



Farm Labor Shortages and Immigration Policy

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Summary

The connection between farm labor and immigration policies is a longstanding one, particularly with regard to U.S. employers' use of workers from Mexico. The Congress is revisiting the issue as it debates guest worker programs, increased border enforcement, and employer sanctions to curb the flow of unauthorized workers. Two decades ago, the Congress passed the Immigration Reform and Control Act (IRCA, P.L. 99-603) to reduce illegal entry into the United States by imposing sanctions on employers who knowingly hire persons who lack permission to work in the country. In addition to a general legalization program, IRCA included legalization programs specific to the agricultural industry that were intended to compensate for the act's expected impact on the farm labor supply and encourage development of a legal crop workforce. These provisions of the act have not operated in the offsetting manner that was intended: substantial numbers of unauthorized aliens have continued to join legal farm workers in performing seasonal agricultural services (SAS).

A little more than one-half of the SAS workforce is not authorized to hold U.S. jobs. Crop growers contend that their sizable presence implies a shortage of native-born farm workers. Grower advocates argue that farmers would rather not employ unauthorized workers because doing so puts them at risk of incurring penalties. Farm worker advocates counter that crop growers prefer unauthorized workers because they are in a weak bargaining position. If the supply of unauthorized workers were curtailed, it is claimed, farmers could adjust to a smaller workforce by introducing labor-efficient technologies and management practices, and by raising wages, which, in turn, would entice more U.S. workers to accept farm jobs. Growers respond that further mechanization would be difficult for some crops, and that much higher wages would make the U.S. industry uncompetitive in world markets without expanding the legal farm workforce. These remain untested arguments because perishable crop growers have rarely, if ever, operated without unauthorized foreign-born workers.

Trends in the agricultural labor market generally do not suggest the existence of a nationwide shortage of domestically available farm workers, in part because the government's databases cover authorized and unauthorized workers. While nonfarm employment generally has increased thus far in the current decade, farm jobs generally have decreased. The length of time hired farm workers are employed has changed little or fallen over the years as well. Their unemployment rate has varied slightly and remains well above the U.S. average. Underemployment among farm workers also remains substantial. In addition, the earnings of farm workers relative to other private sector employees has changed little over time.

This assessment does not preclude the possibility of labor shortages in particular geographic areas at particular times of the year. Some statistical evidence suggests that California growers experienced a tighter labor market in July 2007 compared to peak harvest season a year earlier. It nonetheless appears that the offer of larger wage increases than those of employers in other industries contributed to there being sufficient (authorized and unauthorized) workers available to enable California growers to increase employment on their farms in the year ended July 2007.

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Introduction

Questions often have arisen over the years about (1) whether sufficient workers are available domestically to meet the seasonal employment demand of perishable crop producers in the U.S. agricultural industry¹ and (2) how, if at all, the Congress should change immigration policy with respect to farm workers. Immigration policy has long been intertwined with the labor needs of crop (e.g., fruit and vegetable) growers, who rely more than most farmers on hand labor (e.g., for harvesting) and consequently “are the largest users of hired and contract workers on a per-farm basis.”² Since World War I, the Congress has allowed the use of temporary foreign workers to perform agricultural labor of a seasonal nature as a means of augmenting the supply of domestic farm workers.³ In addition, a sizeable fraction of immigrants historically have found employment on the nation’s farms.⁴

The intersection between farm labor and immigration has again emerged as a policy issue. The terrorist attacks of September 11, 2001 effectively quashed the discussions on this subject between the Bush and Fox Administrations that took place shortly after President Bush first came into office, but the proposal of a broad-based temporary foreign worker program that President Bush sketched in December 2003 revived interest in the labor-immigration nexus. (For a discussion of bills and the President’s proposal, see CRS Report RL32044, *Immigration: Policy Considerations Related to Guest Worker Programs*, by Andorra Bruno.) The lack of progress on broad-based immigration reform before the summer 2007 recess has led to speculation that Congress now will narrow its focus to the supply of temporary foreign workers to the agricultural sector and to professional specialty occupations.

This report first explains the connection made over the past several years between farm labor and immigration policies. It next examines the composition of the seasonal agricultural labor force and presents the arguments of grower and farm worker advocates concerning its adequacy relative to employer demand. The report then analyzes trends in employment, unemployment, time worked and wages of authorized and unauthorized farm workers to determine whether they are consistent with the existence of a nationwide shortage of domestically available farm workers. The farm labor supply-demand situation by geographic area is examined as well.

Farm Workers and Activities of SSA and DHS

During the second half of the 1990s, attention began to focus on the growing share of the domestic supply of farm workers that is composed of aliens who are not authorized to work in the United States. The U.S. Department of Labor (DOL) estimated that foreign-born persons in the

¹ In this report, the terms “agriculture” and “farming” will be used interchangeably as will the terms “producer,” “grower,” and “farmer.”

² Victor J. Oliveira, Anne B. W. Effland, Jack L. Runyan and Shannon Hamm, *Hired Farm Labor on Fruit, Vegetable, and Horticultural Specialty Farms*, U.S. Department of Agriculture, Economic Research Service, Agricultural Economic Report 676, December 1993, p. 2. (Hereafter cited as, Oliveira, Effland, Runyan and Hamm, *Hired Farm Labor on Fruit, Vegetable, and Horticultural Specialty Farms*.)

³ U.S. Congress, Senate Committee on the Judiciary, *Temporary Worker Programs: Background and Issues*, committee print, 96th Cong., 2nd sess. (Washington: GPO, 1980).

