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GEORGIA FARMWORKER HEALTH PROGRAM

MIGRANT AND SEASONAL FARMWORKER ENUMERATION PROFILES STUDY GEORGIA

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Estimating migrant and seasonal farmworkers and their non-farmworker household members is an extremely challenging task. This research has attempted to examine existing data and knowledge to develop a reasonable approach to the estimation process. The user should carefully consider the description of study parameters to understand what is included or excluded from the final figures and the limitations of the research.

It is hoped this document will be helpful in meeting the need for descriptive information on the migrant and seasonal farmworker population.

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DOCUMENT DESCRIPTION

GEORGIA MSFW ENUMERATION PROFILES STUDY

A. BACKGROUND

There is a constant need for accurate and current estimates of the migrant and seasonal farmworker (MSFW) population in Georgia. Many organizations and government agencies who work with this target group use such information in provision of services, planning, policy setting, health care support, regulatory assistance, identification of unserved areas, agricultural production, determining if resources are appropriate to the need and many other areas.

Estimating MSFWs is extremely difficult and no current source provides reliable information, particularly for population figures at the county level. The last comprehensive effort which included county-level figures was, *An Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families*, developed by the Migrant Health Program of the Bureau of Primary Health Care, U.S. Department of Health and Human Services in 1990.

A study was conducted by UGA, Institute of Community and Area Development in 1995 (Winders), which also offered county-level MSFW estimates, but it examined only peak worker numbers for 16 field crops and did not look at all agricultural segments.

The Migrant Health Program completed a limited update of their earlier work in September, 2000 covering counties in only 10 states. The *Migrant and Seasonal Farmworker Enumeration Profiles Study* reports have been widely circulated, reviewed and gained general acceptance as offering a reasonable approach to estimating this population. In 2002, 2005 and 2006, a coalition of organizations in Oregon, Idaho and Michigan, respectively, funded similar studies for those states. Additional efforts estimating harvest workers in New York and Maine have been conducted for the New York Center For Agricultural Medicine and Health (New York, 2002; Maine, 2005).

In 2006, the Migrant and Homeless Programs of the Georgia State Office of Rural Health engaged Larson Assistance Services, Alice C. Larson, Ph.D., author of the *Enumeration Profiles Study* series of reports to conduct a similar effort in their state. The Georgia study is designed to be comparable to the other 15 *Enumeration Profiles Study* reports.

B. STUDY PURPOSE

The *Georgia MSFW Enumeration Profiles Study* (GA-MSFW EPS) offers statebased information at the county level for the following three population sub-groups:

- Migrant farmworkers and seasonal farmworkers
- Non-farmworkers present in the same household as migrant farmworkers and seasonal farmworkers (defined by the term "accompanied")
- Number of people ("children and youth") under age 20 in six age groups

Included in the scope of study are individuals engaged in field and orchard agriculture; packing and sorting procedures in food processing; horticultural specialties (including nursery operations, greenhouse activities and crops grown under cover); and reforestation (tree planting). Excluded from study are those working with livestock, poultry, dairy, fisheries, ranching activities, operating equipment associated with farming or driving trucks transporting agricultural products.

C. DEFINITIONS

1. Migrant and Seasonal Farmworkers (MSFWs)

The MSFW definition used for this study is that of the Migrant Health Program. It describes a seasonal farmworker as:

"An individual whose principal employment [51 percent of time] is in agriculture on a seasonal basis, who has been so employed within the last 24 months."

A migrant farmworker meets the same definition but "establishes for the purposes of such employment a temporary abode." (*United States Code*, Public Health Services Act, "Migrant Health")

2. Industries Included in the Estimates

Each of four major industry groups for which estimates were developed was defined by a specific North American Industrial Classification System (NAICS) Code (a system for identifying every industry and sub-industry). Such categorization was often found to be useful in the GA-MSFW EPS for extracting information from established databases.

a. Field Agriculture

Field agriculture is included in NAICS identification 111, "crop production," under the general category "agriculture" (code 11). Additionally, several smaller NAICS subcategories are considered field agriculture, including: 115112 "soil preparation, planting and cultivating."

b. Nursery/Greenhouse

The NAICS code 1114 defines "greenhouse and nursery production." This falls within the broader "crop production" classification mentioned above.

c. Food Processing

Food processing is defined by two NAICS coded industries:

3114: fruit and vegetable preserving and specialty. 115114: post harvest crop activities.

d. Reforestation

Reforestation falls within NAICS 1153, "support activities for forestry."

3. Demand for Labor Method

One of the primary techniques used, looked at the jobs that employ MSFWs. These "job" figures were then converted into employed "individuals." This methodology is labeled "demand-for-labor" (DFL) and is more fully described in Section F "Enumeration Methodology."

D. LIMITATIONS

This study is limited in scope in that only secondary source material, including existing database information, and knowledgeable individuals, have been utilized to generate information. This has meant taking reports and databases prepared for other purposes and adjusting them, as possible, for the GA-MSFW EPS. Limited resources and time have prohibited primary research directly with farmworkers.

In addition, by employing only secondary source information, the definition of who is included as a migrant or seasonal farmworker is often tied to the limitations of the generating source. Wherever possible, screens were used to exclude those not covered by the study definition.

The study applies factors to make estimates of MSFWs and their non-farmworker family members. Often these factors assume uniformity across crops and counties when, in reality, there might be more variability. Where reliable information was available through which to note these differences, crop or county-specific factors were used. Without such detailed data, it was necessary to apply the same factors broadly.

E. GENERAL PROCESS

1. Basic Investigation Techniques

This study involves six major steps:

- (1) Mass mailing seeking relevant information and sources
- (2) Basic data gathering and clarification of information
- (3) Preparation of Draft One (estimates, methodology, tables)
- (4) Review of Draft One by local knowledgeable individuals
- (5) Revision of Draft One as necessary including conducting additional research
- (6) Issuance of the Final GA-MSFW EPS report

2. National Databases

Information in one national database was analyzed specifically for this study. It represents the largest continuous direct surveys of MSFWs in the country.

<u>The National Agricultural Workers Survey (NAWS)</u> of the U.S. Department of Labor (coordinated by Aguirre International) is a survey conducted three times annually gathering similar information through random selection of targeted counties, employers and subjects. Data gathered includes basic demographics, family characteristics, and work history. This survey has been conducted continuously since 1989.

Data from a five-year period (1998-2002) were examined for the GA-MSFW EPS, as found in the NAWS Public Access Database. This involved over 15,000 respondents with data weighted for sampling disparities. Southeast Regional information was reviewed for the GA-MSFW EPS. This includes the state of Georgia as well as six other states: Arkansas, Louisiana, Mississippi, Alabama,

South Carolina and Florida. Although data from this source were examined, the results were not often used as the only source for deriving calculation factors.

Although coverage is extensive, this source has its limitations with results appearing weaker the further the information is pared down; i.e., less reliable at the regional than the national level. In regard for use in the GA-MSFW EPS, it is not clear how much grouping Georgia data with six other states skews the findings. There is concern that the NAWS Southeast Regional data might be more heavily representative of Florida.

Two other large-scale databases were examined and utilized where appropriate.

