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Literature Review: Agricultural and Fish Processing

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Table of Contents

Executive Summary	iv
1. Introduction	1-1
1.1 Background	1-1
1.2 Area Of Inquiry	1-1
2. Industry Profiles	2-3
2.1 Seafood Processing	2-3
2.1.1 How is the seafood processing industry organized?	2-3
2.1.2 What are the typical activities that take place in seafood processing plants?	2-4
2.1.3 Who are seafood processing workers and how do they move into and out of the industry?.....	2-5
2.1.4 What kinds of “processing” jobs do seafood processing workers perform?	2-9
2.2 Livestock Processing	2-11
2.2.1 How is the livestock processing industry organized?.....	2-11
2.2.2 What are the typical activities that take place in livestock processing plants?	2-13
2.2.3 Who are livestock processing workers and how do they move into and out of the industry?.....	2-13
2.2.4 What kinds of “processing” jobs do livestock processing workers perform?	2-16
2.3 Poultry	2-20
2.3.1 How is the poultry processing industry organized?	2-20
2.3.2. What are the typical activities that take place in poultry processing plants?	2-21
2.3.3 Who are poultry processing workers and how do they move into and out of the industry?.....	2-22
2.3.4 What kinds of “processing” jobs do poultry processing workers perform?	2-24
2.4 Dairy Processing	2-28
2.4.1 How is the dairy processing industry organized?.....	2-28
2.4.2 What are the typical activities that take place in dairy processing plants?	2-29
2.4.3 Who are dairy processing workers and how do they move into and out of the industry?.....	2-30
2.4.4 What kinds of “processing” jobs do dairy processing workers perform?	2-31

2.5	Agricultural Processing	2-34
2.5.1	How is the agricultural processing industry organized?.....	2-34
2.5.2	What are the typical activities that take place in agricultural processing plants?	2-35
2.5.3	Who are agricultural processing workers and how do they move into and out of the industry?.....	2-36
2.5.4	What kinds of “processing” jobs do agricultural processing workers perform?	2-38
3.	Use of Industrial Surveys	3-1
4.	References	4-1

Executive Summary

One of the responsibilities of migrant education program officials is to determine what families meet the criteria for being “migrant.” Part of the current definition of “migrant” makes reference to work done in the food processing industry. This review provides information on the five main food processing industries, the workers, and the seasonality of the work. General findings are given below. Findings specific to each of the five main industries are found in sections organized by research question and processing industry: seafood, livestock, poultry, dairy, and agricultural.

- **Food processing relies heavily on migrant and new-immigrant workers.** Many workers come from Mexico, sometimes arriving via work in agricultural harvesting. The high turnover rate in food processing means that new workers are always in demand and local labor pools are insufficient. Dairy processing is the exception, in that a large proportion of the workers have had some postsecondary education and fewer workers are immigrants.
- **Recruitment is largely based on social networks and family ties.** Workers spread the word about employment opportunities and assist one another in traveling to the place of employment. Social ties also serve as a form of worker control in that a worker must weigh the consequences of making trouble with an employer when close friends and family members are also employed by the same company.
- **Seafood and agricultural processing are the most seasonal industries.** The other three industries reviewed have better control over their raw materials and so can maintain a steadier flow of work.
- **Food processing work is poorly paid and boasts one of the highest injury rates in all of manufacturing.** The most common injuries are ones due to repetitive stress, as workers stand on a processing line and repeat the same one or two cuts on thousands of carcasses per day.
- **Turnover rates are high, and data regarding these rates are largely unavailable.** With a history of controversy over injuries and hiring practices, processing employers do not readily divulge worker records. Researchers in the field are confident, however, that turnover rates are much higher for workers in the more physically demanding jobs on the line than they are for management. Further, Latinos and women are more likely to be in those lower paid, higher risk positions.

1. Introduction

1.1 Background

Title I, Part C, Education of Migratory Children of the Elementary and Secondary Education Act (ESEA), as amended by the No Child Left Behind Act of 2001, authorizes the Secretary of Education to make grants to State Educational Agencies (SEAs) to help ensure that migrant children have the opportunity to meet the same challenging content and achievement standards that all children are expected to meet and graduate from high school so as to be prepared to successfully transition to postsecondary education or employment.

Under the Migrant Education Program (MEP), the SEA is responsible for the proper and timely identification and recruitment of all eligible migrant children in the State, including securing pertinent information to document the basis of a child's eligibility. Children are eligible to receive MEP services if they meet the definition of “migratory child” and if the basis for their eligibility is properly recorded on a certificate of eligibility (COE) or other written or electronic form. The term “migratory child” is defined in section 1309(2) of the statute and section 200.81(d) of the regulations. Determining whether a child meets this definition is often difficult and depends on a recruiter's assessment of information presented by a parent or other family member, guardian, or other individual responsible for the child.

Part of the work that qualifies a family as “migrant” is agricultural and fish processing. **Agriculture** is defined as activity directly related to the production or processing of crops, dairy products, poultry or livestock for initial commercial sale or personal subsistence. **Fishing** activity means any activity directly related to the catching or processing of fish or shellfish for initial commercial sale or personal subsistence.

1.2 Area Of Inquiry

The U.S. Department of Education (ED) identified a need for additional information in four areas: determining (1) what ~~agricultural or fish~~ kinds of processing work should be defined as an agricultural or fishing activity, (2) which agricultural or fish processing activities are temporary or seasonal in nature, (3) what labor migration patterns exist for jobs in the agricultural and fish processing industries, and (4) how to appropriately design and use surveys to determine that work—that may appear to be permanent—is actually temporary for purposes of making eligibility determinations for the MEP.

To address this need for information, RTI conducted a review of the literature from three main sources: government reports of industry characteristics, company materials written by the industries themselves, and sociological research concerning the workers. These sources were each used to answer the questions for which they were most appropriate. For example, company promotional materials were quite useful for gathering information on number and location of plants, but were not as reliable for describing issues related to working conditions or hiring practices.

The specific research questions are presented below. Findings are organized according to type of processing industry, with sections on seafood, livestock, poultry, agricultural and dairy processing.

Research Questions

- (1) **What are the definitions of agricultural and fish processing?** What are the major agricultural and fish products that are processed? At what point does processing terminate and the manufacturing (e.g., second stage processing) begin?
- (2) **How are these processing industries organized** (i.e., by what types of products)? Who are the major companies that are engaged in each of the processing industries? Where are the processing plants located? What is the range and distribution of plants by size (e.g. number of workers, processing capacity)?
- (3) **What typical activities are performed in each type of plant?** Do these plants process these products and other products? Is the processing of raw agricultural and fish products a different type of industry than the processing of these refined products?
- (4) **What is the demographic profile of processing workers?** Does this profile differ by processing industry? **To what degree do these industries rely on local labor and/or people who migrate from other locales?** Are the workers who move to secure these processing jobs considered migrants? **How do they become aware of employment opportunities?** Are there patterns in terms of when they typically arrive and depart? **How long do they plan to stay in an area where they find work in a processing plant?** What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)? What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing? What is the percentage of the processing workers have moved previously to work in processing?
- (5) **What kinds of “processing” jobs do workers perform?** Under what kinds of employment terms and conditions do people work in these jobs? **What are turnover rates** for each particular processing industry and for particular types of “processing” jobs in each processing industry? How long does the average “processing” worker remain employed with the same company? Which of these jobs might be considered temporary or seasonal in nature? To what extent do workers rotate among jobs within a plant versus specializing in a particular job?
- (6) **How can “industrial surveys”** (see Chapter II, section L of the draft non-regulatory MEP guidance) **be used appropriately** to determine that work that might appear on its face to be permanent is actually temporary for purposes of making eligibility determinations for the MEP? What other kinds of analyses could be performed to reliably document work that might appear on its face to be permanent is actually temporary for purposes of making eligibility determinations for the MEP?

2. Industry Profiles

2.1 Seafood Processing

Seafood processing is highly seasonal, with plants shutting down for anywhere from a few weeks to a few months every year (Griffith 1995). Seafood processing is more varied than the other types of processing due to the wider variety of materials processed, the greater number of sources for those materials, and a much lesser degree of control over the raw materials (i.e., quantity and quality). A recent increase in consumer demand for seafood has increased the demand for labor in this industry.

2.1.1 How is the seafood processing industry organized?

Because of characteristics unique to the seafood industry, such as common access to the places of harvest and the lack of a federal inspection program, smaller processors are able to succeed alongside larger companies. Griffith (1995) describes the continuum of processing found in North Carolina, starting with family processing. **Fishing**

families sometimes prepare their catch for immediate sale in their homes, boathouses, or some other workspace nearby. These operations rarely employ anyone outside of the fisher's family. When fishing households band together, they can become certified by the state as a "seafood house." This usually entails a centralized processing location. The next level of seafood processing is **packer-shippers**, who serve to ice down the fish as they come off the boats, sometimes grade the fish, and then ship them to other locations for sale or further processing.

Seafood plants are at the next level of processing and characterize the processing done in the coastal zone (southern Delaware and Maryland to Texas). Seafood plants may haul in their own seafood or buy from fisherman or dealers. Workers are usually paid by a piece rate (rather than hourly) and much of the workforce is related within and across plants. Plants in inland regions, north of Baltimore, or on the Pacific coast tend to have a more factory-like structure. **Mariculture and aquaculture operations** are very similar to poultry processing in that there is a steady supply of raw materials of consistent size and quality so that procedures may be streamlined. Workers are paid on an hourly basis and are often unionized. The highest level of processing occurs in **further-processing plants** such as canning facilities, breating/freezing plants, fish paste plants, and plants that produce cooked and branded products such as those found in the supermarket.

Major Seafood Processing Employers:

- Campbell Soups
- ConAgra (shrimp; frozen seafood)
- General Mills/Red Lobster
- Oscar Mayer/Kemp Seafood (further-processed seafood)

Source: Stull & Broadway 1995

Distribution of plants by size (from greatest to smallest number of employees):

AK, CA, WA, MS, FL,
MA, LA, TX, AL, NJ,
VA, ME, OR, GA, MD,
NC, PA, RI, NH, NY,
CT, SC

Source: NMFS 2002



How many seafood plants are in operation? Where are they located?

As of 2002, there were approximately 996 seafood processing plants employing 48,900 workers (NMFS 2002). Close to 40 percent of these plants (388) are in the **Pacific region**, in Alaska, California, Oregon, and Washington. About 22 percent (223) are in the **Gulf region**, including Alabama, Louisiana, Mississippi, and Texas, 14 percent (137) in the **south Atlantic** states of Florida, Georgia, North and South Carolina, and 12 percent (124) in the **New England** area of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island. A small proportion of the plants are in the **mid-Atlantic** states (77 in Delaware, Maryland, New Jersey, New York, Pennsylvania, and Virginia).

