The changing face of farm employment

Technological advances have led to larger farms and a smaller farm work force whose demographics have changed markedly

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Several decades of transformation in American agriculture have slowly but ever so surely altered the rural landscape. In the process, the faces that now inhabit the farm have changed dramatically. Remarkable shifts have occurred in the demographic characteristics of farmers and farm laborers, in the number and size of farms, and in the makeup of the "typical" family farm.[1]

Farm employment, a subset of agricultural employment, includes persons employed directly in the production of food and fiber products—farm operators, managers, and laborers. Workers in these occupations—who now number about 2 million—accounted for only 1.7 percent of the Nation's employment in 1993, down from 6.4 percent three decades earlier. The mass exodus of millions of farmers and farmworkers into other sectors of the economy already had taken place by the 1970's, even as farm output continued to surge. Further technological advances over the past two decades have largely been reflected in increased output, although employment has continued to slip.

Not only has farm employment fallen, but many changes have taken place in the characteristics of farmers and farmworkers and in the nature of farming itself. The last three decades have witnessed dramatic shifts: from the pronounced use of black workers to employment of Hispanic workers; from smaller to larger farms; from the South to the West; from lower to higher levels of educational attainment; and, to a lesser extent, from male to female ownership. In addition, unpaid work by family members, which for so long had characterized the "typical" family farm, declined substantially.

This article focuses on some of the effects increased productivity, improved technology, and the resultant changes in farm numbers and size have had on the demographic characteristics of farm employment. It also examines geographical shifts in farm activity that have taken place over the last four decades.

Some key factors

Since mid-century, a wide range of changes have occurred in agriculture, society, and the economy in general that influenced farm employment trends and characteristics. Among them:

- Technological advances, such as the increased use of fertilization, improved irrigation practices, and the advent of larger tractor equipment have led to dramatic increases in productivity and reductions in employment.
- Relatively high costs of land and equipment associated with production agriculture (the production of food and fiber products) have restricted access to farming for many, and forced others to abandon farming entirely.
- The expansion of the service sector created a demand for labor in nonfarm industries. Higher

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nonfarm earnings, relative to farm wages, attracted many workers away from agriculture.
- Hispanic immigration, largely from Mexico, provided a large pool of low-wage, agricultural labor.
- There has been a general westward shift in agricultural production.

