

SEASONAL AGRICULTURAL LABOR MARKETS IN AMERICA:

ISSUES AND OPTIONS FOR PUBLIC POLICY

by

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and

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July 1985

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## EXECUTIVE SUMMARY

Agriculture is the core component of the largest industry in the United States, the food system that generates about 20 percent of GNP and employs 22 percent of the work force. This system supplies food to American consumers for 16 percent of the average family's disposable income, the cheapest food in industrial nations.

America's bountiful agriculture has relied on federal assistance programs to cope with its production problems, and these federal programs have yielded surpluses of most farm products. The United States has plenty of farmers and food surpluses, but many farmers complain that there are too few farmworkers.

This report is an analysis of a central paradox in the American food system: the agriculture whose made-in-America products feed a hungry world also relies on legal and illegal immigrant farmworkers to harvest certain commodities. The wages and working conditions which some farmworkers experience has prompted federal assistance programs for migrant and seasonal farmworkers and generated heated debates about the need for immigrant workers in agriculture.

This report explains that farm labor problems are confined largely to the labor-intensive fruit and vegetable segment of agriculture. Fruit and vegetable employment stabilized in the 1970s despite labor-saving mechanization because affluent Americans purchased more hand-picked avocados, grapes, and broccoli. However, the harvest work force includes fewer Americans and more immigrants. The farm labor market is becoming more isolated from nonfarm labor markets despite federal labor standards laws. Many farmworkers continue to receive below poverty-level earnings despite federal assistance programs that spend about \$400 million annually to provide training, education, and health services for farmworkers and their children. If current trends continue, seasonal agriculture will become the major American industry dependent on immigrant workers.

There are no easy solutions for the nation's farm labor problems. The optimal strategy is to anticipate the nature of labor-intensive agriculture several decades hence and adopt policies that minimize inevitable adjustment costs. Such policies should recognize:

- the concentration of fruit and vegetable production on large, specialized, and mechanized farms;
- the tendency of farmworkers to enter the harvest workforce when they are 18 to 25 and leave it after 5 to 15 years, and thus the need for 25 to 40-year old workers to make mid-career changes;
- the fragmentation of employment in agriculture that permits labor contractors and other middlemen to make critical employment decisions.

Labor-intensive agriculture resembles a seasonal nonfarm business in its assembling of labor, capital, and land to produce fruits and vegetables that are packed or processed for distant markets. However, its labor market remains shrouded in myth and tradition.

## Labor-Intensive Agriculture

Agriculture has three subsectors with distinct labor markets. Field crop farms produce wheat and corn with family labor and occasionally hired students and housewives. The stereotypical Iowa corn and hog farm relies on family labor except during the busy fall harvest. Livestock farms are half of the nation's 980,000 farm employers, but most such farms employ only one or two year-round hired hands. Thirdly, there are about 80,000 fruit, vegetable, and nursery operations that hire labor. These farms typically hire crews of 20 to 40 workers to accomplish a two- to six-week task, so employment fluctuates throughout the year. Fruit and vegetable farms employ almost 1 million seasonal workers annually, more than autos and steel combined.

The demand for fruit and vegetable workers stabilized in the 1970s. The reformers of the 1950s and 1960s who advocated federal programs to help farmworkers and their children to get out of a soon-to-be mechanized agriculture could not foresee the ways that affluence and health consciousness would encourage increased consumption and production of hand-harvested fresh fruits and vegetables as fast as mechanization eliminated jobs. However, the 1990s may be a period of increased imports of fruits and vegetables, and labor-saving mechanization may be expedited by crops that ripen uniformly and high-speed sorting devices.

Mechanization and imports could displace American and immigrant farmworkers. Most new farmworkers are recruited through friends and relatives who are already employed. As Americans abandon farm work, new farmworkers are increasingly drawn from rural towns in Mexico and Central America. These immigrant workers are legally and illegally working in the United States; some estimates suggest that there may be 800,000 immigrant farmworkers, half working in the United States illegally. Training and supervision have adapted to a Spanish-speaking workforce, making it hard for Americans and Asian refugees to learn about farm jobs and become seasonal farmworkers.

Fruit and vegetable production is being concentrated on fewer and larger farms, but employment in agriculture is fragmenting as these large employers turn to labor contractors to supply workers for critical tasks such as harvesting. Production and marketing information is spread instantly via computer networks, but labor market information still passes by word-of-mouth from contractor to crew and then to new workers. These private recruitment networks do not utilize available information technologies and thus leave many farm workers unemployed or underemployed more than necessary. The public Employment Service does not have the flexibility of these private networks, and it matches a declining share of farmworkers and farm jobs.

There is widespread agreement that farm labor markets do not operate efficiently. One reason for this inefficiency is the fragmentation of seasonal labor markets by commodity, area, and employer and worker characteristics. The fruit and vegetable labor market is being balkanized or segmented by production, marketing, and labor factors. The major segments include:

- the high-wage and union-influenced segment on corporate farms that each employ 500 to 1,500 U.S. citizens and legal immigrant farmworkers and offer hourly wages of \$6.00 to \$12.00 or \$5,000 to \$10,000 annually for seasonal farm work.
- a broad middle labor market that offers piece-rate wages which enable legal and illegal harvest workers to earn \$4.00 to \$7.00 hourly for seasonal jobs that last from a few days to a few months.
- a minimum wage segment that relies on women, children, and older men and illegal immigrants to hoe and thin and harvest commodities.

There are no reliable statistics on the relative importance of these three segments, but it appears that the middle and bottom segments are growing as the high wage sector contracts.

### Policy Options

The government cannot reform the farm labor market unilaterally even if all its farm labor programs operated perfectly, because labor and nonlabor forces are isolating farm and nonfarm labor markets. For example, new labor laws and stepped-up enforcement in the face of continued illegal immigration encourage the fragmentation of employment. Irrigation technology that permits trees and grapes to be grown on steep hills for tax-loss farmers increases the demand for workers and the labor vacuum is filled by vulnerable immigrants because few Americans will work under such conditions at prevailing wages. The strong dollar, imports, domestic overproduction, and falling land prices have left many farmers financially vulnerable, so they vigorously resist potential cost-increasing changes such as immigration reform.

Current government policies and programs are partially responsible for the isolation of farm labor markets. Continuation of the status quo will lead to more and more immigration, much of it illegal.

Immigrant workers could be legalized through a formal temporary worker program. While this may make the workers less vulnerable to abuse, it is likely to result in the permanent dependence of American fruit and vegetable agriculture on immigrant labor and continuation of isolated farm labor markets. It also delays the adjustments American fruit and vegetable agriculture will have to make to compete in the international markets of the 1990s.

Public policy could reduce the dependence of American fruit and vegetable agriculture on foreign workers and expedite inevitable adjustments. Such a policy requires:

- a more reliable data base, including better information on who hires farmworkers, for how long, and the earnings, and career transistions of farmworkers.
- the integration of farm and nonfarm labor markets, thereby enlisting market forces to upgrade farm jobs.

- extension of the personnel practices so widely practiced in the rest of agriculture (and in other industries) to the hired farm work force.
- extension of labor-intensive agriculture in the United States on the basis of comparative advantage rather than the availability of foreign labor.
- explicit linkages between federal agricultural tax, immigration, and employment policies to minimize contradictions.

The farm labor market is at a crossroads: the incentives to integrate farm and nonfarm labor markets in the 1960s were reversed by ample supplies of immigrant labor in the 1970s. The policy decisions made in the 1980s will shape the farm labor market of the 1990s.

## AMERICAN AGRICULTURE

Agriculture is the core component of the food system, the largest industry in the United States. The food system supplies inputs to farmers, produces food and fiber, and then packs and processes farm products for consumers. The food system generates about 20 percent of GNP and employs 22 percent of the work force.<sup>1</sup> Farm input suppliers--such as equipment manufacturers, chemical and seed companies, and banking, insurance, and other farm service enterprises--employ 3 percent of the work force. Farmers and farmworkers are another 3 percent, almost three times the combined work forces of the steel and automobile industries.<sup>2</sup> Food processors, distributors, retailers, and eating establishments employ another 16 percent of the work force.

American agriculture is an industry noted for its efficiency. Consumers are considered the major beneficiaries of this efficient agriculture: the average American family spent only 16.1 percent of its after-tax income for food in 1982, much less than the 20 to 30 percent common in Europe.<sup>3</sup> American farmers are also major exporters of food and fiber; one-third of the nation's cropland is devoted to export crops such as wheat and soybeans which generate 20 percent of total export revenues.<sup>4</sup>

For more than 50 years, the efficient agricultural system which yielded harvests of plenty has been attacked for its "harvest of shame" wages and working conditions to its hired workers. This report addresses a central paradox in American agriculture--the same food system whose amber waves of grain feed a hungry world does not offer wages and working conditions sufficient to attract and retain American workers.

A farm is defined as any unit of land which is operated as a farm and has annual farm sales of \$1,000 or more. In 1981, the nation's 2,436,000 farms produced crops and livestock worth \$147.3 billion, an average \$60,500 each in farm sales. Farms comprised one-fourth of the proprietorships that filed tax returns in 1980.<sup>5</sup>

The traditionally important role of independent and self-reliant small farms in the American economy has generated several mystiques about farming. America's founders espoused an agrarian ideology which exalted farming, and Thomas Jefferson's belief that a nation of small and independent family farmers is essential for democracy is still echoed in the Congressional committees which influence farm policies. Farming is considered a special occupation in which traditions have been reduced to aphorisms:

- farming is both a business and a way of life;
- farmers preserve essential land and soil for future generations;
- anyone who wants to farm should be able to do so; and
- farmland should be owned by the family that tills the soil.

The special aura that surrounds family farming obscures the actual structure of food production and the operation of farm labor markets.



A better perspective on labor issues can be achieved by separating agriculture into three categories by size of farm (small, mid-sized, and large) and into three commodity sectors (field crops, livestock, and fruits, nuts, vegetables, and horticultural products). The fruits, nuts, vegetables and horticultural products sector includes the labor markets which pose the greatest challenges.

### Farm Structure and Production

America's 2.4 million farms can be classified into three size groups on the basis of their annual sales. At one end of the spectrum are the largest farms (selling \$100,000 or more in farm products). These constitute a small percentage of the nation's farms, produce most of the nation's food and fiber, and are the most profitable. In 1981, only one in eight farms sold \$100,000 or more in farm products, but these farms accounted for 68.4 percent of cash farm receipts and obtained 101.7 percent of net farm income.<sup>6</sup>

Figure 1 shows that the 25,000 largest farms with sales of \$500,000 or more each accounted for 30 percent of all farm sales and received two-thirds of net farm income, while the 840,000 smallest farms sold 1.4 percent of all farm products and lost \$2.1 billion farming.

The small farms that sold less than \$20,000 each were 60 percent of all farms, but collectively such farms accounted for only 6.5 percent of all farm receipts and lost \$1.6 billion farming. Such structural statistics indicate that the nation's smallest farms could "disappear" and cause only a marginal reduction in food production.

