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EVALUATION OF THE H-2A ALIEN LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

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Preface and Acknowledgements

This report evaluates the performance of the H-2A labor certification process (www.foreignlaborcert.doleta.gov/h-2a.cfm) and estimates the future demand for and supply of farm workers. The report is based on analysis of administrative and statistical data, a review of government and research reports and other materials, and interviews with Federal and state officials involved in labor certification and others with significant knowledge of the H-2A program.

The report has two sections: Section A evaluates the current labor certification process, and Section B examines the evolving farm labor market. Key inputs into Section A were interviews with staff of the Office of Foreign Labor Certification, the National Processing Centers and State Workforce Agencies. We are grateful to those who contributed freely of their time to explain current procedures and to suggest streamlining options. A key input into Section B were econometric models that were developed with the assistance of several econometricians and a fresh review of farm labor data that was informed by some of those collecting information on farm workers and their wages and employment.

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Executive Summary

The H-2 program allows U.S. farm employers to request certification from the U.S. Department of Labor (the Department) to have foreign workers admitted "temporarily to the United States to perform agricultural labor…of a temporary or seasonal nature." The Department's certification involves, inter alia, ensuring that two conditions are satisfied:

1. there are not sufficient workers who are able, willing, and qualified, and who will be available at the time and place needed, to perform the labor or services involved in the employer petition and,
2. the employment of the alien in such labor or services will not adversely affect the wages and working conditions of workers in the United States similarly employed.

The Department makes certification decisions in National Processing Centers (NPCs) in Atlanta and Chicago with information and assistance from State Workforce Agencies (SWAs).[1] This report aims to help the Office of Foreign Labor Certification (OFLC) to better fulfill its responsibilities in the farm labor certification process by:

- assessing current certification procedures, which was done by reviewing documents, conducting interviews, and applying lean manufacturing principles to suggest streamlining options
- examining changes in farm production and technology likely to affect the demand for farm workers, and evolving immigration patterns likely to affect the supply of farm workers, which was done by assessing farm labor data, developing national and regional econometric models of the farm labor market, and conducting commodity case studies of labor demand and supply.

We are grateful to those who provided their time and expertise.

Section A Findings and Recommendations

Three Key Considerations

Three key considerations influence the assessment of the current H-2A certification process. First, as Federal courts have explained several times, labor certification requires achieving a balance between efficiency and protection, assuring farm employers "an adequate labor force on the one hand and protect[ing] the jobs of citizens on the other. Clearly, citizen workers would best be protected and assured high wages if no aliens were allowed to enter. Conversely, elimination of all restrictions upon entry would most effectively provide employers with an ample labor force."[2] Courts have acknowledged that it is not easy to find and maintain the proper balance between efficiency and protection in the labor certification process.

[1] Beginning June 1, 2008, all applications for temporary labor certification have been processed in Chicago.

[2] Rogers v. Larson, 563 F.2d 617, 626 (3rd Cir. 1977), cert. denied, 439 U.S. 803, 1978. Quoted in the Testimony of Malcolm Lovell before the U.S. Senate. Committee on the Judiciary, Subcommittee on Immigration, Refugees and International Law, November 30, 1981, 9.

Second, the cost of certification exceeds farmer-paid fees. The NPCs and the SWAs spend at least $7 million a year on certification activities, while farmers pay just over $1 million a year collected in certification fees. Some states report spending two or three times the amount for which they are reimbursed to fulfill their responsibilities in the certification process, viz, inspecting housing, conducting prevailing wage and practice surveys, and processing H-2A applications.

Third, there are a series of management challenges involving tradeoffs between efficiency and expertise, changing the incentives of employer-applicants, and dealing with the program's recent expansion:

- The Department centralized the processing of applications in NPCs in Atlanta and Chicago in 2005 to achieve consistency and efficiency in the handling of applications. This centralization in H-2A certification activities was accompanied by cuts in Federal grants to SWAs due to changes in the nonfarm labor certification process, leading to a reshuffling of personnel and the loss of expertise. Many of the SWA staff interviewed were new to the H-2A program, and many reported little interaction with the NPC analysts making certification decisions. SWA staff reported that "webinars" that explain new rules and procedures are useful, but many believe that more in-person meetings and training would help them to better fulfill their responsibilities.
- NPC and SWA staff react to the employer applications they receive. There is no cost to apply for certification, and NPC analysts are responsible for spelling out the modifications or changes that must be made to make an employer's application acceptable, a procedure that provides little incentive for employers to submit complete and acceptable applications.
- The H-2A program is expanding into new areas, different commodities, and more complex arrangements between farm operators, contractors, and workers. All of those interviewed commented on the difficulty of making accurate and timely decisions in the face of novel and complex arrangements between contractors and farm operators.

The farm labor market exhibits continuity amidst change. For the past decade, expanded production of labor-intensive crops, such as strawberries, has offset the decrease in the demand for labor due to the partial mechanization of others, as in raisin grapes, to keep average U.S. farm worker employment at about 1.2 million.[3] Half of the hired workers employed on crop farms for wages are believed to be unauthorized, and a sixth have been in the U.S .less than a year.[4] Farm labor changes include a rising number of contractors and harvesting companies and more complex relationships with fixed-situs employers. The locus of activity in the H-2A program may change from southeastern states such as NC, GA, and VA to western states such as CA and WA that produce most U.S. labor-intensive fruit and vegetable crops. [5]

[3] These data are from the United States Department of Agriculture's National Agricultural Statistics Service: http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1063

[4] These data are from the Unites States Department of Labor's National Agricultural Workers Survey: www.doleta.gov/agworker/naws.cfm

[5] It may have been very difficult to predict in the mid-1980s that the locus of H-2A employment would shift from Florida sugarcane to North Carolina tobacco within a decade. Employment and Training Administration Information Notice 2-88

Streamlining Recommendations

Lean manufacturing principles[6] were applied to the reports, data and interviews with NPC and SWA staff and others with special knowledge of the H-2A program to generate three major streamlining recommendations, viz,

- to make the 750 and 790 forms electronic to expedite accurate certifications and improve enforcement,
- to rate employers using an ABC system to encourage self-policing, and
- to reconsider current recruitment procedures, which produce few U.S. workers but lead to controversy and litigation.

These recommendations, and three more dealing with prevailing wage surveys, enforcement, and funding issues, are summarized in Table 1.

Table 1. H-2A Streamlining Recommendations

Item	Purpose/Issue	Implementation	Comment
Encourage or require on-line applications for certification	NPC-SWA staff now have to lay out the modifications needed to make an application certifiable	Design E-file system so that applications cannot be submitted until complete; build in checks to e.g. require the correct Adverse Effect Wage Rate (AEWR)	On-line application could automatically be sent to NPC and SWA and link to wage/commodity information
ABC employer and agent rating system	Make current informal system more formal to save staff time and encourage applicant compliance with regulations	Establish criteria for A-rating, e.g. fixed situs, in the program at least 2-3 years, housing passed first time, no modifications or emergencies	Include agents as well to discourage them from "slipping" unacceptable provisions into job offers
Benefits for A-rated employers/agents	Could include self-certification of housing; lower fees	Housing: employers submit self-certification and photos	Inspectors can visit while in area; A-rating benefits provide incentives to achieve and maintain A-status

(August 2, 1988) listed 12 states as "heavy users" of the H-2A program, and they did not include NC, GA, LA, and KY, states among the top five users in 2006. VA was the only state among the top five in 2006 that was considered a heavy user in 1988.

[6] Lean manufacturing principles aim to produce goods without waste of materials or time. One starting point for materials on lean manufacturing is: www.lean-briefing.com

Recruitment and referral summit between NPCs and SWAs to discuss issues	Incremental decision making allows some employers to push limits and leaves some SWAs dissatisfied	Regular NPC-SWA analyst sessions, combined with ABC rating system, could ease NPC-SWA tensions and generate pragmatic guidelines	Recruitment is a significant concern of SWAs in many states
Strengthen prevailing wage surveys or turn them over to the National Agricultural Statistics Service (NASS)	SWAs spent over $1.1 million on surveys in Fiscal Year 2006; most done by mail, hard to get sufficient responses to make findings	NASS conducts most surveys of farm employers by mail or telephone, including Farm Labor, source of AEWR	Lack of funds prevents most SWAs from doing in-person surveys, so there is little gain in local labor market expertise
OFLC makes grants to states to cover the costs of SWA H-2A activities	Most SWAs report spending more than the grant	Reduce the duties of SWAs with ABC ratings and attestation on housing; NASS for surveys OR increase funding and strengthen SWAs	Some states subsidize SWA H-2A activities; others use H-2B and prevailing wage determination funds; surveys first to be cut

Electronic Information

Employers seeking certification are requesting a benefit, the benefit of employing legal foreign workers who are bound to work for them at specified wages and conditions in order to remain lawfully in the United States. The NPCs see employer applicants as their clients or customers, while SWAs have both employers and U.S. workers as clients or customers. The Department's Wage and Hour Division (WHD) as well as state labor law enforcement officials have U.S. workers as clients.

Employers can complete required 750 and 790 forms on line, but must print them out, sign them, and submit completed forms to the NPCs and SWAs with any attachments to the 790 form that provide detail on the jobs being offered as well as copies of contractor's licenses and contracting arrangements. Encouraging or requiring on-line 750 and 790 applications could streamline the certification process because:

- The on-line submission system could be designed so that an application cannot be submitted until key parameters are entered correctly, much as credit card applications cannot be submitted until required fields are completed
- On-line applications could be stored, expediting employer applications in future years and speeding their examination by highlighting employer-made changes in the job order from one year to the next in red or blue

- Employer-provided information about jobs in specific commodities and areas could be linked to the United States Department of Agriculture (USDA) and other resources to facilitate accurate certification decisions. For example, an application for peach pickers could link to (1) SWA prevailing wage and practice studies; (2) the USDA commodity briefing room on peaches and university studies on costs of peach production; and (3) an OFLC-developed database that had rules of thumb, such as the average one worker per acre to harvest strawberries and the usual length of the season[7]
- On-line employer applications could be submitted simultaneously to state SWAs and ESA.

Implementing this recommendation would require OFLC to accept electronic signatures and to modify the E-file database system to capture essential 790 elements about the commodity and job.[8] The payoff could be faster and more accurate certification decisions and time savings for employers as well as NPC and SWA staff.[9] OFLC could require on-line submissions and grant exceptions for paper submissions, as in the H-1B program, or encourage employers to file applications on line by charging a lower fee.

There is currently no application fee, and the Department certification fee for most H-2A employers is the smallest of the three fees paid to U.S. government agencies (the others are to the Department of Homeland Security and Department of State). Complete and accurate applications for certification could be encouraged by imposing an application fee that would be credited to the certification fee. If both paper and on-line applications were allowed, the application fee could be lower for on-line applications, reflecting their lower processing costs. In a further incentive to prepare complete and accurate applications, the amount of the application fee credited to the certification fee could be reduced by e.g. $25 for each modification required.[10]

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[7] Instead of posting only the summaries of the ETA 232 prevailing wage surveys online, there could be links to the two-page state reports, perhaps reducing the need for telephone calls between NPC analysts and SWA staff. SWAs could be encouraged to develop and update regularly profiles of their state labor market to expedite emergency requests for certification. An example of such a state farm labor profile for WA is available: www.workforceexplorer.com/article.asp?ARTICLEID=7023

There is a great deal of information available on specific commodities that is reviewed by e.g. farmers considering what commodities to produce and banks considering loan applications. The U.S. Census of Agriculture reports on the production of over 150 crops, two thirds of which are fruits and vegetables. With fruit and vegetable production rising, and accounting for almost half of cash crop receipts and almost 20 percent of farm exports, increased border and interior enforcement may lead to more requests for H-2A workers from new states and commodities. Analysts could be made more aware of the resources on particular commodities available from USDA and land-grant universities, including USDA commodity briefing rooms (www.ers.usda.gov/Briefing) and commodity costs and returns studies (www.agecon.ucdavis.edu).

[8] USDA uses "eAuthentication" to encourage farmers to apply for benefits on line: https://app.eauth.egov.usda.gov/AccountServices/MainPages/eauthAbout.aspx

[9] For example, employers may use an agent or attorney when first filing for certification, but feel comfortable to refile applications on their own in subsequent years, unless the agent/attorney also provides other services, such as handling recruitment and transportation.

[10] The Department apparently first established a certification fee of $100 plus $10 per worker certified up to a maximum $1,000 based on "time and costs involved in ETA Regional Office processing of H-2A agricultural applications prior to the amendment by the Immigration Reform and Control Act (IRCA)." 20 CFR 655, Vol 52, No 104, June 1, 1987, p20499. The fee did not reflect the cost of SWA activities.

ABC Employer Ratings

NPC and SWA analysts currently have an informal rating system to handle applications for certification. While all requests are treated equally, experience has taught analysts that some applications are more likely to be complete and accurate than others. Making this informal rating system explicit would offer an incentive for employers and agents to earn and maintain an A-rating, and could reduce delays that sometimes hold up certification.

There are two issues with an ABC rating system: the criteria for earning an A-rating, and the benefits provided by an A-rating. The suggested criteria to earn an A-rating, based on interviews with analysts, include being a fixed-situs employer in the H-2A program at least two or three years, having housing that passed inspection the first time, and filing no emergency requests, requiring no modifications, and having no WHD citations.

Timelines for dealing with employer applications are fixed by law and regulation, so it would be hard to give A-rated employers shorter application times. However, employers could be encouraged to achieve and maintain A-rated status by allowing them to self-certify their housing before occupancy. Housing could still be inspected annually when SWA staff are in the area, but self-inspection could remove a reason for delays in certification.

If most employers received A ratings, NPC and SWA staff would have more time and resources to focus on B- and C-rated employers; first-time applicants could be rated B. B-rated applicants would receive standard treatment, including pre-occupancy housing inspections and standard fees, but could earn an A-rating after two or three years in the program.

NPC and SWA staff agree that a few "bad apple" employers sully the reputation of the H-2A program; such employers would be rated C and subject to careful scrutiny. Labor contractors also raise special concerns, primarily because they are recruiting crews of workers abroad who will be deployed to one or more U.S. farms, and could be rated C in an analogue to the H-1B-dependent concept. Formalizing the informal ABC rating system in use by the NPCs and SWAs could encourage self-policing by the majority of employers who abide by H-2A regulations, and free up staff time to focus on the others. NPC and SWA staff agree that labor contractors raise special concerns and that their applications often require more time to assess properly.

U.S. Worker Recruitment

Recruitment is often a contentious and troublesome part of the H-2A certification process. Most SWA staff agreed that the 1998 Office of Inspector General (OIG) report, which found that U.S. workers were referred to 5.2 percent of H-2A jobs, and that U.S. workers were hired to fill 2.5 percent, reflects their current experience. The OIG found that 85 percent of these U.S. workers were referred by SWAs (U.S. Department of Labor. Office of the Inspector General. 1998).

Several background facts help to explain why so few U.S. workers are recruited in response to the job vacancies for which employers are seeking certification to hire H-2A workers:

1. Most employers requesting certification have identified the H-2A workers they want to hire, and may not want to hire U.S. workers that were identified by their own or SWA recruitment.
2. Most U.S. workers seeking temporary farm jobs want to go to work right away, not 30 or more days in the future. U.S. workers are often attracted to jobs offering higher-than-average AEWR wages, but may not learn about them in a timely manner because of the tight timelines fixed in law and regulation that limit the period of active recruitment inside the state, in nearby states, and in traditional supply states. Some SWA staff do not aggressively recruit U.S. workers to fill H-2A jobs because they believe employers prefer H-2A to U.S. workers.
3. Most SWAs suppress the name of the employer requesting certification in their job banks.[11] This means that interested U.S. workers must visit local SWA offices to receive employer contact information. SWAs have a variety of methods to deal with workers who appear in response to H-2A job ads, but most either call employers to arrange telephone interviews for interested workers or issue referral letters that U.S. workers take to employer interviews. Many employers report that few or none of the referred workers appeared for the interview or, if U.S. workers were interviewed and hired, few began work or finished the season. Most SWAs follow up with employers to whom they referred workers, and hear from them that the U.S. worker did not report for the interview or the job. Few SWAs have effective mechanisms to follow up with referred workers.
4. Some SWA staff report a panoply of "tricks" used by employers to discourage U.S. workers. For example, job offers may cite extreme conditions such as high or low temperatures, heavy lifting, or tall ladders or specify a 30-hour rather than a 40-hour work week. Statewide and multi-commodity job orders may discourage U.S. workers who need housing because they do not know where, with whom, or to what commodity they will be assigned.

Employers begin local recruitment efforts when they apply for certification, and SWAs begin recruitment efforts when they find the job order acceptable and enter it into their job bank systems. After the NPC accepts the employer's application, usually within seven days of application, the SWA distributes the job order statewide, to neighboring states, and to at least one traditional recruitment state. The result is a very short period of active recruitment before employer and SWA recruitment reports are due to the NPC.

Recruitment continues until the H-2A workers depart for the U.S. jobs, and employers must continue to accept referred U.S. workers until 50 percent of the contract period is completed. Since most U.S. workers are looking for jobs that begin immediately, SWA staff report that there are referrals and hires near the employer's start date or during the first 50 percent of the contract

[11] Most jobs posted in SWA job banks do not suppress employer contact information, so that workers can contact employers directly. There appear to be several arguments for suppressing employer contact information, including (1) protecting the privacy of employers and (2) ensuring that SWA staff interview workers and determine that they are capable of doing the job; privacy and interviews are apparently not necessary for other low-skill jobs. Many SWA job banks require workers to provide a social security number and register in order to see available jobs, and some include a statement on H-2A job orders that job seekers must present work-authorization documents before they can receive employer contact information and a referral, items not required when employer contact information is posted.

period. Few SWAs have data bases that permit an easy determination of exactly when during the contract period U.S. worker referrals are made.

One recruitment issue mentioned by many SWAs is that some employers request certification for more workers than they "need," allegedly so that they can reject qualified U.S. workers who apply. The NPCs reduce the number of jobs certified to be filled with H-2A workers by the number of U.S. worker rejections, but some SWA staff believe that employers in such cases should be denied certification entirely rather than certified to fill fewer jobs with H-2A workers.

A second recruitment-related issue is that some employers request certification for the normal maximum 10 month period even if the SWA believes that the period of employment will be shorter.[12] Ten-month period of employment requests and 30 hour work weeks may (1) allow employers to satisfy the ¾ guarantee with less than the usual 40+ hours of work in agriculture each week[13] and (2) perhaps encourage H-2A workers to leave before the end of their contracts, saving the employer the cost of return transportation. H-2A workers who are away from their families and not likely to have additional earnings while waiting for the contract's end date are most prone to depart early at their own expense.

Two extremes define the spectrum of options to deal with the recruitment dilemma. One extreme is a trust-the-employer approach, reducing or ending the U.S. worker-recruitment requirement for A-rated employers.[14] Several pending immigration reform proposals would substitute attestation for certification, making this part of the H-2A program similar to the H-1B program.[15]

The other extreme would be to "do recruitment right." Some SWA staff believe that U.S. workers are available to fill many of the jobs for which employers are being certified to employ H-2A workers. However, they argue that finding these U.S. workers requires more recruitment resources, a change of attitude about U.S. workers on the part of some employers, and effective mechanisms to follow up with U.S. workers on referrals and hires.

Perhaps the best option to deal with the recruitment and referral issue is a summit involving NPCs and SWA staff and others closely associated with U.S. worker recruitment. Employers are normally in the best position to determine who is best qualified to fill a particular job, but they invite government oversight of their decisions when they request certification to fill jobs with H-2A workers. Sorting through the issues and options with those who work with employers and U.S. workers may be the best way to move forward on the often contentious recruitment issue.

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[12] We found no database that allows a comparison of the number of employer requests for 10-month certification today versus earlier years, but NPC and SWA staff believe that more employers are requesting longer certification periods.

[13] NASS's Farm Labor survey, based on employer reports, found that hired workers were employed an average 40.7 hours a week in 2007, up from 40.5 in 2006. Farm Labor, October 2007 survey.

[14] Hewlett-Packard complained in May 1996 that labor certification cost $15,000 and took 22 months, prompting U.S. Commission on Immigration Reform commissioners Hill and Morrison to recommend a pilot program under which firms willing to pay $10,000 would be exempt from labor certification. Robert Hill and Bruce Morrison, "Give me your skilled workers," Legal Times, August 5, 1996.

[15] Under attestation, employers would make assurances about the job and wage offered before it is posted by the SWA, and would receive permission to employ H-2A workers; audits would ensure that they adhered to their assurances.

Prevailing Wages, Enforcement, and Funding

Prevailing Wages. The NPCs certify employer requests for H-2A workers to fill jobs with the support of the SWAs that provide local labor market expertise in the form of prevailing wage and practice surveys, housing inspections, and referrals and monitoring recruitment. In some cases, SWAs can prevent certification, as when they refuse to enter a deficient job order into the job recruitment system, effectively preventing the employer from being certified because there has been no test of the U.S. labor market. Similarly, SWAs may refuse to approve the housing that employers must offer to out-of-area U.S. and H-2A workers, or disagree with the employer on the prevailing wage rate.

Most SWAs expressed far more satisfaction with their role in processing H-2A applications and inspecting housing than in conducting prevailing wage and practice surveys. Almost all SWAs reported that they are having difficulty obtaining enough responses from employers to develop accurate and reliable prevailing wage and practice data, especially for new commodities in which employers are requesting H-2A workers. Most expressed a desire for more training on how to do such surveys. As more SWAs use mail surveys to save money, some agreed that NASS (www.nass.usda.gov), which conducts most of nation's farm surveys by mail and telephone, may be in the best position to conduct prevailing wage and practice surveys. NASS has conducted at least one prevailing wage study in Tennessee tobacco.

Enforcement. The Wage and Hour Division of the Employment Standards Administration, not the NPCs and SWAs, enforces labor laws, including the Fair Labor Standards Act and the Migrant and Seasonal Agricultural Worker Protection Act, and each state has labor laws and enforcement staff. WHD does not normally get involved with employers of H-2A workers unless U.S. workers are also present, since most of the laws WHD enforces apply to U.S. workers.[16] If WHD issues citations that could lead to the debarment of an employer from the H-2A program, NPCs can continue to certify that employer until appeals are exhausted and the employer is formally debarred.

Many of those interviewed emphasized that the current paper-based application system and the silo structure of WHD-OFLC interactions restricts communication between enforcement and certification staff. WHD offices receive copies of H-2A applications from the NPCs, often a week or more after they are filed. When WHD inspectors have problems with a particular employer, they contact their supervisors, who contact OFLC and pass the information on to the NPCs, with information from the NPCs returning via the same route. All those interviewed commented on the delays inherent in this process of moving up and down the chains of command.

Funding. SWAs seek reimbursement for the costs they incur to process H-2A applications, inspect housing, and conduct prevailing wage and practice surveys. The OFLC made $17 million in reimbursable alien labor certification grants to states in Fiscal Year (FY) 2005. Grants were reduced to $12 million in FY 2006 and FY 2007, when the responsibilities of the SWAs

[16] Office of Workforce Security Field Memo 10-01 reported that 48 percent of H-2A users inspected by WHD in FY 2000 were in violation of the H-2A provisions. July 19, 2001. www.ows.doleta.gov/dmstree/ib/ib2k1/ib_10-01.htm

were reduced to H-2A activities, processing H-2B applications, and making prevailing wage determinations.

Data on the costs of H-2A activities provided by states are not complete, and some states report H-2A expenses on their SF-424 forms larger than the amount for which they are reimbursed. Given these data limitations, our analysis suggests that states allocated about 55 percent of the total $12 million from OFLC to H-2A activities in FY 2006, $6.6 million. The allocation of OFLC funds between the three SWA activities, housing inspections, surveys, and processing applications, varied greatly between states. On average, a third of the funds were spent on housing inspections, a quarter on surveys, and 40 percent on processing H-2A applications.

Section B Findings and Recommendations

This section examined the changing U.S. farm labor market by reviewing farm labor data, developing an econometric model to estimate the current and future demand for and supply of farm workers in labor-intensive crops, and exploring how changes in trade and technology may affect the demand for farm labor in particular commodities. It concluded with recommendations for improved Department of Labor monitoring of farm labor market developments.

Three Key Considerations

There are three key considerations in understanding the interactions of supply and demand in the farm labor market: complexity, differences between trends in supply and demand, and the need for improved data and case studies. First, the farm labor market is complex because agriculture is a geographically dispersed and seasonal industry that is treated in unique ways under tax, labor, and immigration laws. Agriculture is the only industry with its own cabinet department, has a unique array of human resources (older-than-average White employers and younger-than-average minority employees), and may have the highest share of unauthorized workers among U.S. industries that employ at least a million workers.

Second, there are significant differences in the factors shaping farm labor demand and supply. The demand for farm labor depends primarily on consumer demand for the commodity, with the choice about how the commodity is produced being dependent on farm wages. As both consumer demand and farm wages rise, producers have traditionally found flexibility on the demand side of the labor market by substituting capital for labor, making labor-saving innovations a hallmark of U.S. agricultural history. There have already been significant labor-savings in the production of fruit and nut, vegetable, and horticultural (FVH) commodities, as highlighted by once-over harvesters for vegetables and shake-and-catch machines for fruits and nuts. These decades-old technologies could be refined and used in more FVH crops if there was a sustained increase in farm wages.

Labor-saving innovations usually diffuse fastest in commodities whose production is expanding during periods of rising wages, as during the 1960s. In such periods, new plantings of varieties amenable to mechanization spread rapidly, as with processing tomatoes. Even when acreage is stable, as with WA apples or CA raisin grapes, five percent or more of the acreage is replanted each year, and replantings today anticipate higher wages. Hand-labor usage in FVH agriculture

has probably peaked, but the speed with which farm worker employment falls depends on prices, wages, and technology.[17]

The supply of farm labor is easier to project. Most farm workers are immigrants, and almost all new farm workers are immigrants, making the supply of farm workers dependent on U.S. farm wages remaining significantly higher than wages in the farm workers' countries of origin, primarily Mexico. Most seasonal farm workers stay in the seasonal farm work force a decade or less, as evidenced by studies of workers that are reported to unemployment insurance (UI) authorities and NAWS data that show about a sixth of interviewed farm workers are newcomers. However, there are no longitudinal data to track farm workers and ex-farm workers over time, nor studies that would prioritize the factors that could induce seasonal farm workers to remain in the farm work force longer.

The third consideration is the need for improved farm labor data and commodity case studies, mentioned by almost every farm labor study over the past half century. Farm labor data are collected from employers or establishments and workers or households. The Census of Agriculture, the Farm Labor Survey, and UI data are collected from employers. The Census of Population, Current Population Survey, National Agricultural Workers Survey, and client data collected by Migrant and Seasonal Farm Worker service providers are obtained from individuals or households.[18] Data can be collected via a sampling frame, so that sample data can be extrapolated to the universe, or collected in another fashion, e.g. data reported to unemployment insurance authorities should include all UI-covered workers employed by the reporting employer or establishment.

Each farm labor data source is analogous to a window looking into a room of unknown size and shape, with the size and clarity of the window reflecting the reliability of the sample. However, instead of using previous studies as building blocks, it is common for newly commissioned farm worker surveys to summarize the deficiencies of previous studies and then lay out plans for an entirely new survey. This approach makes it harder to improve the quality of farm labor data over time.

Three Recommendations

The purpose of the Section B analysis is to help the Department better understand the supply of and demand for farm workers and the factors that affect them, so that OFLC can better fulfill its responsibilities. The Section B analysis includes national and regional econometric models of farm labor demand and supply, a review of the labor market in the FVH subsector of U.S. agriculture, and case studies of the farm labor market in several FVH commodities.

[17] The exceptions to declining demand for hand labor in FVH commodities include CA strawberries, WA cherries, west coast blueberries, and nursery and other horticultural specialties across the United States. In each case, rapidly rising consumer demand encourages more production, but there is no single labor-saving machine on the horizon.

[18] Some of these individual or household data are collected outside the United States, as with the Mexico Migration Project (http://mmp.opr.princeton.edu) and the Mexican National Rural Household Survey (http://precesam.colmex.mx/ and www.reap.ucdavis.edu/mexico-national-rural-household-survey).

Econometric Models

During the 1950s and 1960s, when the U.S. experienced massive rural-urban migration, many agricultural economists developed models to explain the demand for and supply of farm workers, usually distinguishing operator, unpaid family, and hired workers.[19] The major concern of agricultural economists at the time was to speed up rural-urban migration so that the resulting reduction in farm labor supply would put upward pressure on farm wages, thereby reducing farm worker poverty (Bishop, 1967). There was little concern about farm labor shortages, since it was widely assumed that at a time when the United States was racing to put a man on the moon, scientists and engineers would quickly learn how to replace hand workers in agriculture.

The econometric models developed in the 1960s made the demand for hired workers dependent on farm wage rates, farm prices (emphasizing that the demand for labor is derived from the demand for farm output), and the number of farm operators and family workers, who were assumed to be substitutes for hired workers (Schuh, 1968). The demand for hired workers increased with farm prices and decreased with farm wages, since higher wages encouraged farmers to adopt labor-saving methods of production. The supply of hired farm workers was a function of farm wage rates, expected nonfarm earnings, the size of the U.S. labor force, and the number of farmers and unpaid family workers. The major variable in the supply-of-labor equation was expected nonfarm earnings, essentially the nonfarm-farm wage gap times the unemployment rate, leading to the policy suggestion that the best way to help farm workers was to promote full employment, so that low-wage workers "trapped" in agriculture would find it easier to move into nonfarm jobs.

Estimating these models requires time series data on average farm worker employment, farm prices and farm wages, nonfarm wages and unemployment, and farm operator and family labor. We re-estimated the major 1960s model using 1975-2005 data, and found far fewer significant coefficients and different signs on the variables. For example, we found that higher farm prices were associated with a decreased demand for farm workers, which is likely only in the very short run, as when a freeze reduces farm worker employment but raises grower prices. None of the labor supply coefficients were significant, leading to the conclusion that the independent variables that explained the number of hired farm workers in the 1960s have lost their explanatory power in the 21st century.

We also estimated state-level models using data from the Agricultural Resource and Management Survey (ARMS). The purpose of these models is to estimate how the demand for labor would change with higher wages, which requires estimating how farmer investments respond to higher wages. The models, estimated for CA, IA, FL, and WA, do not produce strong results, as higher wages are sometimes not associated with more investment. There appears to be limited utility in developing more of such models, since the data required for more sophisticated analyses are not available.

[19] Operator and unpaid family workers receive the difference between farm revenues and costs, while hired workers are paid wages.

Commodity Case Studies

We found it most useful to project the effects of trade, technology and other variables that are likely to influence farm labor demand and supply via case studies of selected commodities. For each, we reviewed the current farm labor market, including the demand for and supply of farm workers as well as the likely impacts of trade, technology, consumer demand, and other factors. We found that:

- WA apple production is changing in ways that facilitate mechanical aids and eventually mechanization for the three major field tasks now done by hand: pruning, thinning, and harvesting. These labor-saving changes are being accelerated by a rising state minimum wage and a shift toward new varieties, although older orchards whose trees may be productive for at least another decade will continue to require hand labor.
- Most of Florida's oranges are hand picked in a very layered labor market, meaning that there may be several entities between growers and pickers. If farm worker wages, now about a cent a pound for harvesting oranges, were to rise, there would be mechanization, with orange acreage shrinking in the center of the state and expanding in the southwest in groves that are planted to facilitate mechanical harvesting.
- Employment in the CA raisin industry has probably peaked, as dried-on-the-vine (DOV) methods of harvesting spread rapidly, to over a third of the crop in 2007. New plantings anticipate DOV harvesting, and older plantings are likely to be retrofitted for mechanization or removed over the next decade, with the speed of such changes depending in part on raisin prices and farm worker wages.
- Employment in CA strawberries is likely to continue increasing because of more acreage and higher yields. The major recent change is a mechanical aid- slow-moving conveyor belts on which pickers deposit full trays of berries- which increases worker productivity.

These changes that affect the farm labor market are motivated by a combination of changing consumer tastes, rising farm worker wages, and trade and technology, but the importance of these factors varies by commodity. WA has the highest state minimum wage, $8.07 in 2008, and it is scheduled to continue rising with the cost of living.[20] Since apples can be stored a year or more after harvesting, and China produces far more apples than WA and is rapidly improving quality, WA apple growers are adjusting by planting new varieties in ways that facilitate use of mechanical aids and potentially shake-and-catch harvesters.

There are several types of mechanical harvesting used on new plantings of Florida oranges; the machines are most efficient when trees are smaller, evenly spaced and carefully pruned. One harvesting system uses a "pull-and-catch" machine with 900 eight-foot metal arms that reach into the tree and remove oranges with spring-loaded plastic fingers, while another uses a rotating device that resembles spinning car-wash brushes to remove oranges as it travels up and down rows of trees. Most new plantings are designed for machine harvesting, but there are relatively few new plantings because growers are reluctant to plant oranges in an urbanizing state that is threatened with disease and hurricanes, especially when freer trade could increase imports of low-cost Brazilian juice.

[20] www.lni.wa.gov/WorkplaceRights/Wages/Minimum/default.asp

Trade and technology are also transforming the CA raisin harvest. Raisins, which can also be stored, are produced cheaper in Turkey, China, and other countries than in the United States. Newer and larger acreage plantings of raisin grapes that anticipate rising state minimum wages (the CA minimum wage is $8 an hour in 2008)[21] and more competition from lower-cost imported raisins are designed for DOV harvesting, which increases the demand for labor in the winter months for careful pruning and reduces the demand for labor in the summer-fall months for harvesting.

CA strawberry production is rising, mostly in response to U.S. consumer demand. Production and especially harvesting are very labor-intensive, with a rule-of-thumb that a worker an acre is required during the peak harvesting season. A majority of growers are Hispanic, often ex-farm workers, and many sign contracts with marketers who provide a complete package to the grower, from the land and plants to water and fertilizers and precise growing instructions. Contract growers are responsible for delivering harvested berries, and pre-harvest and marketing costs are deducted from payments made by the marketer to the grower. There are also large berry growers, some of whom employ 1,500 or more workers and operate in several areas of the state in order to supply berries year-round. The major innovations affecting labor use are the use of contract growers, most of whom have less than 25 acres of berries, and conveyor-belt mechanical aids on the larger farms.

Implications for the Department of Labor

The data and analysis demonstrate that the demand for farm labor is sensitive to rising wages, especially in commodities where trade puts a lid or ceiling on grower prices. Producers are responding to higher wages, and their response is most visible in new plantings of perennial crops designed to accommodate mechanical harvesters and aids. Most farm workers are immigrants, almost all newcomer farm workers were born abroad, and there is little prospect that the wage gaps that encourage foreigners to fill seasonal U.S. farm jobs will soon disappear. However, the procedures for matching farm workers abroad with U.S. farm jobs are becoming more complex, especially as more workers are brought to farms by labor contractors. This complicates the task of estimating the "need" for farm workers and enforcing labor, immigration and tax laws.

The three major policy lessons of our models and case studies include:

1. Adjustments in the FVH labor market in response to higher wages are more likely to be on the demand than on the supply side of the labor market, meaning that a 10 percent increase in wages is more likely to lead to the introduction of mechanical aids or labor-saving chemicals or machines than to add significantly more U.S. farm workers. We did not find data on factors that might lengthen the average tenure in seasonal farm work of existing farm workers, but experience in the nonfarm labor market suggests that higher wages, more benefits, longer periods of employment and mechanical aids that make farm work easier would increase the tenure of a typical seasonal farm worker.
2. The supply of farm workers is difficult to model because there are several distinct components. The supply of workers abroad willing to work on U.S. farms is

[21] www.dir.ca.gov/Iwc/MinimumWageHistory.htm

likely perfectly elastic at current wages, meaning that there would not be upward pressure on wages if the H-2A program expanded from 75,000 workers to 750,000. However, once in the United States, the supply of H-2A workers becomes perfectly inelastic, since these workers must generally leave the United States if they lose their job. Current non-H-2A farm workers, both legal and unauthorized, are likely to continue drifting out of especially seasonal farm jobs after a decade, suggesting that non-H-2A farm workers respond to nonfarm opportunities in the manner highlighted in the 1960s analyses.

3. Adjustments on the demand and supply side of the FVH labor market are not likely to be uniform across commodities. Government is unlikely to have the expertise to plan and implement adjustment strategies for each commodity. Instead, government may want to provide funding for employers and worker representatives to plan productivity-increasing changes that help provide sufficient workers while increasing competitiveness.[22]

[22] One mechanism for funding such competitive-enhancing changes would be the payroll taxes (Social Security and UI in many states) that are not currently collected on wages paid to H-2A workers. Collecting these taxes and using them to increase competitiveness would link a commodity's dependence on guest workers with funding to ensure increased competitiveness over time.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Introduction

In Fiscal Year (FY) 2007, the Department of Labor (the Department) certified almost 7,500 farm employers to fill almost 77,000 jobs with H-2A workers, more than doubling H-2A certification activity in less than a decade. Most employers applying for certification have requested H-2A workers before, most use agents or attorneys to help them to prepare and submit applications for certification, and most who employ H-2A workers two or three years remain in the program. As the H-2A program expands, the workload of the National Processing Centers (NPCs) and State Workforce Agencies (SWAs) increases disproportionately, since first-time applicants generally require more processing time. Effective border and interior enforcement against unauthorized workers, state laws that aim to curb the employment of unauthorized workers, and regulatory changes that make it easier for farm employers to be certified to use H-2A workers could increase NPC and SWA workloads.

The Department certified almost 97 percent of the employer applications and 96 percent of the jobs that employers wanted to fill with H-2A workers in FY 2007. Nonetheless, the H-2A program is often described by employers as broken and bureaucratic, and by worker advocates as unable to achieve its goal of protecting U.S. workers. Employers often cite as problems the "complex" paper-based application system, the need for advance planning, and the fact that some are sued after mandatory recruitment of U.S. workers. Worker advocates assert that some farm employers are certified to employ H-2A workers despite the availability of U.S. workers, and that some farm employers violate the letter and spirit of H-2A regulations aimed at protecting U.S. workers from the adverse impacts of H-2A workers.

Many features of the current H-2A certification process have their origins in the 1917-21 Bracero program, which made exceptions to U.S. immigration law to admit Mexican farm workers at a time when the Federal immigration agency was part of the Department. Concepts such as the Adverse Effect Wage Rate (AEWR) were introduced in the early 1960s, as the 1942-64 Bracero program was ending, in part to offset the wage-depressing effects of decades of foreign worker employment in U.S. agriculture. The H-2 program was created by the Immigration and Nationality Act of 1952, but its essential regulatory features, viz, establishing recruitment requirements for employers to prove that U.S. workers are not available and assessing whether the presence of guest workers adversely affects U.S. workers, have been debated for almost a century.

The report has two parts. Section A examines the evolution of the H-2/H-2A program and discusses the current H-2A certification process to offer suggestions for streamlining the process. Section B outlines the current and future demand for and supply of workers available to labor-intensive crop agriculture and factors that may affect farm labor demand and supply. There are several appendices, including profiles of the farm labor markets in the states in which SWAs were interviewed.

A. Current H-2A System Performance

This section explains the evolution of the H-2(A) labor certification process, including the public policy rationales for the most significant legislative, regulatory, and Department of Labor policy changes since 1952. We then turn to the current certification process, explaining with a flow chart the 45-day countdown from employer application to the date H-2A farm workers go to work and the issues involved for the NPCs and SWAs in each step. The third section reviews H-2A program data.

Public Law (PL) 82-414, Sections 214(c) and 101 (a) (15) (H) (2) created the H-2 program in 1952 and PL 99-603 (the Immigration Reform and Control Act (IRCA)) modified it in 1986, renaming it the H-2A program. Regulations that were issued on June 1, 1987 implemented the H-2A program; these regulations have been modified several times since 1987.

1.1 Evolution of the H-2A Program

As a nation of immigrants, the U.S. government has favored the admission of immigrants over temporary workers. Immigrants or green-card holders are foreign nationals with visas that allow them to live in the United States and work in most U.S. jobs that do not require citizenship. Generally after five years, immigrants may become naturalized U.S. citizens. Immigrants may change U.S. employers or be jobless without losing the right to be in the country, emphasizing the view that most are intending Americans.

There were several exceptions to this immigrant-with-freedom-in-the-labor-market concept, including slavery and bound, indentured or contract workers.[23] Contract workers were foreigners who pledged to work 3-5 years for a U.S. employer who paid for the migrant's transportation to the United States. During the 1861-65 Civil War, immigration declined, and the Union government enacted the Contract Labor Law (Act to Encourage Immigration) of 1864, which created the United States Emigration Office to help private firms recruit workers in Europe whose passage was paid by the U.S. employers to whom they pledged to work for at least 12 months.[24] At the behest of unions that were worried about having to compete with these "indentured workers," the Contract Labor Law was repealed in 1868. U.S. immigration law was amended by the Foran Act in 1885[25] to specifically prohibit the entry of contract migrant workers that would be bound to a particular U.S. employer upon arrival (Briggs, 1992, 49-50).

Three themes run through the discussion of the history of the exceptions to U.S. immigration law that preceded and accompanied the H-2 program in 1952 (Congressional Research Service, Craig, Hahamovitch, Rasmussen) :

1. The major issues involved in the entry of foreign guest workers were recognized as far back as 1917, as regulators grappled with questions such as how to determine if foreign

[23] Until the American Revolution in 1776, bound or contract labor that was tied to an employer in the colonies upon arrival was the rule for both newcomer Whites and Blacks, although Whites were free at the end of their period of indenture.

[24] Many contract laborers had to work additional time because, upon arrival, they signed supplemental contracts promising to do more work to cover the cost of their room and board. Most reports say that only a few thousand contract laborers were admitted, and that many broke their contracts.

[25] Chinese contract workers were barred in 1882.

workers are truly needed, how to establish and enforce prevailing wage and housing regulations, and how to prevent adverse impacts on U.S. workers.

2. There have been persisting allegations of gaps between program rules and realities that resulted in cycles of the Department of Labor loosening regulations to substitute legal for unauthorized workers, as in the mid-1950s, and tightening them to protect U.S. workers from adverse effects, as in the late 1950s. The cumulative impacts of foreign workers are often recognized only over time. The Department found that Bracero-dominated farm labor markets had not experienced expected wage increases during the 1950s, prompting the issuance of AEWRs for each state that had Braceros in May 1962.
3. During the late 1950s and early 1960s, when there were twice as many farm workers and most were U.S. citizens, importing farm workers was a major topic of Congressional debate. Today, with most hired farm workers being foreign-born, and over half of crop workers being unauthorized, the H-2A program is largely a special interest of some farm employers, Federal and state agencies, and worker advocates.

Table 2 summarizes the evolution of H-2A program concepts.

Table 2. Evolution of H-2A Concepts

World War I	**Source/Issue**	**Implementation**	**Comment**
Certification of employer need for foreign workers	Department of Labor order, June 12, 1918c	Local Employment Service office made determination of need and certified employers	Workers could shift between certified employers
Worker contracts and duration	Department of Labor order, June 12, 1918	Mexican workers got written contracts for up to six months that could be renewed	Farmers' Bracero contracts were to offer the same wages and housing as offered to U.S. workers
Braceros were to return to Mexico "at no cost to the U.S. government"	Department of Labor order, June 12, 1918	Employers to bear the cost of return transportation	72,862 Mexicans admitted, 1917-21, and 34,922 or 48 percent returned as required
World War II			
U.S. government as employer, 1942-47, farmer as sub contractor	U.S.-Mexico government agreement and PL 45 (1943)	Braceros got contracts that guaranteed $0.30 an hour, transportation, housing, ¾ guarantee	U.S. farm workers did not have contracts, did not have to be paid minimum wage etc

Unilateral Bracero and H-2 programs	PL 78 (1951) and PL 82-414 (1952)	Once certified as needing foreign workers, U.S employers could recruit anywhere	PL 78 Section 503 laid out requirements for certification, viz, no U.S. workers, no adverse effects, and positive recruitment
Bracero experience I	Surge in unauthorized migration to avoid transportation and minimum wage requirements	Response was Operation Wetback in 1954-55 and easing of enforcement of regulations by the Department	Apprehensions fell and Bracero admissions peaked at 445,200 in 1956
Bracero experience II	Prevailing wages and adverse effect wage rates	1958: The Department used the 40 percent and 51st percentile rules to set prevailing wages	1962: the Department set AEWRs, AZ, $0.95 an hour, CA, $1, CO, $0.90, KS, $1, NM, $0.75, and TX $0.70
H-2	1948 agreement between the Department and the Immigration and Naturalization Service on need for the Department's certification of an employer's need for H-2 workers	Most terms and conditions set by agreements between Caribbean governments and U.S. employer associations	Many western growers planned to switch to H-2 workers after Bracero program ended in 1964; the Department's December 19, 1964 regulations made this hard

WWI Exceptions

There was no statutory basis for the admission of temporary foreign workers between 1885 and 1952, but exceptions to immigration laws were made several times to admit foreign farm workers temporarily. For example, after enactment of the Immigration Act of 1917, which imposed a literacy test on foreigners 16 and older and doubled the head tax to $8, the U.S. Department of Labor, which included the Bureau of Immigration, on May 23, 1917 approved the request of western growers "to admit temporarily otherwise inadmissible aliens" to work in agriculture and on railroads.[26] Some Department of Labor officials were skeptical of the

[26] Reisler (1976, 25-26) reported that many Mexicans left the United States in the spring of 1917 because of rumors that all persons in the United States, including foreigners, could be drafted into the U.S. Army.

growers' labor shortage arguments.[27] Then-assistant Secretary of Labor Louis Post said: "the farm labor shortage is two-thirds imaginary and one-third remedial." Historians note that, as U.S. immigration policy got more restrictive, temporary worker programs became a more important source of farm workers.

The Department acted under the ninth proviso of Section 3 of the Immigration Act of 1917, which allowed the "Commissioner General of Immigration with the approval of the Secretary of Labor…to control and regulate the admission and return of otherwise inadmissible aliens applying for temporary admission." (Quoted in CRS, 1980, 7-8). The Department's May 23, 1917 order suspended the contract labor prohibition as well as the head tax and literacy test for aliens from Mexico and Canada entering the United States temporarily to do farm work (and railroad work in 1917-18). This set an important precedent. The Chair of the House Committee on Immigration and Naturalization did not think the Department had the power to unilaterally suspend the 1885 bar on the admission of contract workers. The Department defended its decision by emphasizing that the alternatives, including repealing the Chinese Exclusion Act to obtain farm workers, were worse (CRS, 1980, 9).

Some 80,000 Mexican workers were admitted, primarily for "employment in the sugar beet fields of California, Colorado, Utah, and Idaho, and in the cotton fields of Texas, Arizona, and California (Scruggs, 1960, 322).[28] The Bureau of Immigration reported that, assured of ample supplies of workers, "large acreages were planted and record crops harvested throughout the Southwest" in 1917. (Quoted in CRS, 1980, 7).

Department of Labor regulations laid out detailed procedures for admitting Mexican farm workers, and revised them several times. A Department of Labor order issued June 12, 1918 outlined the certification procedure, which required employers to provide proof to their local Employment Service office that there were not sufficient U.S. workers; local Employment Service (ES) offices could deny or certify the employer's request for Mexicans.

Once approved by the ES office for a specified number of foreign farm workers, employers were to make written offers of "wages, housing conditions, and duration of employment" to Mexican workers. Wages had to be the same as those "for similar labor in the community in which the admitted aliens are to be employed." (Department of Labor order, April 18, 1918 quoted in CRS, 1980, 10). Housing had to satisfy state laws or standards set by the Department if there were no state laws governing farm worker housing. Farm employers were to report absconding workers, and some of the wages of the Braceros were withheld by employers and deposited with the U.S. Postal Savings Bank to be repaid to workers in Mexico.

Foreign workers were given ID cards and admitted for six months, with a six-month extension allowed, and were to leave the United States at the end of their contracts at no cost to the U.S. government. Mexican Braceros could change farm employers if the new employer was

[27] Quoted on pp10-11, RG 83, Records of the Bureau of Agricultural Economics, Department of Agriculture, 1923-1946, Folder Farm Labor (1941-1946), Box 239: Entry 19, Reports on Farm Labor Shortages and the Works Projects Administration, prepared by the War Production Agency for the House Committee investigating national defense migration, July 3, 1941.

[28] A small number of workers from Canada and the Bahamas were also admitted.

authorized by the local ES office to employ Braceros, and the new employer notified the local ES and Immigration offices.

The railroad program ended at the behest of U.S. unions in 1918, but the farm worker program continued until March 2, 1921, with some exceptions afterward for "particularly meritorious cases." (CRS, 1980, 6). Scruggs, the leading authority on the use of Mexican labor in southwestern agriculture during this period, emphasized that "Mexican immigrants had begun to form a reservoir of 'cheap' labor for the railroads and farms of the Southwest" in the 1890s, and "by the early 1920s" Mexicans were "the principal work force in many southwestern farming areas." (Scruggs, 1960, 319). The Mexican government, initially lukewarm toward the U.S. program, in July 1918 provided trains to transport workers to the U.S. border (Kiser, 1972, 128).

CRS emphasized that the detailed procedures laid out in Department of Labor regulations were not always followed in practice. The annual report of the Bureau of Immigration for 1921 reported that 72,862 aliens were admitted under Department of Labor exceptions between 1917 and 1921, but 21,400 absconded and "15,632 are still in the employ of their original importers," that is, they did not return to Mexico at the end of their contracts (Quoted in CRS, 1980, 11). Only 34,922 or 48 percent of the Mexican contract workers returned to Mexico as required, which the El Paso immigration supervisor attributed to farmers having no incentive to cover the cost of return transportation, and the immigration service having too few inspectors to ensure compliance. Scruggs agreed that the "basic weakness of the program was the lack of adequate enforcement machinery," so that neither workers nor employers felt they had to abide by the contracts they signed (Scruggs, 1960, 324).

The Mexican government was also ambivalent about this first Bracero program. The 1910-17 revolution damaged the haciendas on which many peasants lived and worked, leaving many with neither employment nor land and eager to migrate to the United States for jobs. However, the Mexican government was concerned about the treatment of Mexicans in the United States, especially in Texas, where signs saying "no dogs or Mexicans" were common. Some Braceros returned to Mexico with few savings because of charges they incurred at the farmer-owned stores and camps, another concern of the Mexican government (Fuller 1940, 19853).

CRS noted that legal and illegal Mexican immigration surged in the 1920s after the first Bracero program ended, with considerable seasonal movements in and out of the United States. There were few U.S. border-entry stations and Border Patrol agents, and illegal entry meant entering the U.S. without paying the head tax at one of the border stations. [29] Kiser argued that one reason for continued Mexico-U.S. migration during the 1920s was the practice of U.S. government agencies accommodating employers who preferred to hire Mexicans, so that "far from reducing the number of Mexican workers, the end of the emergency program [1921] marked the beginning of a decade which brought Mexican workers to the United States in vastly increased and unprecedented numbers." (1972, 136)

[29] Scruggs noted that before the Border Patrol was created in 1924, 60 mounted men patrolled the Mexico-U.S. border.

WWII Braceros

The 1930s were marked by farm labor surpluses, especially in California. The state had 5.7 million residents in 1930, and Dust Bowl migration brought 1.3 million Okies and Arkies over the next decade, increasing the population by 25 percent. Steeped in the Jeffersonian family farm ideal, some Dust Bowl migrants drove up to California farm houses and asked for work, expecting to be treated as hired hands who would live and work alongside large fruit and vegetable farmers and later become fruit and vegetable farmers themselves.

Dust Bowl migrants soon learned that California's commercial farms hired crews of seasonal workers when they were needed, not year-round hired hands. Decades of yawning social gaps between White farmers and generally minority farm workers led to a relatively sparse on-farm infrastructure for hired workers. Many Dust Bowl migrants wound up in tent camps known as Hoovervilles, where union organizers were active. Since Dust Bowl migrants were U.S. citizens, there was concern that Hoovervilles could become a fertile breeding ground for Communists and others who wanted to make major changes in the socio-economic system. These concerns led to the creation of federally funded farm worker housing centers, one of which served as a backdrop for John Steinbeck's 1939 novel, The Grapes of Wrath.[30]

In 1940, the Secretary of Agriculture testified before a Senate subcommittee that the number of farm workers far exceeded the number who could expect to make a decent living from agriculture (Rasmussen, 1951, 14). Farmers nonetheless requested supplemental foreign workers in 1941, but the California request was rejected by the Department at the behest of the state's Governor (Rasmussen, 1951, 200).[31] However, after the United States declared war in December 1941, a Federal interagency committee in May 1942 concluded that supplemental foreign farm workers would be needed for the fall harvest. Despite protests from U.S. unions and Mexican American groups,[32] the interagency committee drafted a guest worker agreement and sent it to Mexico, which modified it slightly before approving it.[33] As a result, the first of what became a series of Bracero agreements was signed July 23, 1942 via an exchange of diplomatic notes.[34]

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[30] The Weedpatch migrant camp in Arvin (today the Sunset Migrant Center) provided the backdrop for *The Grapes of Wrath.* After its publication, farmers accused Steinbeck of having Communist sympathies, Steinbeck received death threats, and the Federal Bureau of Investigation investigated the author.

[31] The United States Department of Agriculture and the Department of Labor Inter-Bureau Coordinating Committee reported that, over the past year (1941), "there was some confusion in the use of the term 'shortage,'" and a tendency in some cases "to identify increases in wages, irrespective of the number of workers available, as a shortage." Quoted in Hahamovitch (1999) from Report of the Interbureau Planning Committee on Farm Labor, "Review of the Farm Labor Situation in 1941," 12/31/41, RG 16, Records of the Office of the Secretary of Agriculture, No.17 General Correspondence of the Office of the Secretary, 1906-1970, Subject: Employment, File: " 1. Labor

[32] CRS (1980, 20) says that U.S. unions were mollified by promises to ensure that the Mexican farm workers left the United States when their seasonal jobs ended. Mexican Americans were more ambivalent, fearing that importing Mexicans would have an adverse effect on their wages.

[33] The Mexican Labor Law of 1931 required foreign employers to pay round trip transportation of workers taken out of the country, and for Mexicans going abroad to work to have contracts approved by the Mexican government.

[34] Mexico, which declared war on Germany, Italy, and Japan June 1, 1942, considered its workers in the United States a contribution to the war effort.

The first Mexican Braceros workers entered at El Paso September 27, 1942 and headed to work in the sugar beet fields near Stockton, CA. Only 4,189 Mexican Braceros were admitted in 1942 (CRS, 1980, 16), in part because the Bracero agreement called for a minimum wage of $0.30 an hour[35] at a time when U.S. farm workers were not subject to the federal minimum wage. Many farmers initially refused to hire Braceros, fearing that the minimum wage in the Bracero agreement could eventually be applied to U.S. farm workers as well (CRS, 1980, 22).

East coast farmers recruited workers from the British West Indies (BWI) under separate memoranda of understanding made between the War Food Administration and the Bahamas (March 16, 1943), Jamaica (April 2, 1943), and Barbados (May 24, 1944). Some 4,698 Bahama Islanders and 8,828 Jamaicans were admitted in 1943, and Florida was the peak WWII employer of BWI nationals, employing 4,688 Bahamians on May 26, 1945.[36] The Bahamas government was responsible under the first agreement for transportation costs to and from the United States (and up to 75 pounds of their personal belongings from their homes to and from the point of entry and departure in the United States), while under the Jamaica agreement, the U.S. government was responsible for transportation to and from Kingston to U.S. places of employment (Baptiste, nd).

A total 310,000 foreign workers were admitted between 1942 and 1947, including 220,000 or 71 percent Mexicans. Admissions peaked in 1944, when 84,340 foreign farm workers were admitted, 74 percent Mexicans and 19 percent Jamaicans. The foreign workers were employed in 24 states, but half were in California. The major crops in which Braceros worked were cotton, sugar beets, fruits, and vegetables (Scruggs, 1961, 163). Foreign farm workers were about two percent of U.S. farm workers during World War II.

The intergovernmental agreements with Mexico and the Caribbean islands had similar provisions. They exempted the foreign farm workers from the usual immigration admissions tests and the U.S. military draft, guaranteed them round-trip transportation and the same wages and housing as similar U.S. workers, and allowed the sending governments to determine who could leave for U.S. farm jobs (CRS, 1980, 17).

The Mexican program insisted that the U.S. government be the employer of record for its citizens (the Farm Security Administration signed the contracts), and the U.S. farmer became the sub employer. The U.S. government paid transportation and subsistence costs for Braceros while they traveled to U.S. work sites and these costs were reimbursed by farmers. Braceros were guaranteed work for at least ¾ of the contract period specified by the farm employer, with a payment of $3 a day for days on which the ¾ guarantee was not met (CRS, 1980, 16).[37] Finally, the agreement specified that U.S. employers withhold and deposit 10 percent of Bracero earnings with the Mexican Agricultural Credit Bank.

[35] The Federal minimum wage was set at $0.25 an hour on October 24, 1938, and raised to $0.30 an hour a year later (www.dol.gov/esa/minwage/chart.htm). Piece rates had to enable the average worker to earn $0.30 or the prevailing wage, whichever was higher (CRS, 1980, 23). In 1946, the minimum wage was raised to $0.37 an hour or $33.60 every two weeks.

[36] Intergovernmental agreements were also signed with Barbados and British Honduras.

[37] The agreement also required that the housing provided to Braceros be the same as they provided to U.S. farm workers, and prohibited requiring workers to make purchases from company stores.

Some of the provisions in the U.S.-Mexico agreement were hollow. For example, some of the housing provided to U.S. farm workers was substandard, as was that provided to Braceros. Family members were allowed to accompany Braceros, but children under 14 could not work, so "no family members were ever imported." (CRS, 1980, 24).

The war-time farm labor program, which ended in 1947, was recognized by Congress with the approval of PL 45 (57 Stat 70), enacted April 29, 1943. PL 45, the first of what came to be known as the farm labor supply appropriations acts, appropriated funds for the recruitment, transportation and placement of farm workers. PL 45 explicitly stated that funds may not be used to "fix, regulate, or impose minimum wages or housing standards…except with respect to workers imported into the US from a foreign country, and then only to the extent required to comply with agreements" already signed (Quoted in CRS, 1980, 18). PL 45 was followed by PL 229 (1944) and PL 80 (1947), which had similar provisions.

CRS (1980, 25-27) examined the interlinked problems of unauthorized entries and discrimination against Mexicans, especially in Texas. The Mexican government in 1942 did not allow Texas farmers to employ Braceros because of discrimination against Mexicans, prompting many Mexicans to go to Texas illegally, where they were hired by farmers who wanted to avoid the $0.30 an hour minimum wage that had to be paid to legal Braceros. Analysts concluded that the Mexican government was able to use the Bracero agreement to reduce discrimination against Mexicans, who were allowed to be employed in Texas beginning in 1947.

U.S. laws on importing foreign farm workers lapsed in 1947, but the international agreements remained valid, and Braceros were imported under the exceptions allowed by the ninth proviso to section three of the Immigration Act of 1917. Under these agreements, the Department's ES replaced USDA's Farm Security Administration as the key agency for certifying the need for foreign workers and forwarding the certification to the INS, which regulated admissions at the border. The role of the ES in certification was controversial. Senate bill, S272 in 1949 would have moved the foreign farm worker program from the Department to USDA and exempted foreign farm workers who were from the Western Hemisphere from the Immigration Act of 1917's literacy test and head tax. The bill was opposed by the Justice and State Departments and was not reported out of committee (CRS, 1980, 29).

Many of the Mexican workers employed in U.S. fields between 1948 and 1951 arrived illegally. These workers, known as "wet backs" even in official documents, were returned to the border if detected inside the United States, issued documents, and then returned to the farm on which they had been employed. The President's Commission on Migratory Labor noted that, between 1947 and 1949, 74,600 Mexican workers were admitted legally, while 142,000 "wetbacks already in the US were legalized by being put under contract."(1951, p53). The Commission concluded that the presence of Mexican Braceros depressed wages in the crops in which they were concentrated, especially cotton picking, so that "alien labor has depressed farm wages and, therefore, has been detrimental to domestic labor." (1951, p59).

The outbreak of the Korean War in 1951 strengthened the arguments of Southwestern farmers, who wanted more supplemental foreign labor. On July 12, 1951, PL 78 (the Migratory Labor Agreement of 1951) was signed into law as an amendment to the Agricultural Act of 1949. PL

78 was not the law desired by President Truman, who preferred a law that offered U.S. workers the same wages and protections offered to foreign workers; the Department recommended that Truman veto PL 78 (CRS, 1980, 32). As introduced, PL 78 would have covered all farm workers from the Western Hemisphere, but in the end covered only Mexicans because East Coast farmers argued that their private arrangements with Caribbean governments were satisfactory (CRS, 1980, 32).

PL 78 gave the Department a central role in determining the need for foreign farm workers. Section 503 said that Braceros could not be imported unless "the Secretary of Labor has determined and certified that (1) sufficient domestic workers who are able, willing, and qualified are not available at the time and place needed to perform the work… (2) the employment of such workers will not adversely affect the wages and working conditions of domestic agricultural workers similarly employed, and (3) reasonable efforts have been made to attract domestic workers for such employment at wages …comparable to those offered to foreign workers." The Department reached an agreement with state ES agencies to "assist the [Department of Labor] Secretary in recruiting domestic farm workers and determining if they were available." (CRS, 1980, 34).

PL 78, combined with a Mexico-U.S. agreement that had been revised several times, required the Department to operate what became five reception centers near the Mexico-U.S. border, provide transportation from Mexican recruiting centers to these reception centers, and guarantee the contracts U.S. employers made with Braceros. U.S. employers had to pay Braceros the prevailing wage for the crop and area, guarantee work for ¾ of the contract period, and cover the cost of round-trip transportation from the reception center to the U.S. work site (CRS, 1980, 33). U.S. employers of Braceros could be assessed fees if the workers under contract to them were not returned to reception centers at the end of their contracts. The cost of administering the PL 78 program was covered by farmer-paid fees.

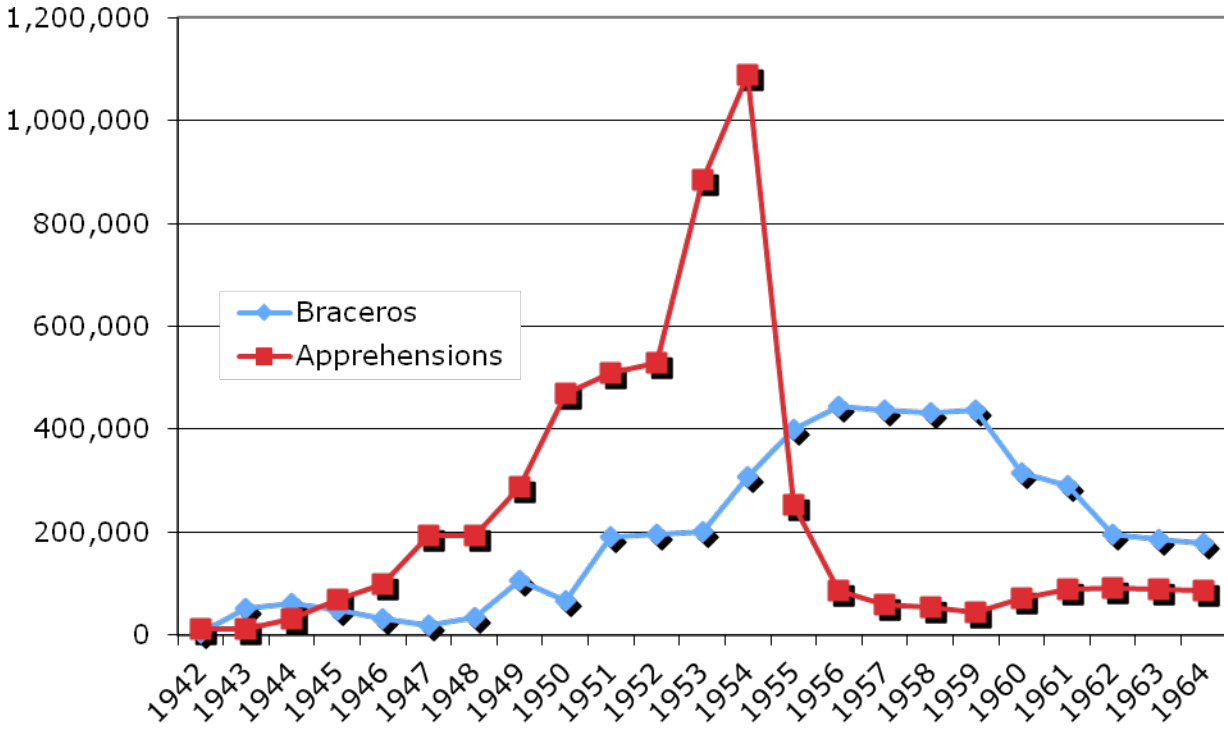
Department of Labor staff interviewed workers recruited by Mexican officials at interior recruiting stations, giving those who passed medical exams conditional entry permits that allowed them to enter the United States and report to a border-area reception center. The U.S. government covered the cost of transporting Mexicans from the interior to border reception centers, and recouped these costs with a $15 per Bracero fee assessed on U.S. farmers. At the reception centers, U.S. farmers or farmers' associations made contracts with Braceros, generally for six months or less, and these contracts were also signed by U.S. and Mexican government representatives. Employers arranged and paid for transportation from the reception centers to the work site. Bracero earnings were exempt from social security and income-tax withholding (CRS, 1980, 35).

Several issues dominated the discussion of Mexican Braceros in the 1950s as admissions rose from 192,000 in 1951 to a peak 445,000 in 1956. The first was protections for U.S. workers. The Department argued that U.S. workers should receive the same wages and benefits that were guaranteed to Mexican Braceros by their contracts, but Rep W. R. Poage (D-TX) successfully argued against wage guarantees for U.S. farm workers, saying that the lack of a minimum wage was "one of the greatest safeguards that you can provide for American labor. If it, in fact, costs

the employer more to bring in foreign labor," employers will prefer U.S. workers (CRS, 1980, 35). Thus, Braceros, but not U.S. workers, had contracts with wage and work guarantees.

The second issue was illegal migration. The number of unauthorized foreigners apprehended, almost all Mexicans, rose from less than 12,000 a year in the early 1940s to over 500,000 a year in the early 1950s, peaking at 1.1 million in 1954. On July 13, 1951, a day after PL 78 was signed into law, President Truman asked Congress to approve, inter alia, sanctions on employers who hired illegal alien workers and more funds for the INS to enforce the law. However, Sections 274 and 287 (a) (3) of the Immigration and Nationality Act of 1952 included the so-called Texas proviso, which made harboring illegal aliens subject to a $2,000 fine and up to five years imprisonment, but exempted employment from the definition of harboring.[38]

Figure 1. Mexican Bracero Admissions and Apprehensions, 1942-64



Source: Congressional Research Service, 1980

With illegal migration surging, Attorney General Herbert Brownwell visited the Mexico-U.S. border in August 1953 and pronounced what he saw "shocking." He bolstered the Border Patrol from 1,079 to 1,479 agents in fiscal years 1954-55 and appointed General Joseph Swing to lead Operation Wetback, which involved area sweeps in cooperation with state and local police to detect and remove illegal Mexicans (CRS, 1980, 40). As the 1955 INS Annual Report noted, the

[38] Senator Paul Douglas on February 5, 1952 offered an amendment to impose penalties on employers who had "reasonable grounds to believe a worker was not legally in the US." It was defeated on a 69-12 vote.

sweeps encouraged tens of thousands of Mexicans to leave "on their own accord." Growers cooperated with the operation because Swing promised to help them to secure domestic and legal foreign workers (CRS, 1980, 42). The INS noted in its review of Operation Wetback that "border control" may be more costly and difficult, but "in the long run, more economical and more humane than the expulsion process." (INS Annual Report, 1955, 15).

PL 78 justified the U.S. government's role in the Bracero program, but the separate memorandum of understanding with Mexico established some of the terms of Bracero contracts, including wages. In 1954, Mexico refused to sign a new agreement because, it argued, the Department's prevailing wage was too low (CRS, 1980, 43). In response, the U.S. government undertook "unilateral recruitment" in Mexico in January-February 1954, leading to "bloody clashes and riots between Mexican guards [trying to keep Mexicans from seeing U.S. recruiters] and aspiring Braceros" seeking U.S. farm jobs (CRS, 1980, 44). However, before Congress could formally approve spending tax funds to unilaterally recruit Mexican workers, Mexico relented and signed a new international agreement.

Hawley (1966) reviewed the operation of the Employment Service in the 1950s, and concluded that most certification decisions were made at state and local levels and, "since the whole farm placement system had once been part of the Department of Agriculture, the men who ran it continued to think in terms of supplying farm labor, not in terms of protecting or finding jobs for [U.S.] farm workers…During the mid-1950s in particular, the program was run to suit the employers."

Department of Labor Secretary James Mitchell considered the Bracero program "of minor importance" in the mid-1950s, but began to actively oppose it in the late 1950s. Mitchell appointed four consultants to study the Bracero program, and they issued a critical report in October 1959 that concluded PL 78 achieved its goal of admitting Mexican workers in an orderly fashion, but the Department failed to achieve the goal of preventing adverse impacts on U.S. workers. The consultants concluded that some employers preferred to hire Mexican workers, and that the presence of Braceros depressed U.S. farm wages. They urged the Department to more carefully study the relationship between the share of Braceros in a particular farm labor market and farm wage trends in that market.

The consultants report described the Department's system for computing prevailing wages (1959, p273): "Under a formula adopted in 1958, the wage rate paid to 40 percent of the workers is considered the 'prevailing wage' for a given activity in the area surveyed." When no single wage is paid to 40 percent of the workers, wages are arrayed from lowest to highest, and the prevailing wage is that paid to the 51st percent." The consultants' report concluded that "wage levels tend to become fixed [and not increase] in areas and activities where Mexicans are employed." (1959, 273). Their report recommended that the Department determine a wage "rate necessary to avoid adverse effect on domestic wage rates" in crops and areas dominated by Braceros (1959, 283).

The consultants also recommended changes to recruitment requirements, urging the Department to make clear in regulations that the "primary responsibility for the recruitment of domestic workers rests with the employer himself." The Department should not certify the need for

Bracero workers, according to the report, unless the employer has "undertaken positive and direct recruitment efforts," offering conditions "equivalent" to those of employers who successfully recruited domestic workers, and offering wages and benefits equivalent to those that had to be offered to Braceros" (1959, 282-3). The consultants report noted that 20,000 Braceros were employed in year-round jobs and that over 60 percent "work in crops which are in surplus supply," such as cotton and sugar (1959, 272-3).

Mitchell implemented many of the consultants' recommendations in regulations that were issued on November 20, 1959, prompting a failed effort in Congress in 1960 to divide jurisdiction of the Bracero program between the Department and USDA. Department of Labor Secretary Arthur Goldberg in 1961 reported that, in 80 Bracero-dominated areas, prevailing wages had not increased during the previous decade, while the wages of domestic farm workers elsewhere were rising. Goldberg tried and failed to get PL 78 amended to require the wage offered to Braceros to be 90 percent of the national or state average, an effort to overcome wage depression in Bracero-dominated areas (CRS, 1980, 52).

After holding public hearings, the Department issued AEWRs in May 1962 of $0.95 an hour in AZ, $1 an hour in CA, $0.90 in CO, $1 in KS, $0.75 in NM, and $0.70 in TX. These AEWRs were usually higher than prevailing wages, and had to be offered to U.S workers if the employer was seeking certification to hire Braceros.

President Kennedy announced plans to end the Bracero program in 1961.[39] Congress voted to extend the program for two years, until the end of 1963, and then for a final year, until the end of 1964, and Kennedy signed both extensions into law. Illegal Mexico-U.S. migration remained relatively low during the 1960s, but was on a rising trajectory—there were 110,000 apprehensions in 1965 and 284,000 in 1969. The Congressional Research Service (CRS) concluded that "the Bracero program only seemed to reduce illegal migration when it was combined with both a massive law enforcement (Operation Wetback) and an expansion of the farm labor program to the point where it almost certainly had an adverse impact on the wages and working conditions of domestic workers [as in the mid-1950s]." (CRS, 1980, 58).

BWI and H-2 Programs

There were British West Indies (BWI) guest worker programs during WWII as well. The United States signed an agreement with the Bahamas in 1942 and with British colonial authorities in 1943 to allow Jamaicans to enter the United States as temporary farm workers.[40] CRS noted that Jamaicans were English speakers who were closer to Florida and the eastern seaboard states

[39] In signing a two-year extension of PL 78 in 1961, President Kennedy said: "The adverse effects of the Mexican farm labor program as it has operated in recent years on the wages and employment conditions of domestic workers is clear and cumulative in its impact….Therefore, I sign this bill with the assurance that the Secretary of Labor will, by every means at his disposal, use the authority vested in him under the law to prescribe the standards and to make the determinations essential for the protection of the wages and working conditions of domestic agricultural workers." (Quoted in CRS, 1980, 52-53).

[40] PL 45, enacted in April 1943, allowed Federal funds to be used to recruit and transport foreign workers, but not to improve the wages and working conditions of U.S. farm workers. Hahamovitch (1999) links the expansion of labor imports from the Caribbean and Mexico with less Federal support for moving U.S. migrant workers over state borders.

than Mexicans, making Jamaica a logical place for Florida farmers to recruit workers (1980, 78-79).

After WWII farm labor programs ended, the BWI program became one in which the British West Indies Central Labor Organization (BWICLO) represented the governments of the islands that were home to farm workers headed to the United States. With island governments controlling who could leave for the United States to do farm work, BWICLO required Jamaican and other Caribbean guest workers to sign supplemental agreements in addition to their U.S. contracts before departure. Between 1960 and 1980, an average 12,000 BWI workers (the range was from 9,000 to 15,000 a year), were admitted, and most harvested sugar cane in Florida and picked apples along the eastern seaboard.[41]

The H-2 program was created by the Omnibus Immigration and Naturalization Act (McCarran Walter Act) of 1952, enacted over President Truman's veto (PL 82-414, U.S. Code, Title 8, Section 212 (a)(3)(B)).[42] Section 101 (a) (15) (H) outlined procedures to admit three types of temporary workers: persons of distinguished merit and ability, other temporary workers, and trainees.[43] H-2 or other temporary workers must have "a residence in a foreign country" that they have "no intention of abandoning" while "coming temporarily to the US to perform other temporary services or labor, if unemployed persons capable of performing such services or labor cannot be found in this country." Section 214 (c) gives the Attorney General the authority to deal with petitions from employers for H-2 visas for foreign workers "after consultation with the appropriate agencies of the government." The Department of Justice (DOJ) (the Department of Homeland Security (DHS) since the movement of the Immigration and Nationality Service (INS) to DHS) normally denies employer petitions unless they are accompanied by a certification from the Department that the U.S. workers are unavailable and that their presence will not adversely affect U.S. workers.

