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A Geographic Analysis of Seasonal Agricultural Services Farms

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In this report... *In 1987, over 1 million U.S. farms were classified as seasonal agricultural services (SAS) farms, defined as farms involved in the field production of fruits, vegetables, and other perishable crops. Over half used hired or contract labor during the year and have been targeted for special worker programs under the Immigration Reform and Control Act of 1986 (IRCA). This report analyzes labor expenditure data for farms producing SAS products to determine the geographic location and types of SAS farms that used the greatest amounts of farm labor. SAS farms producing vegetables, fruits and tree nuts, and horticultural specialties had the largest expenditures for hired and contract labor. Large SAS farms with value of sales of \$500,000 and over were also labor intensive, accounting for over half of all labor expenditures on SAS farms in 1987. Farms in California and Florida accounted for 36 percent of all SAS labor expenses.*

The adequacy of farm labor supply is a major concern facing agricultural producers, especially those involved in the production of perishable agricultural commodities. While mechanization has reduced the labor requirements for producing livestock and field crops, many farmers, especially those producing fruits and vegetables, continue to rely on large numbers of seasonal workers for relatively short periods during peak planting and harvesting periods. However, the short duration of employment, relatively low wages, strenuous nature of the work, and lack of job security associated with farm work make it unattractive to many domestic workers. As a result, some U.S. farmers in past years have relied on undocumented foreign workers for a ready source of labor.¹

IRCA was designed to reduce the flow of unauthorized immigrants to the United States. Growers' concern

that immigration reform would severely reduce the number of available farmworkers led to a special agricultural worker program for producers of perishable agricultural commodities. Provisions of this IRCA program extend to SAS farms involved in the field production of fruits, vegetables, and other specified perishable crops.

Empirical data to evaluate IRCA are just now becoming available, and studies are currently underway to determine the effects of IRCA on farm labor supply and wages. This report uses special county-level tabulations from the most recent census of agriculture to examine the geographic location and characteristics of SAS farms as they are explicitly defined in IRCA. The background data presented here will prove useful to policy analysts and researchers as they conduct their evaluations of IRCA.

The Immigration Reform and Control Act of 1986

IRCA was enacted to control unauthorized immigration to the United States. The impetus behind IRCA was the belief that persistent large-scale illegal immigration interfered with attempts by U.S. citizens to find employment. IRCA attempts to control unauthorized immigration by penalizing employers who hire undocumented workers. Sanctions include fines and possible imprisonment for employers who fail to determine job applicants' employment eligibility. Employers must verify that anyone hired after November 6, 1986, was eligible to work in the United States. IRCA specified the documents acceptable for verifying worker eligibility.

Because of concern over the economic and social disruptions that could occur from deporting all undocumented workers, IRCA contained a general amnesty provision that allowed illegal aliens who had resided continuously in the United States since before January 1, 1982, to apply for legal U.S. residence status by

¹Undocumented foreign workers are persons not possessing legal authorization (such as a "green card") to seek employment in the United States.

June 1, 1987. Approved applicants may eventually become U.S. citizens. However, undocumented farmworkers are more likely to work in seasonal rather than year-round jobs, and many return home when farmwork is unavailable (1).² As a result, many undocumented farmworkers would not meet the residency requirement under the general amnesty provision. Failure to grant legal status to a large number of alien farmworkers could lead to labor shortages and serious disruptions in farm production. Agricultural employers (especially those operating labor-intensive enterprises, who have relied heavily on illegal aliens as a source of labor for many years) successfully lobbied to have Congress include a measure of relief to the agricultural sector. The measure of relief granted is in the form of the Special Agricultural Workers section of IRCA (section 210) (4).

Special Agricultural Workers

The Special Agricultural Workers section provided two benefits for agricultural employers. First, they were allowed 18 months to comply with the employer sanctions provision, while other employers were given only 12 months to comply.³ Second, farm employers were given a chance to keep their labor force because some alien farm laborers were granted a change in status from "illegal" to "temporary residence." In order to gain a change in status, the workers had to document (that is, provide employment records, pay stubs, rent receipts, or the like) by December 1, 1988, that they had resided in the United States and had performed seasonal agricultural services in the United States for at least 90 days during a 12-month period ending on May 1, 1986.⁴ Congress defined seasonal agricultural services as the performance of fieldwork relating to planting, growing, and harvesting of fruits and vegetables of every kind and perishable commodities as defined by the Secretary of Agriculture (4). The Secretary of Agriculture's definition included all crops except grain sorghum/milo, hay and other forage, silage, crops grown for seed (except lettuce seed), sugarcane, coffee, tea, and flax (5). All livestock and livestock products are excluded from the program. This new legal workforce is officially called seasonal agricultural workers (SAW's).

