

Maine Policy Review

Volume 20
Issue 1 *Maine's Food System*

2011

Maine's Food-Related Workforce: Characteristics and Challenges

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Recommended Citation

Carter, Valerie J. . "Maine's Food-Related Workforce: Characteristics and Challenges." *Maine Policy Review* 20.1 (2011) : 190 -208, <https://digitalcommons.library.umaine.edu/mpr/vol20/iss1/29>.

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The Food System Workforce: Present and Future

People who produce, process, transport, sell, prepare, and serve food are a key part not only of the food system but the economy overall. In Maine, by a conservative estimate they are almost 17 percent of the total workforce and range from farmers and fishermen to truckers, cooks, waitstaff, and cashiers. Some work in food-related enterprises, while others perform food-related tasks in other kinds of organizations, such as schools or hospitals. Some live in Maine year-round, while others are seasonal or migrant workers who come to work during the growing season. Although the food-related workforce is diverse, Valerie Carter shows in her article that the majority of workers and entrepreneurs are poorly paid; many work only part-time; few have health insurance or other benefits; and many work under hazardous conditions. In spite of this there is continued growth in employment in Maine's food sector and in independent enterprises such as farming. We need to do a better job to improve the pay, working conditions, benefits, and supports for food workers and food entrepreneurs. One key to helping this growing workforce, as well as the general population, is education, as Molly Anderson describes in her article. She notes that education in Maine about food, fisheries, and agriculture is provided in a wide variety of venues: formal degrees at colleges and universities; Cooperative Extension; farm-to-school programs; the Maine Organic Farmers and Gardeners Association (MOFGA); and even educational farms. 🐟

Maine's Food-Related Workforce: Characteristics and Challenges

by Valerie J. Carter

INTRODUCTION

When the U.S. was a predominantly agricultural nation, most people lived in rural areas and produced much of their own food, in economies that were largely local or regional in scope. Today, however, food in the U.S. is produced, processed, distributed, prepared, and served by a diverse and often global labor force. Supermarkets sell products grown or processed from around the world. Within the U.S. much food is grown, processed, and distributed by large multinational corporations and an “agribusiness” sector with international operations (e.g., General Mills, Conagra, and PepsiCo). Large corporations also dominate in retail food sales nationally and globally (e.g., Walmart, Kroger, Target, and Costco)¹ and in the restaurant industry (e.g., McDonalds).² In Maine, the largest supermarket corporation, Hannaford, which is also the state's largest employer, is now owned by a Belgium-based corporation, the Delhaize Group, which acquired Hannaford in 2000.

Maine food-related workers are a similarly diverse group. Many people across several industries and in scores of occupations contribute to produce and/or harvest crops and animals for food; to process, package and distribute it; to prepare and serve food in restau-

rants and other locations; to sell it in retail stores; and in some cases, to deliver it by car or truck to your home.

Despite its diversity, the food-related workforce has some widely shared basic characteristics: pay scales tend to be low; workers have limited access to employer benefits such as health insurance, depending on where they are employed; the work can be hazardous; and they tend not to be organized into unions with collective bargaining. As a consequence, many people working in the food sector are at risk of economic insecurity, and even, for the lowest-paid and most vulnerable workers, at risk of being “food insecure” themselves.

This article provides an overview of Maine's food-related workforce, focusing on (1) the primary *industries* and *occupations* constituting the food workforce in Maine; (2) characteristics of food-related industries and largest food-related occupations; (3) working conditions, workplace hazards and information on occupational injuries; and (4) the future of Maine's food-related workforce and policy implications.

This analysis is offered with some major caveats, based on the limitations and complexities of labor-market data and other sources of information. First, most available labor-market data on Maine's food-sector workforce includes only workers from establishments or occupations included in “covered” employment, i.e., jobs that are covered by unemployment insurance (UI). Hence these data largely exclude important sectors of food-related workers in Maine such as people in the fishing industry and in small-scale agriculture who are self-employed, and some who are working in sole proprietorships or partnerships. People who work “off the books” in various kinds of food-related work (e.g., hunting, gathering fiddleheads, or raising chickens and sharing eggs with friends and neighbors) are also not included in such official statistics. Second, labor-market data based on household surveys (e.g., the Census Bureau's American Community Survey) cover a broader range of workers, including the self-employed, but they are subject to sampling errors, which are sometimes substantial, raising issues of reliability. Third, labor-force data collected from employers or establishments may overstate the actual number of persons in the labor force, since multiple job holders (especially those working part-time) may

be counted more than once. Finally, many state-level occupational or industry employment numbers for specific categories are not published or available to the public, because the data may be traced to specific employers, so are kept confidential by the Maine Department of Labor.

Given these limitations and caveats, we begin with a basic picture of Maine's food-related workforce.

MAINE'S FOOD-RELATED INDUSTRIES AND OCCUPATIONS: BASICS

Overview of Industry Sectors

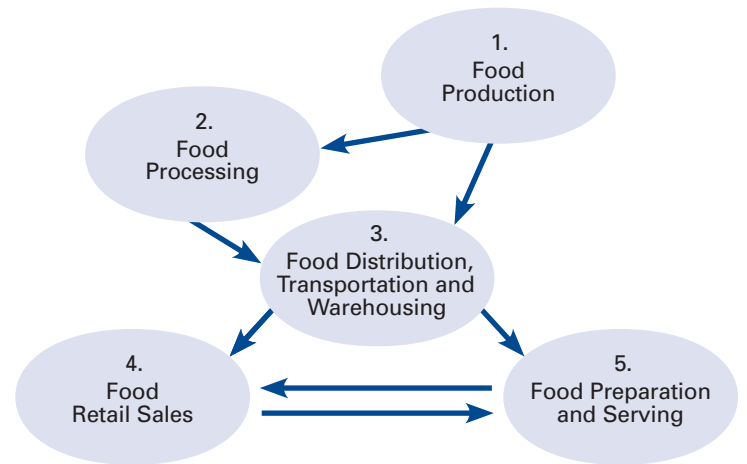
A recent report on food workers and issues of "food justice" by the Applied Research Center suggests that food workers can be seen as a "food chain" divided into four broad sectors: production, processing, distribution, and retail and service (Liu and Apollon 2011). This broad format is a useful starting point in portraying the structure of the food-related workforce.

The model of Maine's food system used in this article builds on the ARC food chain concept, but has five sectors rather than four, since retail sales of food should be separated from food preparation and serving. The decision of what constitutes "production" and what constitutes "processing" in this model is not always obvious, so the outline of the food system is meant only as an illustrative guide. The relationships of occupations to industries are not always simple. People in food occupations often work in non-food industries, such as cafeteria workers in a hospital. Similarly, many working in food industries are not in food occupations; for example, a food-manufacturing firm may employ clerical workers, custodial staff, computer technicians, and truck drivers.

The model's division into five sectors implies that different people and different industries are performing these activities. In practice, the division of labor between these tasks is not always clear-cut. As an example, small farmers who produce food for farmers' markets may also process the crops, transport them to local farmers' markets or stores, and sell them directly to consumers.

Table 1 depicts the major industries in Maine's food-related workforce, divided into five sectors in the food system, along with some typical occupations within

FIGURE 1: **Maine Food Chain System**



each sector. The NAICS codes refer to the standard industry coding system now used in labor market analysis, the North American Industry Classification System.

Food Sector 1: Production

People in the food-production sector produce foods for processing, distribution, sales, preparation, and consumption. Maine's food producers fall into two major industries: farming, including both crop and animal production, and fishing, including both finfishing and shellfish. Table 1 shows some of the typical occupations in this sector.