2.1.2 What are the typical activities that take place in seafood processing plants?

Seafood processing workers “primarily scale, cut, and dress fish by removing the head, scales, and other inedible portions and cutting the fish into steaks or fillets” (BLS 2004). The raw materials of seafood processing are more varied than those in other processing industries. Consequently, there is a broader range of processing activities. North Carolina is a state with a great number and variety of processing plants, so Griffith (1993) uses this state as a case study of the types of activities that take place in seafood plants, including shucking scallops and oysters, picking meat from blue crab, and sorting and packing shrimp, finfish, and clams.¹

Shucking scallops is a procedure that requires little technological investment and is often done by the fishing families themselves. Shucking houses may employ a few permanent workers, but much of their income derives from fishing families paying a set price per gallon of scallop meats to use the shucking facilities. Again, “fishermen rely heavily on kinship to process their catches” (p.71) and social relationships strongly influence what shucking facility they use.

Another set of processing activities relates to **picking and shucking blue crab and oysters**. Workers in these plants are crab pickers, oyster shuckers, management personnel, or workers who perform duties as needed, such as maintaining equipment, replenishing piles of crab or oysters in front of the processors, or unloading shipments. Finally, there are the activities related to **sorting and packing shrimp, finfish, and clams**. These activities are the ones that serve to tie over a very small number of workers between seasons in crab and scallop houses.

Do individual seafood processing plants process more than one type of seafood?

As mentioned above, seafood plants will sometimes turn to processing other seafood materials when their primary food source is in its off-season. This seems to be done largely to retain year-round regular or more valued employees, so these secondary activities are usually on a much smaller scale. For example, some crab houses retain their better workers during the off-season by cutting finfish in winter, but most do not (Griffith 1995).

¹ The processing of menhaden is also part of the seafood processing industry. However, we do not include it in our discussion because the final product is not for human consumption.



2.1.3 Who are seafood processing workers and how do they move into and out of the industry?

As in other processing industries, unskilled laborers working for low wages make up the majority of seafood processing workers. Women do much of the processing work, especially in crab, oyster, and shrimp facilities. Men also have roles in the plants; for example, in shucking facilities, women do the shucking while men replenish the tables with scallops to be processed.

While gender divisions of labor have remained constant, the racial composition of the workforce is changing. Local labor pools are aging and younger people are seeking work outside the processing industry (Griffith 1993, Selby 2001). In his studies in North Carolina, Griffith (1993, 1995) has noted that workers used to be from the local black population, but there is a growing trend towards using Mexican immigrants. By 1993, 75 percent of crab pickers in Eastern Carolina were Mexican women (Selby 2001). An overview of characteristics of seafood processing workers in North Carolina is provided below. However, it should be noted that these data are more than 10 years old and worker demographics have been rapidly shifting during that time.

Major Seafood Products Processed:

- Breaded shrimp
- Canned clams
- Canned fishery products (some for human consumption, some for bait/animal food)
- Canned salmon
- Canned sardines
- Canned tuna
- Fish fillets and steaks
- Fish meal
- Fish oils
- Fish sticks and portions
- Frozen fish products (shrimp, salt-water fillets and steaks)
- Other canned items (pet food, etc.)

Source: NMFS 2002

Selected Characteristics of Processing Workers by Species Processed

	Crab	Oysters	Scallops	Shrimp	Finfish
# workers in plant	24.6	36.5	19.7	29.3	23.3
# years in seafood processing	11.7	20.1	9.5	14.1	9.1
# months per year in seafood processing	8.7	9.1	6.3	6.3	7.9
% worker type:					
Seasonal	45.1	70	100	92.9	57.1
Permanent	54.9	30	0	7.1	42.9
% gender of worker:					
Male	9.8	10	26.7	7.1	33.3
Female	90.2	90	73.3	92.9	66.7

Source: Griffith 1993. Reproduced with permission of the author.



How do they become aware of employment opportunities?

Workers at seafood processing plants are part of a vast network of relatives and social acquaintances through which much of the recruitment takes place. This network pulls workers into the plants via those already employed and for some types of seafood (i.e., scallops and shrimp) extends to connections between those who harvest the seafood and those who process it.

In a survey of North Carolina scallop workers, Griffith (1993) found that at 5 randomly selected shucking facilities, only 13 percent of respondents had no direct kinship link to a scallop fisherman. Direct kinship relationships between harvesters and processors are not as common in the crab picking industry, but they are still present within plants. Griffith found that 60.9 percent reported having relatives who worked in the same plant.

While more employers are making use of the H-2B visas² and extending their recruitment efforts far beyond local labor markets to Mexico, the pull of these social networks remains strong.

In the crab industry, recruitment techniques reveal that blend of labor contracting and network recruiting so common among foreign-born workers in agriculture...In 1993, 21.4% of the H-2B workers had been contacted about their US jobs by labor contractors, while 63.1% had been contacted by friends or relatives. Typically, labor contractors recruit using network ties, which would yield proportions such as these. Once workers are recruited, however, labor contractors usually assume more active roles in their performance on the job...Labor contractors arranged for the visas and traveling arrangements of 67% of H-2B workers coming to the Mid-Atlantic crab-picking plants (Griffith 1995, p. 181).

Similarly, another description of Mexican workers in the crab industry emphasizes familial and social connections.

...the women possessed various informal links to their destination before making the move. All of them have other family members, or friends, working in the Eastern Carolina region, and were aware that they would be able to maintain their own extended community network, albeit at irregular intervals (p.246).

The social interdependence of plant owners, process workers, and harvesters varies according to type of seafood. Scallop shuckers are often women who are related to each other and to the male fishermen who supply the scallops (Griffith 1993). Owners of scallop shucking facilities are related to fishing families either by kinship or by relationships of credit. Crab pickers and oyster shuckers are usually black women who have no kinship links to the owners of the processing houses.

Scallop- and shrimp-processing labor and harvesters tend to be members of the same family or the same community of relatives and friends. By contrast, there exist absolutely no close kinship or friendship ties between processing

² H-2B visas allow employers to hire foreign workers to come to the U.S. and perform temporary nonagricultural work, which may be one-time, seasonal, peak load, or intermittent, but must last less than one year (ETA 2004).



employees, the people who mobilize them to process (plant owners/managers), and the harvesting sector in the blue crab and oyster components of the industry (Griffith 1995, p. 137).

To what degree do seafood plants rely on local labor versus those who migrate from other locales?

This is a timely question and one to which the answer is rapidly changing. Only a decade ago, Griffith (1993) described the seafood processing workers in North Carolina as “quite stable.”

Seafood processing workers are quite stable with regard to residence. Nearly half (48%) of the population live in their natal communities, and nearly ¾ (73.5%) live within 25 miles of their city of birth. Of the remainder, only 10.8% live more than 100 miles from where they were born. In the field, I encountered only 2 women who had relatively complex histories of internal migration...Of those who moved to nearby communities (~25%), the principal reasons they gave for the move were either marriage or that they moved along with their parents. Rarely, in less than 4% of cases, was “to find work” given as their reason for moving, although certainly those who moved with parents or spouses could have been moving for economic reasons (p. 120).

Just two years after that was published, the same author described the growing use of immigrant workers from Mexico, brought in because they are more profitable to employ and local populations were aging or moving away from seafood processing (Griffith 1995). According to a survey of crab house owners in North Carolina (Selby 2001), “participation in the H2 [immigration] program was prompted by changes in the labor pool of the poultry processing industry, which began to draw on migrant labor in the 1980s. The immigration procedures required for such recruitment were disseminated via word of mouth, as were the names of contacts in the Mexican crab processing industry” (p.238).

Isolated by language and culture, these immigrant workers are more susceptible to labor control and therefore set the standards for wages, working conditions, and productivity. Often far from home and heavily reliant on employers for housing and transportation, immigrant workers register fewer complaints and exhibit a higher work ethic than native workers.

On top of the subtle powers that derive from class and race in southern communities, employers’ strategies include providing workers with transportation to and from work, using kinship and network ties between workers to enhance authority over workers, and, with Mexican employees, providing housing and having a legal basis for keeping workers confined to the job. (Griffith 1995, p.167)

Mexican workers are twice disadvantaged in their ability to challenge their employers or leave for other jobs.

...if local pickers were unhappy with their particular situation, they could make their feelings known through those informal social networks of which



both they and their employers were a part, or they could walk out of the job into another crab house or another low-wage job. For the Mexican women recruited into Eastern Carolina, neither of these options is viable. Instead, any attempt to challenge particular working conditions must be channeled through state bureaucratic networks, and so becomes a much more serious, time-consuming endeavor (Griffith 1995, p.246).

Since the first use of Mexicans in seafood plants in 1988, the H-2B program has grown. “By 1992, visa requests for 1,150 migrant workers had been processed for the crab houses, and by 1993 75% of the crab pickers in Eastern Carolina were Mexican women” (Selby et al 2001, p. 238).

Unlike the immigrant laborers in other industries, the crab labor force is made up of women, about half of whom are married with children (Griffith et al 1994 as cited in Selby et al. 2001). The women do not necessarily come to the United States alone however. In a case study of one North Carolina crab house, many of the women working there had husbands working elsewhere in the state, usually in another industry such as wood processing.

Are the workers who move to secure these processing jobs considered migrants? Are there patterns in terms of when they typically arrive and depart? How long do they plan to stay in an area where they find work in a processing plant?

The two groups of laborers described so far are native workers, and those in the United States with H-2B visas. Local laborers rely on other parts of the local economy or unemployment benefits to live during the off-season, and are not mobile (Griffith 1993). Though they may not be considered migrant per se, local laborers may only work in seafood processing sporadically. Shrimp and herring fisheries process seafood for very short time periods (1 to 10 weeks, once or twice a year). These industries therefore rely on casual labor recruited “on the spur of the moment” from among local labor force; “many workers...simply show up at the processing plant during the processing season on an irregular basis, suggesting that a large portion of workers are casual wage laborers” (Griffith 1993, p. 79).

Clearly those from Mexico are considered “migrant” by their adopted communities, though their visas restrict their movements to other occupations or even other employers. Since they are legally prohibited from working elsewhere, it must be assumed that employers are able to support them year round. The literature does not contain information on how long workers remain with their employers or what their plans were when they arrived.

What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)?