²Italicized numbers in parentheses cite sources listed in the References section.

³All employers were given until June 1, 1988, to fully comply without penalty for their first violation of the employer sanction provision, but agricultural employers who could qualify under the Seasonal Agricultural Workers provision were given until December 1, 1988, to fully comply.

⁴About 1.3 million people applied for temporary residence under the Seasonal Agricultural Workers program.

Replenishment Agricultural Workers

Since SAW's are not required to remain employed in agriculture, there was concern that many would leave agriculture, causing a shortage of farmworkers. As a result, the law also contained a Replenishment Agricultural Worker (RAW) provision that allows the replenishment of SAW's with workers from other countries in the event of a shortage of agricultural workers in any 1 of 4 consecutive fiscal years, beginning with fiscal year 1990. These annual estimates of shortages are to be made jointly by the Secretaries of Agriculture and Labor. If the Secretaries estimate a shortage of SAW's, foreign workers will be allowed to enter the U.S. farm workforce as replenishment agricultural workers (RAW's). The estimated shortage of SAW's has been zero for fiscal years 1990, 1991, and 1992; therefore, no RAW's have been admitted.

H-2A Temporary Agricultural Workers Provision

The Special Agricultural Workers program, including the RAW program, expires at the end of fiscal year 1993. Unless Congress extends the program, the only source of legal alien workers available to farm employers will be the H-2A program. The H-2A program allows employers who have not been able to recruit qualified U.S. workers to petition the Attorney General for permission to hire alien workers "to perform agricultural labor or services...of a temporary or seasonal nature, or to perform other temporary service or labor" (4). Before the petitioner can be granted a request to import alien labor, he or she must apply to the Secretary of Labor for certification that "(A) there are not sufficient workers who are able, willing, and qualified, and who will be available at the time and place needed, to perform the labor or services involved in the petition, and (B) the employment of the alien in such labor or services will not adversely affect the wages and working conditions of workers in the United States similarly employed" (4). In 1991, about 25,000 farm jobs were certified for foreign workers by the U.S. Department of Labor under the H-2A program (6).

Source of Data

Reliable information on the number of undocumented workers in U.S. agriculture, types of farms they work on, and location of these farms does not exist. Therefore, a direct analysis of the effects of IRCA cannot be made. However, examination of farm labor expenses by farm size, commodity, and region provides a basis for identifying the types of farms and geographic areas that could provide information to policy analysts and researchers interested in assessing the effects of IRCA.

This report draws from unpublished special tabulations of hired and contract labor expenses on SAS farms from the 1987 Census of Agriculture, the most recent county-level data available. Hired workers are persons hired directly by the farm employer, while contract labor includes workers furnished on a contract basis by a labor contractor or crew leader.

Although undocumented farmworkers are employed in all commodities, they are particularly significant in seasonal employment in the fruit and vegetable industries (1). Therefore, we analyzed only those farms producing SAS crops. SAS crops include fruits, vegetables, and other perishable commodities that are produced as a result of seasonal fieldwork and that have critical and unpredictable labor needs (5). In this report, SAS farms were identified as those farms indicating that they had a positive value of sales from any SAS crop in 1987.⁵ Thus, any farm that produced and sold an SAS crop would be considered an SAS farm, even if its primary commodity were a non-SAS crop (such as corn produced on a dairy farm).

Also, data did not allow labor expenses to be separated by type of activity. That is, labor expenses on SAS farms refer to all labor expenses incurred there, even if these expenses were for non-SAS activities. As a result, labor expenses incurred on SAS farms will probably overestimate the actual amount spent by farmers for labor related to SAS activities. The census of agriculture data provide some indication of the magnitude of the overestimation. On one hand, the overestimation on crop farms is probably small, since these farms are involved predominantly in SAS activities; SAS crops accounted for 90 percent of total value of all sales on crop farms. On the other hand, total labor expenses on livestock farms probably overestimate the amount of labor used in SAS activities to a large degree; SAS crops accounted for only 14 percent of the total value of sales on livestock farms. However, this overestimation of labor expenses on livestock farms has only a small effect on total SAS labor expenses, since labor expenses on livestock farms accounted for only 18 percent of all labor expenses on SAS farms.⁶

Labor on SAS Farms

Over 1 million farms, or slightly more than half of all U.S. farms, produced SAS crops in 1987 (table 1). Of these SAS farms, 576,000, or about half, had labor ex-

penses. Farmers spent about \$9.9 billion for hired and contract labor on these farms. SAS farms appeared among all major types of farms, sales classes, and geographic regions. However, the use of hired and contract labor (as measured by labor expenses) appears to be heavily concentrated by type, sales class, and geographic region.