<u>The Census of Agriculture (COA)</u> from the U.S. Department of Agriculture (past COAs were developed by the Bureau of the Census) is a direct survey of agricultural producers conducted every five years. It asks a variety of information about the components of production including crops grown, acreage involved and number of producers. The results are offered down to a county level. Although this source has been utilized heavily for past MSFW Enumeration Profile Study state reports for county level acreage information, the University of Georgia (UGA) offered an annual update of such information found to be more current (Boatright, *Farm Gate Report).*

<u>ES 202 (information for "covered employment"</u>) also known as the "Quarterly Census of Employment and Wages" is a database kept by the U.S. Department of Labor from employment and wage information submitted through each state for workers covered by the state Unemployment Insurance system. These data, classed in industries and sub-industries by NAICS, are available as monthly summaries at the county level.

It was found that much of the ES 202 information needed for the GA-MSFW EPS was not publicly reported at the county monthly level. This occurs as a protection for respondents when three or fewer producers make up the only reporting units within a geographic area. With the assistance of the Georgia Department of Labor, a special data run was made of ES 202 information at the county level for the specified NAICS codes (Salandi, 2007). Some figures were also found to be suppressed in this additional data run, however a great deal more information was gained through this source (described in this document as the ES 202 Special Data Run).

3. Specific Steps in Development of Estimates

Work began with a mass mailing to identified service organizations assisting MSFWs, government agencies involved with agriculture, farm employer and crop

commodity groups, outreach workers, religious institutions with a Hispanic ministry and others.

Each participant was given an introductory letter and questionnaire listing study factors for which information was sought. They were asked to provide anything they might have directly or list other resource documents or personnel.

Contacts were made with individuals mentioned by survey respondents as well as with many others known to the study principal investigator. This involved a variety of programs and agencies who were asked for specific information such as client-related demographics, enrollment data, crop production figures and acreage statistics.

In June, 2007, Dr. Larson spent seven days in Georgia meeting with over 30 knowledgeable individuals associated with all aspects of agriculture, and government or non-profit MSFW service provision. This involved travel throughout central and southern Georgia.

Additional individuals were reached via telephone or e-mail to help clarify issues of agricultural production or further assess sources of information. Although many different individuals, agencies, organizations and businesses were contacted, the list is in no way exhaustive of all of those involved with agriculture and MSFWs in Georgia.

A thorough search of related internet sites was undertaken including those specific to UGA, Department of Agricultural and Environmental Sciences, the Georgia Department of Agriculture, the Georgia Department of Labor, and other agencies. Additional information was sought from various sites including those of the University of Florida and from links for specific organizations or concerning the production of agricultural commodities.

Once all state specific information was received, factor information was extracted to estimate sub-groups (migrant farmworkers, seasonal farmworkers, children and youth). For each demographic factor used to develop the estimates, there were numerous sources. These were compared and analyzed to account for any differences. Results were contrasted against other MSFW EPS state-specific report information and conclusions drawn regarding the best factor or average to use.

Working draft GA-MSFW EPS estimates were compared to sources presenting data relevant to the MSFW population in Georgia to assess whether the results were within the range of these actual individual counts or population projections developed by other entities. GA-MSFW EPS Draft One estimates were completed and tables prepared for review by knowledgeable individuals.

4. Local Review of Draft Estimates

The draft GA-MSFW EPS, including preliminary estimates, was sent to eight potential reviewers representing a wide range of individuals who interact with MSFWs in Georgia, are involved in agricultural production, or had provided information utilized to develop the MSFWs estimates. One of these individuals forwarded the draft report to all the Migrant Health Centers in Georgia for their comments. A cover letter sent with the document asked for general consideration, and the attachments included a list of Reviewer Questions directing attention to specific issues or factors used to make calculations.

Eleven individuals responded with a variety of comments. These reviewers represented government agencies, MSFW service providers and agricultural experts associated with academic institutions. Five generally indicated they were satisfied with the draft document and estimates as presented, offering minor editing and other suggestions. The remaining six reviewers questioned specific calculations or results, offered additional research sources or made comments about specific issues. Some of the points raised were determined to be beyond the scope of this current study.

At the urging of reviewers, two new databases were requested and examined for comparison purposes with estimates or factors. Other questions regarding specific crop calculations and demographic factors resulted in additional research conducted to verify assumptions used in the draft report. Follow-up with local knowledgeable experts, particularly those associated with agriculture at the county level, helped to clarify production methods and associated labor needs for specific crops. Changes were made to calculations of workers engaged in greens, onions, peppers, sweet corn, tomatoes, and watermelon.

Additional research was conducted to clarify hand labor involvement in peanut production, particularly that used at peanut buying points. An extensive investigation was necessary to find a method to estimate pinestraw workers and determine what proportion were not engaged in other agricultural activities included in MSFW EPS estimates (thus avoiding double counting).

The contributions made by reviewers were considerable. Their assistance in pointing out issues and the resultant research which brought clarification helped to strengthen the final estimates.

5. Presentation of Estimate Results

The Final GA-MSFW EPS summarizes MSFW estimates and presents agricultural production factors within two summary Tables.

- Georgia MSFW Enumeration Profiles Estimates
- Georgia Demand for Labor Factors

F. ENUMERATION METHODOLOGY

The four separate industry classifications within the study MSFW definition (field agriculture, nursery/greenhouse -- crops grown under cover, food processing and reforestation) were each addressed differently. Adjustments were made to worker estimates to account for duplicate counts within and across counties. Finally, population sub-groups and the number of children and youth in specific age categories were calculated.

1. Field Agriculture

The field agriculture estimate used a DFL process that examined the number of workers needed to perform temporary agricultural tasks, primarily harvesting although other activities were also considered where extensive hand labor is involved.

DFL results estimated the number of full-time equivalency (FTE) hand labor "jobs" available during the period of peak labor demand for crop production. These calculations, prepared for each crop in each county, were derived through a formula using four elements:

Where:

A = crop acreage

H = hours needed to perform a specific task (e.g., harvest) on one acre of the crop

W = work hours per farmworker per day during maximum activity

S = season length for peak work activity

Factors used in calculations for hand labor tasks on crops: hours to perform that task, work hours and season length are included in Table 2.

<u>**Onions</u>**: Developing estimates for onion workers was found to be difficult, although four different methodologies were suggested for this purpose. The first was the standard DFL approach. The second also utilized DFL, but one factor</u>

was changed based on a similar previous study estimating onion workers. The third method relied on work assumptions provided by a UGA onion specialist. The fourth method used different work assumptions offered by a migrant legal services representative.

Estimates were prepared via each method and compared. The range was wide and thought was given to averaging the results as a means to even the extremes. These estimates were also examined in relation to H2A worker requests specifically for onion harvesters. This latter comparison found that in one county, the worker figure resulting from the average of the four methods was less than the H2A requests for onion workers.

After careful consideration, it was determined that onion harvest workers should be estimated using only the standard DFL approach, similar to other field crop estimates.

Sweet Corn: The first effort to estimate workers harvesting sweet corn used DFL factors. Additional research (Hudgins, 2008; Harrison, 2008) made it clear that such a method did not accurately represent workers engaged in this activity. It was explained that for the most part workers are attached to a harvester which travels from field to field gathering, packing and crating sweet corn all in one operation. This is referred to as a "mule train" and employs a set number of laborers who cut the corn from the field and then throw it onto a platform for packing by others. An alternative estimation method was required which looked at the average number of workers per mule train and average acres harvested by one mule train during the season. Because this is a specialized process, individuals employed to harvest sweet corn move as a unit only working on this one crop.

