Farmworkers in Southwest Florida

Final Report

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Outline

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I. Introduction and Study Objectives

The citrus and vegetable industries of southwest Florida have long depended upon a sizable number of seasonal farmworkers to harvest and perform various field tasks. Seasonal farmworkers in southwest Florida are responsible for harvesting almost 180,000 acres of citrus trees and more than 31,000 acres of fresh vegetable crops. In addition, they perform several pre-harvest field tasks including transplanting, tying, staking and pruning. A shortage of seasonal farmworkers would seriously crimp economic viability of the citrus and fresh vegetable industries in southwest Florida.

Seasonal farmworkers have been regarded as an impoverished socio-economic class and have been at the center of many public debates over issues of "social justice." With minimal formal education and low income levels, many farmworkers reside in housing units which most Americans would deem as sub-standard. For a number of years, farm labor advocacy groups have been at odds with some agricultural growers over what they perceive as unfair labor hiring practices. Further complicating the seasonal farmworker picture is its historical migratory work patterns and an increasing demographic shift toward foreign-born workers, many of whom work in U.S. agriculture without proper authorization from the Immigration and Naturalization Service (INS).

Community leaders, both in and out of agriculture, are concerned about "social justice" issues, including general working conditions, reasonable housing standards, and access to public health and educational services. Developing reliable statistics that describe the number and demographic characteristics of seasonal farmworkers is the first step toward drafting appropriate and reasonable plans that meet agricultural and broader community concerns.

A number of attempts have been made to enumerate the farmworker population. The rate of worker turnover and the transient nature of seasonal farmworkers have made it difficult to develop accurate and consistent estimates of farmworker numbers. In 1988, the Florida Institute of Government and the Center for Environmental and Urban Problems prepared a study that estimated the number of farmworker in the state to be 104,000 (FAU). Dependents and spouses accompanying farmworkers were not included in this estimate. Two years later, the Atlas of State Profiles included dependents of farmworkers and estimated Florida's farmworker population to be in excess of 435,000 people. Of that total, 183,000 people were classified as the migrant farmworker population. In 1993, the Migrant Enumeration Project (Larson and Plaxcencia) stated that Florida's migrant farmworker population was more than 238,000 people including dependents. Finally, in 1997, the Shimberg Center for Affordable Housing published 139,000 as Florida's migrant farmworker population which included both farmworkers and their dependents (Smith).

Farmworker estimates for southwest Florida have been equally variable. The 1988 Florida Institute of Government study estimated 8,000 farmworkers (no dependents) in southwest Florida (FAU). The

study, *Farmworkers in Lee County*, cited job service statistics for the 1992/93 season indicating 11,600 farmworkers in Collier, Lee and Hendry Counties (Spikowski). The Atlas of State Profiles and the Shimberg Center analysis included dependents in their estimates of farmworker populations in southwest Florida. The Atlas reported a total farmworker population in southwest Florida of almost 54,000, of which, almost 25,000 were migrant farmworkers and their accompanying dependents. The Shimberg estimate placed the regional migrant farmworker population alone to be slightly more than 31,000 people.

The lack of consensus among the previous studies, particularly over the number of farmworkers in southwest Florida, pushed community leaders to call for another study effort that simply focused on the southwest Florida farmworker population. A long term goal among community leaders in southwest Florida is to improve the quality and quantity of farmworker housing. A reliable statistical description of the farmworker population could help draft future housing plans and guide the delivery of health, educational, and other public services.

This paper reports the findings of that study effort. The study objectives were to collect data on the size and demographic features of the seasonal farmworker population in southwest Florida. Unlike the previous studies, this effort attempts to base farmworker population estimates more closely around the agricultural production activities.

Funding support for this project was received from both public and private entities. Public support was provided by the Florida Department of Community Affairs, and the county commissioners of Charlotte, Collier, Hendry and Lee Counties. Private support was provided by the Gulf Citrus Growers' Association and the Redlands Christian Migrant Association. The broad base of support that this project received reflects the broad community interest to find reasonable solutions that would improve the overall welfare of farmworkers.

The next section of this report describes agricultural production in southwest Florida and presents some expectations of future developments. Section 3 develops estimates of the number of farmworkers in southwest Florida. Both full-time and seasonal workers are considered. Section 4 presents demographic data of seasonal farmworkers. Demographic data were collected on age, gender and ethnic origin of seasonal workers. Additional data were further developed to describe seasonal farmworker households including the number of adults, the number and ages of children that are living in the household, and employment of household members. Section 5 combines the study results with other data sources to develop estimates of the farmworker population in southwest Florida, including estimates of the migrant farmworker population. Farmworker populations are estimated by southwest Florida county. Section 6 concludes with a summary and conclusions.

II: Agricultural Production in Southwest Florida

The number of agricultural workers in an area is dictated largely by the extent of agricultural activity in the area. Thus, knowing the extent to which that activity may change in the near future provides a good basis for projecting the likely changes in agricultural employment and needs for housing and other public services. This section of the report establishes the extent of agricultural activity in southwest Florida, providing a basis for estimating the number of workers in the area presently and likely to be there in the next few years.

Agriculture is an important component to the regional economy of southwest Florida. For the purposes of this study, southwest Florida is defined to include Charlotte, Collier, Glades, Hendry and Lee Counties. The region has significant agricultural resources which are devoted to citrus, vegetables, sugar cane, ornamental nursery crops and cattle production. Over the past ten years, the economic importance of agriculture in southwest Florida has grown, both in its contribution to the region's economy and in its relative importance within Florida agriculture.

Agriculture is an "export" industry -- producing and selling products out of the region while channeling income and employment into the region. Five percent of total earnings and nine percent of employment within the southwest Florida region are directly connected to agricultural operations (Mulkey et.al). Indirect economic impacts from agricultural production are estimated to be between 60 and 70 cents per dollar of sales outside the region (Mulkey et.al). That is, for every dollar of agricultural product sold outside the region, another 60 to 70 cents of economic activity are generated through support industries and services within the region. Agriculture contributes almost one-billion dollars of sales revenue to the southwest Florida economy. When indirect economic impacts are included, agricultural enterprises help sustain more than $1.5 billion of economic activity in southwest Florida (Mulkey et.al).

During the 1995/96 season, farm sales totaled more than $880 million despite below average citrus and tomato prices. Table 1 shows the distribution of agricultural sales among the major commodities. Vegetables account for 45% of total agricultural marketings. Sales of citrus crops make up 28% of total sales. Sugar cane, ornamental nursery crops and cattle sales collectively contribute 27%. The two single crops that provide the best indicator of agricultural activity in southwest Florida are oranges and tomatoes. Together, they account for 43% of all crop sales.

Table 2 describes the 1995/96 planted acreage by major commodities for each southwest Florida county. Overall, 40% of the land area in southwest Florida is dedicated to agriculture. Agricultural land is especially important in Glades and Hendry Counties, where farmland represents more than 70 percent of county area. Collectively, citrus, vegetables, sugar cane and nursery crops comprise only 23% of the 1.4 million acres of harvested cropland in southwest Florida. However, these are high valued crops. Citrus and sugar cane generate crop sales of more than $1,100 per acre. Vegetable acreage averages more than $8,600 of sales per acre and one acre of nursery crops generates more than $22,000 of farm sales. Cow-calf operations utilize a significant amount of land. More than one-million acres support 164,000 head of brood cows. For the most part, cattle

Table 1
Southwest Florida Agricultural Acreage, Production, Average Price and Sales Value for 1995/96 Season

Crop		SW Fla Harvested Acres	units	Production (1,000 units)	Price ($/unit)	Sales ($1,000)
Citrus	Oranges	150,540	90# box	45,185	$4.80	$216,888
	grapefruit	19,360	85# box	7,735	$2.15	$16,630
	specialty	9,193	95# box	1,317	$7.69	$10,130
	Total	**179,093**				**$243,648**
Vegetable	tomatoes	18,000	25# ctn	20,889	$7.66	$160,010
	b.peppers	8,350	bu	7,532	$10.00	$75,320
	beans	2,300	bu	5,400	$15.73	$84,942
	squash	2,200	bu	693	$13.54	$9,383
	cucumber	2,650	bu	1,419	$17.00	$24,123
	watermelon	8,500	cwt	2,585	$10.20	$26,367
	potatoes	4,200	cwt	741	$23.90	$17,710
	Total	**46,200**				**$397,855**
Sugar cane		**89,000**	**ton**	**3,097**	**$31.60**	**$97,890**
Pasture (acres) **Livestock Marketings** **SW Florida Beef cows**		**1,072,500** **1/** **164,000 head**	**cwt**	**599,760**	**$62.00**	**$37,185**
Nursery/ornamental		**4,773**		**-**	**-**	**$108,000**
Agricultural acreage 1995/96		**1,391,566**				**$884,578**

Source: Florida Agricultural Statistic Service, Vegetable Summary, Citrus Summary, Field Crops Summary, and Livestock Summary.

1/ Assumptions behind livestock marketing total:

a) total Florida cattle marketings were 4,760,000 cwt;
b) Southwest Florida represents 12.6% of state total;
c) 23% of marketings were cull cows @ $35.40 per cwt;
d) 77% of marketings were calves @ $70.00 per cwt.

Table 2 1995/96 Agricultural Acreage in Southwest Florida by County							
Crop		**SW Fla Harvested Acres**	**Charlotte**	**Collier**	**Glades**	**Hendry**	**Lee**
Citrus	Oranges	150,540	16,256	31,172	8,631	84,464	10,017
	grapefruit	19,360	3,498	4,086	390	10,148	1,238
	specialty	9,193	1,429	1,325	381	5,158	900
	Total	**179,093**	**21,183**	**36,583**	**9,402**	**99,770**	**12,155**
Vegetable	tomatoes	18,000	700	10,400	300	4,125	2,475
	b.peppers	8,350	100	3,100	100	4,400	650
	beans	2,300	0	1,900	0	400	0
	squash	2,200	100	650	100	200	1,150
	cucumber	2,650	50	700	50	1,350	500
	watermelon	8,500	1,200	2,500	500	3,200	1,100
	potatoes	4,200	300	2,500	0	1,100	300
	Total	**46,200**	**2,350**	**21,750**	**1,200**	**14,775**	**6,125**
Sugar cane (ac)		**89,000**	**0**	**0**	**19,000**	**70,000**	**0**
Pasture (ac)		**1,072,500**	**158,500**	**145,000**	**325,000**	**337,000**	**107,000**
Nursery/ornamental (ac)		**4,773**	**600**	**1,530**	**143**	**1,200**	**1,300**
Agricultural Acreage 1995/96		**1,391,566**	**182,633**	**204,863**	**354,745**	**522,745**	**126,580**
Land Area (ac)		3,488,640	444,160	1,296,640	495,360	737,920	514,560
Land in Farms (%)		**40%**	**42%**	**16%**	**72%**	**71%**	**25%**

Source: Florida Agricultural Statistic Service, Vegetable Summary, Citrus Summary, Field Crops Summary, and Livestock Summary.

enterprises are low intensity operations. The animals provide largely for their own nutrition by grazing over vast areas of native range and improved pastures. Cattle provide an important source of revenue ($35 per acre, Table 1)) on land that is unsuitable for other commercial activities.

Citrus production

Severe freezes in the mid and late 1980's destroyed large amounts of citrus acreage in central Florida. Growers responded by replanting in southwest Florida acreage lost in other regions. While southwest Florida flatwood soils pose difficult water management challenges, growers gambled that the reduced costs of fewer expected freezes would more than offset the additional planting and management costs. In 1986, southwest Florida accounted for less than 12% of the Florida citrus acreage. By 1996, the importance of southwest Florida has grown to more than 20% of the state's citrus industry. Within southwest Florida, Hendry County ranks first with almost 100,000 acres of citrus. Collier, Charlotte, Lee and Glades Counties follow in descending order of planted acreage (Table 3).