⁴ Philip L. Martin, “Good Intentions Gone Awry: IRCA and U.S. Agriculture,” *Annals of the American Academy of Political and Social Science*, July 1994.

country illegally accounted for 37% of the domestic crop workforce in FY1994-FY1995. Shortly thereafter (FY1997-FY1998), unauthorized aliens' share of the estimated 1.8 million workers employed on crop farms reached 52%.⁵ By FY1999-FY2000, their proportion had increased to 55% before retreating somewhat—to 53%—in FY2001-FY2002.⁶

Although a number of studies found that no nationwide shortage of domestic farm labor existed in the past decade,⁷ a case has been made that the considerable presence of unauthorized foreign-born workers in seasonal agriculture implies a lack of legal workers relative to employer demand. Arguably, the purported imbalance between authorized-to-work farm labor and employer demand would become more apparent were the supply of unauthorized workers curtailed sufficiently—a fear that has plagued growers for some time.

Crop producers and their advocates have testified at congressional hearings and asserted in other venues that they believe the latest risk of losing much of their labor force comes from efforts by the Bureau of Citizenship and Immigration Services and the Bureau of Immigration and Customs Enforcement within the Department of Homeland Security (DHS) to step-up employment verification and enforcement activities, in concert with mailings of no-match letters by the Social Security Administration (SSA). Growers have asserted that these activities disrupt their workforces by increasing employee turnover and therefore, decreasing the stability of their labor supply. The perception that government actions negatively affect U.S. agriculture has prompted a legislative response in the past.

Composition of the Seasonal Farm Labor Force

Immigration legislation sometimes has been crafted to take into account the purported labor requirements of U.S. crop growers. In 1986, for example, Congress passed the Immigration Reform and Control Act (IRCA, P.L. 99-603) to curb the presence of unauthorized aliens in the United States by imposing sanctions on employers who knowingly hire individuals who lack permission to work in the country. In addition to a general legalization program, P.L. 99-603 included two industry-specific legalization programs—the Special Agricultural Worker (SAW) program and the Replenishment Agricultural Worker (RAW) program⁸—that were intended to

⁵ According to *U.S. Department of Labor Report to Congress: The Agricultural Labor Market—Status and Recommendations*, the 1.8 million figure was developed by dividing the hourly earnings of field and livestock workers into farm labor expenditures to estimate the number of work hours on crop and livestock farms. As it was calculated that 72% of the hours were being worked on crop farms, the percentage was then applied to the Commission on Agricultural Workers' estimate for 1992 of 2.5 million persons employed for wages on U.S. farms to yield a current estimate of the hired crop workforce. The Commission had developed its earlier farm employment figure from a variety of data sources because there is no actual head count of farm workers. For other current estimates of hired farm and crop workers see **Table 1**.

⁶ DOL, *Findings from the National Agricultural Workers Survey (NAWS) 2001-2002*, Research Report No. 9, March 2005. (Hereafter cited as DOL, *Findings from the NAWS 2001-2002*.)

⁷ Commission on Agricultural Workers (CAW), *Report of the Commission on Agricultural Workers*. (Washington: GPO, November 1992). (Hereafter cited as CAW, *Report of the Commission on Agricultural Workers*.) U.S. General Accounting Office (GAO), *H-2A Agricultural Guestworker Program: Changes Could Improve Services to Employers and Better Protect Workers*, GAO/HEHES-98-20, December 1997. (Hereafter cited as GAO, *H-2A Agricultural Guestworker Program*.) DOL, *A Profile of U.S. Farmworkers: Demographics, Household Composition, Income and Use of Services*, Research Report No. 6, April 1997. (Hereafter cited as DOL, *A Profile of U.S. Farmworkers*.) And, annual calculations in the early 1990s by the U.S. Departments of Labor and Agriculture.

⁸ The INS approved more than 1 million of the applications that individuals filed under the SAW program to become (continued...)

compensate for the act's expected impact on the farm labor supply and encourage the development of a legal crop workforce. These provisions of the act have not operated in the offsetting manner that was intended, however, as substantial numbers of unauthorized aliens have continued to join legal farm workers in performing seasonal agricultural services (SAS).⁹

On the basis of case studies that it sponsored, the Commission on Agricultural Workers concluded in its 1992 report that individuals legalized under the SAW program and other farm workers planned to remain in the agricultural labor force "indefinitely, or for as long as they are physically able."¹⁰ According to the DOL's National Agricultural Workers Survey, two-thirds of so-called SAWs stated that they intended to engage in field work until the end of their working lives.¹¹

For many SAWs, the end of their worklives—at least their worklives in farming—may now be near at hand. The diminished physical ability generally associated with aging in combination with the taxing nature of crop tasks could well be prompting greater numbers of SAWs to leave the fields. Relatively few farm workers are involved in crop production beyond the age of 44 and even fewer beyond the age of 54 (19% and 7%, respectively, in FY2001-FY2002).¹² The Commission on Agricultural Workers noted that the typical SAW in 1990 was a 30-year-old male who "is likely to remain in farm work well into the 21st century."¹³ As the "average age of SAW-legalized workers in 2007 will be 47," increasing numbers of them are likely to be curtailing their participation in SAS labor force.¹⁴ It thus appears that the 1986 legalization program has become less useful over time in fulfilling the labor requirements of crop producers.

A combination of factors likely has contributed to the decrease in SAWs' share of agricultural employment.¹⁵ While the share of IRCA-legalized farm workers has been falling over time due to aging and the availability of nonfarm jobs, the leading factor probably is the substantially increased presence of illegal aliens.¹⁶ In the first half of the 1990s, unauthorized workers rose

(...continued)

legal permanent residents. Anticipating that SAWs would leave farming because IRCA did not require them to remain in order to adjust their status, P.L. 99-603 included the RAW program as a back-up measure to ensure growers of an adequate labor supply. The RAW program was never used because the annual calculations of farm labor supply and demand that were made by the U.S. Departments of Labor and Agriculture during the FY1990-FY1993 period found no national shortages of farm workers.