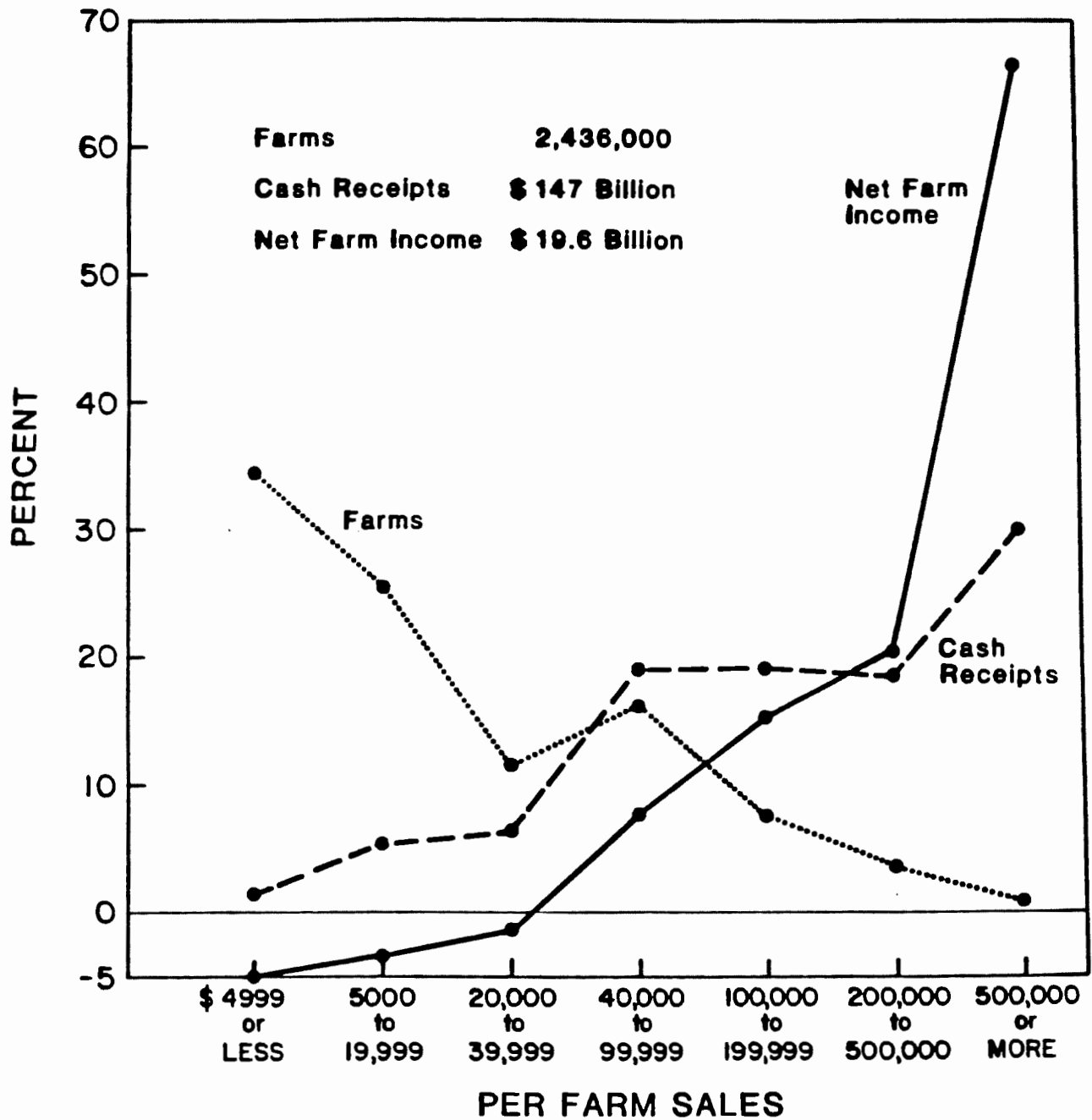
Who are these small farmers who lose an average \$1,000 each farming?<sup>7</sup> Some are retired farmers who have sold or leased most of their land; some are hobby or part-time farmers, or tax-loss investors who lose money farming but expect the value of their farmland to appreciate; and some are struggling full-time farmers. There are no statistics on the true intentions of small farmers, but only a few of them are full-time farmers.

The third group of farms fits the traditional image of the family farm in economic distress--the mid-sized family farm. Farms that sell \$20,000 to \$99,999 in farm products annually are frequently too big to allow the farmer to have a full-time nonfarm job but not big enough to reap economies of scale in farm production. One-fourth of all farms were in this mid-sized group in 1981, and they accounted for one-fourth of all farm sales but only 6.5 percent of net farm income.

The small and mid-sized farms, which comprise 88 percent of all farms, are viable only because such "farms" obtained most of their incomes from nonfarm sources. Small farmers collectively received \$29 billion from nonfarm sources in 1981 which offset their farming losses. Most of these small farmers had off-farm incomes that exceeded the median U.S. household income of \$20,243, so that the average small farmer still had a total income near the median after deducting farm losses. Mid-sized farms also got most of their incomes from nonfarm sources, but the average \$9,500 from nonfarm sources and

Figure 1

### U.S. FARM STRUCTURE: 1981



Source: Economic Indicators of the farm sector, Farm Sector Review, Wash. D.C., USDA, ERS, 1983.

\$2,000 from farming left them with only 57 percent of the median household income in 1981.

Farms purchase inputs such as seeds and fertilizers, transform them with land and machinery into raw products, and then sell these farm products in relatively competitive markets. Farming resembles, in many respects, a small-scale manufacturing process that adds value to inputs, but agriculture has a unique biological production process that slows down adjustments to price changes. Most farmers do not know exactly what price they will receive for their commodities months or years later when it is harvested, so farmers with investments in machinery or trees are reluctant or unable to switch crops if commodity prices fall. This slow production response combines with the unpredictable effects of weather and disease to cause considerable variation in farm prices and incomes from year-to-year.

Agriculture also differs from manufacturing because it is dependent on land. The supply of land is relatively fixed, so to expand farmers must bid against other land users. Land prices can rise if farmers expect higher commodity prices, if nonfarm investors expect inflation, or if urban developers expect development. Unlike reproducible machinery, which tends to depreciate with use, land values usually appreciate as demand rises for a relatively fixed supply.

Farming is more capital-intensive than the rest of the economy. Assets devoted to agriculture total almost \$1 trillion, equal to 90 percent of total U.S. manufacturing assets. The capital-labor ratio in agriculture is three times the economy-wide average, and in 1979 agriculture used \$443,000 of machinery and buildings per worker--twice the value of capital per worker in manufacturing.<sup>8</sup> One consequence is that farmers with debt are very sensitive to changing interest rates. Farm debt exceeds \$200 billion, and interest expenses are 20 percent of cash production costs. This interest burden is divided unevenly because farms tend to be at the extremes of the debt spectrum; many older farmers have little or no debt, while younger farmers sometimes have debt-equity ratios of 80 to 90 percent.

The major 20th Century change in farm structure and production has been the emergence of 200,000 large commercial farms that are capital-intensive, efficient, and capable of generating family incomes that are four times the national median. These commercial farms are the survivors after four decades of labor-saving changes that saw farm production triple while farm employment decreased 80 percent. The number of farms peaked at 6.8 million in 1935, when farm incomes averaged only 40 percent of nonfarm incomes. The farm population decreased sharply during the next four decades until the farm and rural populations stabilized in the 1970s.

A second change has been the increasing importance of nonfarm income to farm families. The rural jobs created in the 1970s by the decentralization of manufacturing and the completion of the interstate highway system spurred the rural population renaissance that integrated many farm and nonfarm labor markets, especially for smaller farmers and their families. In recent years, net farm income has accounted for only one-third of the farm population's total income. Nonfarm income permits the majority of farmers, who on average lose money farming, to remain in agriculture.<sup>9</sup>

### Labor-Intensive Agriculture

Farming has three major commodity subsectors:

- Field crops, such as wheat and corn, required most of the nation's cropland to produce crops worth \$56 billion in 1982;
- Livestock, which may be land-intensive in pastures and rangeland or concentrated in feedlots, dairies, and poultry operations, accounted for half of total farm sales.
- Fruits and nuts, vegetables, and horticultural (FVH) specialties (such as mushrooms and flowers) use less than 3 percent of the nation's cropland; however, such commodities were worth \$18.6 billion in 1982, or one-fourth of total crop sales and one-eighth of total farm sales.

Each of these three sectors pays one-third of the total farm wage bill; but the nature of labor utilization is quite different across the sectors. Field crops have been largely mechanized and, with few exceptions, require little seasonal hired labor to supplement the efforts of family workers and year-round hands. Livestock accounted for half of all farm employees in 1978 but only an average of 3.7 jobs per farm; and many of these jobs were filled by year-round workers. Wages in livestock operations are quite small as a percent of total production expenses. For example, dairy wages amount to only 12 percent of dairy production expenses in 1978, but this average can be deceiving because dairy farms include small operations which rely on family labor at one end of the scale and large commercial operations which hire dozens of workers at the other end.

FVH farming differs significantly from the field crop and livestock farming that shapes public perceptions about agriculture. FVH farms differ in structure and location, marketing channels, and reliance on seasonal hired labor. FVH farms include relatively few employers (only 8.1 percent of all farm employers), offer a large number of jobs (average 20 jobs per farm), and pay wages which are a relatively high percentage of reported production expenses (56 percent on average). These differences make the fruit and vegetable labor market similar to that of a seasonal assembly-line industry and help to justify the "factories in the field" label that is often applied to commercial FVH operations.

The use of seasonal farm labor is largely associated with FVH commodities, but there is considerable diversity even within this sector. Although the term "labor-intensive" is often considered synonymous with FVH agriculture, not all FVH commodities are labor-intensive. Potatoes (\$1.4 billion in 1980) are considered a vegetable but are harvested mechanically with minimal assistance from seasonal workers, as are processing tomatoes, peas and beans. Most tree nuts (\$0.9 billion) such as almonds, walnuts and pecans, are harvested mechanically. On the other hand, a few field crops have labor-intensive harvests or involve other tasks which make heavy use of labor, including sugarcane in Florida and flue-cured tobacco in North Carolina.

The nation's 80,000 FVH farm employers are scattered across the nation,<sup>10</sup> but California and Florida accounted for 55 percent of FVH sales in 1982. Large family and nonfarm corporations sometimes dominate the production of particular fruits and vegetables. Major Florida citrus producers include Procter and Gamble (Citrus Hill), Beatrice (Tropicana), and Coca Cola (Minute Maid). A California subsidiary of Castle and Cooke supplies almost one-fourth of the nation's iceberg lettuce with a work force of 8,000; and California's fresh mushroom production is dominated by Campbell's, Castle and Cooke, and Amfac. Farmer-owned cooperatives, such as Sunkist, market most of the nation's fresh citrus, and other cooperatives dominate almond and raisin marketing. Some of these private and cooperative organizations harvest and market fruits and vegetables, and some only pack or process commodities, but these sizeable organizations influence the FVH labor market.

Production of fruits and vegetables is a high-risk operation that can generate very high profits. For example, an acre (a football field) of strawberries in California generates an average \$25,000 in gross revenues, versus \$150 for Kansas wheat. Most FVH commodities generate \$2,000 to \$4,000 of gross revenue per acre, slightly above production costs. However, if producers elsewhere suffer weather or disease problems, per acre returns can double or triple, and most of the additional revenue is profit. Thus one bonanza year in five will keep many optimistic farmers in business, especially if crop insurance or federal and state marketing orders help to avoid extremely low prices. Marketing orders are federal and state regulations designed to increase and stabilize grower prices.

FVH commodities include capital-intensive perennials and short-season vegetables. Perennials, such as grapes and tree fruits, require three to seven years to reach maximum-yields, while a short season vegetable such as lettuce matures 60 days after planting. The production of perennial commodities responds only sluggishly to changing prices. For example, when canned fruit sales fell in the 1970s, peach farmers were very slow to remove excess acreage because their investment in peach trees was already a sunk cost. Peach farmers continued to employ hand-harvesters even when peach prices just covered harvesting costs.

Production responses to changing prices are much more rapid in vegetables, which have short growing seasons. Two or three months after a vegetable is planted, it must be harvested or abandoned. Most lettuce, broccoli, and melon growers harvest only 50 to 75 percent of the total potential yield of unevenly-ripening vegetables because prices do not justify additional harvesting efforts.

Fruits and vegetables are perishable commodities that are sold fresh or processed (tomatoes into catsup). Some commodities can be stored in the field or orchard for at least several days, but then they begin to deteriorate. For example, citrus can be "stored" on trees without appreciable damage for up to six weeks, and the grape harvest can be shifted one or two weeks, but most tree fruits such as peaches, pears, and cherries have optimal picking windows of only three to five days. Vegetables and melons tend to be even more perishable; many must be harvested within a two or three day period for best quality.

Perishability requires planning, and both growers and packers/processors plan a harvesting schedule. Most farmers stagger plantings to maximize the harvest period and to minimize peak labor needs. Seasonal packing and processing facilities also want to schedule their deliveries over as long a period as possible to maximize the use of their machinery. Unpredictable weather changes can upset this schedule, but fruit and vegetable production is far more carefully planned than many grower representatives imply when discussing their demand for seasonal labor.

Fruit and vegetable agriculture has unique seasonal demands for hired workers. Field crop farms often hire family members, relatives, or local students<sup>11</sup> and livestock farms tend to employ one or two year-round hired hands. Fruit and vegetable farms, in contrast, usually employ crews of 20 to 40 "strangers" for two weeks to two months. Thus, while it is accurate to say that most farm employers have a familial, friendship, or long-term bond with "their" hired workers, such bucolic employment ties are not usually found on the 80,000 fruit and vegetable farms that hire workers directly and the 36,000 such farms that utilize contract labor.

### Summary

The farm labor problems of most concern are those of the fruit and vegetable industry. This expanding industry is concentrated in a few states, produces perishable commodities in small and large factories in the field, and depends on hired workers to do much of the farm work and almost all of the hand-harvesting. Many of the FVH employers are large capital-intensive operations dependent on hired workers that operate very much like manufacturers: they buy inputs, transform them into raw products, and then sell them to processors or retailers. Many fruit and vegetable farm employers have more in common with seasonal nonfarm employers such as construction firms or garment manufacturing, than with other farm employers.

### THE DEMAND FOR FARMWORKERS

Agricultural employment has several distinguishing features:

- farm work is an easy-entry occupation for students, housewives, and immigrants;
- many hired workers are employed seasonally in agriculture, so they combine farm work with education or nonfarm work or periods of unemployment;
- few entry-level farmworkers intend to work for farm wages as a career.