Unlike the Bracero program, which was begun to deal with specific wartime labor shortages, the H-2 program is a permanent part of U.S. law. The H-2 program is unilateral, in the sense that employers can recruit in any country they wish, and in any manner allowed by that country's laws, once the Attorney General (now DHS) accepts their petition. The Bracero program, by contrast, operated under an agreement negotiated by the U.S. and Mexican governments.

The H-2 program evolved from Section 3 of the Immigration Act of 1917, which sets out a list of inadmissible aliens. The ninth proviso allowed waivers for temporary entry, and was used to

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[41] Accordign to Hahamovitch, BWI workers were limited to working in sugar and apples after 1965, but worked in many commodities and states before 1965.

[42] PL 82-414 was vetoed by President Truman on June 25, 1952 because it retained the national origins selection system that gave preference to Western Europeans—70 percent of 270,000 immigrant visas a year were allotted to natives of the United Kingdom, Ireland and Germany (most went unused). The veto was overridden June 27, 1952, and the law went into effect December 24, 1952.

[43] PL 82-414 Section 212 states the negative, that is, aliens are ineligible for visas unless (14) the Secretary of Labor has determined and certified to the Secretary of State and to the Attorney General that (A) sufficient workers in the United States who are able, willing, and qualified are available at the time (of application for a visa and for admission to the United States) and place (to which the alien is destined) to perform such skilled or unskilled labor, or (B) the employment of such aliens will adversely affect the wages and working conditions of the workers in the United States similarly employed. (http://tucnak.fsv.cuni.cz/~calda/Documents/1950s/McCarran_52.html)

admit Mexican and Caribbean workers during WWI and WWII. In 1948, INS and the Department agreed that, before such a waiver could be issued, the Department had to certify that U.S. workers were not available and that the admission of temporary workers would not adversely affect similar U.S. workers (CRS, 1980, 63). The Department explained in a 1963 Congressional hearing that its role under the H-2 program was only to certify need for foreign workers. Under the Bracero program, by contrast, the Department was obliged by the agreement between Mexico and the United States to also enforce the contracts given to Mexican Braceros (CRS, 1980, 64).

After the Bracero program ended December 31, 1964, many farmers expected to employ Mexican workers under the H-2 program. However, the Department on December 19, 1964 published regulations that had the effect of requiring employers of H-2 workers to offer and pay any U.S. workers they employed the AEWR, and to offer and provide U.S. workers with the housing, transportation, and the guarantees included in Mexican worker contracts (CRS, 1980, 65). During January 15-16, 1965 hearings before the Senate Committee on Agriculture, Department of Labor Secretary Wirtz asserted that the purpose of the regulations was to reduce imports of foreign workers in order to reduce unemployment among U.S. farm workers.

The Department was challenged by Florida growers in 1965 after it refused to certify their need for foreign celery cutters. The trial judge refused to issue the order sought by growers to require certification, which led to an effort by Senators from California and Florida in 1965 to transfer responsibility for certifying farm employer requests for foreign workers from the Department of Labor to USDA. This effort failed on a 46-45 vote because Vice President Hubert Humphrey cast a vote to break the previous tie.

The December 19, 1964 Department of Labor regulations became the basis for administration of the H-2 program until the Immigration Reform and Control Act of 1986. Most H-2 workers between the mid-1960s and mid-1980s cut sugar cane in Florida and picked apples along the eastern seaboard (the Florida sugar cane industry expanded after the Cuban embargo of 1961). Hahamovitch (1997) explained that H-2 workers on several occasions went on strike for higher wages, and that BWICLO liaisons were often under pressure to take the employer side in labor disputes in order to keep remittances flowing to island economies. Hahamovitch emphasized that H-2 workers often incurred costs to get selected to come to the United States, and had the cost of their return transportation deducted from their pay if they did not finish the contract, making them less likely to complain.[44]

There were several important court cases involving the H-2 program in the 1970s. In Elton Orchards Inc. v. Brennan (508 F2nd 493), a NH apple grower challenged a Department of Labor requirement that inexperienced Louisiana workers be hired rather than experienced Jamaicans to pick apples. A U.S. District Court agreed that Elton could hire the experienced Jamaicans rather than the inexperienced U.S. workers, but a U.S. Court of Appeals on December 19, 1974 ruled that PL 414 requires U.S. employers to give preference to U.S. workers, concluding there is no "legal right to use alien workers upon a showing of business justification" such as the fact that

[44] In a November 22, 2005 interview, Hahamovitch said "We've never had a guest-worker program that was not rife with abuse, and I think the key to that is that employers hold the deportation card. That deportation card has become the new whip." www.wm.edu/news/?id=5397

the foreign workers were more productive. In Elton's case the business justification for preferring Jamaicans was that apples are perishable and have to be harvested quickly.[45]

In January 1977, the Department proposed revisions to H-2 regulations that would have tightened certification procedures.[46] Testimony from farm employers during the public hearings was generally negative, leading to significant revisions before the final regulations were issued March 10, 1978. With most farmers looking to the H-2 program as a safety valve in the event that illegal migration was curbed, the U.S. Employment Service was roundly criticized during the hearings.

Farmers pointed to the conflict between Department of Labor efforts to recruit U.S. workers to fill farm jobs and Department of Labor-funded training programs that helped farm workers to find higher wage (nonfarm) jobs. The interstate clearance system was also criticized as unable to deliver workers in a timely or efficient manner (CRS, 1980, 75). CRS concluded that the March 10, 1978 regulations were a victory for those who believed that U.S. workers should be guaranteed the same wages and benefits as foreign workers. The regulations confirmed that an AEWR was needed to offset past wage depression due to foreign farm workers (1980, 77-78), and traced AEWRs to the 1964 regulations that aimed to prevent previous users of Braceros from simply substituting H-2 workers for Braceros.

The next major change to the H-2 system and its regulations came in 1986, when the Department's regulations were modified and incorporated into law by the Immigration Reform and Control Act of 1986 (PL 99-603, Title III, Part A, Sections 301-05). The Department issued regulations implementing the now H-2A program in May-June 1987, and they spelled out Department of Labor procedures for dealing with employer requests for certification. For example, the Department emphasized that there could be special procedures for dealing with requests for certification to fill jobs in sheepherding and custom combining, and included an extended discussion of the meaning of temporary in 20 CFR, 655, Vol 52, No 104, pp20497-8. The discussion emphasized that the job the employer is seeking certification to have filled with an H-2A worker must be of a temporary or seasonal nature, and the employer's need to fill the job must be temporary, defined as less than 12 months. However, the Department accepted that some employers would request certification to fill seasonal jobs year after year.

1.2 The H-2A Certification Process

The H-2A program has since June 1, 1987[47] permitted farm employers who anticipate shortages of labor to recruit and have admitted nonimmigrant aliens to perform agricultural labor of a

[45] Department of Labor Secretary Marshall in 1977 told apple growers that foreign workers cannot be imported "just because they can do a better job than available domestic workers." (quoted in CRS, 1980, 71).

[46] On August 4, 1977, as President Carter announced comprehensive immigration reform proposals (S. 2252/HR. 9531) that would have introduced employer sanctions and legalized some unauthorized foreigners, he asked for a comprehensive review of the H-2 program, saying "I believe it is possible to structure this program so that it responds to the legitimate needs of both employees, by protecting domestic employment opportunities, and of employers, by providing a needed workforce." (Quoted in CRS, 1980, 72)

[47] Between 1953 and 1987, nonimmigrant farm workers were admitted under Section 214(c) and 101(a)(15)(H)(2) of the Immigration and Nationality Act of 1952, known as the H-2 program. The H-2A program came into force on June 1, 1987 with

temporary or seasonal nature, that is, both the worker and the work must be temporary, and temporary is usually construed to mean that the farm job lasts less than 12 months. The Department certifies the need for H-2A workers to fill most farm jobs for up to 10 months, with exceptions for sheepherders.[48]

DHS (previously the INS) makes the final decision on the employer's petition for H-2A workers. DHS normally rejects employer petitions unless they are accompanied by a U.S. Department of Labor certification (1) that U.S. workers who are "able, willing and qualified" are not and will not be available to fill the job vacancy for which the employer is requesting H-2A workers, and (2) that the employment of the H-2A workers will not adversely affect U.S. workers "similarly employed."

Farm employers wishing to employ H-2A workers follow an application process set out in law and regulation. Individual farm employers, as well as associations,[49] labor contractors who have agreements with farmers, and authorized agents may file applications to have particular jobs certified to be filled with H-2A workers. U.S. employers seeking certification complete Employment and Training Administration (ETA) Form 750, Application for Alien Employment Certification, Part A, which spells out the job offers for which certification is sought, including the start and end dates and the details of the job, wages, and working conditions. The signed Form 750 is transmitted to the U.S. Citizenship and Immigration Services (USCIS) with the Department's certification.

In addition, employers seeking H-2A workers complete ETA Form 790, (the Agricultural and Food Processing Clearance Order), which provides more detailed information on the jobs, including piece rates, transportation and housing arrangements, and is used to recruit U.S. workers. Form 750 is sometimes called the contract for the H-2A workers and Form 790 the recruitment tool for U.S. workers.

Forms 750 and 790 must be filed at least 45 days before the employer's anticipated need[50] for H-2A farm workers, with (1) the Department's National Processing Center (NPC) in Atlanta or Chicago and (2) the State Workforce Agency (SWA) in the requesting employer's state. Most employers file their applications close to the 45-day deadline, e.g. 45-50 days before their need date. The NPC reviews employer applications for certification, normally notifying the employer (or agent) and the appropriate SWA within 7 days whether the application is accepted or rejected.[51]

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the enactment of the Immigration and Control Act of 1986 (PL 99-603). Immigration & Nationality Act, 8 U.S.C. 1101(a)(15)(H)(ii)(a), 1186

[48] Employers of H-2A sheepherders in the western states must have their need for H-2A workers recertified each year, but H-2A sheepherders are allowed to remain in the United States continuously for up to 36 months.

[49] Associations may file as a single employer that moves workers from farm to farm, a joint employer with the farmers who will supervise and pay the H-2A workers, or as an agent of the farmers who belong to the association and who will be the employer of record.

[50] The McConnell Amendment effective June 29, 1999 shortened the minimum application period from 60 to 45 days and required the Department to make certification decisions 30 rather than 20 days before the employer-set worker-need date.

[51] If the NPC rejects the employer's application, it spells out the changes or modifications needed to correct deficiencies or the procedure the employer may use to contest a rejection, which can be based on an employer not meeting the requirements of the program (time frames, wages etc), the NPC determining that there are sufficient local workers to fill the jobs, or that the

In order to accept the application, the NPC must determine that the employer is requesting certification to fill temporary farm jobs[52] and has made specified assurances, including providing proof of workers compensation insurance, offering at least the higher of the minimum, prevailing, or AEWR wage, and offering free and approved housing, meals or cooking facilities, and in-bound travel reimbursement after 50 percent of the contract is completed. Employers must also offer work for at least ¾ of the contract period, and cover the cost of return travel for U.S. and H-2A workers who complete the contract.

Employer applications that are incomplete or include unacceptable provisions generate modification requests from NPC analysts that spell out the changes necessary to make the application acceptable. Modifications can deal with basic issues (does an egg farm offer temporary jobs) and to oversights (did the employer note that income and social security taxes would be deducted from wages on Form 790, which applies to U.S. workers). There is no application fee, and NPC analysts, rather than employers or agents, ensure that the application is accurate and complete before issuing a certification—the opposite of the Internal Revenue Service model for dealing with tax returns.

The NPC acceptance letters include four conditions necessary for certification. First, employers must cooperate with the SWA to prepare a job order for local, intrastate and interstate recruitment of U.S. workers, under which U.S. workers interested in the job opportunity are directed to the closest SWA for referral to the employer (single job orders are prepared on behalf of associations). Second, employers must place at least two ads in daily newspapers or other appropriate publications advising of the availability of the jobs, [53] contact former U.S. workers to advise them of the job opportunities, and continue to engage in "active recruitment" of U.S. workers until the H-2A workers depart for the United States, usually three days before the scheduled start of work.

Third, employers must provide proof that the ads were run to the NPC. Fourth, employers must submit a "recruitment report" to the NPC at least 30 days before the start date that lays out the recruitment efforts made, identifies U.S. workers who applied for jobs, and explains "lawful job-related reason(s)" for not hiring each U.S. worker who applied but was not hired; the number of jobs certified to be filled by H-2A workers is reduced for each U.S. worker wrongly rejected by the employer. Finally, the acceptance letter allows conditional entry into the interstate clearance system based on the employer's assurance that the housing offered workers will meet Department of Labor standards at least 30 days before it is to be occupied, and that the employer has workers compensation insurance.

presence of H-2A workers would adversely affect U.S. workers. In some cases, as when recruitment finds some local workers, the NPC certifies the employer's need for a reduced number of H-2A workers.

[52] Temporary farm jobs can be seasonal or have peak-load or one-time attributes that ensure they do not persist year-round.

[53] Radio advertising is required in some states but not others covered by the Atlanta NPC, e.g. not in MA and NY, but in GA and KY; radio ads are mandatory in states covered by the Chicago NPC. Radio ads rarely attract workers, in part because they may be on stations that are not listened to by potential farm workers, such as religious stations with low ad rates but a small farm worker audience.

SWAs are to receive employer 750 and 790 forms at the same time as the NPC, giving them time to review the job offer, assign it a job order number, and send it to the SWA office in the area with the job—local recruitment can start immediately. When the NPC issues the acceptance letter, the job offer is circulated throughout the state, to neighboring states, and to at least one traditional recruitment state (generally California, Florida, Puerto Rico, and Texas).

The period of active recruitment is short, often less than a week, before the NPC certifies the employer's need for a particular number of H-2A workers at least 30 days before the employer-set need date. However, employer and SWA recruitment of U.S. workers continues until the H-2A workers depart for the United States. SWAs keep the employer's job order open (meaning they refer workers interested in the job to the employer) until 50 percent of the employer-specified period of employment of the H-2A workers has passed.

The employer sends the Department of Labor certification to USCIS with Form I-129 (Petition for a Nonimmigrant Worker) and the $320 fee (raised from $190 on July 30, 2007) per petition, not per worker; H-2A workers are not normally named on the I-129 form.[54] The Government Accountability Office (GAO) (formerly the Government Accounting Office) concluded that INS/USCIS processing simply involves checking that the employer has a Department of Labor certification and has paid the appropriate fees, but does not add to protections for U.S. workers.[55] After USCIS approves the employer's petition, it is sent to the Department of State's Kentucky Consular Center unless the employer asks that it be sent to a U.S. port of entry. In most cases, the H-2A visas issued are valid for the duration of the employer-requested certification period.

The employer notifies the H-2A workers (more typically an agent) to report to the U.S. consulate to be interviewed for H-2A visas. The workers are interviewed, issued visas, and normally provided with vouchers for the cost of transportation and subsistence to the U.S. work place, if the employer is advancing the cost of in-bound transportation. At the border, the Customs and Border Protection (CBP) inspects the H-2A workers and normally admits them. The workers travel to a reporting station or the work site and go to work. If workers abscond or leave the work site, they are to be reported by the employer to the SWA within two business days. The H-2A certification process is outlined in Table 3.

Table 3. H-2A Certification Flow Chart

H-2A Certification Flow Chart			
RECRUITMENT	CALENDAR	45	APPLICATION PROCEDURE
PROCEDURE	DATE	DAYS	
Enter Date of Need	23-Sep-07		
Local Recruitment begins	9-Aug-07	45	TIMELY FILING: 2 Original, signed

[54] If USCIS rejects the employer's petition, the employer can appeal. Form I-129 is at: www.uscis.gov/portal/site/uscis/menuitem.5af9bb95919f35e66f614176543f6d1a/?vgnextoid=f56e4154d7b3d010VgnVCM10000048f3d6a1RCRD&vgnextchannel=db029c7755cb9010VgnVCM10000045f3d6a1RCRD

[55] GAO (98-20, p8): INS (now USCIS) oversight "adds little value to the process because petitions for H-2A visas, unlike other visa petitions, do not generally identify individual workers."

H-2A Certification Flow Chart			
RECRUITMENT PROCEDURE	CALENDAR DATE	45 DAYS	APPLICATION PROCEDURE
Enter Date of Need	23-Sep-07		
			applications must be filed at NPC at least 45 days before Date of Need- 655.101(c)
	1 10-Aug-07	44	Copy of application sent to SWA; local recruitment begins-655.101(c)(2)
	2 11-Aug-07	43	NPC has 7 DAYS to review application - determine cert/deny
	3 12-Aug-07	42	NPC verifies with state when local recruitment began
	4 13-Aug-07	41	
	5 14-Aug-07	40	
	6 15-Aug-07	39	
			NPC completes review to see if 655.101-655.103 criteria are met
			Unacceptable application - NPC sends rejection letter - 655.104(c) DAY 7
	7 16-Aug-07	38	**Acceptable application - NPC sends acceptance letter - 655.105(a) Also clearance letter to State to begin intra/interstate clearance DAY 7**
	8 17-Aug-07	37	Intra/interstate recruitment should begin - 653.501 and 655.105 when NPC accepts application/job order
Once "Acceptance Letter" is received - Intra/Interstate recruitment begins - Local recruitment continues.	9 18-Aug-07	36	Employer has 5 days to submit modifications to rejection letter.
	10 19-Aug-07	35	For orders for 50 or more workers, employer must submit results of positive recruitment every Friday after recruitment starts until cert day, DAY 30
	11 20-Aug-07	34	
	12 21-Aug-07	33	Employer corrections due if original application is unacceptable (655.104(e) - 5 calendar days -
	13 22-Aug-07	32	Employer advertises for workers - 655.105(b)
	14 23-Aug-07	31	Employer must follow positive recruitment plan submitted (see ETA 790 attachment)
Employer's housing meets standards	15 **24-Aug-07**	**30**	State reports housing results or status of housing inspections. If housing does not meet standards-conditional entry 654.403(e), NPC denies application and SWA cancels orders in clearance.
			All reports due (workers comp., final recruitment report, housing). Two recruitment reports - employer's positive recruitment and State's referral results. Prepare for certification.
			Employer must submit results of positive

H-2A Certification Flow Chart			
RECRUITMENT	CALENDAR	45	APPLICATION PROCEDURE
PROCEDURE	DATE	DAYS	
Enter Date of Need	23-Sep-07		
			recruitment. (Planned recruitment) and results of recruitment instructed by NPC. SWA sends results of referrals / Housing Inspection / Modifications Certification granted (in whole or part) or denied (in whole or part) - Last day housing must meet standards - conditional entry 654.403(c)]. If housing doesn't meet standards, NPC denies application 654.403(e); SWA cancels job orders in clearance 654.403. SWA calculates 50% of the work contract for referral purposes.
	25-Aug-07	29	
	26-Aug-07	28	
	27-Aug-07	27	
	28-Aug-07	26	
	29-Aug-07	25	
	30-Aug-07	24	
	31-Aug-07	23	
	1-Sep-07	22	
	2-Sep-07	21	
	3-Sep-07	20	
	4-Sep-07	19	
	5-Sep-07	18	
	6-Sep-07	17	
	7-Sep-07	16	
	8-Sep-07	15	
	9-Sep-07	14	
	10-Sep-07	13	
	11-Sep-07	12	
	12-Sep-07	11	
	13-Sep-07	10	
	14-Sep-07	9	
	15-Sep-07	8	
	16-Sep-07	7	
	17-Sep-07	6	
	18-Sep-07	5	
	19-Sep-07	4	
H-2A workers depart for the US	20-Sep-07	3	**State ceases active recruitment but leaves Job Order and clearance job orders open until 50% of contract period is completed, all other efforts are suspended on date of certification.**
	21-Sep-07	2	
	22-Sep-07	1	

H-2A Certification Flow Chart			
RECRUITMENT	CALENDAR	45	APPLICATION PROCEDURE
PROCEDURE	DATE	DAYS	
Enter Date of Need	23-Sep-07		
	23-Sep-07	0	

Streamlining Issues: OFLC and NPCs

This report aims to improve the efficiency of the H-2A certification process by assessing the current performance of the process, applying lean manufacturing principles to the work flows of the NPCs and SWAs, and making streamlining suggestions. The purpose of the analysis, which is separated into federal and state sections, is to identify best practices that could lead to efficiencies.

The Office of Foreign Labor Certification (OFLC) has about two full-time-equivalent staff whose primary responsibility is dealing with the H-2A program, five analysts and a supervisor in the Atlanta NPC and four analysts and a supervisor in the Chicago NPC. In both the Atlanta and Chicago NPCs, some analysts are cross-trained in both the H-2A and H-2B programs, and they switch between the programs as workloads dictate. Generally, H-2A work loads peak in January-February in Atlanta and December-January in Chicago, when 300 to 350 applications per month arrive. Currently, there are about 12 NPC analysts to handle the 7,000 employer requests for certification a year.

Most employers enter at least some 750 and 790 data on-line (www.h2a.doleta.gov) and then print out, sign, and submit these forms with attachments. The NPCs E-file system generates a case number, and the NPC analyst receiving an employer's signed 750 and 790 prepares a paper file with the 750 at the front. He/she cross checks the information in the electronic and paper copies (the signed paper copy controls in the event of discrepancies) and, if the application is submitted only on paper, the data are entered into E-file.

The certification process involves ensuring that the 750 and 790 forms include the information needed to accept the application. Analysts' checklists ensure that the forms are signed, that the employer has provided information on days and hours of work and dates of need, and that required assurances have been made, from offering the higher of the AEWR, federal or state minimum wage, or prevailing wage to providing proof of workers compensation insurance. The four major items on analyst checklists appear to be the AEWR, ads, workers compensation, and housing.

NPC analysts have seven days to accept the employer's application, reject it, or require modifications. Most employers have been certified before, making the review of their applications fairly routine, although analysts caution that some employers or agents "slip" unacceptable conditions into their job orders, especially in the attachments to the 790 forms; the job of detecting such provisions and requiring modifications is something of a cat-and-mouse affair. Analysts are aware that, once accepted, an employer or agent will expect to have the same item accepted in the future.

The key to accurate decisions, NPC analysts agree, is careful review of the employer-provided information. Thus, most welcomed the idea of on-line applications and computer programs that would highlight changes made from year-to-year. Such a system, they agreed, would require very careful review of the first-year's application, but expedite the review of applications in subsequent years. Table 4 summarizes the streamlining issues and options for NPCs, some of which also affect SWAs.

Table 4. NPCs Issues and Streamlining Options

Item	Purpose/Issue	Implementation	Comment
Encourage or require on-line applications for certification	Encourage complete and accurate applications	Design system so that application cannot be submitted until it is complete; build in checks to e.g. require correct AEWR	On line application could be sent to NPC and SWA and link to wage and commodity information
Charge an application fee that is credited to the certification fee	Currently, burden is on NPC to lay out modifications to make application acceptable	Application fee can be credited to certification fee if certified; forfeited if denied	Make deductions for each modification required
ABC employer and agent rating system	Convert current informal system to a more formal system to save staff time and encourage applicant compliance	Establish criteria for A-rating, e.g. fixed situs, in the program at least 2-3 years, housing passed first time, no modifications or emergencies	Include agents in ABC system, much like IRS deals with tax preparers
Benefits for A-rated employers/agents	Could include self-certification of housing; lower fees	Inspectors could still inspect at least once a year	
Dealing with contractors and other intermediaries	Agree on consistent rules such as written contracts with fixed-situs employers	With contractors' role expanding in ag, potential for sharp increase in FLC applications	There appears to be variance across SWAs and NPCs in treatment of contractor applications

Item	Purpose/Issue	Implementation	Comment
WHD and state agencies enforce labor laws that sometimes cover only U.S. workers	Employers complain that seeking certification leads to enforcement and suits	Silo structures in which concerns flow up to Washington D.C. and back down	Horizontal links may expedite resolution of WHD-NPC issues
More employers are requesting certification for 10-months	MSPA's definition (29CFR500.20) "On a seasonal or other temporary basis" means not "continuous or carried on throughout the year" or for "a particular piece of work, usually of short duration."	Develop a database of typical periods of employment in particular commodities and areas	If 10-month contract periods become the norm, develop ways to check that ¾ guarantee is satisfied
Employers request "too many" workers, reject some U.S. workers, and are certified for fewer	SWAs report the number of rejected U.S. workers to the NPCs	NPCs usually reduce the number of jobs certified by the number of rejected U.S. workers	Some SWAs want to deny certification to employers who reject qualified U.S. workers
Recruitment and referral summit between NPCs and SWAs	Some SWAs believe that NPCs sometimes wrongly certify the need for H-2A workers	Regular NPC-SWA analyst interaction combined with ABC rating system, could ease tensions and generate pragmatic guidelines	Recruitment is a significant area of SWA concern in many states
OFLC makes grants to states to cover the costs of their activities	Most SWAs report the OFLC grant does not cover their costs for processing applications, housing inspections, and surveys	Reduce duties of SWAs, as with ABC ratings and housing; NASS for surveys; OR increase funding and strengthen SWAs	Some states subsidize SWA H-2A activities; other SWAs shift funds from H-2B and prevailing wages; surveys first to be cut

NPCs and On-Line Applications

The Department centralized the handling of H-2A applications in two National Processing Centers in 2005; previously, 10 regional ETA offices handled certification. The arguments for

centralization generally involve efficiency and consistency--staff doing the same job repeatedly can make faster and more consistent decisions. The arguments against centralization involve loss of contact with the SWAs who may know more about local labor markets and particular employers or agents.[56]

NPC analysts have varying levels of farm labor expertise. While they can always consult each other and SWA staff, most acknowledge that at peak times they feel obliged to review applications quickly. An application requiring an analyst to spell out the 10 or 20 modifications needed to make it acceptable may require a day or two that could have been used to review and accept five or 10 applications.

The review and acceptance of employer applications could be streamlined by encouraging or requiring on-line applications. There are at least four advantages:

- an on-line system could refuse to accept incomplete applications, eliminating one reason for modification letters,
- items in the applications could be linked directly to on-line information about the commodity, period of employment, and the farm labor market in the area, expediting checks on whether the number of workers requested, the period of need, and other factors are appropriate,[57]
- changes from one year to the next could be highlighted automatically by the computer program, drawing analyst attention to them,
- on-line applications could be submitted simultaneously to SWAs and the Wage and Hour Division (WHD).[58]

The major argument against on-line applications is that small farmers may not have access to computers, an obstacle that should decline in importance over time. Other Federal agencies including USDA are moving toward online applications for Federal benefits, and the Department could handle on-line H-2A applications much as it does H-1B applications, requiring those who want to submit paper applications to receive permission from the NPCs.

It should be emphasized that on line applications could also benefit employers and agents, since the E-file system could be modified to store employer applications, including 790 attachments. Employers could log in, see their last application, make any necessary changes, and resubmit, which should save both time and money.

Application Fees

There is no charge to apply for certification to fill farm jobs with H-2A workers, and no bar to resubmitting a rejected application with minor changes. This makes the application process

[56] NPC staff have access to the prevailing wage data collected by SWAs in the on-line library (www.foreignlaborcert.doleta.gov/aowl.cfm), but these data, extracted from state prevailing wage surveys, provide only job title, wage, and date of the survey, not the additional detail that may be on the ETA 232 form. Paper ETA 232 forms are available in the NPCs, but tend to be consulted only if questions arise.

[57] For example, the entire ETA 232 form, not just the summary, could be available to an analyst considering an application.

[58] The Atlanta NPC delivers the copies of the paper 750 and 790 forms of certified employers each Friday; if these forms were on line, they could be forwarded to WHD immediately.

unusual, shifting the burden of ensuring that the application is accurate and complete from the applicant to NPC analysts.

To encourage employers to submit complete and accurate applications, the Department could charge an application fee that could be credited to the certification fee. An employer requesting certification to fill 10 jobs with H-2A workers, the average in recent years, pays a $200 certification fee under current procedures. If this fee were paid upon application, and reduced for each modification required, employers would have a financial incentive to submit more complete and accurate applications.

A second issue is the amount of the application/certification fee. Since 1987, the Department has been charging $100 for each certification plus $10 per job certified, up to a maximum $1,000, billing employers about $1.1 million a year. These fees were set based on costs in the mid-1980s, and should be reviewed to determine if they are appropriate two decades later. Many of those involved in the H-2A program noted that Department of Labor fees are the lowest paid by employers to government agencies.

Finally, the Department could consider a differential fee structure that reflected current costs. For example, NPC analysts agree that first-time applications require more processing effort than repeat applications, applications from labor contractors generally require more processing effort than those from fixed-situs employers, and emergency applications may require dropping other work. A differential fee structure could take these different processing costs into account.

ABC Employer Ratings

About 80 percent of the employers applying for certification in any year have previously been certified to fill jobs with H-2A workers, and most of their applications change little from year to year. However, the H-2A program is expanding, requiring analysts to become familiar with new commodities and areas as well as to deal with novel arrangements, such as contractors requesting certification to fill jobs on farms that they do not own or operate.

Most employer applications are accepted and certified in a relatively routine process. NPC and SWA analysts sometimes describe the majority of applications as clean, suggesting an informal ABC rating system that treats some repeat applications routine, others as new (with the agent being used providing information), and others as troublesome.

This informal ABC rating system could be converted to a more formal system to streamline certification. Employers could earn an A rating based on criteria developed with input from NPC and SWA analysts. For example, the criteria for earning an A-rating could include being a fixed-situs employer certified without modifications or emergency requests for at least the two previous years and with housing that passed inspection the first time. As with the IRS system for rating tax preparers, agents could be rated as well.

Benefits for A-rated employers could include self-certification of housing before it is occupied (inspectors could still visit the housing once a year), which can remove a cause of delayed certification in states with few inspectors, and lower application-certification fees, since A-rated

employer applications are cheaper to process. Eventually, A-rated employers might also be treated differently under some aspects of recruitment.

Contractors and Enforcement

One growing issue is dealing with applications for certification from labor contractors and other intermediaries who organize crews of workers and deploy them from farm to farm. Most Bracero and H-2/H-2A workers over the past six decades were hired by farm employers or employer associations, such as the Florida Fruit and Vegetable Association, whose goal was to minimize the cost of getting farm work done. When employers or associations hired H-2A workers, litigation usually involved issues that affected the cost of getting farm work done, such as whether the piece rate for picking apples had to be raised in lockstep with the AEWR and whether the contract given to H-2A cane cutters called for a piece rate of $5.30 a ton in the late 1980s or the $3.75 a ton that was paid.

More recently, a new type of labor broker has emerged, one that recruits H-2A workers from countries other than Mexico and the Caribbean, including in Thailand and Vietnam. Global Horizons (www.gmpusa.com) is an example of such a firm. Begun in Israel in 1989 to import Thai farm workers, it began to import Thai and Vietnamese H-2A workers for U.S. farm jobs in about 2000. The result was a wave of suits and Global's debarment from the H-2A program.[59]

Farm labor contractors have a generally poor reputation for abiding by labor, immigration, tax and other laws, and have been subject to a variety of licensing, testing, and other regulatory efforts at the federal and state level. However, their share of the farm labor market is expanding. In 2006, for the first time, contractors and other intermediaries employed as many farm workers in California as crop farmers hired directly.

NPC and SWA analysts, as well as others with significant knowledge of the H-2A program, agreed that contractors and other intermediaries pose special challenges in labor certification. Most emphasized that contractors often push the limits of NPC and SWA guidelines in terms of job offers and recruitment, and experience has shown that some contractors discourage U.S. worker applicants and do not abide by the job offers they made. Many analysts commented on the delays inherent in what they described as the silo structure of current interactions between WHD inspectors and NPC analysts, with communications flowing up each agency's silo to Washington D.C., and then back down to the field.

Making accurate and timely certification decisions in a streamlined process that includes ever more contractors is likely to require closer cooperation between the NPCs, SWAs, and WHD and other enforcement agencies. The exact mechanism for enhanced cooperation can be worked out by the appropriate agencies, but it would seem highly desirable to have the names of applicants for certification who have been cited or charged with violations highlighted in some way for NPC analysts and SWAs so that their applications can be reviewed closely. Although the NPCs

[59] SWA staff in California reported that Global in summer 2003 conducted only telephone interviews with potential U.S. workers, insisted that they provide SSNs that were to be checked against government databases, and gave the U.S. workers that were hired conflicting instructions about when and where to report to work. In Yakima in 2004-05, Global was found to have unlawfully refused to hire or retain U.S. farm workers in order to provide jobs to Thais with H-2A visas who reportedly paid $8,000 to $20,000 each to Global.

may certify an applicant who is not debarred, an early warning system could increase the scrutiny of applications from those facing charges that could lead to debarment.

Contracts and Funding

Both NPC and SWA analysts noted the increased number of employers requesting certification for 10 months, sometimes guaranteeing work for only 30 hours a week. These longer periods of employment increase the employer's exposure to the referral of U.S. workers, and may encourage U.S. and H-2A workers to leave the job before the end of the contract, especially if they believe that they will not have additional earnings.

A second contract-related issue involves the number of jobs employers request to fill with H-2A workers. Some employers appear to be requesting certification to fill "too many" jobs with H-2A workers, reportedly so that they can reject qualified U.S. workers, have their certification number reduced, but still have sufficient workers to accomplish farm tasks. Longer contracts and questions surrounding the number of jobs requested suggest the usefulness of regular summits between the NPCs and SWAs to discuss H-2A regulations and their implementation.

The Federal government reimburses SWAs for the cost of their activities under the H-2A program. Most SWAs say that the Federal grant does not cover their full costs. In the absence of additional resources, one option would be to reduce the duties of the SWAs in the H-2A labor certification process so that Federal funds cover the cost of their mandated activities.

Streamlining Issues: SWAs

SWAs perform three major functions related to the H-2A certification process: processing applications and reviewing job orders, inspecting farm worker housing at least 30 days before the employer-determined need-for-workers date, and conducting prevailing wage and practice surveys. In addition, SWAs recruit and refer workers to fill farm jobs using Wagner-Peyser funds, and monitor the recruitment efforts and referral outcomes of workers sent to employers requesting certification to fill jobs with H-2A workers.

SWA staff vary considerably in experience with farm labor and the H-2A program. Some have decades of experience, while others are relatively new. Many of the analysts interviewed emphasized that the staff changes associated with the introduction of the permanent labor certification program (PERM) system and reduced grants led to the loss of experienced staff.

SWAs are organized in a variety of ways to handle employer H-2A applications after they are received in a central office, generally in the state capital. This central office maintains a variety of links to local SWA offices that are more likely to know the employer applying for certification and the local labor market. Some central SWAs include staff who inspect housing and conduct prevailing wage surveys, while others turn housing inspections and wage surveys over to local office staff.

Each state with H-2A applications has a Monitor Advocate and outreach workers to ensure that appropriate services are provided to farm workers, and to accept complaints if these services are

not provided. The relationship between SWA H-2A staff and Monitor Advocates varies considerably.

SWA analysts raised a number of issues and offered a variety of suggestions to streamline their role in the H-2A labor certification process. They are summarized in Table 5 and discussed below.

Table 5. SWA Issues and Streamlining Options

Job Orders	Issues	Implementation	Comment
Receive applications 45 days in advance of need	SWAs welcome new policy of NPCs, sending emails to request job order numbers	Should NPC analysts specialize by state/commodity?	Many SWAs would prefer direct contact with NPC analysts
Job order review and posting	SWA staff type data into Job Bank, some scan attachments for local offices	On-line applications would expedite distribution of job orders	Very uneven treatment of Form 790 attachments across states
Referrals	Applicants see counselor to get job details; SWA calls employer or provides referral letter to worker	Could registered job seekers get referral letter on line?	Most SWAs expect employer to return referral letter with outcome; employers say most referred workers did not show
Follow up	What happens to workers referred?	Referral letters include telephone numbers to call with complaints; some states give cards	SWAs agree on the need for more follow up with referred U.S. workers
General	U.S. farm workers attracted by AEWR want jobs right away, not in 30+ days	Given short recruitment window, many hires are made about when work begins	Some SWA data systems allow extraction of the date referral was made relative to H-2A contract date

Housing	Issues	Options	Comment
Pre-occupancy inspection required	Wide variety of inspection systems, from local SWA to statewide SWA to another agency; sometimes hard to complete on time	ABC employer rating system that allowed A-rated employers to self-certify?	SWAs split about 50-50 on this option; those doing inspections from one office in the state were most likely to favor ABC
Prevailing Wage	**Issues**	**Options**	**Comment**
ETA 232 survey data are increasingly collected by mail, with some telephone follow up	SWAs report increased difficulty obtaining sufficient responses to make wage and practice determinations	Having SWA H-2A staff do surveys increases local labor market expertise vs. turning surveys over to NASS or other statistical agency	Many state SWAs favor using a statistical agency to conduct prevailing wage and practice surveys; could be within the SWA
Few SWAs follow Handbook 385 procedures	SWAs in major farm states should be conducting 100s of surveys; talking to thousands of workers	Turning surveys over to statistical agencies that contact employers by mail or telephone would eliminate worker surveys	Perhaps could use NAWS worker interviews in some states to cross-check prevailing wage and practice data provided by employers
Recruitment	**Issues**	**Options**	**Comment**
ARS requires the Department to maintain a system for orderly movement of workers	Employer must request SWA help to recruit workers intrastate and interstate	SWA staff vary widely in their willingness to recruit workers for H-2A jobs	Many SWA staff noted insufficient resources to recruit low-wage U.S. workers
Some SWA staff recount “tricks” used to discourage U.S. workers	Employers requesting certification usually have identified preferred H-2A workers	NPCs and SWAs could collaborate on a list of allowed and prohibited practices to avoid incremental change	SWA staff vary in their attitudes toward what they consider job terms that discourage U.S. workers
Master association job orders	Associations may file job orders for many employers and many commodities	U.S. and H-2A workers needing housing can be directed to any employer and commodity	SWA staff report that master orders may discourage U.S. workers who prefer a particular commodity/area

Employers must accept U.S. worker referrals until 50 percent of the contract period is completed	SWAs report that employers are more likely to make life "difficult" for U.S. workers than lay off H-2A workers	U.S. workers may be attracted to H-2A jobs by the AEWR and request referral	Training and Employment Guidance Letter 11-07 advises SWAs to refer U.S. workers to non- or unfilled-H-2A jobs to avoid displacing H-2A workers

Job Order Review and Posting

Employers file applications with both the NPCs and the SWAs; in most states, H-2A and H-2B applications are sent to the same address. Many SWAs report that they do not receive employer applications when they are supposed to, at least 45 days before the employer's need date. Indeed, some said that NPC analysts sometimes contact them for job order numbers for applications that the SWA did not receive or review, sometimes prompting a fax of the employer application to the SWA for review and job order number assignment. Most SWAs reported that the fall 2007 change in procedure, to have the NPC routinely send an email to the SWA noting each application received and requesting a job-order number, is reducing the number of applications received only at the NPC.

SWAs report that most employers file just before the 45-day deadline. SWA analysts focus on the job order, and ensure that it satisfies state and local requirements, that is, ensure that it offers at least the state minimum wage and prevailing wages and working conditions. If the job order is satisfactory, most SWAs type the information from the employer's paper application into their job bank system to make it available for local office recruitment; many SWAs lamented the demise of America's Job Bank in July 2007.

SWAs advise the NPC if they find deficiencies with the job order. Many SWAs expressed considerable frustration about communications with the NPCs, saying they do not necessarily know which NPC analyst is handling a particular application. They reported that the normal SWA-NPC communication involves leaving a message and waiting for a response.

Once the employer's application is accepted by the NPC, the job order is distributed throughout the state, to neighboring states, and to at least one traditional recruitment state. Some SWAs scan the entire job order (including attachments) for distribution, while others distribute only the key parameters of the job, such as the wage rate and the start and stop date. Most H-2A job orders can be identified in job banks by the AEWR, but most job banks require workers to create accounts and log in to see the details of the job. The name of the employer is usually suppressed, so that U.S. workers wanting a referral to an "H-2A job" must report to a SWA office to get a referral letter that introduces them to the employer. A few states, notably Virginia, scan H-2A job orders and post them online: www.vec.virginia.gov/vecportal/employer/h2a.cfm?yr=2007.

Most SWAs report that their experience with referrals and hires mirrors that found by the Department of Labor's Office of Inspector General (OIG) in its mid-1990s review, viz, for every

100 H-2A jobs, about five U.S. workers are referred and two are hired. Most SWAs give U.S. workers referred to an H-2A employer a referral letter on which the employer is supposed to indicate whether the worker was hired and return it to the referring SWA office—this information is also included in the employer's recruitment report to the NPC. Many states provide referred workers with toll-free numbers and postcards to make complaints, but all agreed that their systems for following up with U.S. workers (rather than employers) need improvement.

Housing Inspections

During the 15-day window between the employer's application and the certification decision, SWAs are to inspect the housing that farmers offer to out-of-area U.S. and H-2A farm workers to ensure that it meets the higher of Department of Labor, state, or local standards.[60] Until the housing is inspected and approved, employers have "conditional access" to the interstate job clearance system; the understanding is that their housing must meet the standards at least 30 days before it is to be occupied. Employers are not charged for these housing inspections, and generally have five days to make repairs before re-inspections.

The housing checklist defines general and specific criteria for approved housing, such as locating housing in areas that are safe and well-drained and requiring at least 40 square feet per person to sleep in double bunk beds, screens on windows, and at least one toilet for each 15 workers. Employers can provide meals at no charge, charge workers up to $11.80 a day for meals in 2007, or provide cooking facilities so that workers can prepare their own food.

The major housing inspection issues involve making timely inspections and reinspections. Some states have inspectors in areas with regular applicants for H-2A workers and can inspect the housing quickly. Other states have one or two inspectors operating from central offices who sometimes must make long trips to inspect or re-inspect housing. In some states, health or other departments inspect farm worker housing; these other agencies are sometimes reimbursed from the OFLC grant and sometimes cover the cost of housing inspections from their own budgets.

SWA opinions about the desirability of an ABC rating system that allowed A-rated employers to self-certify their housing before occupancy were mixed. SWA staff in central offices were most likely to favor a trust-the-employer approach, while states that had SWA staff in local areas with H-2 applicants trained to conduct housing inspections were most likely to favor a continuation of the current system. Several SWAs noted that employers in sheepherding and sheep shearing are permitted to self-certify their housing, and that SWAs must inspect a third of this housing each year, so that all of an employer's housing is inspected every three years. Some SWAs emphasized that sheep are often in remote locations, so that the inspector may require a day in travel time to inspect the housing of one shepherd. California inspects sheepherder housing twice a year.

As the H-2A program expands, novel housing issues arise. For example, some Arizona-California border-area farm employers have sought certification to fill jobs with H-2A workers

[60] Department of Labor Occupational Safety and Health Administration standards for farm worker housing are at 29 CFR 1910.142; the Department's ETA standards are at 654.404-654.417. Family housing must be provided to workers upon request if family housing is the "prevailing practice."

who live in Mexico and commute daily over the border. In these cases, employers are offering housing to H-2A workers who may not occupy it because they prefer to commute over the international border.

Employers are required to provide housing and free transportation between the housing and the actual work site. In most cases, the distance between the housing and the work site is short, but there can be occasions when employees must travel several hours by bus between housing and work, especially if e.g. the employer has crops to be harvested in a variety of locations. One potential housing issue in such situations is whether out-of-area U.S. and H-2A workers may obtain housing closer to the work site and, if they do, must this close-to-work housing satisfy Department of Labor standards and is its cost borne by the workers or the employer? Resolving such issues requires making a determination of what is a reasonable distance between employer-provided housing and the place where workers actually work.

Prevailing Wage and Practice Surveys

SWA staff are to conduct prevailing wage and practice surveys in commodities and areas with at least 100 farm workers, where H-2A workers were or are expected to be employed, and when a commodity is designated as a major crop or has a complex wage structure. Wage data are to be obtained from small, medium and large employers (PI-114). This does not happen, largely because of a lack of resources.

ETA Handbook 385 lays out the procedure for completing ETA 232 Domestic Agricultural In-Season Wage Reports, which are the basis for determining prevailing wage rates in particular crop activities and areas.[61] Handbook 385 explains that the data collected must be commodity-, area-, and time-specific e.g. picking peaches (rather than just loading them) in a county or multi-county area during a particular week (or less). Surveys are to include "a substantial number of personal employer interviews," and "an average 10 percent of the workers included in the sample for each wage survey must be interviewed." (pI-116).

Handbook 385 lays out two major ways to make a prevailing wage finding (pI-117):

1. If a single rate is paid to at least 40 percent of the U.S. seasonal workers in a crop activity, it becomes the prevailing wage,
2. If there is no single rate covering 40 percent of workers, the rates being paid are to be arrayed from low to high, and the 51st percentile rate becomes the prevailing wage.

Prevailing practice issues deal with the size of the unit used in piece rate wage systems, whether transportation for out-of-area workers is advanced or reimbursed, and whether family housing is provided.

Handbook 385 stresses that when data are not available to follow these rules for determining the prevailing wage, SWA staff should use the rate applicable to "the largest number of workers." Handbook 385 warns that base rates and bonuses must be distinguished in order to determine prevailing wages, and that prevailing wages may differ for in-state, inter-state, and all workers—employers must offer the highest of the three rates for interstate recruitment.

[61] A notice published in the Federal Register February 8, 2007 suggested that 600 ETA 232 reports a year were completed, and that each report was based on an average 65 responses (p 5998).

SWA staff are trained periodically to produce more reliable prevailing wage and practice surveys, but those interviewed stressed the need for even more training and resources. As SWAs conduct more prevailing wage and practice surveys by mail, some staff noted that they do not gain the labor market expertise that flows from talking to employers and workers. In some states, the labor market information agency conducts the surveys, encouraging some SWA H-2A staff to suggest turning mail surveys over to agencies that regularly survey employers.

The quality of prevailing wage surveys has long been a concern of the Department. The National Agricultural Statistics Service (NASS) (www.nass.usda.gov) mailed a 5-question prevailing wage survey to Tennessee tobacco farmers in August 2001, asking whether the responding farm was in the H-2A program, the hourly wage rate paid to workers for cutting/housing tobacco, and the number of workers—we were not provided with the results of this survey or SWA studies to cross check the results.

HeiTech Services reportedly completed a $500,000 project to improve the quality of prevailing wage studies and drafted a Federal Register notice to propose (and seek comments on) the revised survey procedures; we were not provided a copy of the study. According to HeiTech, "The notice proposed major changes to the survey, including its timing and conduct, the characterization of agricultural industries and activities, the methodology for developing a target sample, procedures for collecting wage data, and the methodology for calculating prevailing wage rates." (www.heitechservices.com/hsclients/hscase_studies/survey1.cfm).

Most SWA staff agreed that funding and training for those charged with administering the H-2A program should be increased so that prevailing wage and practice surveys are improved, or these surveys should be turned over to a statistical agency that has expertise in data collection and analysis. Having SWAs do the surveys increases local labor market expertise, and can make SWA staff more knowledgeable about particular H-2A applications, especially because the surveys are supposed to collect detailed information on e.g. the size of the bin used in harvesting. On the other hand, the fact that limited resources mean most SWA staff are using mail and telephone surveys and finding it difficult to obtain enough responses to make a determination suggests that moving surveys to a statistical agency could increase the reliability of the determinations made.

Recruitment Issues

The positive recruitment that is required of employers who request certification and the recruitment efforts of SWAs rarely find U.S. workers who are hired or who complete the season. The small number of U.S. workers recruited by employers seeking certification to hire H-2A workers and referred by SWAs raises a number of issues.

SWA staff report that there are many reasons for the paucity of U.S. workers recruited, referred and hired in jobs for which employers seek certification. Employers say that few U.S. workers apply for farm jobs, and the fact that Department of Labor surveys report that at least half of U.S crop workers are unauthorized is often cited to argue that there is a "shortage" of legal farm

workers.[62] Many SWA staff, including Monitor Advocates, emphasize that significant resources are needed to recruit and place low-wage U.S. workers, most of whom are seeking jobs immediately, not in 30 days, and that the resources available for farm labor recruitment and placement are diminishing. [63]

The Wagner-Peyser Act requires the U.S. Employment Service to maintain a system for the orderly movement of workers within and between states.[64] The Agricultural Recruitment System (ARS) (www.doleta.gov/programs/ars.cfm) helps employers who are anticipating labor shortages to recruit qualified U.S. workers on a temporary or seasonal basis (CFR 653.500-503). The ARS goes into action when an employer requests help from the SWA to recruit workers--any farm employer may make such a request, but all employers requesting H-2A workers must use the ARS to recruit U.S. workers. Employers specify the number of workers needed and describe the job, wages, and working conditions on ETA Form 790.

SWAs can recruit workers locally and throughout the state to fill employer job orders, and send the job orders to other states that may have workers seeking farm jobs.[65] However, before workers are referred to jobs in other states, the Department must approve their job offer, and workers are to receive written assurances about the jobs, wages, and working conditions before they cross state lines to fill farm jobs, as specified by the Migrant and Seasonal Worker Protection Act (MSPA) and Department of Labor regulations. Summaries of interstate job orders were posted on America's Job Bank[66] (www.ajb.org), which ceased operations July 1, 2007, as well as on some state job banks. With the demise of America's Job Bank, and because few national private sector job banks deal with jobs for farm workers, there may be a need to create a new Department of Labor/SWA internet-based job exchange for farm job listings.

SWA staff and others interviewed agreed that the ARS often fails to provide a useful test of the availability of U.S. workers. Many workers do not learn about farm jobs in other states, in part because some SWA staff do not recruit U.S. workers to fill jobs with employers seeking certification for H-2A workers, knowing from "experience" that these employers prefer H-2A workers. SWA staff also recount "tricks" used by some employers to discourage U.S. workers from applying for H-2A jobs. Some employers tell workers who report for interviews that work

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[62] One retort from employers who are denied certification to employ (all of) the H-2A workers requested is that the NPC is "forcing" them to hire illegal (falsely documented) workers.

[63] Some SWA staff, including monitor advocates, believe that "effective recruitment" could fill many and perhaps most jobs for which H-2A workers are requested, but accomplishing this would require "rebuilding" the SWAs in a way that supported the recruitment of low-wage workers. Many SWA staff noted that low-wage U.S. workers are usually looking for jobs now, not 30+days from now; some who say they will report on the employer's need date find other jobs in the interim.

[64] The Wagner-Peyser Act requires the Department of Labor to "assist the state public employment services throughout the country in promoting uniformity in its administrative and statistical procedures, furnishing and publishing information as to opportunities for employment and other information of value in the operation of its system, and maintaining a system for clearing labor between the States." Federal Register, November 28, 2003, p 66884

[65] SWAs also have outreach programs conducted by Monitor Advocates to contact migrant and seasonal farm workers who may not be reached by normal SWA operations. These outreach programs make MSFWs aware of the full range of employment and training services available.

[66] AgJOBS (S 340 and HR 371), introduced in January 2007, would require farm employers to post their job offers on America's Job Bank at least 28 days before workers are needed. At least 14 days before the employer-specified starting date, the employer must advertise for workers.

is not available right now, and do not encourage them to return by providing a starting date. Some employers request "valid SSNs" during interviews and tell workers the numbers they provide will be checked against government databases.[67] Some legal workers travel in crews, and can be discouraged by employers who request certification to fill a small number of jobs each week over time, a hiring pattern that may discourage crews that want to work together.[68] Some SWA staff emphasize that many more U.S. workers would travel long distances to fill farm jobs if employers advanced transportation costs, and more families would travel if family housing was provided.[69]

Most recruitment to fill H-2A jobs has a going-through-the-motions quality. The GAO emphasized that since the SWA "had only growers accounts of the recruitment outcomes, it does not know whether its [SWA's] referrals received fair consideration" by the employer (PEMD 89-3, p4). GAO echoed many previous reports that concluded that growers prefer H-2A workers because they could "more selectively recruit productive and reliable workers" abroad (PEMD 89-3, p4).

The Department of Labor's OIG (1998) reached similar conclusions about the recruitment process. It reviewed employer applications to fill 10,134 jobs with H-2A workers in FY 1996, and found that 530 U.S. workers were referred to fill these jobs, equivalent to 5.2 percent, and 252 or 2.5 percent were hired.[70] The OIG contrasted the very low referral and placement rates in filling H-2A job openings with much higher placement rates reported by SWAs filling non-H-2A job openings, but noted that these higher placement rates may be suspect because of the way the placement of contractor crews is reported.[71] OIG also noted that many employers seem to prefer H-2A to U.S. workers, and that many U.S. workers shun jobs that have been filled by H-2A workers for years or decades, as with tobacco and apple harvesting.

The OIG was concerned about employer associations that are joint employers with the farm where H-2A workers are employed; joint employment between the association and its farmer members allows U.S. and H-2A workers to be transferred from farm to farm.[72] By filing master clearance orders that include dozens of crops, a wide range of piece rate wages and productivity standards, and a long period of employment, master clearance orders can discourage U.S. workers who need housing, since they do not know exactly where within the state they will be

[67] Global Horizons conducted only telephone interviews with U.S. workers and demanded SSNs, which it told applicants would be checked with the DHS Basic Pilot program (such employee verification is to occur only after a worker is hired).

[68] Puerto Rico remains a place from which some workers travel in crews to northeastern states to do farm work. Requesting a single worker in successive weeks discourages workers who travel in crews from applying.

[69] The Snake River Farmers Association (SRFA) in 1990 sent a recruiter to south Texas to interview U.S. workers before being certified to hire H-2A workers, but did not advance transportation costs or provide family housing, which Texas SWA staff said was necessary to attract U.S. workers to Idaho. Since it was not prevailing practice in Idaho to advance transportation or provide family housing, the Department of Labor could not require SRFA to advance transportation or offer family housing.

[70] Of these 252 U.S. workers hired, employers found 34 and SWAs 218.

[71] Some SWAs reported as placements labor contractor crews that return to the same area each year, often working for the same employer. Minimal SWA actions were required to place these farm workers.

[72] 20 C.F.R. § 655.101(a)(3) notes that applications for certification to hire H-2A workers to fill farm jobs can be filed by associations, which must "identify whether it is: (i) The sole employer; (ii) a joint employer with its employer-member employers; or (iii) the agent of its employer-members."

employed, do not know the crop in which they will work, and may not be able to work with family or friends. Many associations do not pay commissions to farm labor contractors (FLCs) who assemble crews of U.S. workers because that is not the "prevailing practice" in the area, which may limit employer access to U.S. workers who are assembled by FLCs into crews.

One issue that arose frequently during the SWA interviews was the 50 percent requirement. Employers must accept referrals of U.S. workers, and hire those who are qualified, until 50 percent of the employer-specified contract period is completed. Active recruitment of U.S. workers ceases when H-2A workers depart for the U.S. work site, generally three days before the start of work, but the H-2A job remains in job banks until 50 percent of the work period is completed. The high AEWR wage is attractive to some U.S. workers seeking jobs, and the fact that the job begins immediately is also attractive to some U.S. workers who seek referrals after H-2A workers are employed.

With many employers requesting certification for 10 months, employer "exposure" to U.S. worker referrals is lengthened to five months. Employers are supposed to hire U,S, workers referred during the first-half of the contract period, and send home employed H-2A workers if necessary to open jobs for the U,S, workers, but SWA staff report that many employers are reluctant to hire U,S, workers referred after H-2A workers are at work, and none recalled an instance of an H-2A worker being sent home to make room for a U,S, worker. Instead, U,S, employers are likely to complain about untrained and unseasoned U,S, workers who cannot keep up with the now-experienced H-2A workers, and "make life difficult" for the late-joining U,S, workers, encouraging many to quit before the end of the season. Training and Employment Guidance Letter (TEGL) 11-07 instructs SWAs to direct U.S. job seekers to non-H-2A or unfilled H-2A jobs once H-2A workers have departed for or are employed in the United States.

There are two extremes in thinking about the recruitment issue: end the recruitment requirement, at least for A-rated employers, or strengthen the SWAs so that they can recruit U.S. workers more effectively, perhaps by giving them a larger role in establishing the working conditions they believe will attract more U.S. workers, such as having employers advance the cost of transportation. Most SWA staff interviewed believe that supervised recruitment is necessary even if it results in few referrals, hires, and U.S. worker completions of the season because it keeps employers and SWAs in touch with the local labor market. However, SWAs share a concern that there are significant problems with the current recruitment system, suggesting that a "recruitment summit" between NPC and SWA staff could be useful to clarify current realities and explore options for change.

Transportation and ¾ Guarantee

U.S. and H-2A workers traveling to fill jobs for which the employer has requested certification must have their inbound transportation and subsistence reimbursed once they have completed 50 percent of the work period specified by the employer, e.g. five months on a 10-month contract. Workers are to be reimbursed for their round-trip transportation if they complete the contract. If it is the prevailing practice in the area, employers must advance the cost of transportation and subsistence to workers traveling to the job site.

Transportation reimbursement is closely linked to the ¾ guarantee, which requires employers to guarantee work for at least ¾ of the work time specified in the job order. For example, if the employer says that the contract period is 10 weeks, and the work day is 8 hours, the employer is offering 40 hours of work a week or 400 hours, and must pay workers for at least ¾ of these hours, 300. The ¾ guarantee does not apply to holidays and days when workers refuse available work. Some employers are making 10-month, 30-hour a week job offers, which effectively offers 40-30-hour weeks, or 1,200 hours of work. In this case, workers would be guaranteed work or pay for at least 900 hours at the higher of the AEWR, minimum wage, or prevailing wage.

The problem with the round-trip transportation reimbursement and ¾ guarantee is that they are enforced at the end of the contract, that is, after 10 weeks or 10 months. SWA staff noted that some employers are specifying a work period that extends beyond the usual period of employment in a particular commodity, and they believe that the purpose of such a long contract, especially coupled with a 30-hour week, is to leave the job before the end of the contract, saving the employer the cost of return transportation. Once the workers have left the workplace, it can be hard to determine if the ¾ guarantee was satisfied.

Wage Issues

Employers seeking certification to employ H-2A workers must offer and pay the higher of three wage rates to U.S. and H-2A workers: the Adverse Effect Wage Rate (AEWR), the prevailing wage in the area, or the federal or state minimum wage. Employers must keep payroll records and give workers written statements of their earnings.

Table 6. H-2A Wage Issues

Item	Source/Issue	Implementation	Comment
Offer and pay the higher of the AEWR, federal or state minimum, or prevailing wage	Statewide AEWRs first published in 1962	Between 1968 and 1987, statewide AEWRs were adjusted by the percentage change in the average annual earnings from the NASS Farm Labor survey	In 1981 the Department proposed and withdrew a national AEWR set by the average annual earnings of **piece rate** workers determined in Farm Labor

June 1, 1987 regulations	AEWR for the current year is the average hourly earnings of field and livestock workers during the previous year	1987 AEWRs ranged from $4.66 in Florida, the state with the most H-2A workers, to $4.17 in the northeast and $5.17 in California.	The Department considered and rejected proposals to set AEWR according to prevailing wages or set AEWRs only in areas with below-average wages
Prevailing wages calculated by SWAs	ETA Handbook 385 sets out 40% and 51st percentile procedures	More states turning to mail surveys, with telephone follow up	No SWA reported systematic collection of data from workers
Minimum productivity standards	Amount of work that must be accomplished for workers to be considered satisfactory	"Iron triangle" between AEWR, piece rate, and minimum productivity standard	Most job orders specify all 3 parameters of the iron triangle, e.g. AEWR of $10, piece rate of $20 a bin, and productivity standard of 4 bins in 8 hours
The Department requires H-2A employers to raise piece rates in step with the AEWR	If piece rates did not rise with AEWR, the minimum productivity standard would rise	H-2A employers in program before 1977 need permission to raise productivity standards	New H-2A employers must have their productivity standards approved

The Department has computed and published AEWRs that must be offered to U.S. workers and paid to them as well as H-2/A workers for decades (Dellon, Whittaker, 20 CFR 655, Vol 52, No 104, p20503, June 1, 1987), and at least since 1953 under the Bracero program. Statewide AEWRs were established in May 1962 after the Department recognized that wages had not risen during the 1950s in what the Department called "Bracero-dominated" crops. Beginning in 1968, statewide AEWRs were adjusted each year by the percentage change in the average annual wages of field and livestock workers computed from the USDA NASS Farm Labor survey during the previous year. After considerable study and public hearings in the late 1970s, the Department in 1981 proposed a national AEWR that would be set at the level of the previous year's average annual earnings of **piece rate** workers as determined by the USDA NASS Farm Labor survey, but withdrew this proposal before it went into effect.

The Department's June 1, 1987 regulations implementing the H-2A program made the AEWR for the current year the average hourly earnings of field and livestock workers for the state or

region during the previous year, as determined by the USDA NASS Farm Labor survey.[73] The Department justified the change to this "superior methodology," switching from using the NASS Farm Labor survey to **adjust** the AEWR to using Farm Labor to **set** the AEWR, by the "probable expansion of the H-2A program to new growers in new crops and new states." (20 CFR 655, Vol 52, No 104, p20504, June 1, 1987). The Department noted that the switch would extend "the DOL practice of over two decades of establishing AEWRs at or above average hourly wages in agriculture." (20 CFR 655, Vol 52, No 104, p20504, June 1, 1987). The Department considered and rejected options that would have set AEWRs according to local prevailing wages and indexing them or setting AEWRS only for areas with many H-2A workers and below-average wages.

The AEWRs for 1987 ranged from $4.66 in Florida, the state with the most H-2A workers, to $4.17 in the northeast and $5.17 in California. There is no survey and thus no AEWR for Alaska, and sheepherders and custom combine crews are paid on a monthly basis, with the SWA determining the prevailing wage.

The USDA NASS Farm Labor survey obtains worker earnings data from a sample of farm employers, asking them to report the gross payroll and total hours worked by hired workers for the week that includes the 12th of the month. NASS divides payroll by hours to compute average hourly earnings for several types of workers four times a year. The quarterly NASS estimates for field and livestock workers are weighted and averaged to obtain the average hourly earnings, and the 2006 average becomes the AEWR for 2007. About 7,000 U.S. farm employers provide earnings data to NASS, making the variance from year-to-year high, especially at the regional level. The fact that the AEWR is an hourly earnings figure that is often higher than the wage rate offered by farmers is a frequent source of employer complaints.

Prevailing wages are calculated by SWAs for particular commodities in particular areas. ETA Handbook 385, reprinted in part in the H-2A Program Handbook 398 (1988, II-3) notes that prevailing wage surveys are to be conducted in "crop activities" in which 100 or more workers were employed in the previous season and are likely to be in the future, H-2A workers were are likely to be employed, or where there is an "unusually complex wage structure." SWAs (then SESAs) are encouraged to "conduct formal surveys of employers, as time and resources permit" (II-5), but Handbook 398 recognizes that prevailing wage determinations must sometimes be based "on the best information available which can be gathered during the time available." (1988, II-3). Prevailing is defined as a practice that applies to a majority of employers who employ a majority of workers in a commodity and area when determining whether, e.g. prevailing practice is to advance transportation costs to recruited workers and use of labor contractors.[74]

SWAs determine prevailing wages and practices by completing Form ETA–232, The Domestic Agricultural In-Season Wage Report, and Form ETA–232–A, Wage Survey Interview Record.

[73] The Department of Labor with the IRCA changes that created the H-2A program began to publish AEWRs for every state, and discontinued the special AEWR for Florida sugar cane.

[74] Handbook 388 advises SWAs that, for the purpose of deciding if it is prevailing practice for employers to provide family housing, they should look to what employers of U.S. workers and employers of H-2A workers do, but for transportation advances and contractor usage, SWAs should look only at what employers of U.S. workers do.

The Department, on November 28, 2003, put the cost of conducting prevailing wage and practice surveys at $1,500 to $6,000 per survey, and state SF-424 requests for reimbursement for FY 2006 put the cost of surveys from under $50 per survey in some states to over $10,000 in others; the overall average cost was $413.

Conducting accurate and timely prevailing wage and practice surveys is a formidable task for SWAs. USDA says that over 150 commodities are grown commercially in the United States, and it reports on the production of over 100 fruits and vegetables (Lucier et al, 2006). Many SWAs say they have neither the resources nor the training necessary to conduct accurate and timely surveys, and most supported moving the responsibility for surveys to NASS or the SWA's labor market research division.

The third wage-related issue concerns minimum productivity standards, that is, the amount of piece-rate work that must be accomplished for a worker to keep his job. Piece rate wages pay for work completed, such as $20 for picking a bin of apples. Workers paid piece rates must earn at the higher of the AEWR, prevailing, or minimum wage, but employers do not have to retain workers who cannot work fast enough to earn the higher of these three wages. The result is an "iron triangle" between the minimum wage, the piece rate, and the minimum productivity standard. For example, if the minimum wage is $10 an hour and the employer specifies a $20 piece rate for picking apples, the minimum productivity standard is 0.5 bins an hour or four bins in an eight-hour day. If employers retain workers who cannot work fast enough at the piece rate wage to earn the minimum wage, they must "make up" the wages of the slower workers so that they earn at least the higher of the three minimum wages.

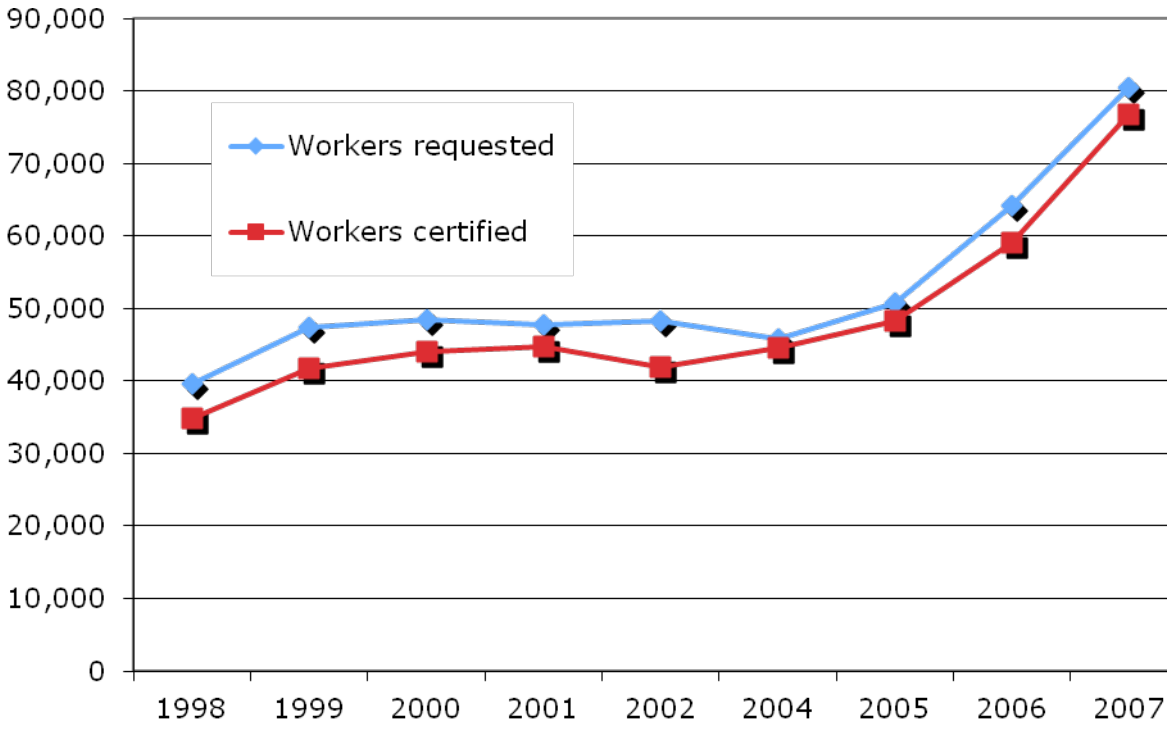
The iron triangle makes productivity standards important for employers and workers. Most employers specify all three parameters in their job order, the minimum wage, the piece rate and the minimum productivity standard, although some job orders say only that a worker must work fast enough at the piece rate to earn the minimum wage. SWAs determine prevailing productivity standards, and Handbook 398 distinguishes employers in the H-2 program before 1977 from those who enter the program after that date (II-10). Long-time participants in the program before 1977 must receive permission from the Department of Labor to raise their minimum productivity standard, and new users of the H-2A program must set standards that "cannot be more than those normally required in the activity." (II-10). The Department and the SWAs are advised to consult with other employers, surveys, and researchers to determine the "acceptability" of minimum productivity standards in the job orders of employers new to the H-2A program

1.3 H-2A Program Data

The number of employer applications for H-2A workers and the number of H-2A workers requested has been rising. Between FY 1998 and FY 2006, the number of employers certified to employ H-2A workers doubled to about 6,600, and the number of jobs certified to be filled with H-2A workers rose by almost 70 percent to over 59,000. Almost all employer requests are certified, 98 percent in recent years, and employers are certified to use H-2A workers to fill over 90 percent of the jobs for which they request foreign workers.

As Figure 2 highlights, the number of jobs that employers requested certification to fill with H-2A workers rose between FY 1998 and FY 1999, remained stable at 45,000 to 50,000 between FY 1999 and FY 2005, and rose to almost 80,000 in FY 2007.

Figure 2 H-2A. Certification Requests and Approvals, FY 1998-2007



Source: OFLC, no data for FY 2003 provided

H-2A certifications have been concentrated in particular states and commodities for most of the past six decades. Between 1952 and 1992, most H-2A workers were from Jamaica, and most were employed in the United States to harvest sugarcane in Florida and to pick apples along the eastern seaboard. The Florida sugarcane harvest was mechanized in the mid-1990s, and for several years thereafter most H-2A workers were Mexicans employed to tend tobacco and vegetables such as cucumbers and onions in the southeastern states.

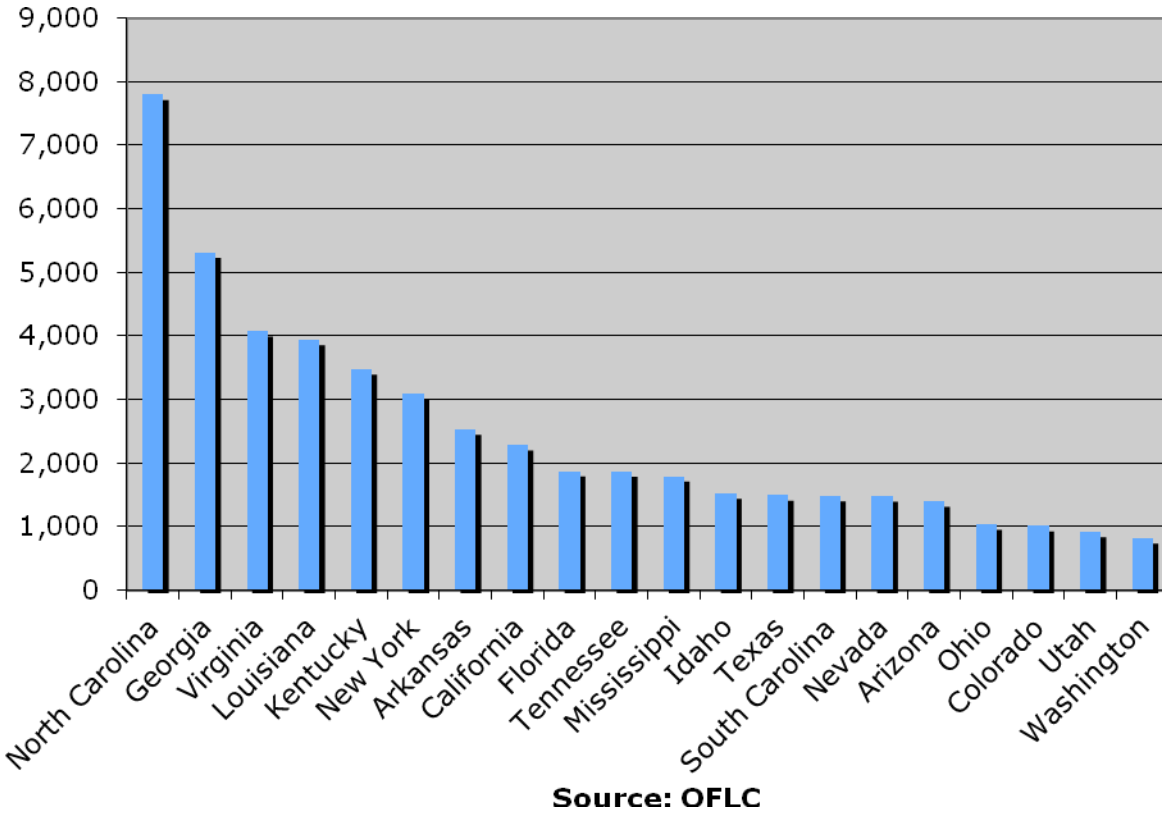
H-2A certifications are less concentrated today. Three states, NC, GA, and VA, accounted for almost 30 percent of H-2A jobs certified in FY 2006. The top five states, these three plus LA and KY, accounted for over 40 percent of worker certifications, and the top 10 states, these five plus NY, AR, CA, FL, and TN, accounted for over 60 percent of jobs certified to be filled with H-2A workers in FY 2006. In FY 2006, as Figure 3 highlights, over 80 percent of the H-2A jobs certified were in 20 states.