⁹ Seasonal agricultural services (SAS) were defined broadly in IRCA as field work related to planting, cultivating, growing and harvesting of fruits and vegetables of every kind and other perishable commodities. The terms "SAS," "seasonal farm work," "field work" and "crop work" are used interchangeably in this report.

¹⁰ CAW, *Report of the Commission on Agricultural Workers*, p. 75.

¹¹ DOL, *U.S. Farmworkers in the Post-IRCA Period*, Research Report No. 4, March 1993. (Hereafter cited as *DOL, U.S. Farmworkers in the Post-IRCA Period*.)

¹² DOL, *Findings from the NAWS 2001-2002*.

¹³ CAW, *Report of the Commission on Agricultural Workers*, p. 80.

¹⁴ 2007 email communication from the U.S. Department of Labor.

¹⁵ Alternatively, there are a number of reasons why SAWs would remain in farm employment (e.g., limited English-language fluency and little formal education). In light of these competing factors, the CAW concluded that it would be difficult to estimate the attrition rate of SAWs from the fields. The existence of fraud in the SAW program further complicates such a calculation because the stock of SAWs who genuinely were farm workers is unknown: when Congress was debating immigration proposals in the mid-1980s, the U.S. Department of Agriculture estimated that there were 300,000 to 500,000 unauthorized farm workers, but more than twice the upper-end estimate were legalized under the SAW program; this large discrepancy, as well as additional research, led to the widely held conclusion that fraud was extensive.

¹⁶ The CAW determined that the design of the SAW program was, at least in part, responsible for the increase in (continued...)

from 7% to 37% of the SAS labor force.¹⁷ Their share climbed to 52% by FY1997-FY1998,¹⁸ then, rose further to 55% by FY1999-FY2000, before it dropped somewhat to 53% in FY2001-FY2002.¹⁹ Moreover, the number of SAS workdays performed by unauthorized aliens more than tripled between FY1989 and FY2002.²⁰ In addition, of the many foreign-born newcomers to the sector in FY2000-FY2002, 99% were employed without authorization.

Unauthorized aliens, arguably, have been displacing legal workers from jobs in the agricultural industry. Farm worker advocates assert that crop producers prefer unauthorized employees because they have less bargaining power with regard to wages and working conditions than other employees. Growers counter that they would rather not employ unauthorized workers because doing so puts them at risk of incurring penalties. They argue that the considerable presence of unauthorized aliens in the U.S. farm labor force implies a shortage of legal workers.

Farm worker groups and some policy analysts contend that even if the previously mentioned DHS and SSA activities were to deprive farmers of many of their unauthorized workers, the industry could adjust to a smaller supply of legal workers by (1) introducing labor-efficient technologies and management practices, and (2) raising wages which, in turn, would entice more authorized workers into the farm labor force. Grower advocates respond that further mechanization would be difficult to develop for many crops and that, even at higher wages, not many U.S. workers would want to perform physically demanding, seasonal farm labor under variable climactic conditions. Moreover, employer representatives and some policy analysts maintain that growers cannot raise wages substantially without making the U.S. industry uncompetitive in world markets which, in turn, would reduce farm employment. In response, farm worker supporters note that wages are a small part of the price consumers pay for fresh fruits and vegetables and accordingly, higher wages would result in only a slight rise in retail prices. These remain untested arguments as perishable crop growers have rarely, if ever, had to operate without unauthorized aliens in their workforces.

A Farm Labor Shortage?

Trends in the farm labor market generally do not suggest the existence of a nationwide shortage of domestically available farm workers, in part because the government's statistical series cover authorized and unauthorized workers. This overall finding does not preclude the possibility of spot shortages of farm labor in certain areas of the country at various times of the year.

(...continued)

unauthorized immigration because if dependents of SAWs did not similarly have their status adjusted, they might have illegally entered the United States to join family members. In addition, the network or kinship recruitment process for SAS work continued to flourish and to facilitate not only job placement, but also migration by assisting in border-crossing and in acquiring fraudulent work authorization documents. These findings led the Commission to conclude that "the concept of a worker-specific and industry-specific legalization program was fundamentally flawed. It invited fraud, posed difficult definitional problems regarding who should or should not be eligible, and ignored the longstanding priority of U.S. immigration policy favoring the unification of families." CAW, *Report of the Commission on Agricultural Workers*, p. 67.

¹⁷ DOL, *A Profile of U.S. Farmworkers*.

¹⁸ DOL, *Findings from the National Agricultural Workers Survey: 1997-1998*, Research Report No. 8, March 2000. (Hereafter cited as DOL, *Findings from the National Agricultural Workers Survey: 1997-1998*.)

¹⁹ DOL, *Findings from the NAWS 2001-2002*.

²⁰ DOL, *Farmworkers in the Post-IRCA Period and Findings from the NAWS 2001-2002*.

Caution should be exercised when reviewing the statistics on farm workers' employment, unemployment, time worked and wages that follow. The surveys from which the data are derived cover somewhat different groups within the farm labor force (e.g., all hired farm workers as opposed to those engaged only in crop production or workers employed directly by growers as opposed to those supplied to growers by farm labor contractors), and they have different sample sizes. A household survey such as the Current Population Survey (CPS) could well understate the presence of farm workers because they are more likely to live in less traditional quarters (e.g., labor camps) and of unauthorized workers generally because they may be reluctant to respond to government enumerators. And, some of the surveys have individuals as respondents (e.g., the CPS and DOL's National Agricultural Workers Survey) while others have employers as respondents (e.g., the U.S. Department of Agriculture's National Agricultural Statistics Service Farm Labor Survey, FLS). Surveys that query employers are more likely to pickup unauthorized employment than are surveys that query individuals.