Planters and Transplanters: Sources within Georgia stated that individuals engaged in pre-harvest activities usually also work harvesting tasks (Kelley, 2007; Shirley, 2007). For that reason, harvest workers estimates were generally thought to include those in other seasonal labor tasks.

Although many crops are planted mechanically, reviewers indicated some are primarily planted by hand or the process involves hand labor. The issue is whether workers also harvest the crops they plant. If these operations involve two different individuals, they each should be included in worker estimates.

Some draft report reviewers and additional research conducted with county extension agents indicated that for a certain percentage of workers this would not be the case (Beard, 2008; Hudgins, 2008, Morton, e-mail 2007). Accordingly, DFL estimates were made for those planting or transplanting the following crops and then a percentage applied to encompass those who would not harvest these same crops:

Second Harvest Workers: Reviewers and others contacted also said that some crops with a considerable amount of acreage that involved more than one harvest could be expected to have a certain number of new workers engaged for the second harvest (Beard, 2008; Hanson, 2008; Himelick, e-mail 2007; Morton, e-mail 2007). Accordingly, a second harvest calculation was developed and a percentage applied to account for those not involved in the first harvest.

2. Nursery/Greenhouse and Crops Grown Under Cover

Nursery/greenhouse workers and those employed in crops grown under cover involve many different categories. These include: bedding plants, cut flowers, florist greens, floriculture, flower seed crops, foliage plants, greenhouse vegetables, mushroom production, potted flowering plants, sod and vegetable seed crops. Some products are grown in covered structures while others are raised in open acreage. Tasks differ with product type and production needs.

Several steps were taken to derive nursery/greenhouse worker estimates for Georgia. These included the utilization of hard data and application of assumptions.

It was first necessary to obtain acreage figures for nursery/greenhouse operations in each county. Next, a "rule of thumb" was applied to estimate number of workers required for production per acre. This varied depending on the type of nursery or greenhouse operation. The percent of "temporary" as opposed to year-round workers was calculated. Last, an additional rule was applied to account for a turnover rate within employment in larger operations. Final nursery/greenhouse worker estimates discounted any counties with worker totals under five and acreage under nine.

3. Food Processing

Previous MSFW EPS report methodologies to estimate food processing have involved utilizing sources to identify food processors and then estimating the temporary workers they employ. Sources within Georgia did allow for this type of estimation, and in fact, two different methods for making such calculations were examined.

In addition, DFL factors were located that allowed utilization of this method to estimate what can be described as "post-harvest activities." These factors covered the following crops: carrots, cucumbers, eggplant, Irish potatoes, lima beans, pecans, tomatoes and squash.

Resulting estimates from all methods were compared along with the perceived strengths and weaknesses of each. Primarily because UGA-produced crop

budgets provided hours per acre estimates for such activities as grading, sorting, and packing, it was felt that the DFL approach was the most appropriate for use.

An alternative methodology was examined to estimate pecan workers engaged in the cleaning/drying/sorting process. It was suggested by Lenny Wells, a specialist in pecan horticulture at UGA (interview, June 21, 2007). However, insufficient data were available to complete the calculations, and pecan workers were estimated using the DFL method.

Alternative information was available through which to estimate onion shed workers. Three sources were found which offered work assumptions that allowed for direct worker estimates for those engaged in onion sheds. The calculations which were utilized came from averaging the results of these three estimates.

4. Reforestation

Reforestation activity is different from work in the other industry classifications as stands of trees are left to grow from five to 45 years or longer. This means only a proportion of timberland in a state is engaged by tree planters each year. As the exact location of this labor differs annually, a worker estimate can only be provided on a <u>statewide basis</u>.

There are no sources known that provide the number of tree planters or reforestation workers in Georgia. As a result, two methods resulting in four separate estimates were used to enumerate workers in this industry category.

One approach used DFL factors developed for a previous MSFW EPS study in a state geographically close to Georgia. The other approach incorporated a "rule of thumb" suggested by Monte Bell of the U.S. Forest Service in Oregon related to the time it takes one worker to replant an acre of land. Acreage information used in these calculations was specific to Georgia.

The final estimate of statewide reforestation workers came from averaging the four separate calculations. Two additional direct count sources were used as a check.

5. Pinestraw Gathering

Harvesting pinestraw has become a major commercial business in Georgia with some individuals reconsidering the type of pine trees they plant to allow for a longer needle more prized by the market (Izlar, 2008; McClure, 2008). Although the industry is growing, very little is known in regard to numbers and demographics of pinestraw gatherers. Often an agreement is signed by a broker with the land owner and then a forestry labor contractor is engaged to perform the work. It is up to the contractor to hire seasonal workers who actually rake pinestraw.

There is a sense that most of those working pinestraw do so in conjunction with other agricultural activities. As such, these individuals would already be estimated through DFL calculations related to crop production. However, it appears some workers are employed only in gathering pinestraw (Casanova, 2008; Moorhead, 2008).

DFL was determined to be the best means to calculate the number of pinestraw workers. The resulting county estimates were reduced to account for the smaller percentage of workers who work only in this industry.

6. Duplication Rate

The DFL method used for field agriculture, as described above, estimates "FTE jobs," not workers. The assumption is one "job" equals one worker; however, this may not be the case. An adjustment was made to account for those employed in more than one agricultural "FTE job" calculated through the DFL process. This "duplication rate" refers to the concept that one worker can be employed in more than one "job." For example, a single individual might work in both peaches and greens. If the estimates for workers employed in each of these crops were simply added, the results would overestimate the number of individuals within any one county or statewide.

Only one source could be found specific to Georgia through which to estimate the duplication rate. This was a database of patients seen in migrant health clinics occurring every summer in Georgia conducted by the Emory University Physicians Assistant Program (Himelick, "Patient Data," 2007). Another source was examined which has been utilized in past MSFW EPS studies, NAWS, but was found to be deficient because it offered only regional information with an assumed heavy bias toward Florida.

The resulting duplication rate was used on estimates of workers in field agriculture as well as those in food processing. This rate was not applied to nursery/greenhouse workers or to those in reforestation.

As discussed earlier, sweet corn harvesters are only employed in one crop. For that reason, the duplication rate was not applied to these workers.

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7. Sub-Group Estimates

Sub-groups estimated for the study were migrant farmworkers, seasonal

farmworkers, non-farmworker family members accompanying farmworkers and children and youth in specified age groups. Migrant farmworkers included individuals who met the definition of a migrant but only traveled within the state of Georgia (intrastate migrants) and others who came from outside the state to work in Georgia (interstate migrants)

Both "non-farmworkers" and "children and youth" were estimated. The first group included anyone of any age in the household who was not employed in farm work. The latter group covered anyone in the household from ages less than one through nineteen. Although the category "children and youth" involves those of a young age who are non-farmworkers, it also includes "youths" who may be farmworkers. This is why the estimates for "non-farmworkers" and for "children and youth" are different.

Sub-group calculations were made, at a county level, as follows:

- Apply percent identified as migrant workers and percent identified as seasonal workers to estimates for all workers (identified as "MSFW Farmworkers")
- Determine the percent of each sub-group (migrant workers and seasonal workers) who are "accompanied" by non-farmworkers. This is as opposed to workers who represent single person households; for example, six unrelated men living in one household would represent six single person households
- Divide the group of accompanied workers by the average number of farmworkers per household to determine the number of accompanied households
- Multiply the number of accompanied households by the average of other members per household to derive the number of "non-farmworkers"

The following age groupings were determined to be the most useful descriptors (given the needs of funding sources and health care programs) for the population considered "children and youth": under 1 year, 1-4 years, 5-12 years, 13-14 years, 15-18 years, and 19 years. Factors were found for the number of individuals in each accompanied household who were less than 20 years old. These were multiplied by the estimate of accompanied migrant and seasonal households to find total number of migrant and seasonal children and youth. A variety of sources were then examined to derive percent of the population in each age group.