Type of Farm

Cash grain farms accounted for the largest proportion by number (34 percent) of all SAS farms with labor expenses (fig. 1). However, these farms, not large users of hired labor, accounted for only 12 percent of all labor expenses on SAS farms. The largest users of labor on SAS farms were vegetable, fruit and tree nut, and horticultural specialty farms, which together accounted for only 16 percent by number of the SAS farms with labor expenses but 51 percent of all labor expenses on SAS farms. Vegetable farms accounted for 2.8 percent of the SAS farms with labor expenses but 12.5 percent of the SAS labor expenses. Fruit and tree nut farms accounted for 9.8 percent of the SAS farms with labor expenses but 21.2 percent of the SAS labor expenses. Horticultural specialty farms accounted for 3.3 percent of the SAS farms with labor expenses but 17 percent of the SAS labor expenses.

Size of Farm

The amount of hired labor expenses on SAS farms directly relates to the size of the farm operation; the larger the farm, the greater the labor expenses. More than 55 percent of total labor expenses on SAS farms were accounted for by the less than 4 percent of all farms with SAS labor expenses that are located in the \$500,000 and above sales class (fig. 2). In contrast, more than 68 percent of the farms with SAS labor expenses were in the less than \$100,000 sales class, but their labor expenses accounted for less than 12 percent of total labor expenses on SAS farms.

Geographic Distribution of SAS Farm Labor

Because of regional differences in type and number of farms, the effects of IRCA may vary greatly by geographic area.

Number of SAS Farms

The number of SAS farms with labor expenses was unevenly distributed by State, ranging from fewer than 100 in Alaska to more than 43,000 in Iowa (app. table). Ten States accounted for over half of all the SAS farms with labor expenses in the United States (table 2). The

⁵Since SAS farms were identified according to value of sales, a farm producing SAS crops but having no value of sales (for example, a newly established fruit farm that did not produce any sales in 1987) was not considered a SAS farm.

⁶The overestimation would be offset by workers on farms producing SAS crops but having no value of sales from these crops.

Table 1—Distribution of SAS farms and labor expenses by type of farm, 1987

Type of farms	All farms	SAS farms	SAS farms with paid labor	Labor expenses on SAS farms
	-----Number-----			1,000 dollars
All farms	2,087,750	1,063,492	575,556	9,875,320
All crop farms	910,066	779,855	407,005	8,054,059
Cash grain	461,116	456,417	196,438	1,191,793
Cotton	27,466	27,466	21,065	514,729
Tobacco	88,204	88,089	51,811	195,050
Vegetable	29,783	29,791	16,530	1,235,062
Fruit and tree nut	89,070	74,136	56,649	2,095,592
Horticultural specialty	30,461	29,424	19,020	1,675,750
Other crop	183,956	74,532	45,492	1,146,083
All livestock farms	1,177,684	283,637	168,551	1,821,261
Beef, hog, and sheep	898,715	211,179	117,890	996,720
Dairy	136,528	53,891	38,556	515,034
Poultry and eggs	36,479	6,327	4,562	208,360
Other livestock	105,962	12,240	7,543	101,147

Figure 1
Distribution of SAS farms and SAS farm labor expenses by type of farm, 1987

