset*. Retrieved from <https://kb.economicmodeling.com/whats-the-complete-list-of-sources-ems-uses-2/?hilit=%27data%27%2C%27sources%27>

⁶Burning Glass Technologies. (2019). Burning Glass Technologies proprietary dataset. Retrieved from <https://www.burning-glass.com/products/research-projects/>

⁷Miller, R., Mann, J., Barry, J., Kalchik, T., Pirog, R., & Hamm, M. (2015) A replicable model for valuing local food systems. *Journal of Agricultural and Applied Economics*, 47(4). <https://doi.org/10.1017/aae.2015.19>

⁸Vermont Farm to Plate. (2013). Jobs and establishments. In *Vermont’s Farm to Plate Strategic Plan* (Chapter 2). Retrieved from <https://www.vtfarmtoplate.com/getting-to-2020/17-jobs-and-establishments>

⁹Michigan Good Food Fund. Retrieved from <http://migooodfoodfund.org/about/>

¹⁰Michigan Department of Agriculture and Rural Development. (2016). *Michigan’s food & agriculture industry*. Retrieved from https://www.michigan.gov/documents/mdard/MDARD_Food_Ag_Brochure_2016_553426_7.pdf

disaggregate the local and regional data from overall food systems data. Allied industries were included in the education and training scan and will be discussed in a subsequent report¹¹.

The limitations of this research

The greatest challenge in the job scan research was determining whether an organization met the proposed definition of “regional.” In other literature, regionality is assessed using consumption data (for example, using local sales figures, as in MSU’s “A Replicable Model for Valuing Local Food Systems”).¹²

It can be difficult to apply similar determinants to secondary workforce data such as the Emsi² and Burning Glass Technologies³ datasets, particularly when attempting to disaggregate regional food systems employment demographics and wages. In these instances, labor market information for all Michigan-based food systems is presented. A review of food systems workforce assessments from other states confirmed that a reliable method for disaggregating regional employment figures from the wider food systems has yet to be established. This remains a challenge for all states.

¹¹ Forthcoming at <https://www.canr.msu.edu/michigan-food-workforce/index>

¹² Miller, R., Mann, J., Barry, J., Kalchik, T., Pirog, R., & Hamm, M. (2015) A replicable model for valuing local food systems. *Journal of Agricultural and Applied Economics*, 47(4). <https://doi.org/10.1017/aae.2015.19>

Food systems job scan

Michigan's food system is made up of a diverse number of industries that span the production-consumption lifecycle of food grown in Michigan—from the farm to grocery stores, restaurants, processing, transportation, and storage that support Michigan food value chains. Likewise, the food system workforce is comprised of an array of occupations.

This analysis looks at key occupations within the five identified industry groups that make up the food system: food production, farm inputs, food manufacturing and processing, wholesale distribution, and food retail sales. A mix of current employment statistics sources were used to conduct the analysis.

Sources included:

- Economic Modeling Specialist, Inc. (Emsi) 2019.2 - QCEW Employees, Non-QCEW Employees and Self-Employed datasets and
- Job posting data from Burning Glass Technologies proprietary dataset

As mentioned, the secondary data analysis represents the entire Michigan food system, not exclusively the local and regional food system. It was not possible to disaggregate employment in the regional food system from the whole of Michigan with the data sources available, time constraints, and this project's scope of work.

We cannot assume that the employment numbers represent total employment in the local and regional food system. This is particularly true of the food retail sector where much of the food service employment is in chain restaurants and fast food. Attempts to estimate regional employment in the food service sector through an analysis of total company revenue to in-state sales was difficult because nearly all food service sales are consumed in-state, giving all restaurants the appearance of being "regional."

A broad description of employment across the food system

Figure 1 shows that food service occupations make up nearly 80% of all food system employment in Michigan. However, limited ability to disaggregate food service employment in large national chain stores from local business means that it is possible that much of this 80% is not a part of the local and regional food system.

This inability to disaggregate broader region food system operations from the local and regional food system is pervasive across industry groups. It is thought to appear more acutely in food service due to the magnitude of the sector and the variety of operations that fall into this category. The percentage of jobs in local and regional food systems production, manufacturing and processing, farm inputs, and wholesale distribution may be markedly higher than shown in the corresponding industry sector data for the entire food system.