Agriculture is an important Maine industry, with several major crops: potatoes, broccoli, oats, blueberries and other fruits, and other food crops. Animal production is also important, particularly dairy cattle, poultry and egg production, and aquaculture. Most Maine farms are small in scale. Only 400 out of 8,136 farms in 2007 reported sales of more than \$250,000, and the average size of Maine's farms was 166 acres (USDA NASS 2009). Most farm owners are small businesses and sole proprietors. The aging of farmers has been viewed as a critical issue for the future of Maine's agriculture. According to an article by Kevin Miller in the *Bangor Daily News* on May 16, 2010, there has been a resurgence of interest in farming among young farmers in recent years. In addition, there is a growing number of people from recent immigrant communities in Maine who are joining the ranks of Maine's farmers. With this increased involvement in farming from young people and immigrants, food production may

TABLE 1: Major Industries and Selected Occupations in the Maine Food System

Sector	Major Industry Sectors (NAICS Code #) ^a	Typical Occupations
1. Production of Food (Agriculture, Fishing, Hunting) ^b	Crop production (111) Animal production (112), e.g., aquaculture (1125) Fishing, hunting, trapping (114), e.g., fishing (1141) Agriculture and forestry support activities (115)	Farmers and other agricultural workers Graders and sorters of agricultural products Fishermen and seafood workers
2. Processing of Food ^c	Food Manufacturing (311), e.g., fruit and vegetable preserving, seafood processing, bakeries, beverage production	Food batchmakers Butchers and meat cutters Bakers
3. Distribution, Transporting and Warehousing of Food ^b	Wholesale Trade: Grocery and related products (4244); farm products and materials (4245) (Air, Water and Truck Transportation) (481, 483, & 484, respectively) ^d (Warehousing and Storage) (493) ^d	Laborers and freight, stock and material movers Truck drivers (large and small)
4. Retail Trade: Retail Sales of Food ^c	Food and Beverage Stores (445), e.g., grocery stores, specialty food stores, fish and seafood markets	Cashiers Packers and packagers Stock clerks and order fillers
5. Preparation and Serving of Food ^c	Food Services and Drinking Places (722), e.g., restaurants, cafeterias, "limited service" restaurants	Combined food preparation and serving workers, including fast food Chefs and head cooks First line supervisors Hosts and hostesses Waiters and waitresses Food preparation workers Bartenders Dishwashers

a Two- and three-digit codes refer to larger industry sectors; four- to six-digit codes are used for more specific industry subsectors.

b Not a major focus in this paper

c Major focus

d These sectors are not specific to food, and will not be a focus in this analysis.

become more vital despite the impending retirement of many older farmers. (See sidebars by Banwell and Carrington.)

The fishing industry is another part of the food-production sector in Maine and is critically important for the state. Fishermen take or catch lobster, Atlantic herring, Atlantic salmon, scallops, clams, and oysters, and many other fish.

Work in the food-producing sector ranges from planting, maintaining and weeding, and harvesting food crops, to growing animals, including aquaculture, dairy cattle, and egg production; and catching fish.

Work in this sector is often dangerous, with workers exposed to many hazardous conditions. One critical, but not highly visible, sector of Maine's agricultural workforce is migrant and seasonal farmworkers, who come to Maine during harvesting season to pick crops. Each year, between 10,000 and 12,000 migrant workers come to work in Maine (Clark 2008). Recently there has been growing concern about the wages, hours, living, and working conditions of migrant workers and about the needs of their families, such as health and education. (See Perez-Febles sidebar, and article by Ginley, this issue.)

Increase in Younger Farmers in Maine Reveals Specific Policy Concerns

By Elizabeth Banwell

Statistical and anecdotal evidence indicates that more and more young people are entering farming in Maine. This demographic shift comes with both opportunity and challenge for these beginning farmers. While the average Maine farmer is still 56 years old, according to the 2007 Census of Agriculture, other indicators suggest that younger farmers are changing the face of Maine. "Younger people are being encouraged to enter farming by the awakening in popular culture to benefits of producing food locally," says Andrew Marshall, director of educational programs at Maine Organic Farmers and Gardeners Association (MOFGA). "It's energizing to see all these young people choose agriculture, and for the most part, Maine is a supportive place for them to do it." In the past three years MOFGA's Journey person apprenticeship program has grown from 100 applicants to 400. In addition to an increase in numbers, the quality of applicants is increasing.

Other signs of the renewed interest in farming include the growing number of sustainable agricultural programs in Maine, including the College of the Atlantic, Unity College, the University of Maine, and a number of community and technical college programs. Nonacademic programs serving beginning farmers include Maine Farmland Trust's FarmLink program, which helps the next generation of farmers get access to farm land, and several programs offered by University of Maine Cooperative Extension for new farmers, including one specifically for women entering farming.

Bowdoinham farmers Nate Drummond and Gabrielle Gosselin typify a growing number of Maine farmers: they are young. They have been able to develop profitable farming ventures in a relatively short time (three and two years, respectively) by leasing land with good soil and accessing established markets for local food. In the process, they have been fortunate enough to sidestep some critical hurdles that prohibit many new farmers from entering or succeeding at farming. Drummond and

Gosselin run Six River Farm, on which they farm 11 acres, five of which are cultivated with mixed vegetables. Theirs is one of three farms leasing land from a "farm incubator program," located on 80 acres in Bowdoinham that was once one farm. The lessees have access not only to prime and affordable farmland, but to equipment, barns, and the other costly start-up infrastructure. In addition, the farm's location in relatively affluent southern Maine has meant that the farmers are able to sell all their produce in the Bath-Brunswick area because of strong demand for local and organic food.

According to these young farmers, the biggest challenges they face are access to affordable land with good soil; start-up and expansion capital for infrastructure; consumer demand and established markets; business management skills; mentoring from experienced farmers; and state health and safety regulations, which can tie the hands of small farmers. John Piotti, executive director of Maine Farmland Trust, explains that unlike farmers in the past, many young farmers are running smaller, more intensive operations on two to five acres of land. "Some state regulations can prohibit these businesses from becoming sustainable."

The policy implications related to this new crop of farmers are nuanced, Drummond says. Farmland preservation must focus on preserving land with good productive capability. Attention must be paid to the development of new markets, as traditional markets, such as farmers' markets and community-supported agriculture (CSA) become saturated, and as new farmers seek to establish themselves in parts of the state without strong existing markets. (Luckily, there is untapped opportunity at schools, hospitals, and food pantries.) Then, there is the complication of leasing land. Right now Gosselin and Drummond rent a house just under a mile from the land they farm. "I am comfortable leasing land, and there are tradeoffs. We aspire to eventually to have a home and a little land near where we lease," says Drummond.

Refugee Agriculture in Maine

By Amy Carrington

Income opportunities that honor the skills and business experience that immigrants and refugees bring are vital for their economic integration. Many of them bring important agricultural skills and experience to Maine. Although some are excellent farmers, there are many obstacles to their transition into agriculture in the Northeast. The culture, language, environment, and market context are often dramatically different from their past experience. Despite these challenges, immigrant and refugee communities have demonstrated great potential and commitment to farming. They have the skills and ambition to be successful farmers and to enhance agricultural production in Maine and throughout the Northeast.

Through the U.S. refugee resettlement program, Catholic Charities of Maine has resettled thousand of refugees in Maine over the past two decades. Members of the refugee communities have started agricultural enterprises and are producing food for local markets. However, it has required an intense focus to develop programs and opportunities that allow these communities to become sufficiently profitable in agriculture. Many African refugees are preliterate, have limited English proficiency, and have little experience learning in a formal classroom environment. For refugees' agricultural businesses to be successful, additional supports and interventions are needed.

The best supports are multiagency coordinated efforts that provide a continuum of services over time. Using a land- and enterprise-based approach, the New American Sustainable Agriculture Project (NASAP) leads the way for refugee farmers in Maine. NASAP leverages local,

state, and federal funding and a network of local partners to train immigrant and refugee farmers. A program of the nonprofit Cultivating Community, NASAP provides participants with access to land, translation services, and linguistically appropriate training opportunities, and facilitates referrals to Maine's traditional agricultural service providers such as Cooperative Extension and the USDA.