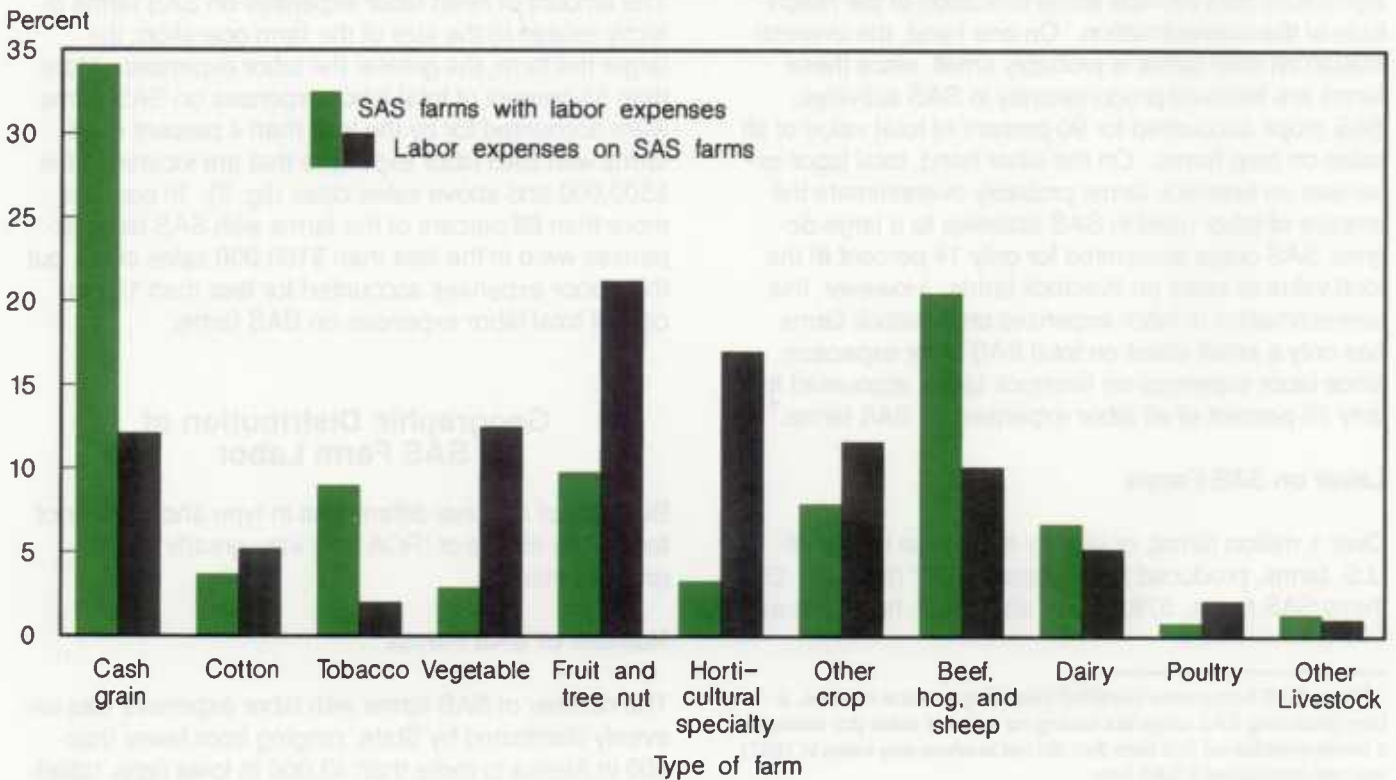
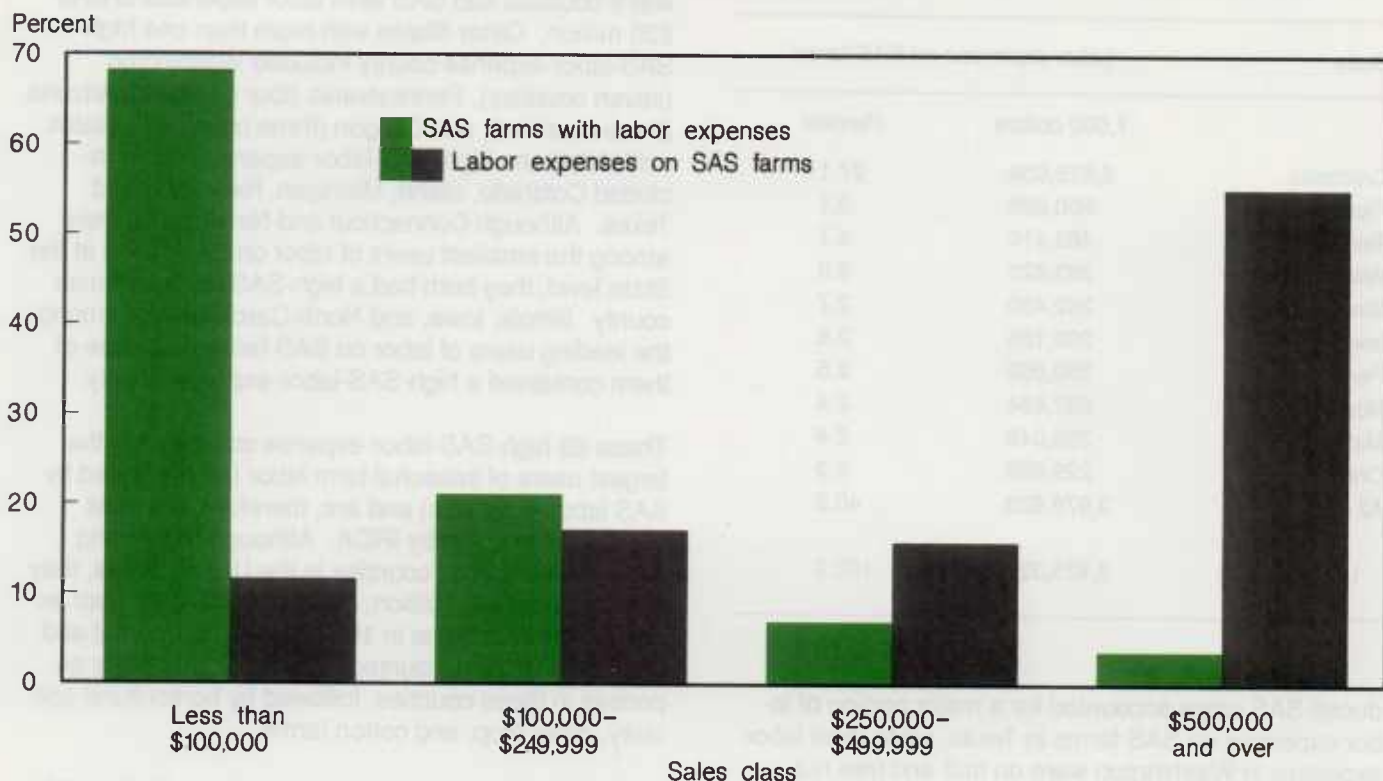