Farmer and farmworker were the dominant occupations in the United States less than 100 years ago; today, the seasonal farm labor market is separated from most other labor markets by its wage system, middleman recruitment system, and worker characteristics.

Agriculture employed an average 13.6 million persons in 1910, over three-fourths farmers. Table 1 shows that agricultural employment declined rapidly through the 1950s and 1960s, but in the 1970s average farm employment stabilized at about four million or 3.6 percent of the work force. Average hired worker employment decreased sharply during the 1960s, reaching a low of 1.1 million in the early 1970s before rebounding to an average 1.3 to 1.5 million in the early 1980s.

Most farms need workers for only a short period each year, and most farmworkers do farmwork for fewer than 20 weeks each year. Seasonal employment generates enormous turnover in the hired farm work force. Some farmers have reported hiring 200 workers in one month to maintain a 20-person harvest crew; a turnover rate of 120 workers per year-long equivalent job. If the U.S. Armed Forces experienced such extremely high turnover, the entire U.S. population would have to serve sometime during the year to maintain current troop levels.

Hired farmworkers are located at every point along the annual hours of work spectrum. The students and housewives employed on field crop farms often contribute fewer than 200 hours of farmwork annually (25 days x 8 hours). At the other extreme, the year-round hired hands employed in livestock operations may contribute 2,400 hours annually (300 days x 8 hours). Short-and long-term seasonal farmworkers fill the middle spectrum, working one to eight months in agriculture.

#### Average Employment, Workforce, and Hours of Work

A snapshot of farmworker employment can be derived from trends in three indicators: average employment, total work force, and hours worked.<sup>12</sup> Annual average employment estimates are derived from a quarterly survey of farm employers which obtains information on family and hired workers, weekly hours of work, and wages. This employment information is published quarterly in Farm Labor, and the annual average employment of farmworkers is simply the average of these quarterly estimates.<sup>13</sup> In 1980, for example, farmworker employment was 910,000 in January, 1.2 million in April, 1.8 million in July, and 1.3 million in October, or an annual average 1.3 million. The employment of farmers and unpaid family workers was 2.1 million in January, 2.3 million in April, 2.8 million in July, and 2.5 million in October, or an annual average of 2.4 million. During the 1970s, annual average farmworker employment rose 10.9 percent, while average family employment fell 28.3 percent.

The total hired farm work force is estimated every other December, when the Current Population Survey attaches farmworker questions to its regular monthly questionnaire. About 1,500 households in the nationwide sample include at least one person who worked for farm wages during the year, and USDA publishes a report on the number and characteristics of farmworkers based on this CPS sample.<sup>14</sup> During the 1970s, the total hired work force ranged from 2.4 to 2.8 million, reaching its lows at the beginning and end of the decade. The number of migrant farmworkers (defined as persons who cross county lines and stay away from home overnight to do farm work for wages) was about 200,000 throughout the 1970s, but fell to 115,000 in 1981.

Table 1. U.S. Farm Employment, Work force, and Hours of Work: 1910-1982

Year	Annual average employment <sup>1</sup>			Hired as a percentage of total farm employment	Total hired farm work force <sup>2</sup>	Hours of Work		
	Total	Family	Hired			Total	Crops	Fruits and Vegetables
	-----Thousands-----			Percent	Thousands	-----millions-----		
1910	13,555	10,174	3,381	25	--	22,547	12,589	1,437
1920	13,432	10,041	3,391	25	--	23,995	13,406	1,509
1930	12,497	9,307	3,190	26	--	22,921	12,286	1,611
1940	10,979	8,300	2,679	24	--	20,472	10,378	1,537
1950	9,926	7,597	2,329	23	4,342	15,137	6,922	1,262
1955	8,381	6,345	2,036	24	--	12,808	6,012	1,057
1960	7,057	5,172	1,885	27	3,693	9,795	4,590	969
1965	5,610	4,128	1,482	26	3,128	7,335	3,416	861
1970	4,523	3,348	1,175	26	2,488	5,896	2,788	811
1971	4,436	3,275	1,161	26	2,550	5,741	2,757	820
1972	4,373	3,228	1,146	26	2,809	5,433	2,621	781
1973	4,337	3,169	1,168	27	2,671	5,321	2,667	828
1974	4,389	3,075	1,314	30	2,737	5,178	2,657	820
1975	4,342	3,025	1,317	30	2,638	4,975	2,630	827
1976	4,374	2,997	1,377	31	2,767	4,783	2,556	787
1977	4,170	2,863	1,307	31	2,730	4,644	2,530	811
1978	3,957	2,689	1,268	32	--	4,432	2,449	789
1979	3,774	2,501	1,273	34	2,652	4,328	2,436	808
1980	3,705	2,402	1,303	35	--	4,257	2,443	810
1982	4,108	2,567	1,541	38	2,431	3,992	2,366	778

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<sup>1</sup>Average of quarterly estimates of number of jobs on farms.

<sup>2</sup>Total number of persons employed for at least 1 day during the year.

<sup>3</sup>Survey design changed in 1974

<sup>4</sup>Employment data is July 1982; hired farm work force is December 1981.

Source: U.S. Department of Agriculture.



Estimates of average employment and the total work force permit analysis of the importance of hired workers in agriculture and the ratio of workers to jobs. Hired workers were about 25 percent of average total employment in agriculture until the early 1970s, when hired worker employment increased to 30 and then 35 percent of average annual employment. If the quarterly Farm Labor survey accurately measures year-long job slots, then hired workers contribute over one-third of the hours worked in agriculture. The ratio of the total work force to average employment is one measure of seasonality (a ratio of one implies that all workers are employed year-round). The work force-employment ratio was 2.1 in 1970 and 1979, implying that the average year-long equivalent job for a hired farmworker was filled by two individuals during the year.

USDA also estimates the total hours of farmwork performed each year from statistics on acres and livestock and the hours required to handle each unit. These estimates on hours of work do not distinguish hired and family workers, but hired workers do a disproportionate share of the work in fruits and vegetables. Fruits and vegetables require one-third of all crop hours, grains 23.7 percent, and cotton 2.5 percent. Hours of crop work decreased 12.4 percent in the 1970s, but fruit and vegetable hours remained at 810 million, so fruits and vegetables loom ever larger in hours of work statistics.<sup>15</sup>

#### Mechanization and Expansion

Data on employment, work force, and hours illustrate an important fact about farm labor markets: farm labor "problems" in field crop and livestock agriculture have been remedied by labor-saving mechanization that reduced the demand for labor and converted hand tasks into equipment operator jobs. Fruit and vegetable agriculture also has experienced labor-saving mechanization, but the expansion of fruit and vegetable acreage has offset mechanization and stabilized the demand for labor. Since hired workers do a disproportionate share of seasonal fruit and vegetable work, seasonal farm labor problems have not disappeared.

During the past three decades, labor-saving trends in fruit and vegetable agriculture have been offset by labor-using trends. The major labor-saving changes included:

- the mechanization of the tree nut, potato, and processing tomato harvests;
- the substitution of precision equipment and herbicides for hand hoers;
- the introduction of bulk bins and forklifts to handle harvested commodities in fields and orchards.

Harvest labor savings have been dramatic in individual commodities, typically substituting a few equipment operators and sorters for 80 to 90 percent of the work force needed to hand harvest the commodity.<sup>16</sup>

These labor-savings were offset by the expansion of fruit and vegetable agriculture. Acreages of hand-harvested commodities such as grapes and strawberries tripled, and yields often doubled or tripled with the introduction of improved plant varieties and cultural practices. This expansion occurred on commercial farms in California, Arizona, Texas, and Florida, so the demand for hired labor increased in the south and west and decreased in the upper midwest and northeast. The fruit and vegetable farms that emerged in the south and west in the 1950s and 1960s were typically large operations that depended entirely on hired workers to harvest commodities.

### Technology and Imports in the 1980s

Labor-intensive agriculture in the south and west depends on adult immigrants to hand-harvest commodities. The demand for these harvest workers stabilized at about 1 million in the 1970s, but rising wages, technology, and imports might reduce the demand for labor in the 1980s and 1990s.

The average farm wage has increased in the 1980s, but so has the apparent variance around this average. The farm labor market appears to be fragmenting into a high-wage segment and a larger low-wage segment, making the average wage a less meaningful statistic. For example, a 1982 survey of California farm employers reported a statewide average wage of \$5.16, but a range of \$3.01 to \$16.00. Similarly, reported statewide average farm wages ranged from \$3.16 hourly in Wisconsin to \$6.90 in Hawaii in July 1984.<sup>17</sup>

Technology could reduce the demand for harvest labor by permitting harvest mechanization and by automating labor-intensive tasks such as irrigation and hoeing. Harvest mechanization should be accelerated by bio-genetic research which is seeking uniformly-ripening commodities that can be harvested mechanically. Uniform-ripening is a necessary pre-condition for most harvest machinery, and machine harvesting can be facilitated by redesigning the commodity (hard tomatoes) or the plant (dwarf trees to minimize falling and bruising). Orchard and vineyard mechanization will require a sharp increase in the demand for labor to replant trees and vines for mechanical harvesting, but then the demand for farm labor should drop drastically as machines replace workers. Perennials that are replanted for mechanical harvesting may also be irrigated automatically, eliminating many of the easy but lower wage jobs taken by older farmworkers (irrigation required one-sixth of the hours of work done by California hired workers in 1976).<sup>18</sup>

Some new technologies may increase the demand for harvest labor but change the composition of the work force. Mechanical aids are becoming common in vegetable and melon production, and a simple conveyor belt in the field that brings harvested commodities to a mobile packing platform can change the composition of the work force and the wage system. Traditionally, young men harvest broccoli or melons in crews of 20 to 40 for piece-rate wages that require all crew members to maintain a fast pace, so some cantaloupe harvesters literally run with 60 pound bags in 110°F heat. Working under group piece-rate compensation schemes, these self-regulating crews have shunned women and older men who cannot maintain the rapid pace that enables each crew member to average \$75 or \$100 for a seven hour day. The vegetables and melons harvested by these crews are hauled to packing sheds where nonfarm workers sort and pack them.

A mobile conveyor belt--which brings the commodity to a mobile packing platform that moves through the field--eliminates much of the lifting and carrying that discourages women and older men. Women and older men can harvest and pack at a pace set by the machine, so a larger and slower crew of such workers, who are paid hourly wages of \$4 to \$6, can be cheaper than the specialized harvesting crews of young men and packing shed crews. These savings are especially important for smaller growers, who do not have to pay a separate packing charge or invest in a packing shed which operates only seasonally. Mobile packing platforms can also utilize lights for night harvesting, reducing cooling costs and quality deterioration.

Mobile packing platforms increase the demand for harvest labor because nonfarm packing shed jobs in effect become field jobs. However, field-packing is a technology often resisted by unions because it often eliminates unionized packing shed jobs and encourages smaller and harder-to-organize farmers to grow vegetables.

Labor-saving harvest mechanization and labor-using field packing may be two responses to the threat of imported fruits and vegetables. Until the 1970s, most fruit and vegetable imports were bananas and other tropical fruits. However, other countries have begun to adopt the production and packaging methods used by California and Florida producers to supply East Coast consumers, and with improved transportation facilities. Distance has become a minor barrier for fresh fruit and vegetable producers.

The fruit and vegetable industry is becoming an international business in which wages are 30 to 60 percent of production costs. The fruit and vegetable industry has demanded protection from imports, unlike the field crop agriculture which generates the U.S. agricultural trade surplus. One example of competitive imports is the attempt of Florida fresh tomato producers to minimize imports of Mexican tomatoes by regulating minimum size and grade standards. Grape growers also complain about European wine imports; orange growers complain of unfair competition from Brazil and Spain; and mushroom producers allege that the Chinese are unfair competitors.

Most fruit and vegetable imports are regulated indirectly with size or grade standards established in federal marketing orders. For example, there is a small tariff on fresh winter tomatoes, but the major impediment to foreign producers is a marketing order approved by Florida growers that makes the federal government the enforcer of the minimum size of domestic and imported tomatoes, the size of the carton in which tomatoes are shipped, and the maximum percentage of defects per box. Inspectors spot check fruit and vegetable shipments and can reject shipments that do not satisfy established standards. Florida tomato growers allege that Mexican producers "dump" tomatoes on the U.S. market, while Mexico complains that the U.S. government approves changes in size and carton standards that discriminate against Mexican growers.