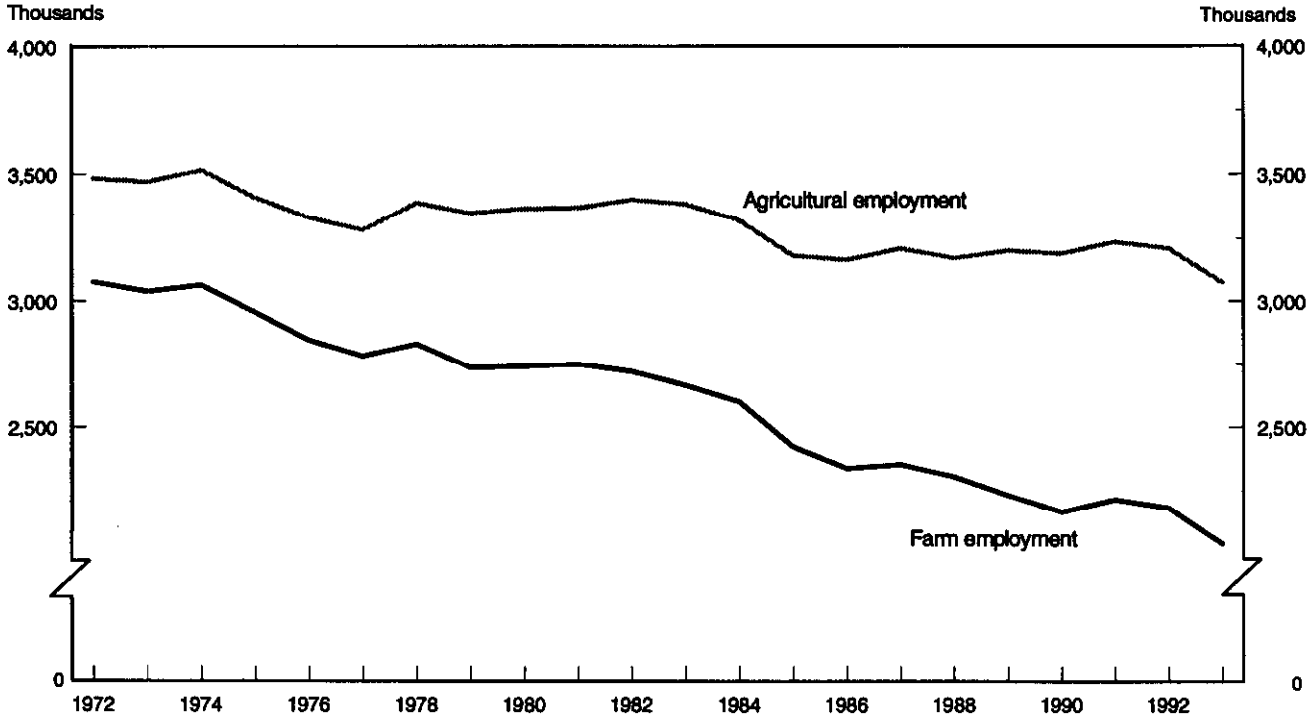
Overview

Agricultural versus farm employment. In addition to workers directly engaged in the production of crops or livestock, agricultural employment (as officially defined in the census industry classification system and used in the Current Population Survey (CPS)) includes persons working in a variety of related services, such as veterinary services and landscape and horticultural services. From an occupational perspective, nearly all of the workers who are directly involved in the production component of agriculture fall into two categories: farm operators and managers and farm occupations, except managerial. Together, these two groups made up about two-thirds of employment in the agriculture industry in 1993. While employment in other parts of the industry has increased over the last two decades, the number of persons employed in these two occupations has declined. As a result, employment in agriculture has shown little change since 1972, even as farm employment has continued to drop. (See chart 1.) And it is for this reason that this article focuses specifically on trends in farm occupations and not on the larger agricultural industry.

Trends. Agricultural production has increased since mid-century even as employment levels were being drastically reduced. And, as improvements and changes in farm technology reduced the emphasis on labor-intensive utilization, agriculture comprised larger, fewer, more specialized and capital-intensive farms. The efficient use of new (usually costly) technologies was often impractical on small farms.[2] Many operators of these farms, unable to adapt and compete, were forced to sell, while other farmers purchased the technologies and expanded their operations. Thus, as shown in table 1, the number of farms fell precipitously and, correspondingly, average farm size rose.[3]

The "boom and bust" cycle in the U.S. farm economy between 1974 and 1987 led to short-term changes in farm size and numbers not readily apparent from the aggregate long-term trend.[4] Generally optimistic times during the late

Chart 1. Trends in agricultural and farm employment, 1972–93



NOTE: "Agriculture" is a major industry division in the classification system used in the Current Population Survey. "Farming" relates specifically to the components of agriculture that are involved directly in the production of food and fiber products.

Table 1. **Selected characteristics of the farming sector of the economy, selected years, 1953–93**

Year	Farm employment[1] (thousands)	Percent change over decade	Number of farms (thousands)	Percent change over decade	Average farm size (acres)	Percent change over decade	Index of farm output (1963=100)
1953	6,224	—	4,984	—	242	—	82.5
1963	4,364	–29.9	3,572	–28.3	322	33.1	100.0
1973	3,027	–30.6	2,823	–21.0	385	19.6	116.3
1983	2,666	–11.9	2,379	–15.7	430	11.7	120.0
1993	2,041	–23.4	2,065	–13.2	474	10.2	[2]148.8

[1] Data refer to farmers, farm managers, and farm laborers. Data are not strictly comparable because of changes introduced into the occupational classification system used in the Current Population Survey (CPS). Data for 1963 forward refer to persons aged 16 years and older; 14 years and older for 1953.

[2] U.S. Department of Agriculture preliminary estimate for 1990.

SOURCE: Bureau of Labor Statistics, Current Population Survey; U.S. Department of Agriculture, National Agricultural Statistics Service.

1970's, generated and fueled by a strong foreign market for U.S. farm products, and low (real) interest rates combined to make farmland seem a good investment. The decline in farm numbers slowed or stabilized in most regions between 1978 and 1982 and even reversed in some as entries into farming exceeded exits. (See table 2.) The growth in average farm size stalled during this period, which indicates that the entry of new farms increased. The expansion, however, was short-lived. With land values declining and real interest rates rising during the early 1980's, the falling asset values led to reduced entry into farming, as volatile economic conditions in the sector made farming less attractive financially.

Employment continued thereafter on its long-term downtrend, farm numbers resumed their decline, and average farm size, its growth. Since 1963, when consistent data (as shown in table 1) were first available, farm employment has fallen by half, while farm output has risen by half.[5] The number of farm laborers has declined at an even faster pace than has the number of farm operators and managers. As a result, farm operators and managers currently make up 57 percent of farm employment within these two groups, compared with 55 percent in 1963.