Maine is not alone; the number of new American farmers is growing throughout the Northeast and the country. Nonprofit community-based organizations (CBOs) have been key stakeholders in coordinating services for immigrant farmers. Coordination with CBOs has created opportunities for traditional agricultural service providers to reach out to these underserved populations. Integrating these new American farmers into mainstream services is a key component to their long-term success. This multiagency approach is effective, and continues to gain momentum in Maine and beyond.

The U.S. may soon be facing a shortage of farmers. In the Northeast there are twice as many farmers over 65 as under 35. The USDA Secretary of Agriculture, Tom Vilsack, has estimated the need for more than 1,000 new farmers nationally each year. Although refugees and immigrants will not enter agriculture in sufficient numbers and volume to replace all those who are retiring, they are contributing toward the growing number of small farms. True progress will come, however, when refugee and immigrant farmers' integration into the U.S. agriculture system is a given, not an exception.

Food Sector 2: Processing

People in Maine's food-processing sector, also known as food manufacturing, process food into finished goods before it is distributed and sold to consumers, including grains, meats, raw fruits, vegetables, and dairy. In Maine, food processing or manufacturing can be found in various industry subsectors. Among the most important industries are fruit and vegetable processing (e.g., potatoes, other

frozen vegetables, and blueberries), dairy processing (e.g., fluid milk production), commercial and retail bakeries, seafood processing, and soft drink manufacturing.

Table 1 shows some typical occupations in Maine's food-processing sector. Workers in this sector face hazardous conditions and have high rates of occupational injuries and illnesses (see section on work hazards). They are often also poorly paid.

MIGRANT AND SEASONAL FARMWORKERS IN MAINE

By Juan Perez-Febles

Every year approximately 8,500 to 12,000 migrant and seasonal farm workers participate in the different agricultural harvests around the state. A migrant worker is one who travels long distances to participate in a particular agricultural activity. A migrant worker does not go home at the end of the work day, but is usually housed in a “labor camp” facility, provided by the employer in most cases. A migrant worker is also one who earned at least 50 percent of his or her income in the previous year in an agricultural-related activity. A seasonal worker goes home to his or her permanent residence at the end of the work day.

Migrant and seasonal farm workers provide a tremendous economic contribution to the state’s economy and to the different communities where they work. Maine’s agricultural employers depend on this workforce to harvest the different crops produced in the state.

Most migrant workers who come to Maine to harvest various crops belong to the eastern stream of migrant workers. This stream starts early in the year somewhere around central Florida, where they harvest tomatoes, strawberries, cucumbers, oranges, and watermelons during the months of January, February, and March. When the harvests are finished, these workers travel to Georgia where they participate in the peach and pecan harvests. Later they move to North Carolina to participate in the sweet potato and tobacco harvests and sometimes work in local furniture factories. Around June and July the workers arrive in New Jersey to participate in the high-bush blueberry harvest. Finally in late July they arrive in Maine to participate in the blueberry harvest in Washington, Hancock, and Waldo counties.

Once the blueberry harvest is completed many workers remain in Maine to participate in the apple harvest in the western part of the state. After the apple harvest many workers return to Washington County to work in the wreath making operations there.

The major agricultural harvests in Maine are shown in Table 1, and the approximate number of temporary harvest workers in Table 2.

TABLE 1: Major Maine Harvests, by County

Crop	Counties
Apples	Androscoggin, Cumberland, Oxford, York
Broccoli	Aroostook
Blueberries	Hancock, Knox, Washington
Mixed Vegetables	Statewide, small farms
Strawberries	Cumberland, Kennebec, Waldo, York
Potatoes	Aroostook
Eggs	Androscoggin (primarily)

TABLE 2: Approximate Number of Temporary Harvest Workers in Maine

County	Worker Estimates
Androscoggin	626
Aroostook	4,173
Cumberland	138
Franklin	41
Hancock	523
Kennebec	145
Knox	436
Lincoln	107
Oxford	412
Penobscot	439
Piscataquis	65
Sagadahoc	28
Somerset	503
Waldo	93
Washington	1,380
York	258
State Total	9,368

Note: Most statistical information here comes from Larson, Alice C. 2005. Enumeration of Vegetable and Orchard Temporary Workers and Work Hours in Maine. New York Center for Agricultural Medicine and Health, Cooperstown, NY.

Food Sector 3: Distribution, Transportation, and Warehousing

Once food is produced and processed, it must be transported, stored, and distributed to retail, institutional, and household consumers or buyers. The primary subsectors in this area are transportation (by truck, rail, air, or ship), warehousing and storage by wholesalers, and distribution by wholesalers. Table 1 shows typical occupations in this sector. Warehousing and transportation of food often needs refrigeration for perishable foods, which means that mechanics and technicians skilled in cooling and freezing equipment are also employed.

Since most occupations in this sector are not specifically food-related, the food labor-force data in this sector are limited and not a major focus of this analysis. It is interesting, however, that supermarket warehouses, particularly truck drivers, are one of the few areas in the food industry in Maine that are likely to be unionized.

Food Sector 4: Retail Sales of Food

The retail sales sector is the second largest in terms of food-related employment and is quite diverse. It includes traditional grocery stores and supermarkets, along with smaller convenience stores; gasoline stations with convenience stores; beer, wine, and liquor stores; stores that specialize in food, health products, and supplements; and warehouse clubs and supercenters selling groceries, which have been multiplying in the state since 2005. (See Table 2 for comparison data on warehouses and supercenters from 2000 to 2010.) As referred to earlier, the largest employer in Maine is currently Hannaford Supermarkets, with Walmart (which now sells food through its supercenters) being second. Shaw's Supermarkets are the tenth-largest employer (CWRI 2011).

Workers in this sector include not only those dealing directly with food, but also a large sales-related staff working as cashiers and baggers and stock clerks. Supermarkets employ a lot of teenagers as cashiers and baggers. In 2008, 16- to 19-year-olds made up 16 percent of employment in grocery stores. Cashiers and stock clerks constitute one-half of all jobs in grocery stores nationwide, and much employment in this sector

is part-time (U.S. Department of Labor 2009a). There is some overlap between this sector and that of food preparation and serving, since food prepared onsite is increasingly common in both small and large retail food stores.

Food Sector 5: Food Preparation and Serving

The food-preparation-and-serving sector, called "food services and drinking places," is by far the largest food-related sector in Maine. As of 2008, limited-service restaurants (fast-food restaurants, cafeterias, and snack/nonalcoholic beverage bars) accounted for almost half (47 percent) of the establishments in this industry in the U.S., and many of these are franchised. Full-service restaurants were about 39 percent of the industry, while drinking places (alcoholic beverages) such as bars, pubs, taverns, and nightclubs were about nine percent. Special foodservices, which includes caterers, mobile foodservice vendors (e.g., ice cream trucks), and foodservice contractors constituted about five percent of establishments in this sector in the U.S. (U.S. Department of Labor 2009b).

Typical occupations in this sector include a range of serving and preparation workers, as shown in Table 1. Jobs are often part-time, and according to the US BLS (2009b), food preparation and serving employs a higher percentage of part-time workers than any other industry. Full-time employees, on the other hand, including managers and owners, tend to work long hours. The work is often hazardous and generally pays low wages although income from tips supplements hourly wages for tipped employees. The low wages in this industry have also been documented in a recent major study of restaurant workers in Maine (Restaurant Opportunities Center of Maine 2010). Restaurant jobs are an important source of employment, especially for young people, women, and new immigrants.

FOOD SECTOR EMPLOYMENT ESTIMATES

Numbers of Workers in Food-Related Industries

It would seem to be a simple question with a clear answer: how many people in Maine are employed in food-related industries? The closer one examines labor-force data on this question, however, the more

complicated it is to come up with an accurate answer. It is only possible to develop an *estimate* of total food-related employment in Maine's food industries through a process of triangulation, with multiple and complementary sources of data.