Table 7. H-2A Workers Certified by State, FY 2006

State	FY 2006
North Carolina	7,803
Georgia	5,320
Virginia	4,084
Louisiana	3,948
Kentucky	3,483
Top 3	29%
Top 5	24,638
Percentage	42%
New York	3,101
Arkansas	2,535
California	2,292
Florida	1,880
Tennessee	1,879
South Carolina	1,489
Next 5	11,687
Top 10	61%

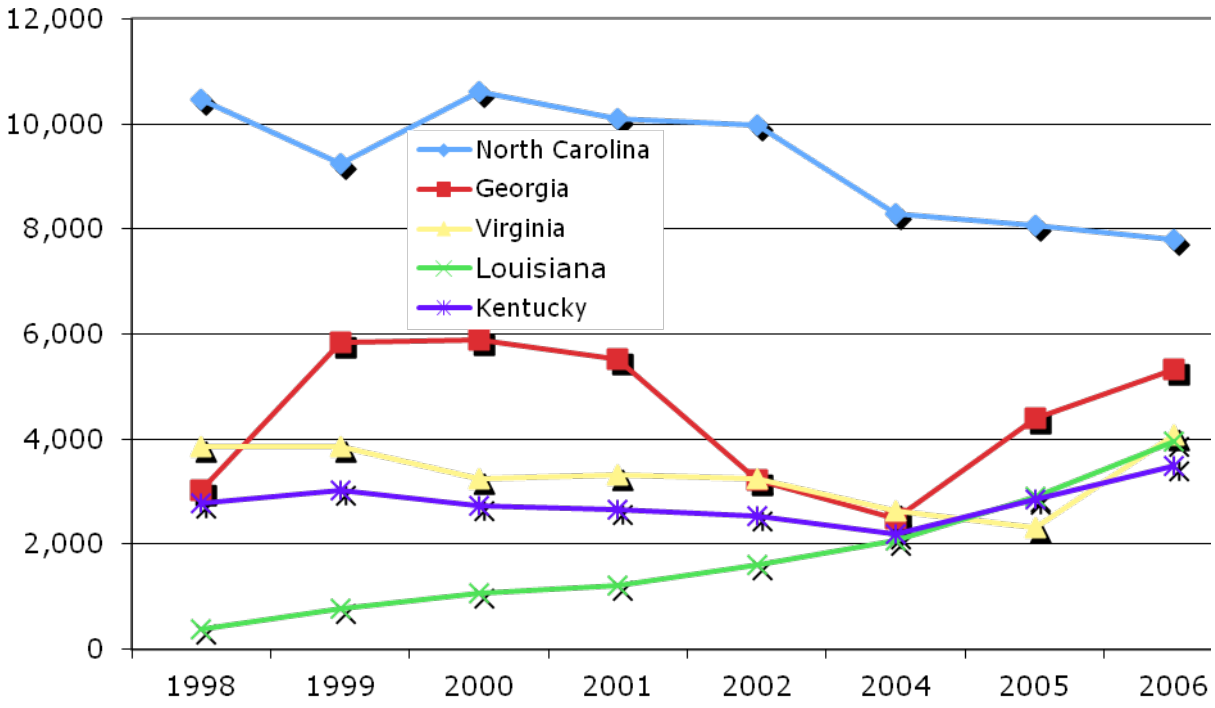
Source: www.foreignlaborcert.doleta.gov/h-2a.cfm

Figure 3. H-2A Jobs Certified by State, FY 2006



We were not provided with OFLC annual reports, so we did not have state and commodity data over time. The data available and interviews with SWAs suggest that the number of jobs employers seek to fill with H-2A workers has been decreasing in NC and expanding in GA, and especially LA. For example, the number of H-2A jobs certified in NC fell by a quarter between FY 1998 and FY 2006, while the number of jobs certified in GA rose by 76 percent. The number of H-2A jobs in VA was stable over this period, but the number in LA rose almost 10-fold, from under 400 to almost 4,000.

Figure 4. H-2A Jobs Certified, Top Five States, FY1998-2006



Source: OFLC, FY 2003 data not provided

Complete data on the next five states were not provided, but it appears that the number of jobs certified to be filled with H-2A workers in NY remained relatively stable at about 3,000 between FY 1998 and FY 2006, and that the number more than doubled in AR and CA to 2,500 and 2,300, respectively. The number of jobs certified in FL rose almost tenfold over this period, from less than 200 to almost 2,000. CT is a state that had almost 1,400 jobs certified in FY 1998, but fewer than 500 certified in FY 2006.

1.4 H-2A Grant Allocations

States request reimbursement for the cost of their alien labor certification activities. In FY 2005, alien labor certification grants to the 50 states totaled $17 million (additional funds went to D.C., PR, and U.S. territories). With PERM reducing the role of SWAs in the labor certification process for immigrants, alien labor certification grants to the 50 states were reduced by 29

percent to $12 million in FY 2006 and FY 2007. The top 10 state grant recipients received 61 percent of the total alien labor certification grant in FY 2007.

Table 8. Top 10 States: Shares of Alien Labor Certification Grants, FY 2007

State	Share of Grants
California	16%
New York	9%
Texas	6%
Virginia	6%
Massachusetts	5%
New Jersey	4%
Florida	4%
Pennsylvania	4%
Georgia	4%
Maryland	3%

Alien labor certification grants cover SWA costs of H-2A activities as well as H-2B processing and prevailing wage determination activities. States provide on Supplement IV to their SF-424 requests for Federal assistance detail a table "using data from the prior fiscal year to estimate the cost of conducting H-2A activities." The table has rows for the cost of housing inspections (including the cost incurred by non-SWA agencies if they inspect H-2A housing), the cost of doing prevailing wage and practice surveys, and the cost of processing H-2A applications, including costs associated with receiving applications, releasing job orders into the intra and interstate job systems, and referring U.S. workers to H-2A jobs.

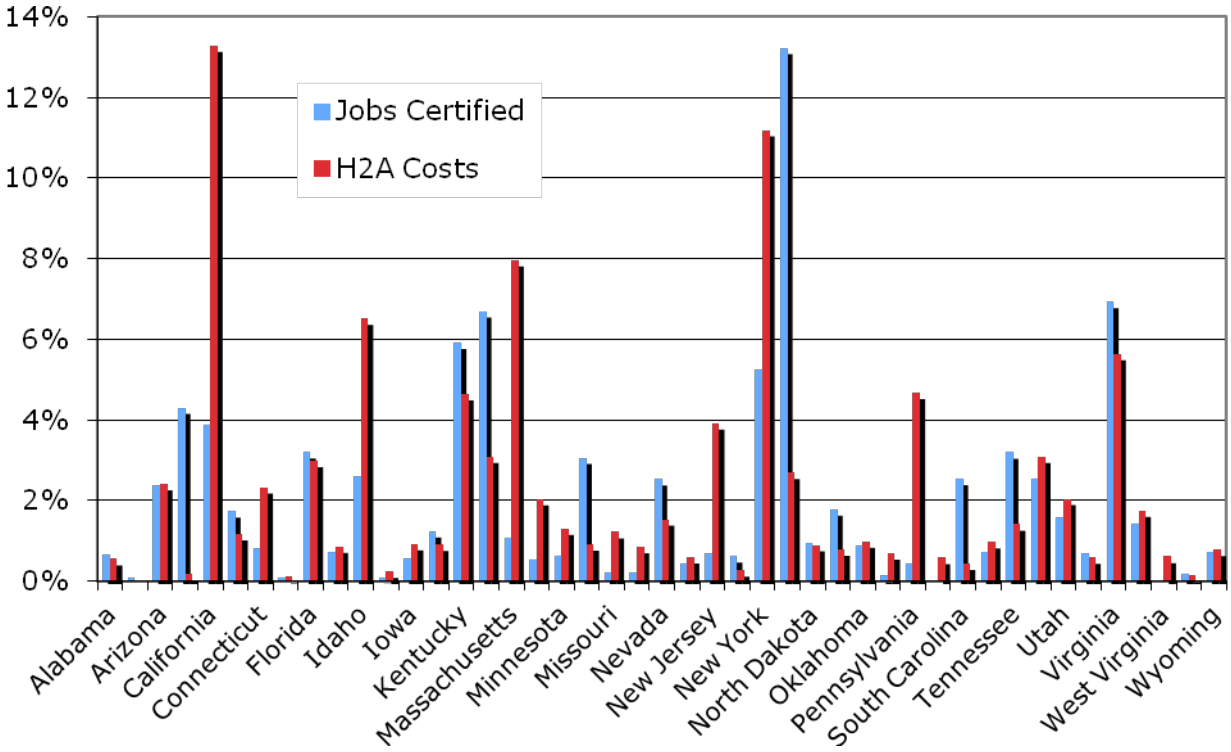
The SF-424 data for the H-2A program for the 50 states total $6 million. There are several caveats to this number. First, some states reported their "full costs," even if their alien labor certification grant was smaller. For example, Georgia reported its H-2A costs as $881,000, even though its total grant was $433,000. Second, some states did not break out the costs of their H-2A activities—there were no entries on Supplement IV for Illinois, Maine, Maryland, and Montana.[75] Third, some states did not include the cost of housing inspections performed by other agencies, as in NC.

Excluding Georgia and IL, ME, MD, and MT, the states did not report H-2A costs, the costs of the H-2A items reported on Supplement IV to SF-424 requests for the remaining 45 states totaled $4.2 million, with a range from $850 in Alaska to $557,000 in California. The top five states accounted for 44 percent of H-2A costs, and the top 10 states 63 percent. Similarly, the top five states accounted for 43 percent of H-2A jobs certified in FY06, and the top 10 states 62 percent.

However, there was little correlation between state shares of H-2A costs and state shares of H-2A jobs certified. States such as CA, ID, MA, NJ, NY and PA received a far greater share of H-A grant funds than they accounted for in H-2A jobs certified, while AR, LA, and NC had a far higher share of H-2A jobs certified than their share of H-2A grant funds.

[75] For example, Maryland reported 120 housing inspections, but no cost for doing them.

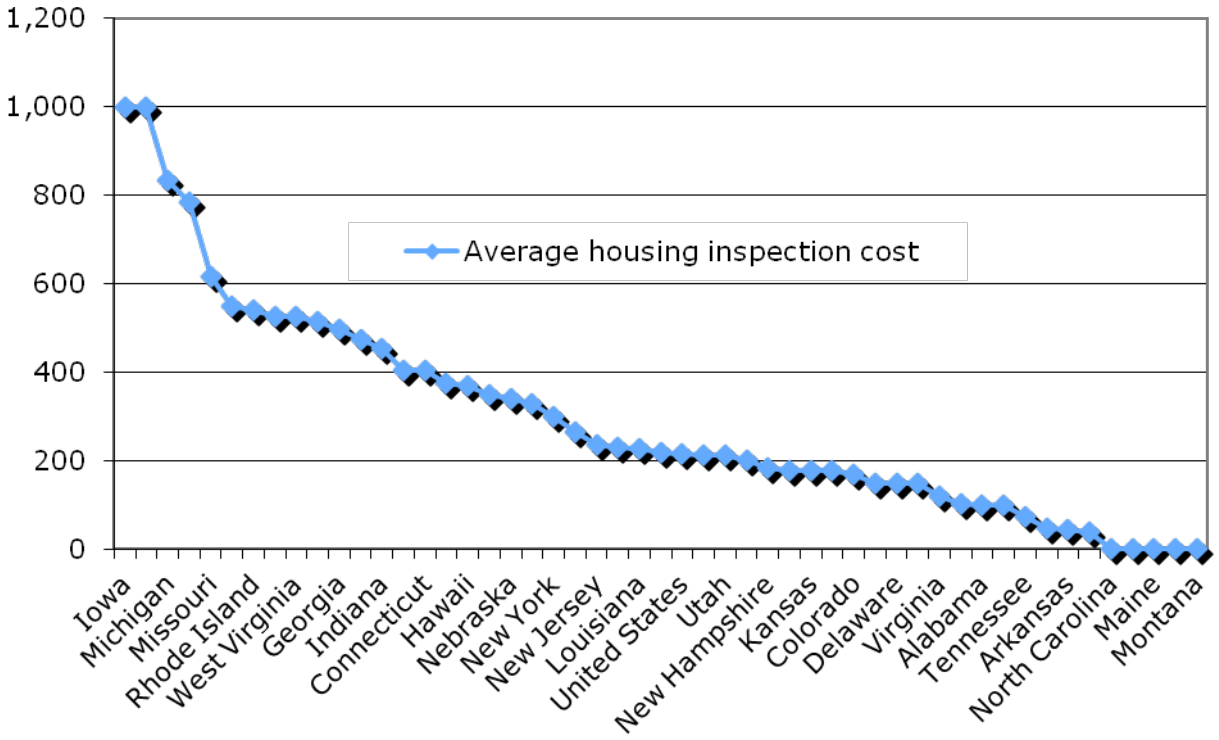
Figure 5. State Shares of H-2A Jobs Certified and H-2A Costs, FY 2006



The H-2A grant funds data suggest that SWA grant funds do not rise or fall with employers and jobs certified. Since the alien labor certification grant aims to reimburse SWAs for their costs, it may be useful to consider a funding formula that adjusts grants to SWAs to reflect each state's share of H-2A activities.

A second dimension to H-2A costs involves the average cost of the activities conducted by SWAs, viz, housing inspections, prevailing wage and practice surveys, and application processing. The average cost of these activities (for states reporting costs) was $214 for each housing inspection, $413 for each prevailing wage survey, and $337 for each application processed. However, the standard deviation exceeded the mean cost in each category, reflecting the wide range in average costs that is apparent in the figures below. For example, the average cost of inspecting housing for H-2A workers ranged from $1,000 per inspection in IA and PA to under $50 in AR and SC.

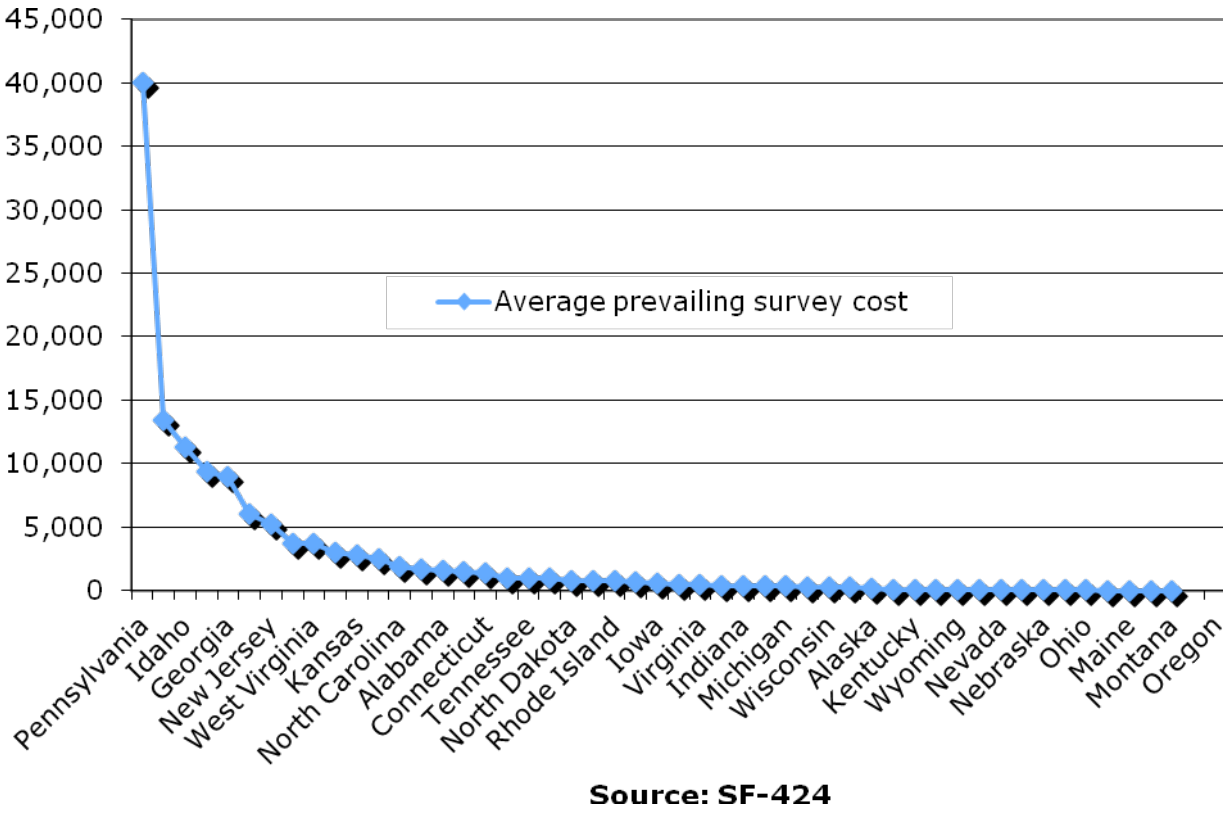
Figure 6. Average cost of Inspecting H-2A Housing, States, FY 2006($)



Source: SF-424. States with zero housing costs cover the cost of housing inspections with state funds

There was a similar wide range in the average cost of prevailing wage and practice surveys. The standard deviation around the average cost was $6,500, reflecting the fact that PA put its average cost of conducting surveys at $40,000, CA $13,400, and ID $11,300. At the other end of the cost spectrum, AZ, MS, NE, NV, and OH reported an average cost of less than $50 for surveys.

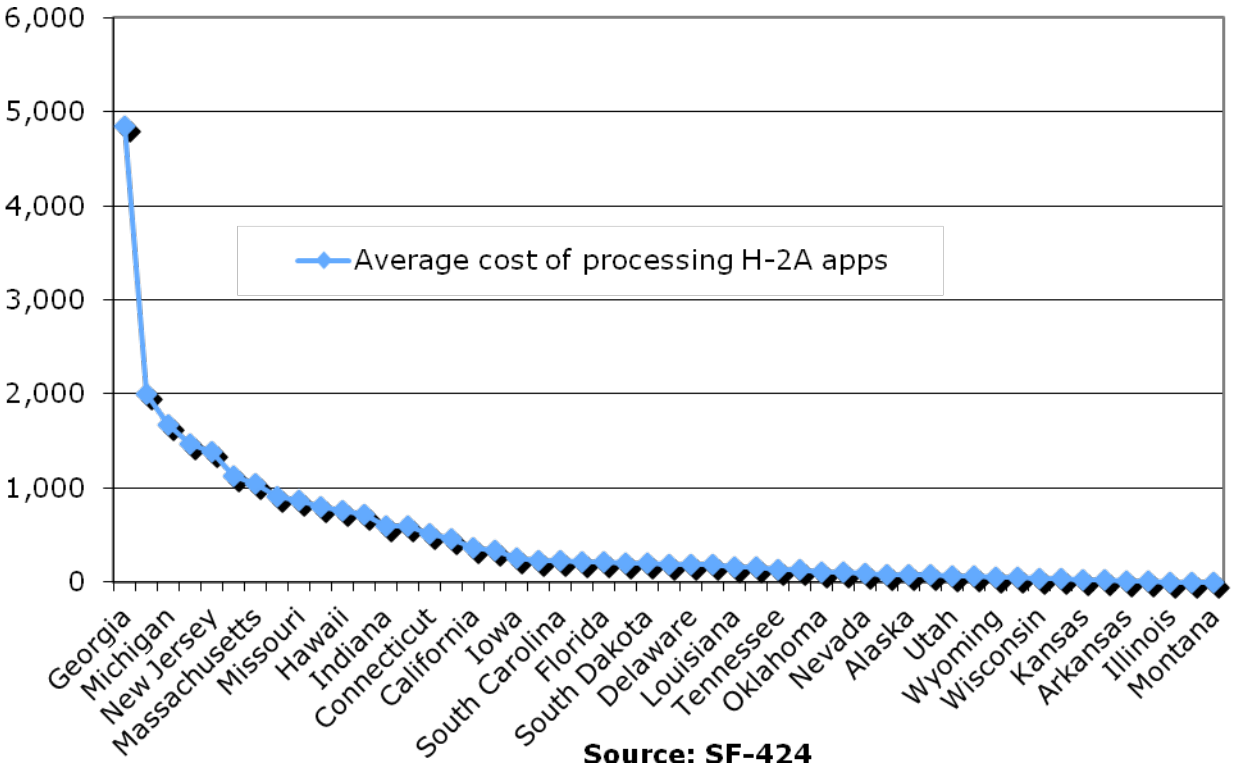
Figure 7. Average Cost of Prevailing Wage and Practice Surveys, States, FY 2006($)



Source: SF-424

The average cost of processing H-2A applications, reviewing and entering job orders, and referring workers, was also highly variable across states. The standard deviation was over twice the average cost of $337, and ranged from a high of $4,800 in GA and $2,000 in VA to under $10 in CO.

Figure 8. Average Cost of Processing H-2A applications, States, FY 2006($)



We received copies of ETA 9127 quarterly activity reports for some states for three quarters of FY 2007. These reports show the number of H-2B applications received and dealt with by SWAs within 30 calendar days, the number of prevailing wage determinations made and their level (based on Occupational Employment Statistics data) within 14 business days, and three parameters of H-2A activity, viz, prevailing wage and practice surveys completed, housing inspections conducted, and H-2A job orders filed. We did not receive similar quarterly activity reports detailing activities at the NPCs.

B. Current and Future Farm Labor Markets

This section assesses the changing farm labor market. Section 2.1 reviews farm labor data and examines the employment of hired workers in U.S. agriculture and in U.S. FVH agriculture. Section 2.2 develops an econometric model to estimate the demand for and supply of farm workers at national and regional levels. The findings suggest that the variables that explained labor demand and supply in the 1960s are no longer significant, and that regional models of labor supply and demand are too aggregated to provide useful estimates of demand and supply parameters. Section 2.3 turns to FVH commodities, focusing on several that highlight the likely responses to factors that affect labor demand and supply, including wages, technology, and trade. Section 2.4 lays out a matrix that summarizes the factors affecting the future demand for and supply of farm workers in FVH agriculture.

2.1 Labor Demand and Supply in Agriculture

The demand for farm workers is a derived demand, meaning that the number and type of farm workers employed depends on the demand for the farm output produced with the help of hired workers and the ways in which farm work is done, such as by hand or with machines. The supply of farm workers has traditionally been modeled on the assumption that farm workers are "trapped" in agriculture, leaving for higher wage nonfarm jobs when such jobs are available. This so-called salvage theory of farm labor supply assumes that workers try to maximize the value of their work time, and they do farm work for wages when they have no better job options (Fuller and Mason, 1977). In a non- or low-immigration situation, the supply of labor expands or shifts right with a growing labor force, but shrinks or shifts left as farm workers leave for higher-wage nonfarm jobs.

Agriculture has many unique features, including a biological production process that has peaks and troughs in demand for labor. Farmers are widely dispersed, many are relatively small, and most hire workers only seasonally. These hired workers are increasingly born abroad and perhaps half are not authorized to work in the United States, increasing uncertainty about the future cost and availability of farm workers for U,S, FVH agriculture. This section of the report explores the likely demand for workers in labor intensive crops, the availability of workers, and the major factors that could affect farm labor demand and supply.

2.1.1 Farm Labor Patterns

Agriculture employs more of the world's workers than any other sector. About 1.4 billon of the world's 3.2 billion workers, 44 percent, are employed in agriculture, including 500 million who are hired workers (International Labour Organization). Economic development is generally associated with fewer workers employed in agriculture and a rising share of farm work done by hired workers.

Among the world's approximately 200 nation states, those that have less than five percent of their workers employed in agriculture are much richer than those with more than 50 percent employed in agriculture. Similarly, with the exception of plantations in developing countries, the share of farm work done by hired workers rises as farms become fewer and larger in the course of economic development and as the production of so-called field crops such as corn, wheat, and soybeans is mechanized.

During the transition from an agricultural to an industrial economy, there is often a cost-price squeeze that hastens exits from farming. The cost of inputs such as labor and capital that can be used in agriculture or nonfarm industries tends to rise with industrialization, especially if there is little competition between suppliers of seed and fertilizer and machinery.[76] However, the prices of farm products often do not rise as fast as food production because stomachs are more or less fixed, and demand for most foods is income inelastic, meaning that people do not buy more as their incomes rise. Since grower prices for commodities may not rise over decades, there must

[76] In some developing countries, there is a monopoly buyer of farm commodities or an export tax on them, driving a wedge between the world price and the grower price.

be rapid productivity growth to keep remaining farmers and farm workers viable economically (Huffman, 2006).

Productivity growth tends to save on the input that becomes most scarce or valuable. In most industrial countries, the scarce input to farming becomes labor. Farmers may find nonfarm jobs offering higher earnings than they can achieve farming, prompting some to leave and others to be part-time farmers. Farm workers who can achieve higher earnings in the nonfarm labor market generally move into nonfarm jobs and do not return to farm work. The demand for seasonal farm workers tends to be concentrated in remaining labor-intensive FVH crops: fruits and nuts, vegetables and melons, and horticultural specialties such as greenhouse and nursery crops. These FVH crops generally account for a higher share of crop sales and farm worker employment over time.

2.1.2 Farm Labor Data

This section reviews the sources of data that can be used to evaluate the current farm labor market and to estimate the future demand for and supply of farm workers. Data on labor demand or employment at particular wages is normally provided by employers or establishments, while labor supply or the number of hours worked at particular wages can be obtained from employers or workers. Labor demand and supply data are often used to estimate what would happen if wages or other factors changed.

Some farm labor data are collected and available at the national level, others at the regional level, and still others, such as administrative data collected by organizations providing services to farm workers, only at the local level. There have recently been several surveys of workers in Mexico, asking them about their work experience in U.S. agriculture.

2.1.2.1 Census of Agriculture

The Census of Agriculture (COA) obtains data from farmers and ranchers every five years, in years ending in 2 and 7, including data on their labor expenditures and the number of workers they hired directly (www.agcensus.usda.gov). The questionnaire is mailed to farmers just after the year for which data are sought, e.g. in February 2008 for the 2007 calendar year. The COA is considered the most comprehensive source of farm-related data, especially at the county and commodity level.[77]

The COA collects demographic and employment data on one "principal" operator per farm, who may be an owner, tenant, or paid manager, but not demographic data on farm workers employed on the farm. The 2002 COA reported that the average age of principal operators was 55, that 55 percent worked off the farm (including 43 percent who did 200 or more days of off-farm work), that 90 percent of operators were male, and that 95 percent were White.

[77] COA county-level data do not distinguish farms and establishments. A farm with operations or establishments in more than one county is generally counted in each, which can understate the concentration of production if e.g. an apple grower with operations in four counties is counted as having a farm in each, reducing the average size and concentration of production.

Farm operator data are collected from all 2.1 million U.S. farms, but farm employment data are obtained from a sample of farms which is stratified so that almost all large farms are asked to complete a questionnaire and 1 in 6 small farms participate. The COA has consistently obtained data on the number of farms that hire labor and their labor expenditures during the year preceding the COA. In some years, the COA has also included questions on employment, but "the utility of this information has been marred by an incredible variety of factors" (Holt et al., 1977 p. II.7), including changing the employment reference week and the wording of the question. Employment questions were included in the 1978 and 1982 COA, dropped from the 1987 COA, and returned in the 1992 COA questionnaire.

COA employment questions asked farmers to report how many workers they hired for more or less than 150 days on their farm and their expenditures for hired labor, contract labor, and custom work.[78] The 2002 COA reported that farmers hired just over 3 million workers sometime during the year, including 30 percent for more than 150 days and 70 percent for less than 150 days on their farm. COA employment data do not distinguish between family and nonfamily hired workers, so some of these "farm workers" could be family members in partnership with the operator.

The workers-employed question was dropped from the 1987 COA after USDA adopted a cost-of-production approach to farming, asking what employers spent for "hired farm and ranch labor" rather than how many workers they hired (workers hired questions were restored in 1992). Labor expenditures include gross wages or salaries, employer-paid payroll taxes, the costs of any fringe benefits such as health insurance offered to workers and any commissions paid to obtain workers. Labor expenditures may change for reasons other than changing farm employment and earnings, as when tax laws make it more or less advantageous to incorporate and have salaried employees or when farmers pay children for doing farm work in order to shift farm income into lower tax brackets.

The COA is the only source of farm employment data at the county level. Hours worked are not reported in the COA, simply dollar costs, but if commissions, family pay and salaried employees, etc. are fairly uniform, then labor expenditures can be divided by average hourly earnings data to estimate hours worked. For example, farmers reported spending $22 billion on directly hired and contract labor in the 2002 COA,[79] and dividing these labor expenditures by the average hourly earnings of all hired farm workers in 2002 from the NASS FLS, $8.80 generates an estimate of 2.5 billion hours worked by hired farm workers, or 1.2 million full-time (2080-hour) equivalents.

[78] In the 1982 COA, about 879,000 farms reported hiring almost 5 million workers, and labor expenditures were $8.4 billion. Some of these farms also obtain labor through contractors or crew leaders; about 140,000 farms reported expenditures of $1.1 billion for contract labor. Finally, some farm operators rely on custom machine operators to plow or combine, and their expenditures for such custom services include the machine rental fee and the wages of the operator. About 787,000 farms reported expenditures of $2 billion for such custom services in 1982.

[79] Expenditures for contract labor represent the wages, payroll taxes, fringe benefits, and profits of workers brought to a farm by a labor contractor or crew leader. Expenditures for custom work are distinguished from contract labor expenditures by the machine rental fee. Custom work implies that the expenditure is primarily for equipment rental, not labor time, although a farmer paying for custom combine services is paying for both the equipment and labor to operate and maintain it.

2.1.2.2 NASS Farm Labor Survey

The National Agricultural Statistics Service has been collecting data on the employment and earnings of hired farm workers since 1910. Until 1974, "volunteers" reported their farm employment and wages, usually monthly, when the survey was converted to a probability survey and conducted quarterly. Budget cuts in the early 1980s led to several years of limited data collection, but quarterly surveys resumed in 1984, and the survey was done monthly for some states in the early 1990s, in part to determine if there were farm labor shortages.[80] More recently, the Farm Labor survey has been conducted quarterly, although no survey was conducted in January 2007.

The sample of farm employers is drawn from a list maintained by NASS to conduct its other farm surveys, such as the number of livestock on farms and the acreages of various crops. The sublist of sample farm employers is drawn from two "frames," a list frame, a list of farms known or likely to employ farm labor because of their size or major commodity, and an area frame of about 16,000 land units in the United States that is used to correct for omissions in the list frame; the master sample list is then corrected for duplication.[81]

Between 50 and 70 percent of the farm employers contacted provide employment and earnings data for the week that includes the 12th of the month; those who did not provide data may have hired no workers during the survey week or refused. The survey collects data only on farm workers, including family members on the farm's payroll, by their duration of expected employment on that farm, more and less than 150 days. Workers are categorized by what they were hired to do, not what they actually did, so a supervisor who thinned lettuce during the survey week is classified as a supervisor. Workers doing a variety of tasks on the farm are classified by the type of farm that employs them, so that general laborers on a crop farm are field workers, and general laborers on livestock farms are livestock workers.

Perhaps the highlight items from the Farm Labor survey are the earnings of various types of hired workers. Interviewers never ask farm operators about the hourly or piece rate wages they pay. Instead, farm employers report the number of workers paid in a certain manner (10 field workers paid hourly wages), their total hours worked during the survey week (300), and their total gross earnings ($3,000). Gross earnings are divided by total hours worked to generate average hourly earnings of $10.

This indirect method of computing hourly earnings allows a single number to be reported despite the diversity of agricultural wage systems. However, this strength can also be a weakness, depending on how the data are used, since the earnings of workers employed for the most hours are weighted most heavily. For example, a farm with 10 irrigators working 60 hours a week for

[80] Monthly employment and wage data were generated for 11 states (NY, PA, NC, FL, MI, WI, TX, NM, OR, WA, CA) and more complete data for 18 multi-state regions in January, April, July, and October in the Seasonal Agricultural Services (SAS) subsector of agriculture, viz, field work in perishable crops. Between 1989 and 1992, farm employers were asked to report the number of workers doing field work and the total man-days (four hours or more) worked in SAS commodities, providing data for 12 weeks during the year when the survey was conducted monthly. During this period, farmers were asked how many additional workers would have been necessary to prevent crop losses due to labor shortages during the previous year and whether anticipated changes in production methods would increase or decrease the need for field workers in the next 12 months.

[81] For example, in the early 1990s, about 1,200 farms were interviewed in California, including 1,000 drawn from the list frame and 200 from the area frame.

$10 an hour, and 30 harvesters working 30 hours a week for $8 an hour, generate gross earnings of $6,000 plus $7,200, or a total $13,200. Gross hours in this example are 600 plus 900 or 1,500, and average hourly earnings are $13,200 divided by 1,500 or $8.80. That is, even though there are three times more harvesters than irrigators in this example, the average earnings of the harvesters are "pulled up" by the longer hours of the irrigators. The Farm Labor survey used to collect data on fringe benefits provided to hired farm workers, but no longer does.

Farm Labor interviewers have since 1988 asked about the value of farm sales during the previous year and whether field crops, other crops (fruits and vegetables), or livestock and poultry contributed most to the farm's sales. Average farm worker earnings per hour are reported for these three types of farms, by several size-of-farm sales categories, e.g. farms with sales of $1 million or more, and by the number of workers employed on the responding farm, e.g. 50 or more workers.

Since 1977, Farm Labor interviewers have also obtained employment and earnings data on agricultural service workers brought to farms by firms that provide a variety of services, from labor services to soil preparation and veterinary services. These data are collected from farm operators except in California and Florida, where a separate survey of agricultural service firms is conducted.

2.1.2.3 Farm Production Expenditures

NASS's Farm Production Expenditures survey provides annual estimates of major expenses for farmers, including labor (http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1066). A third of the U.S, farms in the sample typically report that they had labor expenditures during the previous year.[82] Labor expenditures were the fourth largest expenditure in 2006, accounting for 11 percent of the average $113,000 expended by a typical U.S. farm, a total of $25 billion. Crop farms accounted for two-thirds of these labor expenditures; farms with sales of $1 million or more accounted for 55 percent of total labor expenditures. By state, labor expenditures were the highest share of production expenditures in three states--29 percent of production expenditures in FL, 26 percent in CA, and 22 percent in WA.

NASS reports production expenditure data by region and selected states. About 60 percent of California farms reported expenditures for labor in 2005-06, a total of $7.2 billion in 2005 and $7.7 billion in 2006, 31 percent of total U.S. labor expenditures. About 40 percent of WA farms reported labor expenditures, a total of $1.3 billion in 2005 and $1.4 billion in 2006.

USDA's Economic Research Service (ERS) publishes a time series of various farm production expenses by state, including hired and contract labor (www.ers.usda.gov/data/farmincome/FinfidmuXls.htm).

2.1.2.4 Census of Population and CPS

Households or individuals are the major source of data on the demographic characteristics of the population and work force and migration across occupations, industries, or areas. Some

[82] The survey is sometimes called the Agricultural Resource and Management Survey (ARMS).

household information does not change over time, such as sex and race, some changes in a predictable fashion (age), while characteristics such as employment status and earnings can be quite variable from month-to-month and year-to-year. Household questionnaires usually obtain employment and earnings data for a particular reference week, month, or year.

The Federal government conducts three household surveys that generate data on farm workers. The Census of Population (COP) asks a sample of households about the occupations of family members during the last week in March of the previous year, and the 2000 COP reported that there were 952,000 U.S. workers with farming, fishing, and forestry occupations (Census codes 600-619 and SOC code 45-0000); 79 percent were male.[83] The Census of Population misses workers who were employed in months other than March, making it less-than-satisfactory for seasonal farm workers (Whitener, 1983).

The Current Population Survey (CPS) collects data on employment and earnings from households that are used, inter alia, to make monthly unemployment estimates.[84] Until the late 1980s, questions were attached to the December CPS asking if anyone in the household did farm work for wages during the previous 12 months. During the 1970s and 1980s, about 2.5 percent of the households included a farm worker and, since the CPS was designed to be a random sample of U.S. housing units, the farm worker sample results were expanded to generate USDA Hired Farm Work Force (HFWF) reports.

During the 1980s, the CPS found that about 2.5 million persons 14 and older had done farm work for wages sometime during the year. Their demographics were different than those of the NAWS: the HFWF found that 75 percent of farm workers were White, 12 percent each were Black and Hispanic, and half were under 25 (including 10 percent who were 14-15). Most farm workers did relatively little farm work. In most years, the one-sixth of farm workers who were employed 250 days or more in agriculture contributed half of the work done by hired farm workers.

The HFWF found that fewer than 10 percent of the farm workers identified by the CPS were migrants, defined as persons who crossed county lines and stayed away overnight to harvest crops or do other farm work for cash wages, and their number varied considerably from year to year. For example, the HFWF estimated there were 115,000 migrant farm workers in 1981, 226,000 in 1983, and 155,000 in 1985. The HFWF distinguished between migrants who worked only within the state in which they were interviewed, only out of that state, and both in and out of the state. The small sample size meant that shares in each type of migrant varied. For example, 50 percent of migrants in 1981, worked only out of state, 25 percent worked only out of state in 1983, and almost 60 percent worked only out of state in 1985.[85]

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[83] Another 773,000 workers were farmers and farm managers (Census code 021 and SOC code 11-9012); they were 86 percent male. There were a total of 2.4 million workers employed in the industry agriculture in 2000, farmers and farm workers, 82 percent were male. In the 1980 COP, 70 percent of the 1.3 million workers classified as "farmworkers and related occupations" were White.

[84] Individuals report the job at which they worked the greatest number of hours during the week containing the 12th of the month. Hours worked refer to all jobs held during the survey week, but earnings are only for the job at which the respondent worked the longest.

[85] Unpublished CPS data provided to the Commission on Agricultural Workers.

Migrants were asked how far they traveled to do farm work. Two patterns are apparent in the table. First, the largest share of migrants traveled 500 to 2,000 miles, and second, there was considerable variation from year-to-year. However, very few migrants traveled more than 2,000 miles.

Table 9. Longest Distance Traveled in miles as a Migrant: 1981-83

Distance	1981(%)	1983(%)
<75 miles	29	13
75-499	27	33
500-2000	39	52
>2,000	6	1
Migrants	115,000	226,000

Source: CPS-HFWF, December 1981 and 1983.

In the HFWF analysis of CPS data, once a person was defined as a migrant, all of that person's farm work during the year was considered migratory farm work, even if e.g. the worker was employed 100 days while based in his usual home and one day greater than commuting distance in another county. In a typical year, 120-130 of the 1,500 CPS households with a hired farm worker included a migrant. Migrants were similar to all hired workers in demographic characteristics, that is, about 70 percent White, but including a higher share of Hispanics, 20 percent, and a lower share of Blacks.

2.1.2.5 NAWS

The National Agricultural Worker Survey (NAWS) is a Department of Labor-funded survey of farm workers that was begun to fulfill the Department's responsibilities after IRCA to determine the supply or availability of farm workers (www.doleta.gov/agworker/naws.cfm). The NAWS interviewed workers employed in Seasonal Agricultural Services (SAS) or perishable crop agriculture[86] to estimate days of farm work done by three types of workers. The first group was farm workers who had been interviewed before, since the NAWS was designed to determine if such experienced farm workers were doing more or fewer man days of work from year to year. The second group was farm workers interviewed for the first time; NAWS interviewers asked them about the farm work they had done in previous years, that is, their work history. The third source of farm work man days came from the Potential Agricultural Worker Survey, which sought to determine how many additional days of farm work would be available if farm employers raised wages or improved working conditions to attract the rural unemployed and other rural U.S. workers into the farm work force.

Department of Labor calculations based on the job histories of workers interviewed predicted that SAS or perishable crop agriculture would have eight percent more man-days available in FY 1989 than in FY 1988, meaning that the man days gained through entrants, and the additional

[86]The NAWS excluded some crops, including hay and sugar cane, as well as livestock, dairy, poultry workers, and fishery workers. In 1989, the NAWS sample included an estimated 70 percent of all farm workers.

man days contributed by workers already in the farm work force who worked more days, were expected to add eight percent more days to SAS agriculture than were lost due to worker exits.[87] For FY 1990, the Department calculated that SAS agriculture gained 10 percent more man days. USDA estimated that there was an increase in the number of man days needed in SAS agriculture, but it was less than five percent, so the Replenishment Agricultural Workers (RAW) shortage number was zero.[88]

The NAWS was designed to deal only with farm worker characteristics and employment trends at a national level, and the first interviews were done in 72 counties in 25 states, with sample counties selected on the basis of COA labor expenditure data. The NAWS found a work force quite different from the CPS-HFWF of the mid-1980s. About 75 percent of the farm workers interviewed for the NAWS in the early 1990s were Hispanic, mostly born in Mexico and in the United States less than 10 years. Their legal status in the early 1990s was 40 percent U.S. citizen and 60 percent immigrant. Among the immigrants, almost 40 percent were SAWs, 25 percent were permanent resident aliens, 20 percent were unauthorized, and 16 percent had some non-SAW and non-green card legal status, such as Guatemalans with asylum applications pending.

Most farm workers in the early 1990s did farm work for half of the year, earning 10 to 15 percent above the Federal minimum wage. For example, NAWS workers in 1989-90 earned an average $4.85 an hour at a time when the Federal minimum wage was $4.25. By working an average 26 weeks for $180 a week, farm work earnings averaged $4,700, and most farm workers reported being unemployed and actively looking for work another 10 weeks.[89] About three-fourths of the workers interviewed were employed directly by growers.

A third of farm workers interviewed also did nonfarm work. Even though nonfarm work paid slightly less per hour than farm work in the early 1990s, it was preferred by most of those interviewed while doing farm work, that is, layoffs from nonfarm jobs pushed these workers into farm work. Nonfarm work in services, such as janitorial or clean-up businesses or construction, was felt by workers to be more stable and offer more satisfaction.

Most of the workers interviewed in the NAWS were employed in FVH commodities in the early 1990s, over 90 percent, including 43 percent who worked in vegetables sometime during the year, 32 percent in fruits and nuts, and 15 percent in horticultural specialties. This distribution of workers across commodities differed significantly from the labor expenditures in the 1987 COA; crop farms reported $8.2 billion in total labor expenditures, and 38 percent were made by field crop farms.

[87] The Department adopted a 15-day threshold for entrants and exits, e.g., a worker had to change his employment from less than 15 days of SAS work in FY 1988 to more than 15 days in FY 1989 to be considered an entrant, and from more than 15 days in FY 1988 to less than 15 in FY 1989 to be an exit.

[88] The additional man days from the PAWS were not needed. However, the Departmente found that rural U.S. workers would have done farm work if wages were higher and conditions were better.

[89] In the early 1990s, the NAWS found that a third of workers interviewed lived in employer-provided housing, usually at no charge, but only one-fifth of the employers offer their workers health insurance. Less than half of the workers get unemployment insurance while unemployed.

About 45 percent of the workers interviewed between 1989 and 1991 moved at least 75 miles to do farm work, including 40 percent shuttle migrants who moved from a usual home in Mexico to one place in the United States to do farm work. About 16 percent of the NAWS sample workers were follow-the-crop migrants or were employed in two farm jobs in two non-contiguous counties, and 10 percent shuttled into the United States and then followed-the-crops.

More recent NAWS data suggest more unauthorized workers and changes in the other significant variables as well (U.S. Department of Labor, 2005). Interviews with 6,500 U.S. crop workers in FY 2001-02 found that 77 percent of the workers were born abroad, including 75 percent who were born in Mexico. A third had arrived within two years of being interviewed (newcomers), and about 40 percent had been in the United States more than 10 years.

Half of those interviewed were younger than 31, 79 percent were male, 58 percent were married, and 51 percent were parents who reported an average of two children. Workers had an average seven years of schooling, and over half could not speak English "well." About 53 percent of the workers interviewed were unauthorized, up from 20 percent in the early 1990s. About a quarter of the crop workers were U.S. citizens and another quarter were legal immigrants.

Most U.S. crop workers do not have a series of farm employers, although they may work for contractors and move from farm to farm. Over 70 percent of the workers interviewed in FY 2001-02 had one farm employer during the previous 12 months and worked an average 4.5 years for their current employer (most workers were employed seasonally and returned to the same farm employer year after year).

Almost 80 percent of the workers interviewed were employed directly by a farm operator or packinghouse; 20 percent were employed by FLCs- the unauthorized were most likely to be employed by FLCs. When interviewed, a third of workers were employed in fruits and nuts, a third in vegetables, and 20 percent in horticultural specialties.

Average hourly earnings were $7.25 in 2001-02, when the federal minimum wage was $5.15. Earnings rose with tenure, so that those with their current employer for at least six years averaged $8.05 an hour. Piece rate workers averaged $8.25 an hour and hourly workers $6.95, and harvest workers had higher average earnings than pre-harvest workers.

Annual income data is collected in a range, and averaged $10,000 to $12,500, suggesting 1,500 hours of work at $7.25 an hour (the workers interviewed were employed an average 34.5 weeks of 42 hours in farm work, and did an additional five weeks of nonfarm work, for about 1,600 hours a year). The income of other family members was limited, since total family income averaged $15,000 to $17,500 a year. Almost three-fourths of those interviewed said they would keep working in agriculture for at least five years.

NAWS reports usually summarize national-level data, but with about 35 percent of the crop workers around the U.S. who were interviewed by the NAWS in California, and 45 percent of workers employed in FVH commodities, there are sufficient data for a California profile. Almost all California crop workers interviewed by the NAWS were Hispanics (99 percent) who were born abroad (95 percent), including in Oaxaca (15 percent), Michoacan (12 percent), and Mexico

City (11 percent). The average California farm worker had 11 years U.S. farm work experience (only two-thirds had done farm work in their country of origin). About 10 percent of those interviewed were U.S. citizens and 55 percent were unauthorized; new arrivals were most likely to be unauthorized and from southern Mexico.

The typical California farm worker is a 33-year-old Spanish-speaking male, married and with children, but 40 percent of the fathers did not have their children with them while doing farm work (the average worker entered the United States at age 22). The average age of farm worker parents was 36, and 40 percent had three to seven children. The median level of education was six years, fewer than 10 percent of those interviewed speak English, and just over half said they could read Spanish well.

Almost 20 percent of those interviewed in California were in the United States less than two years. The NAWS suggests that California's crop work force includes a third of workers who have a longer-term attachment to crop farms and two-thirds who "churn" through the revolving door. Over 70 percent of crop workers interviewed said that they were the only members of their family doing U.S. farm work, and half reported that they owned a car or truck in the United States, which helps to explain why 40 percent said they drove themselves to work. About a quarter report paying a raitero $5 a day for rides to work (a raitero is a private person operating a van that usually holds nine to 15 people).

A third of the crop workers interviewed were migrants, defined as persons who travel at least 75 miles to work on farms (migrants may arrive from Mexico and stay in one U.S. residence, that is, they do not have to have two U.S. residences). Only 15 percent were follow-the-crop migrants, meaning that they had at least two farm jobs 75 miles apart, and perhaps two U.S. residences. By definition, newly arrived workers from abroad are "shuttle migrants," meaning that they left usual homes abroad and traveled to the United States to do farm work.

Income data are collected in ranges, and over 40 percent of individual farm workers as well as 30 percent of farm worker families had incomes under $10,000 a year. About 35 percent of farm workers reported receiving unemployment insurance (UI) benefits- this is virtually all eligible seasonal workers, since year-round and unauthorized workers are not eligible. About a third of farm workers received means-tested assistance, including cash Temporary Assistance for Needy Families (TANF) payments, MediCal, Food Stamps, or Women, Infant and Children (WIC); many of the U.S -born children of unauthorized farm workers are eligible for such assistance.

2.1.2.6 ENHRUM

The Mexico National Rural Household Survey or Encuesta Nacional a Hogares Rurales en México (ENHRUM) interviewed 1,760 households in 80 villages throughout Mexico in January-February 2003; a second-round of interviews was done in January-February 2008. The survey collected demographic and work history data on all household members between 1982 and 2002 (those who lived in the household at least three months in 2002), and a sample of sons and daughters who were in the United States all of 2002.

Households in the sample were large, with an average 5.6 members age 12 or older. Household heads, who were on average 35 years old, had an average four years of schooling; the average

level of schooling of all persons 12 and older was six years (Mora and Taylor, 2006, 28-30). Few families had significant agricultural assets; the average value of farm land owned was less than $12,000, and only about one in 20 households had a tractor. Households that had at least one family member in the United States were richer than those that had a migrant in Mexico, and households that had a family member in a U.S. nonfarm job were significantly richer than those that had a family member in a U.S. farm job.[90]

The survey had several significant findings. First, the share of rural Mexicans who had ever migrated, defined as living and working outside the village, rose from 13 percent in 1982 to 29 percent in 2002. Most of the migrants moved to other places in Mexico, about 2/3 of all migrants in the mid-1980s, but by 2000-02, only about 52 percent of those migrating from rural Mexico stayed within the country, while 48 percent went to the United States.

Second, more rural Mexicans go to the United States for nonfarm than for farm jobs. In the early 1980s, there were two rural Mexicans leaving for U.S. nonfarm jobs for each rural Mexican moving to the United States for a farm job, but by 2000-02, there were six migrants to nonfarm jobs for each migrant headed for a U.S. farm job.

Third, policy changes have been associated with more rural Mexican migration to the United States. IRCA in 1986 raised the share of rural Mexicans moving to the United States for farm jobs from about two percent to three percent, and the North American Free Trade Agreement (NAFTA) in 1994 raised the share again from three percent to over four percent, although the trend in rural Mexicans moving to the United States to fill farm jobs appears to be declining.

2.1.2.7 Administrative UI Data

Administrative data on farm workers are generated when farmers pay unemployment insurance (UI) and social security taxes for their employees, when farm workers pay taxes to the Internal Revenue Service, and when farm worker assistance programs obtain data from the clients they serve. They have not been used widely to understand trends in the farm labor market for several reasons. First, the coverage of farm workers under programs such as UI is incomplete. Second, some of the administrative data is uneven in quality, such as the Department of Labor's ES-223 In-Season Farm Labor Reports. Finally, client data from organizations requesting funds may exaggerate the target population. Despite these problems, administrative data are already collected, saving survey costs, and they can provide more complete coverage than statistical sources.

The Unemployment Insurance (UI) program is a federal-state system enacted in 1938 to partially replace earnings lost due to layoffs. The federal government establishes minimum coverage levels (to determine which employers must cover their employees) and levies a tax on the first $7,000 earned by each covered worker to pay for the administration of the system. However, each state determines exactly what type of job loss constitutes unemployment and the level of benefits paid to unemployed workers.

[90] For example, five percent of households in these farming villages with no migrants had tractors, as did five percent of the households with a family member in a US farm job. However, 15 percent of the households with a family member in a US nonfarm job had tractors (p30).

The Federal government has mandated UI coverage of farm workers since 1978. Farm employers[91] paying cash wages of $20,000 or more for farm labor in any calendar quarter in the current or preceding year, or employing 10 or more workers on at least one day in each of 20 different weeks, must provide UI coverage for their employees. This "20-10" rule results in Federal UI coverage only for farm workers employed by larger farm employers; coverage was estimated to be 40 percent of all farm workers in the mid-1970s, but the continuing concentration of farm production on fewer and larger farms means that BLS in 2005 estimated that over 92 percent of total wage and salary employment in agriculture is believed to be covered by Employment and Wages or the Quarterly Census of Employment and Wages (QCEW).[92] Some states, including California and Washington, require all agricultural employers to provide UI coverage for their employees.

The Quarterly Census of Employment and Wages Program (www.bls.gov/cew) generates data from the reports that employers are required to file when they pay UI taxes. Covered employers are required to report all persons on the payroll for the payroll period that includes the 12th day of the month and total wages paid for the quarter. When obtaining their UI account numbers, employers provide information on their county of operation and their primary commodity or activity. The UI system defines employees as all persons on the payroll, so that the paid managers of an agricultural corporation, supervisors, office personnel, professional staff, and fieldworkers are all considered "farm workers." Farm employers report only cash wages; not payroll taxes, bonuses or the cost of fringe benefits. Averages computed from UI data must be interpreted carefully: "employers" may represent several sub-units of one large farm; reported employment increases with the length of the payroll period because of turnover; and wages represent pay to both professionals and to field workers.

In 2005, some 8.6 million establishments employed an average 131.6 million workers who were covered under UI laws; they received a total of $5.4 trillion in wages. Those in private industry accounted for 8.3 million establishments and an average 110.6 million workers covered under UI laws.

There were almost 97,000 UI-covered establishments in agriculture in 2005, and they employed an average 1.2 million workers who were paid a total of $12 billion. About 45 percent of the establishments, employment, and wages paid were in crops, led by noncitrus fruits, which employed an average 154,000 workers and paid $2.8 billion in wages. The big three fruits were grapes, an average 35,200 workers, apples, 31,700 workers, and strawberries, 26,600 workers—these three accounted for average employment of 93,500, or 60 percent of the average noncitrus employment. Note that citrus employs far more than the average 3,500 in UI-data, but many orange pickers are reported by farm labor contractors.

[91] Federal UI law defines a farm employer as an entity that hires workers to raise or harvest agricultural or horticultural products on a farm; repair and maintain equipment on a farm; handle, process, or package commodities if over half of the raw commodity was produced by the employer; gin cotton; or do housework on a farm operated for profit.

[92] BLS estimated that there were 1.2 million UI-covered wage and salary workers in agriculture in 2005, and that 100,000 were excluded from the QCEW.

The FVH sector accounted for an average 436,000 UI-covered employees, or 80 percent of the 549,000 in crops. Nursery and greenhouse operations accounted for the highest average employment, 174,000, followed by fruits and nuts, 164,000, and vegetables, 98,000.

Animal agriculture employed an average 212,000 workers who earned an average $503 a week, almost 20 percent more than the average $418 of workers employed by crop farmers. Cattle ranching employed the most workers in animal agriculture, an average 121,000, followed by diary, an average 76,000. There were an average 290 UI-covered sheep farms employing an average 1,300 workers in 2005; they paid a total $27 million in wages, an average $400 a week, the lowest average weekly wage in animal agriculture.

Some 10,200 establishments employed an average 280,000 workers to provide support to crop production. These support establishments included an average 2,200 labor contractors who employed an average 151,000 workers, which was over half of the employment in crop support. Labor contractors paid the lowest average weekly wages, $273, while another support activity, soil preparation, paid some of the highest weekly wages, $542 in 2005.

Table 10. Average Annual UI-Covered Employment and Wages, 2005

	Estabs	Per Dist	Employ	Per Dist	Wages($)	Per Dist	Ave Weekly($)
Agriculture, forestry, fishing	96,569	100%	1,163,629	100%	26,899,315	100%	445
Crop production	43,589	45%	548,715	47%	11,940,855	44%	418
Oilseed and grain farming	6,600	7%	30,507	3%	789,940	3%	498
Vegetable and melon farming	4,325	4%	98,475	8%	2,096,952	8%	410
Fruit and tree nut farming	12,299	13%	164,332	14%	3,034,795	11%	355
Orange groves	598	1%	6,687	1%	165,072	1%	475
Citrus, except orange, groves	350	0%	3,479	0%	81,655	0%	451
Noncitrus fruit and tree nut	11,351	12%	154,167	13%	2,788,069	10%	348
Apple orchards	2,172	2%	31,663	3%	497,838	2%	302
Grape vineyards	2,907	3%	35,175	3%	698,365	3%	382
Strawberry farming	526	1%	26,627	2%	460,957	2%	333
Berry, except strawberry, far	804	1%	11,627	1%	235,709	1%	390
Tree nut farming	1,696	2%	11,488	1%	275,668	1%	461
Fruit and tree nut combination	374	0%	5,025	0%	90,678	0%	347
Other noncitrus fruit farming	2,873	3%	32,563	3%	528,852	2%	312
Greenhouse and nursery products	9,067	9%	174,197	15%	4,224,979	16%	466
Food crops grown under cover	590	1%	21,390	2%	560,201	2%	504
Mushroom production	220	0%	14,672	1%	389,795	1%	511
Other food crops grown under	370	0%	6,717	1%	170,406	1%	488
Nursery and floriculture prod	8,477	9%	152,807	13%	3,664,778	14%	461

	Estabs	Per Dist	Employ	Per Dist	Wages($)	Per Dist	Ave Weekly($)
Nursery and tree production	5,615	6%	100,453	9%	2,492,063	9%	477
Floriculture production	2,862	3%	52,354	4%	1,172,715	4%	431
Other crop farming	11,298	12%	81,205	7%	1,794,190	7%	425
Tobacco farming	498	1%	3,810	0%	66,664	0%	336
Cotton farming	3,459	4%	18,860	2%	387,752	1%	395
Sugarcane farming	445	0%	6,088	1%	158,620	1%	501
Hay farming	1,305	1%	6,993	1%	171,047	1%	470
All other crop farming	5,591	6%	45,454	4%	1,010,107	4%	427
Animal production	21,208	22%	212,248	18%	5,554,732	21%	503
Cattle ranching and farming	13,521	14%	120,685	10%	2,998,084	11%	478
Beef cattle ranching, farming	7,147	7%	45,007	4%	1,189,032	4%	508
Beef cattle ranching and farm	6,116	6%	30,165	3%	737,005	3%	470
Cattle feedlots	1,031	1%	14,842	1%	452,027	2%	586
Dairy cattle and milk product	6,374	7%	75,678	7%	1,809,053	7%	460
Hog and pig farming	2,038	2%	24,795	2%	693,051	3%	538
Poultry and egg production	1,647	2%	40,713	3%	1,174,392	4%	555
Sheep and goat farming	290	0%	1,302	0%	27,120	0%	400
Animal aquaculture	737	1%	5,886	1%	161,437	1%	527
Other animal production	2,976	3%	18,868	2%	500,649	2%	510
Agriculture and forestry supp	17,293	18%	322,407	28%	6,642,035	25%	396
Support activities for crop p	10,190	11%	280,336	24%	5,432,866	20%	373
Cotton ginning	863	1%	10,530	1%	290,216	1%	530
Soil preparation, planting, a	3,279	3%	22,781	2%	641,656	2%	542
Crop harvesting, primarily by	873	1%	9,590	1%	220,997	1%	443
Other postharvest crop activities	1,831	2%	70,620	6%	1,719,508	6%	468
Farm labor contractors	2,234	2%	151,379	13%	2,148,179	8%	273
Farm management services	1,112	1%	15,436	1%	412,310	2%	514
Support, animal production	1152	1%	26,578	2%	724,109	3%	524

Source: QCEW, www.bls.gov/cew/ew05table2.txt

2.1.3 Hired Labor on U.S. Farms

The United States had 2.1 million farms in the 2002 Census of Agriculture, defined as places that normally sold farm commodities worth $1,000 or more. Most U.S. farms are very small (over half had farm sales of less than $5,000 in 2002), and over half of U.S. farm operators reported that they worked off the farm, usually full time.

U.S. agriculture is balanced between crop and livestock sales—each accounted for about half of the total $200 billion in farm sales, according to the 2002 Census of Agriculture. By 2006, farm sales reached about $240 billion, still divided about 50-50 between crops and livestock. The 2006 value of FVH commodities included $17 billion worth of fruits and nuts, $18 billion worth

of vegetables and melons, and $22 billion of other commodities, mostly horticultural specialties such as greenhouse and nursery crops. Total FVH sales were $57 billion, almost half of 2006 crop sales of $120 billion (www.ers.usda.gov/Publications/Agoutlook/AOTables Table 20).

Some 554,000 U.S. farmers reported labor expenses to the COA, and they totaled $18.6 billion for directly hired workers; 229,000 farmers reported $3.4 billion in contract labor expenses, for a total $22 billion (many of the farms that hired workers directly also hired workers via contractors). NASS reported that the average hourly earnings of all hired U.S. farm workers were $8.80 in 2002, suggesting 2.5 billion hours worked by hired farm workers or 1.2 million full-time (2080-hour) equivalents.[93]

Table 11. Hired Worker Hours in U.S. Ag, 2002

United States: Hours Worked in Ag, 2002	
Farm Sales ($bil)	200
Total Labor Expendits($mil)	22,000
Sales to Expendits ratio	9.1
Average Earns ($/hour)	8.8
Estimated hours worked (mils)	2,500
Full-time equivalent (2080 hrs)	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire.[94] There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[95] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops.[96]

Farm labor expenditures are concentrated on fewer than 31,000 U.S. farms. Some 554,000 U.S. farms reported labor expenses for directly hired workers in 2002, but:

[93] NASS reported an average $8.11 for U.S. field workers and $8.17 for U.S. field and livestock workers in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[94] Hired labor is one of 11 types of farm production expenditures catalogued by the Census of Agriculture (the others range from fertilizer and seed to interest and fuel).

[95] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[96] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

- 68 percent of COA farm employers had less than $10,000 in direct hire labor expenses, and they collectively accounted for four percent of direct hire labor expenses, an average $2,000 per farm.
- Another 26 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 26 percent of such expenses, an average $32,000 each.
- Six percent of operators, about 31,000, had direct hire labor expenses of $100,000 or more, and they accounted for 70 percent of the total, an average $418,000 each.

Contract labor expenses are concentrated similarly. Fewer than 10,000 U.S. farms reported $50,000 or more in contract labor expenses, and they accounted for 71 percent of such expenses.

Table 12. United States: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	554,434	100%	18,568,446	100%	33,491
<10,000	377,550	68%	760,749	4%	2,015
10,000 to100,000	145,674	26%	4,746,419	26%	32,582
>100,000	31,210	6%	13,061,278	70%	418,497
Contract Labor	**Farms**	**%**	**Expenditures($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	228,692	100%	3,451,190	100%	15,091
<10,000	188,739	83%	396,064	11	2,098
10,000 to 50,000	30,343	13%	615,422	18	20,282
>50,000	9,610	4%	2,439,704	71	253,871

Source: COA 2002, U.S., Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or North American Industrial Classification System (NAICS) code. FVH farms, vegetable and melon, fruit and nut, and greenhouse and nursery operations, accounted for 48 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 68 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 6,800 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 55 percent of the 12,200 U.S. farms with large direct hire labor expenses.

Table 13. United States: Farms by NAICS and Labor Expenses, 2002

NAICS	**All Farms With Expenses**	**3 Sectors**					**Dairy**
		Vegs & Melons	**Fruits & Nuts**	**Greenhouse, Nursery**	**Total**	**Share**	
Direct Hire	554,434	14939	39156	27,670	81,765	15%	41,965

Farms							
Labor Exp($000)	18,568,446	2,032,496	2,770,557	4,101,274	8,904,327	48%	2,253,840
Distribution	100%	11%	15%	22%	48%	48%	12%
>$250,000 farms	12,211	1,618	2,005	3,148	6,771	55%	1,961
Contract Farms	228,692	5,564	32,939	10,047	48,550	21%	7,809
Labor Exp($000)	3,451,190	660,692	1,412,413	258,419	2,331,524	68%	116,078
Distribution	100%	19%	41%	7%	68%	68%	3%
>$50,000 farms	9,610	1,330	4,365	744	6,439	67%	431
Direct Hire Farms	554,434	14939	39,156	27,670	81,765	15%	41,965
Workers hired	3,036,470	293,736	656,463	391,253	1,341,452	44%	207,307
>150 days	927,708	92,033	133,421	192,697	418,151	45%	115,003
<150 days	2,108,762	201,703	523,042	198,556	923,301	44%	92,304
<150 days share	69%	69%	80%	51%	69%		45%

Source: COA, 2002, U.S., Table 59

The 554,000 U.S. farms that reported hiring workers directly hired a total of three million workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About 44 percent of these hired workers were in the FVH sector, which hired 45 percent of the workers employed 150 days or more, most in nurseries, and 48 percent of those employed less than 150 days on the responding farm, most in fruits and nuts.

About 70 percent of all hired workers, and 70 percent of those employed on vegetable farms and 80 percent of those employed on fruit farms, worked for less than 150 days on that farm. Half of the workers hired by nurseries, and 45 percent of those hired by dairies, were also employed for less than 150 days on the responding farm, but the data do not make clear whether the large number of less-than-six-month hires reflects seasonality or high worker turnover.

2.1.4 Hired Labor in FVH Agriculture

There are two major sub-sectors within crop agriculture. Most of 945,000 U.S. crop farms and most farm land in 2002 was planted with field crops such as corn, 75 million acres; hay, 64 million acres, wheat, 45 million acres; soybeans, 72 million acres; and cotton, 12 million acres. There were three million acres of rice; two million acres of sugar beets and sugar cane, and 1.2 million acres each of peanuts and potatoes.
Labor-intensive crops were produced by 114,000 U.S. farms with 5.3 million acres of land in orchards and 54,000 farms with 3.7 million acres of vegetables and melons. Sales of fruits, nuts

and berries (NAICS 1113) totaled $14 billion in 2002; sales of vegetables, melons and potatoes (NAICS 1111) totaled $13 billion; and sales of nursery, greenhouse, and flower commodities (NAICS 1114) totaled $15 billion; U.S. FVH sales totaled $42 billion, or 44 percent of crop sales in 2002.

FVH commodity production is concentrated on a relative handful of large farms. The 550 vegetable farms that each had 1,000 acres or more had over a third of the total vegetable acreage, the 400 berry farmers that each had 100 or more acres had almost half of the berry acreage, and the 600 farms with 1,000 or more acres in orchards had 30 percent of total orchard acreage.

For most fruits and vegetables, the largest 10 percent of farms account for over half of total production and sales. Detailed data for particular crops highlight the concentration of production. The 75 broccoli growers with 500 or more acres accounted for 70 percent of the total 142,000 acres; the 40 cantaloupe growers with 500 or more acres accounted for 45 percent of the total 107,000 acres; and the 60 lettuce growers with 1,000 or more acres accounted for 65 percent of the total 190,000 acres.

The production of tomatoes and most fruits is less concentrated. The 90 farmers that each had at least 1,000 acres of tomatoes accounted for 45 percent of the 450,000 acres, while the 100 apple growers who each had 500 or more acres accounted for 20 percent of the 465,000 acres. There were 1.1 million acres of grapes in 2002, and the 2,000 farms with 100 or more acres of grapes accounted for over 75 percent of total grape acreage. About 135 orange farms each had 1,000 or more acres in 2002, and they accounted for 45 percent of the orange acreage. The 130 strawberry farmers with 100 or more acres accounted for 45 percent of the total 55,000 acres of strawberries.

The value of U.S. horticultural crops was $49 billion in 2005, with about a third each from fruits and nuts, vegetables and melons, and nursery, greenhouse, and other crops. The value of horticultural crops is expected to continue increasing, reaching a projected $61 billion by 2015. The fruit and vegetable industry accounts for about a third of U.S. cash receipts from crops and a fifth of U.S. farm exports.

Table 14. U.S. Horticultural Crops, Value, $bil, 2004-06

US Horticultural Crops, Value, $bil, 2004-06

	2004	2005	*2006*	*2015*
Fruit and nuts	14.9	15.1	*15.5*	*19.7*
Vegetables an	15.6	15.9	*16.3*	*20.0*
Nursery/Greer	15.7	16.0	*16.3*	*19.7*
Total Hort	48.2	49.0	*50.2*	*61.4*

Source: USDA baseline projections
http://usda.mannlib.cornell.edu/MannUsda/viewStaticPa
Data for 2006 and 2015 are projected

Lucier et al (2006, 27) put labor costs at 42 percent of variable production costs on "specialized" U.S. fruit and vegetable farms in 2003, defined as farms got more than 50 percent of their income from the sale of fruits and vegetables.[97] FVH operations accounted for almost half of farm labor expenses in 2002, and most were incurred by the fewer than 7,000 large farm employers that paid $250,000 or more for hired labor. FVH farms accounted for about 45 percent of all directly hired workers, and 45 percent of those employed for more and less than 150 days on the responding farm.[98]

Across the United States, most people employed on farms are operators and their family members, so productivity growth reduces their number. FVH agriculture is different in two respects—first, productivity growth has been slower in FVH production than in other types of farm production, and second, hired workers do most of the work on farms producing FVH commodities. This means that as FVH output growth expands, the employment of hired workers can increase if there are no labor-saving changes in production methods.

2.2 Econometric Models

The textbook demand for labor curve makes employment an inverse function of the wage rate, highlighting the trade off often confronting unions between higher wages and higher levels of employment. The assumption that the demand for labor curve is normally negatively sloped in competitive labor markets helps to explain why proposals to raise the minimum wage are often opposed by those who argue that the result will be fewer jobs for low-wage earners.

Hamermesh (1993) estimated the short-run labor demand elasticity to be -0.4 to -0.5, meaning that a 10 percent increase in wages is associated with a 4 to 5 percent drop in employment. The long-run labor demand elasticity was estimated to be -1, meaning that giving employers time to adjust allows a 10 percent increase in wages to be associated with a 10 percent drop in employment.[99] Most economists believe that "the" demand for labor must be estimated for particular labor markets to be meaningful, and that data are rarely available to make meaningful estimates (Ashenfelter and Layard, 1986; Ashenfelter and Card, 1999).

A similar gap between theory and empirics is evident in labor supply analysis. The textbook supply of labor curve makes the supply of labor, measured in people or hours, a function of the wage rate (Killingsworth, 1983). However, estimating the supply of labor with respect to rising wages is complicated by the fact that men and women behave differently to secular increases in wages. During the 20th century, as wages rose sharply, men reduced both their labor force participation as well as their average annual hours of work, while women increased both their labor force participation as well as their average annual hours of work for wages. The usual explanation is that men face a two-way choice between work and leisure, while women face a three-way choice between home work, wage work, and leisure, and many women shifted from home work to market work as wages rose. Estimates of labor supply elasticity to rising wages

[97] These 90,000 specialized fruit and vegetable farms had average sales of $270,000 in 2003, including 95 percent from fruits and vegetables. Variable production expenses averaged $153,000, including $64,000 for labor (2006, 53).

[98] Dairy farms had more labor expenses for directly hired workers than vegetable farms, but less in contract labor expenses.

[99] These estimates assume production functions with constant returns to scale and two factors of production, labor and capita

are further complicated by the fact that, as incomes rise, workers may choose to devote more of their time to leisure rather than work, producing a backward-bending supply of labor curve.

We explain below the Schuh model used to estimate the U.S. demand for and supply of hired workers. We re-estimated this model for the period 1975-2005, finding that the coefficients that were significant for Schuh during the 1929-61 period are not significant in the more recent period, likely because there have been structural changes in agriculture and both the farm and nonfarm labor markets.[100]

We did not develop a new national model of labor demand and supply, largely because there is no satisfactory method of developing a single measure of capital-labor substitution and no adequate means of estimating the supply of foreign-born workers to U.S. agriculture. National or aggregate models obscure real differences between regions or commodities, averaging effects on farm operators and hired farm workers.[101]

Instead, we reviewed regional models of labor supply and demand and examined the demand for and supply of workers for three leading FVH commodities that differ significantly in demand and employment patterns as well as labor supplies. We believe that rising wages provide a uniform signal to substitute capital for labor, but that most significant adjustments are likely to occur on a commodity-by-commodity basis.

2.2.1 Schuh Model, 1929-61

The classic model of the demand for and supply of hired farm workers was developed by Schuh (1962, 1968). Schuh modeled the demand for hired farm labor as a function of farm wage rates, an index of the real price of farm commodities, the number of farm operators (Schuh assumed that hired workers and operators were substitutes), and a time trend. The supply of hired workers was assumed to be a function of farm wage rates, expected nonfarm earnings, the size of the U.S. labor force, the number of unpaid family workers (Schuh assumed that hired workers and unpaid family workers were substitutes), and a time trend. Schuh also developed equations to estimate the demand for and supply of farm operators and unpaid family workers, for a system of six equations.

Schuh used data from 1929-61 to conclude (1968, 176-77) that two major variables affected the demand for and supply of hired workers: higher real farm prices increased the demand for hired workers, and expected nonfarm earnings (the nonfarm-farm wage gap times the unemployment rate) reduced the supply of hired workers. Schuh's model suggested (1968, p182), that a 10 percent increase in the farm wage rate reduced the short run demand for hired workers by about

[100] For example, Schuh's model does not allow for capital-labor substitution in response to wage changes, nor does it account for immigration as a factor affecting the supply of farm workers. A key feature of Schuh's model is that hired workers and operator-family workers are perfect substitutes.

[101] In examining the impacts of immigrants on US labor markets, Borjas (2003) argues for national analysis because of worker migration. US workers who compete with immigrants may move away from cities attracting immigrants, or not move to them, dispersing the effects of immigrants on labor markets across the United States. Borjas estimated that a 10 percent increase in the number of immigrants in the US labor market reduces the wages of low-skilled US workers by 3 to 4 percent, meaning that if these additional immigrants were removed, the wages of low-skilled US workers would rise by 3 to 4 percent.

three percent and increased the short run supply by six percent. In the long run, these elasticities increased, since firms and workers had more time to adjust, to five and 15 percent, respectively. A growing labor force added more workers to both the farm and nonfarm labor forces, and time trends (generally declining farm employment) had small but significant coefficients.

Schuh's analysis reinforced that of Fuller and others who argued that agriculture was a reservoir of low-skill labor. The best way to help low-wage farm workers who were "trapped" in agriculture, this argument went, was to have full employment, so that farm workers could find nonfarm jobs "members of the agricultural labor force are more responsive to changes in nonfarm income than to changes in returns to agricultural labor." It was considered desirable to speed exits from the farm work force in the 1960s, since a reduced supply of labor would raise the wages of those who remained farm workers. In addition to full employment, improving the education of farm workers and their children was also desirable to increase their attractiveness to nonfarm employers.

2.2.1 Updating the Schuh Model, 1975-2005

We re-estimated the Schuh model, using Schuh-type equations to estimate the determinants of the demand for and supply of hired workers.[102] The time series data for the period 1975-2005 were assembled by the Council of Economic Advisors (www.gpoaccess.gov/eop/tables07.html). The variables were:

- Y1--Average employment of hired farm workers (000), from Table B-100, which fell from 1.3 million in 1975 to 780,000 in 2005
- X2—An index of prices received by farmers for all commodities, 1990-92 = 100, from Table B-101; this index rose from 73 in 1975 to 116 in 2005
- Y1L--Average employment of hired farm workers in the previous year,
- X9--Time trend
- Y5 self-employed farm operators and unpaid family workers (000), from Table B-100, which fell from 2.5 million in 1975 to 1.2 million in 2005
- Y2—an index of wage rates for hired workers, from Table B-101, 1990-92 = 100, which rose from 44 in 1975 to 165 in 2005

We estimated the following equation:

$$Y1 = 7.335 - 0.233X2 + 0.097Y1L - 0.020X9 - 0.070Y5 + 1.118Y2$$
$$(2.891)\ (0.141)\quad (0.251)\qquad (0.008)\qquad (0.232)\qquad (0.346)$$

We used two-stages least squares (2SLS) and a double-log specification, including all the predetermined variables in Schuh's complete model in order to obtain efficient estimators of the coefficients.[103] Two-stage least squares estimators, although consistent, are often not asymptotically efficient because they do not take into account the correlations of the structural disturbances across equations. However, 2SLS does not require a complete specification of the entire system of equations for estimation; one needs only the predetermined variables and their sample values. No other instrumental variable estimator based on instruments that are linear

[102] We combined the employment of operator labor and unpaid family labor; these data are no longer available separately.

[103] We also estimated the equation with scaled data, but the results did not change.

combinations of the predetermined variables has a smaller asymptotic variance than the two-stage least squares estimator.

We expected the demand for hired workers to be positively associated with farm prices, negatively associated with employment the previous year and time, and negatively associated with the employment of operators and family workers (assuming they are substitutes for hired workers). We expected a negative coefficient on the wage rate variable, since higher wages lead to capital-labor substitution.

Our demand for labor results differ from those of Schuh. First, the sign of the estimated coefficient of farm prices was negative and the sign of wage coefficient was positive, suggesting that higher farm prices lead to fewer hired workers and higher wages are associated with more hired workers. Only the time-trend coefficient had the same (negative) sign as in Schuh's model, and was significant, suggesting that average hired worker employment continued to decline.

Second, Schuh reported that four of the estimated coefficients were significant at the one percent level. We found only one significant coefficient, for wages, and it had the opposite sign expected (not the negatively sloped demand for labor curve expected). The coefficient on prices received by farmers was negative, which could happen only in the very short run, as when a freeze reduces farm worker employment but raises grower prices.