8. Comparative Estimates

To help consider the reasonableness of the results of GA-MSFW EPS estimates, figures were compared to other sources offering MSFW numbers at a county level in Georgia. These came from direct client data or requests for agricultural workers. The sources examined included:

- Migrant Education Program data (Migrant Education Program, 2007)
- Babies Born Healthy Program data (Conner, 2008)
- Migrant Health patient information (Brown, 2007)
- Farmworker Family Health Program (Wold, 2008)
- Migrant Clinics, Emory University (Himelick, 2007)
- H2A Orders for workers beginning work in 2007 (Georgia Department of Labor)
- Georgia Department of Labor MSFW estimates by Career Center data (Wilson, 2008)

In one instance, this examination resulted in a change in worker estimates, i.e., in Gordon County the number of agricultural H2A workers requested for 2007 exceeded the resulting GA-MSFW EPS estimate. For that county, the estimate was increased to match the H2A number (only a small number of workers were involved).

A discussion of the comparison data for the children and youth estimate is presented later in this report. For this and all other instances where comparisons were made, no evidence was found to conclusively suggest the GA-MSFW EPS calculations were in error.

G. RESOURCES UTILIZED FOR GEORGIA ESTIMATES

Factor information was gathered from the primary sources listed below. For the most part factor information was found for Georgia specifically or for neighboring states. Where no other information could be found, an average of factors from a number of states was used.

1. Field Agriculture

<u>Crops Requiring Temporary Hand Laborers</u>: Past MSFW EPS reports have identified crops that often require hand labor. This offered a starting place for developing a list of crops relevant to Georgia. The results were discussed with many knowledgeable individuals during the time spent on-site in Georgia. A final list of hand labor crops was developed and used for DFL estimates.

<u>Acreage</u>: The *Farm Gate Report*, prepared annually by Susan Boatright, UGA was the source for all crop acreage. The *Report* offers acreage information at the county level as reported by local UGA Extension Agents or others associated with each county. Spreadsheets of data for the years 2004-2006, covering vegetables, fruits and nuts were obtained from Ms. Boatright (Boatright, 2007), and the three years were averaged to provide the final crop acreage.

Previous work (Larson, *MSFW Enumeration Profile Study* reports, and *Migrant Enumeration Project*) found, through discussion with agricultural experts, that crops of less than ten acre are more likely to have harvest tasks performed by family members than hired workers. Accordingly, any crop within a specific county noting such small acreage was dropped. Work on the *MSFW Enumeration Profiles* Study for Oregon included consultation with Diane Coffman of Oregon State University, North Willamette Research and Extension Center who indicated this ten acre rule was less likely to apply in berry crops. Accordingly, production of five or more berry acres were included in estimates.

Vidalia onion growers are required to be certified in Georgia on an annual basis. The Georgia Department of Agriculture maintains this list which also includes acreage data. These figures were used to update onion acres to 2007 (Meyer, 2007).

Hours for Task: "Crop budgets" and other special reports prepared by agricultural economists and extension specialists as a guide to crop production were utilized to determine hours needed to perform major hand labor tasks on each crop. The primary sources for this information were documents prepared by the College of Agricultural and Environmental Sciences, UGA (UGA, crop budgets, 2000-2006).

When Georgia-specific factors were unavailable, one of the following sources was used: *Florida MSFW Enumeration Profiles Study* (Larson, 2000), Florida crop budgets (Center for Agribusiness, University of Florida, 2005-06), *Mississippi MSFW Enumeration Profiles Study* (Larson, 2000), and *North Carolina MSFW Enumeration Profiles Study* (Larson, 2000). When no other information could be found on task hours specific to Georgia or its neighboring states, an average of the factors used in the 15 previous MSFW EPS studies was applied for Georgia.

Work Hours: Only one source was found to have information specific to the Southeast Region, of which Georgia is a part (along with Alabama and South Carolina), for hours per week worked by MSFWs. This was the "Farm Labor" report, published quarterly by the U.S. Department of Agriculture, National Agricultural Statistics Service. Quarterly data for the years 2003 to 2007 were

averaged. The results showed Georgia farmworkers were employed an average of 36.59 hours per week. This was further defined as 7.32 hours a day in an average five day week.

Although NAWS survey data were also available, these were not used as the NAWS region of which Georgia is a part is heavily weighted toward Florida.

Season Length: Information for peak hand labor season dates specific to crops in Georgia was found through various sources specific to Georgia: *Georgia Agricultural Facts* (Georgia Field Office, U.S. Department of Agriculture, 2006) and UGA crop specific publications (UGA crop production, 1999-2006; Cooperative Extension Service, "Planting Dates," 2007). When state-specific factors were not available, estimates were made utilizing crop task hours from studies similar to the GA-MSFW EPS or related sources: *Florida MSFW Enumeration Profiles Study* (Larson, 2000), Florida crop budgets (University of Florida, 2005-06), *Mississippi MSFW Enumeration Profiles Study* Larson, 2000), and an average of the factors used in the 15 previous MSFW EPS studies.

Some of the information reported calendar days which were converted to work days by dividing the total number by seven to derive number of weeks and then multiplying by five for number of average MSFW work days per week.

2. Sweet Corn

Four sources offered estimates of the average number of workers per mule train (Harrison, 2008; Hernandez, interview, 2007; Harrison, 2008; Kelley, 2007). The results were averaged. A calculation was made of the maximum number of acres one such mule train could harvest in a season by determining season length and acres/day (Hudgins, 2008, Kelley, 2007). County sweet corn acreage was then divided by the maximum number of acres per mule train per season (712.5) and the results multiplied by the average number of workers per mule train (42.87).

For every county except two, it was determined that only one mule train, or 42.87 workers, was required for harvest.

3. Pecans

The alternative methodology considered for estimating workers in the pecan drying/cleaning/sorting process, as suggested by Lenny Wells (interview, 2007), looked at an average number of workers per "cleaning table." Dr. Wells indicated

it is generally felt 17.6 percent of growers undertake such activity at their farm. In Dougherty County, where more pecans are grown, Dr. Wells felt 30 percent of growers would have cleaning tables. He suggested there would be four to five workers per cleaning table, and any grower with more than 1000 acres of pecans would have more than one cleaning table.

Unfortunately, all the data needed to make estimates of pecan workers involved in the drying/cleaning process using this method were not found. The only data available on the number of pecan growers per county were from the 2002 COA. Both the 2002 COA and the *Farm Gate Report* offered acreage information by county, however a simple division of acres by growers found no county approaching the 1000 acre per grower threshold. No other data or approach was discovered to determine how many growers in a particular county might have over 1000 acres.

Last, but most important, this methodology only calculated the number of growers maintaining their own cleaning tables. Smaller growers would send their pecans to another location for a similar process. No data or approach was found to calculate worker numbers associated with this activity.

In conclusion, it was determined that the DFL method for workers associated with cleaning/drying/sorting pecans was the best means to make such estimates.

4. Planters and Transplanters

These crop estimates, based on DFL planting factors, were increased to account for planters and transplanters who would not be involved in harvest activities on the same crop.