Evidence suggests that the rate of new planting has slowed. Between 1994-96, citrus acreage in southwest Florida grew only 1.4% as compared to a 12.3% rate of expansion between 1992-94 (Table 3). Despite a decrease in the rate of new planting, overall citrus production in southwest Florida is expected to increase. Over the next ten years, citrus production has been projected to increase by 30% as young trees reach their full bearing potential (Table 4). Current production is between 60 and 62 million boxes. Barring freezes and other unexpected tree loss events, citrus production in southwest Florida is expected to exceed 80 million boxes by the year 2005.

Table 3
Southwest Florida Citrus Acreage,
1986 - 1996

Year	Florida	Southwest Florida	% SWFla	Acreage by County				
				Charlotte	Collier	Glades	Hendry	Lee
1986	624,492	72,480	11.6%	8,759	10,063	6,076	40,269	7,313
1988	697,929	87,842	12.6%	9,345	17,309	6,235	54,953	8,247
1990	732,767	126,252	17.2%	11,718	23,565	7,523	73,754	9,692
1992	786,882	157,239	20.0%	15,981	34,167	9,136	87,396	10,559
1994	853,742	176,641	20.7%	19,995	36,534	9,270	98,604	12,238
1996	857,861	179,093	20.9%	21,183	36,583	9,402	99,770	12,155
% change 1992-94		12.3%		25.1%	6.9%	1.5%	12.8%	15.9%
% change 1994-96		1.4%		5.9%	0.1%	1.4%	1.2%	-0.7%

Source: Florida Agricultural Statistic Service, Annual Citrus Summary, 1986 - 1996.

Growers are concerned over the current "soft" market conditions. Record crops in Florida and Brazil over the past two years, coupled with only moderate demand growth, have dampened on-tree price expectations. Between 1990 and 1996, the average on-tree price of oranges fell from $5.89 per box to $4.63 per box (FASS).

The Florida grapefruit industry has been in the economic doldrums for the past four years, as growers are caught in an economic vice of abundant production and flat consumer demand. Grapefruit boxes sold for an average of $6.62 in 1992 (FASS). During 1996, average grapefruit prices fell to less than $2.00 per box (FASS). Fortunately, grapefruit in southwest Florida accounts for less than 12% of the total citrus acreage and most of the harvested grapefruit enters a favorable early season fresh fruit market.

Table 4
Southwest Florida Citrus Production,
Historical and Projections, 1986 - 2010

Season	Southwest Florida	Charlotte	Collier	Glades	Hendry	Lee
Historical (1,000 boxes) [1/]						
1986-87	22,735	2,305	3,386	1,306	13,482	2,256
1988-89	24,121	2,548	3,358	1,790	14,539	1,886
1990-91	39,234	3,647	6,436	2,427	23,520	3,204
1992-93	46,628	3,896	7,955	2,859	28,509	3,409
1994-95	53,798	4,784	10,963	3,077	31,318	3,656
1996-97	60,869	6,177	12,402	3,616	34,931	3,743
Projection (1,000 boxes) [2/]						
2001-02	77,800	9,500	16,100	4,300	42,700	5,200
2005-06	81,300	9,800	16,700	4,600	44,800	5,400
2009-10	87,800	10,200	18,300	4,800	48,700	5,700

Sources:
1/ Florida Agricultural Statistic Service (FASS), Annual Citrus Summary, 1986-1996.
2/ Projections provided by Dr. Mark Brown, Economist, Florida Department of Citrus.

Tomato/Vegetable Production

Much of the attention has focused on the tomato industry, which in southwest Florida accounts for 45% of total vegetable acreage. In southwest Florida vegetable acreage has decreased by more than 30% over the past five years (Table 5). Tomato acreage alone has fallen by almost 32% since the 1993-94 season when southwest Florida growers planted 21,600 acres. The industry contraction coincided with the implementation of the North American Free Trade Agreement (NAFTA). Mexican competition and general fragmentation of the tomato market have combined to decrease Florida's share of the fresh winter tomato market.

Mexican produce imports have always competed with Florida produce in the winter fresh vegetable market. However, in recent years, Mexican growers have aggressively adopted new technologies which have allowed them to significantly lower their unit production costs. Further, Mexican growers capitalized on peso devaluations, which increased their financial incentive to export tomatoes and other fresh vegetables into the United States. Finally, Mexican tomato growers have promoted varieties labeled as "vine-ripe." These varieties have achieved broad market appeal among consumers in the United States.

Table 5
Harvested Acreage of Selected Vegetable Crops in Southwest Florida

Season	Total (ac)	Tomatoes	Bell Pepper	Squash	Cucumber	Watermelon
1986-87	37,800	15,400	7,200	2,350	5,350	7,500
1992-93	44,150	19,850	8,950	2,400	3,950	9,000
1993-94	45,625	21,600	8,500	3,700	1,925	9,900
1994-95	41,725	19,000	8,100	3,600	3,125	7,900
1995-96	39,700	18,000	8,350	2,200	2,650	8,500
1996-97	31,700	14,700	6,800	1,200	2,000	7,000
% change 1993-1996	-30.5%	-31.9%	-20.0%	-67.6%	-3.9%	-29.3%
% change 1986-1996	-16.1%	-4.5%	-5.6%	-48.9%	-62.6%	-6.7%

Source: Florida Agricultural Statistic Service, Vegetable Summary 1996-97

Table 6
Comparison of Vegetable Acreage in Southwest Florida with State Totals, 1986 and 1996

	1996-97			1986-87		
	FL State	**SWFla**	**% SWFla**	**FL State**	**SWFla**	**% SWFla**
Tomato	37,300	14,700	39.4%	53,300	15,400	28.9%
Bell Pepper	19,000	6,800	35.8%	18,500	7,200	38.9%
Squash	8,500	1,200	14.1%	15,200	2,350	15.5%
Cucumber	9,100	2,000	22.0%	16,100	5,350	33.2%
Watermelon	30,000	7,000	23.3%	46,100	7,500	16.3%
Total	**103,900**	**31,700**	***30.5%***	**149,200**	**37,800**	***25.3%***

Source: Florida Agricultural Statistic Service, Vegetable Summary 1996-97

At one time, Florida mature-green tomato varieties dominated winter grocery shelves in northeastern United States. The mature-green continues to be the main stay of the Florida tomato industry. These are high yielding varieties with good extended shelf life characteristics. However, the introduction of vine-ripe varieties, with similar shelf life qualities, has fragmented the winter tomato market. In addition, cluster and hot-house tomatoes have expanded the choices available to the consuming public and further reduced the retail shelf space once occupied by Florida tomatoes.

While the vegetable industry in southwest Florida faces critical challenges, it is difficult to predict the future size and scope of the industry. Despite the industry's contraction, it is premature to forecast its general demise. Tables 5 and 6 suggest a historical perspective tempers some of the current general pessimism. To some extent , vegetable acreage in southwest Florida has been cyclical and the recent decline in vegetable acreage is not as great if compared to 1986-87 levels (Table 5). Further, acreage statistics indicate that the relative importance of the southwest Florida vegetable industry has been increasing (Table 6). Urbanization of Dade and Palm Beach Counties has forced some agricultural operations to relocate to southwest Florida.

Volatility, both with respect to price and production, is a key feature within the vegetable industry. Adverse weather in one production region, quickly impacts the market and could bring favorable price conditions to unaffected regions. Such conditions took place during the 1997/98 growing season when El Nino induced weather hampered Mexican vegetable production and growers in southwest Florida enjoyed profitable market prices for most of the growing period.

Finally, one must never underestimate the ingenuity of agricultural producers. The remaining growers in southwest Florida are highly sophisticated and are pursuing yield enhancing technologies. As an

organization, they secured a trade agreement with Mexico in 1996 that established a $5.17 floor price of imported tomatoes. If, in fact, the mature-green tomato has lost some market appeal, growers will experiment with different tomato and vegetable varieties. Overall, market fragmentation could offer new niche market opportunities as growers respond to meet consumers tastes and preferences.

III: Counting Farmworkers in Southwest Florida

A primary objective of this study was to estimate the number of farmworkers in southwest Florida. This study adopted an indirect approach to develop farmworker counts using data sources such as crop acreage and worker productivity estimates. A direct approach would rely on a census of farmworkers. Previous attempts at conducting a census of seasonal farmworkers have proved inaccurate because a large number of seasonal farmworkers migrate among production regions and therefore do not maintain permanent residencies.

Within many public agencies, farmworkers are separated into "seasonal" and "migrant" categories on the basis of their residency status. In this context, a seasonal farmworker resides in one location year-round while a migrant farmworker changes residences at least once during the year. In this report, the term "seasonal farmworker" is used slightly differently. A seasonal farmworker is defined as an employment category. That is, someone who is employed on an as needed or day-to-day basis. A migrant farmworker is considered to be a seasonal worker, but with the demographic distinction of changing residences. Section IV of this report summarizes how farmworkers answered questions regarding whether they were migrant farmworkers or not.

By definition, a farmworker is employed doing field activities related to the production and harvest of an agricultural commodity. Therefore, the numerical counts estimated in this study do not include workers in packing houses and processing plants. Estimates of farmworkers are developed for both full-time and seasonal workers. Full-time, or permanent workers, occupy year round positions and include tractor drivers, equipment maintenance personnel, farm managers, and office support staff. Seasonal farmworkers are important to carry out a number of field tasks. Of particular importance is harvesting. Citrus and vegetable industries in southwest Florida rely on seasonal workers to hand pick fruit and vegetables. Vegetable growers utilize seasonal workers throughout the production season to transplant, stake, tie and prune plants. At one time, sugar cane was hand cut by seasonal farmworkers. However, since 1993 the sugar industry in south Florida has converted completely to mechanical harvesting. Sugar cane growers still depend on seasonal labor to annually replant as much as 30% of their acreage (Shine).

Crop acreage is the basis for estimating the number of full-time farmworkers per commodity. Farm payroll records provide accurate counts of full-time workers. By grouping employer records by crop, a ratio of acres per worker is calculated by dividing crop acreage by total number of full-time employees. Applying this acre-worker ratio to the crop acreage in southwest Florida provides an industry level estimate of full-time employment.

Accurate estimates of seasonal farmworker numbers cannot be developed solely through employer payroll records and crop acreage. Seasonal farmworkers make up a "casual" labor force. That is, workers decide on a daily basis when and to whom they sell their labor services. One person may work six days a week, another only two. One person may work for the same farm year after year, another person may switch employers weekly or even daily. While total crop acreage may provide an initial basis to estimate farmworker numbers, a more accurate accounting will depend on knowing

the daily volume or acreage of specific work tasks, the productivity of an average worker by task, and an estimate of an average worker's work week hours.

Two survey efforts were conducted to estimate the number of full-time and seasonal farmworkers in southwest Florida. The first effort took place during March of 1997. Data from this survey provided estimates of full-time farmworkers, and to some extent the demand for seasonal farmworkers. The second survey effort commenced January 1998. This survey collected data on worker productivity and seasonal farmworker demographics.