Figure 1. Industry groups that Form the Food System (as a percentage of total food systems employment)

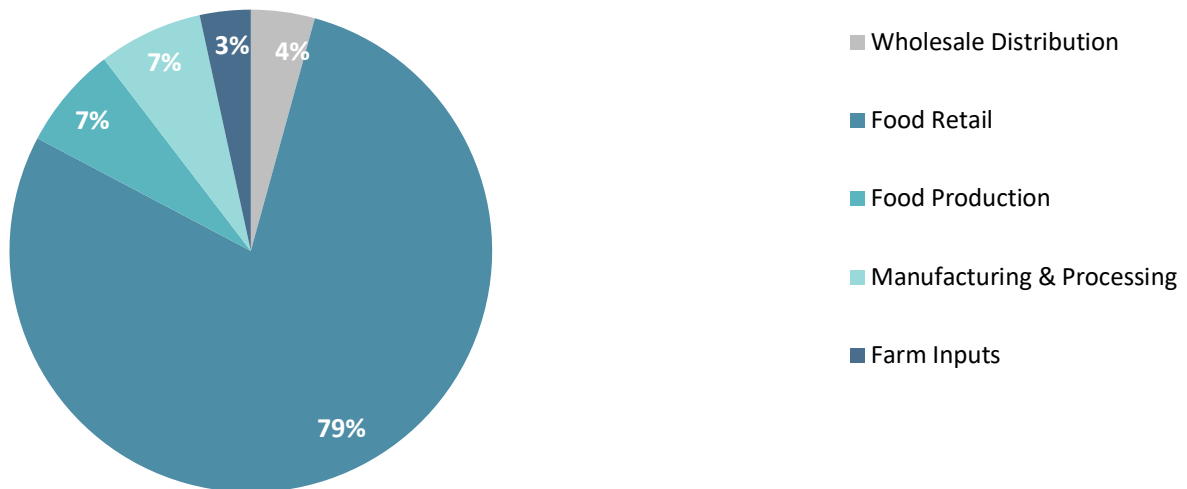


Table 2 shows occupations that occupy at least 1% of employment in two or more industry groups. The analysis revealed occupations spanning multiple categories, potentially showing opportunities for lateral movement within the local and regional food value chain and training opportunities across sectors. For the purposes of this conversation, the food value chain is defined as a food chain that strives to collaboratively add value to the players within it.¹³

Table 2. Top ten Occupations Spanning Two or More Industry Categories

Occupation	Total number of people employed	Food production	Farm input	Wholesale distribution	Food retail	Manufacturing and processing
Cashiers	30,457				29,988	469
Stock clerks and order fillers	15,900			1,499	13,985	417
Farmworkers and laborers, crop, nursery, and greenhouse	11,692	8,445	3,247			
Drivers/sales workers	8,088			1,852	5,746	490
Retail salespersons	6,685				5,803	882
Packers and packagers, hand	6,564		261	790	3,930	1,583
Packaging and filling machine operators and tenders	5,561			439		5,122
Sales representative, wholesale and manufacturing	4,552			3,669		883
Farmworkers, farm, ranch, and aquacultural animals	4,244	4,022	222			
Heavy and tractor-trailer truck drivers	3,168	480		2,138		550

Source: Economic Modeling Specialists, Inc. (Emsi) 2019.2 – QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

¹³ United States Department of Agriculture July, 2014. Food value chain creating shared value to enhance marketing success. Retrieved from <https://www.ams.usda.gov/sites/default/files/media/Food%20Value%20Chains%20-%20Synopsis.pdf>

Key areas of employment in the Michigan food system

A scan of occupations in each key industry sector was conducted to better understand and describe the key areas of employment in the food system in Michigan. Results are presented by industry sector.

Food production

Total Employment: 37,178
Average Earnings: \$25,822

The food production industry group refers to growing, raising, and producing raw food products. It encompasses crop production, animal production, fishing, hunting, and trapping. The occupations in Table 3 are jobs that represented 2% or more of total employment in the industry group. These six occupations make up 83.2% of total employment in food production.

Table 3. Key Occupations Comprising 2% or More of Total Employees in Michigan’s Food Production Sector

Occupation title (standard occupational classification (SOC) code)	Number of people employed	Projected % change (2018 - 2023)	% of total food production jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Farmers, ranchers, and other agricultural managers (11-9013)	14,910	(1%)	39.6%	\$11.39	HS diploma/equivalent	None
Farmworkers and laborers, crop, nursery, and greenhouse (45-2092)	8,445	2%	22.4%	\$10.79	No formal credential	Short-term
Farmworkers, farm, ranch, and aquacultural animals (45-2093)	4,022	5%	10.7%	\$10.31	No formal credential	Short-term
Agricultural workers, all other (45-2099)	2,147	4%	5.7%	\$13.24	No formal credential	Short-term
Agricultural equipment operators (45-2091)	1,049	4%	2.8%	\$16.74	No formal credential	Moderate
First-line supervisors of farming, fishing, and forestry workers (45-1011)	759	3%	2.0%	\$18.47	HS diploma/equivalent	None

Source: Emsi 2019.2 – QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Note: Typical entry education and on-the-job-training represents typical requirements. These may vary.