The primary reason for seeking other employment most often alluded to in the literature is dissatisfaction with the current working conditions. However, injuries, particularly carpal tunnel syndrome, undoubtedly cause a portion of workers to leave plants each year. It is possible that plant managers could provide insight into the question of why workers leave, but in the general literature, there are no solid data that address this question.



What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing?

No information found.

What percentage of seafood processing workers have moved previously to other work within processing?

There is limited information that directly answers this question, though we can make some informed speculations based on the research that has been done. Griffith (1993) discusses the issue of workers moving between plants, but his sample is somewhat dated in that workers were still native at the time of his study. Employers did complain of high turnover rates and the ease with which dissatisfied workers could find jobs at competing plants. However, this would not be the case for Mexican workers in the country with H-2B visas which restrict them to work with one specific employer. Nor is it likely to be as easy to move between jobs for migrant workers who have fewer ties to the community than natives do.

2.1.4 What kinds of “processing” jobs do seafood processing workers perform?

The different levels of processing facilities were described above in section 2.1.1. For those workers employed in actual processing plants (as opposed to home-based businesses), the work they do is repetitive, physically tiring, and unpleasant, especially the odor of the work area.

There are large vats for cooking the seafood in one part of the plant. In another part are long tables of various heights for sitting and standing where the cooked meat is removed from the main part of the shell by the pickers using slightly curved, two-inch bladed knives, and from the claw with a heavier blade knife. Mounds of raw shrimp, scallops or oysters, as well as cooked crabs, are placed in the center of the table, and as the meat is removed it is placed in plastic tubs for weighing (Selby 2001, p.237).

Under what kinds of employment terms and conditions do people work in these jobs?

As with all other food processing work, seafood processing is characterized by low wages and few benefits. “Throughout the crab processing industry pickers are paid a piece rate for each pound of meat produced...The job does not provide health insurance, paid sick leave or paid vacation (Selby 2001, p. 236).” The median annual income for seafood processing workers is \$15,660 (BLS 2004).

What are turnover rates for each particular processing industry and for particular types of “processing” jobs in each processing industry?

No information found.

How long does the average “processing” worker remain employed with the same company?

No information found.



Which seafood processing jobs might be considered temporary or seasonal in nature?

Seasonality of seafood processing jobs is determined by type of seafood being processed. Plants that specialize in crab and oysters rely heavily on imports of the raw materials in order to maintain a year-round supply. Still, crab and oyster houses experience seasonal fluctuations such that workers often collect unemployment or seek other temporary jobs during winter months. Crab picking season runs from March to November, when crab houses scale back or shut down (Griffith 1995). Oyster houses are busiest during the fall months, especially November and December, and some remain open all year round except for August. Both crab and oyster work is steadier than scalloping due to a greater reliance on imported materials to create a year-round supply.

Scallop processing season usually lasts from early December to mid-May, but can fluctuate by a month on either end due to ecological conditions (Griffith 1993, p. 72). During scalloping season, the work is further restricted by regulations designed to ensure speedy processing of a fast-deteriorating product. "Regulations allow scalloping two days per week, Mondays and Wednesdays, for the nineteen-to-twenty-three week season" (Griffith, 1993, p.70)

To what extent do workers rotate among jobs within a plant versus specializing in a particular job?

No information found.



2.2 Livestock Processing

There are a number of significant differences between livestock and seafood processing. Livestock processing is not seasonal, but possibly employs a greater number of migratory workers than seafood processing does, due to extremely high turnover rates. The work is physically demanding, as well as very dangerous. The industry is concentrated in the Midwest, where major employers built their processing plants to be closer to where the livestock originates. Similar to the seafood industry, a large proportion of livestock processing workers are Hispanic.

2.2.1 How is the livestock processing industry organized?

The industry is dominated by a few large employers. Just five companies handle 89 percent of the beef slaughtering (Encyclopedia of American Industries 2004g), and the pork industry is similarly concentrated. Historically, plants were located in urban areas, requiring that animals be shipped for processing. IBP (now Tyson) revolutionized the industry in 1961 by relocating its plants to rural Nebraska and Iowa. This cut the costs associated with shipping animals, but also positioned plants in areas where the local population is not always sufficient to provide all the workers needed.

At what point does processing terminate and manufacturing begin?

There is a distinction made between the processing done to render a live animal into wholesale cuts, and the further processing done to the meat to produce cuts or products ready for retail sale. These activities appear to take place at separate facilities in the livestock processing industry.

How many livestock plants are in operation? Where are they located?

Overall estimates for pork and beef production by state are provided in the tables below. Tyson (IBP) is the largest livestock processor, with 12 beef processing plants, 8 pork processing plants, 36 “prepared food” processing plants, 3 “case-ready” beef and pork processing plants, and 1 “fully cooked beef and pork” processing plant (Tyson 2003). Cargill is also a top livestock processor, with 6 beef processing plants, 2 pork processing plants, 4 beef/pork further processing plants, and 3 case ready processing plants (Cargill 2004).

Major Livestock Processing Employers:

Beef:

- Tyson (IBP)
- Cargill (Excel)
- ConAgra (Swift)*
- Farmland National Beef Packaging Co.
- Smithfield

Pork:

- Tyson (IBP)
- ConAgra (Swift)*
- Cargill (Excel)
- Smithfield

Source: Encyclopedia of American Industries 2004g

*ConAgra sold its beef and pork plants in 2003 (ConAgra 2004).

Top five slaughtering states:

Beef: NE, KS, TX, CO, WI

Pork: IA, NC, IL, MN, NE

Source: USDA 2004



Livestock processing plants are in rural settings, which reduces the cost of shipping animals from farms to be processed. IBP has plants in the following states: Idaho, Illinois, Iowa, Kansas, Nebraska, Texas, Washington, and Wisconsin (Tyson 2003). Cargill has plants in Colorado, Kansas, Nebraska, Pennsylvania, and Texas.

Top Pork Producing States

State	Head Slaughtered	Pounds Liveweight (in thousands)
Iowa	28,832	1,639,312
North Carolina	10,224	2,596,812
Illinois	9,216	2,494,817
Minnesota	8,843	2,311,841
Nebraska	6,945	1,827,457
Indiana	6,953	1,796,449
Oklahoma	4,546	1,274,148
South Dakota	4,306	1,122,733
Virginia	4,124	1,064,738
Pennsylvania	2,628	648,983
Kentucky	2,238	588,903
California	2,429	564,027
Tennessee	686	330,309
Ohio	1,198	315,511
Wisconsin	463	201,411

Source: USDA 2004b

Top Beef Producing States

State	Head Slaughtered	Pounds Liveweight (in thousands)
Nebraska	7,862	10,143,727
Kansas	7,404	9,112,096
Texas	6,472	7,675,296
Colorado	2,596	3,309,943
Wisconsin	1,665	2,209,482
California	1,294	1,667,314
Pennsylvania	1,041	1,328,715
Illinois	942	1,164,745
Washington	853	1,061,005
Minnesota	772	1,057,677
Idaho	828	1,023,273
Iowa	687	870,451
Utah	647	797,399
Arizona	577	760,219
Michigan	456	633,312

Source: USDA 2004b



2.2.2 What are the typical activities that take place in livestock processing plants?

There are four main operations involved in beef and pork production (Tyson 2003):

Stages of Beef Production	Stages of Pork Production
Cow/calf operation	Sow/farrowing barns
Stocker operation	Nurseries
Feedlot operation	Finishing farms
Packer/processor	Packer/processor

When animals reach a slaughter weight (900 to 1,400 pounds for cattle, 250 pounds for pork), they are sold to processing plants. At the plants, the animals are slaughtered and processed into wholesale cuts, or “boxed beef” or “boxed pork.” These wholesale cuts are then sold to further processors, retailers, or foodservice operators who produce a consumer-ready product. However, livestock processors are starting to extend their production to include “value-added” products, meaning case-ready meat and fully cooked meat items under consumer brand names.

Do individual livestock processing plants process more than one type of livestock?

Processing plants are organized by types of livestock processed and by level of processing needed. There are beef plants, pork plants, plants where meats are prepared for the consumer, plants that produce “case-ready” beef and pork, meaning meat that is ready for distribution to supermarkets, and plants that produce fully cooked beef and pork. During the 1960s when the industry was transitioning from urban processing plants to rural ones, multi-storey plants that processed a number of types of livestock were streamlined into one-storey buildings that processed only one type of livestock.

2.2.3 Who are livestock processing workers and how do they move into and out of the industry?

“The stereotypical meatpacking worker is a young, single male; however, packers admit targeting women in recruitment—they are seen as less mobile and more docile than their male counterparts. Company officials initially projected 60% of their processing workers (the majority of hourly employees) to be women, many single mothers” (Gouveia & Stull 1995, p.99).

In 2001, there were 219,157 meat processing workers (U.S. Census 2002). The livestock processing labor force is made up of native and migrant populations, skilled and unskilled workers. A large proportion of the workforce is Hispanic, though South-

Major Livestock Products Processed:

Cattle, hogs, goats, and sheep are cut into large wholesale cuts, such as:

- Rounds
- Loins
- Ribs
- Chucks

Further processing may take place to make the larger cuts into ones ready for retail sale, such as:

- Hamburger meat
- Meat trimmings used for sausage, luncheon meat, and other fabricated meat products.

Source: BLS 2004



east Asians have also populated these processing plants. Workers who are white have usually been employed longer and therefore work the dayshift, get priority for less physically strenuous positions along the production line, and are more likely to be in management positions (Stull & Broadway 2004). In contrast, Hispanic workers are more likely to be paid on an hourly basis, work in physically demanding jobs, and experience a higher turnover rate.

How do they become aware of employment opportunities?

Just as in most food processing industries, livestock processing employers “rely heavily on network recruiting, which effectively ‘subcontracts’ to workers a portion of the time and effort it takes to locate, relocate, train and supervise new employees” (Griffith et al 1995, p. 11). When workers return to their hometowns in Mexico, they spread word of employment opportunities at their plants in the United States, saving employers the costs of international recruitment activities. Further, there is a network of migrant workers within the United States that facilitates worker movement between plants, and also supports workers on their way from Mexico to the state and city of their target employer.

“These suppliers of job information gain the loyalty of new employees because of the latter’s appreciation for help in finding a job, as well as assistance in such essential matters as finding housing...IBP [one of the largest livestock employers] encourages this informal network through monetary awards to current employees who refer new workers...Incentives for new workers to come to [the plant], such as \$100 loans, are used as well” (Grey 1995, pp. 117-118).

To what degree do livestock plants rely on local labor versus those who migrate from other locales?