Underlying Assumptions

Estimating whether the number of workers in the United States is sufficient to fulfill employer demand is difficult because there is no agreed-upon definition of a labor shortage. Economists believe labor markets reach a balance between supply and demand, with a lag, absent government policies that prevent a shortage or surplus from occurring. For example, economic theory posits that firms needing more workers to fill jobs in a particular occupation will initially raise wages to attract employees from elsewhere in the economy and thereby restore equilibrium between supply and demand in the occupation. In contrast, businesses tend to think there is a shortage in a given occupation if as many workers as they want cannot be obtained at the current wage being offered.

Estimating shortages or surpluses also is not straight-forward because the supply of and demand for labor generally cannot be measured directly. There is no proxy for the supply of workers to most occupations.²¹ An oft-used measure of demand is employment. Accordingly:

- an increase in an occupation's employment denotes that employers have increased their demand for labor and may be moving toward—but have not reached—a shortfall of workers, while
- a decrease in an occupation's employment signals that employers either have
 - (1) reduced their demand for labor and may be moving away from a shortage, or
 - (2) maintained or increased their demand but may have exhausted the supply of readily available workers.

The trend in wages commonly is used to clarify the latter situation: if employment in an occupation falls despite employers substantially bidding up wages, it is assumed that the number of workers readily available to fill jobs in the occupation may have reached its limit.

²¹ Exceptions are those occupations with very well delineated and widely agreed upon credentials. In the case of registered nurses, for example, the number of students graduating from nursing programs as well as the number of workers in the United States already licensed as registered nurses would compose the available supply of individuals to the occupation.

Other measures that can be examined to shed additional light on the relationship between labor supply and demand include unemployment and time worked. Both these indicators are analyzed below to supplement trends in farm employment and wages.

Employment

Although the employment of hired workers engaged in crop or livestock production (including contract workers) has fluctuated erratically over time, the trend overall has been downward (see columns 3 and 7 in **Table 1**). The employment pattern among crop workers hired directly by growers (i.e., excluding those supplied by farm labor contractors and crew leaders) has regularly risen and then fallen back, but to a higher level through 2000 (column 4). This ratcheting upward of employment produced a 12% gain over the 1990-2000 period. In contrast, other wage and salary workers experienced steady and robust job growth over almost the entire period: from 1990 to 2000, wage and salary employment in nonfarm industries advanced by 18%. These divergent employment patterns suggest that hired farm workers did not share equally in the nation's long economic expansion and appear to be inconsistent with the presence of a nationwide farm labor shortage at that time.

The labor market continued to contract in 2002, despite the 2001 recession's end in November 2001. Nonfarm wage and salary employment showed signs of revival in 2003 that have since continued. In contrast, employment of hired farm workers has not followed a consistently upward trend. (See columns 3 and 7 of **Table 1**).

Table 1. Hired Farm Employment
(numbers in thousands)

Year	Total Nonfarm Wage & Salary Employment ^a	Economic Research Service (ERS) ^b		National Agricultural Statistics Service (NASS) ^c		Total
		Hired Farm Workers ^d	Hired Crop Workers ^e	Hired Farm Workers ^f	Agricultural Service Workers ^g	
1990	105,705	886	419	892	250	1,142
1991	104,520	884	449	910	259	1,169
1992	105,540	848	409	866	252	1,118
1993	107,011	803	436	857	256	1,113
1994	110,517	793	411	840	250	1,090
1995	112,448	849	433	869	251	1,120
1996	114,171	906	451	832	236	1,068
1997	116,983	889	432	876	240	1,116
1998	119,019	875	458	880	246	1,126
1999	121,323	840	440	929	233	1,162
2000	125,114	878	468	890	243	1,133
2001	125,407	745	392	881	244	1,125
2002	125,156	793	370	886	225	1,111
2003	126,015	777	372	836	236	1,072

Year	Total Nonfarm Wage & Salary Employment ^a	Economic Research Service (ERS) ^b		National Agricultural Statistics Service (NASS) ^c		Total
		Hired Farm Workers ^d	Hired Crop Workers ^e	Hired Farm Workers ^f	Agricultural Service Workers ^g	
2004	127,463	712	368	825	277	1,102
2005	129,931	730	393	780	282	1,062
2006	132,449	748	351	752	255	1,007

Source: Created by the Congressional Research Service (CRS) from sources cited below.

- a. Data are from the monthly CPS, a survey of households, as reported by the DOL's Bureau of Labor Statistics (BLS) for individuals age 16 or older.
- b. Data are from the monthly CPS as reported by the U.S. Department of Agriculture's ERS for individuals age 15 or older.
- c. Data are from the Farm Labor Survey (FLS), a quarterly survey of farm operators, as reported by the U.S. Department of Agriculture's NASS. The statistics reflect individuals on employers' payrolls during the survey week in January, April, July, and October. Data for Alaska are not included.
- d. In the CPS, an individual's occupation is based on the activity in which he spent the most hours during the survey week. Hired farm workers are those whose primary job is farm work and for which they receive wages, as opposed to unpaid family workers or self-employed farmers. Hired farm workers include individuals engaged in planting, cultivating, and harvesting crops or tending livestock whom growers employ directly or through agricultural service providers (e.g., farm labor contractors and crew leaders), as well as farm managers, supervisors of farm workers, and nursery and other workers.
- e. The ERS disaggregates hired farm workers by the kind of establishment employing them (i.e., establishments primarily engaged in crop production, livestock production or other). As "other" includes agricultural service providers, the figures for crop workers are limited to farm workers whom growers employ directly.
- f. Persons paid directly by farmers, including field workers (i.e., those who plant, cultivate and harvest crops), livestock workers (i.e., those who tend livestock, milk cows or care for poultry), supervisory workers (e.g., managers or range foremen), and other workers on farmers' payrolls (e.g., bookkeepers, secretaries or pilots).
- g. Persons supplied to farmers to perform harvest work, for example, but paid by agricultural service firms (e.g., farm labor contractors or crew leaders). Agricultural service workers perform work on farms on a contract or fee basis (e.g., veterinarian services, sheep shearing).