Our supply of labor equation had the same variables as Schuh:

- Y1--Average employment of hired workers (000), from Table B-100, which fell from 1.3 million in 1975 to 780,000 in 2005
- Y1L--Average employment of hired workers the previous year,
- X9--Time trend
- X5—Civilian employment (millions), from Table B-36, which rose from 86 million in 1975 to 142 million in 2005
- X10—Nonfarm income, from Table B-47, adjusted to an annual basis and deflated so that by the CPI, 1982 = 100
- Y5 self-employed farm operators and unpaid family workers (000), from Table B-100, which fell from 2.5 million in 1975 to 1.2 million in 2005
- Y2—an index of wage rates for hired workers, from Table B-101, which rose from 44 in 1975 to 165 in 2005 (1990-92 = 100)

The two-stage least squares estimated hired labor supply function is, in double-log form:

$$Y1 = 44.675 + 0.118Y1L - 0.014X9 - 1.806X5 - 0.703X10 - 0.941Y5 + 1.179Y2$$
$$(48.992)\ (0.718)\qquad (0.041)\quad (2.309)\quad (1.412)\qquad (1.226)\quad (1.850)$$

Our supply results were very different from those of Schuh. None of the estimated coefficients was significant at the one percent level, and the signs of the coefficients in our model were different from those in Schuh's model for time trend, civilian labor force, and wage rate. For example, our negative coefficient on the civilian labor force variable means that as the labor force expands, there are fewer hired farm workers.

The results of the original Schuh and our updated model are summarized in Table 5, where the numbers can be interpreted as the impact of a 10 percent increase in the variable on the demand for and supply of farm workers in percentage terms. For example, Schuh found that a 10 percent increase in farm wages reduced the demand for farm workers by 3 percent in the short run and 5 percent in the long run, while we found that a 10 percent wage increase was associated with 11 percent more workers in the short run and 12 percent more in the long run (in both cases, the coefficients were significant). Both models found that a 10 percent increase in wages were associated with more farm workers; the coefficients were significant for the 1929-61 period, but not for the 1975-05 period.

Table 15. Schuh (1929-61) and Updated (1975-05) Elasticities for a 10% Increase

	Demand for Farm Workers		**Supply of Farm Workers**	
Variable	**Short-run**	**Long-run**	**Short-run**	**Long-run**
Farm Wages				
1929-61	-3	-5	6	15
1975-05	11	12	12	15
Farm Prices				
1929-61	3	6		
1975-05	-2	-3		
Operator-Family				
1929-61	-1	-2	-3	-8
1975-05	-0.7	-0.8	-9	-11
Expected Nonfarm Earnings				
1929-61			-14	-34
1975-05			-7	-8
Labor Force Growth				
1929-61			8	18
1975-05			-18	-20
Sources: Schuh, 1968; text				

Bold indicates significant at the 1 or 5% level
The table can be read as e.g. a 10 percent increase in farm wages reduced the demand for labor 3% between 1929-61 and increased labor demand by 11% between 1975-05

Hired farm worker employment was rising during the first half of the 1929-61 period, but declined steadily during the 1975-2005 period. One possible explanation for the change in the relationship between farm wages and the demand for labor is monopsony power. A major factor increasing farm wages after 1975 was federal and state minimum wage increases. If farm employers acted in a collusive way to keep wages near the minimum, the result could be increased employment with a rising minimum wage.

The very elastic supply response to rising wages in the 1975-2005 period is harder to explain, especially when the NAWS and other surveys suggest that almost all newcomers to the farm work force were born outside the United States. The data we used to estimate the model do not distinguish between U.S.- and foreign-born farm workers or between authorized and unauthorized farm workers, and thus may reflect the sensitivity of immigration to rising U.S. farm wages—although it should be remembered that the coefficients are not statistically significant.

Schuh found that higher farm prices were associated with an increased demand for farm workers between 1929-61; we found that higher farm prices were associated with a decreased demand for farm workers between 1975 and 2005; Schuh's coefficients were significant, ours were not. It should be remembered that the index of farm prices received includes all farm prices, not just the prices of labor-intensive commodities. A farm price variable limited to the prices of labor-intensive commodities is more likely to have significance in demand for farm worker equations, but we found no such variable.

Schuh assumed that hired workers and operator-family labor were substitutes, meaning that the farmer or family members could do the work or workers could be hired to do farm work. We found slightly weaker substitutability between family and hired workers in 1975-2005 than Schuh found between 1929-61, but our coefficients were not significant. In both periods, there was much more apparent substitutability on the supply side, but the coefficients were not significant in the 1975-05 period.

Schuh found that expected nonfarm earnings, the unemployment rate times the nonfarm-farm wage gap, reduced the supply of farm workers, especially in the long run, with a 10 percent increase in expected nonfarm earnings reducing the supply of farm workers by 34 percent in the 1929-61 period. We also found that expected nonfarm earnings reduced the supply of farm workers, but not as much, and our coefficients were not significant.

Finally, labor force growth, which may be a proxy for the time trend, increased the supply of farm workers between 1929-61 and reduced the supply between 1975-2005. The U.S. labor force was growing faster between 1975 and 2005 due to women and baby boomers joining the labor force and increased immigration, so the (insignificant) coefficient suggesting that an expanding labor force does not provide more farm workers indicates that farm work is increasingly isolated from larger labor force trends. Between 1929 and 1961, by contrast, an expanding labor force seemed to provide additional workers to all sectors, including agriculture.

2.3 Regional Models

Our re-estimation of the Schuh model for the 1975-05 period suggests that national models of the hired farm labor market are less useful for understanding farm labor demand and supply in today's vastly different agriculture. There are several reasons, including the changing nature of the farm work force, the concentration of farm workers in the FVH subsector of agriculture (making aggregate data less useful), and the fact that most farm workers were born abroad, so that the farm labor supply responds to different factors than it did during the 1940s and 1950s, when there was little immigration

During most of the 1929-61 period, there were at least two farm operator-family workers for every hired worker, and most hired workers were U.S. citizens who were White or Black. Many hired farm workers were teenagers during the 1929-61 time period, so that it was reasonable to assume that hired farm workers and especially unpaid family workers were substitutes.[104] During the 1940s and 1950s, large acreage commodities such as cotton and sugar beets relied on hired workers to thin and weed as well as to harvest some of the crop. These crops have been largely mechanized, so that today hired farm workers are concentrated in FVH commodities. This concentration allows aggregate employment and wage data to mask labor supply and demand relationships that are important in particular FVH commodities.

The third factor limiting the usefulness of aggregate models is the changed nature of the supply of farm workers. With over three-fourths of farm workers born abroad, and over 95 percent of newcomers to the hired farm work force foreign-born, national supply of farm worker models should include immigration variables as explanatory factors in the supply of farm workers. However, most of the foreign-born newcomers are unauthorized, and there are no reliable means of estimating the future supply of unauthorized workers generally, or unauthorized workers to FVH agriculture in particular.

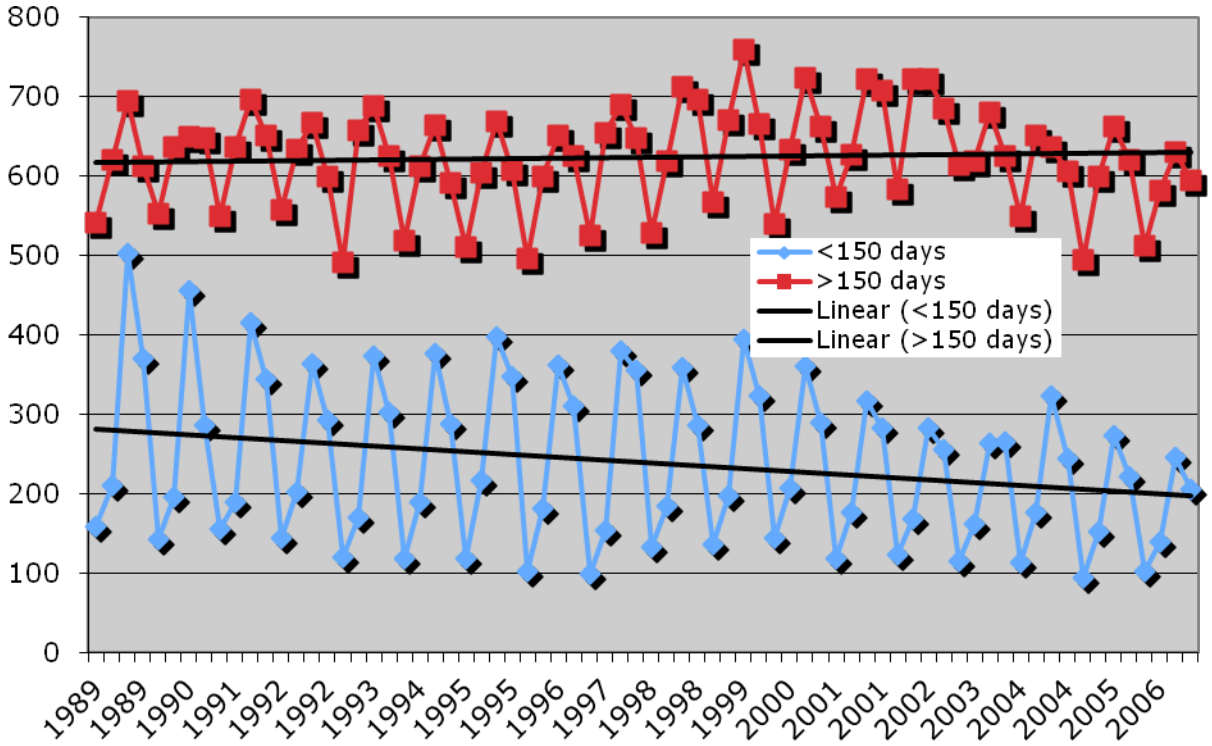
2.3.1 Data for Regional Models

There have been regional efforts to examine changing demand and supply relationships in the farm labor market based on data from USDA's Farm Labor Survey, which collects data from a sample of farm employers each quarter. Between 1989 and 2006, farm employers reported hiring an average of almost 900,000 workers a year, based on the quarterly FLS snapshots. Farm employers were asked how long they expected to employ these directly hired workers, and reported that they hired three times more regular workers, employed 150 days or more on their farms, than seasonal workers, employed less than 150 days on their farms.

Additional seasonal workers are brought to farms by labor contractors and other agricultural service firms; their number ranges from 250,000 to 350,000, making average employment on U.S. farms about 1.2 million. Over the past 15 years, farmers have been hiring more workers via contractors and other intermediaries, which explains why there is a downward trend in the employment of directly hired seasonal workers.

[104] There was an important exception to this mostly US citizen hired farm work force, Braceros in the southwestern states and H-2 workers in Florida and along the eastern seaboard. However, even at their peak in the mid-1950s, these guest workers were less than 10 percent of the total hired farm work force, that is, less than 10 percent of the five million workers employed for wages during the year on US farms.

Figure 9. Directly Hired Farm Workers, Quarterly, 1989-2006 (000)



Source: USDA, NASS, Farm Labor

Average employment does not completely describe the farm labor market. Peak employment measures how many workers are employed at the busiest times of the year, since at least this many individuals must be farm workers to get crops harvested. The third farm labor market concept is a count of the number of individuals employed sometime during the year for wages on farms. Peak employment on farms is about 1.3 million, but the total number of farm workers is believed to be about 2.5 million.[105] If average employment is considered a measure of the number of year-round job slots, then one year-round equivalent farm job is filled by two individuals sometime during the year.

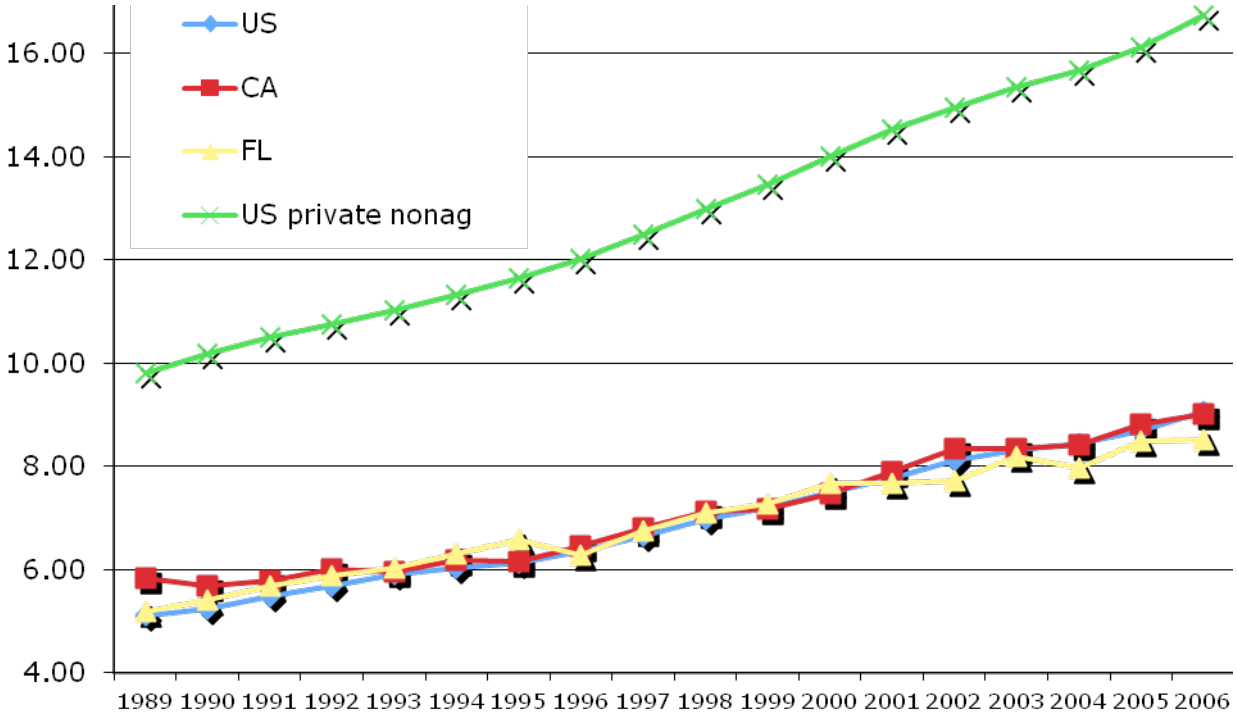
USDA asks farm employers about the average hourly earnings of the field workers they hire directly four times a year.[106] The average hourly earnings of field workers who were hired directly rose from $5.12 in 1989 to $9.06 in 2006. Average the years 1989 and 1990 and 2005 and 2006 to smooth out year-to-year changes generates a 72 percent increase in average field

[105] USDA estimated there were about 2.5 million hired workers employed sometime during the year on US farms by using look-back questions attached to the December Current Population Survey during the 1970s and 1980s, that is, interviewers asked if anyone in the household worked for wages on farms during the preceding 12 months. The results of these surveys were published in Hired Farm Work Force reports, which were discontinued after 1987. (Oliveria and Cox, 1989).

[106] USDA farm employment and earnings data are available at: http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1063

worker earnings, more than the 64 percent increase in the average hourly earnings of private sector nonfarm workers.[107]

Figure 10. Average Hourly Earnings 1989-2006 ($/hour)



Source: USDA, NASS and CEA, Table B-47

There are several ways to examine employer-reported farm worker earnings data. One method is to break a longer time period into shorter periods and examine trends within shorter periods. For example, during the early 1990s there were many reports of farm labor surpluses, while since 2000, there have been more reports of farm labor shortages. Thus, we would expect slower growth in farm worker earnings in the 1990s than since 2000.

However, wage changes in these subperiods do not always reflect the pattern of labor shortage and surplus complaints. Across the United States, the increase in average hourly field worker earnings was about the same between 1989-90 and 1998-99-06, and 26 and 25 percent, respectively. Average hourly earnings patterns in California seem to confirm the surplus-shortage scenario, rising only 15 percent in the early 1990s and 24 percent since the late 1990s,

[107] One reason why nonfarm earnings may not have increased as fast as farm earnings over the past 15 years is because many private sector nonfarm workers receive benefits such as health insurance, and many traded lower wage increases for these benefits. The employment cost index for the benefits of private nonfarm workers rose by 108 percent between 1989 and 2005. ECI Current-Dollar Historical Listings, at www.bls.gov/ect/#tables

but in Florida the pattern of earnings increased was reversed, as field worker earnings rose faster in the early 1990s than since the late 1990s.

Table 16. U.S., CA, & FL. Average Hourly Earnings, Field Workers, 1989-2006

Year	U.S.	CA	FL	U.S. private nonag	U.S. mfg.
1989	5.12	5.84	5.19	9.80	10.35
1990	5.23	5.69	5.40	10.19	10.78
1991	5.49	5.78	5.69	10.50	11.13
1992	5.69	6.00	5.87	10.76	11.40
1993	5.90	5.96	6.02	11.03	11.70
1994	6.02	6.18	6.30	11.32	12.04
1995	6.13	6.16	6.57	11.64	12.34
1996	6.34	6.44	6.29	12.03	12.75
1997	6.66	6.79	6.76	12.49	13.14
1998	6.97	7.13	7.11	13.00	13.45
1999	7.19	7.18	7.26	13.47	13.85
2000	7.50	7.48	7.68	14.00	14.32
2001	7.78	7.89	7.66	14.53	14.76
2002	8.12	8.34	7.71	14.95	15.29
2003	8.31	8.34	8.18	15.35	15.74
2004	8.45	8.41	7.97	15.67	16.15
2005	8.70	8.81	8.50	16.11	16.56
2006	9.06	9.00	8.51	16.73	16.82
1989-2006 Using CPI	8.32	9.49	8.44	15.93	16.83
1989-90 vs 2005-06	72%	54%	61%	64%	58%
1989-90vs1996-97	26%	15%	23%	23%	23%
1998-99vs2005-06	25%	24%	18%	24%	22%
Real 1989-06	9%	-5%	1%	5%	0%

Sources: USDA, NASS and CEA, Table B-47

Data from the National Agricultural Workers Survey (NAWS), which interviews workers rather than employers, suggest both lower farm worker earnings and a slower rate of increase than the FLS. Between 1990-91 and 2000-01, NAWS reported that the average hourly earnings of crop workers rose from $5.40 to $7.05, an increase of 30 percent, while the average hourly earnings of private-sector production workers rose from $10.34 to $14.26 or 38 percent.[108]

Huffman (2005, 2006, 2007) used USDA Farm Labor Survey data to examine the response of farm employment to secular trends that increased farm wages. Huffman distinguished between states such as Iowa, which mostly have family farms producing field crops such as corn and

[108] Calculated from Table 5, p16. Levine, Linda. 2007. Farm Labor Shortages and Immigration Policy. Congressional Research Service. RL30395. September 5.

soybeans as well as hogs, and states such as California and Florida, where crop sales are dominated by FVH commodities and most of the hours of work are supplied by hired workers.

Huffman emphasized that the production of major Iowa crops is largely mechanized. Labor use in Iowa agriculture, family and hired, declined sharply in the 1990s, in part because real wages rose faster in Iowa than in California and Florida. As would be expected, capital/labor ratios rose faster in Iowa than in California and Florida, in part in response to the different wage trends.

Napasintuwong and Emerson (2004) concluded that the demand for labor in Florida agriculture would fall as wages rose, slowing the shift toward labor-intensive crops. Their estimates suggest that a 10 percent wage increase would raise the capital-labor ratio by 18 percent, and that sustained wage increases would likely speed the diffusion of mechanical orange harvesting systems.

Total factor productivity growth in U.S. agriculture has slowed, from two percent a year in the 1970s and 1980s to one percent a year since 1990. Crop output rose faster than livestock output in the 1970s and 1980s due to high grain prices, but livestock output has risen faster in the 1990s as factory-style production spread in poultry, beef, and pork. This slowdown in productivity growth has been accompanied by a rise in the share of hired workers in the farm work force. In 1950, about 20 percent of the average 10 million workers employed on U.S. farms were hired. By 1970, the average number of workers employed on U.S. farms had dropped to 4.5 million, and a quarter were hired. Today, the average number of workers employed on U.S. farms is under three million, and a third of the workers are hired.

There have been several efforts to estimate the effects of various factors on attachment to farm work using NAWS data. Tran and Perloff found that most farm workers legalized under the SAW program intended to remain farm workers. Using the work history grid from the NAWS, they reported that a male employed in agriculture last month has almost a 90 percent probability of being employed in agriculture this month, and there was no significant difference in these probabilities by legal status. However, in the long run, they estimated that SAWs were more likely to stay in agriculture than U.S. citizens, U.S. immigrants, or the unauthorized, bolstering the arguments for farm worker legalization. [109] Moreteti and Perloff found that farm employers paying higher wages also provide better benefits, which they can do and remain competitive because high-wage and high-benefit employers hire more productive workers.

Iwai et al. (2006a) examined the wages of farm workers interviewed in the NAWS by legal status and concluded that, within each of four groups, unauthorized, authorized, permanent resident, and citizen, wages rise with age and U.S. work experience.[110] Given observed wage differences between these four types of workers, Iwai concluded that legalizing unauthorized

[109] In the long run, the probability of working in agriculture declines, and there are differences by legal status, e.g. about 50 percent for unauthorized males and 68 percent for SAWs.

[110] The differences between authorized, permanent resident, and (US) citizen are not clear—all are generally work authorized. Similarly, the finding that piece-rate workers have higher hourly earnings than workers paid hourly wages should not be a surprise, since the purpose of a piece rate wage system is to encourage faster work. The paper discusses "self-selection into legal status."

farm workers would raise their wages by three to 30 percent, with most of the expected increases in the 10 to 15 percent range.

Iwai et al. (2006b) attempted to estimate how long farm workers remain in agriculture, concluding that about 90 percent of those employed in one period in agriculture are also employed in agriculture in the next period. However, NAWS data that find 15 to 20 percent of workers interviewed each year are newcomers, as well as analysis of unemployment insurance data, find much more churning than suggested by Iwai. Iwai et al. (2006b) find that the probabilities of remaining in agriculture are much higher for year-round than for seasonal farm workers.

2.3.2 Regional Models with ARMS Data

NASS's Farm Production Expenditures survey, also called the Agricultural Resource and Management Survey (ARMS), provides annual estimates of major expenses for farmers, including labor (http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1066) A third of the U.S. farms in the sample typically report that they had labor expenditures during the previous year; they were the fourth largest expenditure in 2006, accounting for 11 percent of the average $113,000 expended by a typical U.S. farm, a total of $25 billion. Crop farms accounted for two-thirds of ARMS-reported labor expenditures, and farms with sales of $1 million or more 55 percent of total labor expenditures.

NASS reports production expenditure data by region and selected states. About 60 percent of California farms reported expenditures for labor in 2005-06, a total of $7.2 billion in 2005 and $7.7 billion in 2006, 31 percent of total U.S. labor expenditures. About 40 percent of WA farms reported labor expenditures, a total of $1.3 billion in 2005 and $1.4 billion in 2006By state, labor expenditures were the highest share of production expenditures in three states--29 percent of production expenditures in FL, 26 percent in CA, and 22 percent in WA.

We estimated a partial adjustment agricultural investment equation using state data from 1960-2004 described in Ball, Hallahan, and Nehring (2004). We used two equations, an investment equation and the target capital stock equation. The model is:

$$I_t = K_t - K_{t-1} = \gamma(K_t^* - K_{t-1}) + \varepsilon_t$$

and

$$K_t^* = \beta_0 + \beta_1 w_t + \beta_2 r_t + \beta_3 m_t + \beta_4 O_t + u_t$$

where I_t represents investment in the agricultural sector, K_t denotes the quantity or stock of agricultural capital excluding land, K_t^* represents the target or desired agricultural capital stock in time period t, w_t represents the wage rate of hired farm workers, r_t is the rental rate or cost of capital, m_t is the price of aggregate materials used to produce aggregate output, O_t represents aggregate farm output, γ represents the adjustment coefficient, and ε_t and u_t denote disturbance terms. Wages, cost of capital, and the price of aggregate materials are expressed in prices

relative to the level in Alabama in 1996. Capital and aggregate output are expressed as values in $1000 in 1996 prices of Alabama.

Substituting the target or desired capital equation into the investment equation yields

$$I_t = \gamma\beta_0 + \gamma\beta_1 w_t + \gamma\beta_2 r_t + \gamma\beta_3 m_t + \gamma\beta_4 O_t - \gamma K_{t-1} + (\varepsilon_t + \gamma u_t).$$

This is a short-run model since the dependent variable, investment, represents the change in capital stock from one period to the next, although there is an implied steady state condition that could be found by "killing off" the lags. Both the adjustment coefficient, γ, and wage coefficient are expected to be positive since capital and labor are substitutes. The coefficient on the rental rate of capital is expected to be negative; however, it may take more than one time period for a change in the price of capital or wages to have a significant impact on investment. The aggregate output coefficient is expected to be positive and the sign on the price of materials is expected to be negative.

An ordinary least squares model estimated with GRETL was used to estimate the investment elasticity with respect to wages in California. At the 2004 observation point, the investment elasticity was 0.584, suggesting that if wages increased by 10 percent, investment ($K_t - K_{t-1}$) would increase by 5.8 percent.

However, there is autocorrelation (the LM statistic for first-order autocorrelation was 56.43 with an extremely small p-value), suggesting misspecification. Furthermore, Figure 3 shows a significant difference between the actual and fitted investment values in 1974 and 1983, reflecting oil price hikes and the collapse of farm land prices. Correcting for autocorrelation eliminated the large differences between the actual and fitted investment values in Figure 4. Dummy variables were added to allow for these shocks to partially correct for misspecification.

Figure 11. Actual vs Fitted Investment Values, CA, 1961-2004

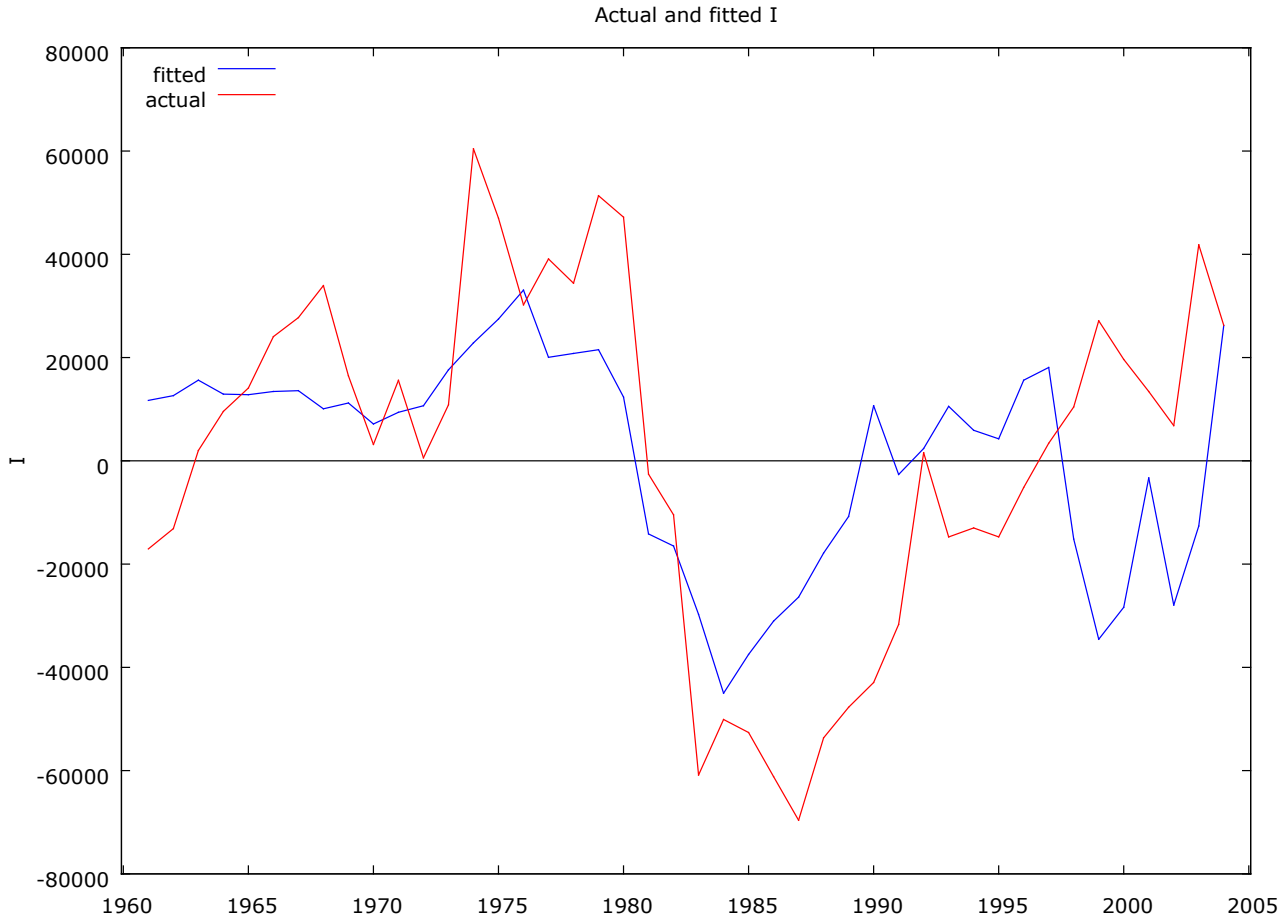
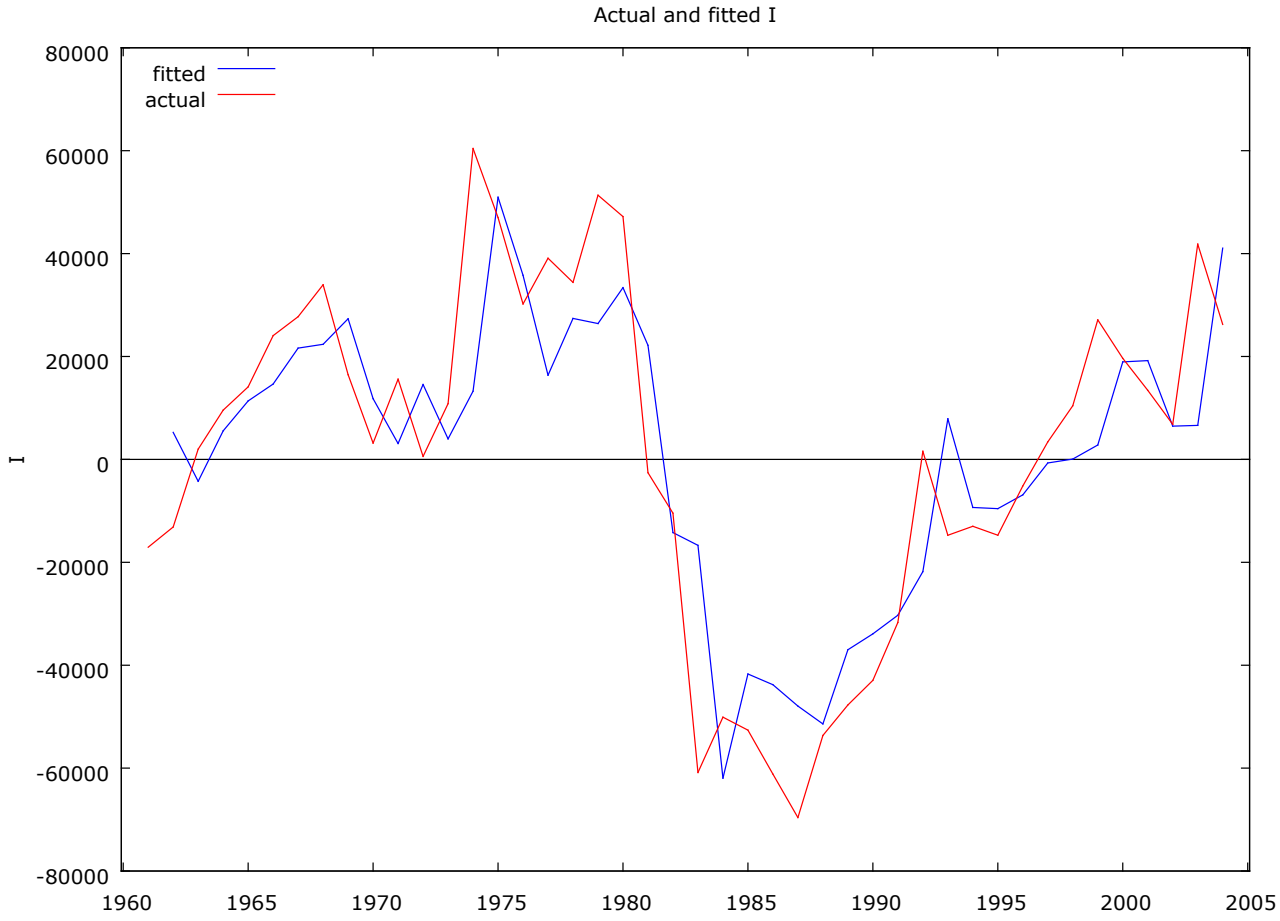


Figure 12. Actual vs Fitted Investment Values (corrected), CA, 1961-2004



Two different estimation procedures were used to estimate the models for the four states. First, variables were included to account for the oil price and land price shocks of 1974 and 1983 and the models were corrected for autocorrelation. Second, aggregate output was included as an endogenous variable. Two-stage least squares were used, with the instrumental variables consisting of wages, prices of capital, prices of material, their lagged values, and time.

Empirical results for the investment model for the four states are reported in the tables below. The first table reports the estimates corrected for autocorrelation, while the second presents the results of the 2SLS estimates using instrumental variables in stage one to account for the endogeneity of aggregate agricultural output.

Table 17. Auto-Corrected Result: State Agricultural Investment Models

	State			
	California	**Iowa**	**Florida**	**Washington**
Coefficient[1] **Oil Shock**	31468	72658	5571.3	7722.6
	(0.015)	(0.199)	(0.243)	(0.358)
Fin. Shock	-27557	94214	5044.2	2835.4
	(0.046)	(0.132)	(0.281)	(0.728)
Wages	-15322	-46545	-24614	25963
	(0.734)	(0.251)	(0.147)	(0.025)
P. Capital	-0.121E+06	-0.533E+06	-60188	-0.154E+06
	(0.022)	(0.000)	(0.012)	(0.000)
P. Mater.	53615	0.304E+06	61542	82472
	(0.303)	(0.000)	(0.023)	(0.000)
Aggr. Out.	0.0038	0.0358	0.0040	0.0085
	(0.116)	(0.000)	(0.256)	(0.132)
Lag Cap.	0.0387	0.0799	0.0739	-0.0033
	(0.493)	(0.000)	(0.192)	(0.923)
Const.	13936	-0.190E+06	6486.9	-26492
	(0.861)	(0.016)	(0.737)	(0.317)
R^2	0.826	0.709	0.808	0.761
ρ	0.798	-0.390	0.813	0.057
Durbin h	-0.037	1.149	0.204	2.306

[1] P-values are reported in parentheses.

The second table corrects for autocorrelation, but does not address possible mis-specification, which would require a specialized second-order adjustment investment model that allowed more time for investment to adjust to changes in wages and other factors. The coefficients for oil and land prices in 1973 and 1984 are not significant, and the coefficients on wages are negative with associated large p-values (except for the state of Washington). The coefficients for the price of capital are all negative (with low p-values), meaning that investment decreases as price of capital increases, as expected. The coefficients on aggregate agricultural output are positive as expected, and the adjustment coefficients on the lagged quantity of capital are positive except for Washington.

The two-stage least squares estimates reported in the table below yield similar results. The wage coefficients for Florida and Washington are positive (p-value is 0.015 for Washington). The price of capital has a negative effect on investment, with small p-values for all four states. The signs on the coefficients of aggregate output are all positive for the states with low p-values, indicating that investment increases with aggregate output as expected. Two of the adjustment coefficients are negative (California and Washington) and two are positive (Iowa and Florida). The variables incorporated to capture the oil shock of 1973-74 and the land price shock of 1983 have positive signs but are statistically insignificant.

Table 18. 2SLS Results. State Agricultural Investment Models. State

	California	Iowa	Florida	Washington
Coefficient[1] **Oil Shock**	31998	88511	8425.1	10520
	(0.107)	(0.183)	(0.312)	(0.243)
Fin. Shock	-2337.8	0.137E+06	6409.7	3057.2
	(0.909)	(0.082)	(0.464)	(0.715)
Wages	-44543	-81691	33007	27726
	(0.505)	(0.175)	(0.191)	(0.015)
P. Capital	-0.285E+06	-0.520E+06	-0.108E+06	-0.157E+06
	(0.000)	(0.000)	(0.000)	(0.000)
P. Mater.	33349	0.296E+06	6973.0	66258
	(0.470)	(0.004)	(0.023)	(0.009)
Aggr. Out.	0.0038	0.0420	0.0188	0.0152
	(0.000)	(0.005)	(0.000)	(0.066)
Lag Cap.	-0.416	0.0895	0.0448	-0.0314
	(0.173)	(0.003)	(0.079)	(0.442)
Const.	-0.210E+06	-0.233E+06	-31170	-52287
	(0.000)	(0.098)	(0.011)	(0.130)
R^2	0.761	0.637	0.660	0.761

[1] P-values are reported in parentheses.

The next table reports the wage elasticity of investment for the four states, calculated at the 2004 observation point. Three of the estimated elasticities are positive, as we expected, for Washington (both models) and Florida (2SLS model). A policy interpretation of the auto-corrected model's results are as follows: a 10 percent increase in hired farm worker wages would imply a short-run decrease in aggregate agricultural investment of six percent in California, a 26 percent decrease in Iowa, a nine percent decrease in Florida, and a 26 percent increase in Washington. For the 2SLS model's results, a 10 percent increase in hired farm wages would lead to a short-run 17 percent decrease in aggregate farm investment in California, a 45 percent decrease in Iowa, a 12 percent increase in Florida, and a 28 percent increase in Washington.

Table 19. Wage Elasticities of Agricultural Investment (Evaluated at 2004)

	CA	IA	FL	WA
I. Auto-Corrected Model	-0.593	-2.573	-0.917	2.638
II. 2SLS Model	1.724	4.516	1.230	2.817

These models were able to explain the effects of the price of capital on investment and the impact of an increase in aggregate output on investment, generally obtaining the correct signs on the adjustment coefficients. However, there is a need for more sophisticated theoretical models, such as a second-order partial adjustment investment model. Models of the effects of wages on investment in agriculture need to account for shocks, including oil price hikes and land price collapses. One could also estimate the final form of a simultaneous state hired labor model, estimating multipliers to capture effects of wage changes. In our modeling, there were few differences between using all labor input and hired labor input.

2.4 FVH Commodities

Fruits and vegetables are planted on 13 million acres[111] of land (three percent of U.S. crop land) and accounted for 29 percent of average crop cash receipts between 2002 and 2004 and 18 percent of U.S. farm exports (Lucier et al, 2006). The United States has imported more fruits and vegetables than it exported since 1998. In 2005, the value of fruit and vegetable exports was $11 billion while the value of imports was $14 billion.

FVH production was about 100 million tons in 2005, including 24 million tons of fresh market vegetables, 16 million tons of processing vegetables, 21 million tons of potatoes, 11 million tons of citrus, 17 million tons of noncitrus (mostly processed) and 1.5 million tons of tree nuts.[112] By value of sales, grapes, oranges, and apples are the most valuable fruits, and potatoes, lettuce and tomatoes the most valuable vegetables.

Americans consume an average 445 pounds of vegetables and 282 pounds of fruit and tree nuts a year. The vegetables include 135 pounds of potatoes, 90 pounds of tomatoes, 27 pounds of sweet corn, and 22 pounds each of lettuce and onions. The fruits include 81 pounds of oranges, 47 pounds of apples, 30 pounds of wine grapes (enough for 12 bottles of wine), 26 pounds of bananas, and 19 pounds of other grapes.

About half of fresh fruits and vegetables are sold in supermarkets. Supermarket sales are being concentrated in fewer chains: the largest 20 food retailers accounted for 60 percent of grocery sales in 2001. Transportation of fresh produce is becoming more costly. In October 2005, when head lettuce was worth an average $5.05 per 24-head or 50-pound carton in Salinas, the cost of transporting a carton to New York was about $6.50.

The 2002 COA included production data on 100 fruits and vegetables. These fruits and vegetables were grown on about 114,000 orchard, 54,000 vegetable and 18,000 berry operations (where these commodities accounted for more than 50 percent of the operation's sales). Labor was the single largest variable cost on these farms in 2003, averaging 42 percent of the $153,000 average expenses per farm. However, only a sixth of these farms had sales of $250,000 a year or more.

[111] This acreage includes about 1.3 million acres of beans, 1.3 million acres of potatoes, and 700,000 acres of sweet corn.

[112] Over half of these tons of fruits and vegetables were processed. Most producers of processed fruits and vegetables had contracts with the firms that froze, canned, or juiced the product. Contracts are spreading rapidly in the fresh market, as supermarkets seek year-round suppliers.

Major issues facing the fruit and vegetable industry are food safety, labor costs and farm policy (interactions with commodities that receive federal price support). Sicknesses and deaths linked to fresh produce have led to more testing and traceability.[113] More farmers are complaining of fewer workers, which can make timely completion of farm tasks difficult. Farmers producing crops such as corn and wheat and receiving government payments are not allowed to plant fruits and vegetables on their "flex acres," a restriction that, if dropped by changes in farm policy, may increase the supply of fruits and vegetables.

2.4.1 Commodity Case Studies

This section presents case studies of labor demand and supply in four major FVH commodities:

- apples, the leading U.S.-produced fresh fruit consumed in the United States,
- oranges, the leading fruit produced in Florida
- raisin grapes, traditionally the largest single employer of seasonal farm workers during a six-week harvest and
- strawberries, a very labor-intensive commodity where both production and grower prices have been rising.

In each of these commodities, farm worker employment has probably peaked, but for very different reasons.

Hired worker employment in U.S. apple production has probably peaked because U.S. production may have peaked due to increased plantings in China and elsewhere. Furthermore, new U.S. plantings tend to be of dwarf varieties that produce fruiting walls amenable to mechanical aids and mechanical harvesters. If sales of fresh-cut and similar value-added apple products expand, there may be more labor employed in packing and preparing apples for market, and apples destined for these value-added products may have to be hand-harvested carefully, but the market share of such value-added products would have to expand very quickly to maintain current levels of field worker employment.

Florida produces about 40 percent of the world's oranges that are processed into juice, and 80 percent of the orange juice consumed in the United States. Most of Florida's oranges are hand picked in a very layered labor market, meaning that there may be several entities between growers and pickers. If farm worker wages, now about a cent a pound for harvesting oranges, were to rise, there would be mechanization, with orange acreage shrinking in the center of the state and expanding in the southwest in groves planted to facilitate mechanical harvesting.

Raisin grape production, concentrated around Fresno, California, has recovered from several years of very low prices. The flexible Thompson seedless grape can be sold as table grapes, crushed to make wine, or dried into raisins (the shift in consumer preferences toward red grapes and the mechanization of bulk-wine grape harvests has reduced flexibility). Raisin-harvesting employment has been falling as growers plant varieties that ripen earlier, so that the grapes can dry on the vine (DOV) into raisins. DOV mechanical harvesting has reduced raisin harvester employment by 20 percent from its peak levels of 50,000 in the late 1990s; the speed at which DOV spreads will depend in part on farm wages.

[113] Most broccoli, celery, lettuce and grapes are packed in the field, while oranges, apples and tomatoes are typically packed in sheds.

Strawberries are among the most labor-intensive commodities produced in the United States, requiring about 1,000 hours an acre, mostly for harvesting. Strawberries are unique because most are grown under contract to coolers-marketers that often lease land, plants, and equipment to growers under contracts that specify exactly how the berries are to be produced and oblige the grower to deliver harvested berries to the marketer.

This contracting system replaced a previous sharecropping system that courts found made some sharecroppers hired workers of the cooler-marketers. As a result, over half of California's strawberry growers are Hispanics, as many ex-harvesters became small growers responsible for hiring and managing harvest workers. Many larger growers have adopted mechanical aids, including conveyor belts moving slowly through the fields to increase worker productivity by eliminating the need for workers to walk to the end of row with full trays. Such mechanical aids have keep employment relatively stable despite rising strawberry production.

Employment in most other major FVH commodities that are hand harvested has likely peaked. The soft tree fruit industry may adapt shake-and-catch harvesters, and there may be mechanical harvesting of leafy green vegetables for food safety reasons. Production of some labor-intensive commodities is expanding because of consumer demand, including relatively small-acreage crops such as blueberries and strawberries, and the nursery industry is likely to continue its expansion when the housing market rebounds. However, there are likely to be more farm employment declines than expansions, which is why BLS projected crop production employment (NAICS 111) to be the industry with the largest decline in employment, from an average 898,000 in 2006 to 758,000 in 2016 (Figueroa and Woods, 2007, 60).

2.4.1.1 Apples

Apples are the leading noncitrus tree fruit grown in the United States; the almost five million tons produced in 2006 were worth $2.1 billion (USDA, 2007, Tables A-5 and A-8). Americans consume about 100 pounds of noncitrus fresh fruit a year, including 25 pounds of bananas and 17 pounds of apples (USDA, 2007, Tables A-1), meaning that apples and bananas account for almost half of the noncitrus fresh fruit consumed by the average American.

Apples, perhaps the first fruit to be cultivated, originated in eastern Turkey. Apples harvested in the fall and stored at a temperature just above freezing have long been an important food in Asia and Europe; apples were brought to North America by colonists. Today, apples are produced commercially in at least 80 countries, and global apple production is over 60 million tons a year. China is the leading apple producer, accounting for 29 million tons or 48 percent of global production in 2006, followed by the United States, five million tons or seven percent of global production, Iran, three million tons or four percent, and Poland, Italy, and Turkey, about 2.5 million tons each or 3.5 percent each. China's apple production increased rapidly between 2000 and 2007 and prices fell, prompting the government to discourage additional apple plantings and encourage farmers to grow other fruits.[114]

[114] The average Chinese farmer has three mu, or half an acre of land, and a third of Chinese farm land is devoted to apples in apple-growing areas. The leading variety is Fuji, and yields of 2,500 kg per mu translate to two tons an acre. With low-cost labor readily available, many Chinese producers place bags around individual apples to prevent insects or birds from damaging

Exported fresh apples as a share of production increased from 15 percent of production in 1990 to 22 percent in 1996. Imports of fresh apples increased much less, from 6 percent to 8 percent.

Table 20. Trends in U.S. Fresh Apple Trade 1990-2006 *(1,000 Short Tons)*

	Imports			*Exports*			Net
Year	From Canada	From Chile	From Rest of World	To Mexico	To Canada	To Rest of World	Export
			1,000 short tons				
1990	57	24	81	13	88	317	256
1991	80	27	107	24	83	353	246
1992	50	29	80	82	84	396	402
1993	47	28	75	119	89	348	406
1994	41	22	63	169	93	533	667
1995	67	23	89	82	89	502	494
1996	87	31	118	90	91	475	419
1997	70	29	99	97	104	522	525
1998	45	41	86	76	100	445	449
1999	47	47	94	146	101	421	479
2000	42	48	90	204	99	402	523
2001	43	64	106	231	101	431	550
2002	48	69	117	156	120	355	397
2003	41	100	141	134	119	330	301
2004	33	125	158	94	105	324	206
2005	37	60	97	175	131	448	559
2006	38	91	130	178	133	394	445
2007	34	136	170	191	146	382	378

Source: Foreign Agricultural Services, http://www.fas.usda.gov/ustrade/

Most apples are consumed in the country in which they are produced. The United States is the leading apple exporter, exporting 1.4 billion pounds a year, 28 percent of U.S. apple production.[115] The United States imports a smaller volume of apples, about seven million a year, primarily from Chile, Canada, and New Zealand.

U.S. growers aim to produce apples for the fresh market; fresh market apples receive a premium of about 40 percent for fresh-market apples. In 2006, the average grower price of apples destined for the fresh market was $0.32 a pound, the high-test price in years, and processing apple prices were $0.22 a pound, also a higher-than-usual price. Grower prices vary inversely with production, and high production in the late 1990s reduced prices enough to shrink U.S. apple acreage from a peak 468,000 acres in 1996-97 to 373,000 acres in 2006. Imports of apple juice,

them. China is expected to dominate trade in the products market (juice and sauce), then compete in the markets for dried and sliced apples, and finally for fresh apples

[115] Half of US apple exports go to Mexico and Canada.

which utilize half of U.S. processing apples, now account for 80 percent of U.S. apple juice consumption.

Table 21. U.S. Apple Production and Grower Prices, 1990-2006

	Production (mil lbs)			Grower prices ($/pound)		
Year	Total	Fresh	Share	Fresh	All	Fresh Premium
1990	9,657	5,515	57%	21	15	38%
1991	9,707	5,447	56%	25	18	40%
1992	10,569	5,767	55%	20	14	43%
1993	10,685	6,124	57%	18	13	43%
1994	11,501	6,366	55%	19	13	44%
1995	10,578	5,840	55%	24	17	42%
1996	10,382	6,207	60%	21	16	31%
1997	10,324	5,815	56%	22	15	44%
1998	11,646	6,413	55%	17	12	42%
1999	10,632	5,996	56%	21	15	42%
2000	10,581	6,266	59%	18	13	39%
2001	9,423	5,468	58%	23	16	45%
2002	8,524	5,366	63%	26	19	37%
2003	8,793	5,462	62%	29	21	41%
2004	10,441	6,638	64%	18	14	34%
2005	9,705	6,117	63%	24	17	40%
2006	9,932	6,322	64%	32	22	41%

Source: USDA ERS Fruit and Tree Nuts Outlook, 2007, Table B-4

The state of WA produces over half of U.S. apples, and two-thirds of the U.S. apples that are consumed fresh; a third of the state's apples are exported. WA had 173,000 acres of apples in 2006, including 66,700 acres in the Yakima Valley, 55,800 acres in the Colombia basin, and 38,900 acres in Wenathcee. Apple acreage is shrinking in Yakima and expanding in the Columbia basin, and new plantings have more trees per acre, almost 500 in some plantings. Yields average 40-1,000 pound bins an acre (20 tons).[116]

Workers are hired to assist with three major phases of apple production: pruning, thinning and harvesting. Pruning occurs in the winter months, when the lack of other farm work and a

[116] A bushel of apples weighs 44 pounds (20kg); most apples are sold in 42 pound boxes.

relatively long window to perform the work usually provides sufficient workers. Some growers pay pruners by the hour to encourage careful work, while others pay piece rate wages and monitor the quality of the pruning work done. Some growers have mobile platforms from which pruners can work, eliminating the need for ladders and increasing both worker productivity and safety. Experiments to prune apples mechanically are underway.

Apples are normally thinned twice, with chemicals during and after the bloom and by hand in June-July, when there are other farm jobs available, such as picking cherries. Hand crews can spend 25 to 50 hours an acre removing poor quality, insect or disease damaged fruit, sometimes using mobile platforms rather than ladders. Thinning requires less skill than pruning, so that temporary workers are often hired for the task.

The most labor-intensive task is harvesting. Workers pick apples from the ground and ladders into over-the-shoulder bags that weigh 60 pounds or more when full. Full bags are dumped into 1,000-pound field bins that are conveyed to warehouses, where they are washed and sorted for immediate packing or held in a controlled atmosphere environment for up to a year. There has been automation in the warehouses, with more electronic devices used to sort and pack apples, but there are also new value-added products such as cut-up apples that create additional packinghouse jobs.

How would the WA apple industry respond to sustained higher wages? The response would likely vary by variety. Many of the dominant Red and Golden Delicious varieties are from older orchards that have trees planted far apart (110 trees an acre). Such trees tend to be tall and wide (14 feet high and 18 feet wide) making mechanical pruning, thinning, and harvesting difficult. Apples tend to ripen from the outside in, so most trees are picked at least twice but, if prices are low, Red and Golden Delicious apples may be picked only once.

Newer varieties such as Fuji, Gala, and Honeycrsip are usually planted on dwarf rootstocks with 500 to 1,000 trees an acre, resulting in trees 10 feet high and six feet wide. These smaller trees are often supported by a trellis that creates a fruiting wall, making it easier to use machines and mechanical aids in pruning, thinning, and harvesting. Fuji, Gala, and Honeycrsip varieties are usually harvested several times, with the wage system (piece rate or hourly) depending on factors that include the market price and average yields.

Mechanical harvesting is rarely used for fresh-market apples. Most experiments with mechanical harvesting adapt shake-and-catch harvesting machines used to harvest nuts and other tree fruits, These machines have a padded arm that grasps and shakes the tree trunk, enabling the fruit to fall into a catching device for transport to a bin. However, shaking tall trees in requires so much force that the tree can be damaged, and fruit falling from high limbs is often bruised, so mechanical harvesting is most likely with smaller trees. If smaller trees are trained to grow on a trellis, a winegrape type over-the-row harvester with rotating fingers can dislodge fruit that falls only a short distance to the catching frame. Abscission or loosening chemicals can limit the amount of force required to dislodge the fruit.

Shake-and-catch method harvesting tends to be once over, making it best suited for varieties such as Red or Golden Delicious,[117] which have a relatively narrow 4-5 week ripening window. Newer apple varieties have longer ripening windows and higher grower prices, presenting an economics versus biology dilemma. Traditional varieties are most amenable to mechanical harvesting because of their narrow ripening window and lower price, but less amenable because they are often in orchards with older and taller trees. Newer varieties are more amenable to mechanical harvesting because then tend to be dwarf varieties that are trellised, but the longer ripening window discourages mechanical harvesting.[118]

Sharp and sustained increases in wages would probably be necessary for widespread mechanization of the fresh apple harvest; such labor cost increases could also spur structural change in the industry. If labor costs rose 20 or 30 percent, older orchards with traditional varieties would likely be replaced with housing in urban areas and perhaps cherries or wine grapes in agricultural areas. Smaller apple trees trained to grow on a trellis would likely dominate new plantings, and the locus of apple production could move toward the Colombia basis. There would likely be accelerated efforts to adapt grape type over-the-row harvesters with rotating fingers to dislodge fruit from trellis-trained small trees, with abscission or loosening chemicals used to reduce the force needed.

Currently, offsetting trends in the apple industry keep the demand for labor stable. Newer apple varieties generate higher grower prices and have much longer ripening windows, encouraging more hand picking, although the dwarf trees trained to grow on trellises can facilitate use of machines and mechanical aids. Meanwhile, traditional apple varieties that are most amenable to mechanical harvesting because of their narrow ripening window and lower prices are often planted in older orchards with taller trees, discouraging mechanical harvesting.

The apple labor market must be put in the context of the WA tree fruit industry, which includes apples, cherries, and pears. The demand for harvest labor in these three tree fruits has a saddle shape, peaking in June to harvest cherries and again in September to harvest apples, with the pear harvest in August. Cherries[119] and apples are higher value than pears, and offer harvest workers higher average hourly earnings. A longer cherry season, often extending into July, as well as a longer apple season, from August until October, can put upward pressure on the wages of cherry pickers, which encourages apple growers to raise wages to obtain workers to thin the crop and pear growers to raise wages for harvesters. The jump in the earnings of cherry workers was especially noticeable between 2005 and 2006.

[117] Apples that go into controlled-atmosphere storage must be picked before all their starches turn to sugar, but it is hard to find the optimum picking point because Red Delicious apples develop a full red color several weeks before they are "ripe."

[118] Most mechanical harvesting systems are once-over. However, San Diego-based Vision Robotics believes that falling costs for computers and optics will allow the development of machines that can detect ripe fruit and use robotic arms to pick it with little damage. This reduces damage to the tree trunk and minimizes bruising, and would allow multiple picks.

[119] The cost of harvesting cherries yielding 6.5 tons an acre was $2,925 an acre or $450 a ton according to a 2007 cost study (ww.farm-mgmt.wsu.edu/treefruits.htm, EB2026E). Harvesting costs were 45 percent of variable costs of $6,495 per acre, and 31 percent of total costs of $9,364 an acre.

Table 22. WA: Average Hourly Earnings, Apples, Cherries, and Pears, 2002-06

Year	Apples	Cherries	Pears	WA Minimum
2002	9.83	10.80	9.47	6.90
2003	9.75	11.58	9.99	7.01
2004	10.06	11.33	9.83	7.16
2005	10.31	11.68	10.49	7.35
2006	11.42	14.32	11.02	7.63
2002-06	16%	33%	16%	11%

Source: Stromsdorfer, 2007, Appendix Table 2.3, p92

Harvested apples are washed, sorted, and stored. Some apples are packed immediately for retail sale, while others are stored in bins in a controlled atmosphere environment for later sale, so that packinghouses tend to operate year round. Most packinghouses pay hourly wages and employ local workers. The future demand for labor in packinghouses is not clear. On the one hand, some packinghouses are adding more electronic devices to sort and pack apples, eliminating jobs, while others are developing new value-added products such as cut apples that add packinghouse jobs.

2.4.1.2 Oranges

Citrus worth $1.6 billion accounted for 20 percent of Florida's farm sales in 2005, and 85 percent of this citrus was oranges. Florida produces about 80 percent of the oranges that are processed into the orange juice consumed in the United States.[120] Tropicana, owned by PepsiCo, and Minute Maid, owned by Coca-Cola, account for two-thirds of the U.S.'s retail orange juice revenue.

Florida orange acreage is shrinking because of urbanization and hurricanes and disease (citrus canker and greening). Bearing acreage peaked at 625,000 in the mid-1990s, and fell by a quarter by 2006-07. Yields averaged 15 tons an acre in recent years, but fluctuate considerably, from 18-19 tons in to 12-14 tons an acre.

Table 23. Florida: Bearing Orange Acreage and Yield, 1990-2006

Year	Acreage(000)	Yield (tons)
1990/91	421	16
1991/92	444	14
1992/93	489	17
1993/94	511	15
1994/95	563	16
1995/96	595	15
1996/97	625	16

[120]The farm weight of oranges processed into juice fell from 73 pounds per person in 2004 to 69 pounds in 2005 and 62 pounds in 2006; orange juice consumption fell from 4.1 gallons per person in 2006, down from 5.1 gallons in 2000 (USDA Fruit and Nut Outlook, Table A1).

Year	Acreage(000)	Yield (tons)
1997/98	609	18
1998/99	613	14
1999/00	602	17
2000/01	605	17
2001/02	587	18
2002/03	588	16
2003/04	565	19
2004/05	542	12
2005/06	491	14
2006/07	476	12

Source: USDA ERS Fruit and Tree Nuts Outlook, 2007, Table C-19

Most of Florida's oranges are harvested by hand. The orange labor market is one of the most layered in U.S. agriculture, meaning that there are often several entities between orange pickers and juice processors. The owner of a citrus grove may hire a farm management company to care for the ripening fruit and a contractor to harvest it and haul it to a packer or processor.[121] There are many variations, with some contractors providing only labor and being joint employers with the grower or farm manager, while others provide labor and equipment and sometimes buy the crop on the tree, making their revenue is the difference between what they receive from the processor and what they paid for the on-tree crop.

Orange harvesting involves climbing ladders, picking oranges into a picking sack that weights 60 to 70 pounds when full, and emptying the sacks into field tubs or bins that hold about 900 pounds of oranges. A "goat truck," often a school bus with the sides and roof cut off to resemble a flatbed truck, conveys the bins to a trailer that hauls the fruit to a juice concentrate plant.[122]

An acre of oranges yields 300 to 400 90-pound boxes of fruit worth $5 to $6 a box or $0.05 to $0.06 a pound.[123] Harvesters receive $0.75 to $0.80 a box (less than a cent a pound). Hand harvesters pick an average of 9-11 boxes an hour, earning $7-$8.

Juice oranges are unusual because most fruits and vegetables that are processed are harvested mechanically. Researchers are developing both harvesting machines and harvesting aids, such as hydraulic lifts or "people positioners" that eliminate the need for workers to climb ladders and handle full bags of oranges. There are several types of mechanical harvesting used on new plantings with smaller trees; the machines are most efficient when trees are evenly spaced and

[121] Florida has more farm labor contractors than in any other state-- 2,848 were registered with Florida's Department of Business and Professional Regulation in 2005.

[122] Some 1,800 goats were registered in Florida in 2004; registration allows them to operate within 150 miles of the registered address. Accidents involving goats, which do not have to have windshields, have prompted calls to ban them from state roadways.

[123] Florida typically produces over 200 million 90-pound boxes of oranges a year. In 2006-07, production is expected to be less than 140 million boxes because of 2004-05 hurricane damage and citrus canker; growers received $10 a box in 2007. However, production is expected to rebound toward 200 million boxes a year.

carefully pruned.[124] One harvesting system uses a "pull-and-catch" machine with 900 eight-foot metal arms that reach into the tree and remove oranges with spring-loaded plastic fingers. Another machine uses a rotating device that resembles spinning car-wash brushes to remove oranges as it travels up and down rows of trees. Oranges require about 20 pounds of pull to remove from the tree, so abscission or loosening chemicals are sometimes sprayed to make facilitate the removal of oranges.

Most new plantings are designed for machine harvesting, but there are relatively few new plantings because growers are reluctant to plant oranges in an urbanizing state threatened with disease and hurricanes, especially when freer trade could increase imports of low-cost Brazilian juice. The Brazilian state of São Paulo produces 45 percent of the world's orange juice, more than Florida's 40 percent share, and Brazilian processors can deliver a pound of frozen concentrated orange juice in the United States for less than 75 cents, compared to 99 cents in Florida. A tariff of 29 cents a gallon keeps Florida orange juice competitive.[125]

Imports of frozen orange juice concentrate from Brazil have fluctuated downward since their peak in 1990, in part because NAFTA allowed Mexico to export orange juice concentrate and pay lower tariffs than Brazilians had to pay.[126] U.S. orange juice production has increased.[127]

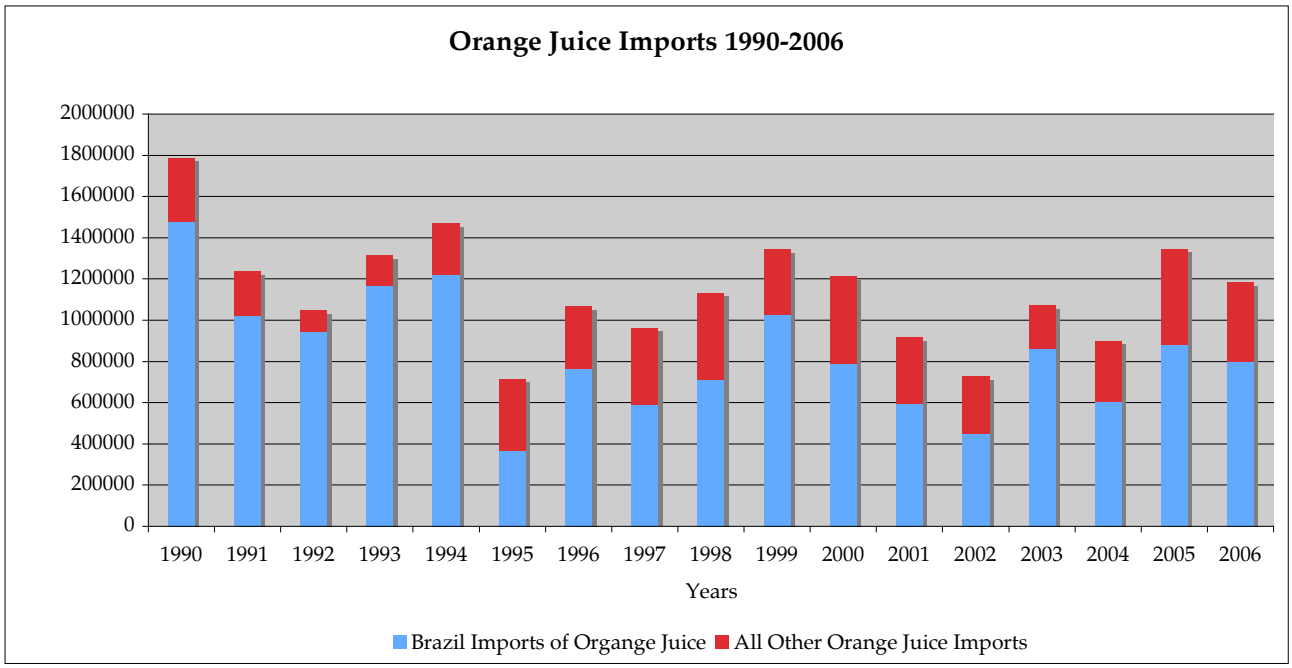
[124] For mechanical harvesting, tree trunks should be less than 10 inches in diameter and trees less than 16 feet high. The University of Florida's Institute of Food and Agricultural Sciences updates the status of mechanical harvesting systems at: http://edis.ifas.ufl.edu/TOPIC_Mechanical_Harvesting

[125] Brazil produced 18 million tons of oranges in 2002-03, when Florida produced 11 million tons; Brazil exports over 95 percent of its orange juice concentrate. Brazil's Sao Paulo state had 1.8 million acres of citrus in 2003, compared to 800,000 acres in Florida.

[126] FAS, NAFTA Agriculture Fact Sheet, http://www.fas.usda.gov/itp/policy/nafta/orange.html

[127] NASS, 1995 Citrus Fruits Summary, http://usda.mannlib.cornell.edu/usda/nass/CitrFrui//1990s/1995/CitrFrui-09-22-1995.pdf

Figure 13. Brazil Share of Orange Juice Imports, 1990-2006



Source: Foreign Agriculture Service, http://www.fas.usda.gov/ustrade/USTHome.asp?QI=

Brazil is the low-cost producer of oranges for juice. With Florida's groves shrinking for reasons that range from urbanization to weather and disease, public policy plays a larger-than-usual role shaping the processing orange labor market. Freer trade could speed the shifting of Florida's orange groves toward the southwestern part of the state, where new plantings are most amenable to mechanical harvesting. A sustained increase in labor costs would have the same effects.

2.4.1.3 Raisins

Raisin grapes are a commodity in which rising wages, uncertainty about the future availability of hand harvesters, and increasing competition from lower-cost imports are encouraging labor-saving mechanization. Grape varieties that mature earlier, allowing canes to be cut and grapes to dry into raisins while on the vine, the so-called dried on the vine or DOV method of production, produce raisins that can be harvested mechanically with wine grape harvesters. According to industry sources, a third of CA raisin grapes were harvested with some type of DOV mechanization in 2007.

Raisins, mentioned in the Bible in the era of King David about 1,000 BC, are dried grapes. Green grapes normally have 22 to 26 percent sugar; drying reduces water and means that raisins are 60 percent sugar by weight. The United States was the largest producer of raisins until 2005, when Turkey's production surpassed the United States. Turkey and the United States produce about 80 percent of the world's raisins.

Almost all U.S. raisins are produced in California's San Joaquin Valley, where commercial raisin production began in the 1870s with the arrival of immigrants from present-day Armenia and Turkey and by 1909, CA produced 280,000 tons of green grapes (4 to 4.5 pounds of green grapes dry into a pound of raisins). About 95 percent of California raisins are made from Thompson seedless grapes[128] that dry into a dark brown color. Americans consume 1.5 to two pounds of raisins a year.

In recent years, some two million tons of green raisin-type grapes have been harvested, and 70 percent have been dried into raisins (the others were crushed for wine, juice, or sweetener). Production peaked at almost three million tons in 2000, and fell below two million tons in 2006. Prices fell sharply between 2000 and 2003; they have risen in recent years, but not yet to 1999 levels.

Table 24. U.S. Raisin Production and Prices, 1990-2006

Year	Tons (1,000)	Price/ton	Raisin Prices
1990	2,345	237	1,067
1991	2,165	247	1,112
1992	2,670	230	1,035
1993	2,354	255	1,148
1994	2,389	229	1,031
1995	2,252	234	1,053
1996	2,192	281	1,265
1997	2,883	262	1,179
1998	2,077	291	1,310
1999	2,122	321	1,445
2000	2,921	166	747
2001	2,215	186	837
2002	2,804	152	684
2003	2,199	170	765
2004	2,038	306	1,377
2005	2,285	261	1,175
2006	1,861	283	1,274

Source: USDA ERS Fruit and Tree Nuts Outlook, 2007, Table B-15

Tons and price/ton is fresh weight--about 4.5 pounds of grapes = 1 pound of raisins

In 2007, CA had 224,000 acres of raisin-type grapes, including 219,000 bearing acres (98 percent); 92 percent were Thompson seedless. [129] About 65 percent of CA's raisin grapes are in Fresno county, followed by 16 percent in Madera County and eight percent each in Tulare and

[128] The Thompson seedless grape was developed by Scottish immigrant William Thompson.

[129] Accounting for unreported acreage, there were 233,000 acres of raisin-type grapes in 2007, according to NASS, 97 percent bearing. California also had 523,000 acres of wine grapes, 92 percent bearing, and 92,000 acres of table grapes, 89 percent bearing. Average raisin yields were 8.3 tons of green grapes per acre; about 4.5 pounds of green grapes dry into a pound of raisins www.nass.usda.gov/Statistics_by_State/California/Publications/Fruits_and_Nuts/index_gab.asp

Kern counties.[130] Newly planted grapes require four years to reach commercial yields, and it takes six to seven years after planting to achieve yields of 8-12 tons of green grapes or 2-3 tons of raisins per acre. U.S. raisin production has been rising, from an average 200,000 tons a year in the 1970s, 300,000 tons a year in the 1980s and 1990s, and 400,000 tons a year between 2000 and 2003; raisin production peaked at 484,000 tons in 2000.

A Federal Market Order has regulated the flow of raisins to the market since 1949. A Raisin Advisory Committee that includes producers and handlers determines how much of the crop will be marketed immediately as "free tonnage" and how much will be placed in a "reserve pool" and sold at concessionary prices to processors, foreign buyers or the school lunch program. The price received by growers is the weighted average of the free and reserve prices, so that a grower price of $1,310 a ton, as was negotiated by the Raisin Bargaining Association for 2008-10, means about $800 a ton to growers on all their raisins if 60 percent of the raisin crop is free tonnage. The RAC receives federal Market Access Program funds to promote U.S. raisins abroad.

Raisin farmers in recent years have had gross revenues of about $350 million a year from 425,000 tons of raisins a year, an average $800 a ton. However, raisin prices have fluctuated over the past three decades, from a low of $400 to a high of $1,250 a ton. In the late 1990s and between 2000 and 2002, there was a surplus of raisins due to high production and foreign competition, and only 56 percent of raisins were allotted to free tonnage.[131] Between 1999 and 2000, prices dropped from $1,220 a ton to $569 a ton, and fell further to $377 a ton in 2002, largely as a consequence of reduced purchases of Thompson seedless grapes by wineries. In response to the low prices, a raisin diversion program was implemented to encourage raisin growers to remove vineyards or prune their vines to reduce production.

The United States exported about 120,000 tons of raisins a year in the late 1990s, with three-fourths sent to the EU (the UK and Germany are the largest importers of raisins). Turkey is the world's leading exporter of raisins, accounting for a third of global exports, followed by the United States and Iran, about a sixth of global exports each, and Greece and Chile, which each account for about a twelfth of global raisin exports. Chile is the leading supplier to the United States of imported raisins.

Table 25. U.S. Raisin Trade Trends 1990-2006

Year	Chilli Imports	Mexico Imports	Total Imports	Import Share of Domestic Supply	Total Exports	Export Share of Supply
		(Short Tons)			*(Short Tons)*	
1990	5651	3668	10718	0.05	147274	0.41
1991	7558	3968	11819	0.04	139636	0.39
1992	1872	4157	7092	0.04	138768	0.41

[130] Data from CA Grape Acreage Reports, ww.nass.usda.gov/Statistics_by_State/California/Publications/Fruits_and_Nuts/index_gab.asp

[131] Fewer raisins were crushed for wine since the 1990s than in earlier years.

Year	Chilli Imports	Mexico Imports	Total Imports	Import Share of Domestic Supply	Total Exports	Export Share of Supply
		(Short Tons)			*(Short Tons)*	
1993	1740	4206	8468	0.03	137905	0.37
1994	1707	3504	7800	0.05	133240	0.38
1995	2311	8785	13285	0.06	130760	0.39
1996	2271	8595	12627	0.06	129870	0.39
1997	3340	5504	12945	0.06	132950	0.39
1998	2189	11014	15659	0.12	122000	0.38
1999	6057	9553	27190	0.09	87500	0.30
2000	6570	3973	15732	0.06	120600	0.38
2001	5425	4553	14141	0.08	125150	0.39
2002	6614	3221	16687	0.07	127750	0.38
2003	8479	3106	14011	0.06	132150	0.41
2004	7044	3545	13348	0.10	125550	0.39
2005	13628	2746	26863	0.11	120700	0.39
2006	13431	2746	24297	0.14	123600	0.39

Source: Foreign Agriculture Services, http://www.fas.usda.gov/ustrade/USTHome.asp?QI=
Source: Economic Research Service YB table F-35,
http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1377

There are about 3,500 raisin growers[132] in the Fresno, CA area, and the harvesting of their raisin grapes has traditionally been the most labor-intensive seasonal labor activity in North America, requiring 40,000 to 50,000 workers for the six-week harvest. Workers wielding a curved knife reach under the vines to cut bunches of green grapes, drop them in a plastic tub or pan, and dump the 20-pound tubs onto paper trays lying between the rows, so that the green grapes dry into raisins in the 100-degree plus heat. After one week, the trays with partially dried grapes are turned or rolled to ensure uniform drying. After another week, the rolled up trays are picked up and taken to a facility where they are shaken off the paper trays unto a conveyor belt that allows stems and debris to be removed by hand. The raisins are then taken to a handler/packer for storage and sale.[133]

Raisins are vulnerable to rain damage during the 2-3 weeks they are drying. There is always a labor shortage in the race between sugar and rain. Grapes are literally sugar balls, with twice as much sugar as sugar cane or sugar beets. Every August, farmers measure the rising sugar level of their grapes and, when they contain 22 or 23 percent sugar, most turn to contractors for crews of harvesters. Farmers are required to have their raisins drying on the ground by a certain date, typically about September 20, to collect payments under their crop insurance policies in the event of rain.

[132] Many raisin growers are retired or mostly depend on off farm income (ERS, 2003)

[133] CA had 22 raisin packers in 2003, including three cooperatives, one of which is Sun-Maid.

The longer farmers wait to begin the harvest, the more workers are needed. If the harvest begins 20 days before the "rain date," twice as many workers are needed than if the harvest begins 40 days before the rain date. A farmer may complain of a labor shortage if he requests two 40-worker crews and gets two 25-worker crews, increasing the risk that he will lose his crop. Farm organizations regularly report that they are "short" 10 to 20 percent of the workers needed to harvest raisins, meaning they would like 4,000 to 8,000 more harvest workers.[134]

Harvesters are paid piece rate wages of about one cent a pound or 25 cents a tray.[135] Growers harvesting 10 tons of green grapes or 20,000 pounds an acre generate 1,000-20 pound trays, and harvesting them costs $250 in wages to workers plus $75 or 33 percent in overhead payments to contractors. If growers receive a net $800 a ton for 2.5 tons of raisins per acre, labor costs of $325 an acre are 16 percent of the $2,000 gross revenue per acre.