A. Southwest Florida Agricultural Labor Survey - March 1997

Attachment I (page 44) is a copy of the survey which was distributed to agricultural landowners in southwest Florida during March 1997. The first part of the survey clarified whether the landowner made the relevant labor employment decisions. If not, the landowner was asked to forward the survey or provide the name of the individual or company who managed the property and made employment decisions. The second part of the survey asked for the total number of employees on hand as of March 12, 1997. The 12th day was chosen as a matter of employer convenience, since this is the same monthly reference day used by other statistical agencies to collect labor market information. The employer was asked to separate total employment into permanent and seasonal categories. Seasonal workers hired through independent contractors were listed separately. If the landowner/employer did not know the exact number of contracted workers, they were asked to provide the names of contractors used on the reference day. Finally, the third part of the survey asked for a generic description of the agricultural operation(s) including commodities grown and their approximate acreage.

A mailing list of 767 agricultural landowners was compiled from address records of the five county property appraisers' offices in southwest Florida. The first mailing took place during early March. A follow-up mailing occurred one month later. 103 individuals from the original mailing list were identified either as out-of-business or as investors who did not contribute to the employment decisions. Of the remaining 664 names, 171 (25.8%) responded with employment information. Table 7 summarizes the response rate and the commodity acreage represented by the survey respondents. Based on 1995/96 acreage reported in Table 1, survey employment responses represented 76% of the citrus acreage, 36% of the vegetable acreage and 70% of the sugar cane acreage in southwest Florida. Survey data were used to develop per acre estimates of permanent positions in citrus, vegetable, sugar cane, and ornamental nursery operations.

The data were separated by commodity groups and were further sorted by respondents who reported labor information on only one commodity versus those operations which grew multiple crops. Table 8 presents data from those respondents who reported labor data on a single commodity. "Acres per full-time worker" was calculated from the reported data and represented the ratio of the reported acres to number of full-time workers. For example, 82 survey respondents reported that they collectively hired 792 full-time workers for 97,532 acres of citrus. This translates to 123 acres per full-time worker. In Table 9, this ratio is utilized to generate the estimate of 1,456 full-time workers

who are employed by the southwest Florida citrus industry. Similar acreage-to-worker ratios were calculated for vegetable, sugar cane and ornamental nurseries. Insufficient data were collected from cattle operations to determine a comparable acre-worker ratio. However, an estimate of the total

Table 7
Summary of the Southwest Florida Agricultural Labor Survey
March 1997

Commodity	Number of Growers [1/]	Acreage	Proportion of 1995/96 Acreage
Citrus	113	134,811	76%
Vegetables	23	17,623	36%
Sugar cane	14	62,356	70%
Pasture	24	142,839	13%
Ornamental Nurseries	25	886	20%

1/ Total respondents were 171 out of 664 potential respondents (25.8%). Some respondents grew multiple commodities.

Table 8
Full-time and seasonal agricultural labor requirements by commodity
March 1997 Survey

	1997 Single crop respondents	Responding acreage	Full-time workers	Seasonal workers	Acres per full-time worker	Acres per seasonal worker
citrus	82	97,532	792	[1/]	123	--
vegetable	14	10,864	173	861	63	13
sugar cane	8	7,812	27	[2/]	289	--
nursery	22	759	815	88	2.35 [3/]	8.6
cattle	6	4,400	8	--	[4/]	--

1/ Limited information was available from citrus growers on numbers of seasonal farmworkers because they generally hire harvesting labor through labor contractors.
2/ At the time of the survey (March), demand for seasonal workers by sugar cane growers was low.
3/ Ratio reflects a mixture of tree nurseries and bedding plant nurseries.
4/ Worker productivity measures for cattle are a function of the number of animals handled rather than the acreage of pasture. Survey respondents did not provide cattle numbers.

number of full-time workers on cattle operations data was estimated from an assumption that one full-time person was required per 750 brood cows, a minimum size herd to be commercially viable.

A limited amount of information on seasonal farmworkers was collected from the March 1997 survey. Citrus harvest is coordinated primarily through specialized labor contracting companies. In general, citrus harvesters are considered employees of the labor contractor and not of the grower. As a result, there was little information from the March survey to draw relationships between citrus acreage and numbers of seasonal farmworkers.

While vegetable and nursery producers utilize crew leaders and labor contractors to recruit workers, these growers typically maintain the payroll accounts, and therefore seasonal farmworkers are considered employees of the farm. Data from vegetable and nursery operations provided some evidence of seasonal farm labor requirements. On the reference day (March 12, 1997), one seasonal farmworker was employed for every 13 acres of vegetables. Similarly for nursery operations, one seasonal farmworker was employed for every 8.6 acres of nursery production. As previously stated, estimating the number of seasonal farmworkers based on acreage will not be accurate because they are hired on a daily basis to do specific tasks. Survey work in 1998 correlated farmworker numbers with farm tasks and estimates of worker productivity.

Table 9
Estimation of full-time agricultural labor requirements by commodity

	1995/96 Southwest Florida agricultural acreage [1/]	Acres per full-time worker [2/]	Number of full-time workers [3/]
citrus	179,093	123	1,456
vegetable	46,200	63	734
sugar cane	89,000	289	308
nursery	4,773	2.35	2,031
cattle pasture	1,072,500	na	218 [4/]
Estimated number of full-time agricultural workers in southwest Florida			4,747

1/ Florida Agricultural Statistic Service and Table 1.
2/ Based on March 1997 Southwest Florida Agricultural Labor Survey (see Table 8)
3/ Divide total acres by acres per worker.
4/ One full-time worker assumed per 750 head. Southwest Florida cow inventory - 164,000 head (Table 1).

Table 9 summarizes the estimated number of full-time positions by agricultural commodity in southwest Florida. More than 4,700 workers are employed full-time by citrus, vegetable, sugar cane, nursery, and cattle operations in southwest Florida. Not included in this estimate are workers employed by packing houses, processing plants, and fruit hauling companies.

B. Southwest Florida Seasonal Agricultural Labor Survey - January 1998

Multiple survey efforts were initiated during January1998. These efforts focused primarily on the citrus and vegetable industries and were designed to develop numerical estimates and demographic statistics of the seasonal farmworker population in southwest Florida. Both employers and farmworkers were interviewed. Employer surveys collected information on farmworker hours and production performance by field task. The first part of the worker survey collected information about job performance over two time periods -- the first week of January and the seven days prior to the survey date. Job questions included type of job done, hours worked, payment method and how much was accomplished during the hours worked. The second part of the worker survey asked demographic questions including residency status in southwest Florida and household characteristics. Attachment 2 presents the employer questionnaire and Attachment 3 presents the worker questionnaire. Section IV of this report summarizes the results of the demographic questions.

Employer and farmworker information was used to develop counts of seasonal farmworkers in citrus and tomatoes. The week of January 4 - 11, 1998 was chosen as the reference week to develop seasonal farmworker counts. While the first week of January did not represent peak vegetable production, the reference week did coincide with the peak harvest period of the early and mid season citrus crop. Specifically, the Florida Department of Labor chose January 6th as their reference day for the Early/Mid Season Citrus Prevailing Wage and Rate Survey (King).

Tables 10 and 11 present information relevant to the estimate of seasonal farmworkers employed in citrus harvesting operations on January 6th. Tables 12 and 13 develop similar information for seasonal farmworkers employed on tomato farms. Table 14 summarizes the seasonal farmworker counts.

Citrus

Table 10 summarizes the information used to estimate the daily volume of citrus harvested between January 4 - 11th in southwest Florida. The Citrus Administrative Committee reported state level weekly harvest volumes. This volume was allocated to southwest Florida by the acreage proportion of early/mid oranges, grapefruit and specialty trees. Only early/mid season orange varieties were counted because late season oranges (Valencias) were not being harvested during the first week of January. An estimate of daily harvest volume from southwest Florida was based on the assumptions that a weekly harvest volume was spread equally over six harvest days. Given the available statistics and stated assumptions, an estimated 376,000 boxes of citrus were harvested per day in southwest Florida between January 4 -11,1998.

Table 10
Estimate of daily citrus harvest volume between January 4-11, 1998 in southwest Florida

	State wide harvest Jan 4-11,1998 (boxes) [1/]	Southwest Florida production percentages [2/]	Estimate of citrus harvest in southwest Florida (boxes)
early/mid oranges	9,841,000	20.5%	2,017,000
grapefruit	1,383,000	12.0%	166,000
specialty	607,000	12.0%	73,000
Total citrus boxes harvested in southwest Florida, January 4-11,1998			2,256,000
Daily citrus harvest (boxes) [3/]			***376,000***

1/ Citrus Administrative Committee (Chadwick).

2/ Florida Agricultural Statistics Service, Annual Citrus Summary 1996-97. Production percentages based on bearing acres.

3/ There was assumed to be six harvest days per week and harvest volume was assumed to be equal to the average daily harvest.

Table 11
Number of citrus harvesters employed daily between January 4-11, 1998 in southwest Florida

Total number of workers sampled [1/]	**1,313 workers**
Total hours worked on January 6, 1998 [1/]	**11,060 hours**
Total boxes picked [1/]	**107,610 boxes**
Average daily productivity	**82 boxes / worker**
Estimated number of boxes harvested daily (Table 10)	**376,000 boxes**
Estimated number of citrus harvesters employed per day in southwest Florida between January 4-11, 1998	***4,585 workers***

1/ Data collected from citrus harvesting companies (February - March 1998).

Employer data were collected on more than 1,300 citrus harvesters (Table 11). Collectively, these workers picked 107,610 boxes over 11,060 hours. An average harvester worked 8.42 hours per day and harvested 9.73 boxes per hour. Consequently, the average worker picked 82 boxes per day during the first part of January. Dividing the estimated daily harvest volume (376,000 boxes) by the average daily worker productivity (82 boxes per day) provided an estimate that 4,585 workers were employed daily harvesting citrus during early January 1998.

Table 12
Southwest Florida tomato acreage by field task and estimated number of required farmworkers between January 4-11, 1998

Production Stage	Task	Southwest Florida tomato acreage inventory: 1/ Jan 4 -11, 1998	Average daily acreage 2/	Worker productivity rates 3/ ac / worker-day	Daily Number of farmworkers Jan. 4-11, 1998
pre-fruit	transplant	200	33	0.5	66
pre-fruit	stake	1,673	279	0.5	558
pre-fruit	1st prune	1,673	279	1.5	186
pre-fruit	1st tie	1,673	279	1.5	186
pre-fruit	2nd prune	1,200	200	1.5	133
pre-fruit	2nd tie	1,200	200	1.5	133
fruit set	3rd tie	957	160	2.0	80
pre-harvest	4th tie	1,407	235	2.0	118
Growing acreage		**5,437**		**Field workers**	**1,460**
1st harvest	1st pick	1,579	263	4/	
2nd harvest	2nd pick	2,913	486	4/	
3rd harvest	3rd pick	2,764	461	4/	
Harvest acreage		**7,256**		**Harvest workers**	**3,985**
complete	clean-up	421	70		
Total Acreage		**13,114**	**Tomato farmworkers 5/**		**5,445**

1/ Acreage based on FASS Tomato Report No.18 indicating tomato acreage inventory in southwest Florida as of January 10, 1998. A total of 3,073 acres were in "pre-fruit set" category.
2/ Daily acreage based on assumption of six day work week and total acres distributed equally across work days.
3/ Worker productivity rates based on conversations with several southwest Florida growers.
4/ See Table 13 for estimation of harvest workers.
5/ Daily number of seasonal farmworkers employed by southwest Florida tomato growers between January 4-11,1998.