July Farm Employment by State

Farm employment is subject to considerable seasonal variation which annual average data masks. Demand for hired farm labor typically peaks in July when many crops are ready to be harvested. The July employment statistics from the FLS have ranged from less than 1.1 million to less than 1.5 million since 1990, well above the average for some years shown in the last column of **Table 1**. Farm employment also varies greatly by geographic area. Recent July data disaggregated by geographic area available from the FLS are examined below to assess whether demand at its peak has produced labor shortages in some parts of the country.

Employment of hired workers and agricultural service workers rose 0.8% on the nation's farms between July 2006 and July 2007, while in Florida total farm employment fell. (See **Table 2**.) When compared with the 1.0% increase in employment among nonfarm wage and salary workers

in 2007, the FLS data do not suggest that peak demand for farm workers nationwide and in Florida exceeded the domestically available supply of labor this past July.²²

Table 2. Total Farm Employment in the United States (excluding Alaska) and in California and Florida, July 2005-July 2007

July	Hired Farm Workers and Agricultural Service Workers Working on Farms					
	Number (in thousands)			Percent Change		
	United States	Florida	California	United States	Florida	California
2005	1344	43	347			
2006	1196	46	302	-11.0	6.9	-12.9
2007	1205	43	322	0.8	-6.5	6.6

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *Farm Labor*, August releases.

Note: See footnotes in **Table 1** for definitions of hired farm worker and agricultural service worker.

The situation differed considerably for California growers. Total farm employment in the state rose at an above-average rate of 6.6% as shown in **Table 2**. The large job growth rate suggests California's farmers faced a comparatively tight labor market this past July.

The state's high rate of job growth on farms largely was due to greater use of workers supplied by farm labor contractors. As shown in **Table 3**, employment of hired farm workers in California increased by 0.5% (1,000) between July 2006 and July 2007. Over the same period, employment of agricultural service workers increased by 17.1% or 19,000 (from 111,000 to 130,000) according to data from the FLS. California's greater use of agricultural service workers accounted for one-half of the increase in employment of these workers at the national level (38,000).

Table 3. Number of Hired Farm Workers by Geographic Area, July 2005-July 2007

Area	Number of Hired Farm Workers Excluding Agricultural Service Workers				
	(in thousands)			(% change)	
	July 2005	July 2006	July 2007	July 2005- July 2006	July 2006- July 2007
United States (excluding AK)	936	876	847	-6.4	-3.3
Hawaii	7	7	6	0.0	-14.3
California	206	191	192	-7.3	0.5
Pacific (OR, WA)	109	92	92	-15.6	0.0
Mountain I (ID, MT, WY)	29	30	22	3.4	-26.7

²² According to CPS data, nonfarm wage and salary employment averaged 132,449,000 in calendar year 2006 and 133,759,000 in January-July 2007. (Monthly data for 2007 are preliminary and subject to revision.)

Area	Number of Hired Farm Workers Excluding Agricultural Service Workers				
	(in thousands)			(% change)	
	July 2005	July 2006	July 2007	July 2005- July 2006	July 2006- July 2007
Mountain II (CO, NV, UT)	26	25	18	-3.8	-28.0
Mountain III (AZ, NM)	24	25	22	4.2	-12.0
Northern Plains (KS, NE, ND, SD)	45	41	40	-8.9	-2.4
Southern Plains (OK, TX)	63	53	58	-15.9	9.4
Delta (AR, LA, MS)	24	30	25	25.0	-16.7
Cornbelt I (IL, IN, OH)	54	55	53	1.9	-3.6
Cornbelt II (IA, MO)	31	23	24	-25.8	4.3
Lake (MI, MN, WI)	75	68	78	-9.3	14.7
Florida	41	43	41	4.9	-4.7
Southeast (AL, GA, SC)	44	41	31	-6.8	-24.4
Appalachian I (NC, VA)	38	40	40	5.3	0.0
Appalachian II (KY, TN, WV)	24	27	30	12.5	11.1
Northeast I (CT, ME, MA, NH, NY, RI, VT)	46	36	39	-21.7	8.3
Northeast II (DE, MD, NJ, PA)	50	49	36	-2.0	-26.5

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *Farm Labor*, August releases.

Note: See notes in **Table 1** for definitions of hired farm worker and agricultural service worker.

Hired Farm Workers

When statistics on hired farm workers alone are analyzed, they do not signal a scarcity of farm labor during a period of peak demand. Employment of hired farm workers in the year ended July 2007 fluctuated much like it had previously over time in the 15 regions and 3 states into which NASS divides the United States. (See **Table 3.**) Farmers in eight regions, Florida and Hawaii reduced their demand for direct-hire farm workers this past July. In addition, employment of hired farm workers remained the same between July 2006 and July 2007 in the Pacific region (Oregon, Washington) and Appalachian I region (North Carolina, Virginia). Thus, growers used fewer or the same number of hired farm workers this July in the majority of regions (10 out of 15) and states (2 out of 3) for which the FLS provides data.

Variable climate conditions may explain a good deal of the long-standing yearly fluctuations in farm employment. For example, drought or hurricanes could severely curtail crop production in a given region in one year that would greatly reduce labor requirements; the following year the same area could have more normal weather conditions that would produce a larger crop and, hence, a greater demand for labor. A specific example involves Washington state. Different weather conditions in 2006 than 2005 affected when demand peaked for harvesting cherries, which in turn affected the supply of labor to other growers in the state. As a result of the delayed surge in demand for labor among cherry producers in 2006, many workers who usually would

have switched to working for apple growers in August instead continued to harvest cherries. Their analysis led Ernst W. Stromsdorfer and John H. Wines to conclude that

dramatic year-to-year seasonal changes explain much of the concern of agricultural producers over the adequacy and timeliness of the supply of seasonal agricultural workers.²³

Unemployment

Employment data paint an incomplete picture of the state of the labor market. At the same time that employment in a given occupation is decreasing or increasing relatively slowly, unemployment in the occupation might be falling. Employers would then be faced with a shrinking supply of untapped labor from which to draw. A falling unemployment rate or level would offer some basis for this possibility.