Increased imports may reduce FVH production and employment in the United States but the additional seasonal employment created abroad may increase, decrease, or have no effect on emigration pressures. It is hard to predict the effects of increased imports on emigration, but under some circumstances increased imports may actually stimulate illegal immigration. For example,

the winter vegetable industry of northern Mexico employs migrant workers whose homes are 500 to 1,000 miles further south. Some of these internal Mexican migrants earn money during the winter vegetable season to pay smugglers who bring them into the United States for the summer and fall harvest seasons. Thus, expanded fruit and vegetable imports could paradoxically increase illegal immigration to the United States.<sup>19</sup>

### Summary

The employment of seasonal farmworkers in FVH agriculture stabilized at about 1 million in the 1970s. This stabilization is the result of offsetting trends: mechanization eliminated some harvest jobs, but the increased production of fruits and vegetables created new farm jobs. Changes in the next two decades promise similar offsetting effects on farmworker employment: uniformly-ripening fruits and vegetables can be harvested and sorted mechanically, but farmers might also shift nonfarm jobs from packing houses to the fields, creating additional farmworker jobs. International competition may intensify, and lower wages abroad may eliminate farm jobs in the United States.

### FARMWORKER CHARACTERISTICS AND EARNINGS

Farmwork is done by farmers, their spouses and children, and hired workers. One major distinction between farmers and family workers and hired workers is that farm families subtract expenses from receipts to obtain their net farm incomes, while hired workers are paid wages or salaries. Net farm incomes are influenced by farm prices, weather, and input costs, while wages and salaries are determined by the demand for and supply of farmworkers.

Persons employed to do America's farm work have two important characteristics:

- Farmers tend to be older white males, but seasonal hired workers tend to be younger and more minority than the civilian work force;
- most farmworkers do only a few weeks of farm work each year, so the 25 to 30 percent of the hired work force that is employed almost year-round does three-fourths of all farm work for wages.

Farmers and their families throughout the United States do 65 percent of the nation's farm work, and 96 percent of U.S. farmers are white. Farmers are older than average; the average age of farmers is 50.

The hired workers who do the remaining 35 percent of the nation's farm work are younger and include more minority workers. The USDA reports that 55 percent of the farm work force is under 25 and that 73 percent of all farmworkers are white (22 percent of the civilian labor force is under 25 and 87 percent are whites).<sup>20</sup> The USDA report does not provide demographic characteristics by commodity, and it appears that the USDA survey--which is conducted every other December--is most likely to interview year-round

farmworkers and white students and housewives who are seasonal workers. State and local farmworker surveys report that ethnic minorities are 70 to 90 percent of the seasonal farm work force in labor-intensive agriculture.<sup>21</sup> The discrepancy between the USDA survey and other surveys is due to their different sampling procedures and timing. This section first reviews the federal survey and then state-level surveys.

### The Federal Farmworker Survey

The only regularly published data on farmworker demographics and earnings is generated by a biennial USDA household survey. The most recent survey of 1,500 farmworker households in December 1981 estimated that 2.5 million persons nationwide did farm work for wages sometime in 1981, that 73 percent of these hired farmworkers were white, 55 percent were under age 25, and that all farmworkers averaged \$2,659 each for doing 98 days farm work.<sup>22</sup> According to this USDA survey, fewer than 5 percent of the farmworkers nationwide were migrant workers who crossed county lines and stayed away from home overnight to do farm work.

The farmworkers whose characteristics and earnings are reported in the USDA Hired Farm Work Force reports can be divided into three groups: students and housewives who do less than 25 days of farm work, seasonal farmworkers, and year-round hired hands. Most numerous are the students who do less than one month of farm work each year. Almost two-thirds of these casual farmworkers were not in the labor force most of the year, and three-fourths reported that they were in school when not doing farm work. Over three-fourths of the farmworkers who did fewer than 75 days of farm work in 1981 were whites. These short-term workers comprised 61 percent of all workers, but they did less than 20 percent of the farm work done by hired workers. Almost 73 percent of these short-term workers were in the southern and north central regions.

The 400,000 year-round hired hands each did 250 days or more of farm work in 1981, and collectively these workers did almost half of the nation's farm work. Almost three-fourths of these year-round workers were white, and they averaged \$8,500 each for doing farm work in 1981. Almost 40 percent of these year-round workers were in the South.

Seasonal workers are the in-between group. The USDA survey reported that less than one-fourth of the total farm work force did 75 to 149 days of farm work in 1981. Although there were proportionately more Blacks and Hispanics in this seasonal worker group, whites were 58.9 percent of this total seasonal work force. Over three-fifths of these seasonal workers were in the southern and north central states.

The USDA acknowledges that its survey misses seasonal farmworkers. It appears that the USDA survey is especially effective in locating the students and housewives who are employed for a few weeks on mid-western field crop farms and year-round livestock workers through out the nation. Indeed, the USDA survey reports that half of all farmworkers in 1981 were primarily employed on field crop farms and 19 percent in livestock enterprises, meaning that only 26 percent or 654,000 workers were primarily employed in fruits, vegetables, and horticultural specialties. Hispanics were concentrated in

these FVH commodities (61 percent of the estimated 328,000 Hispanic farmworkers nationwide), but whites outnumbered Hispanics 1.7 to 1 in the FVH sector, according to the USDA survey.

California, Florida, and Texas are the three most important farm labor states. The farmworkers in each state have common characteristics, including the growing importance of Mexican immigrants in each state's farm work force. However, there are also significant differences between these states:

- California collects the most farmworker data, and statewide employment and earnings data clearly show that the major cause of low annual earnings in the 1980s is unemployment, not hourly wages.
- evidence from Florida indicates that Mexicans are becoming more important in the state's vegetable work force, but the unique feature of Florida's farm work force is the H-2 Program that admits 8,500 Jamaican sugarcane cutters.
- Texas farmers in the lower Rio Grande Valley employ seasonal fruit and vegetable workers, but Texas is unique for its importance as a winter home for migrant workers who harvest summer crops in the upper midwest.
- Other states whose farmers are major employers include Washington, North Carolina, and New York, and in each of these states there is evidence that the Hispanic component of the farm work force is increasing.

### California<sup>23</sup>

The most comprehensive recent farmworker survey was completed in August 1983 by the University of California and the California Employment Development Department. Bilingual outreach workers interviewed almost 1,300 farmworkers and obtained information about 2,240 farmworkers and 2,360 dependents.<sup>24</sup>

The 1983 survey yielded three important findings. First, 80 percent of California's farmworkers are immigrants to the United States. Farmers are not recruiting U.S. citizens to do the state's farm work. Legal and illegal Mexican immigrants do almost 80 percent of the hand-harvesting and irrigation work and over 70 percent of the hoeing and thinning. U.S. citizens are concentrated in the easier farm jobs; they operate one-third of the State's farm machinery and sort 30 percent of the (mechanically-harvested) commodities.

One of the most surprising findings of this survey is that most farmworkers have some U.S. documents, indicating that there are fewer illegal alien farmworkers than many observers assume or that the illegal workers have acquired documents. Since it is very difficult to divide immigrant workers into those legally and illegally in the United States, much of the following discussion simply refers to immigrant workers.

Although most of California's harvest workers were born abroad, most are not illegal immigrant workers. Most immigrant workers had some U.S.

documentation: a green card, driver's license, or a union or church document. The survey indicates that:

- most farm employers could employ their current work forces even if an employer sanctions law were enacted, because most workers have several pieces of identification. However, the INS would have an enormous job verifying the authenticity of these documents.
- implementing an amnesty will be difficult because the many documents possessed by immigrants would have to be verified.

The second major finding is that lengthy unemployment, not low wages, causes low annual earnings. Farmworkers averaged \$4.66 hourly, well above the minimum wage of \$3.35. However, the average farmworker was employed in agriculture for only 25 weeks during the year, earning \$175 weekly and \$4,375 in 1983. Even with nonfarm work, a working spouse, and unemployment insurance benefits, few farmworker families obtained even half the \$22,400 median family income in 1981. Finding a steady job in or out of agriculture is a top priority for farmworkers.

The third major conclusion of the survey is that the harvest labor market operates in a peculiar revolving door pattern. Harvesting fruits and vegetables for piece-rate wages (for example, 85 cents per carton of lettuce) yields wages that range from \$5 to 12 hourly. However, stooping to harvest vegetables or balancing on a ladder with a heavy bag of fruit restricts most of the higher-wage piece-rate jobs to strong young men. These immigrants enter the United States when they are 20 to 30 years old and harvest fruits and vegetables for five to 15 years. Age takes its toll, and these harvesters drift into easier but lower wage farm jobs such as irrigating and hoeing or they find nonfarm jobs, especially if they have urban friends or learn English. Many harvest workers "retire" to Mexico after 10 to 15 years and send their sons to California.

The farm labor market is peculiar because most workers earn the highest wages of their careers when they are young and strong. Instead of the normal career progression into jobs of greater responsibility and higher wages and salaries, farmworkers earn maximum wages at the beginning of their careers. The harvest labor market resembles professional sports in the sense that most participants have only 5 to 15 years of peak harvest earnings, so their incomes decrease as their strength ebbs unless they save money and acquire other skills.

There are three groups of farmworkers in California, and each group has both common and distinct characteristics. "Single males" are Mexican men who come to California to do farmwork for an average 26 weeks each year. One-third of these unaccompanied males have families in Mexico, and on average these workers were unemployed 15 weeks in the United States and spent 9 weeks each year in Mexico. This group includes the highest proportion of illegal workers.

Mexican-born workers with families in the United States are the largest group, comprising 50 percent of the sample. The "average" Mexican family had five members, including 2.8 persons 14 and older who did farmwork in 1982-83.

The average Mexican-born family head did farm work for 24 weeks and nonfarm work for two weeks, was unemployed for 23 weeks, and spent three weeks outside the United States. Most of these Mexican family heads had green-cards, and many included U.S. citizen children.

The third major group is a diverse collection of U.S.-born Texas-Mexicans, California-born single and family workers, and a variety of other ethnic groups, including Punjabis, Southeast Asians, Yemenis, and Filipinos. The U.S.-born subset of this group averaged 25 weeks of farmwork, four weeks of nonfarm work, and 22 weeks of unemployment in 1982-83.

Adult farmworkers averaged \$175 weekly in 1982-83, or \$4,375 for 25 weeks of farmwork and another \$725 for three weeks of nonfarm work, for annual earnings of \$5,000. Household earnings rise with the number of workers; going from a one-to a two-person household increases work effort by 15 weeks and household earnings by almost \$1,700. As household size continues to increase, weeks worked and earnings rise at a slower rate because some of the additional persons are nonworking children, but the "average" farmworker household with four persons worked a total 49 weeks and earned about \$8,750 in 1982-83.

Many California farmworkers obtained social insurance and welfare payments to supplement their incomes. In two-thirds of the farmworker households, at least one person received unemployment insurance payments during the previous year, 26 percent of the households obtained Food Stamps, 24 percent MediCal benefits, 20 percent publicly-subsidized housing, 14 percent Disability Insurance payments, 12 percent AFDC, 6 percent a Social Security or SSI benefit, and 5 percent received General Assistance from county governments. Single Mexican men were least likely to obtain any benefit except UI, while families were more likely to receive UI and other benefits.

Data on the dollar amount of each benefit was not obtained, but it appears that most farmworkers were unemployed enough weeks to obtain half of their earnings in UI payments. This could raise the \$5,000 earned by a single earner to \$7,500 and the \$8,750 for a family to \$13,125. However, one-third of the farmworker households did not obtain any UI benefits.

The survey asked farmworkers about their assets and living conditions. Across all 1,286 households, over 19 percent owned a house in the United States and 29 percent owned a home in Mexico, and four percent owned a house in both countries, so that 45 percent of all the households owned homes. Almost three-fourths of the households owned a car or truck, and 41 percent had a U.S. or foreign bank account. Unaccompanied Mexican men were most likely to own homes abroad (50 percent), farm land in Mexico (17 percent) or a Mexican business that yields income (10 percent), and a Mexican bank account (29 percent). In California, 62 percent of all farmworkers lived in houses, 18 percent in apartments, and most of the rest lived in house trailers, boarding rooms, and barracks. Rental quarters cost an average \$230 per month for three rooms, and the owners of such quarters were primarily private landlords (46 percent), public agencies (20 percent), and employers or friends/relatives (17 percent each).

Farmworkers were asked about their social service needs. The two most frequently-cited needs were assistance with government forms and help in



finding a job (each cited by 54 percent of the 1,286 households). Other needed services were transportation and help communicating with doctors (30 percent each), child care (16 percent), and English classes and immigration assistance (14 percent each). Farmworkers most often rely on friends and relatives to help them, especially with transportation, doctors, and child care. Social service agencies are most helpful in immigration matters, job referrals, government forms, and English classes.

Although all kinds of farmworkers can be found doing farm tasks, there is a definite age and sex taxonomy. Younger workers dominate the harvesting tasks because hand-harvesting involves stooping, climbing, or carrying efforts that "use-up" a worker's back in 10 to 15 years. Young men dominate the hand harvesting of citrus and tree fruits, melons, and piece-rate vegetables, while older men and women often harvest strawberries, carrots, and vegetables such as cauliflower that are field-packed.

Older men do a disproportionate share of the irrigation work, while older men and women do most of the thinning and hoeing work. Women fill most of the (nonfarm) sorting and packing jobs in citrus, tree fruit, and vegetable packingsheds, and women also do most of the field sorting of mechanically-harvested tomatoes. Men of all ages operate farm equipment.