The livestock processing industry relies heavily on labor migrating from other locales. Plants are located in rural areas that are too small to provide the number of workers needed. Though plants are mostly located in the Great Plains states, recruiters go as far and as wide as California, Louisiana, and Chicago.

Stull and Broadway (2004) describe their 1994 case study of a prominent beef plant that employed more than 2,000 workers.

“Managers must supervise not one but two workforces. One force has much in common with the managers; they are native-born Americans, mostly Anglo American, with many years of experience in the industry. The other workforce—the majority of hourly workers—is decidedly different: they are likely to be new to the industry and may well be new immigrants to the United States” (p. 85).

In their study of a hog processing plant in Oklahoma that employed 2,800 workers, Stull and Broadway found that 9 of 10 workers were Hispanics, most from Mexico and other places in Latin America.



Are the workers who move to secure these processing jobs considered migrants? Are there patterns in terms of when they typically arrive and depart?

As with much of the food processing industry, livestock processing relies heavily upon migrant workers to supplement the local labor force.

Migration also occurs at regional and international levels, especially among workers from Mexico who migrate between different agricultural sectors: between agricultural harvest work, fruit and vegetable packing, and meat and poultry processing. Yet a far more politically significant way migrant workers deal with poverty and occupational injury is by returning periodically to their sending regions. They become cyclical migrants, moving between their low-wage jobs and regions with lower cost of living (Griffith et al 1995, p. 5).

How long do they plan to stay in an area where they find work in a processing plant?

There are no data on what workers' plans are when they begin work at a plant. Certainly, data available on turnover rates indicate that workers do not stay long at any one plant. The literature did contain several anecdotal references to workers taking time away from their jobs to rest and recuperate, and then returning to the processing plant. Stull and Broadway (2004) include in their description of a 1988 tour of a Tyson plant the following, attributed to their tour guide:

“Most workers stay on the same job for about a year. By then they are getting bored and usually bid to another job. We have an internal job posting system here at IBP. Current employees are given the opportunity to apply for and fill jobs before we hire from the outside. New hires are placed wherever the need is greatest. After the initial 90-day probationary period, you can bid on other jobs and move around the floor.” (p.2)

In another analysis of how long workers plan to stay at their jobs, Green and Barham (2002) say the following:

In the past, this migration [between Mexico and the US] was primarily for seasonal and was typically circular (i.e., immigrants returned to their home country at the end of the harvest season or moved on in search of employment), but over the past 20 years there has been an increasing presence of immigrant workers in manufacturing jobs that offer greater opportunities for year-round work. The food-processing industry offers a combination of agriculturally-related work and the potential for year-round employment, allowing laborers to stay in areas for longer periods of time and making it more likely that they will bring their families with them” (p. 4).

What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)?

In general, “[t]urnover in meatpacking, as in any industry, includes workers who do not make probation, those who are fired, and those who quit. Managers and workers agree that the line is unpleasant and distasteful. Most of all it is hard—not everyone can ‘pull count’ [keep up with the pace of the line]” (Stull & Broadway



1995, p. 69). However, there do seem to be differences in the reasons that Latinos and Anglos quit their processing jobs. Some of these differences are related to the positions that each group tends to hold within the plants. In their anthropological study of one livestock plant, Stull and Broadway discerned that

Hispanic hourly workers were apt to be short-term employees and work in more physically demanding jobs that were subject to higher rates of injury and turnover. They also lacked suitable job alternatives and were likely to leave the plant for varying intervals of rest and rehabilitation, only to return to work at some later point. In fact, of hourly employees who had been hired during the previous 2 years, 1 in 5 was a rehire (Stull & Broadway 2004, p. 85).

Grey (1999) also found that “Latinos were more likely to be rehires: 43.1% of Latinos were rehires, compared to 28.1% of Anglos” (p.20). Grey further reported that there is anecdotal evidence across Iowa to indicate that workers quit one plant, take time off to rest, and then migrate to another plant where their experience and the high demand for labor ensures them a job.

In addition to this need for **rest and rehabilitation**, Latino workers are more likely to leave in order to **visit their families in Mexico**. In a more recent study of one of the largest pork processing plants, Grey (1999) analyzed employment records and conducted interviews over the course of 10 months.

Of the 1615 workers who left during the sample year, 1290 (80%) left voluntarily, that is they were not fired. Of these, 674 (52.2 %) simply abandoned their jobs by not returning to work or walking off the job. Two hundred and six (15.9%) workers who quit expressed dissatisfaction with the work or took another job. An additional 177 (13.7%) quit their jobs explicitly to go to Mexico. Personnel staff and translators said this number was low because many Latinos expressed plans to return to Mexico without formally submitting it as their reason for quitting (p.19)

When asked directly by Grey, “Latinos overwhelmingly responded that they returned to visit their families in Mexico” (p.20).

What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing? What percentage of livestock processing workers have moved previously to other work within processing?

Although it is a recognized phenomenon that low-wage workers migrate among processing plants or between processing work and more informal means of earning a living (Griffith et al 1995), we found no hard estimates to answer this question empirically.

2.2.4 What kinds of “processing” jobs do livestock processing workers perform?

Animals proceed down a ramp from the holding pens to the “knock box,” where a worker renders them unconscious and another worker shackles them about the ankle and hoists them, hanging upside down, onto the chain. The chain runs continuously through the rest



of the plant, past various stations where each worker makes one or two cuts before the carcass moves along. Workers stick, bleed, skin, saw, gut, and split the animal into a carcass from their stationary positions on the line (Stull & Broadway 2004).³ When the carcass has been gutted, skinned, and split, it moves into the “hot box” to cool, before entering the cooler where it is inspected and graded. From the cooler, the carcass moves to fabrication, where workers “break it down into ribs, loins, and rounds; shrink-wrap these ‘subprimal cuts;’ then box them for shipment to supermarkets” (Stull & Broadway 2004, p.68).

The use of a disassembly line saves time, decreases risks to workers associated with moving around a carcass, and simplifies the tasks so that workers can be much less skilled.

Under what kinds of employment terms and conditions do people work in these jobs?

The median annual income for animal slaughtering and processing is \$17,710 (BLS 2004), but in many cases workers will earn less due to temporary plant closings, seasonality of work, and job-related injuries. Benefits are not known to be desirable either. At Tyson’s flagship plant in Finney County, Kansas, health insurance benefits do not begin until the worker has been employed for 6 months. Given the remarkably high turnover and injury rates, this period without coverage is lengthy.

Jobs in livestock processing are notoriously hazardous. The rate of injury is high, the work is unpleasant and physically draining, the wages are low, and there are often tensions between management and workers on the kill-floor. Seniority plays a major role within the plant itself in determining who gets what jobs. New workers are assigned the most undesirable positions on the line and are most likely to suffer injury.

In 1990 the probability of incurring an injury in a meatpacking plant was three times higher than for manufacturing workers as a whole. A principal cause of excessive injury is the speed of the disassembly line along which carcasses are processed. Workers make thousands of repetitive motions each day, leading to cumulative trauma disorders, the most common being carpal tunnel syndrome (Griffith 1995, p. 3).

Injuries in meat packing are more common than in any other type of processing. While they have fallen since their height in 1990, they still remain around 27 percent; the manufacturing industry average is about 9 percent (Stull & Broadway 2004).

The philosophy at most plants is to keep reports of injuries quiet and to keep the product moving out the door. Workers must handle 400 cattle per hour on the line, and managers have been known to speed up the line as punishment for worker behavior (Stull & Broadway 2004). Such poor working conditions created a favorable atmosphere for the unionization of workers. The union that represents meat and poultry workers is the United Food and Commercial Workers (UFCW).

³ A more detailed description of the stages of livestock processing is given in EPA 2004.



What are the turnover rates for the livestock processing industry and for particular types of “processing” jobs within livestock processing?

“Plant managers dream of annual turnover rates of 36 to 50 percent. In fact, they don’t even talk in terms of annual rates of turnover. They speak, instead, of monthly rates...” (Stull & Broadway 2004, p.80). As plants have moved out to rural areas, they have faced a significant problem in that local labor pools are inadequate to meet their labor needs. For example, around 1990, Tyson’s Finney County, Kansas plant had a turnover rate of 6 to 8 percent of line workers per month, and thus was cycling through 5,000 employees annually. This forced recruiters into neighboring states such as Texas, Alabama, and New Mexico. Rates are generally even higher for newly opened plants. Turnover rate information is guarded by plant owners and we found no source that would specify a rate by position within the plant.

There is some disagreement about whether high turnover is considered desirable by employers. Retaining employees for a very short amount of time means that employers do not have to pay fringe benefits, such as insurance, retirement, and vacation time. Also, when workers leave their jobs to go home to Mexico, they serve as recruiting agents for the plants. Another reason high turnover is beneficial to processing plants is it artificially lowers injury rates. If workers quit because they are tired or injured, this information will often not be reported to authorities. On the other hand, there are certain costs associated with training new employees, though jobs are deskilled, and workers and critics say that training is oftentimes cursory.

How long does the average “processing” worker remain employed with the same company?

How long a worker remains with one processing plant is significantly influenced by what position within the plant that worker holds. Some positions on the line are more physically demanding or unpleasant than others. Also, there is a great difference in longevity between floor workers and management. Stull and Broadway (2004) did an anthropological study of workers at all levels in a livestock processing plant and describe patterns of turnover as follows:

Managers at Running Iron Beef [fictional name] averaged 20 years with the company, ranging from 2 months to over 40 years. Hourly workers averaged only 3.5 years with the company. Fifty-five percent of the hourly workers had been with the company less than 2 years and averaged only a little more than 1 year of service; the other forty-five percent averaged better than 6 years, including some who had been at the plant since it opened a decade earlier...non-Hispanics appeared disproportionately among those with more than 2 years of service (p. 85).

Which livestock processing jobs might be considered temporary or seasonal in nature?

“Hours worked – and income – vary seasonally and even weekly depending on price and supply of fat cattle, consumer demand, and profit margins” (Gouveia & Stull 1995).



To what extent do workers rotate among jobs within a plant versus specializing in a particular job?

The industry deskilled positions years ago, so most of them do not require much expertise, and it is possible that workers could move from one to the other. However, some positions are more desirable than others, and advancement is based on seniority. Also, many workers will not stay at a plant long enough to move to other positions on the line.

In their case study of a large livestock processor in Kansas, Stull and Broadway (2004) reported that workers did have some flexibility in what positions they held.

Hourly workers are assigned to their initial jobs and are on probation for 90 days. After successfully completing the probationary period, the worker is given seniority and may bid on any posted job within the same department: Slaughter; Fabrication; Hides; Offal; Loadout. The qualified bidder with the highest seniority wins the job (p.84).