- Onions 33 percent new workers
- Peppers 20 percent new workers
- Tomatoes 20 percent new workers
- Watermelon 20 percent new workers

5. Second Harvest Workers

The following crop harvest worker estimates were increased to account for workers engaged in the second harvest who would not have worked in the first harvest.

- Onions 20 percent new workers
- Sweet corn 20 percent new workers
- Tomatoes 30 percent new workers

6. Nursery/Greenhouse and Crops Grown Under Cover

The number of acres for both container and field nurseries was obtained from the *Farm Gate Report*, averaging data from 2004-2006. Greenhouse square feet under glass were found in the same source and converted to acres.

Information was secured from Dr. John Ruter, Horticultural Specialist, UGA (interview, June 21, 2007) regarding the number of workers generally considered needed for nurseries. That "rule of thumb" stated it takes one full-time employee to perform hand labor tasks on one acre for container nurseries and one full-time employee to work seven acres for field nurseries. No information was available for greenhouse production. The container nursery "rule of thumb" was used for this category as the work more closely resembles container than field nurseries.

These "rules" were applied to the nursery/greenhouse acres for each county to calculate an estimate for full-time workers. It was then necessary to determine the percent of these workers who might be considered temporary (MSFWs). ES 202 Special Data Run figures were used to approximate this factor. For those counties in which data were available for each of the years 2003-2006, the number of workers reported in the lowest employment month in a year was subtracted from the number of workers reported in the highest employment month in that year to approximate the number of temporary workers (assuming the lowest month represented year-around employees and the highest month represented peak employment). The several years of calculated "temporary worker" figures were averaged to estimate the final number of MSFWs per county.

The percent of temporary workers was then obtained by dividing the workers in each county's average highest month of employment by the calculated average number of "temporary" workers. Where direct county information was available, the resulting percentage factor was applied in that county. Where there was no county information, the statewide average (40.3 percent) was considered the percent of all workers who are temporary in nursery/greenhouse operations.

Dr. Ruter also indicated there was some turnover within nursery/greenhouse employment in larger operations. He gave one example of a nursery that needed to employ 1000 workers annually to fill 500 jobs, a 200 percent turnover. No list could be found of "large" nurseries to which this rule might be considered applicable. Instead, counties reporting over 500 acres of nursery/greenhouse operation were thought to have a "large" nursery operation. In consideration of the posibility of error from this approach, the turnover rate was dropped to 150 percent. The result increased the number of MSFWs employed in nursery/greenhouse operations in ten counties: Clarke, Fulton, Grady, Hart, Jasper, McDuffie, Meriwether, Morgan, Oconee and Walton. The turnover rate was also used for one additional county. In Toombs, as, compared to other counties, the percent of temporary workers was high (75 percent) as was the number of nursery/greenhouse acres (247).

Last, those counties with a calculated MSFW estimate under five and nursery/greenhouse acres under ten were considered to have smaller operations most probably not in need of assistance by temporary employees. Nursery/greenhouse workers were not reported for these counties (N = 33).

7. Food Processing

DFL factors used in "food processing" (post-harvest) estimates are noted in Table 2. The sources utilized for estimates of onion shed workers are specified in a separate section.

Two other methods were assessed for comparison to DFL-generated estimates. They included:

- The Directory of Canning, Freezing, Preserving Industries, 2002 (Edward E. Judge and Sons) to obtain a list of food processors for Georgia. This source lists businesses by the old industry coding system, Standard Industrial Classification (SIC), providing information on location and a range for number of employees. To be used in making estimates, the percent of these workers who are "temporary" would need to be determined
- Available ES 202 county data on temporary workers employed in SIC 3114 (fruit and vegetable preserving and specialty food manufacturing) were averaged to derive a factor. This was applied against the number of growers/packers/shippers noted in the 2008 Georgia Fruit and Vegetable Directory (Georgia Department of Agriculture, 2007) to develop county estimates. The same was done for temporary workers employed in SIC 115114 (postharvest crop activities). These two estimates were averaged

After assessment, the results from the DFL method were determined to be more accurate than the estimates obtained from the two methods noted above.

Early research conducted for the GA-MSFW EPS suggested hand labor was required at peanut buying points. However, further inquiries determined that all of these workers were engaged in operating machines or transport activities and thereby should be excluded from the GA-MSFW EPS estimates (McCovey, 2007).

The methods and sources described below were used to estimate workers involved in onion sheds. The results were averaged.

- Sherri Wilson, Director of Alien Certification at the Georgia Department of Labor estimated an average of 40 workers per onion shed. This figure was multiplied by the number of sheds, as noted on the Georgia "Registered Vidalia Onion Grower/Packer List for 2007" (Meyer, 2007)
- Dawson Morton, Georgia Legal Services, suggested 60 as the average number of onion shed workers. This figure was utilized in a method similar to the one above
- Reid Torrence estimated 30 to 35 workers can pack 250 acres worth of onions per day. County onion acres were divided by 250 and then multiplied by 32.5 workers (midpoint of the range)

8. Reforestation

Acreage information utilized in the four reforestation calculations was obtained from U.S. Department of Agriculture, Forest Service published and unpublished data. (*Tree Planting in the United States*, 1998; "Unpublished Data, Tree Planting Acres" 2005). Information from the five year period 1998-2003 was averaged. Two sets of calculations were made with the two approaches: DFL and "rule of thumb." Each calculation used a different set of factors.

The DFL estimates incorporated two sets of factors used for MSFW EPS studies in Mississippi, Maryland and Florida. Work hours were generally agreed to be eight per day, as reported by various forestry experts. The other two factors, hours for task and season length, came from different sources resulting in the two DFL estimates.

(1) *Number and Characteristics of Migrants in Mississippi* (Larson, 1992), presented tree planting DFL characteristics from field research discussion with knowledgeable experts. This source reported: 1.5 acres of seedlings planted per eight hour day or 5.33 hours/acre; 73 days peak season length, calculated at 13 weeks working an average six days/week minus five days during the season in which weather conditions would prohibit work.

(2) Conversation with Michael Economopoulos, South Eastern Forestry Contractors Association (1998), reported the following factor information: three acres planted per eight hour day or 2.67 hours/acre; 40 days season length, calculated at eight weeks for an average of five days/week.

The other approach similarly developed two estimates. It incorporated a general rule of thumb suggested by Monte Bell of the U.S. Forest Service in Oregon (2002) that suggested it generally takes one worker one day to replant one acre of land. Estimates were made using this formula by dividing the average number of acres by season length. The two different season lengths noted in the DFL

reforestation methods were applied to the "rule of thumb" formula, resulting in two estimates.

The resulting four calculations (two DFL and two rules of thumb) were averaged to derive the reforestation worker estimate used in the GA-MSFW EPS: 5,409.

A direct count of reforestation workers was provided by two other sources for Georgia:

- ES 202 Special Data Run for NAICS 1153 (Salandi, 2007)
- Requests for guest workers filed under the H2B program by employers seeking forestry workers or tree planters (Georgia Department of Labor, 2004-2006)

Each of these sources was felt to report only a proportion of the true population of reforestation workers, and in fact, both the ES 202 and H2B direct count numbers were lower than the estimate developed for the GA-MSFW EPS.