As shown in **Table 4**, the unemployment rate of hired farm workers engaged in crop or livestock production (including contract labor) is quite high. Even the economic boom that characterized most of the 1990s did not reduce the group’s unemployment rate below double-digit levels, or about twice the average unemployment rate in the nation at a minimum. Discouragement over their employment prospects in agriculture or better opportunities elsewhere may have prompted some unemployed farm workers to leave the sector as evidenced by their reduced number after 1998 (see column 4 of the table).

Table 4. The Rate and Level of Unemployment

Year	Unemployment Rate		Number of Unemployed Hired Farm Workers (in thousands)
	All Occupations	Hired Farm Workers	
1994	6.1	12.1	109
1995	5.6	12.5	121
1996	5.4	11.5	118
1997	4.9	10.6	106
1998	4.5	11.8	117
1999	4.2	10.6	100
2000	4.0	10.6	104
2001	4.7	12.1	103
2002	5.8	11.4	102
2003	6.0	12.9	100
2004	5.5	11.4	92
2005	5.1	9.0	72
2006	4.6	9.4	78

Source: CPS data tabulated by the BLS (column 2) and the ERS (columns 3 and 4).

²³ Washington State Employment Security Department, “Agricultural Employment and the Issue of a 2006 Seasonal Labor Shortage,” *2006 Agricultural Workforce in Washington State*.

Note: In the CPS, an individual's occupation is based on the activity in which he or she spent the most hours during the survey week. The ERS defines hired farm workers as individuals aged 15 or older whose primary job is farm work and for which they receive wages. Hired farm workers include individuals engaged in crop or livestock production whom growers employ directly or through agricultural service providers (e.g., farm labor contractors), as well as farm managers, supervisors of farm workers, and nursery and other workers.

Other observers have examined the unemployment rates in counties that are heavily dependent on the crop farming industry. The GAO, for example, found that many of these agricultural areas chronically experienced double-digit unemployment rates that were well above those reported for much of the rest of the United States. Even when looking at monthly unemployment rates for these areas in order to take into account the seasonality of farm work, the agency found that the agricultural counties exhibited comparatively high rates of joblessness.²⁴ These kinds of findings imply a surplus rather than a shortage of farm workers.²⁵

Another perspective on the availability of untapped farm labor comes from the DOL's National Agricultural Worker Survey (NAWS). During FY2001-FY2002, the typical crop worker spent 66% of the year performing farm jobs. The remainder of the year, these farm workers either were engaged in nonfarm work (10% of the year) or not working (16%) while in the United States, or they were out of the country (7%).²⁶ This pattern also suggests an excess supply of labor, assuming that the workers wanted more farm employment. Grower advocates contend that the pattern is a manifestation of working in a seasonal industry. Even in a month of peak industry demand, however, only a small majority of farm workers hold farm jobs.²⁷

Time Worked

Another indicator of supply-demand conditions is the amount of time worked (e.g., hours or days). If employers are faced with a labor shortage, they might be expected to increase the amount of time worked by their employees.

The Seasonality of Demand: Hours Versus Employment

Recent data reveal no discernible year-to-year variation in the average number of weekly hours that hired farm workers are employed in crop or livestock production. According to the FLS, the average workweek of hired farm workers has ranged narrowly around 40.0 hours since the mid-1990s. Thus, neither the trend in employment nor in work hours imply the existence of a farm labor shortage.

There also is not much variability in demand over the course of a year based on hours worked. In 2006, for example, the average week of hired farm workers was 33.2 hours in mid-January, 40.8 hours in mid-April, 41.0 hours in mid-July and 41.6 hours in mid-October. (NASS did not conduct a survey in the first quarter of 2007.)

²⁴ GAO, *H-2A Agricultural Guestworker Program*.

²⁵ See also testimony of Cecilia Munoz, on behalf of the National Council of La Raza before the Senate Judiciary Subcommittee on Immigration, May 12, 1999.

²⁶ DOL, *Findings from the NAWS 2001-2002*.

²⁷ DOL, *Findings from the National Agricultural Workers Survey: 1997-1998*.

The instability of the demand for farm labor within a year (i.e., seasonality) is reflected in employment levels more than in work hours per week. The FLS data show that in 2006, for example, farmers had 614,000 workers on their payrolls in mid-January; 720,000 in mid-April; 876,000 in mid-July; and 797,000 in mid-October.

The Number of Days Worked

Another measure of time worked available from the FLS is “expected days of employment” (i.e., farm operators are asked the number of days they intend to utilize their hired farm workers over the course of a year). As shown in **Table 5**, they anticipated a low of 579,000 farm workers on their payrolls for at least 150 days in 2006 and a high of 679,000 (un)authorized workers in 2002. These “year-round” workers typically have accounted for at least three-fourths of hired farm workers in the current decade.²⁸

Table 5. Hired Farm Workers by Expected Days of Employment
(numbers in thousands)

Year	150 Days or More of Expected Employment		149 Days or Less of Expected Employment
	Number of Hired Workers	Percent of All Hired Farm Workers	
1994	597	71	243
1995	598	69	271
1996	593	71	239
1997	629	72	247
1998	639	73	241
1999	666	72	263
2000	640	72	251
2001	658	75	224
2002	679	77	207
2003	635	76	201
2004	611	74	246
2005	594	76	185
2006	579	77	173

Source: Annual averages calculated by CRS from quarterly releases of the FLS.

Note: See note in **Table 1** for definition of hired farm worker.