The most important source of data on industry employment, despite its shortcomings, is the Quarterly Census of Employment and Wages (QCEW). Table 2 shows the numbers of workers in Maine's food-related sectors, including numbers of units or establishments, average annual employment, and total wages, for 2000 and 2010, based on data from the QCEW. It is critical to keep in mind, however, that as with most other labor force data, these statistics will give only an incomplete picture, with the largest exclusion being the self-employed in agriculture and fishing.

The employment data in Table 2 indicate that the total number of people employed in these food-specific industries in Maine was approximately 77,300 people for 2010. However, the actual numbers are certainly larger than this, since these are only covered employment estimates.

Data in Table 2 for the food-production sector are not complete, since most farming and fishing workers are not captured in these estimates. Thus the average employment figure of 3,232 for farming and fishing cited there is a gross underestimate.

Food processing or food manufacturing shows a total average employment of almost 5,500 in 2010, down substantially from the 2000 figure of 7,200. The ongoing decline in manufacturing overall in the state reflects, in part, the decline in Maine's food processing.

The sector dealing with the distribution, transportation and warehousing of food is not well-documented in the numbers in Table 2, in part because food trucking is not separated from other transport industry numbers. The total employment shown, 3,353 for 2010, is probably an underestimate of the number of people employed in distributing and transporting food.

The retail food sales sector employed an average of 24,234 people in 2010, down slightly from 2000. Food and beverage stores, the largest employment category, employed roughly 17,800 people in 2010. It is interesting to note that while the total number of units and average employment in food and beverage stores have

both apparently declined from 2000 to 2010, the total wages paid in this sector have increased.³ One possible contributor to the decline in employment in food and beverage stores might be the modest increase in people working in gasoline stations with convenience stores. Another possible reason for the decline may be the significant increase in the number of Walmart Supercenters in Maine between 2000 and 2010, particularly between 2005 and 2010.⁴ Unfortunately, it is impossible to get specific data for employment in warehouse clubs and supercenters since these numbers have been omitted from the QCEW data due to confidentiality issues. However, with at least 14 Walmart Supercenters existing in Maine and typical employment of at least 350 to 400 people in each supercenter, it is possible that close to 5,000 supercenter employees should be added to the total number of people employed in the retail food sales sector in the state.⁵

The sector involved with food preparation and serving is by far the largest food-related sector in Maine and the U.S. In 2010, this sector employed approximately 41,000 people in Maine, an increase from 37,750 employed in 2000. This number does not include sole proprietors or self-employed people, so the actual number is probably larger. There was also an increase in units or establishments in this sector, from roughly 2,650 in 2000 to more than 3,000 in 2010. Clearly this industry appears to be thriving.

Given the limitations of these QCEW industry data, it will be important to supplement these estimates with other sources of industry data, such as nonemployer statistics, which includes self-employed workers, and U.S. Census of Agriculture data on farming in Maine.

Numbers Employed in Food-Related Occupations

Labor-force data on occupations gives another perspective on the food-related workforce. As with industry data, estimates of total occupational employment excludes some people not in covered employment, but they still provide useful data on the nature of these occupations. This section focuses on employment numbers, while wages and gender breakdowns will be discussed later.

Table 3 shows the occupations associated with Maine's food system, including all those that employ

TABLE 2: **Maine Employment and Wages, Food-Specific Industries, 2000 and 2010**

NAICS Industry Description	Code*	Units		Average Employment		Total Wages (in \$)	
		2000	2010	2000	2010	2000	2010
1. FOOD PRODUCTION							
Crop production	111	191	210	1,786	1,844	30,546,831	43,288,946
Animal production	112	80	88	771	792	17,204,258	20,198,758
Fishing	1141	141	274	265	418	12,024,819	22,917,309
Support activities for crop production	1151	21	14	282	139	4,433,432	3,577,747
Support activities for animal production	1152	18	17	66	39	1,100,569	892,096
TOTAL		451	603	3,170	3,232	65,309,909	90,874,856
2. FOOD PROCESSING							
Food manufacturing	311	224	209	7,207	5,493	186,606,050	178,496,707
Total		224	209	7,207	5,493	186,606,050	178,496,707
3. DISTRIBUTION, TRANSPORTATION AND WAREHOUSING OF FOOD							
Grocery and related product wholesalers	4244	348	317	3,661	3,271	114,155,392	133,452,016
Farm product raw material merch. wholesalers	4245	5	3	38	24	779,871	893,394
Refrigerated warehousing and storage	493120	9	6	67	58	2,093,236	2,212,636
Farm product warehousing and storage	493130	1	2	ND	ND	ND	ND
TOTAL		363	328	3,766	3,353	117,028,499	136,558,046
4. RETAIL SALES OF FOOD							
Food and beverage stores	445	979	812	19,147	17,802	298,512,270	356,603,154
Food, health, supplement stores	446191	20	16	151	80	1,973,082	1,224,057
Gasoline stations with convenience stores	447110	677	689	5,728	6,352	70,578,841	101,116,802
Warehouse clubs and supercenters	452910	7	20	ND	ND	ND	ND
TOTAL		1,683	1,537	25,026	24,234	371,064,193	458,944,013
5. PREPARATION AND SERVING OF FOOD							
Food services and drinking places	722	2,658	3,001	37,750	41,007	418,550,409	613,631,034
TOTALS, All Food-Specific Industry Sectors		5,379	5,678	76,919	77,319	1,158,559,060	1,478,504,656

*For three-digit NAICS industry codes, all cases are specific to food. In cases with four-, five, or six-digit industry codes, only those specific industry sub-sectors are specific to food.

ND indicates nondisclosable data

Source: Quarterly Census of Employment and Wages (QCEW), Statewide Employment and Wages by 6-digit Industry, 2000 to 2010; Maine Dept. of Labor, CWRI. <http://www.maine.gov/labor/cwri/qcew.html>

TABLE 3: Employment, Wages, and Gender for Food-Related Occupations in Maine, 2010 (by rank order of estimated employment within sectors, for occupations with 100 or more workers employed)

SOC Code	Standard Occupational Classification (SOC) Title	Estimated Employment 2010	Mean Hourly Wage	Median Hourly Wage	Percentage Female, U.S.*
1. FOOD PRODUCTION		750			
45-2092	Farmworkers and Laborers, Crop/Nursery/Greenhouse	390	\$11.42	\$11.29	18.8
45-1011	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers	250	\$21.96	\$20.50	N.A.
45-2093	Farmworkers, Farm and Ranch Animals	110	\$13.74	\$13.65	(24.6)
2. FOOD PROCESSING		2,600			
51-3022	Meat/Poultry/Fish Cutters & Trimmers	840	\$10.85	\$9.75	(21.2)
51-3021	Butchers & Meat Cutters	630	\$14.04	\$13.56	(21.2)
51-3011	Bakers	520	\$11.52	\$11.03	57.0
51-3092	Food Batchmakers	360	\$11.21	\$10.91	55.5
51-3093	Food Cooking Machine Operators/Tenders	250	\$12.19	\$12.38	N.A.
3. DISTRIBUTION, TRANSPORTATION AND WAREHOUSING OF FOOD					
(No occupational data for this sector; most occupations and activity in this industry are not specifically food-related.)					
4. RETAIL SALES OF FOOD		9,445			
41-2011	Cashiers, in Food-Related Industries	4,520	\$9.30	\$8.88	73.7
43-5081	Stock Clerks/Order Fillers, Food-Related Industries	3,223	\$11.20	\$10.43	36.0
53-7064	Packers & Packagers, Hand, Grocery Stores Only	1,702	\$9.84	\$9.18	56.5
5. PREPARATION AND SERVING OF FOOD		52,690			
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	12,400	\$8.72	\$8.61	61.3
35-3031	Waiters and Waitresses	10,660	\$10.08	\$8.61	71.1
35-2021	Food Preparation Workers	5,320	\$10.36	\$9.94	59.2
35-2014	Cooks, Restaurant (% Female: "Cooks")*	4,600	\$11.47	\$11.12	(40.5)
35-1012	First-Line Supervisors/Managers of Food Preparation and Serving Workers	3,950	\$14.07	\$13.41	56.6
35-3011	Bartenders	2,500	\$9.87	\$8.39	55.2
35-9021	Dishwashers	2,340	\$8.79	\$8.67	21.1
35-3022	Counter Attendants, Cafeteria/Food Concession/Coffee Shop	2,170	\$8.91	\$8.61	65.7
35-2012	Cooks, Institution and Cafeteria (% Female: "Cooks")	1,910	\$12.34	\$12.18	(40.5)
35-2015	Cooks, Short Order (% Female: "Cooks")	1,390	\$10.80	\$10.23	(40.5)
11-9051	Foodservice Managers	1,260	\$24.09	\$22.15	47.4
35-9011	Dining Room and Cafeteria Attendants & Bartender Helpers	1,040	\$9.17	\$8.75	47.9
35-9031	Hosts and Hostesses, Restaurant/Lounge/Coffee Shop	990	\$9.47	\$8.99	84.7
35-3041	Food Servers, Nonrestaurant	940	\$9.29	\$9.01	64.9
35-2011	Cooks, Fast Food (% Female: "Cooks")	900	\$8.56	\$8.49	(40.5)
35-1011	Chefs and Head Cooks	320	\$20.61	\$19.64	19.0
Total employed in five other food occupations with less than 100 each		290			
TOTAL Estimated Employment, Food Occupations		65,775			