FVH agriculture began in California in the 1870s, and for over 100 years waves of immigrant workers have done most of the state's farm work. When American farmers fled from the midwest to California to escape Dust Bowl poverty during the 1930s Depression, a surplus of farmworkers and wage-cutting prompted efforts to expel Mexicans who had arrived in the 1920s. White farmworkers joined the armed forces and took industrial jobs in the 1940s, causing a farm labor shortage. Farmers successfully petitioned Congress for temporary Mexican workers or braceros from 1942 through 1964. These Mexican braceros were never more than 27 percent of average domestic farmworker employment in California, but their availability permitted FVH agriculture to expand in the 1950s.

A major change in the composition of the state's farm work force is the growing importance of Mexican-born workers: In 1966, a study conducted for the California State Legislature reported that 46 percent of the state's farmworkers were Mexican; by 1983, it appears that at least three-fourths are Mexican or Mexican-American. Although whites and other ethnic groups still do a considerable amount of the state's farmwork--perhaps half if the contributions of farmers are included--the language of FVH fieldworkers and foremen is Spanish. In the 1980s, most of those who enter the farm work force with the intention of doing heavy hand work for wages for 5 to 15 years are Mexicans who first enter the U.S. when they are 18 to 25 years old.

During the 1930s and 1940s, surveys of midwestern farmworkers found that most considered hired farmworker employment as an entrée to eventual farm ownership. Farmworkers, therefore, reported that their most urgent need was higher commodity prices. This "way station" concept may have been unrealizable even in the 1940s, and few farmworkers in the 1980s will save enough to buy a California farm (at an average cost for land and buildings of \$785,000 in 1982). However, many Mexican-born farmworkers do hope to save enough money working in California agriculture to buy or expand a farm in

Mexico. This Mexican frame of reference helps to explain why immigrant workers will pay labor smugglers (coyotes) \$300 to \$500 to bring them to the United States to do farm work.

### Florida<sup>25</sup>

Florida is the second most important employer of hired farmworkers, and it differs from California in the timing of its peak employment (March-April) and the characteristics of its farmworkers (more Blacks). In 1980, the USDA Farm Labor survey reported that hired farmworker employment was 70,000 in January, 90,000 in April, 54,000 in July, and 57,000 in October, or an annual average of 68,000. Florida farmworkers dominate Federal Region 4, which also includes Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, and the 1981 Hired Farm Work Force reports that Region 4 had 23 percent of the nation's farmworkers (2.5 million) and 59 percent of the Black farmworkers (340,000). Florida's Migrant Labor Office estimates that the state has or attracts 100,000 to 300,000 migrant farmworkers each year for about 100,000 peak farm jobs.

There are four major groups of farmworkers in Florida, although their characteristics and earnings are not well-documented. White and Black U.S. citizens have traditionally done Florida's farmwork in the spring and then some of these workers migrated up the Eastern Seaboard to harvest fruits and vegetables throughout the summer and fall. Fewer and fewer U.S. citizen farmworkers migrate northward, although U.S. citizens dominate the hired farm work force in the northern part of Florida and women dominate packinghouse work forces. U.S. Blacks pick much of the citrus in the central part of Florida.

The major change in the farm work force in the 1970s and 1980s is the growing importance of Caribbean refugees and Mexicans in Florida agriculture. Cubans, Haitians, and other Caribbean nationals have played increasingly important roles in Florida's farm work force, although there are no reliable data on their characteristics or earnings. Similarly, illegal Mexican immigrants appear to comprise an important but undocumented part of Florida's vegetable work force.

Florida's major hand-harvesting jobs can be grouped into four categories: high-wage vegetables, citrus, low-wage vegetables, and sugarcane. Florida is the major producer of fresh tomatoes during the winter months and an increasingly important producer of winter vegetables, such as lettuce, broccoli, and celery. These traditionally higher-than-average wage vegetable harvesting jobs are often filled by Mexican workers. Citrus harvesting usually yields lower wages than vegetables, and the citrus work force includes U.S. and Caribbean Blacks. Low-wage harvesting jobs in strawberries and pole beans are filled by illegal Mexican and Caribbean immigrants.

Sugarcane offers a special class of harvest jobs--the cutting of sugarcane stalks with a machete-type knife. Reclamation and drainage projects in southcentral Florida created rich muckland soil that grows sugarcane stalks which bend over, making them difficult to harvest mechanically. It has always been difficult to recruit American sugarcane cutters, and the Florida

sugarcane industry has relied on alien workers from the Carribean sugar-exporting islands since its postwar expansion. Most of Florida's 320,000 acres of sugarcane is owned by corporate farms, and the harvest work force of about 8,500 workers is largely Jamacian.

The Jamacian sugarcane cutters are admitted under the H-2 Program, a program to admit temporary foreign workers for temporary U.S. jobs that was established in section 101(a)(15)H(ii) of the 1952 Immigration and Nationality Act. Under this H-2 Program, agricultural employers ask the Employment Service to certify:

- that unemployed Americans are not available to fill the jobs offered by the employer; and
- that the employment of the requested number of alien workers will not adversely affect similarly employed U.S. workers.

The Employment Service (ES) has promulgated recruitment procedures that employers must follow before ES will certify to the Immigration and Naturalization Service that the employer's request for H-2 visas should be honored.

The H-2 Program in Florida sugarcane is controversial. Critics allege that employers prefer to select the best cane cutters from the vast pool of Jamacians eager to come to Florida, where they earned an average \$6.16 hourly in 1981-82. In order to obtain these desired foreign workers, critics allege that employers assign American workers to less desirable fields and set piece-rate wages that enable Jamacians to earn more. All cane cutters must be paid at least the ES-determined Adverse Effect Wage Rate of \$5.37 hourly in 1983, but cane cutters actually cut each row of sugarcane for a piece-rate wage which is established by a foreman on the basis of "experience." Employers may fire domestic and foreign workers who cannot cut fast enough to earn the AEWR under these company-established piece rates after eight days.

Employers argue that Americans do not want to cut sugarcane, that foreign workers are more expensive and thus a last resort because employers must pay the workers' transportation costs and provide them with below-cost housing and meals, and that the "critical ingredient" of foreign sugarcane cutters creates full and part-time jobs for 5,400 Americans in sugarcane processing and other ancillary activities. Some employers argue that the U.S. Congress has established a wage floor of \$3.35 per hour, so that employers should be allowed to fill all jobs with foreign workers that are not taken by Americans at the minimum wage. Furthermore, they argue that importing a supplemental harvest work force creates ancillary "good jobs" for Americans and minimizes the demand for imported commodities.

There is some truth in the arguments of both sides, but the H-2 Program in the Florida sugarcane industry does not offer compelling reasons to import supplemental foreign workers to create or preserve U.S. jobs and lower prices for U.S. consumers. U.S. sugar prices are supported at approximately 22 cents per pound; the world sugar price is about 5 cents per pound, so U.S. consumers are paying an enormous subsidy to preserve the American sugar industry. Furthermore, the cane cutters whose admission causes controversy come from

sugar-exporting islands that cannot grow and export as much sugar as they wish because the U.S. imposes quotas on sugar imports to protect American sugar producers. High domestic sugar prices have encouraged major sugar users such as the soft drink industry to substitute corn fructose for sugar, so even a supplemental foreign work force will not be able to preserve sugar processing jobs for Americans indefinitely.

Florida's farm labor market has fragmented into several separate labor markets. Some citrus and vegetable growers have developed employment systems that emphasize the direct hiring of farmworkers who receive above average wages and fringe benefits. More common is the traditional crew leader system that permits growers to indirectly hire crews of 20 to 30 workers for critical production tasks. Conditions among these crews vary widely. In the worst cases, workers in perpetual debt are sold from contractor to contractor and held inside barbed-wire enclosed camps. Finally, the H-2 Program admits legal foreign workers to the handful of Florida growers who produce sugarcane.

### Texas<sup>26</sup>

Texas has more farms and more farmland than any other state, and ranks third among the states as a user of hired labor. Most seasonal fruit and vegetable workers are employed in the lower Rio Grande Valley, an area that includes some of the poorest counties in the U.S. The population and the hired farm work force in these counties are Hispanic. Anecdotal evidence suggests that there are fewer illegal Mexican workers in South Texas agriculture than in the agricultures of Florida and California, although there are more daily green-card border commuters. Hourly wages during the spring citrus and vegetable harvests are typically lower than the wages for similar tasks in California and Florida. There are no union contracts between farmworkers and farm employers in Texas.

Texas is unique in its role as "home" for migrants who travel to at least 25 other states to do farm work. Housing in South Texas is relatively inexpensive and Texas has no state income tax, so Texas is the normal residence of 50,000 to 150,000 farmworkers and their dependents who migrate to the midwestern states. Although the number of migrant families has decreased as seasonal farm jobs in Wisconsin, Michigan, and Ohio are eliminated and as more migrant families settle in these states, a considerable number of workers (perhaps 50,000 to 300,000) still make the annual trek north.

### Other States

The number and characteristics of farmworkers in other states are not well-documented. North Carolina is a major employer of farmworkers, many of whom migrate from west to east for the flue-cured tobacco harvest. The fruit and vegetable farms of the mid-Atlantic states tend to rely on out-of-area migrants to harvest their crops despite their proximity to major urban centers. Migrant crews from Florida, illegal workers from Mexico, Puerto Ricans, and H-2 workers from Jamaica harvest vegetables and apples. In most areas, the major change in work force composition is the increasing importance of Spanish-speaking farmworkers.

The midwestern states of Ohio, Michigan, and Wisconsin produce labor-intensive tomatoes, cherries, and cucumbers. Mechanization, declining production, and the tendency of Texas-based farmworkers to settle in these states has reduced the flow of migrants.

Midwestern farmworkers launched a boycott campaign against Campbell's Soup Company to protest a 1983 Federal District Court decision which permits tomato and cucumber farmers to "sharecrop" harvesting. Under the harvest sharecropping system, a farmer signs one contract with Campbell's to deliver his tomatoes or cucumbers and another with a farmworker family to harvest the crop for a percentage of the profit. The farmworker family becomes an independent contractor, so the grower has no responsibility for labor standards laws or payroll taxes such as social security and unemployment insurance levies. According to the Ohio-based Farm Labor Organizing Committee, sharecropping has led to violations of child labor laws and subminimum wages.

The Pacific Northwest employs a substantial number of migrant farmworkers to harvest its berry and apple crops. The characteristics of these farmworkers have not been well-studied, but farm groups report that most harvest workers are illegal aliens from Mexico. Some workers travel directly to Oregon and Washington, while others migrate from early-season jobs in California.

### Summary

Most farm labor problems concern the seasonal workers who are employed three to six months in agriculture. The USDA survey best describes the characteristics of the extremes of the farmworker distribution: the very casual students and housewives and the year-round hired hands. State-level surveys report that the critical seasonal work force is increasingly Spanish-speaking. The predominance of Spanish-speaking workers in labor-intensive agriculture has several implications:

- recruitment and training systems are oriented to Spanish-speaking workers, so non-Spanish-speaking workers have difficulty finding harvest jobs;
- public job-matching and labor law enforcement agencies should be cognizant of the Spanish-speaking farm labor market to perform their duties effectively;
- most workers drift out of arduous harvest jobs after five to 15 years, and farmworker assistance programs should recognize that most farmworkers will have to make a mid-career job change.

The harvest labor market for farmworkers--with its seasonality, Spanish network recruitment, and revolving door harvest work--is becoming increasingly isolated from nonfarm labor markets.

## FARM LABOR MARKETS

Farm labor markets matches 1 million workers across the United States with seasonal jobs each year. For many farmers, an entire year's farm income depends on harvesting a perishable commodity during a critical window of several days, weeks, or months. Farmworkers, who may find farm work for only 20 to 30 weeks each year, scramble to maximize their earnings during these short harvests by finding the highest hourly or piece-rate wages. There is an inherent conflict-of-interest between farmers and workers: farmers prefer a surplus of workers to minimize their crop losses and wage costs, and workers prefer labor shortages to maximize their wages and work time. Farmers complain of labor shortages and workers report that they suffer unemployment, and the dilemma of matching farmworkers and seasonal farm jobs to minimize unemployment for workers and crop losses for farmers has defied resolution for decades.

The seasonality dilemma is often expressed by farmers and farmworker advocates who are at opposite end of the solution spectrum. Many farmers believe that a large and flexible supply of workers is necessary to produce cheap food for Americans. These farmers argue that they cannot control their selling prices or the costs of fertilizer and equipment, and they simply cannot afford to pay higher wages to seasonal farmworkers. Farmworker advocates, on the other hand, note that many farmers are asset-rich but cash poor, and that farmworkers do not share in appreciating land prices. Many farmworker advocates believe that most farm employers want a low-wage secondary work force so farmers do not have to develop plans to utilize fewer workers for longer periods, and that farmers obtain the work force they desire by manipulating immigration and labor standards laws.