²⁸ These figures potentially are relevant to legislation that would link eligibility for legalization to time spent in farm work. While some might wish to use the above-described data to roughly estimate the number of unauthorized farm workers who would be eligible to adjust status, they describe the *expectations* of farmers and they do not distinguish between legal and illegal workers. In addition, the data could produce an underestimate because they omit the more than 200,000 contract workers on the payrolls of agricultural service providers. Alternatively, the data could produce an overestimate because they include employees not normally thought of as farm workers (e.g., bookkeepers, pilots).

According to the NAWS, the number of actual farm workdays varies by legal status.²⁹ Unauthorized workers averaged 197 days in crop production, compared to 185 days for authorized workers in FY2001-FY2002. More unauthorized than authorized workers were likely to spend at least 200 days in farm jobs (58% and 50%, respectively). Within the authorized population, citizens averaged 175 days and permanent residents, 195 days of employment in farming during the year.

Wages

As previously stated, economic theory suggests that if the demand for labor is nearing or has outstripped the supply of labor, firms will in the short-run bid up wages to compete for workers. Consequently, earnings in the short-supply field would be expected to increase more rapidly than earnings across all industries or occupations. The ratio of, in this instance, farm to nonfarm wages also would be expected to rise if the farm labor supply were tight.

As shown above in **Table 6**, the average hourly earnings of field (excluding contract) workers rose to a greater extent than those of other employees in the private sector between 1990 and 2006, at 73.2% and 64.3%, respectively. Nonetheless, field workers' pay hardly increased compared to other workers' pay: at \$9.06 per hour in 2006, field workers still earn little more than 50 cents for every dollar earned by other private sector workers.

Table 6. Average Hourly Earnings of Field Workers and Other Workers in the Private Sector

(in nominal dollars)

Year	Average Hourly Wages of Field Workers	Average Hourly Wages of Production or Nonsupervisory Workers in the Private Nonfarm Sector	Ratio of Hourly Field Worker Wages to Private Nonfarm Worker Wages
1990	\$5.23	\$10.20	0.51
1991	5.49	10.52	0.52
1992	5.69	10.77	0.53
1993	5.90	11.05	0.53
1994	6.02	11.34	0.53
1995	6.13	11.65	0.53
1996	6.34	12.04	0.53
1997	6.66	12.51	0.53
1998	6.97	13.01	0.54
1999	7.19	13.49	0.53
2000	7.50	14.02	0.53
2001	7.78	14.54	0.54
2002	8.12	14.97	0.54

²⁹ DOL, *Findings from the NAWS 2001-2002*.

Year	Average Hourly Wages of Field Workers	Average Hourly Wages of Production or Nonsupervisory Workers in the Private Nonfarm Sector	Ratio of Hourly Field Worker Wages to Private Nonfarm Worker Wages
2003	8.31	15.37	0.54
2004	8.45	15.69	0.54
2005	8.70	16.13	0.54
2006	9.06	16.76	0.54
1990-2006 change	73.2%	64.3%	—

Source: Created by CRS from FLS (column 2) and BLS (column 3) employer survey data.

Note: Field workers are a subset of hired farm workers who engage in planting, tending and harvesting crops. The data relate to all field workers regardless of method of payment (i.e., those paid an hourly rate, by the piece or a combination of the two). Workers paid directly by agricultural service providers are excluded.

An over-the-year comparison of farm and nonfarm wage data for the nation in the peak demand month of July also does not suggest the presence of a labor shortage. As shown in **Table 7**, the hourly wages of field workers increased at an accelerating rate between July 2005-July 2006 and July 2006-July 2007. But, growers generally did not bid up wages to attract workers to a greater degree than employers in other industries.³⁰

However, growers in three areas—California, Mountain II (Colorado, Nevada and Utah) and Mountain III (Arizona, New Mexico)—raised wages in July 2007 to a much greater extent than the U.S. average for field workers (4.3%) and for employees in private nonfarm industries (4.1%). It appears that only California's above-average wage increase may have been associated with labor scarcity.

Table 7. Hourly Wage Rates of Hired Field Workers by Area, July 2005-July 2007

Area	Hourly Wage of Field Workers Excluding Agricultural Service Workers				
	(in current dollars)			(percent change)	
	July 2005	July 2006	July 2007	July 2005-July 2006	July 2006-July 2007
United States (excluding Alaska)	8.61	8.93	9.31	3.7	4.3
Hawaii	10.00	10.26	10.70	2.6	4.3
California	8.76	8.92	9.80	1.8	9.9
Pacific (OR, WA)	8.60	9.50	9.64	10.5	1.5
Mountain I (ID, MT, WY)	8.39	8.41	8.36	0.2	-0.6
Mountain II (CO, NV, UT)	8.62	8.33	9.25	-3.4	11.0

³⁰ Based on data collected by the U.S. Bureau of Labor Statistics for production and nonsupervisory workers in private nonfarm industries, average hourly earnings grew by 3.9% in 2006 and by 4.1% in the January-July 2007 period. The employees had average hourly earnings of \$16.13 in 2005, \$16.76 in 2006, and \$17.45 in July 2007 (preliminary data subject to revision).

Area	Hourly Wage of Field Workers Excluding Agricultural Service Workers				
	(in current dollars)			(percent change)	
	July 2005	July 2006	July 2007	July 2005- July 2006	July 2006- July 2007
Mountain III (AZ, NM)	7.90	7.55	8.34	-4.4	10.5
Northern Plains (KS, NE, ND, SD)	8.15	8.94	9.13	9.7	2.1
Southern Plains (OK, TX)	8.07	8.53	8.14	5.7	-4.6
Delta (AR, LA, MS)	7.59	8.06	8.14	6.2	0.9
Cornbelt I (IL, IN, OH)	9.20	9.46	9.22	2.8	-2.5
Cornbelt II (IA, MO)	8.86	9.85	9.44	11.2	-4.2
Lake (MI, MN, WI)	8.66	9.37	9.52	8.2	1.6
Florida	8.75	8.39	8.50	-4.1	1.3
Southeast (AL, GA, SC)	8.39	8.21	8.57	-2.1	4.4
Appalachian I (NC, VA)	8.44	9.14	8.80	8.3	-3.7
Appalachian II (KY, TN, WV)	8.46	8.64	8.55	2.1	-1.0
Northeast I (CT, ME, MA, NH, NY, RI, VT)	8.88	9.28	9.58	4.5	3.2
Northeast II (DE, MD, NJ, PA)	8.71	9.26	9.62	6.3	3.9

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *Farm Labor*, August releases.