Sources: Employment and Wages: <http://www.maine.gov/labor/cwri/oes.html>

Gender Data: U.S. Bureau of Labor Statistics (2011a).

* % Female estimates in () are for combined or similar occupational categories.

TABLE 4: **Selected Maine Food Occupation Employment in Non-Food Industries, Estimated, 2008**

Typical Food Preparation and Serving Occupations in Non-Food Industries	Estimated Employment, in Selected Nonfood Industries
Food Preparation Workers	2,514
Cooks, Institution and Cafeteria	1,737
Waiters and Waitresses	1,129
Bartenders	970
Combined Food Prep and Serving Workers	800
Other*	2,037
TOTAL Employment	9,187

*Includes dishwashers, hosts and hostesses, restaurant cooks, etc.

**Includes local government, amusement and recreation industries, employment services, etc.

Source: Maine Department of Labor, CWRI, Maine Employment Info Guide.

100 or more people. The occupations are grouped into the five sectors, with data on Maine employment estimates for 2010, mean and median hourly wages for each occupation, and the estimated percentage of female employees for each occupation, based on U.S. gender percentages.

Table 3 does not provide useful information on employment numbers in the food-production occupations, since most people in farming and fishing are not included. The number of people employed statewide in this table is not to be taken seriously, particularly given the estimated 10,000 to 12,000 migrant and seasonal farmworkers who harvest crops each year in Maine. Data for food-processing occupations show a range of occupations, with the highest numbers for meat, poultry, and fish cutters and trimmers (840), and butchers and meat cutters (630). The total statewide food-processing employment of 2,600 may be an underestimate also. There is no employment data in Table 3 for distribution, transportation, and warehousing of food since the major occupations in this sector are not specifically food related, and the nature of the work in the industry is more general and wide-ranging.

By far, the highest employment numbers are in the last two sectors: retail food sales and the preparation and serving of food. The employment numbers in Table 3 for food-related retail sales (9,445 for 2010) are based on 2008 estimates of three occupations in food and

beverage stores: cashiers, stock clerks and order fillers, and packers/packagegers by hand (baggers). The largest category in this sector, cashiers, is also one of the largest occupations in the state of Maine. Food preparation and serving is the Goliath of the food occupations, with almost 52,700 people employed in Maine in 2010. Like cashiers, the three largest occupations in this category (combined food preparation and serving workers, waiters and waitresses, and food preparation workers) are also among the largest occupations in the state,

Adding together the numbers in Table 3, we get a total of 65,775 people employed in food-related occupations in Maine. We should expect that this number is smaller than the total employed in food-related industries (77,319 plus a few thousand supercenter employees), since many people in food-related industries are not working in food occupations. Thus far, we can say that there are probably at least 80,000 people working in food-related industries and at least 65,800 people in food-related occupations. These numbers cannot be added together, however, since they intersect and often point to the same people, counted once in their industry context and again in their occupational context.

There is, however, another group that can be added to the employment numbers to gain a closer estimate of Maine's food-related workforce. These are people working in food-related occupations (e.g., food preparation and serving), but in industries that are not related to food (e.g., elementary and secondary schools, universities, hospitals, or nursing homes). Since it would be a never-ending task if one tried to count all possible combinations of industries and occupations, this analysis focuses only on occupations dealing with food preparation and serving, which are found across many industries not directly related to food. Compiling the employment numbers for 12 major food-related occupations employed in 16 industries not directly related to food results in an additional 9,187 workers in the food-related workforce (Table 4).

Additional Data on Estimates of the Food-Related Workforce

Two more data sources are useful in getting a "ballpark" estimate of the size of the food workforce in Maine: nonemployer statistics and Census of Agriculture data for Maine.

TABLE 5: **Maine Food Sector Supplemental Industry Estimates, 2008 Nonemployer Statistics**

NAICS Code	NAICS Industry Title	All Establishments	Corporations	Individual Proprietorships	Partnerships
1. FOOD PRODUCTION		6,787			
1141	Fishing	5,923	205	5,694	24
114	Hunting and Trapping	210	ND	199	ND
1151	Support Activities for Crop Production	336	7	328	ND
1152	Support Activities for Animal Production	318	14	299	5
2. FOOD PROCESSING					
311	Food Manufacturing	318	31	275	12
3. DISTRIBUTION, TRANSPORTATION AND WAREHOUSING OF FOOD					
4244	Grocery and Related Product Wholesalers	144	ND	131	ND
4. RETAIL SALES OF FOOD					
445	Food and Beverage Stores	352	46	288	18
4451	Grocery Stores	130	24	101	ND
4452	Specialty Food Stores	204	20	172	12
4453	Beer, Wine, and Liquor Stores	18	ND	15	ND
5. PREPARATION AND SERVING OF FOOD					
722	Food Services and Drinking Places	834	72	728	34
7221	Full-Service Restaurants	94	25	56	13
7222	Limited-Service Eating Places	205	21	169	15
7223	Special Foodservices	498	20	475	ND
7224	Drinking Places (Alcoholic Beverages)	37	6	28	ND
TOTAL	ALL MAJOR FOOD SECTORS	8,435	375	7,942	93

ND = Nondisclosed data withheld to protect confidentiality for individual businesses.

SOURCE: <http://censtats.census.gov/cgi-bin/nonemployer/nonsect.pl>

The U.S. Census Bureau's nonemployer statistics provide economic data, primarily from Internal Revenue Service information, by industry sector for small businesses that have no paid employees, but do pay federal income taxes.

Table 5 shows a breakdown of nonemployer statistics for Maine for 2008. Although these data are not strictly comparable to the 2010 data used previously, they still give a general idea of how many people are involved in food-related industries who are not picked up in covered employment data. However, the numbers do not include people engaged in either crop production or animal production.

Table 5 shows that approximately 8,400 people work in Maine's food workforce as small businesses

that have not shown up in other data. Some of these businesses are incorporated, some are individual proprietorships, and a smaller number are organized as partnerships. Out of these nonemployers, most are engaged in food production, with the large majority found in fishing.