Farm managers (39.6%) represent the largest occupational group followed by farmworkers and laborers (22.4%) and animal farmworkers (10.7%).

It is interesting to see that there are more farmers and farm managers than farmworkers. This likely represents a high number of farmers who run small operations with no hired farm labor support, though they still may rely on informal labor. The 2017 Census of Agriculture¹⁴ supports this consideration by showing that 47% of farms are less than 50 acres and only 25% of Michigan farms hire farm labor. Approximately two-thirds of U.S. farm labor is farmers or their family members, though the proportion of hired farm labor is steadily rising.¹⁵

The two highest paying roles come with higher levels of managerial or technical duties. The highest paying role, farm supervisors, garners a median \$18.47 per hour wage. The other highest paying role – equipment operators – requires a high level of technical skills and pays \$16.74 per hour.

While there is a low educational requirement necessary to enter food production occupations, it is interesting to note that the two roles that require a high school diploma and prior work experience do not have typical on-the-job training. On the other hand, roles that do not have a formal education credential tend to require short to moderate-term on-the-job training.

¹⁴ 2017 Census of Agriculture State Profile – Michigan. United States Department of Agriculture (USDA) National Agricultural Statistics Service (NASS). Retrieved from https://www.nass.usda.gov/Publications/AqCensus/2017/Online_Resources/County_Profiles/Michigan/cp99026.pdf

¹⁵ Philip Martin and Douglas Jackson-Smith, “An Overview of Farm Labor in the United States,” *Rural Connections*, November 2013. Retrieved from https://wrdc.usu.edu/files-ou/publications/pub_1454925.pdf

Farm inputs

Total Employment: 18,048
Average Earnings: \$30,096

Farm inputs refer to support activities that help in the operation and maintenance of the food system, specifically in the production of food. This includes administrative support roles as well as veterinary care.

Key occupations in Table 4 present jobs that represented 2% or more of total employment in the industry group.

Table 4. Key occupations comprising 2% or more of total employees in Michigan’s Farm Inputs sector

Occupation title (SOC code)	Number of people employed	Projected % change (2018 - 2023)	% of total farm input jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Farmworkers and laborers, crop, nursery, and greenhouse (45-2092)	3,247	8%	17.6%	\$10.79	No formal credential	Short-term
Veterinary assistants and laboratory animal caretakers (31-9096)	2,957	9%	16.1%	\$11.77	HS diploma/ equivalent	Short-term
Veterinary technologists and technicians (29-2056)	2,304	11%	12.5%	\$16.35	Associate degree	None
Veterinarians (29-1131)	2,172	8%	11.8%	\$38.27	Doctoral or professional	None
Receptionists and information clerks (43-4171)	1,568	6%	8.5%	\$13.43	HS diploma/ equivalent	Short-term
Office clerks, general (43-9061)	470	5%	2.6%	\$15.58	HS diploma/ equivalent	Short-term

Source: Emsi 2019.2 – QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Note: Entry-level education and on-the-job-training represents typical requirements. These may vary.

Veterinary care roles require the highest level of education; a doctorate to become a veterinarian, or an associate degree or similar for veterinary tech positions. These roles are also the highest paid jobs at \$38.27 per hour for veterinarians and \$16.35 per hour for veterinary technicians. Demand for these roles is projected to grow 9-11% in the next five years; however, the data in this report did not disaggregate veterinary professionals who work exclusively within the food system.

A 2013 workforce assessment study conducted by the American Veterinary Medical Association¹⁶ did disaggregate the demand for “food animal supply” veterinarians. These projections are less up to date than the workforce assessment projections in this report and had limitations with data collection, but they predicted that demand across the U.S. would increase, in particular in poultry and turkeys. This study did not predict an increase in demand for “food animal supply veterinarians” in Michigan through 2025. There was a small predicted growth in the number of small animal veterinarians (pet care) and equine veterinarians.

Farmworkers also appear in the farm inputs industry. Farmworkers can span the production and input industry classifications, though they represent a smaller proportion of the input industry group (17.6%) compared to food production. In the farm input category, a worker classified as a farmworker may perform support activities such as field preparation or pesticide application as a contractor to a farm or production operation. This is different from a farmworker employed directly by a farm who may perform other farming roles in addition to “support activities.”