Figure 2

Distribution of SAS farms and SAS farm labor expenses by sales class, 1987**Table 2—Number of SAS farms with labor expenses in the 10 leading States, 1987**

State	SAS farms with labor expenses	
	Number	Percent
Iowa	43,819	7.6
Kentucky	41,199	7.2
California	38,369	6.7
Illinois	32,421	5.6
Minnesota	30,304	5.3
Texas	28,340	4.9
Kansas	23,011	4.0
Nebraska	22,232	3.9
North Carolina	22,117	3.8
Indiana	21,699	3.8
All other States	272,045	47.3
United States	575,556	100.0

greatest concentration of these farms was in the Midwest. Illinois, Indiana, Iowa, Kansas, Minnesota, and Nebraska were among the top 10 States in terms of numbers of SAS farms with labor expenses. However,

labor requirements on SAS farms differ significantly by crop type, as seen in figure 1. Many of the Midwest SAS farms are primarily cash grain farms, which are among the most highly mechanized and least labor intensive of all farm types. As a result, these States are not major users of farm labor and will be relatively unaffected by IRCA.

Labor Expenditures on SAS Farms

California SAS farms had the highest expenditures for hired and contract labor in the United States.

The amount of labor used varies by type of farm. Therefore, data on labor expenses are a better indicator of labor use than data on number of farms. Labor expenses on SAS farms were highly concentrated by State. SAS farms in California were by far the largest users of hired and contract labor, with expenses of almost \$2.7 billion, or 27 percent of the U.S. total, followed by SAS farms in Florida, with expenses of \$900 million, or 9 percent of the U.S. total (table 3). In both States, fruit and tree nut, vegetable, and horticultural specialty farms accounted for a large majority of labor expenses. Texas (\$463 million) and Washington (\$384 million) were the only other States with over 3 percent of the Nation's total labor expenses on SAS farms. Cotton farms and beef, hog, and sheep farms that pro-

Table 3—Labor expenses on SAS farms in the 10 leading States, 1987

State	Labor expenses on SAS farms	
	1,000 dollars	Percent
California	2,675,056	27.1
Florida	900,029	9.1
Texas	463,410	4.7
Washington	383,820	3.9
Illinois	262,430	2.7
Iowa	260,106	2.6
Pennsylvania	250,056	2.5
North Carolina	237,884	2.4
Michigan	235,048	2.4
Oregon	229,959	2.3
All other States	3,976,523	40.3
United States	9,875,321	100.0

duced SAS crops accounted for a major portion of labor expenses on SAS farms in Texas, while most labor expenses in Washington were on fruit and tree nut farms.