9. Pinestraw Gathering

Acreage information came from the Farm Gate Report (Boatright, 2007) which Dr. Moorhead verified did refer to acres harvested. The standard hours worked per day were used. The task hours figure was calculated from estimates made by three sources on the length of time it might take one worker to rake an acre of pinestraw (Casanova, 2008; Islar, 2008; Moorhead, 2008). Bales per acre (Durges and Edwards) and season length (Morton, 2007) were factors required to complete the equation.

Once the DFL calculation was made, it was reduced to include only 33 percent of all pinestraw harvesters, based on information received from Dawson Morton (Morton, 2008).

10. Duplication Rate

Client survey data collected by the Emory University Physician Assistant Program during their Migrant Clinics held from 2004-2006 (Himelick, "Patient Data") were used to develop a duplication rate. Although the question referred more to movement than actual number of "jobs" held, it was the only information that could be found specific to Georgia. The total number of respondents from which this information was obtained was 2,937.

Calculations were made to determine the average for all of those surveyed. The result: 1.5192, was used as the jobs/worker factor. This "duplication rate" was applied to field workers and those employed in food processing (post-harvest activity).

11. Sub-Groups

<u>Migrant/Seasonal</u>: Seven sources were found to report the migrant versus seasonal percent for MSFWs in Georgia. They included a variety of written documentation as well as client statistics (Migrant Education Program, 2005; Zang, 2001; Telamon, 2007; Winders, 1995; U.S. Department of Labor, NAWS, 2002; Brown, Migrant Health Programs, 2007).

The migrant percent reported ranged from 30 percent to 78 percent; seasonal range was from 28.6 percent to 70 percent. The average of all six estimates was used for the GA-MSFW EPS: 50.9 percent for migrants, 49.1 percent for seasonal farmworkers.

<u>Accompanied</u>: Five sources offered information on the percent of the MSFW work force that is accompanied as opposed to solo workers (traveling without family members). These sources included printed documents, client data and opinion offered by knowledgeable experts (Zang, 2001; Telamon, 2007; Himelick, "Patient Data," 2007; U.S. Department of Labor, National Agricultural Workers Survey, 2002; interview: Burnside and Rolison, 2007).

The range fell between 33.9 percent and 70.0 percent. No information was available for migrant and seasonal farmworkers separately. The results of these sources were averaged to determine 52.9 percent of all MSFWs were accompanied.

Farmworkers Per Household: No published source, client data or survey results could be found that reported the number of farmworkers per accompanied household. As a result, this factor was based on interviews with knowledgeable experts (2007 interviews with: Burnside and Rolison, Ramirez, Cruz, and Morton). Three of these four individuals said they felt there were an average of three farmworkers in accompanied MSFW households. The fourth individual gave a range between two and three persons per household. These four opinions were averaged, and the figure of 2.875 farmworkers per accompanied household was used for both migrants and seasonals.

Non-Farmworkers Per Household: Calculations for non-farmworkers per household begin with determination of household size (for accompanied workers). Seven sources provided such information (Himelick, "Patient Data," 2007; U.S. Department of Labor, NAWS, 2002; Zang, 2001; Burnside and Rolison, 2007 – interview and written response to questions; Wilson and Rodas interview, 2007 – opinion offered by two individuals). The results found a range from 3 to 5.87 person. The average of 4.7 persons was used for accompanied MSFW household size.

The number of farmworkers per accompanied household (noted above) was subtracted from the household size to calculate non-farmworkers. The results

showed 1.825 non-farmworkers per accompanied household. This factor was applied equally to migrant and seasonal farmworker households.

12. Children and Youth by Age Groups

"Children and youth," as defined in the GA-MSFW EPS are those ages infant through 19. Whether or not these individuals perform farm work does not matter for purposes of this calculation, and therefore, the group "non-farmworkers in MSFW households" and the group "children and youth" are not mutually exclusive.

Five sources had information on the number of children and youth per household. They included: Migrant Education Program, 2005; U.S. Department of Labor, National Agricultural Survey, 2002; Telamon, 2007; Burnside and Rolison interview, 2007; Wilson and Rodas interview, 2007). Three other individuals who were interviewed offered the opinion that there were fewer young children in recent years (Himelick, 2007; Ramirez, 2007; Cruz, 2007). The average of all information was 1.615 children per MSFW family.

This figure was multiplied by the number of migrant and number of seasonal farmworkers households to determine individuals in each group under 20 years of age. The results found 13,262 migrant and 12,793 seasonal children and youth.

Three sources provided a complete breakdown of percentage in age categories for MSFW children and youth from client/patient statistics (Migrant Education Program, 2005; Himelick, "Patient Data," 2007; Brown, Migrant Health Program, 2007). These were averaged and applied to both migrant and seasonal accompanied household members. The following summarizes the results.

- Under 1 = 1.4 percent
- Ages 1 to 4 = 16.9 percent
- Ages 5 to 12 = 35.6 percent
- Ages 13 to 14 = 8.5 percent
- Ages 15 to 18 = 26.6 percent
- Age 19 = 11.0 percent

Three reviewers commented on the number of children and youth estimated to be present statewide, as stated in the draft report. In particular, the low figures for those under age one for both migrant and seasonal farmworkers were questioned. The total for children and youth has been increased in the final report related to a rise in the overall MSFW estimates, but additional research was conducted to verify the information.

In examining the factors applied in the development of the estimate of children and youth, it was found that dividing the number of accompanied MSFWs by the rather large average number of farmworkers per household (2.875) resulted in fewer accompanied households. The only sources from which to derive this factor were knowledgeable individuals as no hard data for Georgia could be located. However, the estimates given by each source fell in a very narrow range. Additionally, examination of data from the NAWS for a five year average found a factor of 2.82 for the Southeast Region. In summary, this review found no reason to discount the 2.875 factor of farmworkers per household used in the GA-MSFW EPS.

Further research conducted after issuance of the draft report found an additional database which broke children and youth into the age groups used in the report. This provided a third source for averaging and concluded in slight adjustments to percentages in each age group.

The MSFW EPS overall estimate of children and youth was compared to Migrant Education Program figures and found to be acceptable in terms of the number served. No other program offered comprehensive data on the number of MSFW children and youth.

Babies Born Healthy program client data were examined as an indicator of MSFW children ages three and younger (Conner, 2008). This program provides prenatal care for women who are uninsured and cannot receive such assistance through another source. Program staff indicated many of those enrolled would be agricultural workers or attached to families in which a farmworker would be present (Hurst, 2008). Others might be employed in the poultry industry. The percent of clients who were Hispanic was also provided.

Data for program years 2005 to 2007 were obtained. Information was only available at the Health District level. These figures were both added and averaged, the latter procedure to derive a single number for consideration. Percent of Hispanic clients was averaged over the three year period.

Several criteria were applied at both the Health District and the county (counties composing each Health District) levels to help divide the Health Districts into three categories: primarily EPS study-related agriculture, primarily not EPS study-related agriculture, and not clear if EPS study-related agriculture. The criteria included:

- 1. Summary results for GA-MSFW EPS worker estimates for all of the counties within the Health District
- Presence in Health District of counties falling in the top 10 EPS MSFW worker estimates
- 3. Presence in Health District of counties that is one of the top 20 poultry producers (Boatright and McKissick, Farm Gate Report, 2007)
- 4. Health District reports an average of less than 80 percent Hispanic clients

Criteria one and two indicated a Health District more likely to have clients who would be considered within the MSFW EPS estimates. Criteria three and four described a Health District less likely to have clients who would be included in these estimates. Of the 18 Health Districts, five clearly appeared to have clients who would be included in MSFW EPS estimates, 10 seemed to not have such clients, and no conclusion could be reached for three Health Districts. Client figures for each of the probable and maybe Health Districts were added to compare with MSFW EPS estimates.