Tomatoes

Table 12 summarizes the information used to estimate seasonal farmworkers employed by tomato growers between January 4- 11th . The Florida Agricultural Statistics Service (FASS) Report number 18 indicated that 13,114 acres of tomatoes were at various stages of production in southwest Florida during the week January 4-11,1998. The 3,073 acres in the "pre-fruit set" stage are further divided among transplanting, staking, first and second pruning and tying tasks. It is assumed that tomato farms employ field workers six days a week and that the weekly acreage was evenly distributed over the work days. Grower interviews provided data about worker productivity. Worker productivity rates are based on growers' estimates of the number of workers that were required to do various tasks. For example, 10 people transplanting should complete 5 acres per day, or one-half acre per person per day. Dividing the daily acreage by the worker productivity rate provides an estimate of the number of workers engaged in various field tasks on a daily basis.

Estimating the number of tomato harvesters is more complicated than estimating the number of citrus harvesters. First, there are no weekly statistics of what is field harvested. The Florida Tomato Committee reports "shipped" cartons per week, but this statistic represents fruit picked seven to ten days prior and does not include grading culls at the packing line and fruit that fails to mature properly during the coloring process. Second, unlike a citrus tree which is harvested once, tomato plants are picked multiple times. The number of harvest per plant depends on market conditions. Favorable market prices encourage multiple harvests.

Table 13
Estimated daily number of farmworkers harvesting tomatoes between January 4-11, 1998.

Harvest number	Daily acreage 1/	Yield 2/	Harvested cartons	Worker productivity 3/	Worker count
	ac	carton/ac	cartons	carton / worker-day	number
1st	263	980	257,740	115	2,241
2nd	486	280	136,080	115	1,183
3rd	461	140	64,540	115	561
Daily number of farmworkers harvesting tomatoes Jan. 4-11, 1998					**3,985**

1/ See Table 12.

2/ One acre of tomato assumed to produce 1,400 (25 pound) cartons. Distribution of yield assumed to be 70% harvested at 1st pick, 20% harvested at 2nd pick, and 10% harvested at 3rd pick.

3/ Based on southwest Florida employer surveys (1998). An average worker picks 15 (32 pound) buckets of mature green tomatoes per hour and harvests six hours per day. One bucket equals 1.28 cartons.

The estimate of tomato harvesters derived in this report relied on the University of Florida crop budgets and Florida Agricultural Statistics Service (FASS) which indicated 1,400 cartons per acre as an average total harvest volume of mature green tomatoes (Scott and Taylor). Further, the FASS weekly acreage report indicated at least three picks per plant. It was assumed that 70% of acreage yield came off at first pick, 20% at second pick and the final 10% at third pick.

Grower payroll records provided an estimate of typical productivity rates. An average tomato harvester picks 115 cartons (25 pounds per carton) over a six hour daily harvest period. Based on the information collected, no difference in productivity rate was observed between first, second and third picks. More data are needed to verify this conclusion because workers generally prefer to work in first-pick fields, suggesting that productivity rates are usually higher than second and third picks. As summarized in Table 13, almost 4,000 farmworkers per day were estimated to be harvesting tomatoes per day in southwest Florida between January 4-11, 1998.

An estimate of the total number of seasonal farmworkers in southwest Florida during the first part of January 1998 is presented in Table 14. Approximately 11,700 workers were employed daily between January 4-11th doing various field operations. An estimate of the number of "extra" workers is added to reflect farmworkers, who for whatever reason, were not employed on any given day. An estimate of these "extra" workers can be determined by dividing the total hours of a full-time equivalent position by the number of weekly hours per average farmworker. During the month of January, agricultural operations were employing workers six days per week. If a typical work day is eight hours, then one full-time equivalent (FTE) position is 48 hours per week. From worker surveys (Table 17), an average farmworker spends 35 hours per week in the field, supplying 75% of one FTE. Dividing the percentage FTE of an average farmworker into the average daily employment number (11,746), provides an estimate of the number of "extra" farmworkers available, but not employed on any given day.

In addition, the total count of farmworkers can be augmented by the number of crewleaders who organize work crews and act as field supervisors. The Florida Department of Labor and Employment Security maintains a crew leader registration list. Crew leaders must annually register with the Department and provide basic information about the size of their crew. These records indicate one crew leader per 28 workers (King). Consequently, 559 crew leaders are estimated to work with 15,661 workers. During the month of January, the number of seasonal farmworkers was estimated to be 16,220. This number represents just workers and does not include any family members who may be accompanying them. An estimate of the overall farmworker population is presented later in this report which includes family demographic information.

C. Discussion of farmworker counts and future trends in the numbers of farmworkers

In this report, the term "seasonal farmworker" refers to all workers who are employed on a day-to-day basis throughout the growing season. The 16,220 figure reported in Table 14 includes both workers who reside year-round in southwest Florida and workers who migrate into and out of the region. Whether someone is a "migrant farmworker" is a demographic feature.

Table 14
Estimate of the number of seasonal farmworkers in southwest Florida by commodity between January 4-11,1998

Commodity		Worker number
citrus harvesters	1/	4,585
tomato field workers	2/	1,460
tomato harvesters	2/	3,985
other vegetable field and harvest labor	3/	770
sugar cane field workers	4/	400
nursery workers	5/	546
cattle workers		0.00
Estimated number of seasonal farmworkers employed daily		11,746
Average FTE per seasonal agricultural worker	6/	0.75
Estimated number of extra workers	7/	3,915
Estimated number of seasonal agricultural field workers		15,661
Estimated number of crew leaders	8/	559
Estimated number of seasonal agricultural workers in southwest Florida, January 4-11,1998		***16,220***

1/ See Table 11. All seasonal farmworkers are employed as harvesters. All grove care work is assumed to be done by full-time workers.

2/ See Tables 12 and 13. Tomato acreage separated by activity and daily labor requirements estimated for each task.

3/ In addition to 13,114 acres in tomato production, another 10,000 acres were in vegetable production during the first week of January 1998 – bell pepper (6,800 acres), squash (1,200 acres) and cucumbers (2,000 acres). One seasonal farmworker is assumed to be employed for every 13 acres (Table 4).

4/ Estimate based on planting 500 acres of sugar cane per day through the first week in January.

5/ See Table 8. 8.6 acres of nursery crops per one seasonal farmworker.

6/ See Table 17. A typical seasonal farmworker is assumed to work 35 hours per week. Agricultural employers hire workers six days per week for an average of 8 hours per day. Therefore, a full-time position (FTE) equals 48 hours per week, implying that the typical worker works 75% of a full-time position (FTE).

7/ This is an estimate of the number of farmworkers not employed on any given day.

8/ Crew leader registration data maintained by the Florida Dept. of Labor and Employment Security indicate one crew leader per 28 workers (King).

The farmworker estimate of 16,220 in Table 14 attempts to reflect both the number of jobs and the number of workers available to occupy those jobs. The value 11,746 in Table 14 represents the number of jobs that were available on any given day during early January. A greater degree of confidence can be placed on this estimate because it can be "engineered" with observable data such as crop acreage, field tasks and measures of average worker productivity. On the other hand, estimating the number of farmworkers available depends on the number of people willing and able to work at the prevailing wage rate. To some extent, the 3,915 in Table 14 accounts for the additional number of people available for farmwork but not employed on any given day. The estimate of "extra" farmworkers was developed from weekly work schedules of sampled farmworkers and some strong assumptions that defined a full-time position during early January 1998 to be 48 hours per week. That is, agricultural employers hired seasonal workers six out of seven days and paid them for eight hours per day. It should be recognized, however, that this approach only places a lower bound on the total number of workers. Sampling bias in this procedure could underestimate the total number of workers available to do farmwork. It is likely that the majority of workers interviewed already work a full schedule and that those individuals who work fewer hours are under represented in the sample. Therefore, the average number of hours worked as reported in the survey would be greater than the true average of all farmworkers.

While the 16,220 estimate in Table 14 is above the job services statistics quoted in the study *Farmworkers in Lee County* (Spikowski), the number is lower than what estimates from previous studies would suggest (i.e. Atlas and the Shimberg Study). As mentioned previously, sampling bias could account for some of the discrepancy. At issue could be the definition of a farmworker. If someone arrives in Immokalee early November, harvests tomatoes for three weeks and then leaves for a construction job or a service industry job, should that person still be considered a farmworker? The fewer number of farmworkers estimated in this study may also suggest a contraction in the farm labor market pool. Some anecdotal evidence exists to suggest a declining number of seasonal farmworkers. During the 1997/98 growing season, farmworker housing complexes, such as Oakhaven Apartments and Farm Workers' Village in Immokalee reported vacancies or shortened waiting lists. Other providers of social services, such as the Immokalee Friendship House, experienced a decline in the demand for their services. These reports suggest that the supply of farmworkers in the Immokalee area has been declining. Further, growers reported tighter labor markets during the early fall and later spring as workers appeared to have arrived later and left earlier.

Increased border patrol and immigration enforcement activities have been cited as reasons for the noticeable reduction in the number of farmworkers in southwest Florida. Tighter immigration polices are expected to increase. At least 40% of the farm labor work force are working in southwest Florida without proper documentation, hence they are illegal (Gabbard). At the federal level, the Immigration and Naturalization Service and the Social Security Administration are working on joint programs to reduce the number of illegal workers. As the number of undocumented workers declines, growers and industry organizations are lobbying for guest worker programs that would legally bring in the needed workers from outside the United States.

Historically, when farmers have been faced with either labor shortages or rising labor costs, they mechanize. The sugar cane industry in south Florida has already converted to mechanical harvesting. Currently, an aggressive research and development program for mechanical harvesting is underway within the Florida Department of Citrus. Initial reports appear promising as the citrus industry anticipates at least 20 % of the state's crop will be mechanically harvested within the next five years (Brown). Wholesale adoption of processed citrus could reduce the demand for harvest labor by as much as 60% (Brown). Mechanically harvesting tomatoes and other fresh vegetables does not appear likely in the near future. More than twenty years ago, the University of Florida research efforts attempted to develop a mechanical harvesting system for fresh market tomatoes. The system was never proven to be commercially viable, and today the harvest of fresh tomatoes still depends on seasonal hand labor.

IV: Demographic information on seasonal farmworkers in southwest Florida

Between February and April 1998, more than 900 farmworkers were interviewed in southwest Florida. Attachment 3 presents the survey questionnaire used to solicit information on worker characteristics, household features and farm employment history. The purpose of the survey was to develop a more detailed demographic description of the seasonal farmworker population that could help address housing, education, public health and safety needs within the seasonal farmworker community. Further, gathering employment data about the type of farm work and typical work week length, directly contributes to estimating the number of farmworkers.

Statistically valid inferences depend on selecting a representative sample of the target population. Drawing a representative sample depends, in turn, on some definition of the population's size and composition. A dilemma faced by this study was the absence of clearly defined parameters describing the size and composition of the southwest Florida seasonal farmworker population. Prior studies have developed national and state demographic profiles of seasonal farmworkers. Other studies have developed descriptions of various segments of the regional farmworker population. But this is the first study to address the demographic make up of seasonal farmworkers solely in southwest Florida.

Multiple surveys were initiated with different sampling bases. The citrus and vegetable surveys interviewed samples of workers based on a random selection of employers. For the citrus survey, 295 workers were interviewed. These workers represented 16 crews hired among ten employers. For the vegetable survey, 197 workers were interviewed from six crews working on four farms. Separate surveys were initiated at five Redland Christian Migrant Association (RCMA) sites, thirteen permitted housing sites and at the Pantry Shelf, a worker staging area in Immokalee. Results from these surveys were used to compare with the information collected from the employer based surveys. Observing whether information converges or diverges across sampling groups could provide some insight as to how "representative" the information collected by individual surveys is to the whole seasonal farmworker population. Further, multiple sampling perspectives could provide information on which demographic characteristics are sensitive to the sampling scheme.