2.3 Poultry Processing

Poultry processing is the most vertically integrated of all the food processing industries. Companies have control over their materials from conception through sale of the processed product. This reduces their costs, and also allows them much greater control over the workflow. Seasonality is much less of an issue in poultry processing than in other types of processing. Yet the fast and steady increase in demand for poultry has created a need for more low-wage workers. The consumption of poultry has risen from 28 pounds per person in 1960 to 85 pounds in 2002 (National Chicken Council 2004). During the same period of time, consumption of red meat has actually dropped from 132 pounds in 1960 to 118 pounds in 2002.

However, this industry relies just as heavily on migrant workers to supplement local labor resources, and in fact, has led the way in use of the H-2B visas that permit immigrants to enter the country to work at a specific company. Just as in livestock processing, poultry processing uses production lines where workers make routine cuts on poultry as it moves along the line.

2.3.1 How is the poultry processing industry organized?

As in livestock processing, mergers and acquisitions over the past few decades have concentrated the poultry industry in the hands of a few large employers, especially Tyson. Three levels of processing take place at Tyson's plants (Tyson 2003). The first is **primary processing**, which produces whole or quartered birds, or individual parts. These products are distributed fresh or frozen for further processing by volume users. The next level is **tray pack and overwrapped processing**. Birds may be deboned, trimmed into smaller cuts, and marinated before being distributed for direct consumer consumption via retail markets. Finally, there is **further value-added processing**, which involves fresh or frozen birds that are deboned, trimmed, portioned and sized. They may be pre-cooked, marinated, seasoned, and flavored. They are usually packaged under brand names and distributed for both in-home and foodservice applications in both bulk and convenient consumer packaging.

Top five poultry processing states:

GA, AR, AL, NC, MI

Source: USDA 2004b

At what point does processing terminate and manufacturing begin?

More so than in livestock processing, the more advanced levels of poultry processing appear to take place in the same facilities as the primary levels of processing. Poultry processors have found it highly profitable to offer consumers "value-added" products, and as consumer demand for these labor-intensive and convenient products grows, more plants are adding the capacities for further processing to their current operations.

How many poultry plants are in operation? Where are they located?

Like livestock processing plants, poultry plants are located in rural areas in order to be close to where the birds are raised. The industry is concentrated in the Southeast in a group of states referred to as the broiler belt.



Top Broiler Producing States

State	Number Broilers	Pounds Liveweight
Georgia	1,290,500	6,452,500
Arkansas	1,186,300	5,812,900
Alabama	105,100	5,361,600
North Carolina	735,200	4,411,200
Mississippi	769,500	4,078,400
Texas	588,100	2,881,700
Delaware	257,400	1,544,400
Kentucky	269,900	1,403,500
Maryland	292,900	1,376,600
Virginia	265,500	1,301,000
Oklahoma	232,800	1,140,700
South Carolina	192,900	1,080,200
Tennessee	186,400	894,700
Pennsylvania	133,200	706,000
Florida	114,700	630,900

Source: USDA 2004c

Approximately 350 plants are federally inspected, which accounts for 99 percent of the poultry slaughter annually (USDA 2004c). In 2003, chickens were slaughtered in 34 states and turkeys in 23 states. Tyson is the largest poultry processor, with 52 plants (Tyson 2003), and Gold Kist has 11 plants (Gold Kist n.d.).

2.3.2. What are the typical activities that take place in poultry processing plants?

There are seven stages in the process of getting poultry to a consumer (Tyson 2003):

Stages of Chicken Production
Breeder flock
Pullet farm
Breeder house
Hatchery
Broiler farm
Processing/further processing plants and freezers
Distribution

Poultry are sent to processing plants when they reach the desired processing weight. Plant employees and USDA inspectors populate the kill floors, where the work is divided between people and machines. Killing and plucking has been done by machines since the 1960s, and some eviscerating and cutting was mechanized in the 1970s (Encyclopedia of American Industries 2004i). Hourly workers then perform the rest of the processing, holding positions on the lines as they do in livestock processing. Most workers make one or two cuts per bird at high rates of speed. Those plants with further-processing facilities will produce products that are ready for consumption and are packaged for retail sale.



Do individual poultry processing plants process more than one type of poultry?

The mechanized components of the processing lines are built around the average size of the bird processed, so it is not possible that different types of poultry are processed on the same lines. However, we found no information on whether more than one type of poultry is processed under the same roof.

2.3.3 Who are poultry processing workers and how do they move into and out of the industry?

About 300,000 people are employed in poultry processing plants nationwide (National Chicken Council 2002). Although the industry experienced a 60 percent increase in production during the 1990s, there was not a corresponding increase in the labor force due to increasing automation. Still, the increasing demand for poultry, the need for workers to produce the recent lines of further-processed products, and the higher rates of occupational injury have meant that plants are continually needing to replenish their labor force.

There are two workforces in the poultry industry: workers who are low-wage and unskilled, and those who are more skilled and in management. These two groups can be further characterized according to **ethnicity** and **gender**.

Latinos are more often found working on the lines, while Anglos are more likely to be in management. As in livestock processing, the poultry industry relies heavily on immigrant labor.

Over the last decade, African Americans employed in processing plants began to depart for better-paying, less arduous jobs in the local tourism and resort industry...They have been replaced by Latinos (mostly Mexicans and Guatemalans), Haitians, and to a lesser degree, workers of Asian descent (Bussel 2003, p. 5).

Latinos began streaming in some 25 years ago and now account for about three-quarters of plant labor forces (Striffler 2002). "U.S.-born workers are few and far between" (p.305).

The workforce is also divided by gender. More than half the workforce are women (Bussel 2003), and those women are in less desirable jobs such as eviscerators, while the men are more often found in quality control positions (Griffith 1993).

Most of those who work directly on the line are women, often 'older' women in their 40s and 50s...The fact that most 'on-line' workers are women is neither coincidence nor insignificant in a plant where about two-thirds of the workers are male. On-line jobs are the worst in the plant...Women are concentrated in on-line jobs because they are effectively excluded from all jobs that involve heavy lifting or the operation of machinery (Striffler 2002, p. 307).

How do they become aware of employment opportunities?

Networks of family and friends are critical, and often serve as the lifelines along which workers cross over from Mexico and travel across the United States to their new employers. These networks represent a cost savings to employers as recruiting is done on their



behalf without charge (Griffith et al 1995). Employers do encourage network recruiting, however, with cash incentives. In a study of 14 plants in Georgia and 17 in North Carolina, Griffith (1995) found that 50 percent of the plants in Georgia pay bonuses to workers who recruit new laborers, and about 30 percent of the plants in North Carolina do the same.

To what degree do poultry plants rely on local labor versus those who migrate from other locales?

Poultry processing is like the majority of the food processing industry in that it relies heavily on migrant labor. It is concentrated in remote rural areas where local labor is insufficient, and it has a very high turnover rate so new workers are always needed. Workers are not only migrant, many are immigrants.

In some plants, it is estimated that 40 to 60 percent of the workers in poultry processing plants are undocumented. The industry clearly values immigrant workers, especially Latinos, both for their work ethic and the perception that they are easier to manage and control than native-born labor (Bussel 2003, p. 6).

Attracted by employment opportunities in the poultry industry, Latin Americans began to enter northwest Arkansas in the late 1980s. Today, about three-quarters of plant labor forces are Latin American, with Southeast Asians and Marshallese accounting for a large percentage of the remaining workers. US-born workers are few and far between (Striffler 2002, p. 305).

Are the workers who move to secure these processing jobs considered migrants? Are there patterns in terms of when they typically arrive and depart?

The poultry industry is based on migratory workers just as the other food processing sectors are. Processing employers are certainly aware that a great proportion of their workforce are not native to the areas surrounding the plants and that many will not stay long. However, there is no formal recognition of their migrant status.

Under federal law, housing for migrants must meet basic health and safety standards. The rules, however, define migrant work only in the strictest terms—temporary, seasonal, agricultural. Poultry work hasn't qualified for protection, even though the men and women of the chicken trail were clearly migrants in the broadest sense (Katz 1996, p. 5).

How long do they plan to stay in an area where they find work in a processing plant?

[O]ver the past 20 years there has been an increasing presence of immigrant workers in manufacturing jobs that offer greater opportunities for year-round work. The food-processing industry offers a combination of agriculturally-related work and the potential for year-round employment, allowing laborers to stay in areas for longer periods of time and making it more likely that they will bring their families with them (Green & Barham 2002, p. 4).

However, the poor working conditions and high turnover rates often mean workers move at least to another plant, if not another state. “Anecdotal evidence suggests that many



workers travel a circuit within the industry, frequently switching jobs in the quest for better pay and more favorable working conditions” (Bussel 2003, p. 5).

What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)?

High occupational injury rates “not only lead directly to worker turnover, but also create a need for workers to take off work for relief from the stress and anxiety of working in a poultry processing plant” (Griffith 1995, p.136).

Where permitted, plants participate in the Employment Verification Pilot (EVP) of the Immigration and Naturalization Service (INS) (National Chicken Council 2002). In this program, the INS checks whether an individual is permitted to work in the United States after they have been hired, not before. If the information the worker has provided to his or her employer does not check out with INS, the employer gives the worker 8 days notice to correct the information. If workers are here illegally, they will many times continue at their jobs for another 7 days and then move on to another location (R. Crawford, personal communication, May 3, 2004).

What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing?

While there appears to be a strong connection between the labor pools drawn upon for processing and agricultural work (Griffith 1993; Griffith 1995; Griffith et al 1995), we found no empirical information on the extent to which they overlap.

What percentage of poultry processing workers have moved previously to other work within processing?

There is anecdotal evidence to suggest that workers move within processing in search of better pay or working conditions, or after returning to work after a period of recuperation (Bussel 2003). However, we found no empirical information on what percentage of the workforce moves in these circles.

2.3.4 What kinds of “processing” jobs do poultry processing workers perform?

Like the other types of processing, poultry processing is strenuous, stressful, and unpleasant work. Line speed is of the highest importance to management, who push the workers to process the largest volume of material possible each day. Like livestock processing, workers hold specific positions on the line from where they make the same one or two cuts tens of thousands of times per day. In dimly lit rooms thought to soothe the birds, **live hangers** pull birds from crates and hang them upside down on hooks. Machines then kill and pluck the birds, which move on to the **eviscerators** and **quality control personnel**.