Recruitment: Foremen and Labor Contractors

These extreme positions can be put into sharper focus with a few examples of how the farm labor market functions. A typical large labor-intensive farm with 200 to 300 acres (worth \$6,000 to \$10,000 per acre) of citrus or tree fruit is owned by an individual or partnership that does not speak the language of the fieldworkers. The landowner employs several year-round hired hands to irrigate and to operate equipment, and these hired hands often become foremen who recruit and supervise workers during the two busy times--pruning and harvesting. These long-season foremen are often hired because they are bilingual, reliable, and able to recruit and supervise friends and relatives during the busy periods.

These foremen are agents of the landowning employer, but the employer typically does not know or understand what the foremen actually says to seasonal workers about wages, discipline, or housing. In the informal world of farmworker employment, the landowner will ask his friends what they are paying to have oranges picked, and then tell the foreman that the piece rate will be, for example, \$10 per bin. The foreman is not usually paid extra for recruiting and supervising workers, and many foremen keep a share of the workers' wages by, for example, charging workers for transportation, work equipment, or housing and meals. Few landowners distribute handbooks or

written rules to foremen and workers; and the inability of the true employer to communicate with seasonal workers can lead to the employer wondering why workers are dissatisfied.

There is a fledging movement to promote supervisor training and to impress upon employers the need to learn whether announced wages are being paid to workers and to monitor deductions from wages. Some of the largest union and nonunion employers have developed employee handbooks that spell out the obligations of foremen and workers and outline a grievance system to handle complaints. However, many farm employers do not want to develop an employment policy for fear of losing their "flexibility" in personnel matters, and most employers do not want to train supervisors and then pay them the higher wages they expect.

Foremen can be on the payrolls of landowners, farm management companies, employer associations, and packinghouses. Foremen do not normally have to register as farm labor contractors, and the title "foreman" can be conferred on them at the discretion of the employer. Generally, foremen with the most responsibility for recruitment, supervision, housing, and tending the social service needs of farmworkers are employed by the smallest growers and offered few guidelines or resources other than to get the job done. In these unstructured labor markets, the foremen's word is absolute in determining wages, deductions, and advising workers whether they are eligible for social services.

Foremen are the most important labor market middlemen because most growers hire workers directly. However, farm labor contractors also match seasonal workers and jobs, especially for harvesting and thinning/hoeing tasks. Farm labor contractors (FLCs) are independent businessmen who, for a fee, recruit, transport, and supervise farmworkers. FLCs make agreements with landowners to do a job for a piece rate or hourly wage, and the FLC is supposed to disclose this agreement to farmworkers and indicate the amount of his fee.

FLCs have a shady reputation. FLCs are charged with hiring workers and not disclosing "employment fees" that are then illegally deducted from workers' wages. In extreme cases FLCs have been charged with holding workers in debt peonage, as workers' debts mounted faster than their earnings. Federal laws to regulate the activities of FLCs were enacted in 1963, 1974, and 1983, but anecdotal evidence suggests that there are more independent FLCs operating in the United States today than ever before. Some of these FLCs recruit only vulnerable workers, including alcoholics, illegal immigrants, and recently released mental patients.

Foremen and FLCs do most of the job matching in seasonal agriculture, but there are also other job-matching institutions, including workers who return to the same employer each year, the Employment Service, and union hiring halls. The direct hiring of migrant families still occurs in the upper midwest, but technological changes and settling out have reduced the number of Texas and Florida-based migrant families who drive northward without definite offers of employment. The Employment Service is available to match workers and jobs, and it is used by employers and workers; but both employers and workers accuse it of not being "flexible" enough. ES does not play a critical



job-matching role in most areas with labor-intensive agriculture because workers are available outside ES channels.

Union hiring halls are an oft-advocated remedy in seasonal labor markets, and the United Farm Workers (UFW) union made hiring halls a top bargaining priority in the 1970s. The UFW argued that the only rational way to allocate seasonal jobs was on the basis of seniority, and it established a union seniority list and then negotiated agreements with employers that required the employer to call the union hiring hall for workers. However, administrative snafus, pre-existing company seniority lists, and the desire of some workers to be employed in family groups to facilitate transportation have made the hiring hall a contentious issue with employers and some workers. Some UFW leaders believe that union hiring halls are a necessary stabilizing element in the unstructured farm labor market, but the UFW has dropped the hiring hall requirement from many of its contracts.

Farmworkers are excluded from the National Labor Relations Act; but in California an Agricultural Labor Relations Act has guaranteed the organizing and bargaining rights of farmworkers. Since 1975, over 900 elections were conducted, leading to contracts on 400 California farms. Seven unions represent California farmworkers: The UFW has the most members (12,000 to 60,000), but the Christian Labor Association's 200 contracts exceed the 125 UFW contracts. Unions have had significant but very limited effects on farm labor markets. The fieldworker unions such as the UFW have been most successful organizing workers on the largest vegetable farms that employ 200 to 1,000 workers during peak harvest periods.<sup>27</sup>

A foreman, FLC, employer, or union hiring hall announces that jobs are available, and this job and wage information spreads through informal word-of-mouth networks within the United States and to Mexican and Haitian colleagues. Information networks between the United States and Mexico have been evolving since the Bracero program began in 1942, and can now deliver additional workers to Oregon or Washington within three days. The additional workers delivered also are trained at no cost to the employer, either through the assistance of a friend or relative in crews that divide a single piece rate or because the new hire earns a lower piece-rate wage until he is adept at harvesting.

Farm wages and working conditions vary, so the information network to which a Mexican village is connected is the most important asset of the village's young men. The network can refer workers to high-wage vegetable harvesting jobs, mid-level tree fruit and citrus harvesting jobs, or low-wage thinning and hoeing jobs. Workers referred to high-wage jobs can reap multiple rewards: higher-than-average wages, better working conditions, and a greater probability that a union or some other agency will help the worker acquire legal status.

Word-of-mouth recruitment is selective; it systematically excludes persons from groups without a foothold in farmwork. Unemployed Americans do not usually have friends and relatives who are already employed in seasonal agriculture. The Employment Service plays a minor job-matching role, so most unemployed American workers do not learn about or consider seasonal farm work when they are unemployed.



Recruitment by kinship and friendship networks makes it very hard for new groups of workers to break into farm work. As a recent example, Southeast Asian refugees in California, many of whom were farmers, have had a very hard time obtaining farm work because the language of recruitment and supervision is Spanish. Informal recruitment networks also exclude most Americans from farm jobs even after wages and working conditions have been improved. For example, the UFW has complained bitterly about unemployed white and black Americans pressuring mushroom and melon employers for jobs after highly-publicized strikes in 1982-83 informed unemployed Americans that these jobs paid a minimum \$6.00 and an average piece-rate wage of \$8.00 to \$10.00 hourly. Some of the employers responded to this pressure by asking INS to check the legal status of their workers.

The dominant language of recruitment networks in agriculture is Spanish, but there are a variety of other languages including Creole, Arabic, Tagalog, and Hindu as well. Each language serves to create particular labor markets available to certain ethnic groups. Unemployed white and black Americans do not have ready access to these recruitment networks, so they are not among the pool of farmworkers considered available to farmers.

#### Wages and Working Conditions

Most seasonal fieldworkers are deployed in crews of 20 to 40 workers. Most differences in the pace of work, and the composition of the crew, can be traced to the wage system:

- An employer who records each worker's accomplishments and pays a piece-rate wage is the most likely to have diverse work crews whose daily earnings vary widely.
- An employer who lets the entire crew divide a piece-rate wage will usually have a crew of young strong men, since the crew itself drives out workers who cannot maintain a fast pace.
- An employer who pays hourly wages often will attract crews of older and/or female workers, and these workers tend to do more careful work at a slower pace.

In addition to paying an hourly wage, some employers offer the individual or crew a bonus if a target level of accomplishment is surpassed.

There are two fundamental theorems of farm wage systems: (1) hourly wages are more common when the supply of labor is ample because the employer can select workers of uniform ability from a large labor pool, and (2) the major supervisory task differs with the wage system--piece-rate wages encourage rapid work and thus require quality checks, while hourly wages encourage a slower pace and thus the need for crew pushers to speed up the pace of work. Employers prefer hourly wages if they can select workers from a vast pool, as during the Bracero Program. Employers institute piece-rate wage systems when they employ a diverse group of workers. Piece-rate wages keep harvest costs constant regardless of worker characteristics. Hourly wages, on

the hand, stabilize worker earnings and cause harvesting costs to vary with worker characteristics.

Most harvest crews work for six to eight hours daily. Generally, the starting time and the length of the work day depend on arrangements for packing or processing the commodity and the employer's location. A packing or processing facility establishes a schedule to accept a harvested commodity, and the grower or manager then informs his foremen where and how much to harvest that day. In most instances, harvesting schedules depend on the maturity of the commodity and the capacity of the processing plant, although some of the largest producers of fresh fruits and vegetables make their harvesting schedules contingent on how much lettuce or citrus was sold to supermarkets while still in the field.

Most commodities are picked into bags or buckets and then dumped into bins that must be hauled from the field or orchard, so workers must begin and end their workdays at the same time. Frustrations arise when bad weather, poor markets, or transportation or processing bottlenecks force workers to stop harvesting, since many workers are incurring living expenses but not earning wages. In addition, workers tend to spend money during these unpredictable "down days." A few employers provide standby pay or pay workers for a minimum number of hours who are told to report even if no work is available, but in most cases, workers are paid only when they actually work.

Seasonal workers who live on or near the employer's property are the ideally-flexible work force--the employer does not have to plan ahead or gamble on the weather; he or she simply waits to determine if there is work to be done and then calls out the crew. In the extreme case of workers available seven days each week for up to 12 to 14 hours if necessary, the potential work week is 100 hours but the paid work week might range from 25 to 45 hours. This day-to-day and week-to-week variance in hours and earnings is frequently cited as a primary reason workers leave harvest work.

The harvest usually requires more workers than any other single task, and most entry-level workers enter farmwork as harvesters. Harvest wages are typically higher than the wages paid for jobs such as irrigating, thinning, or pruning. The harvest labor market has the peculiar characteristic that entry-level workers earn higher-than-average wages, while experienced workers work more hours but at lower hourly wages. Harvest work is arduous, and most harvest workers do seasonal harvest work for only 10 to 15 years before back problems or younger workers force them out of the high-wage crews. Older workers keep harvesting at lower wages or move into easier farm jobs, find nonfarm jobs, or leave the United States.

The harvest labor market has an earnings pattern similar to professional sports: high-wage years are typically followed by lower earnings. A rational wage-earner who realized that his or her earnings will decline with age would save from current high earnings or acquire other skills likely to enhance earnings in the next career. Since many harvest workers have farms in Mexico, they do save some of their U.S. earnings to expand their farms. However, much of the infrastructure needed to enhance farm productivity in Mexico must be provided collectively, and there are relatively few public and private

projects to build the irrigation, processing, and transportation facilities required to make small farm agriculture viable in Mexico viable.

A few harvest workers are able to become foremen and labor contractors, benefitting from their ability to recruit other workers. However, most harvest workers who remain in the United States see their annual earnings begin to decline in their 30s and 40s, and they count on support from their children or social service programs.

### Farmworker Careers

Labor-intensive agriculture has rarely offered career jobs that workers aspire to; few American children dream of growing up to become harvest workers. Instead, labor-intensive agriculture has traditionally offered easy entry jobs for students, housewives, and temporarily unemployed persons to supplement their normal incomes. For Americans, seasonal farm work is a last resort job, not a career. Institutions such as unions, employer groups, or government have not applied consistent pressure on fruit and vegetable farmers to convert seasonal farm jobs into career jobs.

There has been no consistent pressure to experiment with improvements in employment practices, mechanization, diversified crops, or mechanical aids because immigrant workers who accept current farm jobs have been available. Many of these immigrant workers hope to save enough money in the United States to buy or expand a farm back home, and they have few wage complaints when their hourly U.S. earnings exceed the daily wage at home. Farmers maintain that Americans won't do harvest work and that experiments to attract American workers will simply raise food prices and not get their crops harvested. Four decades of foreign workers have driven most American workers with options out of seasonal harvest work.

As currently structured, the harvest labor market cannot offer career-type positions that are attractive to American workers who have job options. No one knows exactly what wage, working condition, and management changes would be required to develop acceptable farmworker career jobs because immigrant workers have usually been available. However, some farm employers have made harvest jobs attractive to U.S. citizens and legal immigrants. Relatively simple personnel practices such as seniority recall to increase the certainty of re-employment, transportation and standby pay to reduce the inherent frustration of unpredictable weather and processor schedules, and fringe benefits such as off-the-job health insurance and pension plans have encouraged some workers with options to do harvest work longer. These employer efforts to select and stabilize the best harvest workers have also encouraged unionization and wage increases.