Worker, household and employment demographics of the farmworkers interviewed between February and April 1998 are summarized in Tables 15, 16 and 17, respectively. In each table, column headings identify the specific surveys initiated during the study. "Citrus"and "Vegetable" refer to the employer based surveys. "Pantry Shelf", "Housing Sites" and "RCMA" refer to the additional surveys that are described in the preceding paragraph.

Worker Demographics

Worker demographics include age, gender, ethnic origin and level of formal education. As shown in Table 15, the typical seasonal farmworker in southwest Florida is between 20 and 40 years old, male, of Mexican origin and has between five and six years of formal education. The RCMA survey indicates a higher percentage of female farmworkers than the other survey. However, the mission of RCMA is to provide day care and pre-school educational services. Consequently, one should expect a higher percentage of working mothers to utilize RCMA.

Household Demographics

Table 16 presents household demographic information. Household demographics separate farmworkers into four household categories -- living alone, living unattached but with companions, living as a family unit, and living with relatives. Household size, number of adults and children are summarized for each housing category. Most seasonal farmworkers live unattached with companions. The citrus and vegetable surveys indicate 90% of the seasonal farmworkers live with companions. These households have at least four adult farmworkers and children under the age of eighteen are not present.

The Citrus and Vegetable surveys indicate only between three and four percent of seasonal farmworkers live with families. The percentage of families represented in the RCMA, Pantry Shelf and Housing Site surveys is higher suggesting that the employer based surveys may not have represented an adequate number of families. While the employer based surveys might have missed a proportion of families, there is some evidence that the RCMA and housing site surveys over represented families. As previously mentioned, the RCMA's focus on children should attract a higher proportion of families who utilize their services. In the housing site survey, 79 interviews were conducted at Farmworker Village, Immokalee. Nearly 65% of the farmworkers interviewed in the Village were living with a family. Farmworker Village is a housing complex with more than 500 detached houses and offers family oriented amenities. There are two RCMA centers in the Village and an elementary school within walking distance of the main entrance. If the Farmworker Village responses were removed from the rest of the housing survey, the percentage of farmworkers living with families would drop to 23%.

Employment Demographics

Employment demographics describe farmwork experience in southwest Florida, tendencies to shift among agricultural crops within the season, and a worker's residency status in southwest Florida. In addition, employment demographics describe weekly hours of work and annual income from farm work. Table 17 summarizes employment demographic information. The typical seasonal farmworker has five years of farm experience in southwest Florida. A consensus among all surveys is that most workers do not shift among agricultural commodities during the season. The employer-based surveys show virtually no shifting among crops. The housing site and RCMA surveys indicate some limited movement among citrus, vegetable and nursery industries during the season.

A high percentage of seasonal farmworkers migrate into and out of southwest Florida. The surveys indicate that migrant farmworkers comprise between 75% and 90% of the seasonal agricultural work force. More than 60% of the migrant citrus workers arrive during October and 80% of them expected to depart southwest Florida during June. Vegetable workers tend to arrive in southwest Florida a month earlier than citrus workers. More than 50% of the migrant vegetable workers arrive in September. Almost all migrant vegetable workers expected to leave either in May or June.

Farmworkers were asked about their annual income and the percentage of income they earned from agriculture. The average of all responses was between $6,500 and $7,000 with no more than 12% of the people interviewed claiming income from non-farming activities. While the question asked for annual income, it is unclear whether all responses reflected a calender year of employment. During the first week in January, an average seasonal farmworker worked between 33 and 37 hours.

Except for workers interviewed in the vegetable survey, a similar range of weekly hours was reported for the seven days just prior to the interview date. If farmworkers maintain 35 hours per week of farm employment throughout the year, at minimum wage ($5.15 per hour) their annual income is more than $9,300 ($180 per week * 52 weeks). More clarification is needed to determine whether or not reported incomes reflect 50-52 weeks of employment and the extent to which farmworkers are underemployed.

Comparison of demographic results with other studies

Most of the demographic information collected in this study corroborates demographic information collected in previous studies (Polopolus et. al; Mines et.al). That is, most of the seasonal farmworkers are male, foreign born (typically from Mexico), migrate and live away from any family dependents. Data from the National Agricultural Worker Survey (NAWS) indicate that almost 20% of all farmworkers are new workers, annually. This suggests that a typical farmworker has between five and six years of experience, a result similar to what was found in the current study (see Table 17).

Results in Table 16, however, do not provide a clear picture as to the number of seasonal farmworkers living with families. The percentage of families ranged from three percent in the Citrus worker survey to 70 percent in the RCMA survey. The Housing Site survey indicated 33 percent of seasonal farmworkers live with families, a value that is closer to the Florida NAWS data which reports 38 percent of the farmworkers live with their families (Gabbard).

The Migrant Education Program provides additional data that sheds some insights as to the overall uncertainty with respect to the true farmworker counts and important demographic statistics such as the percent of workers who live with families. Table 18 presents the number of children enrolled in the Migrant Education Program in southwest Florida from the 1993-94 school year through the 1996-97 school year. Approximately, seven percent of the students in the Program are older than 18 years and are in the process of earning a high school G.E.D. Since these individuals are likely to be working on agricultural operations, they are subtracted from the total number of students in the Program. Assuming two children per family, the 1996 Migrant Education Program statistics represent 5,346 families. If one assumes that 16,220 is an accurate count of seasonal farmworkers and 90% of those workers are migrant farmworkers, the Migrant Education Program data imply 37% of all seasonal farmworkers live with families, a statistic that matches closely with the Florida NAWS results. Alternatively, if one adopts the Shimberg Center's estimate of 25,720 migrant farmworkers [1], then the Migrant Education Program data suggest that less then 21% of seasonal farmworkers live with families.

[1] See the Appendix for more details on the Shimberg Center report and other farmworker studies.

Table 15
Worker Demographics

	Citrus 1/	Vegetables	Immokalee Pantry Shelf	Housing Sites	RCMA
Sample size	295	197	61	318	60
Age (%)					
< 20	13%	20%	59%	20%	8%
20 - 40	65	73	41	73	85
> 40	22	7	0	7	7
Gender (%)					
Male	100%	96%	79%	89%	54%
Female	0	4	21	11	46
Ethnic Origin (%)					
Mexican	97%	85%	49%	65%	87%
Guatemalan	1	13	51	26	8
Other Hispanic	2	2	0	5	5
Haitian	0	0	0	4	0
American	0	0	0	0	0
Formal Schooling (years)	5.4	5.1	7.1	5.5	5.3
County Residence (%)					
Collier	39%	100%	100%	26%	13%
Hendry	61	0	0	70	17
Lee	0	0	0	4	7
Charlotte	0	0	0	0	0
Glades	0	0	0	0	0
Desoto	0	0	0	0	63

1/ Column headings refer to the separate sampling efforts initiated during the study. See page 23 for more description of individual surveys.

Table 16
Household Demographics

Household categories:	Household characteristics	Citrus 1/	Vegetables	Immokalee Pantry Shelf	Housing Sites	RCMA
Sample size		295	197	61	318	60
Alone	***percent of sample***	0%	3%	5%	2%	2%
	number of adults	-	1	1	1	1
	number of farmworkers	-	1	1	1	1
	number of children	-	0	0	0	0
Companions	***percent of sample***	94%	89%	79%	61%	20%
	number of adults	6	5	4	4	6
	number of farmworkers	6	5	4	4	6
	number of children	0	0	0	0	0
Family	***percent of sample***	3%	4%	15%	33%	70%
	number of adults	2	2	2	2	2
	number of farmworkers	1	2	2	1	2
	number of children	2	2	2	2	3
Relatives	***percent of sample***	3%	4%	1%	4%	8%
	number of adults	4	4	3	3	4
	number of farmworkers	4	4	3	2	4
	number of children	1	1	0	2	2

1/ Column headings refer to the separate sampling efforts initiated during the study.

Table 17
Employment Demographics

	Citrus [1/]	Vegetables	Pantry Shelf	Housing Sites	RCMA
Sample size	295	197	61	318	60
Farmwork Experience in southwest Florida (yrs)	5.5	4.7	3.8	5.0	4.5
Citrus only (%)	99%	0%	0%	42%	26%
Vegetable only (%)	0%	100%	98%	40%	46%
Other crops only (%)	0%	0%	0%	2%	0%
Crop crossover (%) [2/]	1%	0%	2%	16%	28%
Migrant (% yes)	87%	97%	72%	75%	93%
Arrival months					
August	8%	27%	7%	13%	4%
September	10	52	23	18	9
October	63	18	55	47	23
November	12	3	16	11	43
Departure months					
April	7%	2%	2%	1%	0%
May	11	49	14	17	38
June	80	48	68	75	18
July			16	6	36
Hours worked last 7 days (hrs)	38.2	18.3	37.4	37.2	36.8
Hours worked Jan 4-10, 1998 (hrs)	33.2	36.7	--	36.9	35.5
Annual farmwork income ($) [/3]	$6,956	$6,745	$6,574	$6,567	$9,235
Percent farm income earned in southwest Florida (%)	93%	69%	75%	82%	50%
Non-farm income (% yes)	7%	7%	3%	6%	12%

1/ Column headings refer to the separate sampling efforts initiated during the study.

2/ This category indicates the extent to which a given worker switched among citrus, vegetables and other agricultural commodities during the season in southwest Florida.

3/ Number of actual days worked in agriculture was not documented. See page 24 for further discussion.

Table 18 Children Enrolled in Migrant Education Programs				
County	1993-94	1994-95	1995-96	1996-97
Charlotte	0	0	0	0
Collier	4,375	5,986	6,443	7,340
Glades	145	113	191	170
Hendry	1,383	1,638	2,031	2,467
Lee	1,201	1,406	1,626	1,520
Total	**7,104**	**9,143**	**10,291**	**11,497**

Source: Stauffer, Nada. Florida Department of Education, Bureau of Student Support & Academic Assistance.

V. Population of Seasonal Farmworkers in Southwest Florida and Distribution of the Farmworker Population to Southwest Florida Counties

Estimating the population of seasonal farmworkers depends on first, estimating the total number of farmworkers, second, estimating the percentage of those farmworkers who live with their families, and finally, estimating the number of dependents per family unit. The number of farmworkers in southwest Florida during early January 1998 was estimated to be 16,220 people (Table 14). Of those workers, 37 percent were assumed to be living with a family. While 37 percent is a higher proportion than what was found in worker surveys, it is a statistic that is supported by other research findings (i.e. NAWS- Florida Report) and rationalizes the Migrant Education Program data with the 16,220 total farmworkers reported in Table 14. Both NAWS findings and the findings of the current study support the assumption that there are three dependents per family (spouse and two children) (Mines et.al).

Table 19 summarizes the calculations which estimate both seasonal and migrant farmworker population living in southwest Florida during January 1998. The migrant farmworker population was assumed to be 90 percent of the total seasonal farmworker population (Table 17). The seasonal farmworker population in southwest Florida during January 1998 was estimated to be more than 34,000. Of that total almost 31,000 were a part of the migrant farmworker population.

Table 19
Seasonal and Migrant Farmworker Population in Southwest Florida
January 1998

	Seasonal	*Migrant*
Workers	16,220	14,598
Dependents	18,004	16,204
Total population	**34,224**	**30,802**

Assumptions: 16,220 seasonal farmworkers
90% of total are migrant farmworkers
37% of farmworkers live with family
3 dependents per family

An underlying motivation for conducting an agricultural labor study of southwest Florida, was to provide county planners with the basic statistics so that they could evaluate the overall need for farmworker housing. Toward this end, the estimates of total farmworker populations are apportioned to individual counties. The distribution of the total population to counties is made on the basis of migrant education data and the records of permitted housing units.