[W]orkers and USDA inspectors further eviscerate and inspect the birds...As the birds leave the eviscerators and inspectors, they are routed to stations where quality control personnel check them for imperfections and send the least bruised birds to a station that weighs, packs, and prices whole birds. Imperfect birds then enter



the further-processing sections of the plant...Some [plants] perform very few further-processing cuts, while others produce an entire range of boned and fully cooked products (Griffith 1995, p.135).

Sorters divide the birds into “whole fryers” and “cut-up” based on presence or absence of any of 57 imperfections (Griffith 1993). In the “cut-up” section of the plant, **deboners** remove the birds’ bones from the breasts and **leg-quarter processors** prepare the legs and quarters. If no further processing is to be done, **packaging workers** seal the whole and cut-up birds into packaging for distribution.

Under what kinds of employment terms and conditions do people work in these jobs?

As noted, working conditions are fairly grim. Plants maintain line speeds of 72 to 90 birds per minute and workers must spend their days in damp, cold rooms, with wet floors and a coating of chicken fat over most surfaces (Griffith 1995). “Line speeds have roughly doubled since the mid-1970s to 91 birds per minute on the eviscerating line. The typical worker performs one discrete motion over and over, from 10,000 to 30,000 times a day” (Hall 1995, p.219).

In 1990 the probability of incurring an injury in a meatpacking plant was three times higher than for manufacturing workers as a whole. A principal cause of excessive injury is the speed of the disassembly line along which carcasses are processed. Workers make thousands of repetitive motions each day, leading to cumulative trauma disorders, the most common being carpal tunnel syndrome...Most workers are uninsured until they have worked at a plant for several months. Thereafter they are eligible for the companies’ health insurance, but many cannot afford the premiums and turn to voluntary organizations for health care. This situation is exacerbated by high rates of turnover, which in some plants can approach 100% a year. Workers injured on the job before becoming eligible for health insurance are frequently unable to pay for their own health care and resort to governmental and nongovernmental agencies for care” (Griffith et al 1995, p. 3).

Workers can spend 30 to 45 minutes at each end of the day getting ready and washing up, time for which they are not paid (Stull & Broadway 2004). Lunch is just 30 minutes, and bathroom breaks are discouraged as it affects the speed of the line. The workers interviewed handled 35 chickens per minute in their positions. One reported having quit the plant two times already because she did not like working the third shift (11:30 p.m. to 8:30 a.m.). The day ends only when there are no more chickens to process.

Benefits often do not begin until several months after a worker begins employment, and wages are low.

“Food-processing workers rarely earn a ‘living wage’—one sufficient for workers to reproduce their households...Gross annual incomes from meatpacking jobs usually fall a few thousand dollars above or below [federal poverty] levels; income in poultry processing is less, while in fish processing earnings can fall to half of established poverty levels. These income estimates all assume workers will enjoy full employment, but seasonal slow-downs in demand, occasional plant closings, and occupational injuries



reduce time on the job and hence reduce annual earnings ” (Griffith et al, p. 4).

What are turnover rates for poultry processing and for particular jobs within the processing industry?

Employers closely guard the specific data needed to calculate these estimates. Those who have been able to gain access to turnover information report that rates are high.

Numerous companies have reported a twenty percent turnover every few months, and in some of the least desirable jobs, turnover can run as high as fifty percent annually (Bussel 2003, p. 5).

Two factors that seem to affect turnover rates are job title and how long the plant has been in operation. It is precisely the jobs that immigrant workers are more likely to hold that have the highest rates. “[H]igh turnover [is found] in [the] live-hanging/receiving area; lower turnover [is found] among quality-control personnel and forklift drivers (Griffith 1995, p.146).

When a plant starts up it is not uncommon for employee turnover among line workers to exceed 200 percent in the first year of operation. Indeed, after a plant has been in operation for several years, monthly turnover among line workers usually averages between 6 and 8 (Broadway 2002, p. 39).

How long does the average “processing” worker remain employed with the same company?

Most white workers left area [northwest Arkansas] poultry plants during the region’s economic boom of the 1990s, and those who remain tend to fall into two categories. An older group has been working at Tyson for more than 20 years; they have found a niche and hang on to the benefits that seniority bestows. The few white workers who started at Tyson more recently did so because poultry was one of their few options (Striffler 2002, p. 307).

In addition to seniority being a factor, a portion of the low-wage workers return to former employers after a period of rest, a visit with family in Mexico, or work in another area. How many workers follow this pattern or how long the average stay is with each employer is not known.

Which poultry processing jobs might be considered temporary or seasonal in nature?

Poultry processing jobs are only temporary in that their physically demanding nature makes it difficult for any worker to remain in his or her position for long. With such high employer control over the availability of the raw materials, there is effectively no season in the poultry industry.

To what extent do workers rotate among jobs within a plant versus specializing in a particular job?

The industry is almost entirely deskilled, so none of the jobs require a great deal of training or ability. However, assignment to the various positions within the plant is based on



seniority, so workers do not have the freedom to rotate among jobs at will. Further, while there is “some” rotation among positions, there are “not enough positions available to rotate everyone between the more and less preferred tasks” (Stull & Broadway 1995, p. 146).



2.4 Dairy Processing

Dairy processing is a complex and highly regulated industry. Milk can be used for fluid or manufacturing or processing purposes, where it can be made into a wide variety of products such as butter, cheese ice cream, evaporated and condensed milk, and yogurt. While demand for fluid milk products has remained relatively flat, significant growth in the demand for cheese products has caused the dairy processing sector to grow steadily over the past 20 years (Bailey 2003).

2.4.1 How is the dairy processing industry organized?

Over 80 percent of milk is marketed through farmer cooperatives (Bailey 2003). Cooperatives are defined as “user-owned and controlled businesses from which benefits are derived and distributed equitably on the basis of use” (Bailey 1997).

They have retained an important role in the dairy industry because of the wide variety of services that they provide to both farmers and customers (Bailey 2003). Dairy cooperatives were established to ensure a stable market for highly perishable dairy products and to bargain for higher prices on dairy products (Bailey 1997), but now they may also be involved at all phases of dairy production and marketing (Encyclopedia of American Industries 2004d). Cooperatives frequently provide on-farm inspections and help farmers manage their herds, arrange delivery of milk to be processed, process fluid milk, and manufacture and process dairy products (Bailey 2003; Encyclopedia of American Industries 2004b, 2004d, 2004f, 2004h 2004).

Bailey (2003) notes that the greatest structural change in the dairy product supply chain from farm to customer is the consolidation of farmer cooperatives, processors, and retail stores that sell dairy products. Processors are also increasingly likely to market their own products to retail establishments, thereby eliminating the “middleman” in this portion of the dairy product supply chain.

While the 1992 Census of Manufactures divides dairy product processing into five categories (creamery butter; cheese, natural and processed; condensed and evaporated milk; ice cream and frozen desserts; and fluid milk—Connor & Schiek 1997), multiple dairy products are frequently processed by the same companies (see section 2.4.2).

How many dairy plants are in operation? Where are they located?

Major Dairy Processing Employers

Fluid Milk:

- Dean Foods
- National Dairy Holdings LP
- Foremost Farms USA

Butter:

- Land O’Lakes
- MidAmerica Dairymen, Inc.

Cheese:

- Kraft Foods
- Sargento Cheese Company Inc.
- Mid-America Dairymen, Inc.

Ice Cream and Frozen Desserts:

- Breyer’s
- Dreyer’s/Edy’s
- Blue Bell

Source: Encyclopedia of American Industries 2004b, 2004d, 2004f, 2004h



As of 2003, there were approximately 1,126 dairy processing plants in the United States (USDA 2004a). Of these, 346 plants (about 31 percent) are located in the **East North Central region** (Illinois, Indiana, Michigan, Ohio, and Wisconsin). Another 271 dairy processing plants (about 24 percent) are located in the **North Atlantic region**, which includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. 225 dairy processing plants (about 20 percent) are located in the **West** (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming). The **West North Central** states (Iowa, Kansas, Minnesota, Missouri, North and South Dakota, and Nebraska) have 114 dairy processing plants between them (just over 10 percent of the total). Of the remaining 170 plants (15 percent of the total), half are located in the **South Central region** (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas) and half in the **South Atlantic region** (Delaware, Florida, Georgia, Maryland, North and South Carolina, Virginia, and West Virginia).

Top dairy product producing states by product:

Butter: WI, MN, OH, WA, KY

Cheese: WI, MN, IL, MO, CA

Dried, canned milk: MI, WI, IN, OH, IL

Ice cream, frozen desserts: CA, PA, MA, TX, IL

Fluid milk, yogurt: CA, NY, TX, OH, PA

Source: Connor & Schiek, 1997

2.4.2 What are the typical activities that take place in dairy processing plants?

Before fluid milk arrives at a processing plant, it is first examined by the milk hauler, who checks its temperature, appearance, flavor, and odor (Bailey 1997). The milk hauler also measures the volume of milk to be transported and takes samples of it before transporting it to the processing plant. In the receiving area of the plant, the milk is tested for antibiotics, bacteria count, and quality before it is loaded into silos. Then the milk is separated into cream and skim milk, and then recombined in various proportions to obtain skim, low fat, and whole milk (Bailey 2003). The milk is subsequently homogenized (heated to suspend fat globules so that milk and cream do not separate), pasteurized (heated to kill microorganisms that might cause milk to spoil), and fortified with vitamins A and D.

Subsequent processing of milk into cheese, butter, yogurt, ice cream, and other products involves a variety of other steps such as mixing (milk is mixed with a “starter” lactic acid culture to make cheese; with bacterial cultures to make yogurt; and with sweeteners, emulsifiers, and other flavoring to make ice cream). Cheese processors also separate curds and whey, then pack the curds together for ripening. Water is removed from milk and preservatives added to produce condensed milk, while evaporated milk is sterilized by heat. These processes, along with fermentation of yogurt and freezing of ice cream, are accomplished mechanically, so most workers in these further-processing operations are also likely to work as machine operators (Bailey 1997).



Do individual dairy processing plants process more than one type of dairy product?

Bailey (1997) describes three types of dairy processing plants that are regulated by the federal government: distributing pools/bottling plants, which process fluid milk; supply plants, which produce manufactured products; and cooperative association plants, which process surplus milk. However, these establishments are not necessarily distinct entities; for example, fluid milk producers are described by the Encyclopedia of American Industries (2004) as “huge, sophisticated, diversified operations with product lines that cross industry boundaries. They manufacture and market a mix of fluid milk products, cheeses, ice creams, butter, dairy ingredients, and sometimes extensive lines of nondairy products as well.”