Assuming all of the clients served by the Babies Born Healthy program in the three-year period gave birth during this timeframe, it might be possible to develop a rough estimate of MSFW children ages less than one to age three. This would also require an assumption that all of these children were still with their mothers in Georgia. The EPS breakout for children and youth only offers estimates for those ages less than one to four, a figure not quite comparable.

Client three year numbers from the Health Districts which were most likely to represent GA-MSFW EPS workers totaled 4,161 possible children ages birth to three years. Another 2,846 infants and young children were counted in Health Districts possibly representative of GA-MSFW EPS workers. The MSFW EPS estimate of children up to age four is 4,768. A comparison of these two figures, considering all of the qualifiers noted above, does not definitely suggest that the MSFW EPS estimate of children age four or younger is inaccurate.

13. Final Estimates

The GA-MSFW EPS Final statewide estimate for MSFWs (workers only) is 87,677. the estimate for MSFWs and non-farmworkers is 117,119. These are broken down by county in Table 1.

TABLE 1

GEORGIA MSFW ENUMERATION PROFILES ESTIMATES

FINAL

FIELD AGRICULTURE, NURSERY/GREENHOUSE AND FOOD PROCESSING

				Non-	Non-	MSFW
	MSFW			Farmworkers	Farmworkers	Farmworkers
	Farmworker	Migrant	Seasonal	In Migrant	In Seasonal	And Non-
County	Estimates	Farmworkers	Farmworkers	Households	Households	Farmworkers
Appling	1,445	735	709	247	238	1,930
Atkinson	544	277	267	93	90	726
Bacon	1,729	880	849	295	285	2,309
Baker	177	90	87	30	29	236
Baldwin	18	9	9	3	3	24
Banks	26	13	13	4	4	34
Barrow	9	5	4	2	1	12
Bartow	20	10	10	3	3	27
Ben Hill	240	122	118	41	40	320
Berrien	1,099	559	539	188	181	1,468
Bibb	6	3	3	1	1	8
Bleckley	82	42	40	14	13	109
Brantley	184	93	90	31	30	245
Brooks	3,211	1,634	1,576	549	529	4,289
Bryan	22	11	11	4	4	30
Bulloch	1,009	513	495	172	166	1,348
Burke	223	114	110	38	37	298
Butts	37	19	18	6	6	50
Calhoun	153	/8	/5	26	25	204
Camden	/	3	3	1	1	9
Candler	709	361	348	121	117	947
Carroll	21	11	10	4	3	28
Catoosa	115	58	56	20	19	153
Charlton	13	6	6	Z		17
Chatham	/1	30	30	12	12	95
Chattandochee	50		0	10	10	
Charlooga	00 121	30	29	10	10	/0
Cherokee	131	102	04	22	22	173
Clarke	201	102	99		33 5	200
Clayton	20	14	14	5	5	50
Clayton	30 173	2/1	10 222	0 81	78	632
Cobb	473	15	232	5	70	30
Coffee	659	335	323		100	880
Colquitt	7 549	3 843	3 707	1 290	1 245	10 084
Columbia	29	<u> </u>	14	1,200	<u>1,245</u>	39
Cook	1 615	822	703		5 266	2 157
Coweta	687	350	337	117	113	917
Crawford	273	139	134	́Д7	45	.364
Crisp	1 050	534	516	179	173	1 403
Dade	-,,000 27	14	13	5	5	37
Dawson	58	29	28		10	77
Decatur	11.418	5.812	5.606	1.952	1.883	15.253

FIELD AGRICULTURE, NURSERY/GREENHOUSE AND FOOD PROCESSING - continued

				Non-	Non-	MSFW
	MSFW			Farmworkers	Farmworkers	Farmworkers
	Farmworker	Migrant	Seasonal	In Migrant	In Seasonal	And Non-
County	Estimates	Farmworkers	Farmworkers	Households	Households	Farmworkers
DeKalb	14	7	7	2	2	18
Dodge	812	413	398	139	134	1,084
Dooly	417	212	205	71	69	557
Dougherty	324	165	159	55	53	432
Douglas	36	18	18	6	6	48
Early	94	48	46	16	16	126
Echols	3,567	1,815	1,751	610	588	4,764
Effingham	67	34	33	11	11	90
Elbert	77	39	38	13	13	103
Emanuel	230	117	113	39	38	308
Evans	550	280	270	94	91	735
Fannin	98	50	48	17	16	130
Favette	217	111	107	37	36	290
Flovd	48	24	23	8	8	64
Forsvth	33	17	16	6	5	44
Franklin	29	15	14	5	5	39
Fulton	286	145	140	49	47	381
Gilmer	162	82	79	28	27	216
Glascock	3	2	1	1	0	4
Glvnn	8	4	4		1	11
Gordon	12				2	16
Grady	1 944	990	955			2 597
Greene	96	49	47	16	16	128
Gwinnett	60	31	30	10	10	
Habersham	185	94	91	32		248
Hall	137	70	67	23	23	183
Hancock	322	164	158	55	53	430
Haralson	83	42	41	14	14	100
Harris	222	113	109	38	37	296
Hart	121	62	59	21	20	161
Heard		02	0	 0	0	
Henry	70	 36	34			 Q3
Houston	118	00	58	20	20	158
Irwin	586	298	288	100		783
Jackson	8	4	4	1	1	11
Jasper	232	118	114	40		310
Jeff Davis		195	188		63	511
Jefferson	182	 93	90	31	30	244
lenkins	72	37	35	12	12	96
Johnson	83			12	14	111
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l amar	102	52	50	17	17	126
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FIELD AGRICULTURE, NURSERY/GREENHOUSE AND FOOD PROCESSING - continued

				Non-	Non-	MSFW
	MSFW			Farmworkers	Farmworkers	Farmworkers
	Farmworker	Migrant	Seasonal	In Migrant	In Seasonal	And Non-
County	Estimates	Farmworkers	Farmworkers	Households	Households	Farmworkers
Lumpkin	38	19	19	7	6	51
Macon	949	483	466	162	157	1,268
Madison	86	44	42	15	14	114
Marion	220	112	108	38	36	294
McDuffie	527	268	259	90	87	704
McIntosh	8	4	4	1	1	11
Meriwether	308	157	151	53	51	411
Miller	127	65	62	22	21	170
Mitchell	1,672	851	821	286	276	2,234
Monroe	63	32	31	11	10	84
Montgomery	294	149	144	50	48	392
Morgan	81	41	40	14	13	109
Murray	59	30	29	10	10	79
Muscogee	0	0	0	0	0	0
Newton	25	13	12	4	4	34
Oconee	156	79	76	27	26	208
Oalethorpe	6	3	3	1	1	8
Paulding	335	170	164	57	55	447
Peach	1.191	606	585	204	196	1.591
Pickens	65	33	32	11	11	87
Pierce	1.163	592	571	199	192	1.553
Pike	141	72	69	24	23	189
Polk	54	28	27		9	72
Pulaski	319	162	157	55	53	426
Putnam	58	29	28	10	9	77
Quitman	13	7	7	2	2	18
Rabun	537	273	264		88	717
Randolph	46	24	23		8	62
Richmond	131		64	22	22	174
Rockdale	102	52	50		17	136
Schlev	77			13	13	103
Screven	157	80	77	27	26	209
Seminole	877	446	430	150	145	1 171
Spalding	8	4	4	1	1	11
Stephens	42		20		7	56
Stewart	.32	16			5	43
Sumter	2 470	1 257	1 213	422	407	3 300
Talbot	61	.,_01	.,_10		10	82
Taliaferro	0	0	0			02
Tattnall	3 587	1 826	1 761	613	591	4 792
Tavlor	596	304	293	102	98	797
Telfair	468	238	230	80	77	625
Terrell		230 79	230 75	26	25	205
Thomas	725	70 371	7.5 261	126	101	20J QR2
Tift	2 800 2 800	1 0/5	1 877	653	620	5 106
Toombs	2 886	1,343	1,077	000 102	030 176	3,100
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Treutlen	105	20	27	55 A	30	260
Troup	47		23	8		62
r-			-0	0	0	52