County migrant education data is presented in Table 18. Almost 64 percent of migrant children attend schools in Collier County. More than 21 percent of the migrant children attend Hendry County Schools. Charlotte County has no record of migrant children in its school district.

Table 20 shows the number of units and capacity of permitted migrant housing in southwest Florida. A permit, issued by the Florida Department of Health, is required for any structure which houses five or more migrant farmworkers. Structures housing four or fewer migrant workers are not required to obtain a permit. Permits are designed to insure that the structure comply with basic health codes. The permitted housing capacity in southwest Florida between January and March 1998 was 12,846. The greatest percentage of permitted housing units is in Collier County, where there exists capacity for almost 8,700 people. Hendry County has capacity for more than 2,700 people, or 21.5 percent of the total southwest Florida permitted housing capacity.

Table 20
Permitted Migrant Farmworker Housing
January - March 1998

County	Units	Capacity
Charlotte	0	0
Collier	1,785	8,698
Glades	98	635
Hendry	448	2,725
Lee	181	788
Total	**2,512**	**12,846**

Source: Lou Pelle, farmworker housing consultant, County Public Health Units, Florida Department of Health.

The number of permitted housing units and children in migrant education programs provide an indication of where the farmworker population resides in southwest Florida. Table 21 summarizes the county percentages of housing permits and migrant education enrollment. These data are used to create an allocation factor which is used to distribute the total farmworker population estimates to individual counties. Almost 22,000 seasonal farmworkers, or 64 percent of the total southwest Florida population, are estimated to live in Collier County. The next highest percentage (22 percent) of farmworkers reside in Hendry County. Lee and Glades Counties are home to ten and four percent of the region's farmworkers, respectively. Charlotte County has neither permitted housing units or migrant school children. Therefore, no seasonal farmworkers are assumed to live in Charlotte County. While agricultural production determines the overall number of jobs for farmworkers, population centers do not exactly coincide with agricultural acreage. Collier County is responsible for a quarter of the citrus and vegetable acreage in southwest Florida. However, Collier County is home to almost two-thirds of the region's farmworker population.

Table 21
Distribution of Seasonal and Migrant Farmworker Population to Southwest Florida Counties

	Citrus and Vegetable acreage	Permitted Housing Capacity (Jan-Mar 1998)	Migrant Education Children (1996-97)	Allocation Factor	Seasonal Farmworkers and dependents	Migrant Farmworkers and dependents
Charlotte	10.4%	0.0%	0.0%	0	0	0
Collier	26.0%	64.5%	63.8%	.64	21,903	19,713
Glades	4.7%	5.6%	1.5%	.04	1,370	1,233
Hendry	50.8%	22.1%	21.5%	.22	7,529	6,776
Lee	8.1%	7.8%	13.2%	.10	3,422	3,080
Totals	100.0%	100.0%	100.0%	1.00		
	225,293 acres	12,846 spaces	11,497 children		34,224 people	30,802 people

VI. Summary and Conclusions

Agricultural production is an important economic activity within southwest Florida. The collective sales of citrus, vegetables, sugar cane, cattle and ornamental operations generate sales close to one billion dollars annually. Seasonal farmworkers are an important resource, particularly to the citrus and vegetable industries. The long-term economic viability of these industries will depend on the availability of seasonal farmworkers to harvest citrus and vegetable crops and perform other various field operations.

The first objective of this study was to estimate the number of farmworkers in southwest Florida during the peak of agricultural production. Agricultural operations were estimated to employ almost 5,000 individuals on a full-time basis. In this report, seasonal farmworkers are defined as those worker who are employed on an as needed or day-to-day basis. Estimates of seasonal farmworkers depend on the scope of agricultural activity during a reference period. Early January 1998 was chosen as the reference period and specifically the week of January 4th thru 11th. Data on worker productivity and information about worker employment hours were used to estimate the number of jobs and number of people available to fill those jobs. During early January, the number of farmworkers were estimated to be slightly more than 16,000 people. When dependents of farmworker families are included, the overall population of seasonal farmworkers was estimated to be more than 34,000. The population of migrant farmworker was estimated to be 90 percent, or almost 31,000 people of the total number of seasonal farmworker population.

The southwest Florida seasonal farmworker and population counts reported in this study are less than what was published in the 1997 Shimberg study and the 1990 Atlas of State Profiles. Additional work is being planned for the 1998/99 production season to verify whether the farmworker counts published in this report are reasonable. Sampling procedures need to be reexamined to insure that a true representative sample of farmworkers is being considered when demographic characteristics. However, the results do support anecdotal evidence that farmworker numbers in southwest Florida have declined over the past four years. It is reasonable to assume that a strong economy has provided non-farm employment opportunities to a number of people. Further, a tougher stance within the federal government against undocumented workers has led to increased INS border patrol activities which discourage some foreign-born workers from entering the farmworker labor force in the U.S.

A second objective of this study was to collect demographic information on seasonal farmworkers in southwest Florida. Interviews with more than 900 farmworkers confirm earlier studies that seasonal agricultural labor is predominately under the age of 40, male and Hispanic. About 90 percent of the seasonal agricultural work force in southwest Florida migrate in and out of the region. Most workers arrive in southwest Florida between September and October and leave between May and June.

The surveys conducted in southwest Florida during 1998 did not find a high percentage of workers who lived with families. Most farmworkers live with at least five unrelated companions. While these findings comport with the findings of other studies, the exact percentage of workers living with families remains unclear. The southwest Florida surveys indicated between 3 and 33 percent of workers live with families. On the other hand, data from county migrant education programs suggest the percentage of farmworker families is closer to 40 percent. Verifying an accurate statistic of farmworker families is important because the overall population count is highly sensitive to this statistic.

Currently, southwest Florida has a permitted housing capacity for slightly less than 13,000 people. Estimates of the migrant farmworker population of almost 31,000 people suggest a need for more housing, or at least expanding the permitting criteria to include structures with less than five migrant farmworkers. If community leaders in southwest Florida choose to develop more farmworker housing units, describing the overall size and composition of the agricultural seasonal work force will help direct planning for the type of housing structures the region would like to develop. Results from this study suggest housing plans should target the needs of single men who temporarily reside in southwest Florida for between four and six months.

VII: References

Brown, Mark. Unpublished data. Florida Department of Citrus - Economic Research Division, Gainesville, FL. 1996.

Chadwick, D. Executive director of the Citrus Administrative Committee. January 4-10, 1998 weekly report, Orlando, Florida.

Florida Agricultural Statistics Service (FASS). Annual Citrus Summary 1996-97. Orlando, Florida, January 1998.

Florida Agricultural Statistics Service (FASS). Annual Field Crops Summary 1996-97. Orlando, Florida, January 1998.

Florida Agricultural Statistics Service (FASS). Annual Livestock Summary 1996-97. Orlando, Florida, January 1998.

Florida Agricultural Statistics Service (FASS). Annual Vegetable Summary 1996-97. Orlando, Florida, May 1998.

Florida Institute of Government and the Glorida Atlantic Universtiy/Florida International University Joint Center for environmental & Urban Problems (FAU). *The Florida Farm Worker Study.* Prepared for the Florida Department of Community Affairs, June 1988.

Elswick-Morrison, Jeannee. *Migrant Housing Needs in the Florida Heartland*. Heartland Migrant Housing Coalition. February 1995.

Gabbard, Susan. *Farmworkers in Florida - A Subset of NAWS.* Aquirre International, San Mateo, CA. April 1998.

Johnson, P.C. and R.C. Greene. *Migrant Farm Labor Housing Southeast Florida Survey / Report*. September 1994.

King, Linda. Director of Operations, Division of Jobs and Benefits, Florida Dept. of Labor, Tallahassee, FL. personal communication, July 1997.

Larson, A.C. and L. Plaxcencia. *Migrant Enumeration Project - Final Report*. Prepared for Migrant Legal Services, Larson Assistance Services. 1993

Mines, R., S. Gabbard, and A. Steirman. *A Profile of U.S. Farmworkers, Demographics, Household Consumption, Income, and Use of Services*. U.S. Dept. of Labor, Office of Program Economics Research Report #6. April 1997

Mulkey, D., R.L. Degner, S.Gran, and R.L. Clouser. *Agriculture in Southwest Florida: Overview and Economic Impact*. Staff Paper SP 97-3. Food and Resource Economics Department, IFAS, University of Florida, April 1997.

Pelle, Lou. Farmworker housing consultant, County Public Health Units, Florida Department of Health. August 1998.

Polopolus, L., R. Emerson, N. Chunkasut, and R. Chung. *The Florida Citrus Harvest: Prevailing Wages, Labor Practices and Implications.* Food and Resource Economics Department, IFAS, University of Florida, September 15, 1996.

Shine, J. Research Coordinator, Sugar Growers' Cooperative, Belle Glade, Florida. Personal communication, May 1998.

Smith, Marc T. *Migrant Farmworker Housing Needs Assessment Methodology*. Shimberg Center for Affordable Housing, University of Florida, April 11, 1997.

Smith, S.A. and T.G. Taylor. *Production Costs of Selected Florida Vegetables 1996-97.* University of Florida, Cooperative Extension Service, IFAS Circular 1202. April 1998

Spikowski, William M. *Farmworkers in Lee County: The Housing Challenge.* Spikowski Planning Associates, Ft. Myers, FL. April 1994

Stauffer, Nada. Florida Department of Education, Management and Evaluation Services, Bureau of Student Support & Academic Assistance, June 1998.

U.S. Department of Health and Human Services. *An Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of their Families*. Migrant Health Program, Bureau of Health Care Delivery and Assistance, Rockville, Maryland, March 1990.

Appendix

Previous Farmworker Studies

A number of attempts have been made at counting the farmworker population and describing the characteristics of farmworkers. This section provides a brief review of several studies undertaken on either the Florida or southwest Florida farmworker population.

Atlas of State Profiles. One frequently referenced study that provides estimates of the farmworker population is *An Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families.* The *Atlas* was prepared by the U.S. Department of Health and Human Services in March 1990 for the purpose of determining funding allocations. The estimates presented below were prepared by state organizations and then adjusted as necessary at the national level to meet the scope of the study. These estimates are widely used by many local, state, and federal agencies that work with farmworkers. They include families who travel with the farmworkers.

	Migrant Farmworker Population	Seasonal Farmworker Population	Total Migrant & Seasonal Farmworker Population
Charlotte	75	1,281	1,356
Collier	14,202	7,808	22,010
Glades	503	2,396	2,899
Hendry	3,958	7,108	11,066
Lee	6,139	10,322	16,461
Southwest Florida	24,877	28,915	53,792
State	182,790	252,583	435,373

Source: *An Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families*.

NAWS (Mines et.al). Another important study often quoted is the National Agricultural Workers Survey (NAWS) in which farmworkers across the United States are interviewed. The interviews are conducted during three different times of the year and are undertaken by the U.S. Department of Labor and Aguirre International. A summary of the findings from the NAWS was presented in *A Profile of U.S. Farmworkers: Demographics, Household Composition, Income and Use of Services, April 1997.* This report was prepared for the Commission on Immigration Reform.

The NAWS has been conducted from 1988 to present and over time, the interviews have shown an increasingly male (80%) and increasingly foreign-born (70%) farmworker population. The interviews also showed that the percentage of foreign-born farmworkers working illegally is increasing (37%, up from 7% in 1989).