The harvest labor market is being balkanized or segmented. Some farmers have restructured their harvest jobs and employment practices to employ fewer workers longer. On these farms U.S. citizens and legal immigrants typically earn \$6.00 to \$10.00 hourly or \$6,000 to \$8,000 each annually for 20 to 30 weeks of work. A farmworker family that has two working members and also obtains unemployment insurance benefits can have a total income of \$10,000 to \$20,000. The work is hard, but these stable labor markets resemble those that employ seasonal construction workers and come close to offering farm work

careers. Stable harvest labor markets are the exception; confined largely to a few long-season vegetables, citrus, and horticultural specialty operations that employ workers for 6 to 8 months.

More common is the employer who needs harvest workers for only 2 to 4 weeks and relies on a foreman or labor contractor to recruit and supervise the crew. These employers would have to change their employment practices in ways that might increase their labor costs, so they strongly resist proposals that might reduce the supply of labor. Many of these growers have mid-sized operations that are in financial trouble, and a threat to established labor practices is seen as another possible cause of bankruptcy.

An important question is why a few harvest labor markets have been elevated into the virtuous circle of higher-than-average wages, productive workers, fringe benefits, and employment practices that promote career attachment. Most harvest labor markets seem trapped in a vicious circle of low wages, desperate workers, and unsavory working conditions. Virtuous labor markets need not increase food prices, but they do tend to drive the least-efficient farmers out of business and let large commercial farms dominate the production of a commodity.

### Summary

The harvest labor market has changed from an easy-entry seasonal job for students and housewives to a longer-season dependence on adult immigrants. Most of these immigrant workers are matched with farm jobs by foremen and labor contractors. Foremen and contractors recruit through networks of friends and relatives, thus excluding unemployed Black and white workers who do not have any ties to these recruitment networks.

Wages and working conditions vary with the wage system. Piece-rate wages encourage workers to harvest commodities quickly and keep the employer's cost of harvesting constant regardless of worker characteristics. Hourly wages standardize worker earnings, but they also permit harvest costs to vary with worker characteristics. Most employers prefer piece-rate wages unless they can select workers of uniform ability from a large labor pool.

Few Americans want to be farmworkers. Farm work is typically a temporary and last-resort career for workers who are excluded from other labor markets. The Americans forced into farm work are usually considered inferior to immigrant workers whose frame of reference is wages and working conditions in a developing country. Thus, most employers prefer immigrant workers over Americans.

### CONCLUSIONS AND OPTIONS

American seasonal farm labor markets are considered unsatisfactory by employers, workers, and policy makers. Farm employers complain that reliable labor is not available; and they fear that labor shortages could result from strictly enforced immigration and labor standards laws. Farmworkers complain

that agriculture does not provide them sufficient earnings to escape poverty. Public policy makers have been unable to resolve farm labor problems despite improvements in labor standards laws and coverage under regular social assistance programs as well as an estimated \$500 million in funding a variety of special assistance programs for farmworkers and their families.

Dissatisfaction with seasonal farm labor markets first became a major public issue in the 1930s and has been repeated frequently in television documentaries, articles in magazines and newspapers, and various books which portray details of a "harvest of shame" in American agriculture. However, this "harvest of shame" image surrounding farm labor is neither a universally accurate portrayal of the situation of agricultural workers nor an inevitable feature of American agriculture. Today, most farm labor problems are largely confined to the fruit and vegetable industry, which comprises a small part of production agriculture, which in turn is a small component of the nation's food system.

The 80,000 fruit and vegetable farms that hire workers paid \$4 billion in wages in 1982 and provided farm jobs for about 1 million seasonal workers. Compared with agriculture as a whole, which spent 8 percent of production costs on hired labor, wages amounted to 20 to 50 percent or more of production costs on the fruit and vegetable farms that usually need workers only for a few weeks each year. The seasonal demand for so many workers at relatively low wages is the major farm labor dilemma, and it has usually been resolved by importing supplemental workers into rural areas during the busy harvest season.

Under current public policies, labor-intensive agriculture is becoming an increasingly unique part of the U.S. economy:

- Fruit and vegetable production is being concentrated on fewer and larger farms. This concentration offers new potentials to upgrade farm labor markets through various direct hire arrangements, but most farms rely on labor contractors and foremen to recruit seasonal workers through networks of friends and relatives.
- The fragmentation of management authority under the present system makes it very difficult to determine who is responsible for wages and employment conditions. Is it the urban landowner who simply receives an annual statement on his farming operation, the manager who operates the farm, the packinghouse which supervises cultural practices and determines the harvesting schedule, or the labor contractor who recruits and supervises harvest workers?
- Mechanization continues to eliminate farm jobs, but the increased consumption of labor-intensive fruits and vegetables has stimulated increased production which has offset labor-savings due to technological change so that number of seasonal jobs remained more or less stable since the 1970s.
- More American workers shun seasonal farm work, and the labor vacuum increasingly is filled by legal and illegal immigrant workers who work for five to 15 years, then move on to other jobs.

- Despite federal assistance programs and labor laws, a substantial number of farmworkers still have annual earnings well below the poverty line and still suffer abuses at the hands of employers and labor contractors. However, there are examples of seasonal farm labor markets offering more stable, high wage jobs that are acceptable to American workers.

If current policies and trends persist, the United States can expect fruit and vegetable production to become more concentrated on large and specialized farms. However, employment will continue to fragment as employers hire more workers indirectly via labor contractors. The various layers of management authority will continue to make it difficult to determine who is the true employer.

Farm labor markets involving physically demanding tasks will hold workers only for five to 15 years. As harvest workers are able to find easier or year-round farm or nonfarm work, they abandon seasonal jobs that require hard work for piece-rate wages. Thus, agriculture must depend on an ever-replenishing pool of workers to harvest fruits and vegetables for several weeks or months, and this pool will include more and more immigrants.

Immigrant workers seek harvest jobs that offer piece rates which enable most of them to earn \$4 to \$6 hourly because their frame of reference is typically a rural labor market in Mexico or Central America which offers wages of \$4 to \$6 for a day's work. These legal and illegal workers are ideal for employers because they minimize personnel duties: they recruit new workers as needed and train themselves at no cost to the employer.

Continuation of the status quo promises seasonal labor markets with more and more immigrant workers. The status quo scenario means that:

- harvest labor markets will become ever-more isolated from other farm labor markets, with only immigrant workers seeking harvesting jobs.
- employers will become more dependent on flexible immigrant workers and resist any changes in immigration or labor policies which might disrupt the current self-replenishing labor system.
- the harvest labor markets that have been restructured and upgraded to attract and retain American workers will be threatened by competing employers who rely on flexible, less expensive immigrants.

One alternative to the status quo is a major temporary worker program so that the immigrant workers could be brought legally into the United States. Farmers have embraced this policy option because it would not require labor market changes. Farmers further argue that as legal workers, immigrants would be less vulnerable to abuse.

However, an expanded legal temporary worker program would further promote the isolation of harvest labor markets, reduce the integration of farm and nonfarm markets, and undercut efforts to make farm work an acceptable career option for American workers. Further, as well illustrated by the case of the

H-2 program to import Jamaican cane cutters in Florida sugar, once a temporary worker program starts, it tends to persist.

A third option has not received much attention--upgrade America's fruit and vegetable harvest labor markets to attract American workers. This option follows the labor market pattern of the rest of American agriculture. It requires announcing a long-term goal of using American workers in fruit and vegetable agriculture and then mechanizing, raising wages, or reducing production to achieve this goal. A temporary worker program with this goal becomes only a transition device to an American work force. One way of making such a temporary worker program truly a transition device is to require growers to pay a tax on the wages earned by foreign workers. This tax could be used to expedite labor market adjustments.<sup>28</sup>

Farm labor policies should be based on four principles:

- Integration of farm and nonfarm labor markets so that farm work for wages is on a par with factory or service work for Americans entering the work force.
- Extension of the human resources practices of the nonfarm economy to fruit and vegetable agriculture, and this "labor extension" should be as important as traditional farm extension efforts to improve farming practices.
- The size of labor-intensive agriculture in the United States should be based on comparative advantage rather than the availability of foreign labor.
- An improved data base is needed so that more agreement can be developed on farm labor realities and trends.

The farm and nonfarm economies are becoming integrated. Fruit and vegetable production has become more concentrated in larger enterprises, more nonfarm investors have entered agriculture, and there is more vertical integration. The largest enterprises in many commodities are owned and operated by conglomerates such as oil and insurance companies.

American agriculture is becoming increasingly sensitive to changes in the national and international economy. Monetary and fiscal policies impact agriculture significantly. For example, high interest rates have increased the value of the dollar, reducing exports and increasing interest burdens. Large government deficits have generated significant pressures to reduce government spending on agricultural support programs.

A similar trend toward integration of farm and nonfarm labor markets can be seen. As many farmers have converted to field-pack operations, the distinction between farm jobs and nonfarm food processing jobs has become blurred. Many families with small and mid-sized farms are able to support themselves only by supplementing their farm incomes with earnings from nonfarm jobs. The improved mobility of the rural population, the decentralization of a significant portion of American manufacturing into smaller plants located in rural areas, and urbanization in several areas of fruit and vegetable

production have forced some employers to find it increasingly necessary to compete with nonfarm employers for their workers.

Farm and nonfarm workers are increasingly being treated equally under labor laws. Many of the original exclusions of farm workers from labor standards laws and regulations and from eligibility for most social welfare programs have been eliminated. Special exclusions or differing treatment for farmworkers remain in federal collective bargaining legislation, workers' compensation, and unemployment insurance, the overtime provisions of the Fair Labor Standards Act, work place sanitation regulations, and immigration. However, the trend is clearly toward eliminating or minimizing differences in treatment between farm and nonfarm workers.

Given the integration of the agricultural and nonagricultural economies, it is inappropriate to try to maintain the isolation of farm labor markets from nonfarm labor markets. Isolating farm labor markets shelters farm employers from competitive pressures to make improvements in the attractiveness of the jobs they offer and only serves to forstall adjustments that American fruit and vegetable growers must make to compete internationally.

American agriculture is no stranger to human resource development, and agriculture has relied on government to improve its human resources. More than 100 years ago, the Morrill Act of 1862 established a system of land grant universities to train farmers. The Agricultural Extension Service (Smith Lever Act of 1914) spreads knowledge of farming developed by the Agricultural Experiment Stations (Hatch Act of 1887) to farmers, and this research and extension program is regarded as an exemplary system. National organizations such as Future Farmers of America and 4-H Clubs were established to teach youths about agriculture. Federal support of vocational education at the secondary level through the Smith Hughes Act of 1917, trained future farmers--so many that in the 1960s critics charged that the emphasis on agriculture in rural schools ignored the continued exodus of farmers.

The public efforts devoted to developing and conserving human resources in agriculture ignored farm laborers. Hired farm workers have been treated as disposable and replaceable.

The primary strategy for resolving farm labor problems has been simply and solely to eliminate the need for labor. With very few exceptions, goals such as making farm work easier or more rewarding, stabilizing and extending the duration of employment, or reducing seasonal fluctuations, have not been pursued by the American agricultural research and extension community. Instead, their main focus has been to increase productivity by eliminating the labor input.

Improving productivity needs to remain as a primary goal if American fruit and vegetable agriculture is to survive in a world of intense international competition, but the aim of eliminating the need for labor input could be pursued in a more balanced manner by also explicitly striving to improve the quality of work life for farmworkers who remain in agriculture and assisting those who are displaced. Making farm work easier and more rewarding is important to the survival of American fruit and vegetable agriculture



because it is the key to obtaining American workers and eliminating dependence on immigrant workers.

This study began with a presumption against mechanization as a solution to farm labor problems; but mechanization is the most feasible remedy. Even Lloyd Fisher, in his classic study of the California harvest labor market, concluded that mechanization as the ultimate was the solution for farm labor problems.<sup>29</sup> Eliminating the "labor-intensive" character of fruit and vegetable agriculture is an important part of a farm labor solution.

A solid economic basis for the growth of an industry is comparative advantage, yet in American agriculture numerous other factors are injected by contradictory government policies. A good illustration can be found in rural San Diego County, where nonfarm investors have invested in avocado trees for tax reasons. These avocado groves are located on steep hills to minimize land costs, and production under such circumstances is possible because of federally-subsidized research on drip irrigation. Investors making such plantings gave little or not thought to who would pick their crops. Many American farmworkers avoid working from ladders on the steep hills for \$5 hourly wages, especially because there is little inexpensive farmworker housing available in areas with \$300,000 homes. Avocados are overproduced, and growers recently established a marketing order (with governmental assistance) to tax themselves for research and promotion and to establish size and quality standards in order to improve and stabilize prices.