Office administrative roles including receptionist and office clerks make up 11.1% of people employed in the farm inputs field. These roles are slightly better paid than farm labor occupations at \$13.43-\$15.58 per hour median earnings. They require a high school diploma and short-term on-the-job training.

¹⁶ American Veterinary Medical Association. (2013). 2013 U.S. veterinary workforce study: Modeling capacity utilization. Retrieved from <https://www.avma.org/KB/Resources/Reports/Documents/Veterinarian-Workforce-Final-Report.pdf>

Food manufacturing and processing

Total Employment: 43,203
Average Earnings: \$55,189

This industry grouping looks specifically at the processing of food and beverages, excluding tobacco processing. Key occupations fell into four groupings:

- machine operators and mechanics (including truck operation),
- direct food processing, inspection and handling,
- managerial or supervisory roles, and
- sales.

Key occupations in Table 5 show the jobs that represented 2% or more of total employment in the industry group.

Overall, the number of key occupations in food manufacturing and processing is projected to grow between 4% to 24% over the next five years.

Table 5. Key occupations comprising 2% or more of total employees in Michigan’s Food Manufacturing and Processing sector

Occupation Title (SOC code)	Number of people employed	Projected % change (2018 - 2023)	% of total manufacturing and processing jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Packaging and filling machine operators and tenders (51-9111)	5,122	6%	11.8%	\$14.77	HS diploma/ equivalent	Moderate
Food batchmakers (51-3092)	2,548	4%	5.9%	\$14.77	HS diploma/ equivalent	Moderate
Bakers (51-3011)	2,125	6%	4.9%	\$11.58	No formal credential	Long-term
Industrial machinery mechanics (49-9041)	1,603	8%	3.7%	\$24.00	HS diploma/ equivalent	Long-term
Packers and packagers (53-7064)	1,583	9%	3.7%	\$10.54	No formal credential	Short-term

Occupation Title (SOC code)	Number of people employed	Projected % change (2018 - 2023)	% of total manufacturing and processing jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Helpers, production workers (51-9198)	1,505	9%	3.5%	\$11.79	HS diploma/equivalent	Short-term
First-line supervisors of production and operating workers (51-1011)	1,449	7%	3.3%	\$29.33	HS diploma/equivalent	None
Laborers and freight, stock and material movers (53-7062)	1,357	10%	3.1%	\$13.41	No formal credential	Short-term
Inspectors, testers, sorters, samplers and weighers (51-9061)	1,142	7%	2.6%	\$15.49	HS diploma/equivalent	Moderate
Industrial truck and tractor operators (53-7051)	1,109	8%	2.6%	\$16.03	No formal credential	Short-term
Meat, poultry and fish cutters and trimmers (51-3022)	960	24%	2.2%	\$12.78	No formal credential	Short-term
Slaughterers and meat packers (51-3023)	935	17%	2.2%	\$13.44	No formal credential	Short-term
Sales representative wholesale/manufacturing except technical and scientific (41-4012)	883	10%	2.0%	\$28.05	HS diploma/equivalent	Moderate
Retail salespersons (41-2031)	882	10%	2.0%	\$10.67	No formal credential	Short-term

Source: Emsi 2019.2 - QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Note: Entry-level education and on-the-job-training represents typical requirements. These may vary.

In Michigan, the food manufacturing and processing occupation with the most employees is packing and filling machine operators, with over 5,000 people employed. This role pays at the higher end of entry-level wages, a median of \$14.77 per hour. This role could potentially be an entry-level pathway towards a job in industrial machinery maintenance, which employs 1,600 people at median earnings of \$24 per hour.

In comparison to farm inputs and food production, occupations in food manufacturing and processing tend to have longer on-the-job training. Roles in baking and maintenance require long-term training, while moderate training is needed for machine operation, batch making, and food inspection/testing. The remaining occupations, except for supervisory roles, require at least short-term on-the-job training. Occupations in food processing appear to be more specialized. Thus, it is likely true that specialized, company-specific training is provided.

Wholesale distribution

Total Employment: 27,095
Average Earnings: \$64,889

Wholesale distribution comprises the wholesale sales of grocery, food, and farm products and warehousing, storage, and transportation/distribution of food or farm goods. Table 6 shows the key occupations comprising 2% or more of total employment in the industry group.