Of the U.S. farmworkers interviewed, NAWS reported that 60% of the farmworkers were married, 40% of whom lived apart from their spouses. Fifty six percent of farmworkers lived with unrelated

individuals. For foreign-born workers, the percentage was even higher at 66%. And for illegal workers, the percentage living with unrelated individuals was 75%.

Regarding the number of people in a home, the study found that 10% of the farmworkers lived alone. Foreign-born workers were more likely to share homes with five or more people than U.S. born workers (46% compared to 19%). Only 19% of the foreign-born population shared homes with one or two people. Overall, less than 40% of the foreign born workers lived with family.

With respect to income, the NAWS study found that median personal income from farmwork was typically $2,500 to $5,000. The median income from farmwork and other sources was $5,000 to $7,500. (The median has not changed since 1988.) One quarter of the farmworkers had non-farm work earnings. Median family income was $7,500 to $10,000. Of the farmworkers, 61% were classified as living below the poverty line. Of illegal workers, 80% were believed to live below the poverty line. The NAWS found that 18% of all farmworkers are new to U.S. farmwork each year. Of those, 70% are illegal. The study also found that there was a significant surplus of workers. During one of the peak seasons of the study, July, less than 60% of the workers were employed.

Sufficient NAWS data was collected to produce a Florida report. The Florida report is titled *Farmworkers in Florida: A Subset of the NAWS* and covers interviews conducted from 1988 to 1997. The study found that the mean age of farmworkers in Florida is 32. Of the farmworker population, 79% were men and 47% of the farmworkers were married. Seventy five percent of the workers were foreign born and two thirds of the foreign born workers were from Mexico.

According to the Florida report, 41% of the farmworkers are undocumented workers and that number is increasing. The percentage living without family members is also increasing and now represents about 62% of the population, up from 38% in earlier surveys.

Median personal income was $5,000 to $7,500 while median family income was only slightly higher at $7,500 to $9,999. Concerning housing conditions, 20% reported that they received housing from their employer. One third said they lived in a house, one quarter lived in an apartment, and one quarter lived in a mobile home or trailer.

Shimberg Center (Smith, M). The Shimberg Center for Affordable Housing at the University of Florida created a methodology for estimating the number of migrant farmworkers and their dependents in each county. Estimates reflected 1995 conditions and offered no projections for future farmworkers numbers. The Shimberg Center's for estimates focused only on migrant workers. Seasonal farmworkers, defined as year round residents, were excluded since they were assumed to be part of each counties' permanent population and therefore, were included in other housing need assessments.

To produce estimates of farmworkers at the county level, the Shimberg Center started with a statewide estimate of the number of farmworkers and then distributed them among the counties.

The statewide estimate of 233,000 farmworkers during 1994-1995, was provided by the U.S. Department of Agriculture which uses their Farm Labor Survey (FLS) to count filled U.S. hired farmworker jobs quarterly. The Shimberg Center adjusted that number to remove non-field workers using information from the Census of Agriculture that shows the number of hours worked in fields versus the hours spent working with livestock. That adjustment reduced the statewide estimate to 214,000 farmworkers in 1995.

A second adjustment was made to correct for farmworkers who may have been counted in each of the four quarterly surveys and to include workers who were not employed during any of the four reference weeks. The Shimberg Center relied on information gathered from the National Agricultural Workers Survey (NAWS) that reflects the number of workers counted multiple times in the FLS data and those missed entirely. Based on the NAWS data, the Shimberg Center removed the farmworkers who were counted more than once to reach a statewide estimate of farmworkers of 171,000. To finally reach an estimate of migrant farmworkers, the Shimberg Center again relied on NAWS data which showed that 67% of Florida's field workers are migrants. Applying this factor produced a final estimate of migrant farmworkers in Florida in 1995 of 115,000.

The Shimberg Center next determined the number of dependents traveling with migrant farmworkers. They again used NAWS data which showed that 71% of Florida migrant farmworkers traveled without family members, while 29% traveled with family members including a spouse, parent, and/or child(ren). Those traveling alone were called unaccompanied, while those traveling with family were called accompanied workers. On average, there were 2.2 farmworkers in every accompanied farmworker household. Also, farmworker households had an average of 3.8 family members, including the farmworkers.

To distribute the number of migrant farmworkers among each of the 67 counties in Florida, the Shimberg Center used county contract farm labor expenditures from the 1992 Census of Agriculture. A ratio was calculated for each county showing the expenditures by county compared to the state expenditures. These ratios were applied to produce county estimates of accompanied and unaccompanied migrant farmworkers. The demographic ratios described in the paragraph above were then used to estimate the number of dependents traveling with the accompanied farmworkers.

Finally, the Shimberg Center examined the supply of farmworker housing in each county to determine if a shortage or surplus of farmworker housing existed based on the demand figures calculated above. For that purpose, the supply data was limited to farmworker housing built through the U.S. Department of Agriculture or permitted by the state. (The state requires that any unit housing five or more migrant farmworkers must be permitted as migrant housing.)

The estimates showing farmworkers and their families in the region are shown below:

Migrant Farmworkers and Their Dependents in Southwest Florida
1995

	Unaccompanied Workers	Accompanied Workers	Other Accompanied Hshld. Members	Total Migrant Workers & Their Dependents
Charlotte	809	330	240	1,379
Collier	7,886	3,221	2,342	13,449
Glades	1,253	512	373	2,138
Hendry	7,292	2,978	2,167	12,437
Lee	1,022	417	305	1,744
Total	18,262	7,458	5,427	31,147

Source: Smith, Marc. Migrant Farmworker Housing Needs Assessment Methodology, Shimberg Center for Affordable Housing, University of Florida, Gainesville, April 11, 1997.

Migrant Farm Labor Housing Southeast Florida Survey (Johnson and Greene). Another report, *Migrant Farm Labor Housing Southeast Florida Survey/Report* was written by Paul C. Johnson and Richard C. Greene, for the Office of Rural Health, Migrant Housing Program, September 1994. This report describes the problems of inadequate and substandard housing available for farmworkers in south Florida. The report also includes limited statistical information including the number of permitted units, number of migrant and seasonal farmworkers (from the U.S. Dept. of Health and Human Services' *Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families*), migrant children enrolled in school, registered farm labor contractors, and funding for the State Revenue Program and the Preventative Health Block Grant. This information is provided for the counties of Broward, Dade, Indian River, Martin, Monroe, Okeechobee, Palm Beach, and St. Lucie. The report concludes with a summary section outlining the next steps to be taken to obtain funding for farmworker housing projects in those areas.

Heartland Study (Elswick-Morrison). Another south Florida report, *Migrant Housing Needs in the Florida Heartland*, was prepared by the Heartland Migrant Housing Coalition in February 1995. This study was undertaken by a group of representatives from various counties, government agencies, and agricultural firms, led by Jeanne Elswick-Morrison of the Florida Department of Health and Rehabilitative Services, to demonstrate the need for farmworker housing in south Florida. At the time of the study, HUD was considering initiating several farmworker housing pilot projects in various states. The report was prepared in an effort to demonstrate the need for such housing in hopes that HUD would fund a project of that type in south Florida. For this report, the Heartland area was defined as DeSoto, Glades, Hardee, Hendry, Highlands, and Okeechobee Counties.

The report includes a summary of the number of people employed in the various aspects of growing and harvesting citrus. Based on 165,000 acres of citrus at the time of the report, there were 1,100 permanent jobs available in citrus growing and care taking; 8,500 jobs available in citrus harvesting, most of which were seasonal or migrant; 425 to 500 jobs available in citrus processing, of which 75-100 were permanent, year-round positions; and about 350 jobs available in citrus packing, 50 of which were permanent, year-round positions.

The report stresses the impact of agriculture in the region in terms of employment and its potential for growth, specifically in the areas of citrus harvesting, citrus processing, and citrus packing. Estimates of the number of farmworkers and their family members are taken from the U.S. Department of Health and Human Services' *Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families*. This study appears to incorrectly assume that the figures from the *Atlas* do not include family members that travel with farmworkers. As a result, the author of the study uses an average household size of 6.2 persons to calculate a total estimate of migrant and seasonal farmworkers of 59,658, rather than the 50,725 as presented by the *Atlas* for the Heartland area.

Information on the number of HRS permitted migrant housing facilities in the Heartland area is also included in the report. In 1994, 165 permitted facilities existed in the Heartland area with a maximum occupancy level of 5,356. The report concludes with a summary of the types of housing facilities that currently exist in the area, such as trailers, multi-family units, and homes, combined with a description of the type of housing needed by each county.

Migrant Enumeration Project *(Larson and Plaxcenia)*. Another report, *Migrant Enumeration Project 1993*, was prepared by Larson & Colleagues of Washington (led by Alice C. Larson) and the Tomas Rivera Center in Texas (led by Luis Plaxcencia) for Migrant Legal Services. This report produced estimates at the state level of the number of migrants and their dependents for the purpose of allocating program funds to states to serve the farmworker population.

The methodology used in this project had several main points. First, the estimates were based on place of employment, not residence. Second, the researchers sought to estimate jobs, not the individuals who filled those jobs. Third, the researchers were not concerned about duplication of workers. And finally, the methodology was to be applied uniformly to each state with some flexibility for state variations.

The general methodology from this report combined county level crop acreage data to produce state totals of acreage by crops. The formula for estimating workers considered the amount of crop acreage (as reported in the 1987 Bureau of the Census), multiplied by the number of hours needed to perform a specific operation (reported by state organizations). That figure was then divided by the product of the number of hours per farmworker per day in peak season (assumed to be 7.4 hours as reported in the NAWS study) multiplied by the peak season's length (provided by state organizations). Adjustments to the number of workers by crop were made depending on the mechanization of harvesting for a particular crop.

Once the estimates of the number of workers needed were completed by crop, the researchers used statewide estimates to calculate the number of workers who traveled alone versus those who traveled with dependents. A second estimate was then used to determine the size of the households for migrants who traveled with dependents. Both estimates were taken from NAWS data.

For Florida as a whole, the study produced an estimate of 238,247 migrant workers and their dependents. This number makes Florida the third highest ranking state in the nation in terms of the number of migrants and their dependents working in the state. The first and second states are California (700,233) and Texas (370,815).

The study also examined groups such as nurseries, food processing, etc., using data from the U.S. Department of Labor to identify the number of employees in each relevant SIC category. Permanent workers were subtracted so only seasonal employees were included in the study. The migrants and their dependents reported in the categories of forestry, food processing, cotton ginning, nursery/greenhouse, and crops under cover were 9,824. (This figure is included in the state total of 238,247.)

Farmworkers in Lee County (Spikowski), was prepared by Spikowski Planning Associates for the Lee County Affordable Housing Committee in April 1994. The study identifies the major crops in southwest Florida and their growing periods, the various estimates of the farmworker population in southwest Florida, the current supply of housing for farmworkers, and ways to provide additional farmworker housing.

The Spikowski study identified several sources of estimates of the farmworker population. One source, the Job Service of Florida, is a state employment office which previously provided *In-Season Farm Labor Reports* that estimated the number of seasonal and migrant farmworkers. The Immokalee office produced estimates that covered Collier and Lee Counties and the western portion of Hendry County. Their estimates for the 1985-86 growing season showed a peak estimate for December 1985 of 8,200 (the off-season figure was 2,000). During the 1992-93 season, the highest figure was again in December and was 11,600 (off-season figure was 5,000). Unfortunately, the Job Service no longer produces these estimates.