Major Dairy Products Processed:

- Creamery butter
- Cheese, natural and processed
- Condensed and evaporated milk
- Ice cream and frozen desserts
- Fluid milk

Source: Connor & Schiek, 1997

2.4.3 Who are dairy processing workers and how do they move into and out of the industry?

As compared to other food processing employees, dairy plant workers appear to be a relatively stable, highly skilled work force. Some even enter their jobs with university degrees in dairy science. A 1992 profile of the Dairy Science program at South Dakota State University notes that 50 percent of new hires at one company’s processing plants are graduates of bachelor’s degree programs in dairy science (Rosenbaum 1992). More up-to-date statistics about hiring practices and education levels of workers are unavailable, but SDSU’s current Dairy Science Department website boasts a 100 percent placement rate for graduates of its program (SDSU 2004), suggesting that there is still a strong demand for college-educated workers in the dairy processing industry.

Dairy processing companies appear to invest significant resources in employee recruitment and training, along with safety measures and benefits for workers already employed at the plants. This industry does not appear to rely on low-skill migrant or immigrant workers to the degree that the poultry and meatpacking industries do.

How do they become aware of employment opportunities?

Descriptions of the hiring and training processes for dairy processing workers in industry publications indicate that companies work hard to find workers with specific skills to work in their dairy processing plants. In a 2000 interview, a plant operations manager for Dannon Inc. describes the hiring process:

It’s very hard to find people with the right skills, and we have to hand-pick each person...We try as much as we can to involve team members in our hiring process so they can also have a say in who’s coming to work with them...We look for technical qualities. People coming in with dairy or beverage backgrounds. People who have at least three to five years of experience in machinery. We ask for high computer skills—these people are interfacing with machines through PLCs and touchscreens, and we ask people to be mechanically inclined...From a human standpoint, [we look for



people] who have a team-player attitude, who are willing to learn, who have a lot of initiative (Decrion 2000).

Family and social networks also play an important role in dairy processing employee recruitment. In a 1993 article, Reiter describes a series of family-owned dairy processing operations, including one that he describes as “a real family kind of place...The plant is full of second- and third-generation employees, some of whom have been with Purity for 30 or more years.” An emphasis on “family friendly” benefits and programs is also used to attract employees to work for dairy processors (Judge, 1998).

To what degree do dairy plants rely on local labor versus those who migrate from other locales?

This distinction is not clearly made in any of the existing literature, although it is possible to surmise that because dairy processing plants often employ members of the same families and tend to retain their employees for a long time, the dairy industry likely makes greater use of worker already in the local labor force than newly arrived workers from other areas.

Are the workers who move to secure these processing jobs considered migrants? Are there patterns in terms of when they typically arrive and depart? How long do they plan to stay in an area where they find work in a processing plant?

Since the distinction between migrant and local labor is less clear in the dairy processing industry, these questions are less applicable to this industry. They are not answered in government documents or industry publications.

What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)?

This issue is not specifically addressed in the existing literature about the dairy processing industry. This information would likely have to be solicited from plant managers or other parties with direct knowledge of employment patterns in this industry.

What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing?

No information found.

What percentage of dairy processing workers have moved previously to other work within processing?

No information found.

2.4.4 What kinds of “processing” jobs do dairy processing workers perform?

The various stages of dairy processing were delineated above in section 2.4.2. One should note that separation, recombination, homogenization, pasteurization, and fortification are all automated processes, so it can be surmised that workers involved in these parts of the process are charged mostly with machine tending (Bailey 1997). Similarly, many of the subsequent processing steps are accomplished mechanically as well.



Under what kinds of employment terms and conditions do people work in these jobs?

Compared with workers in other processing industries, dairy processing workers are relatively well trained and compensated for their work: “Plant employees systemwide receive on-the-job training specialized to each department, which includes safety training...Production employees are trained to work in teams and are encouraged to rotate positions every 15 to 30 minutes to help alleviate some of the strain” (Smith 2002, p. 28). Incentive programs are used by some companies to encourage workers to maintain safe conditions on the production floor and in company trucks, and employees receive ongoing training to address areas needing improvement (Smith 2002, p. 30).

Dairy processing workers also earn significantly higher salaries than those employed in other processing industries. Workers with university degrees in dairy science can earn starting salaries of over \$40,000 (SDSU 2004), and average earnings per worker in Iowa were about \$37,000 in 2003 (Ginder & Otto 2003, p. 8).

What are turnover rates for the dairy processing industry and for particular types of “processing” jobs in the dairy processing industry?

Little specific information is available to address this question for the dairy processing industry, although the degree of training required to work in the industry and the relatively high salaries commanded by dairy processing workers suggest that turnover is likely not as high as in other food processing industries.

How long does the average “processing” worker remain employed with the same company?

Overall estimates are not available for this question, but anecdotal accounts suggest that some dairy processing employees work for most of their careers with the same company. Reiter (1993) profiles a company with which some workers have remained employed for 30 or more years.

Which dairy processing jobs might be considered temporary or seasonal in nature?

Bailey (1997) describes a natural seasonal cycle of milk production as a result of environmental conditions and cows’ reproductive patterns:

Milk is produced in a fairly uniform seasonal pattern in the U.S...While much less pronounced today than...15 years ago, milk production usually peaks in May due to spring weather, green pastures, and improved forage quality. Also, many cows calve in early spring and begin a new lactation cycle. Daily milk production is greatest during the early portion of a cow’s lactation cycle. National milk production begins to fall off significantly during the summer when hot and humid weather adversely affects forage quality and milk production...Production begins to pick up again in the fall when other cows calve and temperatures begin to cool (p. 11).

Although it might be assumed that seasonal cycles of milk production might cause employment in the dairy processing sector to fluctuate throughout the year, specific statistics on how many dairy processing jobs are considered seasonal or temporary are not available in the literature.



To what extent do workers rotate among jobs within a plant versus specializing in a particular job?

Smith (2002) describes rotation among jobs as an essential part of a program of “ergonomically-sound production practices” at one company’s plant: “Ergonomically-sound production practices are developed with the help of outside consultants and employee input. Production employees are trained to work in teams and are encouraged to rotate positions every 15 to 30 minutes to help alleviate some of the strain” (p. 28).



2.5 Agricultural Processing

Agricultural processing encompasses a wide variety of crops and processing operations, including the canning and freezing of fruits and vegetables along with flour milling and the production of other grain-based products. Each of these sectors has seen strong sales over the past several years, although the grain processing industry's shipments have declined from their peak in the mid-1990s and canned fruits and vegetables saw increased competition from fresh and frozen produce (Encyclopedia of American Industries 2004a, 2004e).

2.5.1 How is the agricultural processing industry organized?

Each sector of the agricultural processing industry is organized differently from the others. Canned food processors are the primary market for many farmers in the U.S.; they generally contract with farmers to purchase portions of their harvests for processing before the growing season begins (Encyclopedia of American Industries 2004e). Frozen fruit and vegetable processors are often subsidiaries of larger diversified conglomerates that process a wide variety of other products. Flour milling has rapidly consolidated since the 1980s; the number of mills has declined as the market share of top milling companies has increased rapidly. This industry has also undergone a drastic shift in its customer base over the past 30 years, as changing lifestyles and economic expansion have caused the demand for flour to shift from household uses toward commercial bakers and other further manufacturing operations (Encyclopedia of American Industries 2004c).

Major Agricultural Processing Employers

Canned Fruits and Vegetables:

- H. J. Heinz Company
- Del Monte Foods Company
- Campbell Soup Company
- Ocean Spray Cranberries, Inc.

Frozen Fruits and Vegetables:

- J.R. Simplot Company
- McCain Foods
- ConAgra Inc.
- Agrilink Foods Vegetable Company
- Green Giant USA

Flour and Other Grain Products:

- Archer Daniels Midland Company
- ConAgra Inc.
- Cargill Foods
- General Mills

Source: Encyclopedia of American Industries 2004a, 2004c, 2004e

How many agricultural processing plants are in operation? Where are they located?

The most definitive figures about the numbers of agricultural processing facilities in the United States are from the 1997 U.S. Economic Census. A similar census was conducted by the U.S. Census Bureau in 2002, so the updated figures should become available by 2006. As of 1997, there were approximately 824 fruit and vegetable canning establishments, 258 fruit and vegetable freezing plants, and 383 flour mills in the United States. The Economic Census lists canning facilities in California, Florida, Hawaii, Illinois, Michigan, Minnesota, New Jersey, New Mexico, New York, Oregon, Pennsylvania, Washington, and Wisconsin. California has by far the greatest number of plants and the greatest number of canning employees; 17,278 workers in 142 establishments. Florida,



the state with the next largest number of canning employees, has only 5,336 workers in 17 plants (U.S. Economic Census 1997).

Fruit and vegetable freezing facilities are listed by the 1997 Census in California, Florida, Illinois, Michigan, Minnesota, New Jersey, New York, Ohio, Pennsylvania, Texas, Washington, and Wisconsin. California also has the largest number of freezing plants, with 45 establishments that employ 8,182 workers. Washington has the next largest number of freezing-plant employees, with 6,934 workers employed in 12 plants (U.S. Economic Census 1997).

Top agricultural processing states by number of establishments:

Canned fruits and vegetables:

- CA, WI, NY, FL, MI

Frozen fruits and vegetables:

- CA, WA, FL, NY

Flour and other grain products:

- CA, KS, NC, MN, TX

Source: U.S. Economic Survey 1997

Flour mills are located in California, Kansas, Minnesota, Missouri, New Jersey, North Carolina, Texas, and Utah. Missouri has the largest number of flour mill employees, with 1,157 workers in 10 establishments. Texas has the second largest number, with 1,191 employees in 17 plants (U.S. Economic Census 1997).

2.5.2 What are the typical activities that take place in agricultural processing plants?

Produce generally arrives at a canning plant directly from the field where it grew. Vegetables and fruit are chopped, sliced, and peeled to prepare them for canning. They are blanched to preserve texture and flavor, then vacuum-packed in cans. The cans are then heat-processed in the retort (cooker) before they are cooled and labeled for transport. Automated retort systems in some canning plants have improved during the past decade, so employment in the canning industry has declined since the mid-1990s (Encyclopedia of American Industries 2004a).

Fruits and vegetables in frozen food plants undergo similar preparation and blanching procedures to those in canning facilities before they are frozen. Freezing is accomplished using a variety of methods, including individual quick freezing (freezing of small, separated portions of food), blast freezing (passing cold air over food), freezing coils, and immersion in freezing liquids.