Table 6. Key Occupations Comprising 2% or More of Total Employees in the Wholesale Distribution Sector

Occupation title (SOC code)	Number of people employed	Projected % change (2018 - 2023)	% of total wholesale distribution jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Sales representative wholesale/manufacturing except technical and scientific (41-4012)	3,669	9%	14.4%	\$28.05	HS diploma/equivalent	Moderate
Laborers and freight, stock and material movers (53-7062)	2,484	15%	9.8%	\$13.41	No formal credential	Short-term
Heavy and tractor-trailer truck drivers (53-3032)	2,138	10%	8.4%	\$18.89	Postsecondary certificate	Short-term
Driver/sales workers (53-3031)	1,852	11%	7.3%	\$9.69	HS diploma/equivalent	Short-term
Stock clerks and order fillers (43-5081)	1,499	9%	5.9%	\$11.26	HS diploma/equivalent	Short-term
Industrial truck and tractor operators (53-7051)	1,044	13%	4.1%	\$16.03	No formal credential	Short-term
Light truck or delivery services drivers (53-3033)	1,033	11%	4.1%	\$14.78	HS diploma/equivalent	Short-term
Packers and packagers (53-7064)	790	15%	3.1%	\$10.54	No formal credential	Short-term

Occupation title (SOC code)	Number of people employed	Projected % change (2018 - 2023)	% of total wholesale distribution jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Shipping, receiving, and traffic clerks (43-5071)	688	10%	2.7%	\$15.43	HS diploma/equivalent	Short-term
Office clerks, general (43-9061)	587	4%	2.3%	\$15.58	HS diploma/equivalent	Short-term
First-line supervisors of transportation and material moving, except air cargo (53-1048)	546	13%	2.2%	\$24.80	HS diploma/equivalent	None
Merchandise displayers and window trimmers (27-1026)	528	8%	2.1%	\$11.76	HS diploma/equivalent	Short-term

Source: Emsi 2019.2 - QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.
 Note: Entry-level education and on-the-job-training represents typical requirements. These may vary.

A key occupation in this sector is sales representative (3,669 people or 14.4% of the sector) who earn a median wage of \$28.05 per hour with a high school diploma required at the entry level. These earnings figures include earnings on top of regular wages such as commissions and/or bonuses, which are more likely to appear in the earnings for sales occupations.

Employment in this industry group overall is expected to grow substantially over the next five years. The number of jobs available in truck operation, shipping, and delivery are expected to grow between 10% to 15%. While transportation jobs do pay well at the entry-level (approximately \$14 to \$19 per hour), they have limited career growth, unless an individual can move from operating a vehicle to a supervisory or administrative/logistics role.

Food retail

Total Employment: 268,825
Average Earnings: \$25,738

The food retail industry group captures the sectors of the food system where the end food products are accessed or consumed by individuals. This sector includes food retail stores and food service entities (such as restaurants, cafes, and catering companies). Table 7 shows the key occupations that comprise 2% or more of total employees in the food retail sector.

Table 7. Key Occupations Comprising 2% or More of Total Employees in the Food Retail sector

Occupation title (SOC code)	Number of people employed	Projected % change (2018-2023)	% of total food retail jobs	Median hourly earnings	Typical entry education	Typical on-the-job training
Combined food preparation and serving workers, including fast food (35-3021)	105,325	6%	26.3%	\$9.43	No formal credential	Short-term
Waiters and waitresses (35-3031)	66,270	2%	16.6%	\$9.41	No formal credential	Short-term
Cooks, restaurant (35-2014)	32,194	5%	8.0%	\$11.28	No formal credential	Moderate
Cashiers (41-2011)	29,988	(2%)	7.5%	\$9.60	No formal credential	Short-term
First-line supervisors of food preparation and serving workers (35-1012)	22,289	3%	5.6%	\$15.45	HS diploma/equivalent	None
Stock clerks and order fillers (43-5081)	13,985	1%	3.5%	\$11.26	HS diploma/equivalent	Short-term
Food preparation workers (35-2021)	13,052	3%	3.3%	\$10.87	No formal credential	Short-term
Dishwashers (35-9021)	11,977	1%	3.0%	\$9.45	No formal credential	Short-term
Cooks, fast food (35-2011)	11,168	(3%)	2.8%	\$9.60	No formal credential	Short-term
Hosts and hostesses, restaurant, lounge, and coffee shop (35-9031)	10,805	3%	2.7%	\$9.43	No formal credential	Short-term

Source: Emsi 2019.2 – QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Note: Entry-level education and on-the-job-training represents typical requirements. These may vary.