The second source of additional estimates for Maine's food-related workforce is the 2007 Census of Agriculture (USDA NASS 2009). Again, while these are not 2010 data, they serve to give a general idea of how many people are engaged in farming in Maine. These data show that there were 8,136 farms in Maine in 2007. Of these, 3,540 (about 44 percent) of the principal operators have farming as their primary occupation, while 4,596 (about 56 percent) have other

TABLE 6: **Total Estimated Size of Maine's Food-related Workforce**

Data Source	Number
Total employment in food-related industries (from Table 2), documented from QCEW data, 2010	77,319
Approximate additional minimal numbers from Walmart Supercenters, not included in QCEW data for this sector (14 supercenters, multiplied by minimum of 350 people employed)	4,900
Employment estimates for major food preparation and serving occupations in non-food industries (e.g., hospitals, nursing homes, education), from 2008 occupations by industry estimates (from Table 4)	9,187
Small business people (from Table 5, nonemployer statistics, for 2008), including fishing businesses, among others.	8,435
Farming principal operators, documented in the 2007 U.S. Census of Agriculture:	8,136
TOTAL	107,977

occupations as their primary occupation. About three-quarters of the principal operators are male (6,093), while roughly one-quarter (2,043) are female.

We can now pull together these various numbers to estimate the number of people in the food-related workforce in Maine (Table 6). This combined estimate should be seen as a ballpark estimate, with all the caveats described earlier. In addition, since not all data come from the same year, the estimate cannot be specific for a given year. Since most of the employment data are from 2010, it is probably safest to say that this estimate is primarily for 2010, with supplemental estimates from 2007 and 2008 data. With an estimated Maine resident employment of 641,978 in 2010, *the estimated food-related workforce of 107,977 constitutes about 16.8 percent of Maine's total workforce.*

WAGES, BENEFITS, GENDER, AND ECONOMIC SECURITY

People in Maine's food system often work in low-wage jobs, with few if any benefits. The wage data in Table 3 provides information on the issue of economic security for food-sector workers. It is also important to look at the male/female breakdowns for food-related occupations, since women workers are more vulnerable to a range of workplace issues

such as lower pay, discrimination, sexual harassment, and lack of flexibility in work schedules, particularly problematic for workers with young children. It is well-documented that women workers are paid less than men within virtually all occupations and industries, and single parents who are supporting children on their own are disproportionately female. A national study on the gender wage gap found that with few exceptions, women workers earn less than men in both high-paying and low-paying occupations (Hegewisch, Williams and Henderson 2011). They also found that the 10 occupations with the lowest median weekly earnings employed twice as many women as men.

Wages

Assuming that the gender percentages in Maine's food occupations largely reflect the U.S.-based percentages in Table 3, the data in this table suggests that the lowest-paying occupations in Maine's food sector are disproportionately female. Out of the 13 occupations with median hourly wages of less than \$10 an hour, three are primarily male, seven are predominantly female, and three are roughly equal in terms of gender. The highest-paying nonmanagerial occupation, chefs and head cooks, is only 19 percent female. However, it is clear that on the whole both men and women in food-sector jobs are working for low pay, with only a few exceptions.

One approach to analyzing wages and economic-security issues is to look at whether given occupations are likely to pay a "livable wage," the wage level needed to support a worker and their family using a "basic needs" budget. Livable wages in Maine were first analyzed by the Maine Center for Economic Policy (MECEP), and the concept was accepted by the Maine legislature in 2008 as a benchmark estimate for economic security among Maine households.

The Maine Department of Labor estimates Maine livable-wage levels for households based on family size and composition (Pease 2009). Five basic family structures are used as the basis of the estimates, and a corresponding hourly livable wage calculated for each (Table 7).

Given these benchmark wage levels for a basic needs budget (Table 7), we can see from Table 3 that wage levels for food-related occupations generally do not meet the economic needs of workers and their families.

TABLE 7: Maine Average Hourly Livable Wage Estimates, 2008

Household Type	Livable Wage (hourly)
Single Adult	\$10.65
Single adult, one preschool child	\$16.94
Single adult, two children (1 preschool, 1 school age)	\$20.00
Two adults, 1 earner; 2 children	\$17.00*
Two adults, 2 earners, 2 children	\$13.07**

*Assumes that the household has insurance through Cub-Care

**Average wage levels needed by EACH adult earner

Source: Pease (2009)

In the production sector, the median wage of \$11.29 for crops/nurseries/greenhouses workers and laborers only provides a livable wage for a single adult, and is not enough to provide basic needs for any household with children. The median wage for the first-line supervisors/managers in the production sector (\$20.50), on the other hand, does meet the livable wage requirements for all household types, although just barely for a single adult with two children. With a median hourly wage of \$13.65, farm and ranch animal farmworkers would be able to support only themselves or a two-child family if there was another adult earner with equivalent wages.

In the food-processing or manufacturing sector, wages are even lower than they are for farm laborers. One occupation, meat/poultry/fish cutters and trimmers (median wage \$9.75), will not even support a single person at a livable wage level of \$10.65. The highest paid occupation in this group, butchers and meat cutters (\$13.56), would only be able to support a household with two children if there were a second earner with a roughly similar wage. None of these food-processing occupations pay enough to support a single-parent family with one or two children, or to support a family with two children if the other adult does not work for pay.

The wage and economic security situation for workers in the retail sales of food shows that they are even worse off as a group than the food-processing workers. The median hourly wages for the three major categories, cashiers (\$8.88), stock clerks/order fillers (\$10.43), and packers/packagegers or baggers (\$9.18) will not meet the basic needs of a single adult. In addition, since many people in retail food sales work part-time, they may be even worse off if they are not working enough hours to get by.

In the sector that involves food preparation and serving, the economic-security situation for fully three-quarters of the occupations (12 out of 16) is grim, if not appalling: the median hourly wage levels for these 12 lowest-paid occupations are all less than \$10 an hour, and thus do not support the basic needs of one individual worker. Only one out of 16 occupations in this sector, foodservice managers, earns an adequate hourly median wage to meet the basic needs of all the household types.

Benefits

A second major issue for any workforce is the availability of benefits, such as health insurance, pensions, paid sick leave, and paid vacation time. The available data on the provision of health care insurance and other benefits do not provide enough detail to provide exact numbers for Maine's food-sector workers. It is safe to conclude, however, that the majority of food-sector workers are unlikely to have adequate and affordable health insurance benefits provided by their employer, given what is known about the provision of these benefits and the nature of the food-related industry sectors and occupations in Maine.

The available data on employer-provided health care insurance in Maine by larger industry groupings found that that only 35.7 percent of establishments in agriculture, fishing, forestry, and construction offered health insurance. Among retail and other services, 50.7 percent of private sector establishments offered health insurance (US DHHS 2009). Although not as specific as the food sectors studied here, this is still indicative of the situation in the food industry.

According to a press release from U.S. Department of Labor's Bureau of Labor Statistics on access to employer-provided health care and other benefits, several categories of workers are less likely to have employer-provided health and other benefits: those in non-unionized jobs; those with lower wages; part-time workers; and employees in smaller work places (available on www.bls.gov).

Unionization in Maine's Food System

There is a low degree of unionization among food-related workers, which has direct implications for wages, access to health and benefits, and working conditions. Although there is no systematic data available on actual percentages of unionization by specific industries in Maine, it is useful to look at what we know about each of these five food sectors in Maine. Based on communications with union staff members in Maine from the Maine AFL-CIO, the Eastern Maine Labor Council, and various individual unions, here is a brief overview of each sector, with notable examples from each where there is any unionization at all.

Food Production. Agriculture and fishing industries are not unionized in Maine.

Food Processing Manufacturing. This sector is partially unionized:

- Coca Cola bottling in Bangor: represented by United Food and Commercial Workers (UFCW) Local 1445; about 30 workers
- Hostess (formerly Nissen) bakery in South Portland: truck drivers outside are represented by the International Brotherhood of Teamsters; bakery workers inside are represented by the Bakery, Confectionery, Tobacco Workers and Grain Millers International Union
- Garelick dairy (formerly Grants): truck drivers are represented by the Teamsters

Food Distribution, Transportation and Warehousing. Partially unionized:

- Hannaford Warehouse, in South Portland: represented by UFCW Local 1445; about 300 workers
- Shaw's warehouse in Wells, Maine: represented by UFCW Local 791; about 300 workers
- Kellogg Warehouse in Auburn, Maine: represented by the Teamsters; about 40 workers.