At the other extreme, 10 States, Alaska, Delaware, Maine, Nevada, New Hampshire, Rhode Island, Utah, Vermont, West Virginia, and Wyoming, each had labor expenses on SAS farms of less than \$40 million (app. table). The combined labor expenses in these 10 States were only \$160 million, or about 2 percent of the Nation's total.

County-Level SAS Labor Expense Data

Twenty-seven of the 68 U.S. counties with SAS labor expenditures of \$20 million or more were in California.

Labor expenses were examined at the county level to illustrate further the geographic distribution of SAS farm labor. Counties were grouped by four categories, based on expenses for labor on SAS farms: less than \$1 million, \$1 million to less than \$10 million, \$10 million to less than \$20 million, and \$20 million and over (fig. 3).

The use of hired labor on SAS farms was widespread, for all 50 States included at least 1 county with labor expenses on SAS farms of \$1 million or more, and half of the States had at least 1 county with expenses of \$10 million or more. However, the 68 counties with labor expenses on SAS farms of \$20 million or more were concentrated in only 14 States. Twenty-seven of these

high-SAS-labor-expense counties were located in California, while another 13 were in Florida. All four of Hawaii's counties had SAS farm labor expenses of over \$20 million. Other States with more than one high-SAS-labor-expense county included Washington (seven counties), Pennsylvania (four counties), Arizona (three counties), and Oregon (three counties). States containing one high-SAS-labor-expense county included Colorado, Idaho, Michigan, New York, and Texas. Although Connecticut and New Mexico were among the smallest users of labor on SAS farms at the State level, they both had a high-SAS-labor-expense county. Illinois, Iowa, and North Carolina were among the leading users of labor on SAS farms, but none of them contained a high-SAS-labor-expense county.

These 68 high-SAS-labor-expense counties are the largest users of seasonal farm labor (as measured by SAS labor expenses) and are, therefore, the most likely to be affected by IRCA. Although comprising only 2 percent of all counties in the United States, they accounted for \$4.3 billion, or 43 percent of all labor expenses on SAS farms in 1987. Fruit and tree nut and vegetable farms accounted for a majority of labor expenses in these counties, followed by horticultural specialty, other crop, and cotton farms.