The highest proportion of employment was for food preparation and serving workers, including fast food. To understand which employers comprised this large share of employment, employment data from Emsi was cross-referenced with job posting data from Burning Glass. According to job posting data from Burning Glass, the top food service employers with 2018 job openings were all large multinational or national corporations: Pizza Hut, Domino's, Aramark, Panera Bread, Starbucks, Boston Market, and Arby's. This reflects the make-up in the food service sector, and that data presented on these occupations is unlikely to represent occupations in local and regional food systems but rather food systems more broadly.

The food retail sector has a high concentration of occupations that pay on the lower end of the wage range. In particular, jobs as cashiers, waitstaff, cooks, and food preparation workers all pay median wages under \$10 per hour. Fast food occupations across the board were also low paying (less than \$10 per hour). However, much of this employment is in large fast food chains and is likely not tied to the regional food system.

Employment in food retail, including grocery stores and specialty food shops such as stock clerks, has higher median wages compared to food service workers (\$11.26 per hour in food retail). While cashiers make up a large proportion of food retail workers, it is an occupation predicted to decline in number in the short term – 2% fewer people employed over the next five years. This is in part due to advancements in automation (e.g., automated check-out stands).¹⁷ The number of fast food cooks is also predicted to decline, though what may be influencing this in Michigan is unclear.

¹⁷ Shavel, M., Vanderzeil, S., & Currier, E. (2017). *Retail automation: Stranded workers? Opportunities and risks for labor and automation*. Retrieved from <https://cornerstonecapinc.com/retail-automation-stranded-workers-opportunities-and-risks-for-labor-and-automation/>

Occupations showing growth over the next five years

Table 8 shows the occupations with largest predicted five-year growth in number of jobs, presented with median wages earned. Entry- and lower-level roles represent the largest employment of the occupations showing growth. “Front-of-the-house” entry-level roles in food service tend to be the lowest paid in the food system: waiters/waitresses (\$9.41 per hour), bartenders (\$9.38/hr.), or counter workers (i.e. baristas) (\$9.58/hr.). Food preparation roles like chef/cook, baker, or general food prep garner median hourly wages between \$10 to \$12. Food service and food retail jobs make up the bulk of statewide food system employment, although it is a challenge to isolate employment specifically tied to the local and regional food system.

On the higher end of the wage spectrum, where there is a need for jobs, are more specialized occupations such as butchers (\$13.71/hr.), material movers (\$13.41/hr.), light truck delivery (\$14.78/hr.) and general office clerks (\$15.58/hr.).

Table 8. Occupations with the largest predicted 5-year growth in number of jobs (2018-2023)

Occupation (SOC Code)	Employed in Food System	Projected % Change (2018 - 2023)	Median Hourly Earnings
Waiters and Waitresses (35-3031)	66,161	3%	\$9.41
Cooks, Restaurant (35-2014)	32,022	5%	\$11.28
Food Preparation Workers (35-2021)	12,702	3%	\$10.87
Farmworkers and Laborers, Crop, Nursery, and Greenhouse (45-2092)	12,165	4%	\$10.79
Retail Salespersons (41-2031)	8,258	7%	\$10.67
Driver/Sales Workers (53-3031)	8,064	1%	\$9.69
Bartenders (35-3011)	7,121	3%	\$9.38
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop (35-3022)	6,726	2%	\$9.58
Packers and Packagers, Hand (53-7064)	6,666	2%	\$10.54
Laborers and Freight, Stock, and Material Movers, Hand (53-7062)	5,605	11%	\$13.41
Bakers (51-3011)	4,708	4%	\$11.58
Light Truck or Delivery Services Drivers (53-3033)	3,291	8%	\$14.78
Office Clerks, General (43-9061)	3,167	2%	\$15.58
Butchers and Meat Cutters (51-3021)	2,850	3%	\$13.71