Note: A hired field worker is anyone, other than an agricultural service worker, who was paid for at least one hour of work on a farm spent planting, tending and harvesting crops (including operation of farm machinery on crop farms). The figures reflect all ways in which farm workers are paid (e.g., by the hour, by the piece). The wage rate is calculated based on total wages paid and hours worked during the survey week.

California

The wage rate of field workers in California increased by 9.9% between July 2006 and July 2007. (See **Table 7**.) The wage rate of agricultural service workers employed on the state's farms rose as well (5.4%).³¹ These above-average wage increases likely contributed to the state's comparatively high increase of 6.6% in hired farm worker and agricultural service employment in July 2007, as previously shown in **Table 3**. According to the August 2007 *Farm Labor* release of July data, "continued concern [of California growers] about potential labor shortages due to increased border security [led them to pay] ... workers more in order to compete with the higher paying construction industry."

Some southwestern growers also reportedly reacted to the tightening of the farm labor market this summer by

raising crops across the border where many of the workers are ... Western Growers, an association representing farmers in California and Arizona, conducted an informal survey of

³¹ Wage rates of individuals who perform work on farms under a contract or fee arrangement are available from the FLS for only California and Florida. In July 2006, the hourly wage rate of agricultural service workers in California was \$9.49; in July 2007, \$10.00.

its members in the spring. Twelve large agribusinesses that acknowledged having operations in Mexico reported a total of 11,000 workers [t]here.³²

This is one of the actions that economists hypothesize employers will take to bring a scarce labor input into balance with demand. It is akin to the offshoring of work engaged in by other U.S. industries. Thus, the farm labor market in California functioned as economists theorize: growers were able to attract more workers by substantially raising wages, and they economized on U.S. labor by offshoring production.

Arizona, Colorado, Nevada, New Mexico and Utah

The well above-average wage increases among field workers shown in **Table 7** in Mountain II (Colorado, Nevada and Utah) and Mountain III (Arizona, New Mexico) is related to the same factor that pushed up the average hourly wage of all hired farm workers—namely, “a greater percentage of salaried workers putting in fewer hours.”³³ The lower demand for labor, evidenced by fewer hours worked, appears due to different climate conditions in July 2007 compared to a year earlier. The reduced employment in Mountain II this past July resulted from the winter wheat harvest “being behind last year’s pace,” and the lower employment in Mountain III resulted from “abnormally hot and extremely dry weather” that limited activity on farms during the survey’s reference week.³⁴

Conclusion

In summary, indicators of supply-demand conditions generally are inconsistent with the existence of a nationwide shortage of domestically available farm workers in part because the measures include both authorized and unauthorized employment. This finding does not preclude the possibility of farm worker shortages in certain parts of the country at various times during the year. The analysis does not address the adequacy of authorized workers in the seasonal farm labor supply relative to grower demand.

Whether there would be an adequate supply of authorized U.S. farm workers if new technologies were developed or different labor-management practices were implemented continues to be an unanswered question. Whether more U.S. workers would be willing to become farm workers if wages were raised and whether the size of the increase would make the industry uncompetitive in the world marketplace also remain open issues. These matters remain unresolved because perishable crop growers have rarely, if ever, had to operate without unauthorized aliens being present in the domestic farm workforce.³⁵

³² “Short on Labor, Farmers in U.S. Shift to Mexico,” *New York Times*, September 5, 2007.

³³ NASS, *Farm Labor*, August 2007, p. 1 and conversation between CRS and NASS staff. NASS calculates wage rates based on total wages paid and hours worked during the survey week. Salaried workers are paid a pre-set sum per week or month, for example, that is not directly linked to their input (unlike hourly workers who are paid based on the number of hours they actually work) or their output (unlike piece-rate workers who are paid based on the amount of crops they harvest).

³⁴ Conversation between CRS and NASS staff.

³⁵ In the conference report for the DOL’s FY2000 appropriation (H.Rept. 106-479), DOL was charged with reporting on ways to promote a legal farm workforce and on options for such things as improving farm worker compensation and developing a more stable workforce. The report (*U.S. Department of Labor Report to Congress: The Agricultural* (continued...))

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Labor Market—Status and Recommendations) was issued in December 2000. Recommendations included continuing appropriations for AgWork (i.e., an internet-based, on-line job matching system specifically for agricultural employees and employers), encouraging greater use of automated employee verification systems, and further pursuing H-2A program streamlining while maintaining farm worker protections. The report concluded that IRCA’s farm legalization program failed to turn an unauthorized into an authorized workforce. It asserted that proposals to ease growers’ access to temporary farm workers outside the existing H-2A program “would not create a legal domestic agricultural workforce” and instead “would lower wages and working and living conditions in agricultural jobs resulting in fewer domestic workers continuing employment in agriculture and perpetuating the industry’s dependence on a foreign labor force.” The report noted that one approach to creating an authorized supply of crop workers had never been tried, namely, increasing wages and improving working conditions “by normalizing legal protections for farm workers and increasing mechanization,” which has the potential to attract more U.S. workers to agriculture and raise the productivity of a possibly smaller farm labor force. In recognition that there might be short-run increases in growers’ labor costs were these recommendations implemented, DOL urged Congress was urged to consider ways to temporarily assist them.