Most workers pick 30 to 40 trays an hour, earning $8 to $10 or $100 for a 10-hour day. Most raisin pickers do not receive fringe benefits beyond those required by law, which are social security, unemployment insurance, and workers compensation. A 1991 survey of raisin harvesters reported that over 99 percent were born abroad, 92 percent were male, and a third were unauthorized (Alvarado et al, 1993); by the mid-1990s, it was estimated that two thirds of raisin harvesters were unauthorized (Mason, et al 1997). The median age of raisin harvesters in these surveys was 28, and they had an average five years education in Mexico.

The dried-on-the vine (DOV) method of harvesting offers a mechanical harvesting alternative that eliminates 90 percent of the harvesting jobs as well as worries about rain-damaged raisins. Under DOV, the demand for labor shifts from August-September to the winter months for careful pruning to facilitate the hand or mechanical cutting of the canes. Mechanization is spreading, but requires traditional vineyards to be retrofitted with stronger stakes and trellising at a cost of up to $2,000 an acre.

Sun-Maid Growers developed and patented a DOV raisin-production system that uses a specially-designed trellis to divide the vine canopy into fruiting and renewal zones. The fruiting zone, which later becomes the drying zone, is oriented toward the south side in rows that are planted from east to west to speed the drying of green grapes into raisins. Machinery firms have developed cane severing machines, leaf removers, and mechanical harvesters (wine grape harvesters).

Madera-area grower Lee Simpson has high-density raisin-grape vineyards, with almost 1,100 vines an acre (twice the usual number) trained to grow on overhead trellises with fruiting and renewal zones in alternating rows. The canes with bunches of grapes are cut by hand in July-August, and the raisins dry on the vine in six weeks before being removed mechanically (rain

[134] Manuel Cunha Jr. of the Nisei Farmers League asserted that raisin growers were "short" 20 percent of the workers needed for the harvest, and reported 50 calls a day from growers in Fall 2005 asking for harvest workers. Dennis Pollock, "Labor shortage sours citrus harvest," Fresno Bee, November 24, 2005.

[135] A 1991 survey reported that the average piece rate was $0.16 a tray, about the same rate that had been paid for the previous decade. In 1994, EDD found that the prevailing wage was $0.17 a tray, and rose to $0.19 a tray by 1997.

does not damage these drying raisins because it runs off). Yields are much higher, over five tons of raisins an acre.

Innovators such as Simpson represent one end of the raisin industry spectrum, while growers in their 60s and 70s with 30 to 40 acres of raisins represent the other. Many of these older growers are reluctant to make the investments needed to retrofit their vineyards for mechanization. Countries such as Turkey can produce raisins cheaper, $600 a ton versus $800 a ton in CA. Faced with uncertainty about the future demand for U.S. raisins, many smaller farmers are reluctant to incur the fixed costs associated with mechanization.

The U.S. raisin industry is nonetheless mechanizing because the industry is globalizing, preventing U.S. prices from rising as much as they otherwise would. As a commodity that is dried and storable, raisins are easier to mechanize than most fresh fruits and vegetables, since bruises and blemishes from machine handling are of less concern.

The major factors encouraging mechanization in the CA raisin industry are higher wages and labor uncertainty at a time of increased global competition. To remain competitive, CA producers must likely reduce production costs, which is most easily achieved by reducing labor costs and increasing yields in DOV systems. Major obstacles to mechanization include the structure of the industry, large numbers of relatively small producers, and the availability of labor.

2.4.1.4 Strawberries

The United States is the world's leading producer of strawberries; the 1.2 million tons a year produced are a quarter of global production (Pollack and Perez, 2005, 15). China is the second-leading producer, producing 800,000 tons a year, but almost all of China's strawberries are consumed within the country. Spain produces about 300,000 tons of strawberries a year, over 90 percent for the fresh market, and exports 75 percent of its strawberries to Germany, France, and the UK.[136] Japan is the fourth leading producer, producing about 200,000 tons a year, almost all for internal consumption. Poland is fifth, producing about 160,000 tons a year, but low yields and prices are shrinking the industry. Mexico is sixth, producing about 140,000 tons a year, and its exports of 35,000 tons a year are double Polish exports.

California's 32,000 acres of strawberries in the 2002 COA were 57 percent of the US total (56,000 acres). High yields mean that California accounts for 85 percent of U.S. strawberry production, some two billion pounds in 2004 (Florida is second with seven percent of U.S. production).[137] By 2006, California had 36,000 acres of strawberries, and grower sales of $1.2 billion, double the $600 billion of 1995. Strawberries are a success story in the sense that grower prices have increased with production. Production almost doubled between 1990 and 2006, while grower prices rose from $0.47 to $0.63 a pound. As a result of rising production and prices, grower revenues tripled from almost $600 million in 1990 to over $1.5 billion in 2006.

[136] Spain exports about 225,000 tons of fresh strawberries a year; the US about 100,000 tons.

[137] Florida strawberry production, which peaks in February-March, is centered near Plant City in Hillsborough county in the west-central part of the state.

Table 26. U.S. Strawberry Acreage, Production, and Prices 1990-06

Year	Acres	Prod(000)	Price($/cwt)	Value ($000)
1990	46,080	12,537	47	589,588
1991	46,080	13,656	46	631,458
1992	49,530	13,348	52	698,004
1993	51,230	14,465	46	669,937
1994	48,830	16,486	51	836,142
1995	48,080	16,020	51	811,634
1996	47,670	16,259	47	768,943
1997	44,260	16,278	56	903,350
1998	44,930	16,381	61	1,000,254
1999	46,460	18,314	63	1,144,876
2000	47,350	19,008	55	1,044,594
2001	45,700	16,509	65	1,068,582
2002	47,600	18,845	62	1,161,630
2003	48,400	21,560	64	1,375,142
2004	51,400	22,138	59	1,295,464
2005	52,200	23,221	60	1,395,724
2006	53,280	24,040	63	1,514,998

Source: Source: USDA ERS Fruit and Tree Nuts Outlook, 2007, Table D-8
Production and prices are measured in cwt (100 pounds)
In 2006, there were 2.4 billion pounds of strawberries harvested
Growers received $0.63 a pound

U.S. strawberries are produced mostly for the fresh market, with surplus and lower quality berries sent to the processing market. OR and WA are the only two states in which most strawberries are destined for processing; especially in OR, strawberry acreage has declined. There are many reasons for the decline of the OR strawberry industry, including urbanization and expanding blueberry, nursery, and winegrape acreage as well as increased production in CA, but labor issues also played a role. OR harvests strawberries in May-June, when workers can earn more in other farm jobs, discouraging migrants.

U.S. per capita consumption of strawberries rose from 1.6 pounds in 1962 to 5.2 pounds in 2005; between 2002 and 2004, consumption averaged 6.6 pounds, including 5.1 pounds consumed fresh. Total production between 1970 and 2005 increased almost four-fold, with a larger increase for fresh than processing strawberries. Nominal prices rose as well, as growers in recent years received about $0.70 a pound for fresh strawberries and $0.30 a pound for processing berries. Grower prices move inversely with shipments, reaching lows in April-May-June, when shipments peak. Less than 10 percent of U.S. strawberries are imported, usually from Mexico during the March-April period.

Table 27. Share of U.S. Strawberries Exported/Imported 1990-2006

Year	Imports	Import Share of Supply	Exports	Export Share of Production
	1000 Short Tons		*1000 Short Tons*	
1990	7	4%	26	10%
1991	17	3%	29	10%
1992	20	2%	39	10%
1993	18	3%	46	10%
1994	16	4%	43	11%
1995	16	5%	48	10%
1996	12	5%	51	10%
1997	16	3%	51	10%
1998	22	5%	63	10%
1999	29	7%	56	10%
2000	34	5%	58	10%
2001	16	5%	58	10%
2002	29	6%	55	11%
2003	47	5%	62	12%
2004	38	5%	68	11%
2005	35	6%	64	11%
2006	45	7%	78	10%

Source: USDA, ERS and NASS

Exports and imports of fresh strawberries have grown significantly in the last ten years, however when compared to total supply, trade has not played a very large role in U.S. fresh strawberry sales. Fresh strawberry exports tripled between 1990 and 2006; at the same time production increased causing export share of production to stay flat around 10 percent. Similarly, import share of supply remains less than 10 percent despite the fact that in 2006, imports were six times greater in 1990, 45,000 tons from 7,000.

Farmers receive a small share of the retail price. In the mid-1990s, farmers received about $0.50 per pound or $0.37 per 12 once pint of strawberries, while consumers paid about $1.13 per pint, making the farm share of the average retail price 33 percent. With labor a third of farmers' costs, the price of each pint includes about $0.12 of farm worker wages and benefits, 11 percent of the retail price.

California's coastal counties from Santa Cruz in the north to Ventura in the south account for over 80 percent of the state's strawberry production—Ventura and Monterey countries account for over half of the state's strawberries. Production moves from south to north, with fresh strawberry shipments from Ventura county peaking in April and from Monterey county peaking in May-June.

Strawberries are expensive to produce: UC cost studies (http://coststudies.ucdavis.edu/current.php) put total costs at about $28,000 an acre in 2004, including $12,000 for labor (harvesting materials, marketing, and cooling were another $8,800). About 600 hours an acre are required for pre-harvest activities, and another 1,000 to 1,400 hours

an acre for harvesting.[138] Most growers assume that 1.5 to 1.75 workers per acre are needed to harvest strawberries without conveyor belts, and one to 1.25 workers per acre with conveyor belts.

Harvesters were assumed to earn $7.25 an hour which, with payroll taxes that add 34 percent to wages, makes labor costs of $9.72 an hour (the state's minimum wage was $6.75 an hour in 2004). The cost studies assumed that workers picked six trays, each containing eight one-pound containers, an hour. Estimated revenues are also high—a 50-acre farm was projected to produce 5,500 trays, each weighing 9.5 pounds, an acre. At an average price of $6.45 per tray, gross revenues are $35,475 an acre, while costs are $32,431.

Fields are picked up to 10 times a season by workers wheeling 12-pint trays with plastic containers between two raised rows, picking from both; a rule of thumb is that one worker is needed for each acre. There have been efforts to mechanize strawberry harvesting, especially those used in processing. A 1979 Oregon report concluded there was "a promising outlook for mechanical strawberry harvesting in Oregon" with 85 percent of the berries harvested by machine salable to processors (Hussen et al, 1979).

The major recent development has been a mechanical aid that increases labor productivity, a slow-moving conveyor belt introduced in Ventura County in 2000 onto which pickers put full trays of berries. Workers still push a small wheelbarrow holding a tray between two rows of berries, but full trays are taken a few steps to the conveyor belt rather than to the end of the row, saving pickers steps in fields with rows 300 to 800 feet long.

The conveyor-belt serves as a moving receiving station for pickers, and enables them to pick strawberries faster because they walk less; in some crews, workers picked 25 to 35 percent more berries in the same period of time. Mutual benefits of this mechanical aid system included fewer worker injuries from slips and falls, reducing workers compensation costs, and increased earnings. On the other hand, workers stayed bent over longer with the conveyor belt system, which could aggravate chronic back problems.

The conveyor belt spread quickly in the Oxnard area, where the ground is flat and growers shared the increased productivity with pickers. For example, an employer who previously paid workers a piece rate of $1.50 a tray reduced the piece rate to $1.20 a tray but, with the machine, workers harvested more trays, so their hourly piece rate earnings were higher despite the reduced piece rate (Rosenberg, 2004). In northern California, the conveyor belt is not widely used, reflecting both more hills and because of disputes over how the benefits of increased productivity should be shared between employers and workers.

The fact that strawberry production was expanding rapidly in an area that had been a union stronghold encouraged the UFW to launch its "Five Cents for Fairness" campaign in the Salinas area in the mid-1990s. The UFW called strawberries La Fruta del Diablo (the fruit of the devil) because workers are often bent over for most of the day. The UFW demanded that growers provide pickers "a living wage, clean drinking water and bathrooms, job security, health

[138] There are generally fewer hours per acre required for harvesting in southern California, which has a shorter harvest period and thus fewer repicks.

insurance and an end to sexual harassment and other abuses," and received extensive support from AFL-CIO to organize strawberry workers and to get consumers to tell supermarket managers that they are concerned about the wages and working conditions of strawberry workers in cities across the United States.

During the summer of 1996, the UFW strawberry organizing effort was described as the largest union-organizing effort in the United States, involving $2 million and 40 full-time organizers. The UFW targeted Monsanto-owned Coastal Berry, which was sold to union-friendly buyers who wrote "the Company is in favor of having the union [UFW] for the benefit of the Company and its employees."

However, the independent Coastal Berry Farmworkers Committee in July 1998 requested and won an election, which the UFW and Coastal asked the ALRB to set aside, which it did. In May and June 1999, the CBFC won again, but the votes of Coastal's 1,500 workers in northern and southern California regions were counted separately. The UFW won in the south, and the CBFC won in the north, and the ALRB certified the UFW to represent Coastal's southern California workers and the CFBC the northern workers. The UFW eventually wound up representing all of Coastal's workers, Coastal was sold to Dole in 2004, and the UFW-Dole contract in effect between 2006 and 2009 offers most pickers about $5 an hour plus $1 a tray. Most workers pick seven to nine trays an hour and earn over $12 an hour. The UFW also represents workers at Swanton Berry, a producer of organic strawberries.

The strawberry industry has dealt with labor issues by introducing mechanical aids and a contract-growing system. Most strawberries are grown under contract to cooling and marketing companies such as Watsonville-based Driscoll Strawberry Associates, the largest, that provide growers with plants and boxes, cool their berries, and sell them, deducting their costs and paying the balance to "contract growers." Growers, over half of whom are Hispanic, often lease the land on which they raise strawberries, and many receive everything from plants to fertilizer from their cooler-marketer. Contract growers are independent businesses responsible for hiring workers to produce the strawberries they deliver. In the past, some courts found that the marketers with whom they signed contracts exercised enough control to make them effectively employees, prompting a revision of the contracts (Wells, 2000; Manion, 2001).[139]

Strawberry consumption and grower prices have increased, with consumer prices have held down by rapid yield increases. If wages were to rise, the major kinds of strawberries sold, now organic and nonorganic, could result in more product differentiation, such as careful and less-careful hand-picked berries or machine and hand picked. Strawberry prices might also rise, which could limit the upward trend in consumption.

[139] Manion notes that a six-part test is used to determine whether sharecroppers are truly independent businesses or employees, viz, whether profit or loss depends on managerial skill, the relative size of the investments made by the two parties, whether the services provided by the sharecropper require special skills, the permanence of the relationship, and the extent of control over the independent sharecropper (most marketers have "field representatives" who visit sharecroppers). In Real v. Driscoll Strawberry Associates (603 F.2d 748 9th Cir, 1979), the 9th Circuit Court of Appeals decided that despite a contract that repeatedly called the sharecroppers independent businesses, they were in fact employees of Driscoll. However, in Donovan v. Brandel (736 F.2d 1114, 1117 6th Cir. 1984), the 6th Circuit Court of Appeals decided that cucumber sharecroppers were independent businesses.

2.4.2 Farm Labor Demand and Supply Matrix

The econometric model, regional analysis, and commodity case studies suggest that the demand for farm labor responds to rising wages, but that responses vary by region and commodity. The major variables affecting the future demand for farm labor are consumer demand (in the United States and abroad), the structure of production (larger farming units tend to rely more on hired workers but are also first to adopt labor-saving technology), and trade patterns (many countries with lower wages are adopting U.S. seeds and technologies to produce fruits and vegetables for export). Combined, these factors point to an increased demand for fruits and vegetables, likely produced on fewer and larger U.S. farms, with the method of production and the share of imports dependent on farm wages and U.S. trade polices.

The first two factors, consumer demand and method of production, promise to increase the demand for farm labor. U.S. consumer demand for especially fresh fruits and vegetables is rising faster than population growth. A variety of factors, many associated with financing and marketing, encourage more of this production to shift toward fewer and larger farms. Technology will likely have offsetting effects on U.S. FVH production, replacing workers with machines or making workers more productive so that fewer are needed, or developing seeds and plants that allow longer periods of production, better taste, or higher yields, increasing U.S. production and farm employment. Determining whether the labor-saving or labor-using part of technology is likely to dominate is best done on a commodity-by-commodity basis.

Figure 14. Factors Affecting Farm Labor Demand and Supply

Demand	Factor	Source	Note
Demand for FVH commodities	Value of FVH commodities projected to rise 20% between 2006 and 2016, from $50 billion to $61 billion	USDA baseline projections	New plantings are sometimes labor-saving (apples) and sometimes labor-using (strawberries)
Most FVH production is on larger farms that rely on hired workers	Expansion of U.S. FVH production requires more hired workers absent labor-saving changes	Cost of production studies for FVH commodities show that seasonal activities are done by hired workers	Strawberries are an exception; some are produced under contract by smaller growers
Technology 1	Labor-saving technologies replace hand workers; labor aids make farm work easier or workers more productive	Agricultural engineering studies	Balance between labor-saving machines and labor aids depends on wage costs, costs of machines/aids, and the commodity
Technology 2	Drip irrigation, plastic mulch, and	Farm production studies	Longer seasons can be associated with

	varieties that extend the season can *increase* the demand for farm workers		fewer workers employed longer (strawberries) or migrancy (lettuce)
Trade	U.S. imported $15 billion in fruits and vegetables in 2006; exported fruits and vegetables worth $12 billion	FATUS database	Canada and Mexico are the largest sources of imported FVH commodities and the main destinations for U.S.-produced FVH commodities
Supply	**Factor**	**Source**	**Note**
Immigration	Ease of entry for new workers, duration of seasonal farm work	NAWS	Ease of entry reflects government policy; duration of farm work depends on farm vs nonfarm job options

Trade may be the most difficult factor to forecast. The expectation is that, in a globalizing world with freer trade, production of labor-intensive FVH commodities will shift to lower-wage countries, especially as they adopt the same seeds and technologies that allowed production to be separated from consumption, as when CA became the long-distance supplier of FVH commodities to the eastern United States in the 1950s and 1960s. The speed with which imports of labor-intensive FVH commodities increase depends on factors that range from U.S. and foreign wages, trade rules, the spread of technology, and the value of the dollar relative to other currencies.

The United States was a net exporter of fruits and vegetables until the late 1990s, when the balance tipped in part because NAFTA enabled Mexican exports to the United States to increase sharply and Americans developed a taste for year-round fresh fruits and vegetables, which are supplied by imports when there is little or no U.S. production. The relatively strong dollar until 2005 also encouraged imports; the 2007-08 depreciation of the dollar encouraged U.S. exports. It should be emphasized that especially fresh fruits and vegetables are mostly water, explaining why Canada and Mexico are both the largest sources of imports of FVH commodities to the United States and the main destination of U.S. FVH exports.

The supply of labor is easier to predict. With three-fourths of U.S. farm workers immigrants, virtually all newcomers to the farm work force immigrants, and seasonal FVH agriculture offering jobs rather than careers, the farm labor market has a flow-through or a revolving door quality. Newcomers arrive from abroad, fill seasonal farm jobs for about a decade, and then generally move into nonfarm jobs.

This makes two factors critical to projecting the future supply of farm workers. First, how will foreign workers enter the United States to fill farm jobs, for example, as workers who can shift to other U.S. jobs, as with legal immigrants or unauthorized workers, or as guest workers tied to particular farm employers during limited stays in the United States? Second, how easy will it be for farm workers to make the transition to nonfarm jobs? The answer to this question depends on the state of the nonfarm economy and restrictions, if any, on migrants changing jobs in the United States.

Conclusions and Recommendations

This report evaluated the performance of the H-2A labor certification process and projected the demand for and supply of workers in the U.S. farm labor market. Section A was based on analysis of publicly available administrative and statistical data,[140] a review of published government and research reports and other materials, and interviews with federal and state officials involved in labor certification and others with significant knowledge of the H-2A program. Section B was based on a review of farm labor data, an econometric model, and regional and commodity analysis of labor supply and demand.

Section A applied lean manufacturing principles to the current labor certification process to suggest streamlining options that would enable the Department to satisfy its obligations, viz, to certify an employer's need for temporary alien farm workers when U.S. farm workers are not available, and to protect U.S. farm workers from any adverse effects due to the presence of the H-2A workers. In the past, the Department has placed relatively more emphasis on one of these two objectives, as in the mid-1950s when it put more emphasis on certifying the need for Braceros to reduce illegal migration and in the early 1960s when the emphasis was on protecting U.S. workers. The Department recently made significant changes to the administration of the H-2A program, centralizing the processing of applications in two centers and reducing funding to state SWAs as part of a reorganization of permanent labor certification. As a result, there are a number of new staff in both federal and state offices dealing with the H-2A labor certification process.

We recommend several steps to streamline the H-2A labor certification process, including requiring or encouraging employers to file applications on line in order to ensure that applications are complete and accurate and can be distributed easily to SWAs and others. We recommend an application fee, credited to the certification fee and reduced by each modification required by NPC analysts, to encourage employers and their agents to more carefully prepare applications. Finally, we recommend that the informal ABC system for rating employers and agents be made explicit to give employers incentives to earn and maintain A-ratings and thus free up analyst time for reviewing the applications of other employers.

[140] The report was based only on publicly available data and reports; we did not have access to the materials in government and private files that more clearly spell out the justification for particular provisions of the H-2/H-2A program. Second, most of the data provided by OFLC arrived four months into the project, after interviews were conducted with the NPCs and about half of the SWAs. We received ETA-9127 forms and Quarterly Activity Reports. for some states. Third, some materials that may have been useful were not available, such as a sample of H-2A applications that would have allowed a determination of whether periods employment are lengthening, job descriptions are becoming longer and more detailed, and contractor-employer relationships more complex.

We made a number of recommendations for SWAs that would allow them to better focus their limited resources. At least on a pilot basis in states that are conducting prevailing wage and practice surveys by mail, NASS and/or state labor market research divisions with statistical expertise could conduct the surveys. An ABC system that rated employers and allowed A-rated employers to self-certify their housing before occupancy could free up SWA resources for other tasks and still ensure that H-2A worker housing is inspected at least once a year. Finally, we recommend regular NPC-SWA meetings to discuss issues of concern to both, including longer contracts with fewer hours a week and more applications from labor contractors.

Section B estimated the effects of higher labor costs on U.S. agriculture at national and regional levels. We found that models developed in the 1960s to explain the links between farm and nonfarm labor markets no longer generate significant coefficients on the variables expected to explain levels of farm worker employment. Regional models are also problematic, largely because state-level data aggregates commodities that have very different levels of dependence on hired workers and thus sensitivity to labor costs.

Our review of labor conditions in selected labor-intensive commodities suggests that the demand for hand labor in each has likely peaked, but the reasons for expecting fewer farm workers in the future varies. In apples, there is tension between varieties and economics--the traditional varieties most amenable to machine harvesting because they ripen more uniformly are often planted in a way that results in taller trees and thus more bruising of fruit that is shaken off trees by machines, while newer varieties planted to facilitate mechanization have longer ripening windows that discourage make once-over machine harvesting.

Florida's oranges are mostly processed into juice, and new plantings are designed for machine harvesting. Freezes and hurricanes, urbanization, and disease are reducing orange acreage, which could shrink further with freer trade because of lower production costs in Brazil. Similarly, the California raisin industry is moving toward mechanization under the twin pressures of higher labor costs and low-cost imports. However, strawberry production is expanding, and cooler-shippers are meeting labor challenges with mechanical aids that increase worker productivity and contracting that has turned many ex-pickers into small growers.

We believe that it is important for the Department to keep abreast of changes in the farm labor market that affect its responsibilities in areas from labor certification to labor law enforcement to job training. During the 1950s and 1960s, the Department supported research on how changes in the farm labor market were likely to affect farm worker employment (Cargill and Rossmiller, 1969-70). Given the prospect of rapid changes in the demand for and supply of farm workers over the next decade, the Department may want to resume its historic role.

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Appendix 1. State Farm Labor Profiles

This project interviewed SWA staff in states with a majority of the jobs certified to be filled with H-2A workers, as well as in states with large numbers of farm workers (where the H-2A program could expand). Also included in the sample were states with recent expansions in H-2A usage and in states with long-time experience with H-2A workers and where the H-2A program has special provisions, as with sheepherders. In these states, we also interviewed non-governmental people with special knowledge of the H-2A program.

Interviews were conducted in 17 states accounting for 64 percent of the jobs certified to be filled with H-2A workers in FY06 and accounting for 62 percent of direct-hire farm labor expenses in the 2002 Census of Agriculture. We are grateful to the government and nongovernment people who answered our questions. For each state in which key informants were interviewed, a profile of that state's labor market, usually reviewed by the SWA staff and researchers, was prepared.

Table A1. States in which H-2A Interviews were conducted, 2007

State	2006 H-2A jobs cert	2006 Share	2002 COA ($mils)	2002 Share
United States	59,112	100%	18,568	100%
Arizona	1,405	2%	343	2%
Arkansas	2,535	4%	281	2%
California	2,292	4%	4,317	23%
Florida	1,880	3%	1,158	6%
Georgia	5,320	9%	327	2%
Illinois	287	0%	422	2%
Kansas	724	1%	332	2%
Kentucky	3,483	6%	292	2%
Massachusetts	620	1%	99	1%
New York	3,101	5%	449	2%
North Carolina	7,803	13%	552	3%
Oregon	69	0%	620	3%
Tennessee	1,879	3%	173	1%
Texas	1,500	3%	970	5%
Virginia	4,084	7%	242	1%
Washington	826	1%	987	5%
Subtotal	37,808	64%	11,564	62%

Source: OFLC and Census of Agriculture

COA are direct hire labor expenditures

United States Farm Labor Profile

U.S. Summary

U.S. agriculture is balanced between crops and livestock—each accounted for about half of farm sales of $200 billion in the 2002 Census of Agriculture. By 2006, farm sales reached about $240 billion, still divided 50-50 between crops and livestock. The 2006 value of FVH commodities, fruits and nuts, $17 billion, vegetables and melons, $18 billion, and other commodities (mostly horticultural specialties such as greenhouse and nursery crops), $22 billion, was $57 billion, almost half of 2006 crop sales of $120 billion (www.ers.usda.gov/Publications/Agoutlook/AOTables Table 20).

FVH operations also account for about half of the farm labor expenses and workers hired. Almost 555,000 U.S. farms reported hiring workers in 2002, but the 31,000 with farm labor expenses of $100,000 or more accounted for 70 percent of the total. FVH operations accounted for almost half of farm labor expenses in 2002, and most were incurred by the fewer than 7,000 large farm employers that paid $250,000 or more for hired labor. FVH farms accounted for about 45 percent of all directly hired workers, and 45 percent of those employed for more and less than 150 days on the responding farm.[141]

U.S. Census of Agriculture

The Census of Agriculture reported that the United States had 2.1 million farms in 2002, down from 2.2 million in 1997. U.S. farm sales were $200 billion, including $95 billion worth of crops, 48 percent, and $105 billion of livestock, 52 percent. Over half of all farms, some 1.1 million, had annual sales of less than $5,000, and 1.1 million farm operators reported that they worked off the farm, usually full-time. The average age of farm operators was 55, up from 54 in 1997.[142]

Some 554,000 U.S. farmers reported labor expenses to the COA, and they totaled $18.6 billion for directly hired workers; 229,000 farmers reported $3.4 billion in contract labor expenses, a total $22 billion. NASS reported that the average hourly earnings of all hired U.S. farm workers were $8.80 in 2002, suggesting 2.5 billion hours worked by hired farm workers; this is 1.2 million full-time (2080-hour) equivalents.[143]

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[141] Dairy farms had more labor expenses for directly hired workers than vegetable farms, but less in contract labor expenses.

[142] The Census of Agriculture provides the most comprehensive data on US agriculture, but not on US farm workers. The COA every five years reports the number of farms, farm sales, and various production expenses, including for workers hired directly and for contract labor.

[143] NASS reported an average $8.11 for US field workers and $8.17 for US field and livestock workers in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. Hired Worker Hours in U.S. Ag, 2002

U.S.: Hours Worked in Ag, 2002	
Farm Sales ($bil)	200
Total Labor Expendits($mil)	22,000
Sales to Expendits ratio	9.1
Average Earns ($/hour)	8.8
Estimated hours worked (mils)	2,500
Full-time equivalent (2080 hrs)	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[144] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[145]

Farm labor expenditures are concentrated on fewer than 31,000 U.S. farms. Some 554,000 U.S. farms reported labor expenses for directly hired workers in 2002, but:

- 68 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for four percent of direct hire labor expenses, an average $2,000 per farm.
- Another 26 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 26 percent of such expenses, an average $32,000 each.
- Six percent of operators, about 31,000, had direct hire labor expenses of $100,000 or more, and they accounted for 70 percent of the total, an average $418,000 each.

Contract labor expenses are concentrated in the same way. Fewer than 10,000 U.S. farms reported $50,000 or more in contract labor expenses, and they accounted for 71 percent of such expenses.

Table 2. United States: Farm Labor Expenses, 2002

Directly Hired	Farms	%	Expenses($000)	%	Averages $/farm
Farms with Expenses($000)	554,434	100%	18,568,446	100%	33,491
<10,000	377,550	68%	760,749	4%	2,015
10,000 to100,000	145,674	26%	4,746,419	26%	32,582
>100,000	31,210	6%	13,061,278	70%	418,497

[144] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[145] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Contract Labor	Farms	%	Expenses($000)	%	Averages $/farm
Farms with Expenses($000)	228,692	100%	3,451,190	100%	15,091
<10,000	188,739	83%	396,064	11%	2,098
10,000 to 50,000	30,343	13%	615,422	18%	20,282
>50,000	9,610	4%	2,439,704	71%	253,871

Source: COA 2002, US, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, COA Table 55 notes that the 55,800 U.S. farms with 2,000 or more acres paid $2.9 billion in directly hired labor expenses, 16 percent of the total, and the 19,000 such farms with contract labor expenses paid $1 billion, 29 percent of the total.

COA Table 56 reported that the 26,400 U.S. farms that each had farm sales of $1 million or more accounted for 58 percent of the $18.6 billion in direct hire labor expenses, and the 10,000 farms with sales of $1 million or more accounted for 56 percent of the $3.4 billion in contract labor expenses.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 442,400 individual or family farms with direct hire labor expense in 2002 accounted for $6.2 billion or a third of such expenses, the 56,000 partnerships $3.6 billion, and the 50,300 corporations $8.3 billion, or 45 percent of the total. The 188,000 individual or family farms with contract labor expense in 2002 accounted for $1.4 billion or 41 percent of such expenses, the 39,000 partnerships $758 million, and the 17,200 corporations $1.2 billion, or 35 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. Three types of U.S. farms: vegetables and melons, fruit and nut, and greenhouse and nursery operations, accounted for 48 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 68 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 6,800 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 55 percent of the 12,200 U.S. farms with large direct hire labor expenses.

Table 3. United States: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors					Dairy
		Vegs & Melons	Fruits & Nuts	Greenhouse, Nursery	3 Sectors	Share	
Direct Hire Farms	554,434	14,939	39,156	27,670	81,765	15%	41,965
Labor Exp($000)	18,568,446	2,032,496	2,770,557	4,101,274	8,904,327	48%	2,253,840
Distribution	100%	11%	15%	22%	48%	48%	12%
>$250,000	12,211	1,618	2,005	3,148	6,771	55%	1,961

Contract Farms	228,692	5,564	32,939	10,047	48,550	21%	7,809
Labor Exp($000)	3,451,190	660,692	1,412,413	258,419	2,331,524	68%	116,078
Distribution	100%	19%	41%	7%	68%	68%	3%
>$50,000	9,610	1,330	4,365	744	6,439	67%	431
Direct Hire Farms	554,434	14939	39,156	27,670	81,765	15%	41,965
Workers hired	3,036,470	293,736	656,463	391,253	1,341,452	44%	207,307
>150 days	927,708	92,033	133,421	192,697	418,151	45%	115,003
<150 days	2,108,762	201,703	523,042	198,556	923,301	44%	92,304
<150 days share	69%	69%	80%	51%	69%		45%

Source: COA, 2002, U.S., Table 59

The 554,000 U.S. farms that reported hiring workers directly hired a total of three million workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About 44 percent of all hired workers were in the three major labor-using sectors: vegetables, fruits, and nurseries.

These sectors hired 45 percent of the workers employed 150 days or more, most in nurseries, and 48 percent of those employed less than 150 days on the responding farm, most in fruits and nuts. About 70 percent of all hired workers, and 70 percent of those employed on vegetable farms and 80 percent of those employed on fruit farms, worked for less than 150 days on that farm. Half of the workers hired by nurseries, and 45 percent of those hired by dairies, were also employed for less than 150 days on the responding farm; it is not clear whether this reflects seasonality or high turnover.

FVH Agriculture

The Census of Agriculture includes a variety of other data on U.S. agriculture. The 28,700 U.S. farms that each had sales of $1 million or more in 2002 accounted for $95 billion in farm sales, almost half the total. The 3,300 farms that each had farm sales of $5 million or more sold $49 billion worth of farm commodities, a quarter of the total.

There are 950 million acres of land in U.S. farms, and about 430 million acres are considered crop land, but only about 300 million acres were harvested in 2002. Some of the land not harvested suffered crop failures, some was used only for pasture, and some was fallowed; there are no data on crops not harvested due to labor shortages. About 55 million acres were irrigated.

There are two major sub-sectors within crop agriculture. Most of the 945,000 U.S. crop farms and most of the acreage in 2002 were in field crops such as corn, 75 million acres; hay, 64 million acres, wheat, 45 million acres; soybeans, 72 million acres; and cotton, 12 million acres.

There were three million acres of rice; two million acres of sugar beets and sugar cane, and 1.2 million acres each of peanuts and potatoes.

Labor-intensive crops included 114,000 U.S. farms with 5.3 million acres of land in orchards and 54,000 farms with 3.7 million acres of vegetables and melons. Sales of fruits, nuts and berries (NAICS 1113) totaled $14 billion in 2002; sales of vegetables, melons and potatoes (NAICS 1111) $13 billion; and sales of nursery, greenhouse, and flower commodities (NAICS 1114) totaled $15 billion; U.S. FVH sales totaled $42 billion, or 44 percent of crop sales.

FVH production is concentrated on a relative handful of large farms. The 550 vegetable farms that each had 1,000 acres or more had over a third of the total vegetable acreage, the 400 berry farmers that each had 100 or more acres had almost half of the berry acreage, and the 600 farms with 1,000 or more acres in orchards had 30 percent of total orchard acreage.

For most fruits and vegetables, the largest 10 percent of farms account for over half of total production and sales. Detailed data for particular crops highlight the concentration of production. The 75 broccoli growers with 500 or more acres accounted for 70 percent of the total 142,000 acres; the 40 cantaloupe growers with 500 or more acres accounted for 45 percent of the total 107,000 acres; and the 60 lettuce growers with 1,000 or more acres accounted for 65 percent of the total 190,000 acres.

Tomatoes and most fruits are less concentrated: the 90 farmers each with at least 1,000 acres of tomatoes accounted for 45 percent of the 450,000 acres, while the 100 apple growers who each had 500 or more acres accounted for 20 percent of the 465,000 acres. There were 1.1 million acres of grapes in 2002, and the 2,000 farms with 100 or more acres of grapes accounted for over 75 percent of total grape acreage. About 135 orange farms each had 1,000 or more acres in 2002, and they accounted for 45 percent of the orange acreage. The 130 strawberry farmers with 100 or more acres accounted for 45 percent of the total 55,000 acres of strawberries.

U.S. QCEW Data

In 2005, some 8.6 million establishments employed an average 131.6 million workers who were covered under UI laws; they received a total of $5.4 trillion in wages. Those in private industry accounted for 8.3 million establishments and an average 110.6 million workers covered under UI laws.

BLS estimates that 1.2 million wage and salary workers in agriculture are included in the data, and less than 100,000 are excluded, that is, over 92 percent of total wage and salary employment in agriculture is believed to be covered by Employment and Wages or the Quarterly Census of Employment and Wages (QCEW).[146]

[146] The Federal Unemployment Compensation Amendments of 1976, effective January 1, 1978, brought agricultural labor under UI coverage if performed for a farm employer who, in any calendar quarter in the current or preceding calendar year, paid cash remuneration of $20,000 or more in farm wages or who, on each of some 20 days in 20 different weeks during the current or preceding calendar year, employed at least 10 individuals in agricultural labor.

There were almost 97,000 UI-covered establishments in agriculture in 2005, and they employed an average 1.2 million workers who were paid a total of $12 billion. About 45 percent of the establishments, employment, and wages paid were in crops, led by noncitrus fruits, which employed an average 154,000 workers and paid $2.8 billion in wages. The big three fruits were grapes, an average 35,200 workers, apples, 31,700 workers, and strawberries, 26,600 workers—these three accounted for average employment of 93,500, or 60 percent of the average noncitrus employment. Note that citrus employs far more than the average 3,500 in UI-data, but many orange pickers are reported by farm labor contractors.

The FVH sector, accounted for an average 436,000 UI-covered employees, or 80 percent of the 549,000 in crops. Nursery and greenhouse operations accounted for the highest average employment, 174,000, followed by fruits and nuts, 164,000, and vegetables, 98,000.

Animal agriculture employed an average 212,000 workers who earned an average $503 a week, almost 20 percent more than the average $418 of workers employed by crop farmers. Cattle ranching employed the most workers in animal agriculture, an average 121,000, followed by diary, an average 76,000. There were an average 290 UI-covered sheep farms employing an average 1,300 workers in 2005; they paid a total $27 million in wages, an average $400 a week, the lowest average weekly wage in animal agriculture.

Some 10,2000 establishments employed an average 280,000 workers to provide support to crop production. These support establishments included an average 2,200 labor contractors, and they employed an average 151,000 workers, which was over half of the employment in crop support. Labor contractors paid the lowest average weekly wages, $273, while another support activity, soil preparation, paid some of the highest weekly wages, $542 in 2005.

Table 4. Average Annual UI-Covered Establishments, Employment, and Wages, 2005

	Estabs	Per Dist	Employ	Per Dist	Wages($)	Per Dist	Ave Weekly($)
Agriculture, forestry, fishing	96,569	100%	1,163,629	100%	26,899,315	100%	445
Crop production	43,589	45%	548,715	47%	11,940,855	44%	418
Oilseed and grain farming	6,600	7%	30,507	3%	789,940	3%	498
Vegetable and melon farming	4,325	4%	98,475	8%	2,096,952	8%	410
Fruit and tree nut farming	12,299	13%	164,332	14%	3,034,795	11%	355
Orange groves	598	1%	6,687	1%	165,072	1%	475
Citrus, except orange, groves	350	0%	3,479	0%	81,655	0%	451
Noncitrus fruit and tree nut	11,351	12%	154,167	13%	2,788,069	10%	348
Apple orchards	2,172	2%	31,663	3%	497,838	2%	302
Grape vineyards	2,907	3%	35,175	3%	698,365	3%	382
Strawberry farming	526	1%	26,627	2%	460,957	2%	333
Berry, except strawberry, far	804	1%	11,627	1%	235,709	1%	390

	Estabs	Per Dist	Employ	Per Dist	Wages($)	Per Dist	Ave Weekly($)
Tree nut farming	1,696	2%	11,488	1%	275,668	1%	461
Fruit and tree nut combination	374	0%	5,025	0%	90,678	0%	347
Other noncitrus fruit farming	2,873	3%	32,563	3%	528,852	2%	312
Greenhouse and nursery production	9,067	9%	174,197	15%	4,224,979	16%	466
Food crops grown under cover	590	1%	21,390	2%	560,201	2%	504
Mushroom production	220	0%	14,672	1%	389,795	1%	511
Other food crops grown under	370	0%	6,717	1%	170,406	1%	488
Nursery and floriculture prod	8,477	9%	152,807	13%	3,664,778	14%	461
Nursery and tree production	5,615	6%	100,453	9%	2,492,063	9%	477
Floriculture production	2,862	3%	52,354	4%	1,172,715	4%	431
Other crop farming	11,298	12%	81,205	7%	1,794,190	7%	425
Tobacco farming	498	1%	3,810	0%	66,664	0%	336
Cotton farming	3,459	4%	18,860	2%	387,752	1%	395
Sugarcane farming	445	0%	6,088	1%	158,620	1%	501
Hay farming	1,305	1%	6,993	1%	171,047	1%	470
All other crop farming	5,591	6%	45,454	4%	1,010,107	4%	427
Animal production	21,208	22%	212,248	18%	5,554,732	21%	503
Cattle ranching and farming	13,521	14%	120,685	10%	2,998,084	11%	478
Beef cattle ranching, farming	7,147	7%	45,007	4%	1,189,032	4%	508
Beef cattle ranching and farm	6,116	6%	30,165	3%	737,005	3%	470
Cattle feedlots	1,031	1%	14,842	1%	452,027	2%	586
Dairy cattle and milk product	6,374	7%	75,678	7%	1,809,053	7%	460
Hog and pig farming	2,038	2%	24,795	2%	693,051	3%	538
Poultry and egg production	1,647	2%	40,713	3%	1,174,392	4%	555
Sheep and goat farming	290	0%	1,302	0%	27,120	0%	400
Animal aquaculture	737	1%	5,886	1%	161,437	1%	527
Other animal production	2,976	3%	18,868	2%	500,649	2%	510
Agriculture and forestry supp	17,293	18%	322,407	28%	6,642,035	25%	396
Support activities for crop p	10,190	11%	280,336	24%	5,432,866	20%	373
Cotton ginning	863	1%	10,530	1%	290,216	1%	530
Soil preparation, planting, a	3,279	3%	22,781	2%	641,656	2%	542
Crop harvesting, primarily by	873	1%	9,590	1%	220,997	1%	443
Other postharvest crop activities	1,831	2%	70,620	6%	1,719,508	6%	468
Farm labor contractors	2,234	2%	151,379	13%	2,148,179	8%	273
Farm management services	1,112	1%	15,436	1%	412,310	2%	514
Support, animal production	1152	1%	26,578	2%	724,109	3%	524

Source: QCEW, www.bls.gov/cew/ew05table2.txt

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Arizona Farm Labor Profile

AZ Summary

Arizona is a vegetable, nursery, and dairy state for farm labor purposes. These three sectors accounted for just over half of the jobs reported by farmers in the 2002 COA and ¾ of the contract labor expenses. The largest employment sector was vegetables and melons, accounting for a third of workers hired and labor expenditures, nurseries, 20 percent of workers and labor expenditures, and dairies, an eighth of workers hired and a sixth of labor expenditures.

Arizona farm sales were $2.9 billion in 2006, including $1.6 billion for crops and $1.3 billion for livestock. Vegetables and melons harvested from 146,000 acres and worth $734 million were almost half of crop sales, led by almost $390 million for lettuce, $53 million for broccoli, and Chile peppers.

Arizona farmers reported hiring 36,500 workers in the 2002 COA, most for less than 150 days on the responding farm. A worker employed by two farmers is counted twice in the COA; UI data reported that average agricultural employment was 28,900 in 2002. COA data report only workers hired directly by responding farmers, while UI data include direct hires (an average 14,000 in 2006) and workers brought to farms by agricultural support firms such as labor contractors (an average 14,100 in 2006).

Few Arizona farmers requested H-2A workers until FY06, when 42 farm employers were certified to fill 181 jobs with H-2A workers in FY05, over half sheepherder jobs. Employer requests rose in FY06, and the number of jobs that employers wanted to fill with H-2A workers increased over 10-fold to almost 3,000. Over half of these FY06 employer requests were rejected, but the number of jobs certified to be filled with H-2A workers nonetheless jumped sevenfold, from fewer than 200 to over 1,400.

AZ Census of Agriculture

The Census of Agriculture reported that Arizona had 7,300 farms in 2002, down from 8,500 in 1997. Farm sales were $2.4 billion, including $1.6 billion worth of crops, 66 percent, and $805 million of livestock, 34 percent.

Some 2,700 Arizona farmers reported labor expenses to the COA, and they totaled $343 million for directly hired workers; 1,600 farmers reported $95 million in contract labor expenses, a total $438 million. NASS reported that the average hourly earnings of all hired farm workers in Arizona were $8.04 an hour in 2002, suggesting 54 million hours worked by hired farm workers; this is 26,000 full-time (2080-hour) equivalents.[147]

[147]NASS reported an average $7.32 for field workers and $7.35 for field and livestock workers in Arizona in 2002; the all-hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings

The AEWR for Arizona in 2007 is $8.27 an hour; the state's minimum wage was $6.75 an hour in 2007, and $6.90 in 2008. Arizona voters approved Proposition 202 in November 2006 to create a state minimum wage that was indexed to the U.S. All-Urban Consumer Price Index (CPI-U).

Table 1. Hired Worker Hours in Arizona Ag, 2002

AZ: Hours Worked in Ag, 2002	
Farm Sales ($bil)	2.4
Total Labor Expendits($mil)	438
Sales to Expendits ratio	5.5
Average Earns ($/hour)	8.04
Estimated hours worked(mils)	54
Full-time equivalent (2080 hrs)	26,191

Source: Census of Agriculture and Farm Labor, 2002

Mortensen (2004) estimated 19,800 jobs in agriculture in the 1999-2001 period, including 7,600 or 38 percent filled by farmers and family members.

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[148] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[149]

Farm labor expenditures are concentrated on fewer than 500 Arizona farms. Almost 2,700 farms reported labor expenses for directly hired workers in 2002, but:

- 44 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for one percent of direct hire labor expenses, an average $2,800 per farm.
- Another 38 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 12 percent of such expenses, an average $39,000 each.
- 18 percent of operators, about 480, had direct hire labor expenses of $100,000 or more, and they accounted for 87 percent of the total, an average $627,000 each.

Contract labor expenses are more concentrated than direct hire expenses. The 165 farms reporting $50,000 or more in contract labor expenses accounted for 92 percent of such expenses.

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and hours worked provided by farm employers for four survey weeks (the week of January, April, July, and October that includes the 12th of the month). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[148] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[149] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Table 2. Arizona: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	2,678	100%	343,422	100%	128,238
<10,000	1,188	44%	3,287	1%	2,767
10,000 to100,000	1,011	38%	39,824	12%	39,391
>100,000	479	18%	300,311	87%	626,954
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	1,648	100%	95,038	100%	57,669
<10,000	1,234	75%	2,431	3%	1,970
10,000 to 50,000	249	15%	4,969	5%	19,956
>50,000	165	10%	87,638	92%	531,139

Source: COA 2002, Arizona, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, COA Table 55 notes that the 381 Arizona farms with 2,000 or more acres paid $132 million in directly hired labor expenses, 38 percent of the total, and the 188 with contract labor expenses paid $47 million, 49 percent of the total.

It might be noted that 2,200 Arizona farms were cattle ranches in the 1997 COA, and they included 92 percent of land in farms (used for pasture and range land). The average ranch was almost 11,000 acres (Mortensen, 2004, 7). About 75 percent of Arizona's ranches had annual sales of less than $25,000. Ranches accounted for relatively little of the hired farm labor expenses in 1997.

Data in COA Table 56 reports that the 380 Arizona farms that each had farm sales of $1 million or more accounted for 79 percent of the $343 million in direct hire labor expenses, and the 164 with farm sales of $1 million or more accounted for 85 percent of the $95 million in contract labor expenses.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 1,658 Arizona individual or family farms with direct hire labor expense in 2002 accounted for $82 million or 24 percent of such expenses, the 588 partnerships $91 million, and the 372 corporations $155 million, or 45 percent of the total. The 1,100 Arizona individual or family farms with contract labor expense in 2002 accounted for $23 million or 24 percent of such expenses, the 349 partnerships $18 million, and the 161 corporations $52 million, or 55 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of Arizona farms, vegetables and melons, greenhouse and nursery operations, and dairies, accounted for 52 percent of direct hire labor expenses in 2002; these three types of

farms also accounted for 76 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 109 vegetable, nursery and dairy operations that each had farm labor expenses of $250,000 or more were a 41 percent of the 264 Arizona farms with large direct hire labor expenses.

Table 3. Arizona: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	2 Sectors				
		Vegs & Melons	Greenhouse, Nursery	Total	Share	Dairy
Direct Hire Farms	2,678	148	175	323	12%	91
Labor Exp($000)	343,422	111,717	67,263	178,980	52%	44,713
Distribution	100%	33%	20%	52%	52%	13%
>$250,000	264	52	57	109	41%	59
Contract Farms	1,648	107	85	192	12%	67
Labor Exp($000)	95,038	67,907	4,463	72,370	76%	1,443
Distribution	100%	71%	5%	76%	76%	
>$50,000	165	63	8	71	43%	3
Direct Hire Farms	2,678	148	175	323	12%	91
Workers hired	36,459	11,623	7,119	18,742	51%	2,132
>150 days	17,425	5,376	3,450	8,826	51%	1,802
<150 days	19,034	6,247	3,669	9,916	52%	330
<150 days share	52%	54%	52%	53%		15%

Source: COA, 2002, AZ, Table 59

Arizona's 2,700 farms that reported hiring workers directly hired a total of 36,500 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Over half of all hired workers were in the three major labor-using sectors: vegetables, nurseries and dairies. These sectors hired 51 percent of the workers employed 150 days or more, and 52 percent of those employed less than 150 days on the responding farm. Over half of the workers employed on vegetable farms and nurseries were employed for less than 150 days on the reporting farm. By contrast, only 15 percent of those employed in the state's dairies were employed less than 150 days by the reporting nursery.

NASS's Farm Labor survey reported that 19,000, 18,000, 24,000, and 25,000 workers were employed by farmers in during the survey weeks of January, April, July, and October 2005, very similar to employment in previous years—over 75 percent were expected to be employed on the responding farm 150 days or more. The Farm Labor Survey groups Arizona and New Mexico. New Mexico had farm sales of $1.7 billion in 2002, 42 percent of the total for Arizona and New Mexico, and total farm labor expenditures of $209 million, 32 percent of the two-state total. Thus, at least 2/3 of the employment reported in the NASS Farm Labor survey is likely in Arizona.

AZ State Data

Arizona Workforce Informer (www.workforce.az.gov) includes ES-202 data, which are UI-covered employment and wages. In 2006, there were about 1,100 establishments (employers) in agriculture, forestry, and fisheries that employed an average 28,000 workers and paid total wages of $603 million, making average wages per year-round equivalent job about $21,435. Average wages jumped especially fast between 2004 and 2005, rising 11 percent, but rose less than one percent between 2005 and 2006.

Table 4. Arizona: UI-Covered Ag Employment, 1990-2006

Year	Establishments	Ave Employment	Wages($)	Ave Wages($)
1990	1,231	23,724	301,001,781	12,688
1991	1,278	25,870	333,352,332	12,886
1992	1,296	26,540	351,044,393	13,227
1993	1,283	26,931	357,871,448	13,288
1994	1,296	27,047	362,185,492	13,391
1995	1,288	28,171	392,687,513	13,939
1996	1,239	29,283	400,410,176	13,674
1997	1,244	29,427	418,779,749	14,231
1998	1,234	31,358	449,158,995	14,324
1999	1,217	31,296	461,993,539	14,762
2000	1,208	29,249	465,703,830	15,922
2001	1,158	28,671	481,895,721	16,808
2002	1,147	28,885	498,310,642	17,252
2003	1,151	28,626	511,516,005	17,869
2004	1,130	29,160	557,594,391	19,122
2005	1,118	28,386	603,055,299	21,245
2006	1,124	28,118	602,695,284	21,435
1990-06	-9%	19%	100%	69%
1990-95	5%	19%	30%	10%
1996-00	-3%	0%	16%	16%
2001-06	-3%	-2%	25%	28%

Source: www.workforce.az.gov/cgi/dataanalysis/AreaSelection.asp?tableName=Industry

There is limited detail by NAICS code—only 3-digit crop, livestock, and agricultural support data are available, and only since 2004. These data suggest that direct-hire crop employment has been falling since 2004, show a spike in wages in crops and agricultural support between 2004 and 2005, and show that more workers are hired in the lowest-wage support sector than are hired directly—in 2006, half of the UI-covered employment in agriculture was with agricultural support establishments, where wages of $18,500 were about 80 percent of the $23,400 average for those hired directly by crop farms. The 4,000 livestock workers had the highest average hourly earnings, an average $26,800 in 2006.

Table 5. Arizona: UI-Covered Employment in Crops, Livestock, and Support 2004-2006

Crops	Establishments	Ave Employment	Wages($)	Ave Wages($)	%Change
2004	510	10,784	226,536,399	21,007	
2005	503	10,671	261,583,491	24,513	16.7%
2006	493	9,865	231,270,303	23,444	-4.4%
Livestock					
2004	236	3,749	100,022,417	26,680	
2005	226	3,923	101,063,142	25,762	-3.4%
2006	221	4,027	107,792,091	26,767	3.9%
Support					
2004	359	14,488	227,936,032	15,733	
2005	364	13,640	236,997,753	17,375	10.4%
2006	384	14,085	260,245,684	18,477	6.3%

Source: www.workforce.az.gov/cgi/dataanalysis/AreaSelection.asp?tableName=Industry

AZ H-2A Jobs, Referrals, and Prevailing Wages

In FY 2006, 58 Arizona employers requested certification to fill 2,931 farm jobs with H-2A workers. The Department certified 51 employers to fill 1,405 jobs, 48 percent, one of the lowest certification percentages in the United States. Many of the requests were from vegetable growers who did not follow through with their applications, but the number of jobs certified nonetheless jumped sevenfold between FY 2005 and FY 2006. About 100 of the jobs certified in most years are for sheepherders.

Table 6. Arizona H-2A Applications, FY04-06

	Employer Requests	Employer Certified	Jobs Requested	Jobs Certified	%Cert
2004	31	30	339	239	71%
2005	43	42	246	181	74%
2006	58	51	2,931	1,405	48%

Source: OFLC, Crop Activity Summary Report

States submit applications on Form SF-424 for grants to cover their costs under the H-2A program. Arizona estimated its costs for FY06 at $100,535, including 75 percent for processing applications.

Table 7. Arizona Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	73	15,962	219	16%
Prevailing Wage Surveys	222	9,472	43	9%
Job Orders Processed	83	75,101	905	75%
Total		100,535		

Source: SF-424

States have three major costs: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. Arizona provided detailed data on its costs, noting that considerable driving time was required to do housing inspections, that time was required to develop survey instruments for prevailing wage surveys, and that staff time is needed to enter job orders into local and interstate clearance systems.

The AZ SWA receives H-2A applications and reviews the 790 job orders before entering them into the job bank system. In most cases, employers or their agents submit applications to both the SWA and NPC, but there have been occasions in which the SWA did not receive the application, only the NPC, and the SWA learned of it when the NPC requested a job order number.

Arizona has outreach workers who recruit and refer workers to jobs, including H-2A jobs. Workers referred receive a referral letter, which they give to the employer. The AZ SWA reported that employer recruitment reports detailing the outcomes of these referrals go directly to the NPC, and that the SWA may not see them.

Arizona is a large state, and inspecting housing is a costly and time-consuming activity. Sheepherder housing is inspected every three years, and on some occasions several employers have housed workers at one location, which can complicate making repairs.

The SWA conducts prevailing wage surveys in crops, but relies on prevailing wages in neighboring states to determine sheepherder wages. The SWA plans to mail surveys to farm employers in January 2008, and use SWA outreach workers to obtain enough responses to make a prevailing wage determination.

The Arizona prevailing wage data on the OFLC web site (www.foreignlaborcert.doleta.gov/aowl.cfm) includes 2007 prevailing wages that range from $8 an hour for custom combine operators to $8.25 an hour for lettuce harvesters. The prevailing piece rate was $40 a 47x47x30 inch bin for ring clipping lemons, and $750 a month for sheepherders (where there few domestic workers). No prevailing wage finding was made for watermelon workers or orange harvesters.

Issues and Trends

The Arizona Republic on November 3, 2005 reported on labor shortages due to stepped up border enforcement. A Chile producer in Pearce reported losing $100,000 in fall 2005 because

he had 60 to 70 workers rather than the usual 120.[150] In fall 2005, many of the workers interviewed were guaranteed $5.48 an hour, but earned a piece rate of $1 a bucket. Most were from Oaxaca, and reported earning $50 to $70 a day.

The Western Growers Association reported that vegetable growers lost “millions” in the winter and spring of 2005 in Yuma because of too few workers. Dole Fresh Vegetables was reportedly refurbishing a labor camp for 285 H-2A workers in Yuma, Arizona.

The Legal Arizona Workers Act requires employers beginning January 1, 2008 to participate in DHS's EEVS system (E-Verify) to check on the legal status of new hires, but includes no penalties for non-participation in what is now a voluntary system. State and county district attorneys must investigate complaints that employers intentionally or knowingly hired unauthorized workers, and notify ICE if the complaint is not "frivolous" as well as ask a court to withdraw the firm's business license.

Arizona's Attorney General has been trying to deter smugglers by requiring Western Union to report all wire transfers to the northern Mexican state of Sonora that exceed $300. Suits challenged the authority of the Arizona attorney general to seize, for instance, money transfers from Illinois to Sonora. The Arizona Court of Appeals in September 2007 agreed that Western Union does not have to provide the information that would be needed to make the seizures. Some $17 million has been seized, and some of those who lost their money are suing to recover it.

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[150] The chile grower, Ed Curry, used Jesus "Jesse" Lopez to get harvest workers. Curry-Lopez reported using both prison labor and the H-2A program to obtain workers.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Arkansas Farm Labor Profile

AR Summary

Arkansas had farm sales of $6.2 billion in 2006, ranking it 11th among states. Livestock and poultry worth $3.8 billion accounted for 61 percent of Arkansas's farm sales; almost 80 percent were poultry and eggs. Crops worth $2.4 billion were led by rice worth $850 million, cotton worth $642 million, and soybeans worth $604 million. Vegetables were worth $31 million, including half tomatoes, and fruits and nuts were worth $13 million, including almost $4 million worth of peaches.

About a fourth of Arkansas farms reported expenses for hired farm labor in 2002, and these expenses suggest the creation of about 20,000 year-round equivalent jobs. There were about 39,000 workers hired by AR farms in 2002, including two thirds for less than 150 days on the responding farm. Over half of the workers hired directly by farmers were in three sectors, grains, cotton, and eggs, with grains the largest direct-hire employer. There were two workers employed on egg farms for less than 150 days for every worker employed 150 days or more, which may reflect high turnover in these year-round jobs.

Some 118 Arkansas farm employers were certified to fill over 2,500 jobs with H-2A workers in FY06. A quarter of these H-2A jobs were in grains, another quarter were in tomatoes, and 10 percent each were in blackberries and peppers.

AR Census of Agriculture

The Census of Agriculture reported that Arkansas had 47,500 farms in 2002, down from 49,500 in 1997. Farm sales were almost $5 billion, including $1.6 billion worth of crops, a third, and $3.3 billion of livestock, two thirds.

Some 12,225 Arkansas farmers reported labor expenses to the COA, totaling $281 million for directly hired workers; 5,300 farmers reported $28 million in contract labor expenses, a total of almost $308 million. NASS reported that the average hourly earnings of all hired farm workers in Arkansas were $7.56 an hour in 2002, suggesting 41 million hours worked by hired farm workers; this is almost 19,600 full-time (2080-hour) equivalents.[151] The AEWR for Arkansas in 2007 was $8.01 an hour.

[151] NASS reported an average $7.41 for field workers and $7.35 for field and livestock workers in Arkansas in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. AR Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	Arkansas	United States
Farm Sales ($bil)	5	200
Total Labor Expendits($mil)	308	22,000
Sales to Expendits ratio	16.2	9.1
Average Earns ($/hour)	7.56	8.80
Estimated hours worked (mils)	41	2,500
Full-time equivalent (2080 hrs)	19,587	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[152] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[153]

Farm labor expenditures are less concentrated than in Arkansas than in other states. Arkansas is the only state among those examined in these interviews in which more farm labor expenses were incurred by farms in the $10,000 to $1000,000 category than in the over $100,000 category. Over 12,200 farms reported labor expenses for directly hired workers in 2002, and:

- Two thirds had less than $10,000 in direct hire labor expenses, and they collectively accounted for six percent of direct hire labor expenses, an average $1,900 per farm.
- Another 31 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 45 percent of such expenses, an average $33,000 each.
- 4 percent of operators, about 445, had direct hire labor expenses of $100,000 or more, and they accounted for 40 percent of the total, an average $250,000 each.

Contract labor expenses are also concentrated in the mid-sized category of farm employers. The 613 farms reporting $10,000 to $50,000 or more in contract labor expenses accounted for 41 percent of such expenses.

Table 2. Arkansas: Farm Labor Expenses, 2002

Directly Hired	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	12,225	100%	280,599	100%	22,953
<10,000	7,989	65%	15,544	6%	1,946
10,000 to100,000	3,796	31%	126,659	45%	33,366

[152] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[153] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

>100,000	443	4%	111,192	40%	250,998
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	5,253	100%	27,758	100%	5,284
<10,000	4,567	87%	9,654	35%	2,114
10,000 to 50,000	613	12%	11,431	41%	18,648
>50,000	73	1%	6,671	24%	91,384

Source: COA 2002, AR, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of Arkansas farms: grains, cotton, and egg farms, accounted for 70 percent of the direct hire labor expenses in 2002 and 60 percent of the contract labor expenses. Grains accounted for 37 percent of direct-hire labor expenses and 26 percent of the contract labor expenses.

Relatively few farms accounted for most of these labor expenses: the 71 grain, cotton, and egg farms that each had farm labor expenses of $250,000 or more were two-thirds of the 113 Arkansas farms with large direct hire labor expenses.

Table 3. Arkansas: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Grains	**Cotton**	**Eggs**	**Total**	**Share**
Direct Hire Farms	12,225	3,012	564	2,331	5,907	48%
Labor Exp($000)	280,599	103,525	33,731	55,500	192,756	69%
Distribution	100%	37%	12%	20%	69%	69%
>$250,000 farms	113	17	15	39	71	63%
Contract Farms	5,253	810	199	912	1,921	37%
Labor Exp($000)	27,758	7,228	3,382	5,731	16,341	59%
Distribution	100%	26%	12%	21%	59%	59%
>$50,000 farms	73	28	12	8	48	66%
Direct Hire Farms	12,225	3,012	564	2,331	5,907	48%
Workers hired	38,833	10,544	3,252	8,101	21,897	56%
>150 days	13,311	5,417	1,793	2,822	10,032	75%
<150 days	25,522	5,127	1,459	5,279	11,865	46%

<150 days share	66%	49%	45%	65%	54%	

Source: COA, 2002, AR, Table 59

Arkansas's 12,200 farms that reported hiring workers directly hired a total of 39,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About 56 percent of all hired workers were in the three major labor-using sectors: grains, cotton, and egg farms.

These sectors hired 75 percent of the workers employed 150 days or more, and 46 percent of those employed less than 150 days on the responding farm. About half of the workers employed on grain and cotton farms were employed less than 150 days on the reporting farm; two-thirds of the workers employed on egg farms were employed less than 150 days, most likely reflecting high turnover in these year-round jobs.

AR State Data

Arkansas has federal 20-10 UI coverage, meaning that farm employers are required to provide unemployment insurance coverage for their workers if they paid cash wages of $20,000 or more in the current or preceding calendar quarter or employed ten or more workers on at least one day in each of 20 different weeks in the current or immediately preceding calendar year.[154] The earnings of H-2A workers are exempt from the federal 0.8 percent UI tax, but H-2A workers are counted in determining whether a farm employer is subject to the 20-10 rule.[155]

There were 2,000 UI-covered reporting units in Arkansas agriculture, forestry, and fisheries in 2005, and they had an average 14,151 covered employees who earned an average $511 a week. Poultry and eggs accounted for 18 percent of the UI-covered agricultural employment, followed by grains, 14 percent (logging accounted for 20 percent). The highest average weekly wages were in poultry and eggs, $607, and the lowest in vegetables, $228.

Table 4. Arkansas: UI-Covered Employment, 2005

	NAICS Code	Units	Avg Employ	Wages Paid($)	Ave Weekly($)
Agriculture	11	2,022	14,151	375,779,534	511
Crops	111	724	3,878	80,714,074	400
Grains	1111	437	2,011	42,045,710	402
Greenhouse/Nursery	1114	48	347	8,554,877	474
Animal Prod	112	255	3,715	112,511,056	582
Poultry/Eggs	1123	88	2,580	81,422,051	607

Source: www.discoverarkansas.net/?PageID=137

[154] Several states have practically universal coverage of farm workers, including CA and WA. FL requires UI coverage of farm workers by employers paying $10,000 or more in a calendar quarter or employing at least five workers in 20 weeks, while TX requires coverage if employers pay $6,250 in any calendar quarter or hire at least three workers in at least 20 different weeks. Comparison of State UI Laws. http://workforcesecurity.doleta.gov/unemploy/statelaws.asp#Statelaw

[155] States may exclude the wages paid to H-2A workers from state UI taxes, and NC XXX

AR H-2A Jobs, Referrals, and Prevailing Wages

Some 118 Arkansas farm employers were certified to fill over 2,500 jobs with H-2A workers in FY06. About a quarter of these H-2A jobs were in grains, another quarter were in tomatoes, and 10 percent each were in blackberries and peppers.

States have three major costs to administer their part of the H-2A program: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Arkansas reported its H-2A costs for FY06 to be $7,136, and spent 75 percent on housing inspections, six percent on prevailing wage and practice surveys, and 20 percent processing job orders.

Table 5. Arkansas Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	117	5,324	46	75%
Prevailing Wage Surveys	6	408	68	6%
Job Orders Processed	117	1,404	12	20%
Total		7,136		

Source: SF-424

Less than half of the AR farm employers seeking certification use agents to file applications with the SWA and the NPC in Chicago (most of the farm employers who apply on their own used agents in the past). Especially since December 2007, the NPC analyst handling the application sends an email to the SWA requesting the job order number, so that it can be put in the acceptance letter, and also ensuring that both agencies have the application. The SWA noted that the email may not include the NPC analyst's name.

H-2A job order information is entered by the SWA and posted on the Arkansas Job Link (https://www.arjoblink.arkansas.gov/ada/default.cfm), which listed one H-2A job in December 2007, for a fish-hatchery worker to hand-harvest fish with nets. Local SWA offices can see this information, and recruit and refer workers to H-2A jobs. The AR SWA does not scan the attachments to the 790 form for distribution to SWA offices in the state or neighboring states. Employer names are suppressed in the job bank, so workers wanting referrals to an H-2A job visit a SWA office and see a counselor, who provides detailed information from the job order before making the referral. Referred workers are given a letter that they hand to the employer, who is asked to report whether the worker was hired and mail the letter back to the SWA office. More Arkansas employers are requesting workers for 10 months, and the SWA closes their job order after the 50 percent period has expired, that is, after five months.

The AR SWA conducts housing inspections from the central office in Little Rock. With the same employers using the same housing for the same workers year-after-year, the SWA sees little need for pre-occupancy inspections. An ABC system that rated employers and allowed A-rated employers to self-certify their housing would, in the AR case, save scarce resources.

The AR SWA conducts prevailing wage and practice surveys by mail, following up with telephone calls to get sufficient responses to make a determination. Given the time required for follow up, the AR SWA would welcome turning these surveys over to NASS or another statistical agency.

The H-2A program is expanding in Arkansas, with most employers requesting certification in the southeastern portion of the state.

Bibliography

Covered Employment and Earnings. www.discoverarkansas.net/?PageID=137

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - California Farm Labor Profile

CA Summary

Most California farm workers are employed to produce FVH commodities: fruits and nuts, vegetables and melons, and horticultural specialties from greenhouses and nurseries. California is the largest farm state, as measured by cash receipts, with farm sales of $32 billion in 2005, including $24 billion from crops and $8 billion from livestock. FVH crops were worth $20 billion, including $10.5 billion for fruits and nuts, $6.2 billon for vegetables and melons, and $3.4 billion for horticultural specialties.

Fruit, vegetable and greenhouse-nursery operations hire most of the state's farm workers. The 2002 COA reported that almost 34,000 California farms spent $4.3 billion to hire 535,000 workers; 38 percent of these jobs lasted 150 days or more on the responding farm. [156] About 70 percent of the farms hiring workers, 75 percent of the expenditures for hired workers, and 85 percent of the hired workers were on fruit, vegetable, and nursery farms. Fruit and nut farms offered 57 percent of the jobs reported in the COA, including 40 percent of the regular or 150-day jobs and two-thirds of the seasonal or less than 150 day jobs.

There are effectively two H-2A programs in California, one for sheep and one for FVH commodities; any growth would likely be in FVH commodities. California records referrals to H-2A jobs in a way that allows a determination of when the worker was referred relative to the employer-specified start date—about two-thirds of the U.S. workers were referred before the start date.. The SWA conducts 13 prevailing wage and practice surveys a year by mail and, given limited responses from employers, is uncertain about their reliability.

CA Census of Agriculture

The Census of Agriculture reported that California had 78,000 farms in 2002, down from 88,000 in 1997. Farm sales were $25.7 billion, including $19.2 billion worth of crops, 75 percent, and $6.5 billion of livestock, 25 percent.

Some 34,300 California farmers reported labor expenses to the COA, totaling $4.3 billion for directly hired workers; 24,700 farmers reported $1.7 billion in contract labor expenses, a total $6 billion. NASS reported that the average hourly earnings of all hired farm workers in California were $9.13 an hour in 2002, suggesting 657 million hours worked by hired farm workers; this is 316,000 full-time (2080-hour) equivalents, a quarter of the estimated U.S. total. [157] The AEWR for California in 2007 was $9.20 an hour; the state minimum wage was $7.50.

[156] Workers reported by two responding farms are counted twice, so the worker count is best considered a count of jobs on state farms.

[157] NASS reported an average $8.31 for field workers and $8.42 for field and livestock workers in California in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other

Table 1. CA Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	California	United States
Farm Sales ($bil)	25.7	200
Total Labor Expendits($mil)	6,000	22,000
Sales to Expendits ratio	4.3	9.1
Average Earns ($/hour)	9.13	8.80
Estimated hours worked(mils)	657	2,500
Full-time equivalent (2080 hrs)	315,949	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[158] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[159]

Farm labor expenditures are concentrated on fewer than 7,000 California farms. Over 58,000 farms reported labor expenses for directly hired workers in 2002, but:

- A quarter had less than $10,000 in direct hire labor expenses, and they collectively accounted for one percent of direct hire labor expenses, an average $2,800 per farm.
- Another two-thirds of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 11 percent of such expenses, an average $13,000 each.
- 12 percent of operators, about 6,800, had direct hire labor expenses of $100,000 or more, and they accounted for 88 percent of the total, an average $556,000 each.

Contract labor expenses are as concentrated as direct hire expenses. The 4,700 farms reporting $50,000 or more in contract labor expenses accounted for 88 percent of such expenses.

Table 2. California: Farm Labor Expenses, 2002

Directly Hired	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	58,359	100%	4,317,078	100%	73,975
<10,000	14,580	25%	41,170	1%	2,824
10,000 to100,000	36,980	63%	492,676	11%	13,323

workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[158] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[159] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

>100,000	6,799	12%	3,783,232	88%	556,439
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	24,716	100%	1,665,671	100%	67,392
<10,000	13,123	53%	42,470	3%	3,236
10,000 to 50,000	6,861	28%	156,836	9%	22,859
>50,000	4,732	19%	1,466,365	88%	309,883

Source: COA 2002, California, Table 4.

Farm labor expenses can be tabulated along several other size-of-farm dimensions. For example, the data in COA Table 55 show that 34,300 California farms reported hiring 535,300 workers, including 19,950 farms reporting the hiring of 201,900 workers for 150 days or more and 26,000 that reported hiring 333,400 workers for 150 days or less—both of these workers' entries should be considered job counts, since one worker employed on two farms is counted twice. There were 1,800 farms with 2,000 or more acres that hired workers directly, and they hired 91,200 workers.

Data in COA Table 56 report that 4,900 California farms had farm sales of at least $1 million and hired workers; their direct hire labor expenses were $3.3 billion, 77 percent of the total $4.3 billion. The 2,800 farms with sales of at least $1 million and contract labor expenses accounted for $1.2 billion or 70 percent of the total $1.7 billion.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 23,600 California individual or family farms with direct hire labor expenses accounted for $1.2 billion or 28 percent of such expenses, the 6,000 partnerships $1 billion, and the 4,200 corporations $2 billion, or 46 percent of the total. The 17,800 California individual or family farms with contract labor expense accounted for $545 million or 33 percent of such expenses, the 4,100 partnerships $475 million, and the 2,400 corporations almost $614 million, or 37 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of California farms: vegetables and melons, fruits and nuts, and greenhouse and nursery operations, accounted for 77 percent of direct hire labor expenses in 2002; these three types of farms also accounted for almost 81 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 2,347 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 71 percent of the 3,299 California farms with large direct hire labor expenses.[160]

[160] California had 1,811 dairy operations that reported $420 million in direct hire labor expenses in 2002; 513 reported $32 million in contract labor expenses. The direct-hire dairy farms reported a total of 20,655 workers hired, including 14,500 or ¾ hired 150 or more days on the responding farm.

Table 3. California: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Vegs & Melons	Fruits & Nuts	Greenhouse, Nursery	Total	Share
Direct Hire Farms	34,342	1,861	19,033	2,753	23,647	69%
Labor Exp($000)	4,317,078	770,709	1,632,780	932,369	3,335,858	77%
Distribution	100%	18%	38%	22%	77%	77%
>$250,000	3,299	575	1,119	653	2,347	71%
Contract Farms	24,716	1,202	17,912	820	19,934	81%
Labor Exp($000)	1,665,671	390,588	1,036,570	82,699	1,509,857	91%
Distribution	100%	23%	62%	5%	91%	91%
>$50,000	4,732	622	3,246	180	4,048	86%
Direct Hire Farms	34,342	1,861	19,033	2,753	23,647	69%
Workers hired	535,256	77,152	306,047	70,038	453,237	85%
>150 days	201,852	35,687	82,127	42,198	160,012	79%
<150 days	333,404	41,465	223,920	27,840	293,225	88%
<150 days share	62%	54%	73%	40%	65%	

Source: COA, 2002, CA, Table 59

California's 34,300 farms that reported hiring workers directly hired a total of 535,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Over 85 percent of all hired workers were in the three major labor-using sectors: vegetables, fruits, and nurseries. These sectors hired 80 percent of the workers employed 150 days or more, and 88 percent of those employed less than 150 days on the responding farm. Almost 55 percent of the workers employed on vegetable farms and almost 75 percent of those hired on fruit farms were hired employed less than 150 days on the reporting farm; 40 percent of those employed in the state's nurseries were employed less than 150 days by the reporting nursery.