In flour mills, wheat and other grains are ground, fractionated (separated according to fineness of particles), and blended into flours with varying amounts of protein. White flour is generally bleached for consistent color and to improve the condition of its gluten, which is important for baking quality. Wheat germ and oils are often extracted for use in other products (Encyclopedia of American Industries 2004c).



Do individual agricultural processing plants process more than one type of product?

The lists of companies involved in each aspect of agricultural processing show little overlap between companies that can, freeze, or mill flour. It can be surmised that most processing plants are devoted to particular types of processing (canning, freezing, or milling), but not necessarily the processing of single crops or products. For example, the cannery described by Zavella (1987) processes spinach, peaches, fruit cocktail, and tomatoes. Companies involved in canning and freezing facilities certainly make a wide variety of products available to consumers, so it is most likely that each individual plant processes more than one type of product at a time. Also, because produce harvests are often highly seasonal, agricultural processing plants also likely need to process more than one type of product in order to maintain employment of at least a portion of their workers throughout most of the year.

Major Agricultural Products Processed:

Canned Fruits and Vegetables:

- Tomatoes
- Sweet corn
- Snap peas
- Green peas

Frozen Fruits and Vegetables:

- Potatoes
- Mixed vegetables
- Green beans
- Strawberries
- Blueberries
- Raspberries
- Frozen juices

Flour and Other Grain Mill Products:

- Wheat flour

Sources: Encyclopedia of American Industries 2004; U.S. Economic Census 1997

2.5.3 Who are agricultural processing workers and how do they move into and out of the industry?

Zavella (1987) describes fruit and vegetable cannery workforces as divided by gender, age, and ethnicity. She alludes to “two workforces,” one comprised mostly of white men who hold full-time supervisory jobs, and the other of women, many of them immigrants who are employed as low-skill, seasonal workers. The full-time and seasonal workforces also have different age distributions:

...There were marked age differences between regular and seasonal cannery workers. Regular workers were relatively evenly distributed in all age categories. However, long-term seasonal workers (those with four or more years of unbroken service) had a greater proportion of older workers...Increasingly, the seasonal labor force included middle-aged workers, who would be particularly vulnerable once canneries began closing (p. 59).

Zavella also describes the division of specific tasks in the cannery by gender. Women are more likely to work as sorters (the largest workforce in a canning plant), tend filler and seamer machines, inspect can seams, and work in quality control, while men are more likely to operate cooking machines, drive forklifts, and work as mechanics.

Statistics presented in Del Monte Foods Company’s current company profile (2002) demonstrate the heavy seasonal fluctuation in fruit and vegetable processing industry



employment. The report notes that of the company's total 17,600 employees, 7,800 work full-time, while 9,800 are seasonal employees.

How do they become aware of employment opportunities?

As in other processing industries, informal social networks are an important part of agricultural processing employee recruitment. Zavella (1987) describes “gossip networks” as effective means of soliciting new employees into the canning industry:

Once the process of seeking cannery work began, one was subject to the industry's informal means of labor recruitment. Gossip networks were the usual way workers found out about job openings. With only word-of-mouth reports that canneries were hiring, crowds appeared outside company gates to wait in the hot sun (p. 91).

To what degree do agricultural processing plants rely on local labor versus those who migrate from other locales?

While less is known about the workforces in frozen vegetable and fruit processing and flour milling, Zavella (1987) argues that fruit and vegetable canning facilities rely on both local and migrant labor and points out that local or migrant status appears to determine which jobs employees fill: “Clearly, there are two labor forces in canneries. Men—especially white men—have the year-round, skilled, or supervisory positions, and women, especially Mexican-American women, fill the lower-level, seasonal positions” (p. 59).

Are the workers who move to secure these processing jobs considered migrants? Are there patterns in terms of when they typically arrive and depart? How long do they plan to stay in an area where they find work in a processing plant?

While less information is available for the frozen food and flour milling sectors, Zavella (1987) states that cannery workers that she has interviewed view their jobs as temporary, even if they later find themselves working in the industry for many years:

During the first years on the job, women expected to work temporarily...Most women originally hoped their tenures as cannery workers would be brief, something to tide them over until their husbands could find better jobs...Their husbands also expected that their jobs would be temporary...After working a few seasons, these women became permanent seasonal cannery workers (p. 96).

She later notes that cannery work follows a seasonal pattern, beginning in June and ending in September, “with the peak of the season in July and August” (p. 107).

What are the primary reasons why workers leave a plant (e.g., better opportunities elsewhere, fired, injured, poor working conditions)?

This issue is difficult to assess based on the existing literature about the agricultural processing industry. This information would likely have to be solicited from plant managers, employees themselves, or other parties with direct knowledge of employment patterns in this industry.



What is the percentage of the “processing” workers have moved previously to work in agriculture or fishing?

No information found.

What percentage of agricultural processing workers have moved previously to other work within processing?

No information found.

2.5.4 What kinds of “processing” jobs do agricultural processing workers perform?

The different levels of processing tasks were described above in section 2.1.1.

Under what kinds of employment terms and conditions do people work in these jobs?

Zavella (1987) describes the terms under which women become employed in California canneries:

Women viewed working in a cannery as a step up from work in the fields. In the hierarchy of agricultural work, fieldwork was at the bottom, packing-house work next, and cannery work best. Although the work was seasonal, the union wages were much higher than those in farm work... Cannery work was also perceived as being better than farm work because of the working conditions. Workers were not out in the hot sun, and the actual work process was easier than farm work (p. 96).

Workers in flour mills earned about \$14.50/hour in 1997 (Encyclopedia of American Industries 2004c). Safety risks such as dust, noise, and fire and explosion hazards are of concern for these employees. Dust control is of particular importance in flour plants because dust can burn rapidly if ignited at certain concentrations, and can also carry toxins such as microorganisms, pesticide residues, insect parts, and animal hairs. Chronic exposure to grain dust is thought to be related to respiratory ailments such as chronic bronchitis.

Less specific information is available about the terms under which workers are employed in the frozen fruit and vegetable industry, but it can be surmised by the fact that cannery work is by far the most seasonally dependent of these industries, workers in the other industries may have more stable employment patterns throughout the year than cannery workers do.

What are turnover rates for the agricultural processing industry and for particular types of “processing” jobs in the agricultural processing industry?

Little specific information is available to address this question for the agricultural processing industry.



How long does the average “processing” worker remain employed with the same company?

Overall estimates are not available for the frozen fruit and vegetable and flour industries, but Zavella (1987) suggests that some canneries can retain a portion of their seasonal employees for many years: “Long-term seasonal cannery workers’—those who work seasonally for four years or more—comprised approximately 16% of the northern California cannery labor force” (p. 97).

Which agricultural processing jobs might be considered temporary or seasonal in nature?

The fruit and vegetable canning industry is known to be highly seasonal, as acknowledged by Zavella (1987):

Since most cannery workers are employed seasonally, they experience...harsh conditions in short, intense bursts. Work seasons usually ran from June through September, with the peak of the season in July and August. Some canneries processed spring fruits or vegetables and had a short work season then (p. 107).

The seasonality of the canning industry is also documented in the 1997 U.S. Economic Census, which lists quarterly counts of workers employed in the industry. Census data show that employment in canning peaks during the summer and falls during autumn, with its lowest numbers of all in early spring. In 1997, an average of 52,884 workers were employed in fruit and vegetable canning; on March 12th, this number was only 37,863, while on August 12th, 86,066 people were employed. By November 12th, the number of employees working in fruit and vegetable canning had fallen by over 40,000, back to 45,329 workers (U.S. Economic Census 1997).

Frozen fruit and vegetable processing has a similar but less pronounced seasonal employment pattern. In 1997, the number of processing workers rose from 37,111 on March 12th to 46,544 on August 12th, then fell to 39,007 on November 12th (U.S. Economic Census 1997).

Flour milling appears to have a more stable employment pattern throughout the year, with only small fluctuations around its average number of 9,320 workers throughout the year in 1997 (U.S. Economic Census 1997).

To what extent do workers rotate among jobs within a plant versus specializing in a particular job?

No information found.



3. Use of Industrial Surveys

To aid in the identification of qualifying migrant families, states are encouraged to conduct surveys of industrial employers within their states. The goal of these surveys is to identify which jobs within processing plants are temporary or seasonal in nature.

The draft MEP non-regulatory guidance specifies the steps states should take in order to conduct an industrial survey. While the tasks listed are reasonable and thorough, states have a formidable challenge in front of them. Most employers are guarded with their employee and hiring practices information due to the frequent criticism under which the processing industry operates. Securing turnover rates for every job title within each plant may not be possible.

Because employers are, for the most part, the exclusive source of the data required, it might be worth the effort to explore ways of increasing their cooperation with industrial surveys. We recommend gathering information from both sides of this situation. First, **survey a sample of state MEP officials** who have had experience conducting industrial surveys. Collect information on what the major challenges have been, what strategies they have found to be effective, and what their response rates have been. At what level do states perceive the refusal to participate to be coming from? Do most states start with the human resources department? Or have some experienced greater success by approaching companies via their upper management? From this type of data collection, OME might develop a list of best practices that could raise the level of cooperation experienced by all states.

Second, we recommend investigating **how industrial surveys are perceived by the companies themselves**. Do companies understand the purpose of the survey? It can be assumed that in most cases, concerns about how the data will be used are interfering with employer cooperation. What concerns do companies have about how the surveys will affect their business? Employers have been known to complain that Latinos are effectively creating temporary jobs out of permanent ones through their tendency to come and go (Grey 1999). Some also would prefer not to be known as an employer who offers temporary work (R. Crawford, personal communication, May 3, 2004). If states can better understand employers' concerns, they might easily be able to allay some of these fears by simply providing better information on the purpose of the surveys.

The **development of some type of industry incentive** would also improve states' abilities to conduct valid industrial surveys. During our review, the most informative sources of information on processing plant workers were found in sociological and anthropological studies. Many of the authors formally recognized that the types of data they were reporting were not usually available. The researchers were granted unique access to the data because they had something to offer employers in return: consulting services on worker issues. While state MEP officials are not in the position to offer exactly that, they might be able to offer employers information about their state's migrant population that employers would find useful.

Finally, states should **consider all possible sources of the information** they seek. While the employers themselves are the richest source of data, it is possible that other community agencies could supply some worker information. For example, Gouveia and Stull (1995) obtained information on IBP (Tyson) plant workers through the local Nebraska

Job Services office. All new employees were required by IBP to fill out forms that determined IBP's eligibility for the Targeted Jobs Tax Credit. Gouveia and Stull were able to convince the Jobs Services office that their cause was worthy and that the data would be used responsibly. State MEPs may well be able to do the same.

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