The contradictions in the policies which yielded surplus avocado production and an illegal work force are clear. Production made possible by subsidized research was undertaken by nonfarm investors for tax reasons. American rejected the jobs created, and the labor vacuum was filled by an illegal immigrant work force. Moreover, under a legal temporary worker program, the "critical need" for immigrant harvest labor in San Diego will be weighed equally with established farmers of other commodities, since avocados are grouped with other perishable fruits and vegetables. The sight of produce rotting in fields enjoys uncanny success in galvanizing political action to make workers available; but the circumstances under which the original plantings took place are unlikely to be taken into account.

The contradictions that generate an expanding labor intensive agriculture and a labor-vacuum filled by illegals may not be sustainable in light of emerging trade patterns. Most fruits and vegetables that are traded are produced and consumed in affluent industrialized countries. However, multi-national marketers have begun to more clearly define consumption (United States, EEC, and Japan) and to consider feasible production areas across the entire world. As production technologies and transportation infrastructures develop and become standardized, the contradictory American policies which are expanding labor-intensive agriculture with illegal workers will force American producers to compete with producers elsewhere on the basis of wage costs. Such a wage competition practically guarantees isolated farm labor markets.

Contradictory assertions about farm labor abound because there is no reliable data base. National statistics on labor and employment are drawn from household surveys and reports from business establishments. The Bureau of Labor Statistics (BLS) in the U.S. Department of Labor collects data

primarily on nonagricultural employment. BLS programs generate reliable monthly data on employment and unemployment, wages and hours of work in the nonagricultural economy, and the occupational structure within nonfarm industries. The BLS data collection systems usually excludes farmworkers or groups farmers and workers together.

The U.S. Department of Agriculture maintains two statistical series regarding farm labor: a biennial December household survey supplement to the Current Population Survey is published as the Hired Farm Working Force series and a quarterly establishment survey of farm employers which generates information for the Farm Labor series. However, both of these series yield statistics whose reliability is widely disputed.

Recent Hired Farm Working Force reports indicate a labor force which is becoming younger and whiter, with a very large component of students. According to the 1981 survey, fewer than 200,000--or about 5 percent of farmworkers--were migrants. This number was about half the migrant count in 1979 data.

Critics point out that the sampling error in these estimates is substantial. Only about 2,000 households in the Current Population Survey (CPS) reported a worker in agriculture and only about 150 families reported being migrants. The Current Population Survey misses many farmworkers--especially migrant workers because it undercounts households that move and illegal residents. The CPS survey misses many farmworker families who may be legal Mexican immigrants or U.S. citizens who spend the December holiday period in Mexico. The survey also excludes Puerto Ricans and Jamaicans and other foreign nationals working in the United States under the H-2 program.

One indicator of a CPS undercount of farmworkers can be obtained by comparing data from unemployment insurance records in California with information from the Hired Farm Working Force series. California has universal coverage for farmworkers under its unemployment insurance law. Both the CPS and UI purport to count any worker who worked in agriculture anytime during the year. California's unemployment insurance records record more than three times the number of farmworkers estimated by the Hired Farm Work Force survey.

Similarly, the Farm Labor series published by USDA has shortcomings. For example, it fails to distinguish workers by commodity, and it lumps wages for supervisory employees together with other workers.

These two USDA series, together with information from the decennial Census of Population (which critics say also misses many farmworkers), constitute the primary regularly-published national data on farm labor. In addition, ad hoc state or local surveys are conducted. Finally, the administrative records of various public programs which serve farmworkers generate information, but the programs that provide health services, education, employment and training, and legal assistance are difficult to use due to inconsistent definitions and to the fact that these programs reach an uncertain partial sample of the farmworker population.

In view of these deficiencies, it is important to build a solid base of factual information on agricultural employment and farmworkers. The Bureau of Labor Statistics should assume responsibility for collecting and publishing farm labor data as part of its regular data systems. Past arguments for excluding farm labor from the BLS system are less cogent today. Although it is true that almost 1 million American farms hire perhaps 2.5 million workers, the largest farms hire most of the workers and pay most of the farm wages. A BLS data collection effort centered on workers on the largest farms would yield more useful data than the current USDA effort, complemented by ad hoc surveys and program administrative records.

Since an ever-increasing percentage of workers in agriculture are hired workers and since agricultural workers numbers more than three times the work force of the steel and auto industries combined, it seems only reasonable to consider them in regular statistical series. Including farm labor in the regular BLS data system also will tend to promote fuller integration of farm labor markets with other labor markets. Systematically, excluding an industry and occupational category from a data base tends to isolate that industry and its workers in policy decisions.

Better research is needed on international patterns of commodity production and consumption. Also needed is better research on personnel systems, production methods and technology which offer alternatives to continued dependence on an immigrant work force of uncertain future availability. The innovative practices of a few existing producers suggest good starting places for such research. Improvements in personnel policies are needed to stabilize farm work and make it an acceptable career option for mainstream American workers; these include, for example, policies that assure seasonal farmworkers recall rights in a predetermined order, written personnel rules that minimize arbitrary supervisory decisions and clarify expectations, fringe benefits that tie workers to one employer or group of employers, and job ladders that promise advancement to attract American workers to harvest jobs.

Similar research is needed on ways to extend the duration of seasonal employment through the use of diversified cropping patterns, labor pooling arrangements, cross training, upgrade training and other techniques. Extending the length of employment is a critical factor in raising farmworker incomes.

Finally, more research is needed on how federal policies affect the structure of employment, the demand for harvest workers, worker characteristics, and the operation of farm labor markets. Agricultural and tax policies affect the number and size of farms; research subsidies, marketing orders, and trade policies help determine how many harvest workers are hired and when; immigration and employment policies influence the number of Americans and immigrants available to do harvest work; and federal labor laws and their enforcement can change the mix of farm employers, wage systems and employment conditions. We need to better understand the contradictory labor market implications of government policies; and if possible, identify ways to reduce the impact of contradictions.

Labor-intensive agriculture has evolved from a seasonal, local and largely family-operated business into a year-round, specialized industry concentrated in a few states. The farm labor force has been similarly transformed, from a high percentage of students and housewives in the family agriculture of the 1950s to adult immigrants on the corporate fruit and vegetable farms of the 1980s. Labor-intensive agriculture can evolve along several different trajectories, and the trajectory followed in the 1980s and 1990s will depend critically on government policies as well as strategies American producers adopt to position themselves for a more internationally competitive climate.

The current gap between the demand for harvest workers and the dwindling supply of resident American farmworkers is filled by immigrants. The federal government could avoid contradictions in policy if illegal immigration were curtailed and legal farmworkers were imported only to harvest those commodities designated as critical to the American food system. Importation of workers would be only a transitional measure designed to fill in while adjustment measures were devised under funding from a 10 percent payroll tax on the immigrant work force.

Current federal policies and private decisions are creating isolated and immigrant-dominated farm labor markets. This status quo promises to continue the dependence on immigrant workers in fruit and vegetable agriculture. Federal policies and private actions can alter this course; and the decisions made in the 1980s will determine the harvest labor market in the 1990s.

## FOOTNOTES

<sup>1</sup>Estimates of the food system's share of employment and GNP vary because many businesses serve both farm and nonfarm customers. The estimates presented here are from "The Importance of Agriculture to the U.S. Economy" in The Changing Economics of Agriculture: Challenge and Preparation for the 1980s, A Staff Study prepared for the Joint Economic Committee, December 28, 1982, p. 18.

<sup>2</sup>Farm employment averaged 3.6 million; basic steel (394,000), foundries (159,000), and motor vehicles (705,000) employed about 1.3 million in 1982.

<sup>3</sup>In 1982, Americans spent \$255 billion on food eaten at home and \$94.7 billion on food eaten away from home, or 16.1 percent of disposable personal income of \$2.2 trillion.

<sup>4</sup>Agricultural exports totaled \$43.3 billion in 1981 and \$36.6 billion in 1982, 19 and 18 percent of total exports. Since 1977, about one-third of the nation's cropland was devoted to export crops; 35.2 percent of 366 million crop acres in 1981. Statistical Abstract of the U.S. 1983-84, pp. 673-675.

<sup>5</sup>Internal Revenue Service records show that the 3,279,000 agriculture, forestry, and fishery proprietorships were 25.8 percent of the total proprietorships in 1980. There were also 126,000 active agricultural partnerships and 81,000 active corporations. Statistical Abstract, p. 533.

<sup>6</sup>The 298,000 largest farms had a net farm income of \$19.9 billion in 1981; this was 101.7 percent of the nation's net farm income of \$19.6 billion.

<sup>7</sup>The 1,464,000 farms that sold less than \$20,000 in 1981 lost \$1.586 billion, or an average \$1,083 each. USDA, Farm Sector Review, 1984, p. 7.

<sup>8</sup>Economic Report of the President, 1984, p. 118

<sup>9</sup>In 1981, 1,742,000 farms lost, on average, \$880 to \$1,389 farming. This was 71.5 percent of the 2,436,000 farms. Farm Sector Review, op cit, p. 7.

<sup>10</sup>The 1978 Census of Agriculture reported that there were 158,030 primarily vegetable and melon (016), fruit and tree nut (017), and horticultural speciality (018) farms. Of this number, 51 percent reported hiring labor.

<sup>11</sup>Many midwestern field crop farms depend on migrant combine crews to harvest their wheat and soybeans. The managers of these crews usually have sophisticated equipment, and they maximize its use by following the harvest northward from Texas to Canada. Canadian equipment operators are sometimes admitted under the H-2 alien worker program.

<sup>12</sup>In most industries, an average annual employment of 100 implies that about 120 persons must be hired to keep the 100 job slots staffed over 12 months. Each full-time job slot should represent 2,000 hours of work

(50 weeks x 40 hours), so the average worker contributes 1,667 hours (200,000 hours ÷ 120 workers). The average hours of work per person employed sometime during the year varies across industries. In high-wage durable goods manufacturing, most of the older-than-average workers are employed for a full 1,900 to 2,000 hour year in nonrecession years. In lower wage and part-time fast foods, the average worker employed sometime during the year may contribute only 600 hours of work (30 weeks x 20 hours).

<sup>13</sup>The USDA's quarterly survey of employers was converted to a single annual survey in July in 1982, 1983, and 1984. The quarterly survey is scheduled to resume in 1985.

<sup>14</sup>S. Pollack and W. Jackson, The Hired Farm Working Force of 1981 (USDA: AER 507, 1983).

<sup>15</sup>Economic Indicators of the Farm Sector: Production and Efficiency Statistics: 1982 (Washington: USDA, 1984).

<sup>16</sup>P. Martin, "The Demand for Seasonal Farmworkers 1950-1980," UCD mimeo, 1985.

<sup>17</sup>Farm Labor (Washington: USDA, 1984).

<sup>18</sup>R. Mines and P. Martin, "The Demand for Seasonal Farm Labor in California," University of California-Davis Working Paper 83-9.

<sup>19</sup>G. Thompson, R. Amon, and P. Martin, "Agricultural Development and Emigration: Rhetoric and Reality," University of California-Davis Working Paper 85-1.

<sup>20</sup>S. Pollack and W. Jackson, The Hired Farm Working Force, op cit.

<sup>21</sup>The USDA's biennial Hired Farm Working Force reports are based on 1,500 household interviews conducted in December, when fruit and vegetable agriculture employment is at its nadir in most parts of the United States. It is widely believed that the USDA report is an accurate reflection of the students and housewives who are employed on field crop farms for a few weeks and the year-round workers employed on livestock and diversified farms. The most recent report indicates that 50 percent of the 2.5 million hired farmworkers in 1981 were primarily employed in field crops, 26 percent in fruits, vegetables, and nurseries, and 24 percent in livestock and other. Whites are three-fourths of the USDA sample, but only 19 percent of the White worked in FVH crops, versus 61 percent of the Hispanics and 33 percent of the Blacks.

<sup>22</sup>S. Pollack and W. Jackson, op cit.

<sup>23</sup>This section is based on P. Martin, "Labor in California Agriculture," in P. Martin (Ed.) Migrant Labor in Agriculture: An International Perspective, (Berkeley, California: University of California, 1985).

<sup>24</sup>Details of the survey will be published in R. Mines and P. Martin, California's Farm Work Force (Berkeley, California: University of California, 1985).

<sup>25</sup>This section is based in part on J. Holt, "Labor in Florida Agriculture," in P. Martin (Ed.) Migrant Labor in Agriculture, op cit.

<sup>26</sup>This section is based in part on R. Glover, "Labor in Texas Agriculture," in P. Martin (Ed.) Migrant Labor in Agriculture, op cit.

<sup>27</sup>For more information on farmworker unions see P. Martin, "California's Farmworker Unions," UCD mimeo, 1985.

<sup>28</sup>P. Martin. "Labor-Intensive Agriculture," Scientific American, Vol. 249: No. 4 (October 1983), pp. 58-59.

<sup>29</sup>L. Fisher. The Harvest Labor Market in California, (Cambridge, MA: Harvard University Press, 1953).