State Data

There are two major state sources of statistical data on California farm employment and earnings: UI data (QCEW) and a state version of the Current Employment Statistics program. In addition, there are a number of other surveys of California farm workers and employers.

California has had nearly universal coverage of farm workers under the UI system since 1978, and the Quarterly Census of Employment and Wages (ES 202) provides data on establishments

or reporting units, employment, and wages paid by state and county. The statewide data show rising employment in agriculture between 1990 and 1998, especially by FLCs, and declining employment since 1998 in all sectors except animal production.

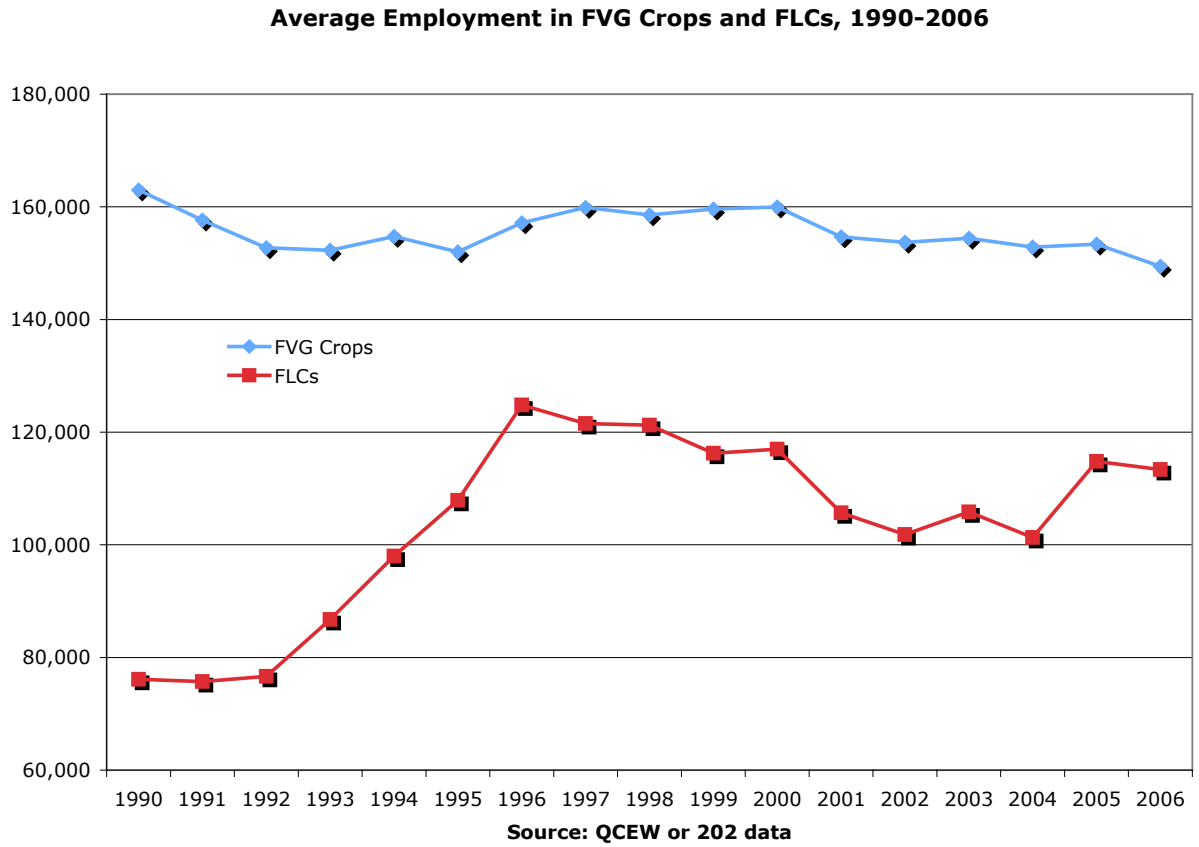
Table 4. Average Employment in CA Agriculture, 1990-2006

Year	Ag (11)	Crops (111)	Vegs (1112)	Fruits (1113)	Green (1115)	Animal (112)	Ag Sup (115)	FLC (115115)
1990	373,570	202,659	36,796	91,026	35,151	27,605	135,971	76,122
1991	356,016	194,840	34,935	89,392	33,296	26,345	128,376	75,715
1992	353,845	189,808	32,455	88,020	32,263	25,523	132,290	76,651
1993	363,377	189,190	32,861	88,066	31,347	25,141	143,076	86,754
1994	380,689	193,265	33,516	89,444	31,774	25,181	156,485	98,008
1995	387,289	189,700	33,210	86,718	32,097	25,160	166,599	107,898
1996	411,823	195,964	33,028	91,214	32,902	25,250	184,584	124,806
1997	411,475	198,711	32,408	93,785	33,691	26,306	180,657	121,536
1998	406,933	195,150	31,906	91,850	34,806	26,781	179,705	121,248
1999	402,595	197,115	33,586	90,314	35,707	27,631	172,467	116,254
2000	405,585	198,087	33,818	89,804	36,340	28,423	173,927	116,969
2001	383,347	189,192	32,967	85,981	35,707	28,853	160,669	105,669
2002	376,138	186,335	33,572	85,065	35,046	29,720	155,678	101,835
2003	377,944	184,247	33,448	86,019	34,970	29,044	160,886	105,862
2004	369,951	178,844	35,507	82,188	35,145	29,342	158,102	101,290
2005	380,538	177,003	34,567	85,122	33,704	29,258	170,748	114,822
2006	378,942	172,267	33,086	83,115	33,246	29,199	174,071	113,356
1990-98	9%	-4%	-13%	1%	-1%	-3%	32%	59%
1998-06	-7%	-12%	4%	-10%	-4%	9%	-3%	-7%

Source: EDD, QCEW, www.labormarketinfo.edd.ca.gov

Employment in fruit and nuts (NAICS 1113), vegetables and melons (1114), and greenhouse and nursery crops (1115) was about 80 percent of employment in California crops in 1990, and 87 percent in 2006, similar to these crops 83 percent share of crop sales. Employment by FLCs (NAICS 115115) rose as a share of agricultural support employment from 56 percent in 1990 to 65 percent in 2006. As Figure 1 shows, the sharpest rise in FLC employment in CA agriculture was between the early 1990s and 1995; since the 1995 peak, average FLC employment has declined.

Figure 1. CA: Average Employment in FVG Crops and FLCs, 1990-2006



The average weekly wages of workers employed directly by crop farms were $466 a week in 2006, equivalent to $11.65 an hour (UI-covered workers include supervisors and managers). Average weekly wages were highest in greenhouses and nurseries and vegetables, lower in fruits and nuts, and lowest for workers employed by FLCs, equivalent to average hourly earnings of $7.20 in 2006, when the state's minimum wage was $6.75.

Average weekly wages rose twice as fast among directly hired fruit and nut workers as for FLC workers between 1990 and 1998, 44 percent versus 22 percent. However, between 1998 and 2006, these trends were reversed. Average FLC weekly wages rose 58 percent between 1998 and 2006, almost twice as fast as wages in fruits and nuts.

Table 5. Average Weekly Wages ($), CA, 1990-2006

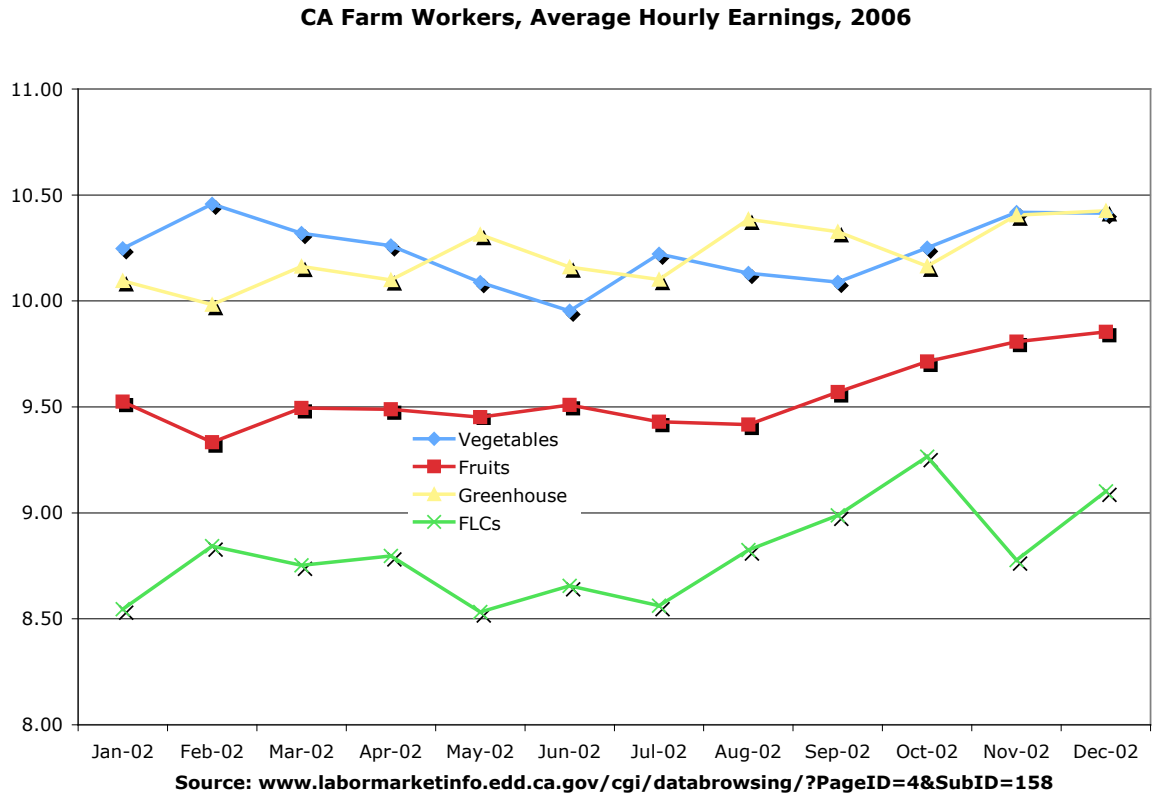
Year	Crops (111)	Vegs (1112)	Fruits (1113)	Green (1115)	FLC (115115)
1990	259	294	211	322	149
1991	265	288	221	334	146
1992	275	308	234	342	160
1993	281	315	241	347	155
1994	286	320	244	350	154
1995	300	339	257	362	147

Year	Crops (111)	Vegs (1112)	Fruits (1113)	Green (1115)	FLC (115115)
1996	307	347	268	369	145
1997	325	370	285	390	165
1998	349	395	303	418	182
1999	360	396	316	432	200
2000	370	394	328	453	206
2001	387	422	340	472	230
2002	404	435	357	488	252
2003	407	462	347	490	257
2004	424	475	362	502	266
2005	443	494	384	520	273
2006	466	523	404	540	288
1990-98	35%	34%	44%	30%	22%
1998-06	34%	32%	33%	29%	58%

Source: EDD, QCEW, www.labormarketinfo.edd.ca.gov

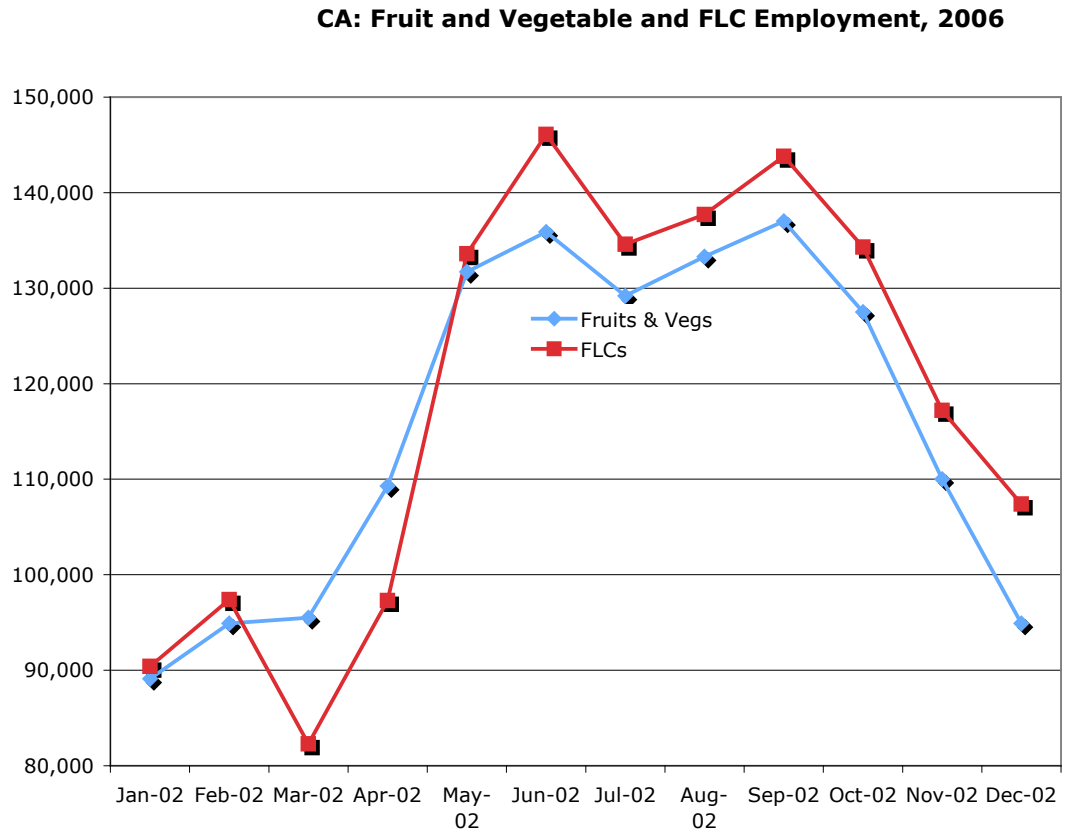
In the early 1990s, California developed CES-Ag program that obtained the same data on the employment and earnings of nonsupervisory production workers from farm employers that was collected from nonfarm employers by the CES program (www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=4&SubID=158). These earnings data mirror the UI data, with greenhouse and nursery workers and vegetable workers having the highest average hourly earnings, an average of about $10.25 an hour in 2006. Average hourly earnings for fruit workers were about $9.50 an hour, and those employed by FLCs earned less than $9 an hour.

Figure 2. CA Farm Workers, Average Hourly Earnings, 2006



Farm worker employment, as measured by the monthly survey of farm employers, exhibits little seasonality in greenhouses, while the ratio of peak to trough employment is over 1.5 in vegetables, fruits, and among FLC employees, with peak employment in June and September. FLC employment exceeded fruit and vegetable employment except for March-April 2006.

Figure 3. CA: Fruit and Vegetable and FLC Employment, 2006



Source: www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=4&SubID=158

California's Agricultural Services Plan for PY07-08 reviewed the difficulty estimating the number and status of MSFWs and notes that few visit EDD offices and register for CalJOBS, the state's job bank. The Plan reported that outreach workers contacted 50,000 MSFWs in 2006-07, and 10 percent of those contacted visited an EDD office or registered for CalJOBS; California has 22 full time outreach workers.

CA referred 5,266 of the 12,000 MSFWs registered with CalJOBS to jobs in PY06-07; three times more received some type of assistance. The plan attributes the declining number of MSFWs registered with CalJOBS to more farm workers finding jobs with FLCs (pIV-5); letters are sent to registered MSFWs to advise them of the availability of EDD services.

The Plan's Table 11 reported that 2,918 agricultural job orders were received in PY06-07 offering 11,800 farm jobs, down from 5,300 and 27,500 the year before; these PY06-07 job orders were from 2,200 employers (one reason for the drop was that the system purged employers who had not been active in placing job orders during the previous five years). The state received 14 interstate job orders in PY06-07.

CA H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 258 CA farm employers were certified to fill 2,292 jobs with H-2A workers. The number of farm employers requesting certification has been stable at about 250 in recent years, but the number of jobs has doubled from less than 1,000 in FY04. Almost all H-2A applications are submitted by associations or agents (often lawyers) on behalf of employers.

California effectively has two separate H-2A programs, one for employers seeking sheep-related workers and another for non-sheep employers.[161] Almost all of the sheep employers requesting certification use an agent, either the Western Range Association or the Mountain Plains Association, so there are about 75 employer contacts with the California SWA each year, two for sheep and the others for non-sheep employers. In FY05, when 260 farm employers were certified to fill 1,049 jobs with H-2A workers, 220 or 85 percent of the employers were sheep (or goat) farmers, and 345 or a third of the H-2A jobs certified involved sheep.

Any growth in the H-2A program is likely to come from non-sheep farmers, most likely from FVH operations. The western sheep industry has been declining for the past several decades, a decline accelerated by the removal of price supports for wool and mohair in 1995.[162] The United States had 6.2 million sheep and lambs in January 2007, including 1.1 million in Texas and 610,000 in California (http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1145).

States have three major costs to administer their part of the H-2A program: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. California reported its costs for FY06 to be $556,813, divided into thirds for housing inspections, prevailing wage and practice surveys, and processing job orders.

Table 6. California Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	351	193,050	550	35%
Prevailing Wage Surveys	13	174,655	13,435	31%
Job Orders Processed	521	189,108	363	34%
Total		556,813		

Source: SF-424

Most California farm employers seeking certification file applications 45 to 47 days in advance of their need-for-workers date with the CA SWA and the NPC in Chicago. SWA staff review applications, check the job description, prevailing wage offered etc and, if the application is

[161] Employers must have their need for H-2A sheepherders recertified each year, but the H-2A sheepherders are allowed to remain in the U.S. continuously as H-2A workers for up to 36 months.

[162] The National Wool Act of 1954 created a price support program for wool and mohair; it was phased out in 1995. In 2000, USDA launched a four-year Lamb Meat Adjustment Assistance Program to help US producers compete with imports that account for about half of US-consumed lamb (lamb is meat from animals younger than 14 months) and mutton consumption. The Farm Security and Rural Investment Act of 2002 re-instituted federal support for wool and mohair.

acceptable, enter the 790 job information into the CalJOBS system and contact the nearest EDD office to let them know about the job. In some cases, especially first-time employers must be reminded of H-2A regulations, as when they offer the *lower* of the three wage rates, AEWR, federal or state minimum, or prevailing, rather than the *higher* as regulations require.

After the NPC accepts the employer's application for certification, usually within seven days of its submission, the CA SWA notifies EDD offices around the state about the H-2A job offer and sends it to nearby states and Texas; H-2A job orders are scanned for email transmission to other states. More California employers are requesting H-2A workers for the usual maximum 10 months, and some offer workers 30 hours a week, which may discourage U.S. workers seeking 40 or more hours of work a week.

The names of employers seeking certification to fill jobs with H-2A workers are suppressed.[163] This means that U.S. workers interested in the jobs must register with EDD, which requires submitting an SSN and developing a "resume," and then visit an EDD office to be referred to an H-2A job. CalJOBS advises potential workers to note the job number and report in person to a particular EDD office-- the bottom of H-2A job listings says "In order to obtain job listing contact information [employer's name and address], you must present documents to show legal authorization to work in the United States."

SWA staff normally try to contact the employer by telephone while the potential worker is in the EDD office. If the SWA counselor believes the worker is qualified, expects the worker to be offered a job. If the worker is hired more than five days before the job begins, the worker is supposed to reconfirm his/her availability with the SWA at least five days before the start date.

In PY06-07, employers requested certification to fill 2,900 jobs with H-2A workers. There were about 630 U.S. worker referrals to these jobs, 22 percent, including 415 or two-thirds made before the job's start date and 215 or a third made after the job began. These data, from the state's Program Activity Support System (PASS) system, could be used to determine exactly how many days before and after the job start date referrals were made.

Workers seeking jobs can see the job at any CalJOBS kiosk, but need to see a counselor and show proof that they are legally authorized to work in the United States before being referred to the job (JS staff do not determine the authenticity of worker documents). Referring U.S. workers to the H-2A jobs can mean that JS staff call the employer on behalf of the worker seeking a job, schedule an in-person appointment for the worker with the employer, or help the worker to submit a written application to the employer.

Most U.S. workers seeking farm jobs want work right away, so most of the referrals to H-2A jobs that result in a U.S. worker going to work are made near the time that work begins and 50

[163] Most of the jobs posted in the CalJOBS system do not suppress employer contact information, allowing workers to apply directly for the job without visiting an EDD office. At one time, CA posted contact information for employers filing H-2A job orders, but was instructed to suppress employer contact information (1) to protect the privacy of employers and (2) to ensure that EDD staff interviewed workers and determined that they were capable of doing the job. Almost all H-2A job orders require no experience, and it is not clear how experience is verified if, e.g., the employer requires six months experience harvesting lettuce.

percent of the contract period, when the H-2A job is removed from the Cal JOBS system. [164] EDD field staff record when referrals are made, but the California system does not readily generate data to show exactly when in the period between the employer's application and 50 percent of the employer-specified contract period U.S. workers were referred and hired.

Most worker complaints about the H-2A program come from workers hired during the 50 percent period. Some employers may make life difficult for these U.S. workers rather than send H-2A workers home to open jobs for them—as in other states, there are few reports of H-2A workers sent home because U.S. workers were hired. In some cases, employers who say they have a full complement of workers must be reminded of their obligation to hire U.S. workers for up to 50 percent of the contract period. With more employers requesting certification for 10 months, the 50 percent period during which U.S. workers can seek H-2A jobs lasts five months.

CA's SWA and the NPC certify FLCs seeking to employ H-2A workers to fill jobs on the farms to whom they supply workers, but only if the FLC has a written contract with the farmer in question that is attached to the FLC's application. FLCs provide additional information in attachments to the 790 form, including copies of their federal and licenses, any necessary amendments to transport and house workers, and their tax-ID numbers.

In FY05, CA employers requested certification to fill 1,678 jobs with H-2A workers, and were certified to fill 1,049 jobs, 62 percent; in FY06, employers sought certification to fill 3,971 jobs and were certified to fill 2,292 jobs, 58 percent. The large gap between requests and certifications seems to involve border-area vegetable farmers who applied for certification but did not have housing available (the growers wanted the workers to commute to farm jobs from homes in Mexico). These growers reportedly hoped that labor shortages would allow their applications to be approved on an emergency basis, predicted farm labor shortages did not materialize. [165]

As a result of budget cuts, CA conducts its 13 prevailing wage and practice surveys a year by mail, obtaining employer names and addresses from the UI system (CA has had almost universal UI coverage of farm workers since 1978). It is sometimes difficult to get employers to respond to the surveys, which prompts in-person follow ups in order to make a finding as to the prevailing wage. The reliability of the mail surveys may not be as high as in-person surveys if employers do not respond.

There are four positions funded by the agricultural portion of CA's labor certification grant, and they fund staff in Sacramento to process applications and conduct prevailing wage surveys. The four EDD employees stationed at offices around the state who conduct housing inspections are funded from 10 percent Wagner-Peyser funds. Housing inspections are conducted in a timely

[164] Some workers, attracted by the AEWR of $9.20 an hour, take other jobs while waiting for the H-2A job to begin.

[165] The March 2006 Grower and Shipper magazine attributed the lack of border-area labor shortages to low vegetable prices that reduced the demand for labor and to the Border Patrol not stopping as many contractor buses headed from the border to the fields. See H-2A, H-2B. Rural Migration News Vol. 13 No. 2, April 2006. http://migration.ucdavis.edu/rmn/more.php?id=1111_0_4_0

manner, and the state inspects sheepherding housing every year, rather than once ever three years as required by H-2A regulations (sheepherders can remain in the United States three years).[166]

The H-2A program is expanding in CA, raising issues that range from the need for additional resources to employers offering longer periods of employment and 30-hour work weeks. The number of jobs certified more than doubled between FY05 and FY06, stretching the staff. As the program expands to new commodities, the CA SWA will have to conduct more prevailing wage and practice surveys, become more familiar with job descriptions and contracting arrangements in new commodities, and deal with often complex relations between contractors and fixed situs employers.

Farm Labor Trends: Sheep

The sheep industry has used the H-2A program longer than any other California agricultural commodity. Each shepherd cares for a flock of 750 to 1,250 sheep between April and October in mountainous areas, and then accompanies the flock to a lower-level ranch from November to March for lambing and shearing.

In 1950, Senator Patrick McCarran of Nevada persuaded Congress to approve the "sheepherder bills" that allowed then mostly Basques to enter the United States as shepherds and, after fulfilling a three-year contract, to become immigrants.[167] Sheepherders were admitted as immigrants in the early 1950s from the Basque region of Spain without a test of the U.S. labor market to determine whether U.S. workers were available or whether the presence of the foreigners had any adverse effects on U.S. workers. Some employers complained that their sheepherders left as soon as they got immigrant visas, and in a report issued February 14, 1957, the House Judiciary Committee agreed that admitting sheepherders as permanent immigrants did not permit the sheep industry to "fully benefit" from the services of aliens admitted to be sheepherders. It recommended that the special provision for admitting sheepherders as permanent immigrants be allowed to expire, and that alien sheepherders have been admitted under the H-2 program since the late 1950s.

In 1981, when Congress was considering immigration reforms that would, inter alia, change the H-2 program to the H-2A program, the President of the Western Range Association (WRA) testified that shepherding is "a way of life" requiring a man, dog and rifle (U.S. Senate, 1981a, 85). Contradictory assertions were made about the skills required to be a sheepherder. On the one hand, it was argued that shepherding is a skilled job, "one of the highest paid...in agriculture," (U.S. Senate, 1981a, 108) , and that H-2 sheepherders have experience in their countries of origin. On the other hand, H-2A sheepherders should remain in the United States more than one year because it is only in the herder's second year that "you are really going to benefit from his services."(U.S. Senate, 1981b, 107).

[166] Since a visit by Peruvian government representatives in 2004, California inspects H-2A sheepherder housing before occupancy and six months after occupancy, and discusses the quality of the housing with sheepherders. Housing inspectors report improved housing conditions as a result.

[167] A 2000 book noted that "few Basque immigrants herded sheep back home" (p4) "few had sheepherding experience," (p138), and "most Basque immigrants, when given an opportunity, left…sheepherding." (p101). (Bieter and Bieter)

WRA testified that it hired about 30 United States and 300 H-2A sheepherders a year at monthly wages of $600 to $625; employer costs were put at $1,000 a month, including travel to the United States and housing—herders were said to be more interested in the quality of their housing than the wage. WRA asked that H-2 sheepherders be allowed to stay in the U.S. up to five years, that the Department make a blanket certification finding that U.S. workers are unavailable to be sheepherders, and that the Department not specify e.g. maximum charges for food.

CRLA in 2000 surveyed sheepherders and released a report Suffering in the Pastures of Plenty: Experiences of H-2A Sheepherders in California Central Valley. It concluded that many of state's H-2A sheepherders were not provided with adequate trailers or running water, and persuaded the state's Industrial Welfare Commission to require that sheepherders be paid at least $1,350 a month in 2007.

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Florida Farm Labor Profile

FL Summary

Florida was the nation's ninth largest farm state in 2005, with farm sales of $7.8 billion, including 80 percent from crops. The leading crops were greenhouse and nursery commodities worth $1.9 billion, oranges worth $1 billion, and tomatoes worth $805 million.

Florida farmers reported farm labor expenses of $1.6 billion in 2002. At average hourly earnings of $8.69, these expenses generated 90,000 year-round jobs. Farmers reported hiring almost 120,000 workers directly in 2002 (other workers are brought to farms by contractors), and 80 percent of these direct hires were on three types of farms--vegetables and melons, fruits and nuts, and greenhouse and nursery operations (workers employed on two farms are counted twice in these data).

There were an average 81,000 workers employed by crop and crop support employers who were covered by Florida's UI system in 2006. They were in four major sectors, vegetables and melons, where UI-covered employment averaged 18,000 in 2006, fruit farming, 9,600, greenhouses and nurseries, 24,300, and crop support activities (mostly labor contractors) 25,500.

About 50 Florida farmers have been certified to fill 2,000 jobs with H-2A workers in recent years; ¾ of these H-2A jobs have been in citrus. Most Florida farm employers use agents to apply for H-2A certification, and many are applying well before the 45-day minimum application cut off in order to ensure that the Florida SWA and the state Department of Health do required housing inspections. Job information is typed the Employ Florida Marketplace system, but the employer's name is suppressed; workers wanting a referral visit a One-Stop Center to get the complete job contract and a referral letter. Employers may request that the One-Stop Center complete an I-9 form on each worker before making the referral, and many do.

The Florida data system is capable of generating information on how many workers were referred to H-2A jobs, how many were hired, and how long they stayed on the job and what they earned, but these data were not readily available.

FL Census of Agriculture

The Census of Agriculture reported that Florida had 44,100 farms in 2002, down from 45,800 in 1997. Farm sales were $6.2 billion, including $5 billion worth of crops, 80 percent, and $1.2 billion of livestock, almost 20 percent.

Some 10,700 Florida farmers reported labor expenses to the COA, and they totaled $1.2 billion for directly hired workers; 10,200 farmers reported $422 million in contract labor expenses, a total $1.6 billion. NASS reported that the average hourly earnings of all hired farm workers in Florida were $8.69 an hour in 2002, suggesting 187 million hours worked by hired farm workers;

this is 90,000 full-time (2080-hour) equivalents.[168] The AEWR for Florida in 2007 was $8.56 an hour.

Table 1. Hired Worker Hours in Florida Ag, 2002

	Florida	United States
Farm Sales ($bil)	6.2	200
Total Labor Expendits($mil)	1,622	22,000
Sales to Expendits ratio	3.8	9.1
Average Earns ($/hour)	8.69	8.80
Estimated hours worked(mils)	187	2,500
Full-time equivalent (2080 hrs)	89,736	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[169] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[170]

Farm labor expenditures are concentrated on 1,600 Florida farms. Almost 10,700 farms reported labor expenses for directly hired workers in 2002, but:

- Over half had less than $10,000 in direct-hire labor expenses, and they collectively accounted for one percent of direct hire labor expenses, an average $2,400 per farm.
- Another third of farm operators had direct-hire expenses of $10,000 to $100,000; they collectively accounted for 10 percent of such expenses, an average $35,000 each.
- 15 percent of operators, about 1,600, had direct-hire labor expenses of $100,000 or more, and they accounted for almost 90 percent of the total, an average $635,000 each.

Contract labor expenses are as concentrated as direct hire expenses. The 1,200 farms reporting $50,000 or more in contract labor expenses accounted for 83 percent of such expenses.

[168] NASS reported an average $7.71 for field workers and $7.78 for field and livestock workers in Florida in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[169] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[170] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Table 2. Florida: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	10,672	100%	1,157,569	100%	108,468
<10,000	5,755	54%	13,683	1%	2,378
10,000 to100,000	3,299	31%	116,347	10%	35,267
>100,000	1,618	15%	1,027,538	89%	635,067
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	10,204	100%	422,218	100%	41,378
<10,000	6,624	65%	18,661	4%	2,817
10,000 to 50,000	2,418	24%	51,126	12%	21,144
>50,000	1,162	11%	352,430	83%	303,296

Source: COA 2002, FL, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of Florida farms: vegetables and melons, fruits and nuts, and greenhouse and nursery operations, accounted for 80 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 87 percent of the contract labor expenses.

Relatively few farms accounted for most of these labor expenses: the 692 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 81 percent of the 858 Florida farms with large direct hire labor expenses.

Table 3. Florida: Farms by NAICS and Labor Expenses, 2002

NAICS	**All Farms With Expenses**	**3 Sectors**				
		Vegetables	**Fruits**	**Greenhouse**	**Total**	**Share**
Direct Hire Farms	10,672	506	2,007	2,495	5,008	47%
Labor Exp($000)	1,157,569	221,104	170,949	535,896	927,949	80%
Distribution	100%	19%	15%	46%	80%	80%
>$250,000 farms	858	125	125	442	692	81%
Contract Farms	10,204	289	5,429	1,218	6,936	68%
Labor Exp($000)	422,218	70,177	266,379	30,120	366,676	87%
Distribution	100%	17%	63%	7%	87%	87%
>$50,000 farms	1,162	159	755	109	1,023	88%

Direct Hire Farms	10,672	506	2,007	2,495	5,008	47%
Workers hired	118,581	33,414	19,883	38,048	91,345	77%
>150 days	49,610	9,113	6,019	23,805	38,937	78%
<150 days	68,971	24,301	13,864	14,243	52,408	76%
<150 days share	58%	73%	70%	37%	57%	
Ave >150 days	5	18	3	10		
Ave <150 days	6	48	7	6		

Source: COA, 2002, FL, Table 59

Florida's 10,700 farms that hired workers directly reported a total of 118,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Over 75 percent of these directly hired workers were in the three major labor-using sectors: vegetables, fruits, and nurseries.

These three sectors hired over 75 percent of the workers employed 150 days or more, and over 75 percent of those employed less than 150 days on the responding farm. Almost 75 percent of the workers employed on vegetable farms and 70 percent of those hired on fruit farms were employed less than 150 days on the reporting farm; a third of those employed in the state's nurseries were employed less than 150 days by the reporting nursery.

Vegetable farms had the largest work forces, an average 18 regular or more than 150-day employees and 48 seasonal workers, followed by greenhouses and nurseries, with 10 regular and six seasonal workers. The small labor forces in fruits may be misleading because the data include only workers hired directly by farm operators. Many of the workers hired to harvest fruit are provided by labor contractors. The cost of labor contractors is included in the labor expense data, but not the number of workers they bring to farms.

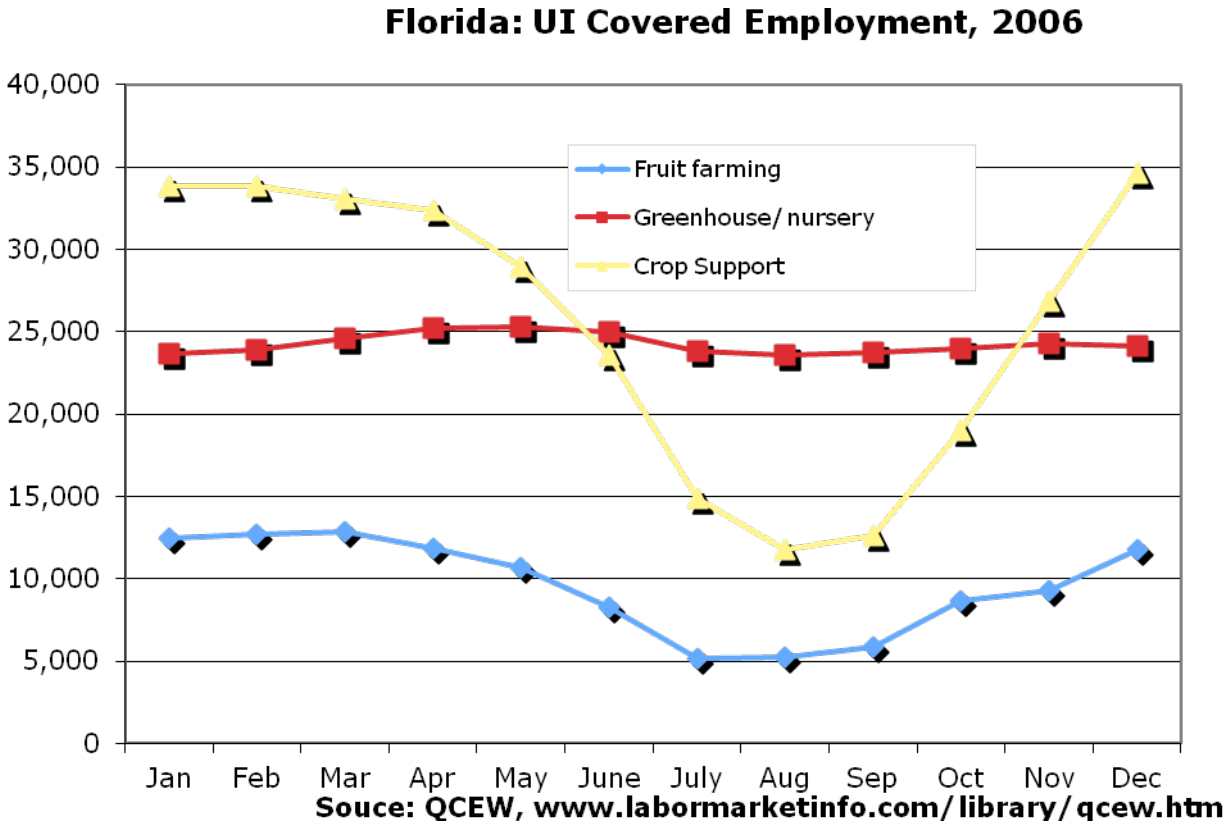
State Data

Florida generates data on employment and wages paid by employers in its UI program. In 2006, employment in UI-covered agricultural, forestry, and fisheries jobs averaged 94,000, and ranged from a low of 65,000 in August to a high of 112,000 in December. UI-covered wages totaled $2.1 billion, and the average wages paid to a year-round UI-covered job were $22,800, an implied $11 an hour.

Three sectors accounted for two-thirds of UI-covered employment, fruit production, greenhouses and nurseries, and crop support activities such as labor contracting. Employment in greenhouses and nurseries was relatively stable at about 24,000, but employment in fruit farming, which averaged 9,600, and crop support activities, which averaged 24,500, was far more seasonal. Fruit farming employment was almost 13,000 between January and March, a period when crop

support activities employment was 33,000 to 34,000 and reached its lows in August, at about 5,300 and 11,800, respectively.

Figure 1. UI-Covered Employment, Fruit, Greenhouses, and Support, 2006



H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 47 Florida employers were certified to fill 1,880 farm jobs with H-2A workers, up from 32 employers certified to fill 1,615 farm jobs in FY05, when 70 percent of the H-2A jobs were in oranges. The FL SWA has a web site that describes the H-2A program (www.floridajobs.org/alc/ans7.html)

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Florida requested $124,600 for FY06, including 40 percent for housing inspections, 40 percent for prevailing wage surveys, and 20 percent to process H-2A applications.

Table 5. Florida Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	1300	49,718	38	40%
Prevailing Wage Surveys	52	48,281	928	39%

Job Orders Processed	125	26,573	213	21%
Total		124,572		

Source: SF-424

Most FL farm employers use agents to help them apply for H-2A certification, and many agents are encouraging their farmer clients to file applications well before the need date, in part because both the state Department of Health and the FL SWA inspect housing, and they want to be assured that the housing is inspected so that they can be certified. One full-time and one part-time staff person inspect farm worker housing.

Employer job orders are received and reviewed by the SWA before being entered into the Employ Florida Marketplace system, which makes the job visible to job seekers everywhere, but suppresses the employer's contact information (www.employflorida.com/saintro.asp?session=jobsearch). Workers wanting a referral to the job see a counselor at one of 80 full-service One-Stop Centers for complete job information and a referral letter, which is taken to the employer (there are additional satellite centers).

Employers may request that One-Stop Centers check the work authorization documents of workers seeking referrals to jobs. In such cases, work authorization documents are presented and copied, and a verification is given to the worker to present to the employer. The employer must complete another I-9 form for the newly hired employee, and can use the E-Verify system to check on the validity of the documents presented. In some cases, employers reportedly send seasonal workers they regularly employ to the local One-Stop Center, so that their work authorization documents can be checked and the One-Stop Center is credited with referrals.

One-Stop Centers handle recruitment and referral, and they are performance driven. FL SWA staff note that many of the U.S. workers referred to H-2A jobs are UI benefit recipients, which generates reports on whether the referred worker was hired and whether he/she stayed on the job. Thus, one could extract data from the Florida system to determine when a worker was referred to a job, whether he/she was hired, and how long the employee stayed in the job.

Data on the number of workers referred to H-2A jobs were not readily available, but it is believed that referral and hire rates are similar to national averages, viz, referrals are made to about five percent of H-2A jobs and workers are hired to fill about two percent of them.

Prevailing wage studies by mail, with telephone follow up to get sufficient responses to make a determination. The FL SWA believes that, with the work load increasing, having another agency do prevailing wage and practice surveys such as NASS could yield reliable data and free up resources for processing the increasing number of H-2A applications.

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Georgia Farm Labor Profile

GA Summary

Georgia is a state whose farm sales are dominated by poultry. However, it has the second-largest number of H-2A jobs certified, after NC, largely because 4,000 to 5,000 jobs on the vegetable farms that account for about a quarter of the state's farm sales have been certified to be filled with H-2A workers.

Georgia's vegetables, seasonal farm workers, and H-2A workers are concentrated in the southern parts of the state, with fewer in the central and northern parts of the state. Commodities with significant numbers of H-2A workers include squash, onions, peaches, and peppers—squash accounted for a third of the H-2A jobs certified in FY05. H-2A worker usage is spreading northward, and the cost of state job order processing, prevailing wage studies, and housing inspection costs exceed the alien labor certification grant. The enactment of SB 529, the Georgia Security and Immigration Compliance Act, may speed the expansion of the H-2A program, but has so far had minimal impacts on the farm labor supply.

Under "Southern Denial," the INS apprehended 21 workers in May 1998, prompting fears of a reduced supply of workers for the Vidalia onion harvest. The INS agreed to stop its enforcement activities for the rest of 1998 if employers agreed to hire legal workers in 1999 via the H-2A program and to make available to the INS employment records, including FLC-grower agreements. However, a dispute over the prevailing wage for harvesting onions limited onion employer participation in the H-2A program.

GA Census of Agriculture

The Census of Agriculture in 2002 reported that Georgia had 49,000 farms, about the same as in 1997. Farm sales were almost $5 billion, including $1.6 billion worth of crops, 33 percent, and $3.3 billion of livestock, 67 percent. Two thirds of the crops were vegetables, cotton, and nursery products, each about 20 percent of crop sales. Livestock was dominated by poultry—almost 85 percent of livestock sales, and 40 percent of total farm sales, were poultry and eggs.

By 2006, farm sales were reported to be $6.4 billion; most of the growth occurred in livestock (www.caed.uga.edu). In 2005, vegetable sales were almost $900 million, and Fonsah observed that even sharp increases in production do not reduce prices enough to lower revenues. For

example, in 2006 there was a 48 percent increase in onion production and a 15 percent drop in onion prices. The three leaders in the fruits and nuts category are pecans, blueberries, and peaches, accounting for 60, 22, and nine percent of this sector's sales in 2005.

Georgia farmers reported COA labor expenses of $327 million for directly hired workers and $61 million in contract labor expenses in 2002, a total $388 million. NASS reported that the average hourly earnings of all hired farm workers in the region were $8.53 an hour in 2002, suggesting 45 million hours worked by hired farm workers in Georgia in 2002; this is 21,6300 full-time (2080-hour) equivalents.[171]

Table 1. Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

Georgia	Georgia	United States
Farm Sales ($bil)	4.9	200
Total Labor Expendits($mil)	388	22,000
Sales to Expendits ratio	12.6	9.1
Average Earns ($/hour)	8.53	8.80
Estimated hours worked(mils)	45	2,500
Full-time equivalent (2080 hrs)	21,869	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major labor expenditure items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[172] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[173]

Farm labor expenditures are highly concentrated on 600 to 1,000 Georgia farms. Some 11,600 Georgia farms reported labor expenses for directly hired workers in 2002:

- Almost 70 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for five percent of direct hire labor expenses, an average $1,900 per farm.

[171] NASS reported an average $8 for field workers and $8.06 for field and livestock workers in Georgia in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[172] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[173] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

- Another 26 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for nine percent of such expenses, an average $98,000 each (???seems unusual to have average be just under 100k).
- Five percent of operators, fewer than 600, had direct hire labor expenses of $100,000 or more, and they accounted for 86 percent of the total, an average $480,000 each.

Contract labor expenses are not as concentrated as direct hire expenses.

Table 2. Georgia: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	11,636	100%	326,621	100%	28,070
<10,000	8,010	69%	15,256	5%	1,905
10,000 to100,000	3,038	26%	29,649	9%	9,759
>100,000	588	5%	281,716	86%	479,109
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	5,175	100%	60,861	100%	11,761
<10,000	4,317	83%	9,533	16%	2,208
10,000 to 50,000	688	13%	13,128	22%	19,081
>50,000	170	3%	38,200	63%	224,706

Source: COA 2002, Georgia, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, the data in COA Table 55 show that the 580 Georgia farms with 2,000 or more acres and hired labor expenses paid $84 million in directly hired labor expenses, 26 percent of the total; the 167 Georgia farms with 2,000 more acres and contract labor expenses paid $19 million in contract labor expenses, 31 percent of the total. Data in Table 56 report that the 845 Georgia farms that each had farm sales of $1 million or more and their direct hire labor expenses were $180 million, or 55 percent of the total $326 million. The 309 with farm sales of $1 million and contract labor expenses accounted for $33 million or 54 percent of the total $61 million.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The almost 9,600 Georgia individual or family farms with direct hire labor expense in 2002 accounted for $129 million or 40 percent of such expenses, the 1,100 partnerships $56 million, and the 893 corporations $133 million, or 41 percent of the total. The almost 4,400 Georgia individual or family farms with contract labor expense in 2002 accounted for $33 million or 54 percent of such expenses, the 420 partnerships $14 million, and the 327 corporations $13 million, or 21 percent of the total.

COA Table 59 reports hired and contract labor expenses by NAICS. It shows that three types of farms: vegetables and melons, greenhouse and nursery, and poultry and eggs, accounted for 55 percent of direct hire labor expenses in 2002; they also accounted for almost 60 percent of the

contract labor expenses. Relatively few farms accounted for these labor expenses: the 130 fruit and vegetable, greenhouse, and poultry operations that each had farm labor expenses of $250,000 or more were two-thirds of the 192 Georgia farms with large direct hire labor expenses.

Table 3. Georgia: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	4 Sectors				
		Vegs, Melons	Greenhouse, Nursery	Poultry, Eggs	Total	Share
Direct Hire Farms	11,636	596	474	1,654	2,724	23%
Labor Exp($000)	326,621	53,902	71,331	54,092	179,325	55%
Distribution	100%	17%	22%	17%	55%	55%
>$250,000	192	41	56	33	130	68%
Contract Farms	5,175	259	196	685	1,140	22%
Labor Exp($000)	60,861	20,011	5,403	9,969	35,383	58%
Distribution	100%	33%	9%	16%	58%	58%
>$50,000	170	55	23	20	98	58%
Direct Hire Farms	11,636	596	474	1,654	2,724	23%
Workers hired	60,713	10,771	6,172	7,070	24,013	40%
>150 days	18,406	3,064	3,582	3,065	9,711	53%
<150 days	42,307	7,707	2,590	4,005	14,302	34%
<150 days share	70%	72%	42%	57%	60%	

Source: COA, 2002, GA, Table 59

Georgia's 11,600 farms that reported hiring workers directly hired a total of 61,000 workers in 2002; these worker data are best considered a count of farm jobs, since a worker employed on two farms is counted twice (additional workers may be brought to farms by contractors and custom harvesters). About 40 percent of all hired workers were in the three major labor-using sectors: vegetables and melons, greenhouse and nursery, and poultry and eggs. These sectors hired over half of the workers employed 150 days or more, and a third of those employed less than 150 days on the responding farm.

As would be expected, almost three fourths of the workers employed in vegetables and melons were hired less than 150 days on the reporting farm, but less than half of the jobs in nurseries and greenhouses were seasonal. Poultry and egg jobs are mostly seasonal, with 57 percent of the jobs reported in the COA lasting less than 150 days.

State Data

Georgia Employment and Wages (Quarterly Census of Employment and Wages - QCEW) is an annual report based on data submitted by employers paying their UI taxes (www.dol.state.ga.us/wp/lmi_publications.htm). Georgia has federal UI coverage of agriculture, meaning that agricultural employers must participate in the UI program if they have a quarterly payroll of at least $20,000 or at least 10 persons working for a day in each of 20 separate weeks during any calendar year. Based on the COA concentration data, it appears that a minority of farm employers, but a majority of the farm workers, are covered by UI.

In 2005, Georgia had an average 38,555 establishments with 692,400 workers earning almost $790 a week. These included an average 2,300 establishments in agriculture, forestry and fishing with an average 24,500 employees earning $470 a week (p6)

Georgia has 159 counties. In 2005, only two, Colquitt and Tift, had average monthly UI-covered employment in agriculture of over 1,000 employees. Average weekly wages in both counties for workers employed in agriculture were significantly below the state's average for agricultural workers.

Table 4. Georgia UI Employment and Wages, 2005

	Establishments	Employment	Weekly wages($)
Georgia	38,555	692,373	788
Agriculture	2,237	25,461	472
Colquitt	73	1,252	341
Tift	55	1,127	271
Atlanta MSA	292	2,303	609
Valdosta MSA	87	1,506	354

Source: www.dol.state.ga.us/wp/lmi_publications.htm

Georgia produces occupational wage profiles for many occupations (www.dol.state.ga.us/wp/lmi_publications.htm). For the second quarter of 2006, the entry wage for farm workers and laborers, crop, nursery and greenhouse (45-2092) was reported to be $6.75 an hour (more than the $6.10 an hour for agricultural equipment operators), with a mean wage of $9 an hour and a median of $8.75. Farm workers, animals (45-2093) had an entry wage of $7, an average $10.55 and a median $11.

H-2A Jobs, Referrals, and Prevailing Wages

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Georgia requested $432,559 for FY07, and allocated 75 percent to agricultural certification activities. Georgia estimated its certification costs at $881,000, or almost twice the federal grant.

Table 5. Georgia Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	400	199,119	498	23%
Prevailing Wage Surveys	22	197,001	8,955	22%
Job Orders Processed	100	484,949	4,849	55%
Total		881,070		

Source: Application for Federal Assistance SF-424, Supplement 4, May 24, 2007

States have three major costs: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. Georgia estimated that over half of its costs for alien labor certification are in the statewide office that processes job orders at an average cost of almost $5,000. It noted that the number of employer requests for H-2A workers has been increasing, with the program spreading from the south and central parts of the state to the northern parts of the state, in part because of the activities of agents offering to provide H-2A workers to farm operators.

Georgia noted that first-time applications take more time to process, and that applications are becoming more complex, as e.g. agents file requests for FLCs who in turn have contracts with farm operators. Dan Bremer, a retired Department of Labor employee, operates AgWorks Inc. of Lake Park, GA (www.agworksinc.com), a major provider of H-2A and H-2B workers in the state.

The second major cost is conducting prevailing wage/practice studies, the results of which are submitted on the 2-page form ETA 223. Prevailing wage studies are to be conducted when there were 100 or more workers last season, or 100 or more are expected this season; when there were H-2A workers employed; when there are complex wage systems (piece rates), and when surveys are of "national interest," such as custom combine, sheep and goat herding, nurseries, and East Coast apples.

Georgia in 2007 plans to conduct surveys in 11 commodities in the South, Central, and Northern parts of the state, for a total of 33 surveys at an average cost of $9,000. A review of recent prevailing wage surveys suggests that in the commodities surveyed, H-2A workers were over half of the work force, including over 80 percent in zucchini and green tomatoes in 2006. Georgia's minimum wage was $5.15 an hour in 2005 and 2006, but average hourly earnings at prevailing piece rates were considerably higher, over surveys report $12 an hour in green tomatoes in 2006 and in Vidalia onions and cantaloupes in 2005.

Table 6. U.S. and H-2A Workers by Commodity, Georgia, 2005-06

		Workers	Workers	H-2A
Commodity	Date	US	H-2A	Share
Zucchini	Jun-06	468	1,875	80%
Watermelons	Jun-06	512	638	55%
Green	Jun-06	82	1,389	94%

tomatoes				
Subtotal		*1,062*	*3,902*	*79%*
Bell Peppers	Jun-05	757	885	54%
Vidalia Onions	Jun-05	862	3,066	78%
Cantaloupe	Jun-05	332	811	71%
Subtotal		*1,951*	*4,762*	*71%*
Source: ETA, 232				

The third SWA responsibility is to conduct housing inspections, which Georgia estimates cost almost $500 each. Georgia has 16 Agricultural Career Centers with staff who can conduct housing inspections; in other parts of the state, the statewide office sends staff to conduct housing inspections. The state notes that, if multiple H-2A applications are filed in one area, it may be difficult to conduct the required housing inspections in a timely manner, especially when deficiencies during a first inspection require a re-inspection.

SB 529 and Worker Availability

SB 529, the Georgia Security and Immigration Compliance Act, went into effect July 1, 2007. Section 2 requires Georgia's public employers, and their contractors and subcontractors, to enroll in ICE's Basic Pilot (also known as the Employment Eligibility Verification System or EEVS) to verify the legal status of new hires (www.vis-dhs.com/EmployerRegistration/StartPage.aspx?JS=YES)--during the first year, only those with 500 or more employees are covered. Individuals receiving state benefits must sign affidavits attesting that they are U.S. citizens or legal aliens.

There has been speculation that SB 529 has encouraged some unauthorized workers in the state to leave, and discouraged unauthorized workers from coming to the state. However, as of July 2007, there is little evidence that the new state immigration law is having much effect on the farm work force.

The Los Angeles Times reported July 29, 2007 that the law is straining relations between Latinos and local police, since it requires law enforcement officers to investigate the citizenship status of anyone charged with a felony or driving under the influence. One consequence of the new law is reportedly criminals targeting unauthorized foreigners, many of whom carry large amounts of cash.

Vidalia Onions and H-2A Workers

In May 1998, the then-INS launched operation "Southern Denial," arresting unauthorized workers in Glennville, GA and prompting fears that many of the peak 3,500 to 4,500 farm workers would leave or not move into the area. The commodity most affected was Vidalia onions, which are grown on low-sulfur soils in southeastern Georgia. This gives these onions six to eight percent sugar, far more than onions grown elsewhere (Coca Cola is 10 percent sugar).

There are about 110 growers and 14,000 acres of Vidalia sweet onions; the crop was worth about $60 million in recent years. Georgia onion growers began growing and marketing Vidalia onions in the 1980s, and won a Federal marketing order designating the 20-county area as the only area that could label its onions "Vidalia sweet." As a result, Vidalia onion acreage expanded from 2,000 acres in 1987 to 16,000 acres in 1997.

Vidalia onions are planted in the fall, grow their rings in the winter months, expand after March, and are harvested in May and June. A tractor-pulled harrow cuts the onions from the roots and loosens the ground. After the onions dry for several days, workers pull the onions out of the ground, clip the stems and the roots and put them in 50-pound burlap bags. Yields average 300 bags an acre.

The prevailing wage in 2005 was $0.75 per 50-pound bag. In 1997, some growers withdrew their applications for H-2A workers after the prevailing wage was found to be $0.80 per 50-pound bag; at that time, growers insisted the prevailing wage was $0.75 for a 60-pound bag. Regardless of the prevailing wage in 1997, the data suggest that there has been little or no increase in the piece rate in the past decade.

After protests by local Congressional representatives, a compromise was reached under which the INS stopped enforcement for the 1998 season in exchange for a grower promise to use the H-2A program to obtain harvest workers in 1999. Many growers used the H-2A program in 1999, then returned to hiring unauthorized migrants via contractors. The largest grower, Delbert Bland with 2,200 acres, continues to use the H-2A program to obtain harvesters.

The GAO did a follow-up study of operation "Southern Denial" that stressed three points: (1) onion growers knew that many of their workers were illegal, and formed an organization, Vidalia Harvesting Inc, to obtain legal H-2A foreign workers; (2) growers abandoned the H-2A strategy because of the prevailing wage dispute, coupled with the requirement that they provide housing at no charge to domestic and H-2A workers; and (3) growers took little interest in where workers came from or went after the harvest--they told GAO that FLCs "and workers just 'show up' without advance notice" when they are needed (page 12).

As one condition for certifying onion jobs to be filled with H-2A workers (an application later withdrawn by growers), growers offered FLC-recruiters in the Rio Grande Valley $8 per worker recruited. One FLC in south Texas reported that onion growers could get plenty of legal U.S. workers if they were willing to pay recruitment fees of $250 to $450 a worker.

The Vidalia onion industry expanded after many farmers stopped providing housing for migrant workers. Most of the migrants employed in the Vidalia onion industry share mobile homes; rent was reported to be $300 to $400 a month for four to six occupants in 2000.

Some onion packing sheds are reportedly substituting H-2B for H-2A workers in onion packing sheds. Under the H-2B program, the prevailing wage is $6 an hour, and employers do not have to provide free housing to workers, some of whom used to work at the same jobs as H-2A workers entitled to the AEWR which is $8.51 in 2007. An onion packing shed can become a

"commercial" and thus nonfarm operation by packing onions for the farm on which the onions were grown as well as for other farmers.

Most U.S.-grown onions are harvested by machine. There are two major types: 75 percent of U.S. onions are storage onions, produced in summer and fall, and stored until consumption, while 25 percent are spring/summer onions, such as Vidalia and Walla Walla. Both types can be yellow, red or white. California accounts for 25 percent of U.S. onion production, followed by Oregon, 16 percent; Washington, 12 percent; and Idaho and Colorado, nine percent each.

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Illinois Farm Labor Profile

IL Summary

Illinois is a corn, soybeans, and pork state. The 7th largest farm state, as measured by cash receipts, had farm sales $8.9 billion in 2005, including $6.9 billion from crops and $2 billion from livestock. The leading crops were corn, worth $3.6 billion or over half of crop sales, and soybeans, worth $2.6 billion or almost 40 percent of crop sales. The leading livestock is hogs/pork, worth $1 billion or half of livestock sales.

Grain, nursery, and hog operations hire most of the state's farm workers. The 2002 COA reported that almost 20,000 Illinois farms spent $422 million to hire 66,750 workers; 30 percent of these jobs lasted 150 days or more on the responding farm. [174] About 75 percent of the farms hiring workers, 75 percent of the expenditures for hired workers, and 75 percent of the hired workers were on grain, nursery, and hog farms. Grain farms offered mostly jobs lasting less than 150 days, while just over half of the jobs on nursery and hog farms lasted 150 days or more (Some of these grain jobs may have involved shifting money within farm families to family members with lower tax rates).

IL Census of Agriculture

The Census of Agriculture in 2002 reported that Illinois had 73,000 farms, down slightly from 79,000 in 1997. Farm sales were $7.7 billion, including $5.9 billion worth of crops, 77 percent, and $1.8 billion of livestock, 23 percent.

Some 19,750 Illinois farmers reported labor expenses to the COA, and they totaled $422 million for directly hired workers; 3,800 farmers reported $18 million in contract labor expenses, a total $440 million. NASS reported that the average hourly earnings of all hired farm workers in the region including Illinois were $9.67 an hour in 2002, suggesting 46 million hours worked by hired farm workers; this is almost 22,000 full-time (2080-hour) equivalents.[175] The AEWR for Illinois in 2007 is $9.88 an hour.

[174] Workers reported by two responding farms are counted twice, so the worker count is best considered a count of jobs on state farms.

[175] NASS reported an average $8.63 for field workers and $8.94 for field and livestock workers in Illinois in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. Hired Worker Hours in Illinois Ag, 2002

IL: Hours Worked in Ag, 2002	
Farm Sales ($bil)	7.7
Total Labor Expendits($mil)	440
Sales to Expendits ratio	17.5
Average Earns ($/hour)	9.67
Estimated hours worked(mils)	46
Full-time equivalent (2080 hrs)	21,876

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[176] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[177]

Farm labor expenditures are concentrated on fewer than 700 Illinois farms. Almost 20,000 Illinois farms reported labor expenses for directly hired workers in 2002, but:

- Almost 70 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for seven percent of direct hire labor expenses, an average $2,200 per farm.
- Another 29 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for nine percent of such expenses, an average $30,200 each.
- Three percent of operators, about 650, had direct hire labor expenses of $100,000 or more, and they accounted for 53 percent of the total, an average $340,000 each.

Contract labor expenses are not as concentrated as direct hire expenses.

Table 2. Illinois: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	19,750	100%	421,803	100%	21,357
<10,000	13,447	68%	29,075	7%	2,162
10,000 to 100,000	5,650	29%	170,395	40%	30,158
>100,000	653	3%	222,333	53%	340,479

[176] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[177] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Contract Labor	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	3,791	100%	18,530	100%	4,888
<10,000	3,380	89%	6,076	33%	1,798
10,000 to 50,000	362	10%	6,766	37%	18,691
>50,000	49	1%	5,688	31%	116,082

Source: COA 2002, Illinois, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, the data in COA Table 55 show that 7,000 Illinois farms reported hiring 20,310 workers for 150 days or more, and 16,250 reported hiring 46,440 workers for 150 days or less—both of these worker entries should be considered job counts, since one worker employed on two farms is counted twice. There were 1,565 farms with 2,000 or more acres, and they hired 7,800 workers.

Data in COA Table 56 report that 661 Illinois farms each had farm sales of $1 million or more; their direct hire labor expenses were $181 million, or 43 percent of the total $422 million. The 107 farms with farm sales of $1 million and contract labor expenses accounted for $4 million or 23 percent of the total $18 million.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The almost 16,000 Illinois individual or family farms with direct hire labor expense accounted for $169 million or 40 percent of such expenses, the 1,900 partnerships $56 million, and the 1,800 corporations $188 million, or 44 percent of the total. The almost 3,100 Illinois individual or family farms with contract labor expense accounted for $11 million or 61 percent of such expenses, the 375 partnerships $3 million, and the 300 corporations almost $4 million, or 20 percent of the total.

COA Table 59 reports hired and contract labor expenses by NAICS. It shows that three types of farms: oilseed and grain farming, greenhouse and nursery, and hogs and pigs, accounted for 80 percent of direct hire labor expenses in 2002; these three types of farms also accounted for almost 70 percent of the contract labor expenses. Relatively few farms accounted for these labor expenses: the 179 grain, greenhouse, and hog operations that each had farm labor expenses of $250,000 or more were 77 percent of the 232 Illinois farms with large direct hire labor expenses.

Table 3. Illinois: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Oilseed & Grain	Greenhouse & Nursery	Hog & Pig	Total	Share
Direct Hire Farms	19,750	13,220	601	924	14,745	75%
Labor Exp($000)	421,803	172,084	107,266	57,197	336,547	80%

Distribution	100%	41%	25%	14%	80%	80%
>$250,000	232	30	93	56	179	77%
Contract Farms	3,791	1,989	147	129	2,265	60%
Labor Exp($000)	18,530	8,292	2,698	1,957	12,947	70%
Distribution	100%	45%	15%	11%	70%	70%
>$50,000	49	19	12	7	38	78%
Direct Hire Farms	19,750	13,220	601	924	14,745	75%
Workers hired	66,750	33,161	9,326	4,058	46,545	70%
>150 days	20,310	7,974	4,921	2,079	14,974	74%
<150 days	46,440	25,187	4,405	1,979	31,571	68%
<150 days share	70%	76%	47%	49%	68%	

Source: COA, 2002, IL, Table 59

Illinois's 19,750 farms that reported hiring workers directly reported a total 66,750 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About 70 percent of all hired workers were in the three major labor-using sectors: grains, greenhouse and nursery, and hogs. These sectors hired 74 percent of the workers employed 150 days or more, and 68 percent of those employed less than 150 days on the responding farm. As would be expected, three fourths of the workers employed on grain farms were hired less than 150 days on the reporting farm, but half of the jobs in greenhouses and on hog farms lasted more than 150 days.

State Data

Illinois's Quarterly Census of Employment and Wages reports the number of workers covered by employers paying UI taxes on their earnings (http://lmi.ides.state.il.us/covered.htm). Illinois has federal UI coverage of agriculture,[178] meaning that agricultural employers must participate in the UI program if they have a payroll of at least $20,000 in any calendar quarter or at least 10 persons working for a day in each of 20 separate weeks during the current or preceding calendar year. Based on the data in Tables 3 and 4, it appears that perhaps 2,000 farm employers and 20,000 farm workers are covered by UI in Illinois.

Illinois had 344,760 establishments with 5.7 million UI-covered workers in March 2006. Most were small employers—75 percent of the establishments had fewer than 10 employees, and they

[178] States that require more complete UI coverage of farm workers include California, where workers are covered if the employer has $100 or more in quarterly wages or one or more employees, Florida if employers have at least $10,000 in quarterly wages or at least five workers in 20 weeks, Minnesota if employers have at least $20,000 quarterly wages or at least four workers in 20 weeks, New York if employers have at least $500 quarterly wages, Rhode Island if employers have one or more workers, Texas if employers have at least $6,250 quarterly wages or at least three workers in 20 weeks, and Washington if employers have one or more employees (www.workforcesecurity.doleta.gov/unemploy/uilawcompar/2003/coverage.pdf)

accounted for 11 percent of the state's employment. Almost 1,600 establishments in agriculture, forestry and fishing had 17,500 UI-covered employees in March 2006. About 1,200 farm establishments, 75 percent of the total, had fewer than 10 employees, but they accounted for 26 percent of UI-covered employees in agriculture.

Illinois has 102 counties. In the third quarter of 2006, seven had at least 500 UI-covered employees during the third quarter of 2006. These top seven ag countries included 20 percent of the UI-covered agricultural establishments and almost 30 percent of the UI-covered agricultural employment and wages paid. UI-covered average weekly wages in agriculture were significantly below the statewide average, $675 a week versus $1,075 a week.

Table 4. Illinois UI Employment and Wages, 3rd Quarter 2006

	Establishments	Employment	Wages($000)
Illinois	350,165	5,881,609	63,248,812
Agriculture	1,594	17,533	118,280
Cook	61	619	3,636
DeKalb	41	711	4,698
DuPage	38	538	3,563
Henry	18	780	3,352
Kane	60	1,018	6,905
Kankakee	45	856	6,949
McHenry	67	617	4,053
Top 7	330	5,139	33,156
Top 7-share of ag	21%	29%	28%

Source: http://lmi.ides.state.il.us/ilatwork/ilatwork_revised.htm

Illinois produces occupational wage estimates for many occupations (http://lmi.ides.state.il.us/wagedata/wage.htm). For the first quarter of 2006, the entry wage for all farming, fishery, and forestry operations (45-0000) was reported to be $7.95 an hour or $16,500 a year, the median wage $10.75 or $22,300, and the wage for experienced workers $15 an hour and $31,300 a year.

For farm workers and laborers, crop, nursery and greenhouse (45-2092), the entry wage was reported to be $7.76 an hour, the median $9.86, and for experienced workers $12.10. Farm workers, animals (45-2093) had an entry wage of $6.90, a median $7.92, and for experienced workers $10.63—more hours of work for animal workers may have offset lower wages.

Illinois makes employment projections, and projects statewide employment to rise from 6.3 million in 2004 to 6.8 million in 2014. Agricultural production employment is projected to decrease, from 99,000 in 2004 to 94,000 in 2014—this includes farm operators and hired workers (http://lmi.ides.state.il.us/projections/statewideproj.htm)

H-2A Jobs, Referrals, and Prevailing Wages

In recent years, about 20 Illinois employers have been certified to fill 300 jobs with H-2A workers; in FY07, 27 employers were certified to fill 496 jobs with H-2A workers, a sharp jump. Most are nursery and vegetable operations; other commodities range from tobacco and horseradish to seed corn detasseling. Several hog operations are using H-2A workers to disinfect hogs from porcine reproductive and respiratory syndrome (PRRS) infection.

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Illinois requested $242,936 for FY07, based on the costs of its agricultural certification activities in FY06.

Table 5. Illinois Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	21	46,242	2,202	19%
Prevailing Wage Surveys	6	38,103	6,351	16%
Job Orders Processed	100	158,590	1,586	65%
Total		242,935		

Source: SF-424, Supplement 4, March 13, 2007

States have three major costs: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. Illinois estimates that 65 percent of its costs for alien labor certification involve processing job orders at an average cost of almost $1,600.

The second major cost is conducting prevailing wage/practice studies, the results of which are submitted on the 2-page form ETA 223. Prevailing wage studies are to be conducted when there were 100 or more workers last season, or 100 or more are expected this season; when there were H-2A workers employed; when there are complex wage systems (piece rates), and when surveys are of "national interest," such as custom combine, sheep and goat herding, nurseries, and East Coast apples. Illinois in 2007 plans to conduct six prevailing wage surveys.

The third SWA responsibility is to conduct housing inspections, which Illinois estimates cost $2,200 each. If multiple H-2A applications are filed in one area, it may be difficult to conduct the required housing inspections in a timely manner, especially when deficiencies during a first inspection require a re-inspection.

Some of the IL farm employers who obtain workers under the H-2A program were based out of the state, producing e.g. nursery stock around the United States for big box stores (which require legal workers) to take advantage of weather differences. Those interviewed praised the quality of the H-2A workers, considering them loyal and reliable, but complained about the cost of agents and delays in visa issuance—several reported that they set the start date a month before they expect work to begin to ensure there is enough time for H-2A workers to arrive at the work place.

Most of these H-2A employers considered themselves "lucky" that they did not receive many U.S. worker referrals. Most employers reported that U.S. workers who were referred rarely stayed more than a few days, and that some filed complaints about working or housing conditions during their brief stints on their farms. One employer with a mixed crew of United States and H-2A workers noted that the handful of U.S. workers who live in the housing with the H-2A workers complain that they, but not the H-2A workers, have deductions made from their pay for income and social security taxes.

Farm Labor Trends

The Illinois Migrant Council is a WIA 167 provider of employment and training and other services to eligible MSFWs, receiving $1.2 million in FY05. It reported 32,000 MSFWs employed in Illinois, and says most are employed on 3,200 vegetable, fruit, sod and dairy farms, orchards and nurseries (www.illinoismigrant.org/farmwrk1.html). The IMC has been in operation since 1966.

One traditional seasonal farm labor task in Illinois is detasseling corn used to produced seed for the next year's crop. Most detasseling corn workers are migrants from South Texas who walk along half-mile long rows of corn that each have 3,000 to 4,000 plants. Most detasselers cover 15 to 20 rows a day, or eight to 10 miles, and remove the tassels from 45,000 to 80,000 plants. Detasseling machines have trouble getting all the tassels, since the corn varies in height, and a few missed tassels can pollinate and ruin a field for seed.

Monterey Mushrooms in Princeton, Illinois employs 500 workers, 75 percent born in Mexico. The Monterey plant sells about 400,000 pounds of mushrooms a week, and the piece-rate workers reported earning an average of $9 to $10 an hour working seven to 12 hour days in 2004. Monterey, owned by Shah Kazemi since the late 1970s, is the largest grower/shipper and marketer of fresh mushrooms in the United States, had sales of $769 million in 2006.

Illinois has a growing wine industry, located primarily in the southern part of the state (south of Springfield). The state had over 30 wineries in 2002 (http://lmi.ides.state.il.us/lmr/winter_2002/wine.htm)

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Kansas Farm Labor Profile

KS Summary

Kansas is a cattle and grain state—cattle and calves account for almost two-thirds of the state's farm sales, and grains another quarter. Over 16,000 Kansas farms reported hiring 47,000 workers directly in 2002 (a worker employed on two farms is counted twice), and other workers were brought to farms by contractors and custom harvesters. About two-thirds of the directly hired workers were seasonal, employed on the responding farm less than 150 days., Grain farms and cattle feedlots accounted for 60 percent of the farm labor expenses, but grains accounted for 40 percent of the hired workers and cattle only 10 percent, since most cattle workers are employed year-round.

Kansas had 124 employers certified to fill 724 jobs with H-2A workers in FY06, up from 81 employers and 515 jobs in FY05; the 2007 AEWR is $9.55. In FY05, over half of the H-2A jobs certified were in grain farming and custom combining. The number of custom combining jobs filled by H-2A workers has been declining because of high gasoline prices, which encourage custom operators from neighboring states rather than Canadian operators to harvest wheat in western Kansas. Budget reductions in 2007 led to the closure of several SWA offices in western Kansas that matched combining workers with employers.

KS Census of Agriculture

The Census of Agriculture reported that Kansas had 64,400 farms in 2002, down from 65,500 in 1997. Farm sales were $8.7 billion, including $2.4 billion worth of crops, 48 percent, and $6.3 billion of livestock, 52 percent.

Some 16,500 Kansas farmers reported labor expenses to the COA, and they totaled $332 million for directly hired workers; 4,700 farmers reported $32 million in contract labor expenses, a total $364 million. NASS reported that the average hourly earnings of all hired Kansas farm workers were $9.92 in 2002, suggesting 37 million hours worked by hired farm workers; this is 17,600 full-time (2080-hour) equivalents.[179]

[179] NASS reported an average $9.25 for Kansas field workers and $9.30 for Kansas field and livestock workers in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. Hired Worker Hours in Kansas Ag, 2002

KS: Hours Worked in Ag, 2002	
Farm Sales ($bil)	8.7
Total Labor Expendits($mil)	364
Sales to Expendits ratio	23.9
Average Earns ($/hour)	9.92
Estimated hours worked (mils)	37
Full-time equivalent (2080 hrs)	17,641

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[180] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[181]

In Kansas, farm labor expenditures are concentrated on fewer than 500 farms. Some 16,500 farms reported labor expenses for directly hired workers in 2002, but:

- 71percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for eight percent of direct hire labor expenses, an average $2,100 per farm.
- Another 26 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 39 percent of such expenses, an average $30,000 each.
- Three percent of operators, 484, had direct hire labor expenses of $100,000 or more, and they accounted for 54 percent of the total, an average $369,000 each.

Contract labor expenses are less concentrated. Fewer than 125 Kansas farms reported $50,000 or more in contract labor expenses, and they accounted for 39 percent of such expenses.

Table 2. Kansas: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	16,549	100%	332,498	100%	20,092
<10,000	11,787	71%	24,999	8%	2,121
10,000 to 100,000	4,278	26%	128,951	39%	30,143
>100,000	484	3%	178,548	54%	368,901

[180] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[181] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Contract Labor	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	4,749	100%	32,466	100%	6,836
<10,000	4,076	86%	8,736	27%	2,143
10,000 to 50,000	551	12%	11,192	34%	20,312
>50,000	122	3%	12,537	39%	102,762

Source: COA 2002, Kansas, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, COA Table 55 notes that the 4,731 farms with 2,000 or more acres and direct hire labor expenses paid $160 million, 48 percent of the total, and the 1,092 farms with 2,000+ acres and contract labor expenses paid $14 million, 44 percent of the total.

Data in COA Table 56 reports that the 668 Kansas farms that each had farm sales of $1 million or more accounted for 51 percent of the $332 million in direct hire labor expenses, and the 213 with farm sales of $1 million or more accounted for 24 percent of the $32 million in contract labor expenses.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 13,380 individual or family farms with direct hire labor expense in 2002 accounted for $122 million or 37 percent of such expenses, the 1,580 partnerships $58 million, and the 1,500 corporations $145 million, or 44 percent of the total. The 3,900 individual or family farms with contract labor expense in 2002 accounted for $21 million or 65 percent of such expenses, the 488 partnerships $5 million, and the 333 corporations $5.4 million, or 17 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. Two types of Kansas farms: oilseed and grain and cattle feedlots accounted for almost 60 percent of direct hire labor expenses in 2002 and 54 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 110 grain and cattle operations that each had farm labor expenses of $250,000 or more were 61 percent of the 180 Kansas farms with large direct hire labor expenses.