Food Retail Sales. This sector is not unionized in Maine, apart from affiliated warehouses

Food Preparation and Serving. There is little unionization in this sector.

- UFCW states that there are no unionized restaurants in Maine. Only small numbers of institutional food workers, such as cafeteria workers (e.g., in public schools or universities); represented by a number of different unions.

Several characteristics of the five food sectors in Maine are related to the small likelihood of having employer-offered health care or other benefits:

1. Few food-sector workers are unionized in Maine. (See sidebar for details on unionization in Maine). In particular, there is virtually no unionization among supermarket or supercenter workers, or workers in farming/agriculture, fishing, or private sector restaurants. This has far-reaching implications for pay, benefits, and working conditions.
2. Many food-sector workers work in small establishments.
3. Food-sector workers tend to be in low-paying occupations and jobs.
4. Many workers in food-related occupations work part-time.

For all these reasons, it is likely that many workers in food-related businesses in Maine do not have employer-provided health care or other benefits. In a few cases, large employers of food-related workers may offer types of health insurance that provide only limited coverage or come with high premiums and/or deductibles.

In another recent study of restaurant workers in southern Maine, researchers found that the vast majority surveyed (89.6 percent) did not have employer-provided health insurance (Restaurant Opportunities Center of Maine 2010). A similar percentage of workers, 89 percent, reported that they did not have paid sick days, and 71 percent said that they had been forced to work while they were sick. In addition, 39 percent of the workers in this study did not have any health insurance at all. These findings were largely replicated in similar studies of restaurant workers in other states, so Maine is not unusual in this regard (Restaurant Opportunities Centers United 2010).

Thus the evidence suggests that many of Maine's food sector workers are at risk, either without health insurance at all or with inadequate benefits or unaffordable prices.

WORKING CONDITIONS: WORKPLACE HAZARDS AND OCCUPATIONAL INJURIES

While the five food-related sectors vary widely in their types of work and general working conditions, each of them poses challenges to workers beyond low pay and few benefits.

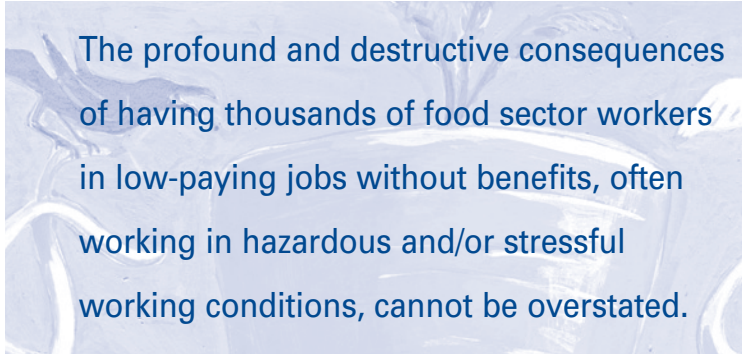
In the food-production sector, both agriculture and fishing involve dangerous work, with much physical labor that is often done outdoors and for long hours. Farmworkers involved in animal care must typically work seven days a week, and the work can often be dangerous. Agriculture involves heavy machinery, which can be hazardous and can result in fatal accidents, and exposure to pesticides. Commercial ocean fishing is also risky due to the dangers of being on the ocean. Fishermen work in boats with complicated and hazardous machinery; every year workers in this industry are seriously injured or lost at sea. According to the U.S. Bureau of Labor Statistics (2011b), the farming, fishing and forestry sector had the highest rate of fatal injuries of any industry in the U.S., with an incidence rate of 27.2 cases per 100,000 full-time equivalent workers. Maine data on nonfatal occupational injuries also indicates that this sector had a higher rate of occupational injuries than average, with an incidence rate of 6.4 cases per 100 full-time workers. By comparison, the average rate for all industries combined was 5.6 cases (US BLS 2011c).

The food-processing or manufacturing sector also involves dangerous work and has a high rate of occupational injuries. The U.S. Bureau of Labor Statistics (2009c) states that “food manufacturing has one of the highest incidences of injury and illness among all industries; seafood product preparation and packaging and dairy product manufacturing have the highest incidence rates of injury and illness among all food manufacturing industries.” For Maine, in 2009 food-manufacturing workers had an incidence rate of 7.3 per 100 full-time equivalent workers for nonfatal occupational injuries and illnesses, which is substantially higher than the average of 5.6 for all industries.

Food distribution, transportation, and warehousing is also associated with a hazardous workplace. This industry sector had the second highest rate of fatal occupational injuries and illnesses nationwide, with

an incidence rate of 13.3 cases per 100,000 full-time equivalent workers. The state data for nonfatal occupational injuries and illnesses for 2009 for transportation and warehousing shows that Maine's workers had a high incidence rate of 8.3 cases per 100 full-time equivalent workers. Grocery wholesalers had a lower incidence rate of 6.8 for that year. Both were higher than the incidence rate for all occupations.

The retail food sales sector also presents workplace hazards to workers although retail trade generally has a low rate of workplace injuries resulting in fatalities (2.2 cases per 100,000 full-time equivalent workers). Particularly in grocery stores, however, nonfatal occupational injuries happen at a fairly high rate. In Maine, the nonfatal injury incidence rate was 9.4, which is the highest for all of the major food sectors in the state. The most common occupational injuries reported were strains and sprains. Workers in this industry are also at a high risk of having repetitive strain or trauma, which is considered an occupational illness rather than an injury (Clarke 2003).



The profound and destructive consequences of having thousands of food sector workers in low-paying jobs without benefits, often working in hazardous and/or stressful working conditions, cannot be overstated.

The food-preparation and serving sector is associated with a number of workplace hazards although it does not have a high rate of fatal injuries. The most common occupational injuries include sprains and strains, cuts and lacerations, bruises and contusions, and heat burns, from hot food and cooking or baking equipment. The incidence rate of nonfatal occupational injuries for this sector in Maine was lower than the average rate of 5.6 for all industries. Full-service restaurants had an incidence rate of 4.2 per 100 full-time equivalent employees, while limited-service eating places had a rate of 2.8.

The recent study of Maine's restaurant workers (Restaurant Opportunities Center of Maine 2010) also documents the range of workplace hazards facing people in this industry, particularly for those working in the kitchen. Among the workers surveyed for this study, 58.3 percent reported that they had been burned and 62 percent that they had been cut while on the job. Restaurant workers also face slippery floors which may result in falls; contact with toxic chemicals; and injuries from lifting heavy objects such as trays of food.

POLICY IMPLICATIONS AND CONCLUSIONS

Maine's food system has a large, growing, and diverse workforce, spread out across numerous industries and dozens of occupations. This is a critical sector of Maine's economy for both employment and business revenues, and this sector offers employment opportunities for many Maine workers.

There are many challenges involving specific industries, too detailed to include in this overview. These range from the problems of overfishing in the fishing industry, to health and safety problems among migrant workers, to economic challenges resulting from global competition, global trade agreements, and other economic pressures in agriculture and food manufacturing. The challenges and conditions facing workers in these sectors may vary, but taken as a whole, three major themes emerge.

First is the widespread issue of low pay and few benefits. The profound and destructive consequences of having thousands of food sector workers in low-paying jobs without benefits, often working in hazardous and/or stressful working conditions, cannot be overstated. Second, employees in all of the sectors in this industry face workplace hazards. Some sectors are particularly dangerous, leading to worker fatalities. A third issue is the lack of an organized voice among workers, in dealing with workplace and employment issues. These issues raise a number of potential policy suggestions for the food-sector workforce.

1. Collective bargaining should be encouraged for Maine's food workforce. Policymakers should make it easier for all workers to unionize, rather than creating additional

obstacles to unions and collective bargaining. Being represented by a union is one of the best strategies for increasing wages and benefits and addressing working conditions. Paid sick days, for example, will protect both workers and consumers, but this is unlikely in the absence of unionization.