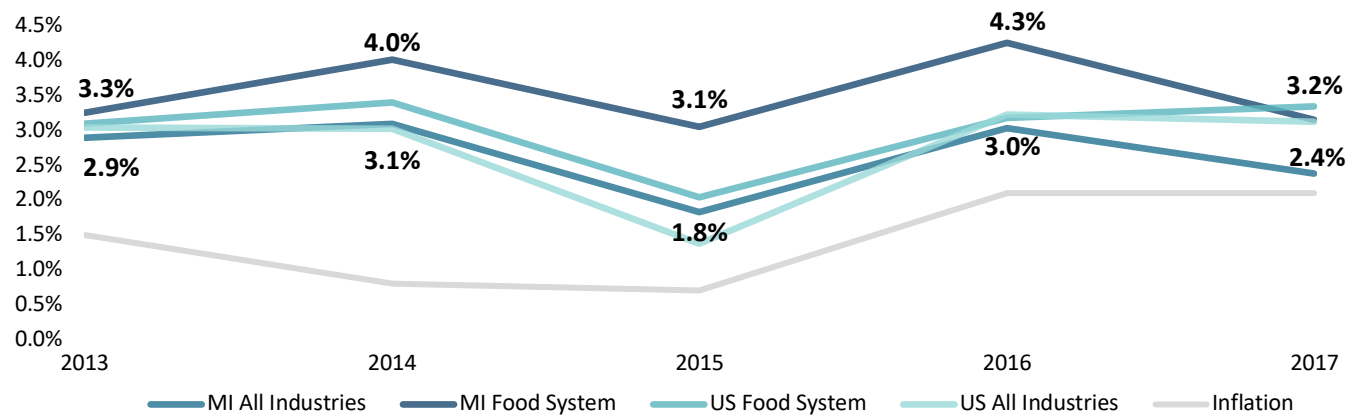
Source: Emsi 2019.2 - QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Food systems workforce wage data

Figure 3 shows that Michigan food system wages, overall, have been rising at a higher average annual rate than other industries in the state. Wages in the food system grew 3.2% between 2017 and 2018 in Michigan, while only 2.4% growth was seen on average across all industries in the state.

Over the past five years food system wages in Michigan had been growing at a faster rate than compared to these wages nationally. However, last year's growth was on par with national figures. In total between 2013 and 2018, Michigan's food systems wages have grown about 19% compared to 14% across all Michigan industries, and compared to 16% growth in national food system wages.

Figure 3. Michigan food system wages are growing at a faster rate than all other sectors in the state. (Average annual growth. Labels shown for Michigan only.)



Source: Emsi 2019.2 - QCEW Employees, Non-QCEW Employees, and Self-Employed dataset.

Most requested food systems workforce skills

A summary of the top requested skills in job postings from 2016 to 2018 within each food system industry group are presented in Table 9.

Table 9. Top Requested Skill Clusters by Food System Sectors, 2016-2018 (in order by most appearances in job postings)

Food production and farm inputs	Manufacturing and processing	Wholesale distribution	Food retail
Food and beverage service	Basic customer service	General sales	Basic customer service
Basic customer service	General sales	Basic customer service	Food and beverage service
Occupational health and safety	Microsoft office and productivity tools	Microsoft office and productivity tools	Retail industry knowledge
Manufacturing processes	Merchandising	Retail industry knowledge	Business management
Microsoft office and productivity tools	Food and beverage service scheduling	Scheduling	General sales
Enterprise resource planning	Business process and analysis	Food and beverage service	Scheduling
Resource management and restoration	Enterprise resource planning	Merchandising	Cash register operation
General administrative and clerical tasks	Occupational health and safety	Administrative support	Business process and analysis
People management	Material handling	Store management	Equipment repair and maintenance
General sales	Budget management	Sales management	People management
Scheduling	Manufacturing processes	Budget management	Merchandising
Physical abilities	Equipment repair and maintenance	Material handling	Physical abilities
Budget management	Packaging and labeling	Business process and analysis	Retail sales
Project management	People management	Project management	Retail store operations
Packaging and labeling	General sales practices	Transportation operations	Microsoft office and productivity tools
Material handling	General administrative and clerical tasks	Occupational health and safety	Occupational health and safety
Agronomy and farming	General administrative and clerical tasks	General administrative and clerical tasks	Cash management
Business process and analysis	Food and beverage industry knowledge	Retail sales	General administrative and clerical tasks
Equipment repair and maintenance	Machinery	Enterprise resource planning	Budget management
Retail sales	Project management	Prospecting and qualification	Inventory management

Source: Burning Glass Technologies. burning-glass.com. Labor Insight™ 2019

In analysis of two years of Michigan job posting data, the skill clusters (similarly grouped individual skills) commonly requested across all food systems industries were: food service (which includes food safety, handling, and preparation), customer service, sales, and business management.

Food production and farm input skills are presented together because there is so much overlap in the occupations comprising these sectors. The most requested skills in these industries center around food/crop handling, occupational health and safety, business management, managing natural resources, and skills in agronomy and farming. As a labor-intensive industry, physical abilities such as the ability to lift and bend also appear as a key skill in farm production and farm input job postings.