Table 3. Kansas: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	2 Sectors			
		Oilseed & Grain	Cattle Feedlots	Total	Share
Direct Hire Farms	16,549	7,887	644	8,531	52%
Labor Exp($000)	332,498	107,234	89,941	197,175	59%
Distribution	100%	32%	27%	59%	59%

>$250,000	180	18	92	110	61%
Contract Farms	4,749	1,856	224	2,080	44%
Labor Exp($000)	32,466	14,916	2,682	17,598	54%
Distribution	100%	46%	8%	54%	54%
>$50,000	122	68	13	81	66%
Direct Hire Farms	16,549	7,887	644	8,531	52%
Workers hired	46,857	18,576	4,523	23,099	49%
>150 days	15,003	5,790	2,769	8,559	57%
<150 days	31,854	12,786	1,754	14,540	46%
<150 days share	68%	69%	39%	63%	

Source: COA, 2002, KS, Table 59

The 16,500 Kansas farms that reported hiring workers directly hired a total of 47,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Half of these directly hired workers were in the two major labor-using sectors: grains and cattle feedlots. These sectors hired 57 percent of the workers employed 150 days or more, and 46 percent of those employed less than 150 days on the responding farm. About 68 percent of all hired workers, and 69 percent of those employed on grain farms, worked for less than 150 days on that farm.

State Data

During the third quarter of 2006, the 80,700 UI-covered employers had an average 1.1 million employees; average weekly wages were $671. These included 357 crop production employers with an average 2,500 employees and 438 animal production employers with an average 5,900 employees; average weekly wages were $511 in crops and $598 in animals. There were 311 food manufacturing establishments with an average 32,100 employees and average weekly wages of $737 (www.dol.ks.gov/LMIS/ALMIS/qcew/qcew.asp?year=2006&quarter=03&area=Statewide)

H-2A Jobs, Referrals, and Prevailing Wages

Kansas farm employers have requested certification to fill about 500 farm jobs with H-2A workers in recent years, including 200 for grain combining jobs and 200 for livestock jobs.

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Kansas reported 140 housing inspections, three prevailing wage studies, and processing 150 H-2A job orders, for H-2A certification costs of $37,558.

Table 4. Kansas Alien Labor Certification Grant, FY07

	Number	Cost($)	Average($)	Share
Housing Inspections	140	24,808	177	66%
Prevailing Wage Surveys	3	8,250	2,750	22%
Job Orders Processed	150	4,500	30	12%
Total		37,558		

Source: SF-424

States have three major costs: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. Kansas estimated that two-thirds of its costs for alien labor certification involve housing inspections, which cost an average $177. Most of the H-2A jobs certified are in the sparsely populated western half of the state, so that housing inspections can involve significant time and travel costs.[182] The Kansas SWA may try to have another state agency conduct H-2A housing inspections, such as the health or housing agencies.

The second major cost is conducting prevailing wage/practice studies, the results of which are submitted on the 2-page form ETA 223. Prevailing wage studies are to be conducted when there were 100 or more workers last season, or 100 or more are expected this season; when there were H-2A workers employed; when there are complex wage systems (piece rates), and when surveys are of "national interest," such as custom combine, sheep and goat herding, nurseries, and East Coast apples.

Kansas in 2007 conducted surveys in custom combining and nurseries at an average cost of $2,750. The Kansas SWA noted that it is not always easy to get farm employers to provide information on wages and employment, especially employers with both U.S. and H-2A workers. With the turnover in SWAs after PERM-related budget cuts, there is a need to train SWAs in prevailing wage and practice survey methodology.

The third SWA responsibility is to process H-2A applications. The Kansas SWA faxes the paper applications it receives to the local SWA office in the area of intended employment to enter job order information into local job banks and supervise recruitment. Kansas anticipates processing 150 employer applications in FY07 at an average cost of $150.

[182] In remote areas, housing that does not pass inspection the first time because it is missing e.g. a screen or light bulb may be passed without re-inspection after a receipt for the missing item is faxed to the SWA.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Kentucky Farm Labor Profile

KY Summary

Kentucky had farm sales of $4 billion in 2005, including $2.7 billion worth of livestock products and $1.3 billion worth of crops. Horses were almost 40 percent of livestock sales, and tobacco was the leading crop, accounting for a quarter of crop sales.

Kentucky had 25,000 farms that hired labor in 2002. They reported hiring a total of 115,000 workers, 85 percent of whom were employed on the responding farm for less than 150 days. Tobacco farms accounted for 35 percent of all workers hired, and 38 percent of seasonal workers hired, on KY farms. Many of the workers hired on KY farms are employed only a short time—the number of year-round equivalent jobs on KY farms is about 22,500.

Almost 600 KY employers were certified to fill 3,500 jobs with H-2A workers in FY06, up from about 550 employers and 2,900 jobs in FY05. In FY05, about 85 percent of the H-2A jobs were in tobacco. The H-2A program is expanding in Kentucky, with most of the growth in nurseries and vegetables, commodities in which employers are requesting larger numbers of workers.

KY Census of Agriculture

The Census of Agriculture reported that Kentucky had 86,500 farms in 2002, down from 91,200 in 1997. Farm sales were $3.1 billion in 2002, including $1.1 billion worth of crops, 35 percent, and $2 billion of livestock, 65 percent.

Some 24,900 Kentucky farmers reported labor expenses to the COA, a total of $292 million for directly hired workers; 11,800 farmers reported $59 million in contract labor expenses, a total $351 million. NASS reported that the average hourly earnings of all hired farm workers in Kentucky were $7.50 an hour in 2002, suggesting 47 million hours worked by hired farm workers; this is 22,500 full-time (2080-hour) equivalent jobs.[183] The AEWR for Kentucky in 2007 is $8.65.

Table 1. Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	Kentucky	United States
Farm Sales ($bil)	3.1	200
Total Labor Expendits($mil)	351	22,000

[183]NASS reported an average $6.76 for field workers and $7.10 for field and livestock workers in Kentucky in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

	Kentucky	United States
Sales to Expendits ratio	8.8	9.1
Average Earns ($/hour)	7.5	8.80
Estimated hours worked(mils)	47	2,500
Full-time equivalent (2080 hrs)	22,500	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[184] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[185]

Farm labor expenditures are concentrated on less than 500 Kentucky farms. Almost 25,000 farms reported labor expenses for directly hired workers in 2002, but:

- 85 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for 11 percent of direct hire labor expenses, an average $1,500 per farm.
- Another 13 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 32 percent of such expenses, an average $28,000 each.
- two percent of operators, 407, had direct hire labor expenses of $100,000 or more, and they accounted for 57 percent of the total, an average $410,000 each.

Contract labor expenses are less concentrated than direct hire expenses. The 168 KY farms reporting $50,000 or more in contract labor expenses accounted for 27 percent of such expenses. Many of the same farms with large direct hire labor expenses also had large contract labor expenses.

Table 2. Kentucky: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	24,882	100%	291,881	100%	11,731
<10,000	21,139	85%	31,055	11%	1,469
10,000 to100,000	3,326	13%	93,365	32%	28,071
>100,000	407	2%	167,012	57%	410,349
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with	11,778	100%	58,808	100%	4,993

[184] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[185] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Expenses($000)					
<10,000	10,481	89%	20,174	34%	1,925
10,000 to 50,000	1,129	10%	23,739	40%	21,027
>50,000	168	1%	16,023	27%	95,375

Source: COA 2002, KY, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. Three types of KY farms: greenhouse and nursery operations, tobacco farms, and other animal farms (horses), accounted for 60 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 55 percent of the contract labor expenses.

Relatively few farms accounted for most of these labor expenses: the 114 greenhouse, tobacco, and horse operations that each had farm labor expenses of $250,000 or more were 81 percent of the 140 KY farms with large direct hire labor expenses. It should be emphasized that most tobacco farms are very small employers—they averaged five directly hired workers in 2002, almost all of whom were employed less than 150 days on the responding farm.

Table 3. Kentucky: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Greenhouse, Nursery	Tobacco	Other Animal	Total	Share
Direct Hire Farms	24,882	450	7,869	1,736	10,055	40%
Labor Exp($000)	291,881	25,035	31,197	117,563	173,795	60%
Distribution	100%	9%	11%	40%	60%	60%
>$250,000 farms	140	25	4	85	114	81%
Contract Farms	11,778	196	3,977	1,029	5,202	44%
Labor Exp($000)	58,808	2,342	20,535	9,292	32,169	55%
Distribution	100%	4%	35%	16%	55%	55%
>$50,000 farms	168	5	40	44	89	53%
Direct Hire Farms	24,882	450	7,869	1,736	10,055	40%
Workers hired	115,177	4,152	40,368	10,660	55,180	48%
>150 days	16,174	1,531	2,451	4,496	8,478	52%
<150 days	99,003	2,621	37,917	6,164	46,702	47%
<150 days share	86%	63%	94%	58%	85%	

Source: COA, 2002, KY, Table 59

KY's 24,900 farms that reported hiring workers directly hired a total of 115,200 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Half of all hired workers were in the three major labor-using sectors: greenhouses, tobacco, and horses, and these sectors hired about 52 percent of those hired 150 days or more and 47 percent of those employed less than 150 days on the responding farm.

There were distinct differences by commodity: 94 percent of the workers hired by tobacco farms were employed less than 150 days on the responding farm, as were about 60 percent of those employed by greenhouses and horse farms. Some observers report that farm employers treat workers paid piece rate wages as independent contractors rather than paid employees. Such labor expenses may show up in the COA contract labor expenses, but the workers would not appear in the employment data.

H-2A Jobs, Referrals, and Prevailing Wages

Almost 600 KY employers were certified to fill 3,500 jobs with H-2A workers in FY06, up from about 550 employers and 2,900 jobs in FY05. In FY05, about 85 percent of the jobs were in tobacco. There has been some growth in non-tobacco commodities.

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. NC requested $194,400 for FY06, and allocated 60 percent to housing inspections, 21 percent for prevailing wage and practice surveys, and 20 percent to process job orders.

Table 4. KY Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	500	115,500	231	60%
Prevailing Wage Surveys	500	40,500	81	21%
Job Orders Processed	500	38,081	76	20%
Total		194,081		

Source: SF-424

Most of KY's H-2A applications are filed by one of several agents on behalf of farm employers who rarely change their job descriptions from year-to-year. Job orders received by the KY SWA are sent to local offices, who recruit and refer workers to the jobs.

Most employers file H-2A applications 45 to 50 days in advance of their need-for-workers date. The KY SWA inputs job orders and assigns them a number, so that the job order number can appear on the NPC acceptance letter. Most of the job orders offer work for nine or 10 months, 40 hours a week.

Local offices recruit and refer workers, and the KT SWA believes that its referral and hire rate is similar to the five and two percent, respectively, found by the Department's OIG in 1998. Each worker referred generates a referral letter that the worker takes to the employer. Workers who appear for an interview hand the employer the letter, which the employer is to complete by saying hired or not hired and the reason why and return to the local office that referred the worker.

KY conducts prevailing wage and practice surveys by mail, and did 100 in 2007 covering tobacco, hay and straw, vegetables, and nurseries. The KY SWA requested reimbursement for 500 surveys in FY06. The KY SWA would welcome having NASS conduct its prevailing wage and practice surveys.

Data from the prevailing wage studies done for cutting and housing tobacco between November and January reported a prevailing wage of $8 an hour both years. In 2004-05, almost half of the U.S. workers were paid this $8 an hour wage; in 2005-06, only 31 percent were paid this prevailing wage. A higher share of U.S. workers earned less than $8 in 2005-06, 61 percent, than in 2004-05, 38 percent, suggesting that the prevailing wage in 2005-06 should have been lower than in 2004-05.

Table 5. KY: Prevailing Wages ($/hour), Tobacco 2004-06

Cutting and Housing tobacco, Nov 2005-Jan 2006 Total 3,500 employers, 570 responded, no H-2A workers		
Wages ($/hr)	**U.S. Workers**	**Per Dist**
6 or less	5,111	39%
>6 and <8	2,831	22%
8	3,958	31%
>8 and <10	953	7%
10 or more	90	1%
Total	12,943	100%

Source: ETA 232

Cutting and Housing tobacco, Nov 2004-Jan 2005 Total 4,500 employers, 841 responded, 2,200 H-2A workers		
Wages ($/hr)	**U.S. Workers**	**Per Dist**
6 or less	306	4%
>6 and <8	2,659	34%
8	3,918	49%
>8 and <10	943	12%
10 or more	90	1%
Total	7,916	100%

Source: ETA 232

The KY SWA conducts housing inspections with two full time and two part-time staff, and reports no problems conducting timely inspections. In KY, the SWA feels that pre-occupancy housing inspections are needed, since some employers say that they have to clean up the housing before the inspector arrives, and may not get to that if there was no pre-occupancy housing inspection.

The H-2A program is not likely to expand in tobacco, but could expand in vegetables, nurseries and other commodities. The number of employers certified to have farm jobs filled by H-2A workers rose 30 percent between 2004 and 2007, and the number of jobs certified to be filled with H-2A workers rose by 70 percent.

Table 6. KY: H-2A Employers and Jobs Certified, 2004-07

Year	Employers	Jobs
2004	585	2,838
2005	550	2,876
2006	576	3,417
2007	763	4,833
2004-07	30%	70%

Source: KY SWA

Calendar year data; employers and jobs certified

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Massachusetts Farm Labor Profile

MA Summary

Massachusetts is a crop state dominated by greenhouse and nursery commodities. Almost three-fourths of farm sales are crops, and over half of crop sales are nursery products. The Census of Agriculture reported that greenhouse and nursery operations accounted for a third of the workers hired and almost half of the state's farm labor expenses in 2002. However, fruit, vegetable, and tobacco farms hired over half of the workers employed on the responding farm less than 150 days (Table 59, p154).

MA Census of Agriculture

The Census of Agriculture reported that Massachusetts had 6,075 farms in 2002, down from 7,300 in 1997. Farm sales were $384 million, including $277 million worth of crops, 72 percent, and $107 million of livestock, 28 percent.

Some 1,770 MA farmers reported labor expenses to the COA, totaling $99 million for directly hired workers; 712 farmers reported $11 million in contract labor expenses, a total $110 million. NASS reported that the average hourly earnings of all hired farm workers in New England were $9.95 an hour in 2002, suggesting 31 million hours worked by hired farm workers; this is 11,000 full-time (2080-hour) equivalents, a quarter of the estimated U.S. total.[186] The AEWR for MA in 2007 was $9.50 an hour.

Table 1. MA Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	MA	United States
Farm Sales ($mil for MA/$bil for U.S.)	384	200
Total Labor Expendits($mil)	110	22,000
Sales to Expendits ratio	3.5	9.1
Average Earns ($/hour)	9.95	8.80
Estimated hours worked(mils)	11	2,500
Full-time equivalent (2080 hrs)	5,315	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

[186] NASS reported an average $9.19 for field workers and $8.98 for field and livestock workers in New England in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[187] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[188]

Farm labor expenditures are concentrated on 221 MA farms. Almost 1,800 farms reported labor expenses for directly hired workers in 2002, but:

- Almost half had less than $10,000 in direct hire labor expenses, and they collectively accounted for two percent of direct hire labor expenses, an average $2,700 per farm.
- Another 40 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 26 percent of such expenses, an average $36,000 each.
- 12 percent of operators, about 400, had direct hire labor expenses of $100,000 or more, and they accounted for 72 percent of the total, an average $323,000 each.

Contract labor expenses are not as concentrated as direct hire expenses. The 53 farms reporting $50,000 or more in contract labor expenses accounted for 55percent of such expenses.

Table 2. MA: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	1,770	100%	99,292	100%	56,097
<10,000	831	47%	2,268	2%	2,729
10,000 to100,000	718	41%	25,674	26%	35,758
>100,000	221	12%	71,349	72%	322,846
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	712	100%	11,378	100%	15,980
<10,000	487	68%	1,689	15%	3,468
10,000 to 50,000	172	24%	3,429	30%	19,936
>50,000	53	7%	6,260	55%	118,113

Source: COA 2002, MA, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of MA farms: vegetables and melons, fruits and nuts, and greenhouse and

[187] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[188] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

nursery operations, accounted for 61 percent of the direct hire labor expenses in 2002 and 63 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 65 vegetable, fruit and nursery operations that each had farm labor expenses of $250,000 or more were 3/4 of the 86 MA farms with large direct hire labor expenses.

Table 3. MA: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Vegetables	Fruits	Greenhouse, Nursery	Total	Share
Direct Hire Farms	1,770	193	341	457	798	45%
Labor Exp($000)	99,292	10,079	16,551	43,633	60,184	61%
Distribution	100%	10%	17%	44%	71%	71%
>$250,000 farms	86	12	14	39	65	76%
Contract Farms	712	36	233	137	406	57%
Labor Exp($000)	11,378	527	2,712	3,976	7,215	63%
Distribution	100%	5%	24%	35%	63%	63%
>$50,000 farms	53	3	13	20	36	68%
Direct Hire Farms	1,770	193	341	457	991	56%
Workers hired	13,545	1,789	2,151	4,710	8,650	64%
>150 days	5,280	539	549	2,498	3,586	68%
<150 days	8,265	1,250	1,602	2,212	5,064	61%
<150 days share	61%	70%	74%	47%	59%	

Source: COA, 2002, MA, Table 59

MA's 1,770 farms that reported hiring workers directly hired a total of 13,545 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Almost two-thirds of all hired workers were in the three major labor-using sectors: vegetables, fruits and nurseries—nurseries accounted for 35 percent of direct hires.

These sectors hired 68 percent of the workers employed 150 days or more, and 61 percent of those employed less than 150 days on the responding farm. Over 70 percent of the workers employed in vegetable and fruit operations were employed less than 150 days on the reporting

farm, but over half of those hired in nurseries and greenhouses were employed over 150 days on the responding farm.

H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 208 MA farm employers were certified to fill 620 jobs with H-2A workers. The number of farm employers requesting certification has been stable in recent years; 193 employers were certified to fill 583 jobs in FY05, when half of the H-2A jobs were in apples and 20 percent were in tobacco.

States have three major costs to administer their part of the H-2A program: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. MA reported its costs for FY06 to be $333,505, and spent 25 percent on housing inspections, 7 percent on prevailing wage and practice surveys, and 68 percent processing job orders.

Table 4. MA Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	105	82,320	784	25%
Prevailing Wage Surveys	15	25,005	1,667	7%
Job Orders Processed	215	226,180	1,052	68%
Total		333,505		

Most farm employers seeking certification file applications 45 days in advance of their need-for-workers date with the MA SWA and the NPC in Atlanta, and email communication between the SWA and the NPC has improved recently. Almost all applications are submitted by associations such as the New England Apple Council, which acts as an agent for the employers of H-2A workers—it is not a joint employer.

SWA staff review applications, check the job description and the prevailing wage offered and, if the application is acceptable, give the job order a number, enter it into the job bank system, and send the number to the NPC.

After the NPC accepts the employer's application for certification, usually within seven days of its submission, the MA SWA enters the job order in the Massachusetts One-Stop Employment System (MOSES) for distribution to offices around the state; copies of the ETA 790 are mailed to traditional recruitment or labor supply states, including Puerto Rico. Field offices recruit and refer workers, and the employer issues a recruitment report that is checked by the SWA 33 days before the employer-specified start date--in most cases, this report says that workers referred did not show up for interviews.

In 2007, the MA SWA referred 147 U.S. workers to about 700 H-2A jobs, 21 percent, including 20 to 25 local workers and 125 mostly Puerto Rican workers (others come from FL, TX, and OH). Most of these referrals, perhaps two-thirds, are made before the employer's start date, and a third after the H-2A workers have arrived and gone to work.

Housing inspections are conducted by the MA SWA on behalf of the MA Department of Public Health and the U.S. Department of Labor. The SWA verifies that the housing meets federal and state standards, and DPH checks the water supply and issues the occupancy certificate—SWA costs are reimbursed from the OFLC grant.

The MA SWA conducts prevailing wage and practice surveys by mail, and does 15 surveys a year, in nurseries, vegetables, apples and tobacco.

Apple, tobacco, and vegetable growers have been long-time users of the H-2A program; future growth is likely to be in nurseries. Issues for the MA SWA include the tendency of some employers to increase the number of jobs for which certification is requested so that when the number is reduced for failure to hire U.S. workers, they have sufficient workers, employers not wanting to hire U.S. workers after their H-2A workers are employed, and dealing with master applications. For example, if the NEAC is certified to fill 35 jobs for seven employers in several

New England states, the MA SWA deals only with the MA employers who were certified, and needs e.g. their EIN to enter a job order, which may not have been provided to the NPC.

Perhaps the major gap in MA is the gap between the scenario envisioned by the regulations and practices. Employers seeking seasonal workers were imagined as coming to the SWAs for help. If no local workers were available, the employer could complete a Form 790 and use the agricultural recruiting system to find workers in other states. If that effort failed, Form 750 could be added and the employer was ready to apply for H-2A workers. The fact that the H-2A workers are generally identified before the employer turns to the SWA for recruitment assistance reverses this process.

Farm Labor Trends

The Boston Globe on July 29, 2007 profiled a 56-year old Jamaican who has returned to a Peabody, Massachusetts farm for 20 years as an H-2A worker, along with five other Jamaicans. The six Jamaicans reported working 48 hours a week and earning $450 a week. A survey of 118 farms in Essex county found that almost 60 percent said lack of labor curbed expansion plans, including selling produce at farmers' markets.

The Massachusetts Department of Workforce Development reported an average 780 H-2A workers employed in Massachusetts agriculture in 2006, earning an average $24,200. In July 2006, there were reported to be 640 H-2A workers in Massachusetts, earning at least the AEWR of $9.50 an hour.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - New York Farm Labor Profile

NY Summary

New York is a dairy state: milk accounted for almost half of the state's farm sales of $3.5 billion in 2006. The three traditional labor-intensive sectors, fruits worth $265 million, vegetables worth $553 million, and horticultural specialties such as greenhouse and nursery crops worth $402 million, accounted for 80 percent of crop sales.

Dairy is also the largest employer of both regular (more than 150 days on the responding farm) and seasonal workers, accounting for 42 percent of the 24,500 regular worker "hires" in 2002 and 26 percent of the 43,000 seasonal "hires" (a person employed on two farms is counted twice in these COA data). Dairy accounted for 44 percent of the farm labor expenses in 2002, followed by 20 percent for greenhouses, 13 percent for vegetable farms, and 10 percent for fruit farms.

New York has more H-2A workers than any other state in the northeast. Over 200 farm employers were certified to fill 3,100 jobs with H-2A workers in FY06; about 80 percent of these jobs were in apples.

NY Census of Agriculture

The Census of Agriculture reported that New York had 37,250 farms in 2002, down from 38,3400 in 1997. Farm sales were $3.1 billion, including $1.1 billion worth of crops, almost a third, and $2 billion of livestock, two thirds.

Some 10,500 New York farmers reported labor expenses to the COA, totaling $449 million for directly hired workers; 2,600 farmers reported $23 million in contract labor expenses, a total $472 million. NASS reported that the average hourly earnings of all hired farm workers in New York were $8.68 an hour in 2002, suggesting 54 million hours worked by hired farm workers; this is over 26,000 full-time (2080-hour) equivalents.[189] The AEWR for New York in 2007 was $9.50 an hour.

[189] NASS reported an average $8.47 for field workers and $8.17 for field and livestock workers in New York in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. NY Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	New York	United States
Farm Sales ($bil)	3.1	200
Total Labor Expendits($mil)	472	22,000
Sales to Expendits ratio	6.6	9.1
Average Earns ($/hour)	8.68	8.80
Estimated hours worked(mils)	54	2,500
Full-time equivalent (2080 hrs)	26,143	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farm operators report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[190] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops.[191]

Farm labor expenditures are concentrated on 1,000 New York farms. Almost 10,500 farms reported labor expenses for directly hired workers in 2002, but:

- Half had less than $10,000 in direct hire labor expenses, and they collectively accounted for three percent of direct hire labor expenses, an average $2,600 per farm.
- Another 37 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 29 percent of such expenses, an average $33,000 each.
- 9 percent of operators, almost 1,000, had direct hire labor expenses of $100,000 or more, and they accounted for 68 percent of the total, an average $313,000 each.

Contract labor expenses are not as concentrated as direct hire expenses. The 72 farms reporting $50,000 or more in contract labor expenses accounted for 36 percent of such expenses.

Table 2. New York: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	10,494	100%	448,924	100%	42,779
<10,000	5,600	53%	14,749	3%	2,634
10,000 to100,000	3,921	37%	129,936	29%	33,138

[190] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[191] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

>100,000	973	9%	304,239	68%	312,681
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	2,634	100%	23,019	100%	8,739
<10,000	2,084	79%	4,887	21%	2,345
10,000 to 50,000	478	18%	9,942	43%	20,799
>50,000	72	3%	8,189	36%	113,736

Source: COA 2002, NY, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of New York farms: vegetable and melon, greenhouse and nursery operations, and dairy farms, accounted for 75 percent of the direct hire labor expenses in 2002 and 43 percent of the contract labor expenses (fruits and nuts accounted for another 10 percent of labor expenses). Relatively few farms accounted for most of these labor expenses: the 290 vegetable, nursery, and dairy operations that each had farm labor expenses of $250,000 or more were 80 percent of the 355 NY farms with large direct-hire labor expenses.

Table 3. New York Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Vegetables	Greenhouse, Nursery	Dairy	Total	Share
Direct Hire Farms	10,494	791	852	3,950	5,593	53%
Labor Exp($000)	448,924	58,631	84,288	196,018	338,937	75%
Distribution	100%	13%	19%	44%	75%	75%
>$250,000 farms	355	62	71	156	289	81%
Contract Farms	2,634	179	250	487	916	35%
Labor Exp($000)	23,019	3,149	2,477	4,280	9,906	43%
Distribution	100%	14%	11%	19%	43%	43%
>$50,000 farms	72	16	8	12	36	50%
Direct Hire Farms	10,494	791	852	3,950	5,593	53%
Workers hired	67,886	9,863	8,966	21,564	40,393	60%
>150 days	24,539	3,306	4,787	10,270	18,363	75%
<150 days	43,347	6,557	4,179	11,294	22,030	51%

<150 days share	64%	66%	47%	52%	55%	

Source: COA, 2002, NY, Table 59

New York's 10,500 farms that reported hiring workers directly reported a total of 67,900 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About 60 percent of all hired workers were in the three major labor-using sectors: vegetables, nurseries and dairy.

These sectors hired 75 percent of the workers employed 150 days or more , and 51 percent of those employed less than 150 days, on the responding farm. Over two-thirds of the workers employed on vegetable farms were employed less than 150 days on the reporting farm, as were over half of the workers employed on dairies.

State Data

New York has 20-10 unemployment insurance coverage of farm workers, meaning that farm workers are covered if their employer pays $20,000 or more in cash wages in a quarter or if the employer hires 10 or more workers on each of 20 days in different weeks during the current or preceding year. There were an average 2,231 UI-covered reporting units in NY agriculture in 2006. They employed 21,600 workers and paid them an average $26,000 in wages.

The reporting units in forestry and fisheries can be distinguished, but agricultural support employers can not be, that is, they could be in forestry and fisheries. The UI data show that crop employers account for half of the UI-covered farm employment, and they pay lower average wages than animal employers—these average wages are best considered the annual earnings of full-time equivalent workers.

Table 4 NY: UI-Covered Crop, Animal, and Ag Support Activity, 2006

	Reporting Units	Ave Employment	Total Wages($)	Average($)
Crops	933	10,470	246,182,934	23,513
Animals	686	7,921	221,256,971	27,933
Support	330	2,179	63,137,117	28,975
Total	1,949	20,570	530,577,022	

Source: QCEW, www.labor.state.ny.us/workforceindustrydata/apps.asp?reg=nys&app=ins

NY's agricultural plan of service for PY07 noted that 370 farm employers submitted 663 job orders requesting 4,481 workers during PY06, an average of almost seven workers per job order. Referrals do not necessarily result in jobs being filled. Even though 796 of the workers referred were reportedly hired, 18 percent, New York's One Stop system tracks workers who entered employment via wage records. Hires are sometimes recorded if a worker contacts the employer directly after contact with MSFW staff, not as a result of a formal referral.

NY had 8,000 MSFWs in selected crops in 2006, 55 percent in apples and 16 percent in nurseries. The number of MSFWs peaks at almost 11,000 during the apple harvest; most migrants leave New York at the end of the fall harvest season.

Table 5. New York: Estimated MSFWs by Crop, 2006

Crop	Number
Apples	4,572
Nurseries	1,290
Onions	545
Cole crops	425
Potatoes	410
Greenhouses	400
Sweet corn	395
Total	8,037

Source: NY Ag Plan of Service, PY07

The H-2A program in New York has traditionally been associated with apple harvesting. The United States harvested about 222 million 42-pound boxes of apples in 2007, including 130 million in WA, 31 million in NY, and 19 million in MI.

H-2A, Alien Certification Grant and Prevailing Wages

In FY06, 212 NY farm employers were certified to fill 3,100 jobs with H-2A workers. These numbers have been increasing—182 farm employers were certified to fill 2,300 jobs with H-2A workers in FY05, when 80 percent of the jobs certified were in apples. In FY07, some 285 farm employers requested certification to fill almost 4,000 jobs with H-2A workers; this increase has been attributed to the workplace inspections, especially in western New York, and fears of sanctions tied to the receipt of no-match letters, which are issued to employers submitting tax information for 10 or more workers whose names and SSNs did not match government databases.

States have three major costs to administer their part of the H-2A program: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. New York estimated its costs for FY07 would be $469,000, with 35 percent devoted to housing inspections, 20 percent to prevailing wage and practice surveys, and 45 percent to processing job orders.

Table 6. New York Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	550	164,099	298	35%
Prevailing Wage Surveys	31	94,238	3,040	20%

Job Orders Processed	460	210,474	458	45%
Total		468,811		

Source: SF-424

Most farm employers seeking certification file applications 45 days in advance of their need-for-workers date with the NY SWA and the NPC in Atlanta. Since most NY employers requesting certification have been in the H-2A program for several years and because SWA outreach staff are in contact with farm employers, there are few problems with employers forgetting to file their application with the NY SWA.

SWA staff review applications, check the job description and prevailing wage offered and, if the application is acceptable, enter it into the job system, which generates the job order number necessary for the NPC to accept the employer's application and for the employer to post ads for U.S. workers. The NY SWA notes that some out-of-state agents assisting employers use attachments from applications filed in other states that include provisions not permitted under NY state law.

After the NPC accepts the employer's application for certification, usually within seven days of its submission, the NY SWA scans the job orders for distribution to traditional supply states, including Florida, Texas, and Puerto Rico and to Ohio, at the request of that state's Monitor Advocate. Since New York uses America's Labor Exchange, its job orders get national exposure. NY SWA staff note that more employers are requesting H-2A workers for longer periods, sometimes 6 to 8 months, but most job orders offer at least 40 hours a week. Most of the H-2A requests are for under 20 workers, but a few request more than 200 workers

ES field offices recruit and refer workers to the jobs for which employers are seeking certification to hire H-2A workers. In NY, the $9.50 an hour AEWR mentioned in the ads draws U.S. applicants, but some are reluctant to register at their local ES office and be referred while others are discouraged by the fact that the job does not begin for 30 or more days. The NY SWA does not ask for or check the documents of workers seeking referrals.

NY has not had experience with farm labor contractors seeking certification to fill jobs with H-2A workers. NY requires FLCs to have a federal license and to register with the state.

The employer issues a recruitment report to the NPC at least 30 days before the employer-specified start date. The SWA also submits a recruitment report The NY SWA referred 507workers to H-2A job orders in PY 2006, but does not track how many were hired.

Most U.S. workers seeking farm jobs want work right away, so most referrals to H-2A jobs that result in a U.S. worker going to work are made near the time that work begins and 50 percent of the contract period, when the H-2A job is removed from the system. Field staff record when referrals are made, but the system does not readily generate data to show exactly when in the period between the employer's application and 50 percent of the employer-specified contract period U.S. workers were referred and hired. U.S. workers who do not need housing are usually hired even after the H-2A workers are on site; the SWA follows an informal practice of trying to

refer U.S. workers who need housing to jobs that avoid displacement of H-2A workers already in the state.

The NY SWA conducts housing inspections using local field staff. NY state law requires the Department of Health to conduct pre-occupancy and post-occupancy inspections of housing for five or more migrant workers, so that SWA inspections of housing for H-2A applications resulted in duplicate inspections. Beginning in 2008, NY will test having the Department of Health inspect the housing for five or more migrant workers associated with H-2A applications.

The NY SWA conducts prevailing wage and practice surveys by mail and in person, and has received enough responses to make prevailing wage determinations for apple harvesting.

The H-2A program is expanding in NY, in part because of ICE raids in western New York that have encouraged some workers to leave the area. If milking jobs, in which there is high turnover, are defined as seasonal and eligible to be filled with H-2A workers, the program could expand in New York. Even without the participation of the dairy industry, the H-2A program is likely to expand in NY nurseries.

Farm Labor Trends

ICE has been especially aggressive enforcing laws against hiring unauthorized workers in Western New York. A 29-year old farm worker arrested in September 2006 was sentenced to 15 months in federal prison before removal in March 2007; he had been apprehended six times before. He reported sending $200 a month to his parents and two children in Mexico.

New York farm worker organizations unsuccessfully pressed for a state law that would grant workers collective bargaining rights. The Farmworkers Fair Labor Practices Act, which stalled in the state Senate in 2006, would have required farm workers to get overtime pay and a day off each week and given them collective bargaining rights. In 1996, New York enacted a law requiring farmers to provide water and toilets to field workers, and in 1999 made the minimum wage for farm workers the same as the minimum for other employees on farms with 11 or more workers.

New York's Division of Housing and Community Renewal has had a revolving loan fund to support growers offering housing to farm workers since 1995, and a 2004 change now allows dairy farms and others offering year-round work to receive low-cost loans to build housing for their workers.

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - North Carolina Farm Labor Profile

NC Summary

North Carolina had farm sales of $8.2 billion in 2006, including $5.3 billion or almost two thirds from livestock and $2.9 billion or a third from crops. The two most valuable commodities, each accounting for about a quarter of the state's farm sales, are broilers and hogs. The most valuable labor-intensive crops were flue-cured tobacco, worth $486 million in 2006, sweet potatoes worth $104 million, and blueberries worth $49 million; other labor-intensive commodities include tomatoes worth $28 million in 2006, and cabbage and strawberries worth $19 million each. Greenhouse and nursery products, including Christmas trees, were worth $1 billion, an eighth of the state's farm sales.

According to the Census of Agriculture, about 60 percent of the state's farm labor expenses were paid by 1,000 farms in 2002. NC farms reported hiring 91,000 workers directly in 2002, including two-thirds for less than 150 days. Most farm labor expenses were incurred by greenhouse and nursery operations, tobacco farms, and hog farms.

NC has had declining farm worker employment and a rising number of jobs certified to be filled with H-2A workers. Hired farm worker employment fell from about 160,000 in the late 1980s to under 100,000 in 2005-06, with the sharpest drop for (local) seasonal workers and regular workers employed at least 150 days on the responding farm. The number of migrants rose very fast until leveling off at about 40,000 since 2000—almost all are Spanish speaking—while the number of jobs certified to be filled with H-2A workers peaked at 10,500 in 1998 and fell by a third to 7,600 in 2006.

NC Census of Agriculture

The Census of Agriculture reported that North Carolina had 54,000 farms in 2002, down from 59,000 in 1997. Farm sales were $7 billion in 2002, including $2 billion worth of crops, 29 percent, and $5 billion of livestock, 71 percent.

Some 16,000 North Carolina farmers reported labor expenses to the COA, a total of $552 million for directly hired workers; 4,400 farmers reported $65 million in contract labor expenses, a total $617 million. NASS reported that the average hourly earnings of all hired farm workers in North Carolina were $8.31 an hour in 2002, suggesting 74 million hours worked by hired farm workers; this is 35,000 full-time (2080-hour) equivalents.[192] Because of the importance of livestock, North Carolina had a higher farm sales to labor expenses ratio than the United States.

[192]NASS reported an average $7.52 for field workers and $7.64 for field and livestock workers in NC in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is

Table 1. Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

North Carolina	North Carolina	United States
Farm Sales ($bil)	7	200
Total Labor Expendits($mil)	617	22,000
Sales to Expendits ratio	11.4	9.1
Average Earns ($/hour)	8.31	8.80
Estimated hours worked(mils)	74	2,500
Full-time equivalent (2080 hrs)	35,465	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[193] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[194]

Farm labor expenditures are concentrated on about 1,000 NC farms. Over 16,000 farms reported labor expenses for directly hired workers in 2002, but:

- Two thirds had less than $10,000 in direct hire labor expenses, and they collectively accounted for four percent of direct hire labor expenses, an average $2,100 per farm.
- Another 30 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 30 percent of such expenses, an average $35,000 each.
- 7 percent of operators, about 1,046, had direct hire labor expenses of $100,000 or more, and they accounted for 66 percent of the total, an average $350,000 each.

Contract labor expenses are almost as concentrated as direct hire expenses. The 235 NC farms reporting $50,000 or more in contract labor expenses accounted for 56 percent of such expenses. Many of the same farms with large direct hire labor expenses also had large contract labor expenses.

Table 2. North Carolina: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	16,091	100%	552,486	100%	34,335
<10,000	10,308	64%	21,448	4%	2,081
10,000 to100,000	4,737	29%	164,454	30%	34,717

calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[193] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[194] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

>100,000	1,046	7%	366,584	66%	350,463
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	5,599	100%	*65,193*	100%	*11,644*
<10,000	4,422	79%	9,647	15%	2,182
10,000 to 50,000	942	17%	19,343	30%	20,534
>50,000	235	4%	36,203	56%	154,055
Source: COA 2002, North Carolina, Table 4.					

Farm labor expenses can be tabulated along several size-of-farm dimensions. For example, the data in COA Table 55 show that 16,091 NC farms hired 91,138 workers, including 6,100 farms that hired 27,900 workers for 150 days or more and 13,400 that hired 69,200 workers for less than 150 days—both of these worker entries should be considered job counts, since one worker employed on two farms is counted twice. There were 515 farms with 2,000 or more acres that hired workers directly, and they hired 11,200 workers.

Data in COA Table 56 report that 1,300 NC farms each had farm sales of $1 million or more and hired workers; their direct hire labor expenses were $303 billion, 55 percent of the total $552 million. The 500 farms with sales of $1 million and contract labor expenses accounted for $29 million or 45 percent of the total $65 million.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 13,000 NC individual or family farms with direct hire labor expense accounted for $212 million or 38 percent of such expenses, the 1,700 partnerships $85 million, and the 1,300 corporations $246 million, or 45 percent of the total. The 4,500 NC individual or family farms with contract labor expense accounted for $33 million or 51 percent of such expenses, the 600 partnerships $15 million, and the 470 corporations almost $16 million, or 25 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. Three types of NC farms: greenhouse and nursery operations, tobacco farms, and hog farms, accounted for 60 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 49 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 238 greenhouse, tobacco, and hog operations that each had farm labor expenses of $250,000 or more were two thirds of the 354 NC farms with large direct hire labor expenses.[195]

[195] North Carolina had 36 vegetable and melon farms that had $250,000 or more in direct labor expenses in 2002, but their total labor expenses were suppressed in the COA; 43 vegetable and melon farms also had contract labor expenses of $50,000 or more. There were eight fruit and nut farms that had $250,000 or more in direct labor expenses in 2002, and 10 fruit and nut farms also had contract labor expenses of $50,000 or more.

Table 3. North Carolina: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Greenhouse, Nursery	Tobacco	Hogs	Total	Share
Direct Hire Farms	16,091	1,143	3,509	1,085	5,737	36%
Labor Exp($000)	552,486	115,394	84,359	134,244	333,997	60%
Distribution	100%	21%	15%	24%	60%	60%
>$250,000 farms	354	99	17	122	238	67%
Contract Farms	5,599	731	1,239	408	2,378	42%
Labor Exp($000)	65,193	9,317	14,608	7,986	31,911	49%
Distribution	100%	14%	22%	12%	49%	49%
>$50,000 farms	4,732	31	59	40	130	3%
Direct Hire Farms	16,091	1,443	3,509	1,085	6,037	38%
Workers hired	97,138	13,619	35,634	9,659	58,912	61%
>150 days	27,916	5,731	4,640	6,179	16,550	59%
<150 days	69,222	7,888	28,772	3,480	40,140	58%
<150 days share	71%	58%	81%	36%	68%	

Source: COA, 2002, NC, Table 59

NC's 16,100 farms that hired workers directly reported a total 97,100 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Over 60 percent of these direct hires were in the three major labor-using sectors: greenhouses, tobacco, and hogs, and these three sectors hired 60 percent of those hired 150 days or more and 60 percent of those employed less than 150 days on the responding farm. There were distinct differences by commodity: over 80 percent of the workers hired by tobacco farms were employed less than 150 days on the responding farm, versus a third of those reported by hog farms.

NC is combined with VA in NASS's Appalachian I region, which reported peak employment of 38,000 to 40,000 workers in July 2005, 2006, and 2007. As in the rest of the United States, about two-thirds of these workers were expected to be employed on the responding farm 150 days or more. The average hourly earnings of all hired workers in the Appalachian I region rose from $9.03 to $9.64 between July 2005 and July 2006 and fell to $9.25 in July 2007. The wage rates of other types of hired workers, such as field and livestock workers, had this same pattern of rising between 2005 and 2006 and falling between 2006 and 2007.

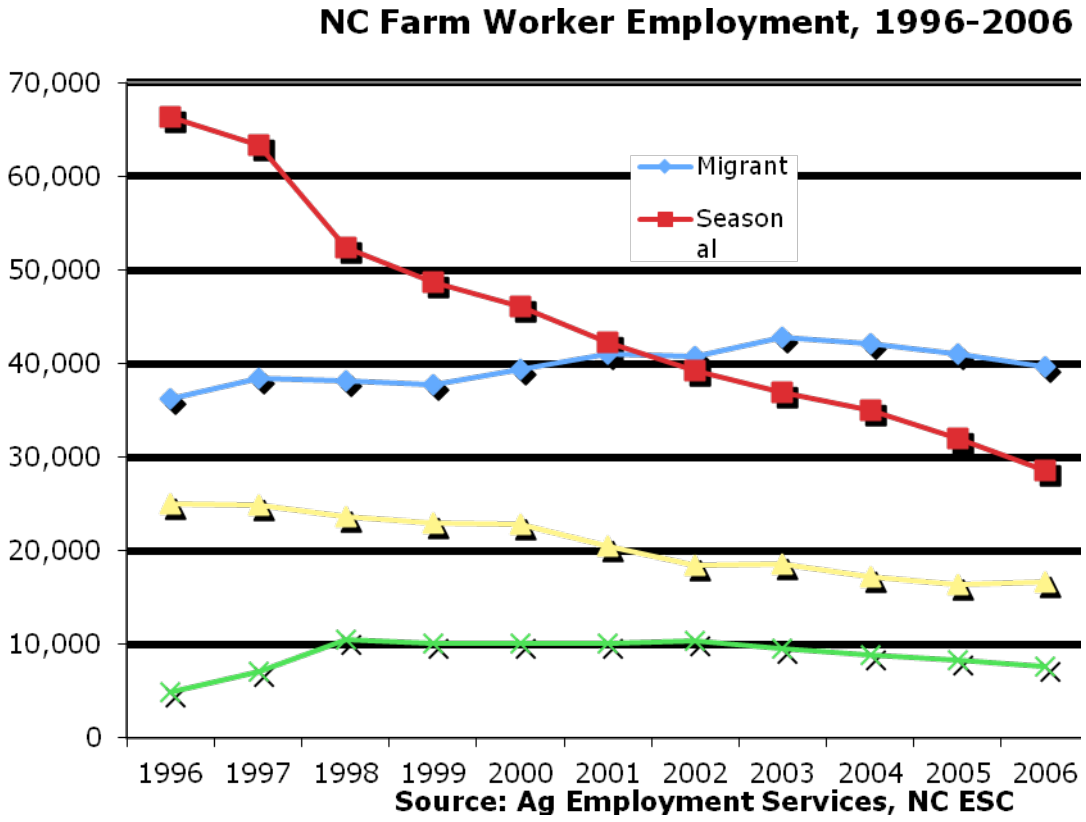
State Data

The Agricultural Employment Services unit of the North Carolina Employment Security Commission estimates the number of migrant, seasonal, and regular (employed more than 150 days on one farm) farm workers, and reports the number of jobs certified to be filled with H-2A workers for each county. These data suggest that the total number of farm workers in NC fell 40 percent between 1986 and 2006, from over 160,000 to less than 100,000.

Within the four types of workers, the number of local seasonal workers fell most, from over 100,000 to less than 30,000, or from two-thirds of the state's farm workers to a third. The next largest drop was for regular workers employed more than 150 days on one farm; their number fell from almost 40,000 to 16,000 despite the growth of large hog operations hiring year-round workers.

The fastest growth was in H-2A workers. The number of jobs certified to be filled with H-2A workers rose from less than 200 in 1989 to a peak of 10,500 in 1998, and decreased to about 7,700 in 2006. Most of the H-2A workers are employed on the state's tobacco farms. The number of migrant workers, those with homes outside the state, almost doubled from about 20,000 in the mid-1980s to 40,000 in 2005-06. Almost all of these migrants are Spanish speaking.

Figure 1. NC Farm Worker Employment, 1996-2006



North Carolina has federal 20-10 UI coverage, meaning that farm employers are required to provide unemployment insurance coverage for their workers if they paid cash wages of $20,000 or more in the current or preceding calendar quarter or employed ten or more workers on at least one day in each of 20 different weeks in the current or immediately preceding calendar year.[196] The earnings of H-2A workers are exempt from the federal 0.8 percent UI tax, but H-2A workers are counted in determining whether a farm employer is subject to the 20-10 rule.[197]

There were almost 2,800 UI-covered establishments in NC agriculture in 2006, including 1,200 in crops, 640 in animal production, and 400 in ag support services (plus some UI-covered employers in forestry and fisheries). About a quarter of the UI-covered crop employers were tobacco farms, and they collectively hired an average 1,700 workers in 2006, about 15 percent of the average 11,600 workers employed in crop agriculture. Average earnings on tobacco farms were lower than for all crop farms.

Table 4. North Carolina: UI-Covered Ag Employment, 2006

North Carolina: UI-Covered Employment, 2006

	NAICS C	Units	Avg Employ	Wages Paid($)	Average W	Hourly($)	Taxable Wages	Share
Agricultur	11	2,798	29,513	784,593,702	26,572	12.78	484,404,728	62%
Crops	111	1,158	11,585	240,378,284	20,748	9.98	170,244,256	71%
Tobacco	111910	260	1,701	28,887,487	17,004	8.18	23,731,993	82%
Greenhou	1114	257	3,957	98,817,944	24,960	12.00	62,878,302	64%
Animal Pr	112	638	10,630	333,284,452	31,356	15.08	195,980,076	59%
Hogs	112210	389	5,437	157,920,743	29,068	13.98	90,994,100	58%
Ag Suppor	115	394	3,873	107,298,349	27,716	13.33	58,054,100	54%
FLCs	115115	38	642	8,874,381	13,832	6.65	7,176,909	81%

Source: Employment and Wages, www.ncesc.com/lmi/industry/industryMain.asp#industryWages
Hourly is the implied average hourly earnings for 2080 hours a year

Another quarter of the UI-covered crop employers were greenhouse and nursery operations, and they accounted for an average 4,000 UI-covered workers, or 35 percent of the total. Their implied average earnings of $12 an hour were significantly above the $10 average for all crop workers and the $8 average for tobacco workers.

About 60 percent of the 640 UI-covered animal production units were hog farms, and they accounted for half of the average UI-covered animal employment of 10,600. The implied average earnings of UI-covered workers on hog farms, $14 an hour, was slightly below the $15 an hour average of all UI-covered animal workers.

There were only 38 UI-covered FLCs in NC in 2006, and they collectively hired an average 642 workers. These workers had the lowest implied hourly wages, $6.65 an hour.

[196] Several states have practically universal coverage of farm workers, including CA and WA. FL requires UI coverage of farm workers by employers paying $10,000 or more in a calendar quarter or employing at least five workers in 20 weeks, while TX requires coverage if employers pay $6,250 in any calendar quarter or hire at least three workers in at least 20 different weeks. Comparison of State UI Laws. http://workforcesecurity.doleta.gov/unemploy/statelaws.asp#Statelaw

[197] States may exclude the wages paid to H-2A workers from state UI taxes, and NC XXX

H-2A Jobs, Referrals, and Prevailing Wages

NC has more employers certified to fill more H-2A jobs with guest workers than any other state. In FY06, over 1,200 NC farm employers were certified to fill 7,800 jobs with H-2A workers. In the number two H-2A state, Georgia, 58 employers were certified to fill 5,300 jobs with H-2A workers, suggesting that NC has far more employers requesting certification for fewer jobs on each farm.

States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. NC requested $112,400 for FY06, and allocated 53 percent of the OFLC grant to job-order processing and 47 percent to prevailing wage and practice surveys.

Table 5. NC Alien Labor Certification Grant, FY07

	Number	Cost($)	Average($)	Share
Housing Inspections				0%
Prevailing Wage Surveys	28	53,288	1,903	47%
Job Orders Processed	100	59,104	591	53%
Total		112,392		

Source: SF-424, May 21, 2007
Data refer to FY06

States have three major costs under the H-2A program: processing job orders, conducting housing inspections, and doing prevailing wage and surveys. Many of NC's farm employers use the NC Growers Association and other agents and associations to apply for H-2A certification, so that NC reports only 100 job orders processed in FY06 at an average cost of $600.[198] These master job orders covered about 1,280 farm employers.

Most employers file H-2A applications 45 to 50 days in advance of their need-for-workers date. NC inputs acceptable master job orders covering multiple employers and crops into its Job Service system immediately to expedite the distribution of the job orders to local offices based on the location of the job, so that local workers know about local jobs. After the NPC accepts the employer's H-2A application, NC opens the job for recruitment statewide and in nearby states. A check of the web site in December 2007 found several 10-month jobs offering $9.02 an hour for 40-hour work weeks (www.ncesc.com/individual/jis/jisMain.asp?init=true).

In calendar year 2007, NC employers requested certification to fill about 8,500 jobs with H-2A workers. The NC Job Service made 374 referrals to these H-2A jobs, 4.4 percent, and 111 of these referred workers went to work, 1.3 percent; in 2006, there were 312 referrals that resulted in 106 workers going to work.[199] NC has 22 agricultural representatives and four field

[198] Most of NC H-2A applications are filed by one of four agents: NC Growers Association, GA-based AgWorks, VA-based Mid-Atlantic Resource Association, and KT-based KT Labor.

[199] NC asks workers seeking job placement services if they are legally authorized to work in the US; if they answer yes, they can be referred to jobs. DOL's November 6, 2007 TEGL strongly encourages SWAs to use E-Verify to determine that the workers referred to fill H-2A jobs are legally authorized to work in the US. E-Verify was designed to be used by employers after

supervisors to solicit job orders, make referrals, and register labor contractors, and they complete a form ETA 975 for each worker referred. Workers referred to farm jobs are given postcards on which they can report what happened, and ag representatives follow up with all workers referred to H-2A jobs, including making unannounced field checks.

Most U.S. workers seeking farm jobs want work right away, so most of the referrals to H-2A jobs that result in a U.S. worker going to work are made between the time that work begins and 50 percent of the contract period, when the job is removed from the ES system. NC does not have data readily available that would show exactly when in the employer-specified contract period U.S. workers went to work. However, the fact that most workers seeking farm jobs want them right away suggests that most of the referrals that resulted in U.S. workers being hired occurred between the contract start date and the 50 percent mark.[200]
NC ag representatives register about 300 labor contractors and crew leaders each year and record the placement of their crews, helping to explain the 13,000 placements of farm workers in non-H-2A farm jobs in 2006. NC has had several applications for H-2A certification from Thai crew leaders, but they were denied job-placement services because of deficiencies in their applications, including a lack of written agreements with fixed-situs employers. NC ag representatives reported that some of the employers to whom the crew leaders were going to supply H-2A workers did not realize that the workers would be admitted with H-2A visas.

Associations can serve as a policing mechanism for their farm employer members, submitting standardized applications to expedite processing and setting and enforcing standards of conduct among their grower members. However, they can also take steps that deter some U.S. workers from applying for H-2A jobs,[201] as when an association's master job order lists hundreds of employers and multiple crops, so that a U.S. worker needing housing could be assigned to any employer or crop. In some cases, associations educate their members about their responsibilities under the H-2A program, while in others they may shield members from H-2A program requirements.

NC had an extensive program of wage and practice surveys that was active through the 1990s, but it became outmoded as computer technology changed. Under the old program, ag representatives obtained wage and employment data in person from employers and workers, and these data were fed into a program that calculated prevailing wages. In 2007, NC resumed wage and practice surveys, conducting 28; they are being finalized in fall 2007.

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they have made a decision to hire a worker, so that errors in the databases that are checked do not prevent a legally authorized worker from being hired.

[200] Few employers send H-2A workers home to make room for the local hires. Instead, some employers make local workers feel unwelcome, an attitude that may be reinforced by the H-2A workers. There are no data available on how many of the referred workers who begin working finish the season.

[201] SWA staff emphasize that US workers seeking farm jobs want to go to work right away, and requirements to call a far-away number and be interviewed by an association representative may be seen by US workers as non-welcoming. NC discourages employers from requiring US workers applying for H-2A jobs from having to fax or send written applications to the employer, or leave messages to be returned—anything that introduces delay in making a hiring decision for a US workers tends to be discouraging. In the experience of the NC SWA, employers willing to talk directly to the US workers seeking jobs are most likely hire and keep these workers employed.

Housing inspections are conducted by the North Carolina Department of Labor's Agricultural Safety and Health Bureau and not charged to the state's alien certification grant. The state's 1989 Migrant Housing Act,[202] (effective 1990) established a single set of standards for inspecting agricultural migrant housing, including housing provided to migrants working in crab processing and Christmas trees[203] The ASHB conducts an annual housing registration, inspection and compliance program (www.nclabor.com/ash/ash.htm). In 2007, the MHA was amended to require each farm worker housed to have a mattress in good repair.

Farmers must request an inspection of their housing at least 45 days before occupancy. The local health department checks the water and sewer system at the migrant housing, and the NC Department of Labor inspects the housing and issues a certificate approving occupancy or outlines the repairs that must be made to gain approval. NC Department of Labor inspectors can return after occupancy and issue citations for violations of standards.

Farm labor housing providers whose housing is in full compliance at least two years when NC Department of Labor inspects it for the first time can request "Gold Star grower" designation (http://www.nclabor.com/ash/goldstar.htm). Growers with safety programs and a below-average injury and accident rates who also satisfy other conditions can be deemed Gold Star, which allows them to self-inspect their housing, although it is visited once a year by a NC Department of Labor inspector.

[202] Before January 1, 1990, farmers housing fewer than 13 migrants did not have to have their housing inspected by the state.

[203] NC DOL's guide to farm worker housing (p22) estimated that 80 percent of NC farm workers were employed in tobacco and 16 percent in fruits and vegetables such as cucumbers and sweet potatoes.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Oregon Farm Labor Profile

OR Summary

Oregon is a crop state dominated by the sale of nursery commodities. Nurseries accounted for almost half of Oregon's farm labor expenses in 2002, and hired a third of the regular farm workers, those employed at least 150 days on the responding farm. Most of the state's nurseries and farm workers are in the Willamette Valley, which also produces fruits, vegetables, and other commodities.

Oregon is divided by Cascade Mountains—labor-intensive commodities are to the west of the mountains, and grains and cattle dominate in the east. Most of the employers requesting certification to fill jobs with H-2A workers are sheep farmers seeking sheepherders in the eastern half of the state, but most of the growth in the H-2A program is likely to come from fruits, vegetables, and nursery operations in the western half of the state.

The Oregon SWA has been successful referring workers to jobs that employers seek to fill with H-2A workers, but many of the referred workers do not show up for interviews, and few appear to finish the season. The SWA notes that many U.S. workers are attracted to the $9.77 an hour H-2A jobs, but that it does not have the resources to follow up with referrals, hires and quits, and that few U.S. workers are willing to file complaints that could lead to investigations of employers who may have discouraged them in order to hire or retain H-2A workers.

Oregon state policy is to have federal funds cover the cost of federal mandates, so that if employer applications increase, the state would expect more funding. One person in the SWA covers H-2A and H-2B processing as well as making prevailing wage determinations.

OR Census of Agriculture

The Census of Agriculture reported that Oregon had 40,000 farms in 2002, about the same as in 1997. Farm sales were $3.2 billion, including $2.2 billion worth of crops, 69 percent, and $1 billion of livestock, 31 percent. In 2005, farm sales totaled $4.3 billion, including $868 million in nursery sales, $533 million from cattle, $373 million from grass seed, and $359 million from milk.

Almost 11,000 Oregon farmers reported labor expenses to the COA, and they totaled $620 million for directly hired workers; 5,800 farmers reported $63 million in contract labor expenses, so that farm labor expenses totaled $683 million. NASS reported that the average hourly earnings of all hired farm workers in Oregon were $9.15 an hour in 2002, suggesting 75 million

hours worked by hired farm workers, almost 36,000 full-time (2080-hour) equivalents.[204] The AEWR for Oregon in 2007 is $9.77 an hour, when the state's minimum wage was $7.80.

Table 1. Hired Worker Hours in Oregon Ag, 2002

	Oregon	U.S.
Farm Sales ($bil)	3.2	200
Total Labor Expendits($mil)	683	22,000
Sales to Expendits ratio	4.7	9.1
Average Earns ($/hour)	9.15	8.80
Estimated hours worked(mils)	75	2,500
Full-time equivalent (2080 hrs)	35,887	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[205] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[206]

Farm labor expenditures are concentrated on about 1,000 Oregon farms. Almost 11,000 farms reported labor expenses for directly hired workers in 2002, but:

- Over 60 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for two percent of direct hire labor expenses, an average $1,800 per farm.
- Another 28 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 19 percent of such expenses, an average $38,000 each.
- 10 percent of operators, about 1,100, had direct hire labor expenses of $100,000 or more, and they accounted for 80 percent of the total, an average $466,000 each.

Contract labor expenses also concentrated. The 162 farms reporting $50,000 or more in contract labor expenses, many of which also had high direct-hire labor expenses, accounted for 54 percent of such expenses.

[204] NASS reported an average $8.37 for field workers and $8.48 for field and livestock workers in Oregon in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[205] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[206] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Table 2. Oregon: Farm Labor Expenses, 2002

Directly Hired	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	10,978	100%	620,422	100%	56,515
<10,000	6,769	62%	12,435	2%	1,837
10,000 to100,000	3,110	28%	117,825	19%	37,886
>100,000	1,099	10%	490,162	79%	446,007
Contract Labor	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	5,812	100%	62,764	100%	10,799
<10,000	4,689	81%	9,937	16%	2,119
10,000 to 50,000	961	17%	19,228	31%	20,008
>50,000	162	3%	33,599	54%	207,401

Source: COA 2002, Oregon, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, COA Table 55 notes that the 1,011 Oregon farms with 2,000 or more acres paid $143 million in directly hired labor expenses, 23 percent of the total, and $14 million in contract labor expenses, 22 percent of the total.

Data in COA Table 56 report that the 526 Oregon farms that each had farm sales of $1 million or more and direct hire labor expenses accounted for 61 percent of the $620 million in direct hire labor expenses, and the 203 with farm sales of $1 million or more and contract labor expenses accounted for 40 percent of the $63 million in contract labor expenses.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The almost 8,000 Oregon individual or family farms with direct hire labor expense in 2002 accounted for $156 million or 25 percent of such expenses, the 1,200 partnerships $92 million, and the 1,627 corporations $361 million, or 58 percent of the total. The almost 4,600 Oregon individual or family farms with contract labor expense in 2002 accounted for $26 million or 41 percent of such expenses, the 665 partnerships $12 million, and the 493 corporations $24 million, or 38 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of farms: vegetables and melons, fruits and nuts, and greenhouse and nursery operations, accounted for 69 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 63 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 305 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 70 percent of the 438 Oregon farms with large direct hire labor expenses.

Table 3. Oregon: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Vegs & Melons	Fruits & Nuts	Greenhouse, Nursery	Total	Share
Direct Hire Farms	10,978	534	1,752	1,717	4,003	36%
Labor Exp($000)	620,422	58,074	90,725	276,865	425,664	69%
Distribution	100%	9%	15%	45%	69%	69%
>$250,000	438	60	75	170	305	70%
Contract Farms	5,812	187	1,007	922	2,116	36%
Labor Exp($000)	62,764	5,198	13,453	20,660	39,311	63%
Distribution	100%	8%	21%	33%	63%	63%
>$50,000	162	24	30	38	92	57%
Direct Hire Farms	10,978	534	1,752	1,717	4,003	36%
Workers hired	122,845	11,118	42,216	30,150	83,484	68%
>150 days	27,339	2,609	4,539	11,614	18,762	69%
<150 days	95,506	8,509	37,677	18,536	64,722	68%
<150 days share	78%	77%	89%	61%	78%	

Source: COA, 2002, OR, Table 59

Oregon's 11,000 farms that reported hiring workers directly hired a total of 123,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About two-thirds of all hired workers were in the three major labor-using sectors: vegetables, fruits, and nurseries. These sectors hired 70 percent of the workers employed 150 days or more, and 70 percent of those employed less than 150 days on the responding farm. Three fourths of the workers employed on vegetable farms and 90 percent of those hired on fruit farms were hired employed less than 150 days on the reporting farm. By contrast, only 40 percent of those employed in the state's nurseries were employed less than 150 days by the reporting nursery.

Oregon agriculture is often sub-divided by area, with the most common divide east and west of the Cascade mountains. The east has so-called traditional agriculture, including grains and livestock, while the west has specialty agriculture, including nursery crops, strawberries and other fruits, and grass seed, wine grapes, and vegetables. A more detailed geographic breakdown into the state's six regions shows that:

1. The 10-county Willamette Valley typically accounts for 55 percent of the state's farm sales and employs about 60 percent of the state's farm workers,
2. Eastern Oregon's six mostly irrigated farming counties in the north account for 25 percent of farm sales and 15 percent of farm workers,

3. Eastern Oregon's 10 mostly non-irrigated farming counties in the south account for less than 10 percent of sales and farm workers,
4. The two mid-Columbia counties of Hood River and Wasco have 4-5 percent of the state's farm sales but 7-8 percent of the state's farm workers because of tree fruits such as pears and cherries,
5. The three southern Oregon counties are similar to Hood River and Wasco, with 4-5 percent of the state's farm sales and 7-8 percent of the state's farm workers
6. The six coastal counties have 6-7 percent of the state's farm sales and 3-4 percent of the state's farm workers.

Marion county is Oregon's major farm county, with farm sales of $540 million in 2005, including greenhouse and nursery crops worth $193 million and cane berries worth $19 million. In the 2002 COA, Marion county had $430 million in farm sales, including $364 million from crops and $66 million from livestock. The crop sales were dominated by greenhouse and nursery crops worth $189 million and produced by 465 operations.

Marion County had 932 farms reporting $113 million in direct hire labor expense and 350 farms reporting $7.4 million in contract labor expense; labor expenses of $120 million were 22 percent of farm sales. The 932 farms hiring workers directly reported hiring 20,130; the 383 employers hiring 10 or more workers hired 18,137, or 90 percent. About 75 percent of the workers were hired for less than 150 days on the responding farm.

Oregon accounted for $951 million of the total $15.7 billion in sales of greenhouse and nursery crops in 2004, according to USDA's NASS (http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1448). Oregon's sales have expanded faster than U.S. sales, up 68 percent from the mid-1990s to 2002-04, but the rate of increase slowed in recent years, as seen in the figure below.

Table 4. Oregon and U.S. Greenhouse and Nursery Crop Sales($), 1995-2004

	1995	1996	1997	1998	1999	2000	2001
Oregon	510,022	537,710	588,847	638,801	703,496	718,018	830,938
		5.4%	9.5%	8.5%	10.1%	2.1%	15.7%
United States	10,800,000	11,300,006	12,354,507	12,596,807	13,145,363	13,770,814	14,398,071
		4.6%	9.3%	2.0%	4.4%	4.8%	4.6%
	2002	**2003**	**2004**		**Ave 1995-97**	**Ave 2002-04**	**Change**
Oregon	887,190	908,860	951,452		545,526	915,834	68%
	6.8%	2.4%	4.7%				
United States	15,178,683	15,548,540	15,669,238		11,484,838	15,465,487	35%
	5.4%	2.4%	0.8%				

Source: USDA, NASS

Nursery crops dominate Oregon's crop production, and there are several distinct types of nurseries. Some nurseries specialize in containers, growing plants in one or five gallon containers, while others specialize in producing ornamental and flowering trees that are transported and planted. In most nurseries, labor is at least 45 percent of production costs. Most

nurseries complain of cost-price squeezes, citing the state's rising minimum wage and rising transportation costs, and big-box retailers and the U.S. housing slowdown on the price side to explain why costs can rise while prices remain stable.

Many Willamette Valley farmers devote most of their acreage to seed crops that are not labor intensive, including grass seed, tall fescue, and rye grass, whose production involves a few hired irrigators for several months. However, many of these seed farmers also produce vegetables for processing, often turning to year-round irrigators and equipment operators to recruit seasonal vegetable harvesters. Processing vegetable crops are suffering cost-price squeezes, primarily because only two processors remain, National and Norpac, and competition from farmers in the Midwest with lower cost land is increasing.

There are two areas in Oregon with distinct seasonal labor demand peaks, Hood River-Wasco counties along the Colombia River (the Dalles area) and Douglas-Jackson counties in southwestern Oregon. In both areas, pears are an important crop, although along the Colombia River cherries have become important. Labor costs are 25 to 50 percent of revenue in these crops, and relatively short harvests mean that producers must scramble to find sufficient seasonal workers. Some offer housing for seasonal workers.

State Data

Oregon is a state of small farms and businesses. Farm employers who pay at least $300 to a particular farm worker in a year must withhold income tax from the worker's earnings, and those hiring at least 10 workers for at least 20 days during a year, or paying $20,000 or more in quarterly wages, must pay unemployment insurance taxes on their workers' earnings. According to the 2002 Census of Agriculture, 95 percent of the hired farm labor expenses reported by Oregon farm operators were incurred by those with $25,000 or more in expenses for hired farm workers (COA Table 4, p11).

The Oregon Employment Department (OED) collects unemployment insurance (UI) taxes from covered employers and provides benefits to qualified unemployed workers. Agricultural employers must participate in the UI program if they have a quarterly payroll of at least $20,000 or at least 10 persons working in each of 20 separate weeks during any calendar quarter.

According to the 1997 COA, 82 percent of Oregon farms hired fewer than 10 workers, and they collectively accounted for 25 percent of the workers reported in the COA (Fridley, 2004). Separate estimates made by comparing OR and WA, which has a similar agriculture but almost complete UI coverage of farm workers, suggested that Oregon in 2004 had 32,514 UI-covered farm jobs (including forestry) and 4,416 non-covered jobs. This means that a minority of Oregon farm employers, but 88 percent of Oregon farm workers, are covered by the UI system.

OED has reported monthly and average annual UI-covered farm employment by 3-digit NAICS codes since 2001 (www.qualityinfo.org/olmisj/CEP). In 2005, OED reported that an average 26,973 covered workers were employed in crop production, 3,039 in animal production, and 8,667 in agricultural and forestry support activities--these annual averages are derived by summing monthly employment and dividing by 12 (almost half of the agricultural support activity employment is in forestry, and just over half of the annual agricultural support payroll is

for forestry). If we assume that half of the average annual employment in NAICS agricultural support activities is for crop and animal agriculture, annual average support employment on farms would be 4,334 in 2005, and total employment 34,346 (26,973 crop +3,039 animal +4,334 support). UI-covered employment varies from month to month, with crop employment ranging from a low of 17,000 in January 2005 to a high of 41,000 in August 2005.

The 34,346 annual average employment can be considered the number of full-time equivalent jobs; more than 34,346 individuals filled these jobs. If Oregon is similar to U.S. agriculture, where an annual average 1.1 million farm jobs are filled by about 2.5 million workers, then 2.3 workers would be associated with each Oregon year-round equivalent farm job, suggesting 79,000 farm workers. Analysis of California data suggest that in states with more jobs in seasonal fruit and vegetable agriculture, the appropriate ratio of workers to jobs is 2.5, which would suggest almost 86,000 workers employed sometime during the year for wages on Oregon farms.

Table 5. Oregon UI-Covered Agricultural Employment, 2001-05

	NAICS 111	NAICS 112	NAICS 115	
Year	Crops	Animals	Crop/Live Support	Total
2001	25,718	2,637	3,963	32,318
2002	25,437	2,831	4,233	32,501
2003	26,093	2,862	4,429	33,384
2004	27,446	3,017	4,177	34,640
2005	26,973	3,039	4,334	34,346

Source: www.qualityinfo.org/olmisj/CEP

In 2005, 54% of the average support employment and 46% of the support payroll was in forestry

Crop/Live includes 1/2 of the NAICS 115 support activities employment

H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 29 Oregon farm employers were certified to fill 69 jobs with H-2A workers; the state expects 10 employer applications to fill 100 non-sheepherder jobs with H-2A workers in FY07. In FY05, 42 Oregon employers were certified to fill 62 jobs with H-2A workers, and 70 percent of these jobs were sheepherders.

States submit applications on Form SF-424 for grants from OFLC to cover their costs under the alien certification programs. States have three major costs: processing job orders, conducting prevailing wage surveys, and conducting housing inspections. Oregon received $28,6000 for FY06, and allocated 24 percent to housing inspections and 76 percent to process employer applications (Oregon's total allocation for FY06, which also covers H-2B and making prevailing wage determinations for H-2B and PERM, was $68,637).

Table 6. Oregon Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	20	7,000	350	24%
Prevailing Wage Surveys				0%
Job Orders Processed	30	21,600	720	76%
Total		28,600		

Source: SF-424

The Oregon SWA educates employers about the H-2A program, working closely with first-time applicants not using agents to ensure that they understand the requirements of the H-2A program. In 2007, one employer used the interstate clearance system for the first time and successfully recruited out-of-state U.S. workers.

Oregon normally receives employer applications at the same time as the NPC, and checks them before scanning job orders for distribution to local offices so that local recruitment can begin (job orders from labor contractors cannot be entered until they provide a copy of their OR FLC license).

Housing inspections are done by staff in local ES offices who follow the Oregon OSHA check list and report the results to SWA staff in Salem.

The Oregon SWA mails prevailing wage and practice surveys to employers, using names received from employer associations and explaining in a cover letter the purpose of the survey. Surveys were done in 2007 in cherries, pears, wine grapes and Christmas trees, but have not yet been finalized and submitted to OFLC.

Workers are referred to the H-A jobs listed at: www.emp.state.or.us/jobs/, and the jobs listed in December 2007 included sheepherders guaranteed $1,112 a month, and H-2A pruning jobs offering $9.77 an hour in WA. The OR SWA refers a large number of U.S. workers to the H-2A jobs, as workers are attracted to the $9.77 an hour wage. However, many of the U.S. workers referred are not hired, and many of those hired do not complete the season.

The Oregon SWA has had experience with employers who prefer H-2A workers, and who are especially reluctant to hire U.S. workers during the 50 percent period. As in other states, there is little follow up with U.S. workers who are referred but not hired, or who are hired but do not finish the season, in part because there are no funds available for such follow-up activities and because relatively few U.S. farm workers are willing to file complaints.

Oregon expects more farm employers to request certification to fill jobs with H-2A workers, which is likely to strain resources. Oregon's state government policy is not to subsidize federally mandated activities, which suggests that the federal grant would have to be increased for the SWA to perform its duties in a timely and accurate manner.

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EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Tennessee Farm Labor Profile

TN Summary

Tennessee mirrors U.S. agriculture in having almost a 50-50 split between the value of crops and livestock. In 2006, farm sales were almost $2.6 billion, including $1.4 billion worth of crops and $1.2 billion worth of livestock. The leading labor-intensive crops were greenhouse/nursery commodities worth $273 million, tobacco worth $94 million, and tomatoes worth $50 million.

Over 17,000 TN farms reported expenses for hiring workers, but the 300 that each paid $100,000 or more for labor accounted for half of farm labor expenses. A total of almost 54,000 workers were hired in 2002 (one worker employed on two farms is counted twice), and workers hired for less than 150 days on the responding farm outnumbered those hired more than 150 days 4 to 1. The high share of seasonal workers is reflected in the fact that total labor expenses divided by average hourly earnings would suggest 13,100 full-time equivalent workers hired in TN agriculture in 2002; an average of about 7,000 workers were covered by the agricultural reporting units in the UI system in 2006.

Labor expenses in tobacco rank sixth, behind greenhouse and nursery operations, beef cattle, dairies, grain farming, and cotton farms, but half of the jobs certified to be filled with H-2A workers are in tobacco, followed by vegetables.

TN Census of Agriculture

The Census of Agriculture reported that Tennessee had 87,600 farms in 2002, down from 91,500 in 1997. Farm sales were $2.2 billion in 2002, including $1.1 billion worth of crops, 50 percent, and $1.1 billion of livestock, 50 percent.

Some 17,200 Tennessee farmers reported labor expenses to the COA, a total of $173 million for directly hired workers; 7,200 farmers reported $34 million in contract labor expenses, a total $207 million. NASS reported that the average hourly earnings of all hired farm workers in Tennessee were $7.60 an hour in 2002, suggesting 27 million hours worked by hired farm workers; this is 13,100 full-time (2080-hour) equivalents.[207] The AEWR for Tennessee in 2007 is $8.65.

[207] NASS reported an average $7.34 for field workers and $7.32 for field and livestock workers in Tennessee in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Table 1. Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	Tennessee	United States
Farm Sales ($bil)	2.2	200
Total Labor Expendits($mil)	207	22,000
Sales to Expendits ratio	10.6	9.1
Average Earns ($/hour)	7.6	8.80
Estimated hours worked(mils)	27	2,500
Full-time equivalent (2080 hrs)	13,095	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[208] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[209]

Farm labor expenditures are concentrated on less than 300 Tennessee farms. Almost 17,200 farms reported labor expenses for directly hired workers in 2002, but:

- 85 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for 12 percent of direct hire labor expenses, an average $1,400 per farm.
- Another 13 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 41 percent of such expenses, an average $32,000 each.
- two percent of operators, 283, had direct hire labor expenses of $100,000 or more, and they accounted for 48 percent of the total, an average $296,000 each.