Regions, race, and ethnicity. The number of white farmers/managers has been nearly halved since 1963 while black farmers/managers, who numbered about 170,000 three decades earlier, have become nearly extinct. (See table 3.) The overall decline in the number of farm laborers has been just as dramatic; white farm labor has declined by 46 percent, while black farm labor has dropped by 88 percent. Some of the decline in total farm labor has been offset by growth in Hispanic farm employment. The Hispanic share of farmworkers has doubled in the last two decades and 3 of every 10 laborers are now of that ethnicity.

As shown in table 3, overall farm employment (both operators/managers and laborers) among blacks declined by 90 percent over the past three decades; the comparable decline for whites was about 50 percent. As a result, blacks' share of farm employment has fallen precipitously—from 15.5 to 3.4 percent.

It is important to recognize that farm employment has not changed in all regions of the country to the same degree that the general trend indicates.[6] The decennial census data show that the West has had an increasing share of total farm employment since mid-century.[7] The South's share has been declining since 1950, though at a slower pace since 1970. The North Central's share has declined substantially since 1980, following years of constant growth. (See table 4.)

Most of the trend in black farm employment mentioned above can be traced directly to changes in the South, because this region ac-

Table 2. **Percent change in the number of farms by census region, 1976–88**

Year	Total	Northeast	North Central	South	West
1976	–1.0	0.1	–1.3	–1.3	1.2
1977	–1.7	–2.7	–1.7	–2.1	.8
1978	–.8	–.8	–1.1	–1.4	2.6
1979	([1])	2.6	–1.0	.3	1.9
1980	.1	.4	–.9	.5	2.0
1981	([1])	–.5	–.5	–.1	2.5
1982	–1.4	–.6	–1.7	–1.6	.1
1983	–1.2	.3	–1.3	–1.5	–.3
1984	–1.9	–2.5	–2.4	–1.8	–.1
1985	–1.8	–2.5	–2.1	–1.9	.3
1986	–1.9	–1.9	–2.0	–2.2	–.2
1987	–1.6	–1.6	–1.9	–1.8	–.4
1988	–.7	–1.5	–.5	–1.0	([1])

[1] Less than 0.05 percent.

SOURCE: U.S. Department of Agriculture, National Agricultural Statistics Service.

counted for 97 percent of black farm employment as recently as 1950. As seen in table 5, overall farm employment in the South declined by more than four-fifths between 1950 and 1990; employment of black farmers in the region all but disappeared.

Farm employment had been so important for blacks in the South that its demise severely affected black employment levels in general. For example, a study by John Cogan on black teenage employment noted that the employment-to-population ratio of black male 16- to 19-year-olds in the South plummeted from 54.8 percent in 1950 to 27.4 percent in 1970, while changing little in the other regions.[8] This decline influenced the drop in the overall employment-to-population ratio for the same group from 46.6 to 27.0 percent. The loss of agriculture as a source of

Table 3. **Farm employment by occupation, sex, race, and Hispanic origin, annual averages, selected years, 1963–93**

Occupation	Total	Men	Women	White	Black[1]	Hispanic origin
	Numbers (thousands)					
1963						
Total, 16 years and older	4,364	3,547	817	3,689	675	(2)
Farmers and farm managers	2,388	2,257	131	2,221	167	(2)
Farm laborers	1,976	1,290	686	1,468	508	(2)
1973						
Total, 16 years and older	3,027	2,513	514	2,772	219	188
Farmers and farm managers	1,664	1,561	103	1,602	51	8
Farm laborers	1,363	952	411	1,170	168	180
1983						
Total, 16 years and older	2,666	2,194	472	2,463	157	206
Farmers and farm managers	1,450	1,275	175	1,419	19	11
Farm laborers	1,216	919	297	1,044	138	195
1993						
Total, 16 years and older	2,041	1,695	347	1,940	69	284
Farmers and farm managers	1,170	1,003	167	1,152	10	28
Farm laborers	871	692	180	788	59	256
	Percent distribution					
1963						
Total, 16 years and older	100.0	81.3	18.7	84.5	15.5	(2)
Farmers and farm managers	100.0	94.5	5.5	93.0	7.0	(2)
Farm laborers	100.0	65.3	34.7	74.3	25.7	(2)
1973						
Total, 16 years and older	100.0	83.0	17.0	91.6	7.2	6.2
Farmers and farm managers	100.0	93.8	6.2	96.3	3.1	.5
Farm laborers	100.0	69.8	30.2	85.8	12.3	13.2
1983						
Total, 16 years and older	100.0	82.3	17.7	92.4	5.9	7.7
Farmers and farm managers	100.0	87.9	12.1	97.9	1.3	.8
Farm laborers	100.0	75.6	24.4	85.9	11.3	16.0
1993						
Total, 16 years and older	100.0	83.0	17.0	95.1	3.4	13.9
Farmers and farm managers	100.0	85.7	14.3	98.5	.9	2.4
Farm laborers	100.0	79.4	20.6	90.5	6.8	29.4

[1] Data for 1963 refer to black-and-other workers.