2. Occupational injuries and illnesses among food-sector workers can be decreased through a variety of means, such as appropriate workplace restructuring or job redesign, adequate safety training and safety equipment, and more frequent breaks to help prevent fatigue. Workplace health and safety regulations should be strengthened and enforced to protect workers on the job.
3. Benefits such as affordable and adequate health insurance should be available to all workers, including part-time workers, and not simply as part of one's employment. Those who are self-employed (most farmers and fishermen) or who run small businesses should have expanded access to affordable coverage. The recent legislative reforms in health care in the U.S. may result in greater coverage for proprietors and employees in small businesses, which are at the core of the food system.
4. Other policies to address wage levels should be developed and passed into law, such as increasing the minimum wage, working towards developing livable wages, and increasing wages for tipped employees.
5. Violations in employment laws that govern labor standards, collective bargaining, discrimination, and other areas should be strictly enforced by state and federal agencies.

As stated in the study of Maine's restaurant workers mentioned earlier, state policies should encourage "high road" employment among the state's food-related workforce (Restaurant Opportunities Center of Maine 2010). In addition to benefiting workers themselves, the state's population will also benefit from having safer and healthier workers,

healthier food for consumers, and a thriving Maine economy. 

ACKNOWLEDGMENTS

I would like to thank several people for their assistance and guidance with this article. For questions and help with locating and understanding labor force data: Merrill Huhtala, Betty Dawson, and Dana Evans, at the Maine Department of Labor. For information on labor unions and union representation in Maine: Matt Schlobohm, Sarah Bigney, and Tracy Allen, Maine AFL-CIO; William Murphy and Gary McGrane, Bureau of Labor Education, University of Maine; Jack McKay, Eastern Maine Labor Council; MaryAnn Turowski, MSEA-SEIU Local #1989; Mark Govoni and Dennis Norton, UFCW Local #1445; John Jordan and James Anderschat, Bakery, Confectionery, Tobacco Workers And Grain Millers International Union, Local #334; Ken Eaton and Alan Churchill, Teamsters Union Local #340, Jerry Ashlock, American Federation of Teachers; David Lowell, International Association of Machinists and Aerospace Workers; Ross Ferrell, Maine Education Association; and Martin Chartrand and Laura Binger, Food AND Medicine. For assistance in obtaining health insurance data: Andrew Coburn and Lisa Morris, Muskie School of Public Service, University of Southern Maine. I am, of course, solely responsible for the content here and for the compilation and interpretation of labor force data; any errors or miscalculations are my responsibility alone.

ENDNOTES

1. Food Retail World; <http://www.foodretailworld.com/LeadingRetailers.htm>
2. http://money.cnn.com/magazines/fortune/fortune500/2011/full_list/index.html
3. The decline in the number of units for food and beverage stores can be partly explained by two factors. First, since these numbers include local, state, and federal government, the statistics reflect the closure of several commissaries that were included in this category (Betty Dawson, personal communication, 2011). Dawson also states that the smaller number of units in 2010 is due in part to corrections in the data and coding in later years.

4. For example, between 2005 and 2009, new Walmart Supercenters with grocery departments opened in Bangor, Brewer, Brunswick, Ellsworth, Sanford, and Scarborough.
5. Walmart employs 7,433 people in Maine, according to their web site. With three Sam's Clubs and a large distribution center in Lewiston, Walmart alone probably employs a few thousand people in Maine dealing with food; these figures are not included in the numbers shown in Table Two.

REFERENCES

- Center for Workforce Research and Information (CWRI). 2011. Top 50 Employers in Maine by Employment. CWRI, Maine Department of Labor, Augusta. <http://www.maine.gov/labor/cwri/publications/pdf/MaineTop50Employers.pdf> [Accessed June 19, 2011]
- Clark, Jeff. 2008. "Invisible Mainers." *Downeast Magazine* (August). <http://www.downeast.com/Down-East-Magazine/August-2008/Invisible-Mainers> [Accessed June 19, 2011]
- Clarke, Cynthia M. 2003. Workplace Injuries and Illnesses in Grocery Stores. Bureau of Labor Statistics, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/opub/cwcc/sh20031216ar01p1.htm> [Accessed June 19, 2011]
- Hegewisch, Ariane, Claudia Williams and Amber Henderson. 2011. The Gender Wage Gap by Occupation. Institute for Women's Policy Research, Washington, DC. <http://www.iwpr.org/publications/pubs/the-gender-wage-gap-by-occupation-updated-april-2011/> [Accessed June 19, 2011]
- Liu, Yvonne Yen and Dominique Apollon. 2011. The Color of Food. Applied Research Center, New York. http://arc.org/downloads/food_justice_021611_F.pdf [Accessed June 19, 2011]
- Pease, Ruth. 2009. Maine Livable Wage in 2008. Center for Workforce Research and Information, Maine Department of Labor, Augusta. <http://www.maine.gov/labor/cwri/publications/pdf/LivableWageReport2008.pdf> [Accessed June 19, 2011]

Restaurant Opportunities Center of Maine. 2010. Behind the Kitchen Door: Low Road Jobs, High Road Opportunities in Maine's Growing Restaurant Industry. http://www.rocunited.org/files/MAINE_FINAL_edit0119.pdf

Restaurant Opportunities Centers United. 2010. Serving While Sick: High Risks and Low Benefits for the Nation's Restaurant Workforce, and Their Impact on the Consumer. Restaurant Opportunities Centers United. New York. http://www.rocunited.org/files/roc_servingwhilesick_v06%20%281%29.pdf [Accessed June 20, 2011]

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA NASS). 2009. 2007 Census of Agriculture. USDA NASS, Washington, DC. http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Maine/cp99023.pdf [Accessed June 19, 2011]

U.S. Bureau of Labor Statistics (US BLS). 2009a. Career Guide to Industries, 2010-11 Edition, Grocery Stores. BLS, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/oco/cg/cgs024.htm> [Accessed June 19, 2011]

U.S. Bureau of Labor Statistics (US BLS). 2009b. Career Guide to Industries, 2010-11 Edition, Food Services and Drinking Places. BLS, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/oco/cg/cgs023.htm> [Accessed June 19, 2011].

U.S. Bureau of Labor Statistics (US BLS). 2009c. Career Guide to Industries, 2010-11 Edition, Food Manufacturing. BLS, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/oco/cg/cgs011.htm> [Accessed June 19, 2011].

U.S. Bureau of Labor Statistics (US BLS). 2011a. Labor Force Statistics from the Current Population Survey. Table 11. Employed Persons by Detailed Occupation, Sex, Race, and Hispanic or Latino Ethnicity. BLS, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/cps/cpsaat11.pdf>[Accessed June 19, 2011]

U.S. Bureau of Labor Statistics (US BLS). 2011b. "Number and Rate of Fatal Occupational Injuries, by Industry Sector, 2009." Census of Fatal Occupational Injuries (CFOI) - Current and Revised Data. BLS, U.S. Department of Labor, Washington, DC. <http://www.bls.gov/iif/oshwc/cfoi/cfch0008.pdf> [Accessed June 20, 2011]

U.S. Bureau of Labor Statistic (US BLS). 2011c. "Table 6: Incidence Rates of Nonfatal Occupational Injuries and Illnesses by Industry and Case Types, 2009." State Data for Nonfatal of Occupational Injury and Illness Cases. <http://www.bls.gov/iif/oshwc/osh/os/pr096me.pdf> [Accessed June 20, 2011]

U.S. Department of Health and Human Services (US DHHS). 2009. Medical Expenditure Panel Survey, Table V.A.2 Percent of private-Sector Establishments that Offer Health Insurance by Industry Groupings. Agency for Healthcare Research and Quality, US DHHS, Rockville, MD. http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/insr/state/series_5/2009/tva2.htm [Accessed June 19, 2011]



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