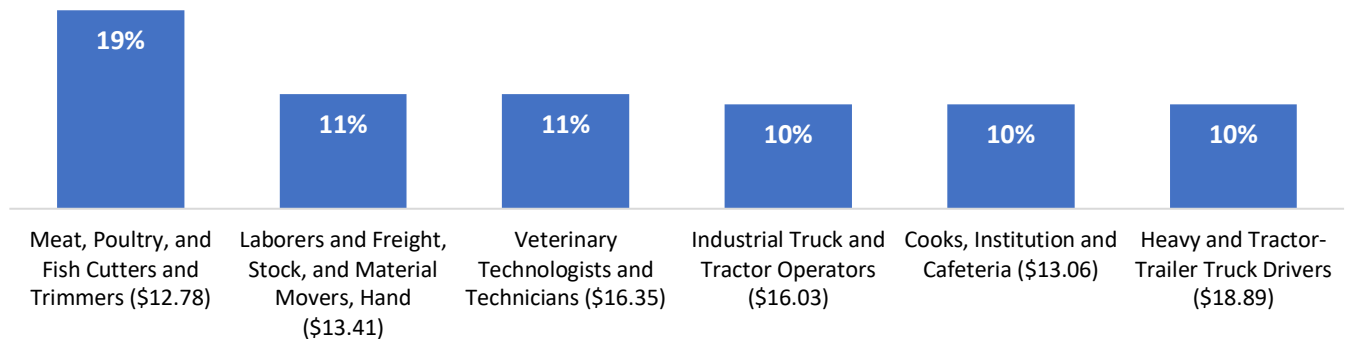
Manufacturing processes appears as a key skill in both the production and processing sectors, indicating there is likely overlap in the functions of many businesses. Machinery, repair and packaging also appear in processing job postings. Key skills in warehouse distribution center around sales (specifically wholesale) and supply chain logistics (e.g., store management, business processes, transportation operations).

In food retail, skills required are focused on individual customer interaction and food handling. Skills in store operations, like scheduling, cash register operation, merchandising, and people management, also appear.

Anticipated food systems workforce growth

Figure 2 shows the occupations that employ more than 1,000 people in Michigan and have a projected job growth rate of 10% or more. More generally, Figure 2 shows that there is significant growth potential in certain job areas within food systems.

Figure 2. Occupations Employing 1,000 or More Michiganders (2018) with a Projected Five-Year Growth Rate Greater than 10% (with 2018 median hourly wage).



Source: Emsi 2019.2 - QCEW Employees, Non-QCEW Employees, and Self-Employed dataset

Food processing jobs have the highest predicted growth: meat, poultry, and fish cutters with a projected 19% more cutters anticipated over the next five years, followed by labor and freight material movers (11%), veterinary technologist (11%, though not all these roles are thought to be isolated to the food system), industrial truck and tractor operators (10%), institution and cafeteria cooks (e.g., at schools or hospitals) (10%), and heavy and tractor-trailer truck drivers (10%). Employment projections come from Emsi analysis of 5, 10 and 15-year historical employment data sourced primary from BLS's Quarterly Census of Employment and Wages (QCEW).¹⁸

¹⁸Emsi. (2019). Industry Projections Methodology. Retrieved from <https://kb.economicmodeling.com/industry-projections-methodology/>

Summary

We cannot fully understand the workforce issues within the local and regional value chain until we understand the larger Michigan food system. This is an initial scan of jobs in the broader Michigan food system and does not represent the results solely of the local and regional food system as defined earlier in this report, due to the limitations of this work. However, this job scan is a building block to supporting a food system that has quality jobs that strengthen communities and the economy.

This work shows that earnings vary among sectors. Average earnings range from \$25,738 per year in the retail sector to \$64,889 per year in the wholesale distribution sector. The majority of people work within the retail sector, but large numbers (235,533 people) are paid below \$10/hour. This likely contributes to the number of people in the ALICE bracket who are not earning enough to make ends meet.

Michigan food system wages have been increasing at a higher rate than other industries in the state and are on par or higher than food systems jobs nationally.

Employers are seeking a broad array of skills, including skills in food service, customer service, sales, and business management.

Occupations projected to be in high demand include meat, poultry and fish cutters; labor and freight material movers; veterinary technologists; industrial truck and tractor operators; institution and cafeteria cooks; and heavy and tractor-trailer truck drivers.

A helpful next step in this work would be to further identify challenges and potential solutions to wage disparities and skill shortfalls by engaging in more discussions with workforce development organizations, food businesses, workers, and advocates. This is particularly important to local and regional food systems as we consider the development of quality jobs.

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