[2] Not available.

NOTE: Pre-1980 data for Hispanics do not reflect revised population controls introduced in 1986. Detail for race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups.

employment in the South was cited as the principal cause of this employment decline among young black men.

Over half of the decline in black farm employment in the South between 1950 and 1990 was due to the departure of black farmers and farm managers (as opposed to laborers). This decline, in itself, does not necessarily mean a reduction in the number of black farm owners, because a "farmer" can be a tenant (nonowner) as well.[9] In fact, in 1954, three-fifths of "nonwhite" farmers in the South were tenants.[10] That proportion had declined to 1 in 7 by 1984. The relatively few black farmers left in the South by the mid-1980's were primarily full or part owners, while those who left farming were more often tenants.

Small farms in general were less likely to benefit from the rapid technological advances in agriculture, because the capital requirements for implementation of those technologies were often prohibitive.[11] The average-sized farm operated by nonwhites in the South was only 46 acres in 1954, less than a fourth the size of farms operated by whites.[12] Data on income confirm what can be inferred from the farm-size data just described, that is, that the marginal nature of many black-operated farms has been the main reason for the exit of blacks from farming. Data from the Bureau of the Census for 1969 show that the mean farm self-employment income for rural black farm families was just over a third of the farm income earned by white families.[13]

Thus, evidence indicates that smaller, minority-owned (or -operated) farms were poorly equipped to compete in an environment where large-scale farming practices were better suited to the changing technology. Also, some discriminatory practices (including limited access to credit and land), as well as unfavorable tax and subsidy policies combined with the aforementioned inherent disadvantages to all small farmers associated with increased mechanization, have been cited as factors that led to a decline in farm employment among minorities.[14]

While many black farmers and farmworkers had already exited agriculture by the early 1970's (nearly 60 percent during the decade of the 1960's), the upward trend in Hispanic farm employment was just beginning. Since 1973 (when data for Hispanics were first available from the CPS), the number of Hispanic farmers and farmworkers has increased by half to over 280,000 compared with only 70,000 remaining blacks. In 1993, the employment share of Hispanics—13.9 percent—was essentially the same as that of blacks three decades earlier. (See table 3.)

As with blacks, farm employment data for Hispanics need to be examined in a regional context. Whereas the trend in black farm employment, shown in table 6, was readily linked to changes in the South, the trend in Hispanic farm-related activity is closely aligned to changes in the West.

Table 4. **Percent distribution of farm employment by census region, selected years, 1950–90**

Category	United States	Northeast	North Central	South	West
Total					
1950	100.0	7.2	34.8	47.5	10.6
1960	100.0	7.5	38.1	40.7	13.7
1970	100.0	8.1	39.9	35.6	16.4
1980	100.0	7.9	40.5	32.2	19.4
1990	100.0	8.5	36.8	31.3	23.4

NOTE: Detail may not sum to totals due to rounding. Data for 1970 forward refer to persons aged 16 years and older; 14 years and older for prior years.

SOURCE: Bureau of the Census, Census of the Population.

Farm employment in the West—the only region to experience an increase since 1970—has risen by 8.7 percent. (See table 5.) Hispanics contributed heavily to this expansion and made up over 40 percent of farm employment in the West by 1990, double their share in 1970.

Nearly all the increase in Hispanic farm employment in the West (as seen in table 5) has been among laborers, although the number of Hispanic farmers also advanced. Because of the labor-intensive nature of fruit, vegetable, and horticultural specialty (FVH) farms common in California and Washington, large numbers of workers are required for short periods.[15] However, unlike other types of production specialty such as livestock and grain production, where technology and mechanization have reduced or replaced the need for labor, these farms are still heavily dependent on cheaper, oftentimes migrant, farm labor. While data from both the CPS and decennial censuses indicate a significant increase in Hispanic farm employment levels since 1970, there is reason to believe that some of the actual ("true") increase may be unaccounted for in those data. In fact, the literature suggests that the number of Hispanic migrant or seasonal farm workers may be vastly underestimated, especially in the area of illegal immigrant employment.[16]