Contract labor expenses are less concentrated than direct hire expenses. The 124 TN farms reporting $50,000 or more in contract labor expenses accounted for 38 percent of such expenses. Many of the same farms with large direct hire labor expenses also had large contract labor expenses.

Table 2. Tennessee: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	17,223	100%	173,255	100%	10,060
<10,000	14,710	85%	20,695	12%	1,407
10,000 to100,000	2,230	13%	71,012	41%	31,844
>100,000	283	2%	83,778	48%	296,035

[208] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[209] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Contract Labor	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	7,174	100%	34,127	100%	4,757
<10,000	6,540	91%	11,271	33%	1,723
10,000 to 50,000	510	7%	9,785	29%	19,186
>50,000	124	2%	13,072	38%	105,419

Source: COA 2002, TN, Table 4.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. Greenhouse and nursery operations account for a third of the expenses for directly hired labor, followed by beef cattle, dairies, grain farming, cotton farms, and tobacco farms. Because of the importance of tobacco farms to the H-2A program, tobacco was included with greenhouses and nurseries in the table below.

Greenhouse, beef, and tobacco farms accounted for 52 percent of direct hire labor expenses in 2002; these three types of farms also accounted for 61 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: 60 percent of the operations that each had farm labor expenses of $250,000 or more were greenhouses. It should be emphasized that most tobacco farms are very small employers—they averaged four directly hired workers in 2002, almost all of whom were employed less than 150 days on the responding farm.

Table 3. Tennessee: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Greenhouse, Nursery	Tobacco	Beef	Total	Share
Direct Hire Farms	17,223	865	2,280	7,715	10,860	63%
Labor Exp($000)	173,255	58,118	11,113	20,106	89,337	52%
Distribution	100%	34%	6%	12%	52%	52%
>$250,000 farms	79	48	1	1	50	63%
Contract Farms	7,174	506	944	3,001	4,451	62%
Labor Exp($000)	34,127	8,069	6,943	5,659	20,671	61%
Distribution	100%	24%	20%	17%	61%	61%
>$50,000 farms	124	44	23	6	73	59%
Direct Hire Farms	17,223	865	2,280	7,715	10,860	63%
Workers hired	53,712	6,559	9,269	18,514	34,34	64%

					2	
>150 days	10,346	3,072	901	1,350	5,323	51%
<150 days	43,366	3,487	8,368	17,164	29,019	67%
<150 days share	81%	53%	90%	93%	85%	

Source: COA, 2002, TN, Table 59

TN's 17,200 farms that reported hiring workers directly hired a total of 53,700 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). Over 64 percent of all hired workers were in three labor-using sectors: greenhouses, tobacco, and beef cattle, and they accounted for 51 percent of those employed 150 days or more on the responding farm and 67 percent of those employed less than 150 days on the responding farm.

There were distinct differences by commodity: 90 percent of the workers hired by tobacco farms, and 93 percent of those hired by beef cattle operations, were employed less than 150 days on the responding farm, versus 53 percent of those reported by greenhouses. Some observers report that farm employers treat workers paid piece rate wages as independent contractors rather than paid employees. Such labor expenses may show up in the COA contract labor expenses, but the workers would not appear in the employment data.

State Data

Tennessee has federal 20-10 UI coverage, meaning that farm employers are required to provide unemployment insurance coverage for their workers if they paid cash wages of $20,000 or more in the current or preceding calendar quarter or employed ten or more workers on at least one day in each of 20 different weeks in the current or immediately preceding calendar year.[210] The earnings of H-2A workers are exempt from the federal 0.8 percent UI tax, but H-2A workers are counted in determining whether a farm employer is subject to the 20-10 rule.

There were 731 UI-covered reporting units in TN agriculture and forestry in 2006, and they reported an average of almost 7,000 employees earning average $26,600 a year, for an implied hourly wage of $12.80.

Table 4. TN: UI-Covered Employment, 2006

	NAICS Code	Units	Avg Employ	Wages Paid($)	Average Wage($)	Hourly($)
Agriculture Forestry Fishing & Hunting	11	731	6,923	184,229,413	26,612	12.79
Crops	111	264	4,033	100,398,112	24,894	11.97
Animal Prod	112	124	1,037	32,213,751	31,052	14.93

[210] Several states have practically universal coverage of farm workers, including CA and WA. FL requires UI coverage of farm workers by employers paying $10,000 or more in a calendar quarter or employing at least five workers in 20 weeks, while TX requires coverage if employers pay $6,250 in any calendar quarter or hire at least three workers in at least 20 different weeks. Comparison of State UI Laws. http://workforcesecurity.doleta.gov/unemploy/statelaws.asp#Statelaw

Ag Support	115	141	968	29,239,138	29,584	14.22

Source: QCEW, www.state.tn.us/labor-wfd/lmi.htm

Hourly is the implied average hourly earnings for 2080 hours a year

Tennessee's 110,000 employers became subject to loss of their business licenses January 1, 2008 if they knowingly hire unauthorized workers at least twice in three years. The Tennessee Department of Labor and Workforce Development, which will enforce the Illegal Alien Employment Act with 12 inspectors who also enforce child labor and other labor laws, says that employers who complete the I-9 process or participate in E-Verify will not be prosecuted (www.state.tn.us/labor-wfd/faq_illegal_alien.htm).

H-2A Jobs, Referrals, and Prevailing Wages

Tennessee had 205 farm employers certified to fill almost 1,900 farm jobs with H-2A workers in FY06, up slightly from 188 farm employers certified to fill 1,800 farm jobs in FY05. About half of these H-2A jobs were in tobacco, and about 20 percent each were in tomatoes and other vegetables and in horticulture and nurseries.

States have three major costs to fulfill their responsibilities under the H-2A program: processing job orders, conducting housing inspections, and doing prevailing wage and surveys. Almost all of TN's farm employers requesting certification to employ H-2A workers use agents and associations to apply.

Table 5. TN Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	350	25,183	72	43%
Prevailing Wage Surveys	1	942	942	2%
Job Orders Processed	250	32,552	130	55%
Total		58,677		

Source: SF-424
Data refer to FY06

Most employers file H-2A applications 45 to 50 days in advance of their need-for-workers date and, since Fall 2007, there is regular email communication between the Atlanta NPC and the TN SWA. The TN SWA reviews the application and enters the job description into state's ES system and issues a job order number, which is included in the NPC acceptance letter to the employer.

TN did not conduct any prevailing wage studies in 2007. Those conducted in the past were done by SWA staff by telephone, contacting employers and recording the information provided to make wage determinations. The TN SWA does not see problems with turning prevailing wage surveys over to NASS. In August 2001, NASS did a prevailing wage study in TN tobacco,

asking for employment, hourly wages, and whether the farm employed H-2A workers—we did not gain access to the results.

Housing inspections are conducted by the TN SWA, with one full-time person doing most of the inspections. Many employers do not request housing inspections soon enough, and some ask to be reminded before the inspector arrives so that the housing can be "cleaned up" and prepared for the inspection and the workers.

TN's experience with recruitment and referrals is similar to the findings of the Department of Labor's OIG in 1998, viz, a five percent referral rate and a two percent hire rate. Workers referred to H-2A jobs are given referral letters generated by the ES system that they take to the employer, who completes the form by indicating if the worker was hired or, if not hired, why, and returns it to the referring office by mail, fax, or by calling the Career Center.

Many of these referral letters are not returned, which prompts a call from the Career Center to the employer, who normally says the referred worker did not report for the interview. The TN SWA does follow up with workers who were drawing UI benefits, but not other workers referred to H-2A job orders. Career Center staff know the employers in their area, and are expected to follow up with farm employers who do not hire or retain referred U.S. workers who appear qualified for the job; they refer one or two employers a year to the state SWA who appear to be not hiring or discouraging U.S. workers.

Referrals are more common in the nursery industry based in McMinnvile in 40,000 resident Warren county, the self-described nursery capital of the world. A severe drought in 2007 has reduced new hires in this seasonal industry.

Most H-2A job orders request certification for 10 months work at 40 hours a week. The number of requests to fill farm jobs with H-2A workers is stable in tobacco, but increasing in vegetables and melons, including tomatoes, and strawberries. The tomatoes, grown mostly in eastern TN by FL-based employers, tend not to use local workers.

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Texas Farm Labor Profile

TX Summary

Texas has more farms and more cattle than any other state, and is the only state in which a quarter of farm labor expenses in 2002 were in beef cattle ranching. About 10 percent of the U.S. farms reporting expenses for hiring workers in 2002 were in Texas; they reported hiring 166,000 workers sometime during the year, creating the equivalent of 72,000 year-round equivalent jobs (individuals hired on two farms are counted twice in the 166,000 number).

About 1,500 farm jobs a year have been certified to be filled with H-2A workers, half in custom combining of grains, 20 percent in cattle, and another 20 percent in vegetables and nurseries. Texas refers workers to many non-H-2A employers inside and outside the state, and both job service counselors and workers "know" that employers who have applied for H-2A workers generally do not want to hire U.S. workers. Many employers request certification to fill farm jobs with H-2A workers for 10 months at 30 hours a week.

TX Census of Agriculture

The Census of Agriculture reported that Texas had 229,000 farms in 2002, about the same as in 1997. Farm sales were $14 billion, including $3.7 billion worth of crops, 26 percent, and $10.4 billion of livestock, 74 percent.

Over 49,200 Texas farmers reported labor expenses to the COA, and they totaled $970 million for directly hired workers; 37,400 farmers reported $173 million in contract labor expenses, a total $1.1 billion. NASS reported that the average hourly earnings of all hired farm workers in Texas were $7.67 an hour in 2002, suggesting 149 million hours worked by hired farm workers; this is almost 72,000 full-time (2080-hour) equivalents.[211] The AEWR for Texas in 2007 is $8.66 an hour; the state minimum wage is the same as the federal, and rose from $5.15 to $5.85 on July 24, 2007.[212]

[211] NASS reported an average $7.11 for field workers and $7.24 for field and livestock workers in Texas in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

[212] The Texas Commissioner of Agriculture is authorized to establish piece rates for agricultural commodities commercially produced in substantial quantities in Texas if sufficient productivity information is available. The piece rates are supposed to guarantee the minimum wage for harvesters of average ability and diligence while allowing harvesters to earn more by producing more, and provides a procedure for contesting an established piece rate (www.twc.state.tx.us/ui/lablaw/tmwsum.html).

Table 1. Hired Worker Hours in Texas Ag, 2002

	Texas	U.S.
Farm Sales ($bil)	14	200
Total Labor Expendits($mil)	1,143	22,000
Sales to Expendits ratio	12.2	9.1
Average Earns ($/hour)	7.67	8.80
Estimated hours worked(mils)	149	2,500
Full-time equivalent (2080 hrs)	71,645	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[213] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops etc.[214]

Farm labor expenditures were concentrated on about 1,300 Texas farms. Almost 49,000 farms reported labor expenses for directly hired workers in 2002, but:

- Over 72 percent had less than $10,000 in direct hire labor expenses, and they collectively accounted for seven percent of direct hire labor expenses, an average $1,900 per farm.
- Another 26 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 38 percent of such expenses, an average $29,000 each.
- 3 percent of operators, about 1,300, had direct hire labor expenses of $100,000 or more, and they accounted for 55 percent of the total, an average $396,000 each.

Contract labor expenses are less concentrated. The 342 farms reporting $50,000 or more in contract labor expenses, many of which also had high direct-hire labor expenses, accounted for 28 percent of such expenses.

Table 2. Texas: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	49,206	100%	969,466	100%	19,702
<10,000	35,233	72%	68,562	7%	1,946
10,000 to100,000	12,635	26%	371,037	38%	29,366
>100,000	1,338	3%	530,380	55%	396,398

[213] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[214] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

Contract Labor	Farms	%	Expenditures ($000)	%	Averages $/farm
Farms with Expenses($000)	37,394	100%	172,668	100%	4,618
<10,000	33,761	90%	62,836	36%	1,861
10,000 to 50,000	3,291	9%	62,165	36%	18,889
>50,000	342	1%	47,668	28%	139,380

Source: COA 2002, Texas, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, COA Table 55 noted that the 7,175 Texas farms with 2,000 or more acres paid $331 million in directly hired labor expenses, 34 percent of the total, and the 4,131 Texas farms with 2,000 or more acres paid $53 million in contract labor expenses, 31 percent of the total.

Data in COA Table 56 reported that 1,382 Texas farms that each had farm sales of $1 million or more and direct hire labor expenses accounted for $450 million or 46 percent of the $970 million in total direct hire labor expenses, and the 688 with farm sales of $1 million or more and contract labor expenses accounted for $38 million or 22 percent of the $173 million in contract labor expenses.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 41,000 Texas individual or family farms with direct hire labor expense in 2002 accounted for $409 million or 42 percent of such expenses, the 4,600 partnerships $213 million, and the 2,700 corporations $324 million, or 33 percent of the total. The almost 32,600 Texas individual or family farms with contract labor expense in 2002 accounted for $116 million or 67 percent of such expenses, the 3,100 partnerships $32 million, and the 1,400 corporations $23 million, or 13 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that four types of Texas farms: greenhouse and nursery operations, cotton farms, beef cattle ranching, and cattle feedlots, accounted for 65 percent of direct hire labor expenses in 2002; these four types of farms also accounted for 55 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses: the 207 that each had farm labor expenses of $250,000 or more were 45 percent of the 456 Texas farms with large direct hire labor expenses.

Table 3. Texas: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	4 Sectors					
		Greenhouse, Nursery	Cotton	Beef Cattle	Feedlots	Total	Share
Direct Hire Farms	49,206	985	3,812	26,232	1,094	32,123	65%
Labor Exp($000)	969,979	199,871	100,252	231,467	101,312	632,902	65%
Distribution	100%	21%	10%	24%	10%	55%	55%
>$250,000	456	126	16	65	93	207	45%
Contract Farms	37,394	535	1,636	20,774	761	23,706	63%
Labor Exp($000)	172,668	9,696	12,312	67,961	5,408	95,377	55%
Distribution	100%	6%	7%	39%	3%	52%	52%
>$50,000	342	29	36	97	16	162	47%
Direct Hire Farms	49,206	985	3,812	26,232	1,094	32,123	65%
Workers hired	166,117	16,250	14,736	68,292	6,034	105,312	63%
>150 days	53,820	9,444	5,902	14,252	3,350	32,948	61%
<150 days	112,297	6,806	8,834	54,040	2,684	72,364	64%
<150 days share	68%	42%	60%	79%	44%	69%	

Source: COA, 2002, TX, Table 59

Texas's 49,200 farms that reported hiring workers directly hired a total of 166,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About two-thirds of all hired workers were in the four major labor-using sectors.

These four sectors hired 61 percent of the workers employed 150 days or more, and 64 percent of those employed less than 150 days on the responding farm. About 60 percent of the workers employed on cotton farms and 79 percent of those hired on beef cattle farms were employed less than 150 days on the reporting farm. By contrast, only 42 percent of those employed in the state's nurseries and 44 percent of those employed in cattle feedlots were less than 150 days by the reporting farm.

State Data

The Texas Workforce Commission profiles employment in crop, animal, and farm support activity for three-digit NAICS codes. During the third quarter of 2006, there were 3,900 UI reporting units in crops employing 23,225 workers—a quarter were employed on farms that had 100 or more workers. About 40 percent of UI-covered crop employment during the third quarter of 2006 was in nurseries and crops grown under cover, and 27 percent in cotton.

Another 3,353 UI-reporting units were in animal agriculture during the third quarter of 2006, and most were small—farms with more than 100 workers hired 20 percent of the 22,455 workers. Over half of these reporting units were in beef cattle ranching and feedlots.

There were 1,400 UI-reporting units in agricultural support activities during the third quarter of 2006, and they had 12,455 employees, a quarter of which were employed by firms with 100 or more workers. Two thirds of this employment involved support activities for crop production.

H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 235 Texas farm employers were certified to fill 1,500 jobs with H-2A workers, up from 135 employers and 939 jobs in FY04. About half of the H-2A jobs certified in Texas in recent years involved jobs in custom combine crews that move south to north harvesting wheat and other grains. About 20 percent of the H-2A jobs are in cattle and livestock and another 10 percent involve vegetables such as watermelons and tomatoes.

States have three major costs in administering their responsibilities under the H-2A program: processing job orders, doing housing inspections, and conducting prevailing wage and practice surveys. Texas employers request certification to fill more jobs with H-2B workers than any other state, and some SWA staff work with both the H-2A and H-2B programs.

Table 4. Texas Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	234	62,010	265	48%
Prevailing Wage Surveys	16	15,808	988	12%
Job Orders Processed	281	51,384	183	40%
Total		129,202		

Source: SF-424

Almost all employers requesting certification to fill jobs with H-2A workers use agents or attorneys to file applications, and they often file applications 50 or 60 days before their need date. Most H-2A employers have been in the program several years, although nurseries that previously obtained H-2B workers are shifting into the H-2A program, and some employers using H-2A program for the first time require extra help to process their applications. Since the NPC will not issue an acceptance letter until the SWA posts the job order, most employers are filing applications with the NPC and Texas SWA simultaneously, as they are supposed to.

SWA and NPC analysts inform each other of each application, with the SWA notifying the NPC whether the job order is acceptable. Once the H-2A application is accepted, the job order is scanned and sent to Texas Workforce Commission offices throughout the state and to neighboring states.

TWC offices have staff trained to conduct housing inspections, and most are conducted in a timely fashion unless there are problems on a first inspection that require re-inspection or the employer must make a last-minute substitution.

Texas conducts prevailing wage and practice surveys by mail, using lists of employers generated by contacting industry groups and other means—UI tax records are not used. There is some concern about obtaining sufficient responses to make accurate findings of prevailing wages, but the SWA believes that the local labor market expertise obtained by conducting the surveys justifies the investment in making them more reliable.

Referrals to H-2A jobs present issues. As a traditional supply state that sends farm workers to every other state, Texas has had considerable experience with referrals to employers who want and do not want U.S. workers. Until late 2006, U.S. employers who refused to abide by the terms of their job orders, such as refusing to pay the AEWR as promised, had their applications for certification denied. Today, employers rebuffing U.S. workers only have the number of H-2A certifications reduced by the number of U.S. workers they refused, which gives them an incentive to request certification for more workers and still have enough to handle their work if the certification number is reduced for U.S. worker refusals.

Jobs are posted online at www.twc.state.tx.us/jobs/job.html, and the H-2A jobs can be identified by the fact that they offer the AEWR of $8.66 an hour. Most of those listed in the Lubbock TX area in December 2007 specified a 10-month contract and offered 30 hours a week; the work was to be moving and operating farm equipment. Employer contact information is suppressed, so job

applicants must see a counselor to learn all of the job order requirements and be referred; the 50 percent-of-contract period is noted in the system.

Counselors may call the employer while the job seeker is with them to conduct a telephone interview, but there can be issues if job seekers have to wait for employers to become available to conduct the job interview or if employers request items during the interview that were not in the job order, such as a resume. The SWA believes that in and out of state employers who want to hire U.S. workers can find them through the ES.

The Texas JS does not check worker documents for legal U.S. work status, but advises job seekers that they will have to present work authorization documents when hired.

Texas has over 600 labor contractors, and they are filing more requests for certification, and they must have written contracts or letters of intent with the employers to whom they will provide workers. However, the Texas SWA does not necessarily see copies of the FLC license, proof of workers compensation etc—these are supplied as attachments to the 790 to the NPC.

Over half of the farm workers seeking services with the Texas SWA are in-state or interstate migrants. Texas refers farm workers to farm jobs in 30 and 40 U.S. states. Among these out-of-state jobs, H-2A jobs can be more attractive because of the AEWR, but many employees and counselors "know" that employers seeking H-2A workers do not want to hire them, as word-of-mouth communication among workers quickly determines "good" and "bad" employers. There are no known cases of an employer sending an H-2A worker home to hire a U.S. worker referred after the work started and before the 50 percent cut off date.

Farm Labor Trends

In 1991, a Texas A&M professor testified before the Commission on Agricultural Workers about the state's dominant commodities, cattle and cotton, and reported that employers feared that unauthorized workers employed in the cattle industry and not eligible for SAW legalization would be unable to work, leaving the cattle industry short of workers (Goodwin). Goodwin also emphasized that many of the vegetable firms that operated in the Rio Grande Valley and the Texas Panhandle brought crews from the valley to the panhandle during the summer months, when there was little farm work in the valley. Goodwin expected farm labor shortages in the early 1990s, as legalized SAWs replaced unauthorized workers in cattle or left the farm labor market, which he expected to lead to increased fruit and vegetable imports (p580).

The January 1991 hearing was in Westlaco, Texas, where there was testimony that employers had become accustomed to a surplus of farm workers.[215] Most labor-intensive vegetable production in the Rio Grande Valley was reported to be from a handful of very large 2,000 to 8,000 acre operations that paid seasonal workers the federal minimum wage of $3.85 per hour and offered few benefits beyond the Social Security, UI, and workers compensation required by law. Growers expected labor-intensive agriculture to shrink in South Texas and expand as more moved operations to Mexico.

[215] A summary of the testimony is available at: http://migration.ucdavis.edu/rmn/word-etc/caw.html

Some of the largest employers based in the Rio Grande Valley had operations throughout Texas, and local FLCs moved crews of workers from South Texas to West and North Central Texas to provide more employment.

The four South Texas counties of the Rio Grande Valley, Cameron, Hidalgo, Starr, and Willacy, had a 1986 population of about 700,000. Average employment was about 190,000 in 1990, including 10,000 to 15,000 in agriculture, making agriculture secondary to trade and tourism as an employer. The Rio Grande Valley is a delta plain running 80 miles from north to south and 40 miles from the Gulf of Mexico to the western edge of Hidalgo County. About 750,000 acres of cropland are irrigated, and farm sales were about $400 million a year, half vegetables and a quarter cotton. The four-county area had about 60,000 acres of vegetables and melons, 50,000 acres of fruit, 800,000 acres of cotton, and 350,000 acres of other field crops (sorghum) in 1988-89.

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Texas Workforce Commission. Economic Profiles http://www.tracer2.com/?PAGEID=67&SUBID=132

Texas. Quarterly Employment and Wages (QCEW) http://www.tracer2.com/cgi/dataAnalysis/AreaSelection.asp?tableName=Industry

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Virginia Farm Labor Profile

VA Summary

Livestock accounts for two thirds of Virginia's farm sales, and crops a third. The major sectors generating farm labor expenses are greenhouse and nursery operations, tobacco farms, beef cattle operations and poultry production; vegetables (tomatoes) hire a large number of seasonal workers.

Over 500 Virginia farm employers were certified to fill over 4,000 jobs with H-2A workers in FY06. About two-thirds of these H-2A jobs were in tobacco and 20 percent were in apples. The VA SWA has the most complete list of resources on farm labor and the H-2A program at: www.vec.virginia.gov/vecportal/employer/ruralservices.cfm

VA Census of Agriculture

The Census of Agriculture reported that Virginia had 47,600 farms in 2002, down from 49,400 in 1997. Farm sales were $2.4 billion, including $720 million worth of crops, a third, and $1.6 billion of livestock, two thirds.

Some 12,900 Virginia farmers reported labor expenses to the COA, totaling $242 million for directly hired workers; 4,200 farmers reported $22 million in contract labor expenses, a total $267 million. NASS reported that the average hourly earnings of all hired farm workers in Virginia were $8.58 an hour in 2002, suggesting 31 million hours worked by hired farm workers; this is almost 15,000 full-time (2080-hour) equivalent jobs.[216] The AEWR for Virginia in 2007 was $9.02 an hour.

Table 1. VA Farm Sales, Labor Expenditures, Average Earnings, and Hours Worked, 2002

	Virginia	United States
Farm Sales ($bil)	2.4	200
Total Labor Expendits($mil)	265	22,000
Sales to Expendits ratio	9.1	9.1
Average Earns ($/hour)	8.58	8.80
Estimated hours worked(mils)	31	2,500
Full-time equivalent (2080 hrs)	14,849	1,201,923

[216] NASS reported an average $7.71 for field workers and $7.98 for field and livestock workers in Virginia in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

Source: Census of Agriculture and Farm Labor, 2002

Farmers report their labor expenditures on p17 of the 23-page COA questionnaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social security, unemployment and workers compensation insurance, and other fringe benefits.[217] Question #9b asks for expenditures on contract labor, such as payments to contractors or crew leaders to harvest crops.[218]

Farm labor expenditures are concentrated on 400 Virginia farms. Over 12,900 farms reported labor expenses for directly hired workers in 2002, but:

- Three quarters had less than $10,000 in direct hire labor expenses, and they collectively accounted for seven percent of direct hire labor expenses, an average $1,800 per farm.
- Another 20 percent of farm operators had direct hire expenses of $10,000 to $100,000; they collectively accounted for 36 percent of such expenses, an average $32,000 each.
- 3 percent of operators, about 400, had direct hire labor expenses of $100,000 or more, and they accounted for 58 percent of the total, an average $345,000 each.

Contract labor expenses are not as concentrated as direct hire expenses. The 60 farms reporting $50,000 or more in contract labor expenses accounted for 40 percent of such expenses.

Table 2. Virginia: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	12,907	100%	242,131	100%	18,760
<10,000	9,794	76%	17,955	7%	1,833
10,000 to100,000	2,706	21%	86,133	36%	31,830
>100,000	407	3%	140,748	58%	345,818
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	4,169	100%	22,545	100%	5,408
<10,000	3,747	90%	6,878	31%	1,836
10,000 to 50,000	373	9%	6,512	29%	17,458
>50,000	59	1%	9,156	41%	155,186

Source: COA 2002, VA, Table 4.

Farm labor expenses can be tabulated along several other size-of-farm dimensions. For example, the data in COA Table 55 show that 12,900 Virginia farms reported hiring 48,000 workers,

[217] Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities.

[218] Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

including 4,200 farms reporting the employment of 13,600 workers for 150 days or more and 11,000 farms that reported hiring 34,400 workers for 150 days or less—both of these workers' entries should be considered job counts, since one worker employed on two farms is counted twice. There were 330 farms with 2,000 or more acres that hired workers directly, and they hired 3,600 workers.

Data in COA Table 56 report that 325 Virginia farms had farm sales of at least $1 million and hired workers; their direct hire labor expenses were $100 million, 41 percent of the total $242 million. The 95 farms with sales of at least $1 million and contract labor expenses accounted for $7 million or a third of the total $22 million.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The 10,600 Virginia individual or family farms with direct hire labor expenses accounted for $89 million or 37 percent of such expenses, the 1,300 partnerships $30 million, and the 960 corporations $118 million, or 49 percent of the total. The 3,400 Virginia individual or family farms with contract labor expenses accounted for $13 million or 60 percent of such expenses, the 380 partnerships $2.8 million, and the 318 corporations almost $6.5 million, or 33 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of Virginia farms: greenhouse and nursery operations, tobacco farms, and beef cattle farms, accounted for almost half of the direct hire labor expenses in 2002 and a quarter of the contract labor expenses (poultry and egg production accounted for almost 10 percent of direct hire labor expenses, about the same as tobacco, and fruit 15 percent of contract labor expenses, twice as much as tobacco). Relatively few farms accounted for most of these labor expenses: the 58 nursery, tobacco, and beef operations that each had farm labor expenses of $250,000 or more were almost half of the 134 Virginia farms with large direct hire labor expenses.

Table 3. Virginia: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Greenhouse, Nursery	Tobacco	Beef Cattle	Total	Share
Direct Hire Farms	12,907	795	1,382	4,653	6,830	53%
Labor Exp($000)	242,131	66,720	19,585	25,871	112,176	46%
Distribution	100%	28%	8%	11%	46%	46%
>$250,000 farms	134	54		4	58	43%
Contract Farms	4,169	239	292	1,457	1,988	48%
Labor Exp($000)	22,545	1,865	1,229	3,227	6,321	28%
Distribution	100%	8%	5%	14%	28%	28%

>$50,000 farms	59	31	4	4	39	66%
Direct Hire Farms	12,907	795	1,382	4,653	6,830	53%
Workers hired	48,014	6,669	7,228	10,897	24,794	52%
>150 days	13,647	2,927	1,457	1,641	6,025	44%
<150 days	34,367	3,742	5,771	9,256	18,769	55%
<150 days share	72%	56%	80%	85%	76%	

Source: COA, 2002, VA, Table 59

Virginia's 12,900 farms that reported hiring workers directly hired a total of 48,000 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters). About half of all hired workers were in the three major labor-using sectors: nursery, tobacco, and beef operations.

These sectors hired 44 percent of the workers employed 150 days or more, and 55 percent of those employed less than 150 days on the responding farm. Over 80 percent of the workers employed on tobacco and beef operations were employed less than 150 days on the reporting farm.

State Data

The Virginia Employment Commission's 2007 plan for MSFWs estimated a total 5,222 seasonal farm workers, 8,902 migrant farm workers, and 2,461 H-2A workers (pp167-71). A quarter of the migrants were in Accomack county and another 18 percent in Northampton county. The other types of workers were more diffused: about 5 percent of the seasonal workers were in King George's county, and 30 percent of the H-2A workers were in Mecklenburg and Pittsylvania counties, half in each. Virginia has farm placement staff in nine One-stop centers providing statewide coverage for agricultural workers and employers.

H-2A Jobs, Referrals, and Prevailing Wages

In FY06, 538 VA farm employers were certified to fill almost 4,100 jobs with H-2A workers. The number of farm employers requesting certification has been stable in recent years; but the number of H-2A jobs certified almost doubled from 2,300 in FY05. In FY05, about two-thirds of the jobs certified to be filled with H-2A workers were in tobacco, and 20 percent were in apples.

States have three major costs to administer their part of the H-2A program: processing job orders, conducting prevailing wage and practice surveys, and conducting housing inspections. States submit applications on Form SF-424 for grants to cover their costs under the alien certification programs. Based on its experience in FY06, Virginia requested $235,986 for FY07, with 28 percent devoted to housing inspections, 11 percent to prevailing wage and practice surveys, and 61 percent to processing job orders.

Table 4. Virginia Alien Labor Certification Grant, FY07

	Number	Cost($)	Average($)	Share
Housing Inspections	566	67,014	118	28%
Prevailing Wage Surveys	54	25,002	463	11%
Job Orders Processed	72	143,970	2,000	61%
Total		235,986		

Source: SF-424

Most farm employers seeking certification file applications 45 days in advance of their need-for-workers date with the VA SWA and the NPC in Atlanta. In the past, some of the applications were accepted by the NPC without the SWA knowing about them, but recently, communication by email has improved so that each agency has the employer's application. Almost all applications for H-2A certification are submitted by associations such as the Virginia Agricultural Growers Association or agents on behalf of employers.[219]

SWA staff review applications, check the job description and prevailing wage offered and, if the application is acceptable, enter the 790 job order into the job system, where it is given a job order number, which is necessary for the NPC to accept the employer's application and for the employer to post ads seeking U.S. workers. After the NPC accepts the employer's application for certification, usually within seven days of its submission, the VA SWA scans the job orders for distribution to One-Stop offices around the state and to nearby states plus traditional recruitment states, Florida, Texas, and Puerto Rico.

The VA SWA has had disagreements with the NPC about whether particular job orders are accurate. For example, if the employer requests certification to fill tobacco jobs in the winter when the SWA believes there are few or no such jobs, is the burden on the employer to prove there are in fact jobs to be filled or on the SWA to disprove to the NPC the employer's assertion? The VA SWA believes that employers must be able to demonstrate that they have jobs to fill. A second issue involves experience requirements. The VA SWA uses the O*Net system (http://online.onetcenter.org), and considers almost all farm jobs that employers are seeking to fill with H-2A workers to be entry level, with no experience required, and the SWA's prevailing practice surveys do not find experience requirements for farm worker jobs.[220] The SWA disagrees with the practice of sometimes certifying employers to fill jobs with H-2A workers if their job orders required U.S. applicants to have experience.

One-Stop offices recruit and refer workers to the jobs for which employers are seeking certification to hire H-2A workers and maintain a record of the results that is transferred to the MPC upon request. In PY 2006-07, the VA SWA referred 247 U.S. workers to about 2,400 H-2A jobs, about 10 percent, but relatively few of the U.S. workers were hired and fewer completed the season.

[219] VAGA is a joint employer with its 400 grower members, and may request certification for e.g. 30 employers to each hire three workers for 10 months to work in tobacco and other crops.

[220] O*Net 45-2092.02 - Farmworkers and Laborers, Crop (http://online.onetcenter.org/link/summary/45-2092.02)

Virginia posts the H-2A job orders at: www.vec.virginia.gov/vecportal/employer/h2a.cfm?yr=2007 and a check of the H-2A jobs posted in December 2007 found several offering 10-month contracts at 40 hours a week at the AEWR of $9.02 an hour (www.vawc.virginia.gov/jobbanks/default.asp?session=jobsearch&geo=5101000000). U.S. workers could contact the employer directly, but most see a workforce services representative (WSR) or farm placement specialist (FPS) before being referred, and these staff call the employer on behalf of the worker seeking a job and schedule a telephone or in-person interview for the worker.[221]

Most U.S. workers seeking farm jobs want work right away. Nearly all the referrals to H-2A jobs that result in a U.S. worker going to work are made near the time that work begins and during the first 50 percent of the employer-specified contract period. At the completion of 50 percent of the contract, the H-2A job is deactivated in the system. Field staff record when referrals are made and the system readily generates data to show exactly when in the period between the employer's application and 50 percent of the employer-specified contract period U.S. workers were referred and hired.

Some U.S. workers hired during the 50 percent period complain of their treatment. Some employers make life difficult for these U.S. workers rather than send H-2A workers home to open jobs for them—there are few reports of H-2A workers sent home because U.S. workers were hired. In some cases, employers who say they have a full complement of workers must be reminded of their obligation to hire U.S. workers for up to 50 percent of the contract period. With more employers requesting certification for 10 months, the 50 percent period during which U.S. workers can seek H-2A jobs lasts five months.

The VA SWA conducts housing inspections using local field staff. In about half of the cases, the housing must be reinspected after repairs are made, since much of the housing stock is aging. In VA's experience, a trust-the-employer approach would likely not be appropriate, since employers whose housing did not require preoccupancy inspections may not feel obliged to ensure that it satisfied requirements, even if employers knew their housing would be inspected by SWA staff during the season.

The VA SWA conducts prevailing wage and practice surveys in person, and does over 50 surveys a year, including in tobacco, the commodity that has the highest share of H-2A workers in its labor force.

The H-2A program is expanding in VA, raising issues that range from the need for additional resources to employers offering longer periods of employment that anticipate downtown during the period of the contract. These longer contracts encourage some workers to leave early, since they are not likely to have additional earnings, and complicate enforcement of the ¾ guarantee.

The number of jobs certified to be filled with H-2A workers more than doubled between FY05 and FY06. As the program expands to new commodities, including Christmas trees and

[221] At the request of agricultural employers, the VA SWA completes I-9 forms for workers referred to jobs on the eastern shore (Northampton and Accomack counties), issuing over 3,000 "I-9 Certificate" for referred workers a year.

nurseries, the SWA will have to conduct more prevailing wage and practice surveys and become more familiar with job descriptions and contracting arrangements in new commodities.

Farm Labor Trends

The flue-cured tobacco harvest relies primarily on H-2A workers, while the burley harvest does not. GCH International unveiled a $400,000 harvesting machine in 2007 that could hasten mechanization.[222] The 2004 federal tobacco buyout ended price supports and encouraged many small farmers to give up tobacco; the larger farms that remain are interested in machines that harvest eight acres working 13-hour days. Harvesting tobacco by hand requires 60 to 70 man-hours per acre; the machine can reduce labor costs by 80 percent.

The harvester is a once-over device that cuts the plant, flips it, and places it on a curing frame at the back of the machine. Each curing frame holds 450 plants, so 15 frames are needed to harvest an acre with the typical 6,800 plants. Machines to strip tobacco are under development.

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[222] Gregory A. Hall, "Tobacco harvester may help solve farmers' labor problem," Louisville Courier-Journal, January 21, 2007

EVALUATION OF THE H-2A LABOR CERTIFICATION PROCESS AND THE U.S. FARM LABOR MARKET

Appendix 1 - Washington Farm Labor Profile

WA Summary

Washington is a crop-producing state. Its three most valuable crops are apples, potatoes, and wheat. Farm commodities were worth a record $6.4 billion in 2005, including $4.1 billion from crops, 64 percent, and $1.8 billion from livestock, primarily milk and cattle, 28 percent.[223] Apples were the most valuable crop, worth $1.2 billion.

Washington's tree fruits have very seasonal demands for labor. Employment peaks in June-July to harvest cherries and in September-October to harvest apples, creating a saddle-shaped demand for labor with twin peaks. In 2006, the cherry harvest was large and late, which led to a sharp jump in cherry wages that encouraged apple growers to raise wages in order to obtain sufficient workers for thinning and harvesting. There were slightly more seasonal workers in Washington in 2006 than 2005, but larger crops and the merged cherry and apple activities encouraged growers to raise piece rates so that real hourly earnings rose in 2006 after declines in 2004 and 2005.

The saddle demand for labor may increase use of the H-2A program, since many employers want "loyal" employees who remain with them between the high-wage cherry and apple harvests to fill lower wage jobs thinning apples and harvesting pears. Washington had 19 farm employers certified to fill 826 jobs with H-2A workers in FY06; 21 employers were certified to fill 1,657 jobs in FY07, plus sheepherding employers and workers.

The WA SWA best practices include frequent communication with the agents filing most H-2A applications, posting the H-2A job orders on line (www.wa.gov/esd/farmworkers/h2a_jobs.htm), and developing a spread sheet that allows managers to see at a glance the key parameters of H-2A job order received and to record referrals and hires by job order. On-line employer applications that automatically pre-filled such spreadsheets for SWAs would expedite the monitoring of recruitment and referrals

WA Census of Agriculture

The Census of Agriculture in 2002 reported that Washington had 36,000 farms, down from 40,000 in 1997. Farm sales were $5.3 billion, including $3.6 billion worth of crops, 68 percent, and $1.7 billion worth of livestock, 32 percent.

Some 13,600 Washington farmers reported labor expenses to the COA,[224] and they totaled $987 million for directly hired workers; 3,700 farmers reported $56 million in contract labor expenses,

[223] Other farm commodities including nursery products, Christmas trees, and mushrooms were worth $544 million in 2005.

[224] Farmers report their labor expenditures on p17 of the 23-page COA questionaire. There are two major items: question #9a asks how much the operator paid for "hired farm and ranch labor," including the employer's share of payroll taxes for social

a total of over $1 billion. NASS reported that the average hourly earnings of all hired farm workers in the region (WA and OR) were $8.71 an hour in 2002, suggesting 120 million hours worked by hired farm workers; this is 57,500 full-time (2080-hour) equivalents.[225] The AEWR for Washington in 2007 was $9.77 an hour; the state's minimum wage was $7.93 an hour.

Table 1. Hired Worker Hours in Washington Ag, 2002

	WA	U.S.
Farm Sales ($bil)	5.3	200
Total Labor Expendits($mil)	1043	22,000
Sales to Expendits ratio	5.1	9.1
Average Earns ($/hour)	8.71	8.80
Estimated hours worked(mils)	120	2,500
Full-time equivalent (2080 hrs)	57,571	1,201,923

Source: Census of Agriculture and Farm Labor, 2002

Farm labor expenditures were concentrated on about 1,100 Washington farms. Almost 13,600 Washington farms reported labor expenses for directly hired workers in 2002, but:

- Half had less than $10,000 in direct hire labor expenses, and they collectively accounted for two percent of direct hire labor expenses, an average of $2,500 per farm.
- Another 40 percent of farm operators had direct-hire expenses of $10,000 to $100,000; they collectively accounted for 17 percent of such expenses, an average of $31,000 each.
- Eight percent of operators, about 1,100, had direct hire labor expenses of $100,000 or more, and they accounted for 81 percent of the total, an average of $742,000 each.

Contract labor expenses are not as concentrated as direct hire expenses. The 230 farms reporting $50,000 or more in contract labor expenses accounted for two-thirds of such expenses. Most of these large contract labor farms were also had large direct hire labor expenditures.

Table 2. Washington: Farm Labor Expenses, 2002

Directly Hired	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	13,598	100%	72,614	100%	$/farm

security, unemployment and workers compensation insurance, and other fringe benefits. Item 9a includes gross wages and salaries paid to "hired workers, family members, hired managers, administrative and clerical employees, and salaried corporate officers," while Item #9b asks for "the labor costs of workers furnished on a contract basis by labor contractor, crew leader, or cooperative for harvesting vegetables or fruit, shearing sheep, or similar farm activities. Item #10 asks for expenditures for custom work (machine hire, presumably including the cost of the operator) and custom hauling (truck and operator cost).

[225]NASS reported an average $8.47 for field workers and $8.90 for field and livestock workers in Washington in 2002; the all hired wage was higher than earnings for the two worker subcategories because it includes the earnings of supervisors and other workers, including bookkeepers and mechanics. Average annual hourly earnings are calculated from reports of gross earnings and hours worked provided by farm employers for four survey weeks (January, April, July, and October). The annual average is calculated by weighting the number of hours worked during each of the four weeks, so that the July average has the greatest weight.

<10,000	7,061	52%	17,743	2%	2,513
10,000 to100,000	5,458	40%	169,264	17%	31,012
>100,000	1,079	8%	800,392	81%	741,791
Contract Labor	**Farms**	**%**	**Expenditures ($000)**	**%**	**Averages $/farm**
Farms with Expenses($000)	3,702	100%	55,607	100%	15,021
<10,000	2,826	76%	6,809	12%	2,409
10,000 to 50,000	646	17%	12,776	23%	19,777
>50,000	230	6%	36,022	65%	156,617

Source: COA 2002, Washington, Table 4.

Farm labor expenses can be tabulated along several other size dimensions. For example, the data in COA Table 55 show that 6,200 Washington farms reported hiring 44,700 workers for 150 days or more, and 12,100 reported hiring 217,800 workers for 150 days or less--both of these workers' entries should be considered job counts, since one worker employed on two farms is counted twice, and many farms hired both regular and seasonal workers. There were 1,110 farms with 2,000 or more acres that hired workers directly, and they hired 27,600 workers.

COA Table 56 groups farms by their annual sales. Some 935 Washington farms each had farm sales of $1 million or more in 2002, and their direct hire labor expenses were $591 million, or 60 percent of the total $987 million. The 204 farms with farm sales of $1 million and contract labor expenses accounted for $24 million or 43 percent of the total $56 million.

COA Table 58 reports farm production expenses by how farms are organized: individual or family, partnerships, and corporations. The almost 9,600 Washington individual or family farms with direct hire labor expense accounted for $314 million or 32 percent of such expenses, the 1,425 partnerships $172 million, and the 2,350 corporations $460 million, or 47 percent of the total. The 2,900 Washington individual or family farms with contract labor expenses accounted for $25 million or 45 percent of such expenses, the 320 partnerships $10 million, and the 411 corporations almost $19 million, or 34 percent of the total.

COA Table 59 reports hired and contract labor expenses by commodity or NAICS code. It shows that three types of Washington farms, vegetables and melons, fruits and nuts, and greenhouse and nursery operations, accounted for 69 percent of direct hire labor expenses in 2002. These three types of farms also accounted for almost 73 percent of the contract labor expenses. Relatively few farms accounted for most of these labor expenses; the 573 vegetable, fruit, and nursery operations that each had farm labor expenses of $250,000 or more were 69 percent of the 831 Washington farms with large direct hire labor expenses.

Table 3. Washington: Farms by NAICS and Labor Expenses, 2002

NAICS	All Farms With Expenses	3 Sectors				
		Vegs & Melons	Fruits & Nuts	Greenhouse, Nursery	Total	Share
Direct Hire Farms	*13,598*	*722*	*4,603*	*1,040*	*6,365*	*47%*
Labor Exp($000)	987,399	122,796	431,453	131,760	686,009	69%
Distribution	100%	12%	44%	13%	69%	69%
>$250,000	831	118	342	113	573	69%
Contract Farms	*3,702*	*284*	*1,143*	*295*	*1,722*	*47%*
Labor Exp($000)	55,607	8,720	28,255	3,648	40,623	73%
Distribution	100%	16%	51%	7%	73%	73%
>$50,000	230	42	106	20	168	73%
Direct Hires Farms	13,598	722	4,603	1,040	6,365	47%
Workers hired	262,528	18,745	176,108	17,849	212,702	81%
>150 days	44,731	4,066	19,549	5,971	29,586	66%
<150 days	217,797	14,679	156,559	11,878	183,116	84%
<150 days share	83%	78%	89%	67%	86%	

Source: COA, 2002, WA, Table 59

Washington had 13,598 farms that reported hiring workers directly, and they hired a total of 262,528 workers in 2002 (additional workers are brought to farms by contractors and custom harvesters but, in COA data, the same individual employed on two farms is counted twice). Over 80 percent of all hired workers were in the three major labor-using sectors: vegetables, fruits, and nurseries.

Vegetables, fruits, and nurseries hired 66 percent of the workers employed 150 days or more, and 84 percent of those employed less than 150 days on the responding farm. Almost 80 of the workers employed on vegetable farms, and almost 90 percent of those hired on fruit farms, were employed less than 150 days on the reporting farm; two thirds of those employed in the state's nurseries were employed less than 150 days by the reporting nursery.

State Data

Washington is divided by the Cascade mountains into two states: the counties west of the Cascade mountains have almost 80 percent of the state's workers but a much smaller share of the state's land, while those east of mountains have 20 percent of the state's workers and most of the land. Agricultural employment is the opposite of statewide employment--80 percent is east of the mountains, including 25 percent in Yakima county and 14 percent in Chelan and Douglas

counties. The two leading farm counties, Yakima (www.co.yakima.wa.us), and Grant, account for a third of the state's farm sales.

Washington has had almost complete UI coverage of farm workers since 1990. In 2006, an average 7,900 agricultural firms (NAICS 11) employed an average of 84,200 workers and paid an average $22,200 in wages; the 5,300 firms in crop production (NAICS 111) employed an average 55,000 workers and paid an average $17,600 (More detailed data show that 2,900 fruit and nut farmers employed an average 36,600 workers and paid an average $14,800; Stromsdorder, 2007,p16). The number of UI-covered agricultural employees has been stable in recent years, and peaks in June-July for the cherry harvest and in September-October for the apple harvest.

Stromsdorfer (2007) excluded logging and fisheries to examine UI-covered farm employment in 2004. Some 7,100 agricultural firms hired 73,000 workers, paying $1.3 billion in wages or an annual average $17,400. Half of these workers, 36,800, were employed in fruit and nut farming and 11,400 or 15 percent were employed in support activities (p37). Farm employment peaks at about 60,000 in June-July, when two commodities--cherries, 40 percent of farm employment, and apples, 30 percent--dominate the demand for farm workers. Farm employment reaches 60,000 again in September-October, when over 70 percent of farm worker employment is in apples.

Employment in fruit farming is very seasonal. One measure of seasonality is the share of employment in each month---if employment were steady year-round, each month's share of annual employment would be 8.3 percent. In cherries, July's share of annual employment is 58 percent, meaning that, of every 100 workers employed in Washington cherries sometime during the year, 58 are employed in July. Apples are less seasonal, with a peak-month ratio of 20 percent.

Stromsdorfer included a table showing that 150,000 workers are employed for wages on Washington farms sometime during a typical year. These workers averaged 2.5 employers, did almost 1,000 hours of work, and earned $11 an hour. These data are roughly consistent with the estimate of almost 60,000 full-time equivalent workers imputed from wages paid and average earnings from the COA for 2002.

Two-thirds of the UI-covered farm workers had only farm employers, worked an average 850 hours, and earned $11 an hour or about $9,500 a year. A third of farm workers also had nonfarm jobs, and these farm and nonfarm workers had almost 500 hours a year more than only-farm workers. Even though earnings were similar in farm and nonfarm work, the extra hours of nonfarm work increased the earnings of farm and nonfarm workers about $6,000 a year.

Many "only farm workers" did not perform many hours of farm work. About 54 percent of the only farm workers were employed fewer than 680 hours in 2006, versus 28 percent of the farm and nonfarm workers, suggesting that some of the only farm workers were "salvaging" time that would otherwise have been unpaid, as suggested by Fuller and Mason (1977).

Table 4. Washington Farm Workers, 2005-2006

Washington Farm Workers, 2005-2006			
	2005	**2006**	**<680 hours**
All Farm Workers	149,316	151,611	46%
Ave Employers	2.5	2.6	
Ave Hours	973	989	
Annual Earnings($)	10,872	11,505	
Ave Hourly($)	11.17	11.63	
Only Farm Workers			
Workers	107,137	107,545	54%
Ave Employers	2.1	2.1	
Ave Hours	836	847	
Annual Earnings($)	9,124	9,625	
Ave Hourly($)	10.91	11.36	
Farm and Nonfarm Workers			28%
Workers	42,179	44,066	
Ave Employers	3.7	3.7	
Ave Hours	1,320	1,337	
Annual Earnings($)	15,313	16,091	
Ave Hourly($)	11.60	12.04	

Source: Stromsdorfer, 2007, p19, 20

Real average hourly earnings fell slightly between 2001 and 2005 for only farm workers, and were flat for workers with both farm and nonfarm jobs, even though the state's minimum wage rose from $6.72 to $7.35 (p56). By commodity, real average hourly earnings in pears rose between 2000 and 2005, but not in cherries and apples, the two commodities that hire the most seasonal workers.[226] However, a late harvest and large cherry crop led to an 8 percent spike in real cherry wages in 2006, which encouraged apple growers to raise real wages by a similar amount.

Cherry workers earned an average $12 an hour in the third quarter of 2006, apple workers more than $10, and pears less than $10. The WA AEWR in 2007 is $9.77 an hour, indicating that most workers in the cherries, apples, and pears earn more than the AEWR.

Stromsdorfer reviewed the labor shortage debate. There was an increase in the employment of seasonal workers between 2005 and 2006, from an annual average 30,000 to 32,000 (p29). The sharpest increase in seasonal worker employment was in cherries, from 3,200 to 5,100 workers,

[226]In an interesting graphic and table (p63), the report notes that unskilled wage rates are similar in the US and western Europe, and that the US can produce apples $10 to $20 a 1,000 pound bin cheaper than France, Italy, and Germany. However, Poland can produce apples at half the average $120 a bin US cost.

and pears, from 700 to 1,100. Labor shortages, discussed by Stromsdorfer on p30, can be inferred from rising wages in response to an increased demand for workers (as with the larger 2006 cherry harvest), or from a decreased supply of workers, as would occur if illegal immigration were reduced or more farm workers left for nonfarm jobs.

Washington asks employers to report the origins of their seasonal workers. In July 2006, almost 70 percent of the 60,000 seasonal workers were local, about six percent each were migrants from other states and from foreign countries, and employers did not know the origins of the remaining 18 percent. Inter-state migrants were down sharply in June 2006 compared to a year earlier, perhaps reflecting the late WA cherry harvest.

In 2006, about 12 percent of the farm employers reported a labor shortage in July and October (Stromsdorfer, p36); the percentage reporting labor shortages was lower in other months. An analysis using real mean and median hourly wages shows declines between 2003 and 2005, followed by increases that recouped most of the decline in 2006 (p36) as the jump in cherry wages spilled to apples.

There were fewer unemployed workers in key farming counties such as Yakima in peak farm employment months of 2006 versus 2005—there were 8,000 jobless in Yakima in July 2005, and 7,400 in July 2006. Employment in Yakima in 2006 peaked at 128,000 in July, and reached a low of 102,000 in January (p43). However, the most extreme peak-trough swing was in Okanogan county, where employment peaked at 25,000 in July 2006 and reached a low of 17,000 in January 2006.

Stromsdorfer reviewed the Unemployment Insurance experience. ESSB 6885 codified two changes introduced in WA 2005, viz, calculating UI-eligible earnings based on the two highest-earning quarters in the base year and requiring that eligibility for benefits be liberally construed. Weekly UI benefits were reduced to 3.85 percent of average wages in the two quarters, down from four percent. Thus, a worker earning $14,000 in two quarters could receive $539 a week in UI benefits, which may keep more workers tied to agriculture.

In 2005, an average 4,550 farm workers were receiving UI benefits; the ratio of UI beneficiaries to employed seasonal farm workers varied from a low of five percent in June-July and September-October to over two-thirds in December-January. The total number of UI claimants was 23,400 in 2005, including two-thirds Hispanics and two-thirds with less than a high-school diploma (UI claimants must present evidence of being legally authorized to work in the United States).

H-2A Jobs, Referrals, and Prevailing Wages

Washington uses relatively few H-2A workers—19 employers were certified to fill 826 jobs with H-2A workers in FY06, and 21 were certified to fill 1,657 jobs in FY07 (these data exclude sheepherding). Half of the requests for certification in FY07 were made by one apple operation in several applications.

States submit applications on Form SF-424 for grants from OFLC to cover their costs under the alien certification programs. States have three major costs: processing job orders, conducting

prevailing wage surveys, and conducting housing inspections. Washington received $72,870 for FY06, and allocated 26 percent to housing inspections, 14 percent to prevailing wage surveys, and 60 percent to process employer applications.

Table 5. Washington Alien Labor Certification Grant, FY06

	Number	Cost($)	Average($)	Share
Housing Inspections	40	18,920	473	26%
Prevailing Wage Surveys	4	10,000	2,500	14%
Job Orders Processed	30	43,950	1,465	60%
Total		72,870		

Source: SF-424

Most WA farm employers use one of two agents to help them to request H-2A certification, the Washington Growers League and the Washington Farm Labor Source. The WA SWA works closely with these agents, and generally receives employer applications at the same time they are submitted to the NPC.

Employer job orders are received in Olympia at least 45 days before the employer's need date. If acceptable to the SWA, they are entered into the WA job bank and sent to the local ES office so that recruitment and referrals can begin. When the NPC issues the acceptance letter at least 38 days before the need date, active recruitment begins throughout the state and in neighboring states and Texas.

Washington posts H-2A jobs, with employer contact information suppressed, at: www.wa.gov/esd/farmworkers/h2a_jobs.htm. Most tree fruit operations seeking H-2A workers file several requests for H-2A workers, each covering a 4-5 month period.[227] Some of the contract periods are June 1 to November 1, or five months and run from August 1 to November 1, reflecting the apple thinning and pear and apple harvesting.

Job orders filed in 2007 guaranteed the AEWR of $9.77 an hour; most specified piece rates, such as $13 a bin for picking red and golden delicious apples.[228] In order to earn the AEWR of $9.77 an hour, workers would have to pick 1.3 bins an hour. The piece rate for picking red cherries was $0.12 to $0.15 a pound in 2007, and workers were expected to pick at least 65 to 81 pounds an hour. The SWA relies on prevailing wage surveys as well as local ES office expertise to determine if the piece rate offered in an H-2A application is appropriate.

Workers interested in H-2A jobs see a local counselor to get complete information on the job and a referral to the U.S. employer. Many U.S. workers are attracted by the $9.77 an hour AEWR,

[227] In states such as Texas and NC, many employers seek certification to employ H-2A workers for 10 months, guaranteeing them 30 hours of work a week, or about 1,200 hours of work over 40 weeks. Some advocates say that the ¾ guarantee is more easily achieved over 1,200 rather than the more usual 1,600 hours of work, and that H-2A workers who have been away from their families are more likely to leave when work ends rather than waiting until the end of the contract, saving employers the cost of return transportation.

[228] One job order says that the training period is 2-3 days, and that the employee "must be able to perform the instructed job requirements."

but most want work right away rather than in 30 days. Some of the U.S. workers referred to farm employers do not show up for hiring interviews, and some of those hired do not report to work or remain for the season—WA has data on referrals and hires, but not how many referred workers completed the season. U.S. workers picking cherries, for example, are more likely to switch to another cherry employer when the farm's cherry harvest is completed rather than stay and thin apples because earnings are higher from cherry harvesting.[229]

WA referred about 683 U.S. workers to the 1,657 jobs for which employers sought certification in FY07, 41 percent, and reported that 62 or four percent were hired—WA's referral rate is far above the U.S. average, which is five percent. The WA SWA is very active and visible, erecting tents along roads in agricultural areas that advise both employers and workers of its job-matching services.

One issue in WA is companion job orders that allow employers to get the H-2A workers they really want. Employers file a job order for 40 local workers and also request certification to fill 60 jobs with H-2A workers; the wages and terms and conditions are the same in both job orders. The SWA is obliged to first try to fill the request for local workers before recruiting U.S. workers for the H-2A jobs. If the SWA cannot fill the first job order for 40 workers, the employer is certified for 60 H-2A workers. In theory, the employer could have his request for H-2A workers reduced the next year if e.g. only 10 U.S. workers were referred to the local job order, suggesting the total need was for 70 rather than 100 workers, but there is no systematic way to make such checks.

The WA Department of Health (www.doh.wa.gov/hsqa/FSL/arcs/MFH/default.htm) conducts housing inspections, and has an extensive outreach program make growers aware of housing requirements. As an "upstream" state producing high-value commodities, many WA farm employers provide housing to attract seasonal farm workers, and most of the housing offered to U.S. and H-2A workers passes inspection the first time. Some employers note on their applications that, if the housing they plan to use becomes unavailable, they will use local one-star motels.

Washington conducts prevailing wage studies by mail, sending employers questionnaires. A September 2005 survey of 54 growers of red delicious apples found a prevailing piece rate of $13 a bin for strip-picking from medium density orchards (the bin size was 47x47x24.5 inches). Almost half of the workers earned $13 to $14 a bin. The prevailing wage for strip-picking golden apples from medium-density orchards was $15 a bin, although the largest single group of workers, a quarter, were paid $14 a bin.

Table 6. Prevailing Farm Wages, Washington, 2005

Washington Apples	Date	Workers U.S.	Workers H-2A	H-2A Share	Prevailing Hourly	Prevailing Piece($)	Prevailing Unit
Red Delicious	Sep-05	2,541		0%		13	bin

[229] Cherry harvesting pays wages sufficiently high, $12 to $15 an hour, to attract nonfarm workers from out of the area who leave after the cherry harvest is completed.

Golden	Sep-05	2,061		0%		15	bin
Gala	Sep-05	1,416				16	bin
Fuji	Sep-05	1,084				18	bin

Source: ETA 232 Domestic Agriculture In-Season Wage Report

The relatively well-funded WA SWA and the active interest of the state's governor in farm labor issues makes WA a state that refers more than the usual number of farm workers to both non-H-2A and H-2A jobs. WA is also the state in which contractor Global Horizons, the only employer debarred from using the H-2A program in 2007, was most active.

There are other H-2A issues as well, including the fact that the NPC often reduces the number of jobs that can be filled by H-2A workers when employers reject qualified U.S. workers rather than canceling the employer's order outright. Some employers are requesting certification to fill a series of jobs, such as pruning, thinning and picking, which may discourage U.S. workers who only want to harvest. If certified, long-season H-2A workers wind up doing so-called "in-between jobs" that used to be done by U.S. workers.

Washington's Supreme Court, in a 5-4 decision in October 2005, ruled that H-2A sheepherders were not entitled to the state's minimum wage, which was $5.70 per hour in 1999 and $6.50 in 2000, the period covered by the case. Two Chilean sheepherders sued Klickitat County sheep rancher Max and Ann Fernandez and the joint employer, the Western Range Association, alleging that their $650 a month pay was too low. WA's Minimum Wage Act excludes workers who are required to "reside or sleep" at their workplace (Berrocal v. Fernandez, Wash., No. 75549-3, 10/13/05).

Global Horizons and H-2A

The major H-2A-related item in Washington in recent years has been Global Horizons, a Los Angeles-based farm labor contractor that brought mostly Thai workers to the Yakima area in 2004 and 2005.[230] Global violated a number of federal and state laws, prompting a settlement with the state in September 2005 that was violated and led to a revocation of Global's state FLC license in December 2005.[231] The federal government in 2006 barred Global from bringing H-2A workers into the United States for at least three years.

In April 2006, the UFW and Global negotiated a three-year agreement under which the H-2A workers Global brings into the United States will be paid two percent more than the AEWR and receive health care coverage while in the United States.

Washington's Farm Labor Contractor Act may be revised in part to deal with problems that came to light with Global. Under the proposed revision, FLCs in Washington would have to post a repatriation bond to cover room, board and travel expenses for foreign guest workers, there would be background checks of FLCs, and the annual licensing fee would rise to $100 from $35.

[230] Global began bringing Thai workers to Israel in 1990, and in 2005 said it provided 3,000 H-2A workers to farmers in 28 states, especially Oregon, Georgia, Florida and Hawaii.

[231] Global, inter alia, deducted state income taxes from the Thai H-2A workers' paychecks although Washington has no state income tax.

One proposal would cap fees that contractors could charge workers at 25 percent of gross wages for an employee's first 180 hours of work, or $357 for the $1,427 earned at the state's 2007 minimum wage of $7.93. Washington had 120 licensed contractors in 2006, when Oregon had 300.

There are two pending suits against Global. In one, some of the 190 Thai workers brought to the United States to pick apples in 2004, and who reportedly paid up to $11,000 to get 28-month H-2A contracts, are suing Global for lack of promised earnings opportunities. They were flown home for nine months after earning an average $4,500 in four months in 2004, and then returned to Washington in 2005.[232] Global subcontracted its recruiting in Thailand to AACO International Recruitment Company Ltd. The Thais suing Global say that AACO made verbal commitments in Thai, but had the workers sign English-language contracts they did not understand. Once in the United States, the workers say that Global kept their passports and contracts.

The second suit was filed by 600 U.S. workers against Global and Valley Fruit Orchards and Green Acre Farms, where the Thais were employed. The U.S. workers allege they were unlawfully not hired or terminated in 2004. Their allegations included being hired but not told when and where to report for work, prompting Global to say that they did not show up for work, and not offering the local workers transportation to work, even though the H-2A workers received transportation. Valley Fruit and Green Acre managers instructed their hiring foremen to have workers who stop by and request work to report to the WorkSource office in Yakima, 30 miles away, to get a referral to the job.

Global hired about 320 local workers between January and September 2004, but lost 70 percent of them despite the higher than AEWR average wage rate. One reason for this high turnover may have been the lack of hours for the local workers—the Thai H-2A workers averaged over 750 hours, while the local workers averaged less than 250 hours. The Global job order specified that workers must perform assigned tasks in a "timely and proficient manner," but did not specify a definition of timely and proficient.

In fact, local workers appeared to be more productive than H-2A workers. For example, during the thinning of apples in summer 2004, local workers thinned an average of 12 or more trees an hour, while Thai H-2A workers did not achieve a 10 tree-an-hour thinning rate. At harvest, picking costs for local workers in the same block of Gala trees that were damaged by hail were $93 a bin, versus $135 a bin for the Thai H-2A workers. Despite their higher productivity, local workers were disciplined for slow work, causing some to quit for other picking jobs.

A federal judge in July 2007 ordered Global and the two Yakima Valley growers to pay $1.85 million or $2,000 to $4,500 each to the U.S. workers because they were not hired or retained. The specific violations included failing to disclose productivity requirements when recruiting U.S. workers and firing U.S. workers for failing to meet them, failure to pay the promised piece rate for harvesting pears, and requiring local workers to provide their own transportation to the job while providing transportation to the Thai workers.

[232] John Verbrugge, orchard manager at Valley Fruit in Wapato was satisfied with the Thai H-2As: "I'm getting far better results with the legal workers and not having the hassle of the paperwork."

The judge who issued the July 2007 order died, and Global asked for a reconsideration of that judge's decision in a jury trial. During the September 2007 trial, legal services lawyers described the Thai workers as being exploited in Yakima and the U.S. workers who applied for jobs as being humiliated by Global recruiters. Global's Mordechai Orian testified that he preferred Thais because "they work really hard" and were less likely to "abscond" or leave the employers to whom they were assigned. Orian admitted that he sent Thai H-2A workers to two Yakima farms, Valley Fruit and Zirkle Fruit, even though these farms were not certified to have H-2A workers fill their jobs. Valley Fruit and Green Acre Farms paid Global $2 million in 2004 for farm labor services.

A Yakima jury ordered Global to pay $317,000, including $17,000 in compensatory damages to three farm workers and $300,000 in punitive damages to hundreds of other U.S. workers; the other class members can seek compensatory damages in the next phase of the litigation (Perez-Farias v. Global Horizons Inc., E.D. Wash., No. 05-3061, 9/27/07). Global promised to appeal, saying that the workers suing "quit or were terminated for cause" and that the verdict was "driving the entire agricultural industry oversees." Global sought to prove that some of the workers suing were unauthorized, but the court blocked discovery of the workers' legal status.

Global is suing eight of the U.S. farm workers in federal court, alleging they used fraudulent or stolen identity documents in order to get jobs and cost Global money by quitting after a short time. Global is using Chicago lawyer Howard Foster to sue the workers under federal racketeering laws, which provide for triple damages if a jury finds against the defendants. In October 2006, Foster sued Evans Fruit, alleging that it hired 5,000 illegal migrants over a four-year period in an effort to depress the wages paid to legal workers. In January 2006, Foster settled a similar suit against Zirkle Fruit in Selah for $1.3 million after the 9th Circuit Court of Appeals sent the case back to Yakima for trial (under RICO, Zirkle could have been liable for triple damages and attorneys' fees).

Washington's Valicoff Farms co-owner Rob Valicoff, with 1,500 acres of apples and cherries and 60 H-2A workers, said that he prefers to hire H-2A workers because local workers "get on their cell phones and figure out where the best pay was; some leave" for slightly higher wages. H-2A workers, by contrast, "aren't allowed to go anywhere. They have a contract with us and we have one with them. If they leave, it's our responsibility to inform ICE. That's why the guest worker program works."

Farm Labor Issues

The state government has been actively involved in helping farm employers to secure sufficient workers. The Washington state Employment Security Department released a video in May 2007 to recruit farm workers that emphasizes Washington had the highest state minimum wage, $7.93 an hour in 2007.

Employment Security Department Director Karen Lee told the Washington's Farm Bureau November 13, 2006 that there is no generally accepted definition of labor shortage. The ESD surveys 600 growers a month for its In-Season Farm Labor Survey, obtaining commodity-specific wage data, and 10 percent reported trouble finding workers in 2006. Lee said that apple

farmers reported raising the piece rates they pay for harvesting by 20 percent in 2006, from about $15 per 1,000-pound bin, or 1.5 cents a pound, to $18 a bin (the fact that piece rates vary by variety and over the course of the season makes it hard to determine an average piece rate).

Washington's state government has provided tents to house seasonal workers in an effort to minimize illegal camping by short-season cherry pickers. State-provided tents are considered a success. Most are 4-by-20-foot, seven-person, fire-resistant vinyl tents erected on concrete slabs that rent for $3 a person per night or $10 per night per family. There is a common kitchen and a dining tent and restrooms, showers and laundry facilities. The 10-acre Pangborn Cherry Harvest Camp has 35 tents on cement slabs with communal eating, cooking, laundry and bath facilities, and filled up the first day it was open with about 210 workers.

In 1999, the state refurbished 40 used shipping containers for migrant housing in Mattawa and charged farm workers $3 a person or $10 per family a day, plus a $70 deposit, to live in the Esperanza Housing project. During the summer months, Mattawa's population of 3,000 almost doubles, and temporary housing is scarce. Some Mattawa residents complained that, with 50 percent of the town's property owned by government or nonprofits who are exempt from paying property taxes, the farm worker housing brings residents but no taxes. In 1999, the state legislature committed $40 million over 10 years for farm worker housing programs

Conclusions

Washington produces high-value tree fruits with the help of seasonal farm workers. With the highest state minimum wage of $7.93 an hour in 2007, and with most harvesters able to earn more under prevailing piece rates, most seasonal farm workers in Washington are local residents. However, as fewer workers migrate to Washington from other states, and with perhaps fewer newcomers arriving from other countries, 10 to 15 percent of the peak 50,000 to 60,000 seasonal workers may disappear. For this reason, the number of jobs certified to be filled by workers with H-2A visas may expand.

Most Washington tree fruit growers hire workers directly. There are several labor scenarios that could unfold. The warehouses that pack and sell apples could assume the additional task of picking fruit, charging growers for harvesting. Alternatively, there could be more mechanization, either harvesting aids such as mechanical platforms or replacements for hand workers, such as shake and catch machines. Finally, smaller growers could form associations that recruit workers and deploys them among members, especially if the association acts as the employer of H-2A workers.

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Appendix: Apples. Cherries and Pears

Apples are the most valuable crop in Washington, worth $1.2 billion in 2005 or 19 percent of the state's farm sales. Other labor-intensive crops include cherries, worth $338 million, nursery products, $326 million, pears, $143 million, grapes, $142 million, and onions, $111 million.

The highest-revenue commodity on a per acre basis in 2005 was cherries, whose average yield of 9,400 pounds generated an average $11,535 an acre; fresh onions, 37,000 pounds worth $8,700 an acre; apples, 27,400 pounds worth $7,600 an acre; blueberries, $6,800; and pears, $5,900. Washington produces almost 60 percent of U.S. apples, 55 percent of U.S. sweet cherries, and 50 percent of U.S. pears.

In 2005, the 5.8 billion pounds of apples were worth an average 21 cents a pound to growers, followed by sweet cherries-- 137,000 tons were worth $335 million, or an average $1.20 a pound to growers. Washington had 155,000 bearing acres of apples in 2005, and yields averaged 19 tons an acre; there were 29,000 acres of sweet cherries, and yields averaged 4.7 tons an acre.

Apple acreage, about 161,000 in 1986, rose to 192,000 acres in 2001 before dropping to 173,000 acres in 2006; however, the number of apple trees remained about the same between 2001 and 2006 75 million, as growers planted more trees per acre. Apples require about 150 hours an acre for care and harvesting.

There were extensive new plantings in the 1970s and 1980s—bearing acreage went from 60,000 in 1970 to a peak 170,000 in the late 1990s. By area, Yakima had 67,000 acres of apples in 2006, up by 17,000 acres since 1986, Wenatchee 39,000 acres, down from 61,000, and the Columbia Basin (Adams and Grant counties) 56,000 acres, up from 24,000. Apple prices in recent years ranged from a low of 12 cents a pound in 2004 to 25 cents in 2003 and 2006.

There were 14,000 acres of sweet cherries in 1986 and 36,000 in 2006, with acreage quadrupling in the Columbia Basin and tripling in Wenatchee—cherry acreage almost doubled in Yakima over the past 20 years. For both apples and cherries, tree density has increased—an average of almost 440 apple trees per acre in 2006, and over 200 cherry trees.

The largest tree fruit growers tend to be integrated operations; the largest 10 packinghouses ship over half of the state's apples and most of the cherries and pears as well.

The Washington apple industry is switching varieties in response to market pressures. Red Delicious apples were 75 percent of the Washington crop in the 1980s but only 35 percent in 2005; new varieties such as Fuji and Gala ripen earlier and command higher prices.

Traditional verities such as Red Delicious are harvested in September and October and held in controlled-atmosphere (CA) storage units that have high humidity and low oxygen levels to retard aging. Apples that go into CA storage must be picked before all their starches turn to sugar, but it is hard to find the optimum picking point because Red Delicious apples develop a full red color several weeks before they are "ripe." Apples ripen from outside to inside, and most

farmers harvest all Red Delicious apples at once, further complicating the optimum picking date and leaving some apples with a mealy or mushy mouth feel.

China is the world's largest producer of apples, producing 28 billon of the world's 70 billion tons in 2005 (40 percent), followed by 4.7 million tons in the United States (7 percent), and about 2.5 million tons each in Turkey, Iran, Italy, France, Poland and Russia (3.5 percent each). China's apple production increased rapidly between 2000 and 2007 and prices fell, encouraging the government to discourage additional apple plantings in favor of alternative fruits.

The average Chinese farmer has three mu, or half an acre of land, and a third of Chinese farm land is devoted to apples in apple-growing areas. The leading variety is Fuji, and yields of 2,500 kg per mu translate to two tons an acre. With low-cost labor readily available, many Chinese producers place bags around individual apples to prevent insects or birds from damaging them. China is expected to dominate trade in the products market (juice and sauce), then compete in the markets for dried and sliced apples, and finally for fresh apples.[233].

Americans consume about 50 pounds of apples a year, half as juice and half as fresh apples. Apple juice consumption has been rising, but over 70 percent of U.S. apple juice products are imported, primarily from China.

The Washington tree fruit industry has a technology roadmap that aims to reduce production costs by 30 percent by 2010 to maintain industry competitiveness (www.treefruitresearch.com). Dwarf apple and pear trees are being planted close together, sometimes only two or three feet apart in rows nine or 10 feet apart and trellised in a vertical (5-wire) or Tatura (V) system. The effect of these new plantings is to create a "fruit wall" that is no more than three- or four-feet wide. Dwarf trees with thinner fruit walls have several advantages, including producing after three years and yielding up to 40 tons an acre.

Machines or self-steering and slow moving platforms can be used to perform or assist in many tasks, from pruning and thinning to harvesting. The Washington Tree Fruit Research Commission, whose $4 million annual budget comes from a levy on growers, is developing mobile picking platforms to eliminate the need for ladders and make picking jobs easier for workers.

Machines to pick cherries are spreading. Most have hydraulic arms that grasp the tree limb and shake the cherries off, catch them, and blow out leaves as the cherries are conveyed to harvest bins. Machines can harvest seven bins or 80 to 150 trees an hour, but only if the trees are pruned properly. Before harvesting, cherries are often sprayed with Etherl, a loosening agent, so that they can more easily be shaken off the trees.

Pears may be squeezed out by the growth of cherries and earlier apple varieties. Cherries traditionally draw workers seeking high piece rate earnings, and pears provide employment in August before apples are ready to harvest. The cherry season has been extended, and new apple

[233] China exported 840,000 tons of apples in 2004-05; followed by 700,000 tons from Chile; 600,000 tons from the US; and about 500,000 tons each from Italy and Poland. China exported fruits and vegetables worth $3.5 billion in 2004-05, up from $2.3 billion in 2001.

varieties are ready to pick sooner, making fewer workers available to pick pears, which generate less revenue per acre and traditionally offer lower earnings.

Onions were the leading vegetable in 2005, worth almost $100 million of the state's $391 million in vegetable sales. Asparagus acreage has been dropping as imports rise from Peru and elsewhere—sales were $28 million in 2005, less than half the $60 million plus of the mid-1990s.

The Yakima county population was 230,000 in 2005; about 40 percent of residents are Hispanic. The county's major city is Yakima, with almost 80,000 residents; almost 40 percent of Yakima county is covered by the Yakima Indian reservation. In 2004, Yakima County had 8,700 employers with an average 94,000 UI-covered employees, including 1,450 or 17 percent agricultural employers and 20,000 or 21 percent agricultural employees (www.ofm.wa.gov/databook/county/yaki.asp). In 2005, an average 69,000 county residents, 30 percent, received health care assistance via means-tested programs, 37,000 or 16 percent food assistance, and 13,000 or six percent received TANF payments.