FIELD AGRICULTURE, NURSERY/GREENHOUSE AND FOOD PROCESSING - continued

				Non-	Non-	MSFW
	MSFW			Farmworkers	Farmworkers	Farmworkers
	Farmworker	Migrant	Seasonal	In Migrant	In Seasonal	And Non-
County	Estimates	Farmworkers	Farmworkers	Households	Households	Farmworkers
Turner	798	406	392	136	132	1,067
Twiggs	22	11	11	4	4	30
Union	139	71	68	24	23	186
Upson	28	14	14	5	5	37
Walker	114	58	56	19	19	152
Walton	51	26	25	9	8	68
Ware	824	419	405	141	136	1,101
Warren	95	48	47	16	16	127
Washington	160	81	79	27	26	214
Wayne	1,416	721	695	242	233	1,891
Webster	159	81	78	27	26	213
Wheeler	610	310	299	104	101	814
White	116	59	57	20	19	154
Whitfield	16	8	8	3	3	21
Wilcox	1,117	568	548	191	184	1,492
Wilkes	12	6	6	2	2	16
Wilkinson	12	6	6	2	2	16
Worth	1,100	560	540	188	181	1,469
Total State	82,268	41,874	40,394	14,061	13,564	109,894
Reforestation						
Total State	5,409	2,753	2,656	925	892	7,225
Grand State Total	87,677	44,628	43,049	14,986	14,456	117,119

NOTE: County numbers have been rounded and, therefore, may not exactly add to totals.

CHILDREN AND YOUTH BY AGE GROUPS (STATEWIDE)

Age Groups	Migrant Percent	Number of Migrant Children And Youth	Seasonal Percent	Number of Seasonal Children And Youth
< 1	1.4%	186	1.4%	179
1-4	16.9%	2,241	16.9%	2,162
5-12	35.6%	4,721	35.6%	4,554
13-14	8.5%	1,127	8.5%	1,087
15-18	26.6%	3,528	26.6%	3,403
19	11.0%	1,459	11.0%	1,407
Total	100.0%	13,262	100.0%	12,793

NOTE: "Children and Youth" are defined as those under 20 years of age. Some may be farmworkers.

TABLE 2

GEORGIA DEMAND FOR LABOR FACTORS

<u>FINAL</u>

		Hours	Season	
Сгор	Task	Per Task	Length	Notes
Apples	harvest	89.82	20.71	
Asian Pears	harvest	89.82	20.71	
Banana Peppers	transplant	20	33.21	@ 20%
	harvest	127.5	29.29	
Bell Peppers	transplant	20	33.21	@ 20%
	harvest	127.5	29.29	
Blackberries	harvest	60	37.14	
Blueberries	harvest/pack	209.05	36.43	
Broccoli	harvest	75	14.93	
Cabbage	harvest	108.33	32.38	
Cantaloupe	harvest	59.22	21.43	
Carrots	pre-harvest	5.5	97.14	
	grade/pack	110	97.14	
Christmas Trees	harvest	31.7	36.79	
Collards	harvest	87.14	107.86	
Cotton	pre-harvest	2.25	105.71	
Cucumbers	harvest	62.96	22.14	
	grade/pack	44.42	22.14	
Eggplant	harvest	85	136.43	
551	grade/pack	110	136.43	
English Peas	pre-harvest	12	19.91	
Grapes	harvest	48.75	42.86	
Green Onions	harvest	293.3	46.55	
Hot Peppers	transplant	20	33.21	@ 20%
	harvest	127.5	29.29	
Irish Potatoes	pre-harvest	10.74	37.14	
	grade	40	37.14	
Kale	harvest	87.14	107.86	
Korean melons	harvest	59.22	21.43	
Korean squash	harvest	100.27	33.57	
Lettuce	harvest	87.14	107.86	
Lima Beans	pre-harvest	12	23.19	
	shell/pack	52.08	23.19	
mayhaws	harvest	mech	36.78	
misc veges	harvest	95.73	34.68	
Mustard	harvest	87.14	107.86	
Nectarines,Plums	harvest	42.31	66.00	
Okra	harvest	156.6	40.72	
Onions	plant	5	38.57	@ 33%
	harvest	80	25.00	
	2nd harvest	80	25.00	@ 20%
	grade/pack - shed work	not use I	DFL, see na	arrative for details

		Hours	Season			
Crop	Task	Per Task	Length	Notes		
other-unk	harvest	99.85	37.42			
Peaches	harvest	81.65	43.57			
Pecans	clean/dry	9.72	43.57			
Persimmons	harvest	90	30.00			
Pine Straw	rake	10.83	176.00	@ 33%		
Pole Beans	harvest/pack	53.33	23.57			
Pumpkin	harvest	27.33	37.86			
Snap Beans	harvest/pack	53.33	23.57			
Southern Peas	pre-harvest	12	19.91			
Greens, speciality	harvest	54.16	107.86			
Spinach	harvest	168.04	31.36			
Strawberries	harvest	519.25	42.86			
Sweet Corn	harvest/pack/crate	42.87 wkers/muletrain				
		712.5 acres/muletrain				
		(weet corn			
	2nd harvest/pack/crate	@ 20%, only work sweet corn				
Sweet Potatoes	harvest	70	59.29			
Tobacco	harvest/dry/store	60	25.71			
Tomato	transplant	100	27.14	@ 20%		
	harvest	333.33	21.43			
	2nd harvest	333.33	21.43	@ 30%		
	grade/pack	219.58	21.43			
Turnip Greens	harvest	87.14	107.86			
Turnip Roots	harvest	54.16	37.00			
Watermelon	transplant	13.33	37.86	@ 20%		
	harvest	90.83	44.29			
Winter Squash	harvest	100.27	33.57			
	wash/pack	36.77	33.57			
Yellow Squash	harvest	100.27	33.57			
	wash/pack	36.77	33.57			
Zucchini	harvest	133.33	33.57			
	wash/pack	50	33.57			

DEMAND FOR LABOR FACTORS - continued

Explanation of Table Columns

Task: The specific crop work activity for which demand-for-labor estimates were made.

- Hours Per Task: The hours required to perform the specified task on one acre of the crop.
- Season Length: The number of work days required to perform the specified crop task during peak season.

The last piece of the demand-for-labor equation is "work hours" - the average number of hours worked per day by an average worker during peak season of the specified crop and task. The study used 7.32 hours for every crop and task.

Notes: Indicates items relevant to the calculations. Example: for various peppers it is noted that the calculation for transplant hand labor was 20% of the total. This means that only 20% of the work was conducted by hand.



³²

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