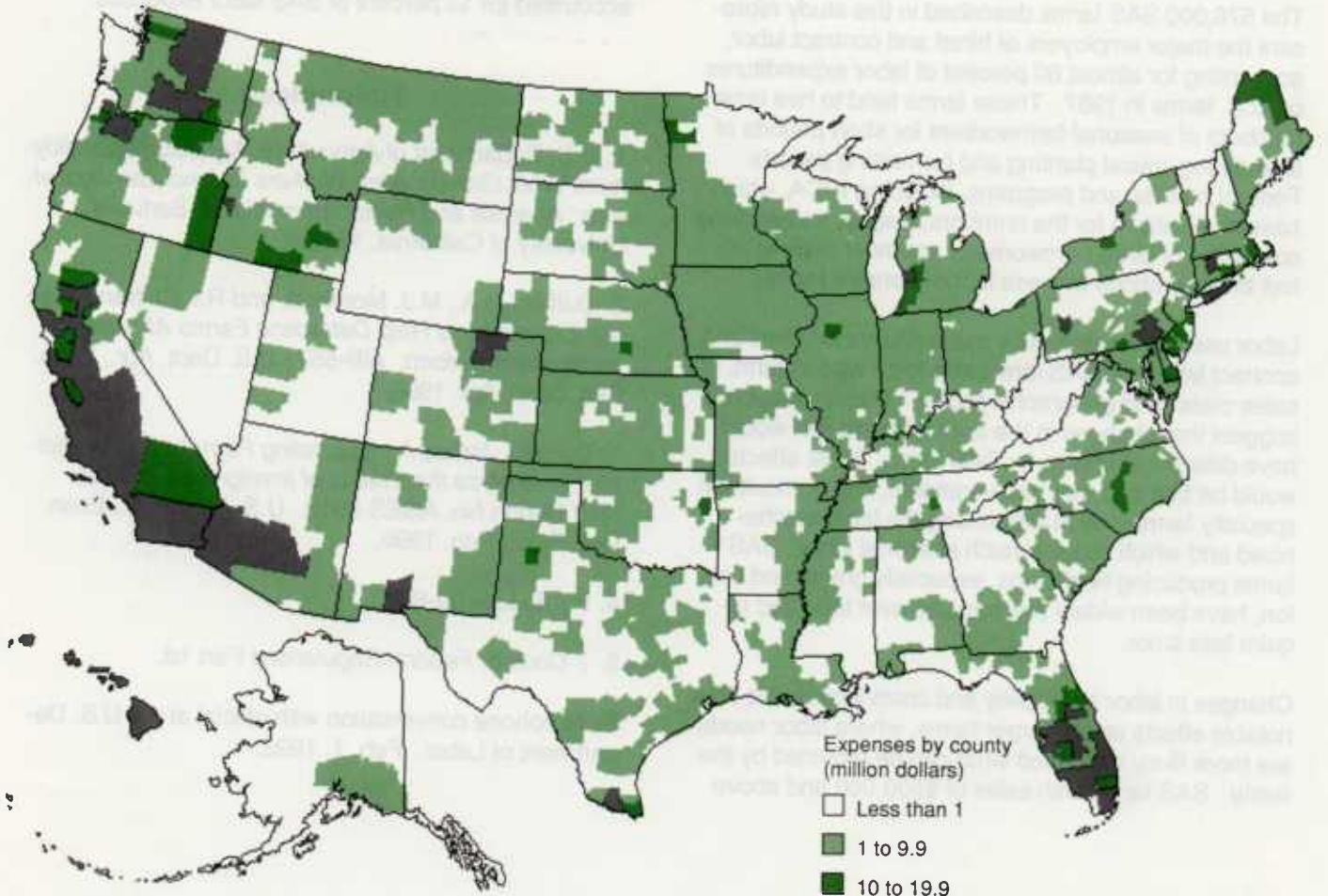
Fresno County, CA, led all counties in the Nation with SAS farm labor expenses of almost \$332 million (table 4). This was greater than the SAS labor expenses in 46 of the remaining States. Two other California counties, Kern (\$259 million) and Monterey (\$240 million), had the next highest labor expenses on SAS farms. Of the nine counties with SAS labor expenses over \$100 million, only Palm Beach, FL (\$223 million), and Yakima, WA (\$104 million), were outside California.

Table 4—Counties with labor expenses on SAS farms greater than \$100 million in 1987

County	State	Labor expenses on SAS farms
		1,000 dollars
Fresno	California	331,574
Kern	California	258,544
Monterey	California	239,595
Palm Beach	Florida	223,201
Tulare	California	181,495
Ventura	California	162,520
San Diego	California	109,157
San Joaquin	California	107,294
Yakima	Washington	103,638

Figure 3

Labor expenses on SAS farms, 1987



Conclusions

The 576,000 SAS farms described in this study represent the major employers of hired and contract labor, accounting for almost 80 percent of labor expenditures on U.S. farms in 1987. These farms tend to hire large numbers of seasonal farmworkers for short periods of time during critical planting and harvesting periods. Federal policies and programs, including IRCA, which have implications for the numbers, wages, and working conditions of hired farmworkers, are most likely to affect the operations of these labor-intensive farms.

Labor use (as measured by expenditures for hired and contract labor) on SAS farms varied by type of farm, sales class, and geographic region. These variations suggest that changes in the farm labor market would have differential effects for SAS farms. Most affected would be fruit and tree nut, vegetable, and horticultural specialty farms, which are among the least mechanized and which require much seasonal labor. SAS farms producing field crops, especially grains and cotton, have been widely mechanized over time and require less labor.

Changes in labor availability and costs would also have notable effects on the larger farms, where labor needs are more likely to exceed what can be provided by the family. SAS farms with sales of \$500,000 and above

accounted for more than 55 percent of SAS labor expenses; small farms with sales of less than \$100,000 accounted for 12 percent of SAS labor expenses.

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3. Duffield, James A. *Estimating Farm Labor Elasticities To Analyze the Effects of Immigration Reform*. Staff Report No. AGES-9013. U.S. Dept. Agr., Econ. Res. Serv., Feb. 1990.
4. Public Law 99-603.
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6. Telephone conversation with official at the U.S. Department of Labor. Feb. 1, 1992.