The study also included estimates prepared by the Department of Health and Human Services which are the same as those presented in the *Atlas of State Profiles Which Estimate Number of Migrant and Seasonal Farmworkers and Members of Their Families.* Two other sources identified were the Migrant Education data and the Florida Department of Labor. The Lee County School Board showed that there were 1,300 students enrolled in migrant education programs during the 1988-89 school year. In the 1992-93 school year, that figure had risen to 2,000. (Students enrolled in that program can remain in the program for a certain number of years after their family has stopped moving, and are therefore no longer considered "migrant." Previously, this period was five years, but now it is limited to three years. The Florida Department of Labor produced employment estimates that show there were 3,563 farm jobs in Lee County in 1991. By the year 2005, they estimated that the number would rise to 4,096.

The study also includes estimates regarding the race and ethnicity of the population. In the various estimates, Hispanics are the majority and typically represent 70% to 94% of the population. Haitians in two of the estimates comprised seven to eight percent of the population (and were excluded in the other estimates).

The report does not endorse a particular set of estimates but states that all estimates show a need for more farmworker housing in the future. The report identifies the number of permitted units in the County in 1994 (161 units capable of housing 810 farmworkers). It concludes with a look at successful farmworker housing developments, the siting criteria for future housing developments, possible funding sources, and an examination of the regulatory constraints to building farmworker housing and recommended changes to correct those problems.

FAU/FIU Study. *The Florida Farm Worker Study* was prepared by the Florida Institute of Government and the FAU/FIU Joint Center for Environmental & Urban Problems in June 1988. The study was commissioned by the 1987 Florida Legislature and was administered by the Florida Department of Community Affairs. It was intended to accomplish three things: provide a demographic profile of Florida's farmworker population; identify current and future labor needs of agriculture; and evaluate farmworker housing needs and conditions.

The study began with a discussion of the importance of agriculture to the state's economy and looks at how agriculture has changed over time. The study followed this with an examination of several sources of statewide estimates of the farmworker population and the variation between those estimates. The study found that while most of the farmworkers in the U.S. at that time were primarily unpaid family members, Florida differed significantly from that picture. Most farmworkers in Florida were hired, paid workers.

The study estimated that in Florida, approximately 75% of the workers were over the age of 25, that the majority were male, and that Hispanics were largely replacing blacks as farmworkers. The study continued with a discussion of the various programs affecting the supply of farmworkers including unemployment insurance, labor contractor and crew leader issues, and the Immigration Reform Act and concluded with a literature review of the pertinent literature.

The study includes a section called Demographic Profile of the Florida Farm Worker which includes estimates of farmworkers by regions of the state. Region 13 corresponds to the five counties included in the Institute of Florida Agriculture and Sciences study area. The estimates are based on data collected in the 1980 Census of Population, the Hired Farm Working Force surveys that are used to supplement the Current Population Survey, and the 1978 and 1982 Censuses of Agriculture.

The study produced a statewide estimate of 104,000 farmworkers in 1986. This was a decline from 135,000 in 1980. For southwest Florida, the estimate of farmworkers was approximately 8,000 (both seasonal and migrant, but exclusive of dependents). The survey estimated that only 4.6% of the farmworkers in south Florida were undocumented workers in 1986.

As part of the study, the Legislature required that a survey be done of growers regarding their future need for and expected supply of farmworkers. The survey was mailed to 500 growers and 118 responded. The survey asked questions concerning the number of employees hired, the adequacy of the current labor supply, and concerns over the future supply of labor. The Immigration Reform and Control Act (1987) had just occurred one year earlier and 54% of the responding growers felt they would experience a shortage of workers in the future. The growers believed they would need to rely more heavily on the foreign labor market using programs like H-2A in which foreign workers are brought to the area. In response to a survey question asking growers what services or programs were needed to improve the availability, performance, and skills of farmworkers, growers responded that housing and education were most important.

The final portion of the study focuses on farmworker housing and living conditions in eight communities around the state. Of those eight, the researchers conducted site visits at three: Immokalee, Hendry County, and Belle Glade. In each of these areas, they examined the current supply of housing

and found a large amount of it to be substandard and/or overcrowded. They also examined anticipated future agricultural trends in those areas and determined that each area had a significant need for more decent, affordable, farmworker housing. In Immokalee, the researches specifically identified the need for more year-round housing since the area was becoming a home base for many migrant families.

Two suggestions from the grower surveys are worth mentioning. Regarding the need for more affordable housing, growers suggested the creation of tax incentives to encourage growers or other private sector entities to develop affordable housing. Second, to address the problem of a possibly declining labor supply, growers suggested better coordination of the workforce, perhaps through a central clearinghouse or registration center.

Attachment 1

Survey ID _____

University of Florida - Southwest Florida Research and Education Center
PO Box 5127 Immokalee, FL 34143-5002
Contact: Fritz Roka, (941) 657-5221

Census of Southwest Florida Agricultural Labor, March 1997

CONFIDENTIAL

*The following question pertains only to workers who are employed within the **five-county, Southwest Florida** region.*

1. Are you a land owner or part of a coop who has hired a management service to make all employment decisions?
If yes, would you provide the name of the management service?

_____

If you are a land owner and/or manager who has knowledge of employment statistics, please continue.

2. Grower Employee Count

Category	*March 12, 1997*		*January 12, 1997*	
	Permanent	*Seasonal*	*Permanent*	*Seasonal*
Field workers				
Office workers				
Truck drivers				
Other _____				
Total				

Employee anyone you have recruited and to whom you issue a paycheck. Include any unpaid family members working on the farm.
Field workers anyone directly involved in farm, grove, greenhouse, or nursery activities -- including foremen, field managers, tractor drivers, harvesters, and farm maintenance workers.
Office workers includes general business managers, clerical, office maintenance and marketing/sales staff.
Truck drivers workers who haul fruit or produce off the farm or grove.

Labor recruited by a labor contractor (workers not considered farm employees).

Name of Contractor & phone number	*Crop worked*	*number of workers (if known)*	
		March 12th	*January 12th*
1.			
2.			
3.			

3. Approximate Size of Southwest Florida Farming Operation

Commodity [1]	*1996/97 Est. Acreage*
1.	
2.	
3.	

1/ List crops categories, such as citrus, vegetables, sugar cane, ornamentals, sod, nursery crops, and pasture.

Attachment 2

Name of Interviewer _____ Code _____
Date _____
Location of Interview _____

Employer survey
Vegetable Grower

On Jan 6, 1998, how many employees were on hand working vegetable crops?
Permanent _____ (#)
Seasonal _____ (#)

List the crops that are being grown (on Jan 6, 1998) and estimate the acreage in each:

Crop	**Acreage**
Tomatoes	_____
Bell Pepper	_____
Specialty Pepper	_____
Cucumber	_____
Squash	_____
Eggplant	_____
Potato	_____
Watermelon	_____
other _____	_____

Do you provide housing to your workers? ○ yes ○ no

How often do you pay your workers? ○ daily ○ weekly ○ biweekly

Do you provide transportation for your workers? ○ yes ○ no

Do you utilize the services of a crew leader or labor contractor? ○ yes ○ no

If yes, does your crew leader:
Hire workers? ○ yes ○ no
Transport workers? ○ yes ○ no
Supervise field work? ○ yes ○ no
Keep payroll? ○ yes ○ no

Crop :

Activity	**units**	**pay rate**	**Units produced during reference week**	**Total hours worked in field**	**number of workers**	**Average productivity per worker**	**Gross wages**	**Effective hourly wage**
		$/unit	units	hrs	#	unit/hr	$	$/hr
laying plastic								
planting								
staking								
tying								
harvest MG								
harvest Roma								
clean-up								

Attachment 3 (page 1 of 3)

Name of interviewer: _____ Code: _____
Date of interview: _____
Location of interview: _____

1998 Survey of Vegetable Farmworkers
Contact: Fritz Roka
SWFREC-Immokalee
(941)658-3400

Worker Earnings

1. Over the last seven days (write in dates:):

Activity	units	$/unit	Paid units	days	hours in-field
Total days worked					
Total hours worked in field					
Total earning over the last seven days					

2. During reference week (Jan 4th - Jan 10th):

Activity	units	$/unit	Paid units	days	hours in-field
Total days worked:					
Total hours worked in field:					
Total earnings during reference week:					

3. Housing cost _____ $/wk_____ $/mo. Employer provide housing? ○ yes ○ no
4. Transport cost_____ $/wk_____ $/mo. Employer provide transport? ○ yes ○ no

Name of interviewer: _____ Code: _____
Date of interview: _____
Location of interview: _____

1998 Survey of Citrus Farmworkers
Contact: Fritz Roka
SWFREC-Immokalee
(941)658-3400

Worker Earnings

1. Over the last seven days (write in dates:):

Citrus crop	Total boxes picked	Rate $/box	days	hours in-grove
process oranges				
fresh market oranges				
grapefruit				
mandarin, murcots, other				
Total days worked				
Total hours worked in field				
Total earnings over last seven days				

2. During reference week (Jan 4th - Jan 10th):

Citrus crop	Total boxes picked	Rate $/box	days	hours in-grove
process oranges				
fresh market oranges				
grapefruit				
mandarin, murcots, other				
Total days worked				
Total hours worked in field				
Total earnings during reference week				

3. Housing cost _____ $/wk _____ $/mo. Employer provide housing? ○ yes ○ no
4. Transport cost _____ $/wk _____ $/mo. Employer provide transport? ○ yes ○ no

Code: _____

Name of Interviewer _____
Date _____
Location of Interview _____

Worker Profile

1. ***Age*** ○ less then 20 ○ between 20 and 40 ○ over 40 years

2. Gender ○ male ○ female

3. Ethnic Origin
○ African American ○ Haitian
○ European American ○ Salvadoran
○ Mexican ○ Other Hispanic _____
○ Guatemalan ○ Other_____

4. How many years have you been doing farmwork? _____ (number of years)
○ 0-3 yrs ○ 3-10 yrs ○ more than 10 yrs

How many seasons have you worked in southwest Florida? _____ (number)

5. During this season (since Sept. and in Florida), what farm crops have you worked:
○ citrus ○ vegetables ○ sugar cane
○ cattle ○ nursery ○ other _____

6. Where do you currently live _____ (Closest town), _____ (County).

7. Do you live in one house year round, or do you change houses during the year?
○ stay ○ change
If you change houses, do you leave Florida? ○ yes ○ no

If yes, when did you return to Florida this year?
○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ Jun ○ July ○ Aug ○ Sep ○ Oct ○ Nov ○ Dec

If yes, when do you plan to leave Florida this year?
○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ Jun ○ July ○ Aug ○ Sep ○ Oct ○ Nov ○ Dec

In terms of moving and changing houses, is this year similar to last year? ○ yes ○ no
Where do you consider your home residence (home base)?_____

8. While working in Florida, do you live as a single person or live with a family?
○ alone ○ with companions
○ with my family (spouse & kids) ○ with relatives

9. Total number of people (adults and children) who live with you (in same house)? _____ (number)
How many adults? _____ (number)
How many farmworkers? _____ (number)
How many children (less than 18 years old) ? _____ (number)

10. Do you have any formal education? ○ yes ○ no
Check the highest level: ○ elementary ○ high school / vocational ○ college

11. What were your total earnings from farm work last year? _____ ***($)***

12. Did you earn income from source other than farm work? ○ yes ○ no

13. During the last seven days, how many total hours did you spend doing farmwork? _____(hrs)

14. Between Jan. 4th and Jan 10th , how many total hours did you spend doing farmwork?_____ (hrs)