Appendix table—SAS farm labor expenses by State, 1987

State	All farms	SAS farms	SAS farms with paid labor	Labor expenses on SAS farms
				1,000 dollars
-----Number-----				
United States	2,087,750	1,063,492	575,556	9,875,321
Alabama	43,316	11,029	5,516	73,070
Alaska	547	152	98	1,791
Arizona	7,673	2,441	2,054	199,561
Arkansas	48,243	11,207	7,316	125,027
California	83,210	47,223	38,369	2,675,056
Colorado	27,281	10,829	6,343	113,846
Connecticut	1,109	1,109	615	49,449
Delaware	2,965	1,928	846	22,758
Florida	36,562	15,668	10,643	900,029
Georgia	43,550	16,431	9,335	152,512
Hawaii	4,869	3,569	1,420	181,063
Idaho	24,140	11,364	8,050	158,868
Illinois	88,788	72,429	32,421	262,430
Indiana	70,506	52,191	21,699	175,556
Iowa	105,184	81,858	43,819	260,106
Kansas	68,580	47,721	23,011	173,746
Kentucky	92,453	68,869	41,199	136,696
Louisiana	27,353	9,500	6,096	105,502
Maine	6,266	2,209	1,636	38,544
Maryland	14,774	8,492	4,306	64,443
Massachusetts	6,216	2,701	1,528	58,045
Michigan	51,175	31,762	13,943	235,048
Minnesota	85,078	57,026	30,304	211,109
Mississippi	34,075	10,169	6,246	109,779
Missouri	106,109	39,841	17,235	129,534
Montana	24,565	12,297	7,069	78,424
Nebraska	43,184	43,184	22,232	199,619
Nevada	3,029	258	184	11,628
New Hampshire	621	621	324	9,927
New Jersey	9,034	5,294	2,357	90,994
New Mexico	14,246	3,020	2,179	66,446
New York	37,740	12,406	7,138	187,150
North Carolina	59,288	37,241	22,117	237,884
North Dakota	35,294	29,521	14,657	93,156
Ohio	79,276	53,625	20,900	201,702
Oklahoma	70,235	22,075	11,880	92,018
Oregon	32,017	10,330	7,023	229,959
Pennsylvania	51,549	25,220	11,461	250,056
Rhode Island	702	227	116	7,146
South Carolina	20,517	8,997	5,139	87,263
South Dakota	36,377	25,339	13,181	82,862
Tennessee	79,712	37,043	19,610	103,099
Texas	188,785	42,742	28,340	463,410
Utah	14,064	3,932	2,468	26,103
Vermont	626	626	452	6,516
Virginia	44,795	17,383	10,096	99,004
Washington	33,563	13,992	10,536	383,820
West Virginia	17,237	2,862	1,305	15,865
Wisconsin	75,103	35,286	19,343	217,892
Wyoming	9,206	2,253	1,401	19,807

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Summary: A Geographic Analysis of Seasonal Agricultural Services Farms

The 1987 Census of Agriculture identified over 1 million seasonal agricultural services (SAS) farms which were involved in the field production of fruits, vegetables, and other perishable crops. About half of these SAS farms (576,000) had labor expenses amounting to \$9.9 billion. SAS farms, which generally employ large numbers of seasonal workers, are the subject of special worker provisions under the Immigration Reform and Control Act of 1986 (IRCA). The provisions of IRCA were designed to insure that producers of perishable commodities would have adequate supplies of farm labor during the transitional adjustment period. This report, using special county-level tabulations from the most recent census of agriculture, identifies and describes SAS farms and their labor use.

Although SAS farms appeared among all types of farms, sales classes, and geographic regions, labor expenses for hired and contract workers are heavily concentrated in a few types, sales classes, and regions. The largest users of hired labor on SAS farms are those producing vegetables, fruits and tree nuts, and horticultural specialties, which accounted for only 16 percent of SAS farms but accounted for 51 percent of the labor expenses on SAS farms.

SAS farms located in the \$500,000 and above sales class accounted for less than 4 percent of the SAS farms, but they accounted for more than 55 percent of the total labor expenses on these farms.

Labor expenses on SAS farms are concentrated in California (27 percent of all SAS labor expenses), Florida (9 percent), Texas (5 percent), and Washington (4 percent).

For Additional Information..

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Also See...

V.J. Oliveira. *Hired and Contract Labor in U.S. Agriculture, 1987: A Regional Assessment of Structure*. AER-648. U.S. Dept. Agr., Econ. Res. Serv., May 1991.

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