The modern farmer

Family labor. The "typical" American farm of today often is vastly different than that of 30, and even 20, years ago. While family members, including children, once provided a primary source of farm labor as unpaid workers, today they are more likely to pursue opportunities off the farm. The number of unpaid family workers has declined by over three-fourths since 1973 and comprised 10 percent of farmworkers in 1993,

only a third of their share 20 years earlier. A significant amount of the decline in unpaid family labor has been among farmers' wives, and much of this appears to be attributable to simple reclassification of wives from unpaid workers to co-owners. This reclassification, alternatively, has contributed to an increase in women's share of farm self-employment (operators/managers) as shown in table 3. Indeed, the role of women as farm operators/managers is much more apparent in recent years, as their proportion of farmers/managers increased from 6.2 to 14.3 percent between 1973 and 1993. Also, nearly three-fifths of all female farmers co-owned or co-operated farms with their husbands in 1993.

In general, the farmer's wife now is more likely to be employed (as indicated in table 7) and also is more likely to be employed off the farm. While the percent of farm operators' wives who are employed has risen by more than half since 1976, the proportion who are in farm employment has declined by a fourth.

Table 5. **Farm employment by race, Hispanic origin, and census region, selected years, 1950–90**

Category	United States	Northeast	North Central	South	West
1950					
Total	6,706,047	481,467	2,330,518	3,184,278	709,784
Farmers and farm managers	4,306,253	278,797	1,638,505	2,012,644	376,307
Farm laborers	2,399,794	202,670	692,013	1,171,634	333,477
Black	995,111	8,153	11,891	969,205	5,862
Farmers and farm managers	495,368	1,004	5,168	488,454	742
Farm laborers	499,743	7,149	6,723	480,751	5,120
1960					
Total	3,950,491	297,258	1,504,236	1,606,473	542,524
Farmers and farm managers	2,505,684	171,555	1,131,769	941,044	261,316
Farm laborers	1,444,807	125,703	372,467	665,429	281,208
Black	494,969	6,483	6,947	475,171	6,368
Farmers and farm managers	168,776	763	1,698	165,326	989
Farm laborers	326,193	5,720	5,249	309,845	5,379
1970					
Total	2,367,055	191,523	943,981	842,368	389,183
Farmers and farm managers	1,418,746	105,141	719,543	430,729	163,333
Farm laborers	948,309	86,382	224,438	411,639	225,850
Black	217,211	8,009	8,595	195,406	5,201
Farmers and farm managers	42,169	2,518	2,880	35,919	852
Farm laborers	175,042	5,491	5,715	159,487	4,349
Hispanic origin	135,728	2,376	3,920	45,875	83,557
Farmers and farm managers	14,404	120	713	5,253	8,318
Farm laborers	121,324	2,256	3,207	40,622	75,239
1980					
Total	2,174,001	172,198	881,054	699,736	421,013
Farmers and farm managers	1,298,670	95,457	640,576	393,893	168,744
Farm laborers	875,331	76,741	240,478	305,843	252,269
Black	111,007	1,787	2,582	103,296	3,342
Farmers and farm managers	25,155	343	651	23,636	525
Farm laborers	85,852	1,444	1,931	79,660	2,817
Hispanic origin	190,183	3,465	4,384	52,648	129,686
Farmers and farm managers	17,761	390	1,178	7,352	8,841
Farm laborers	172,422	3,075	3,206	45,296	120,845
1990					
Total	1,805,247	152,667	665,168	564,523	422,889
Farmers and farm managers	1,066,944	92,699	490,536	313,735	169,974
Farm laborers	738,303	59,968	174,632	250,788	252,915
Black	68,439	1,959	2,032	62,479	1,969
Farmers and farm managers	16,660	544	715	14,955	446
Farm laborers	51,779	1,415	1,317	47,524	1,523
Hispanic origin	258,854	5,552	6,531	69,281	177,490
Farmers and farm managers	33,300	939	1,151	11,766	19,444
Farm laborers	225,554	4,613	5,380	57,515	158,046

NOTE: Data for 1970 forward refer to persons aged 16 years and older; 14 years and older for prior years.
SOURCE: Bureau of the Census, Census of the Population.

Table 6. **Percent of farm employment and of selected occupations comprised by blacks and Hispanics in the United States and in each census region, selected years, 1950–90**

Category	United States	Northeast	North Central	South	West
Black					
1950	14.8	1.7	0.5	30.4	0.8
1960	12.5	2.2	.5	29.6	1.2
1970	9.2	4.2	.9	23.2	1.3
1980	5.1	1.0	.3	14.8	.8
1990	3.8	1.3	.3	11.1	.5
Farmers and farm managers:					
1950	11.5	.4	.3	24.3	.2
1960	6.7	.4	.2	17.6	.4
1970	3.0	2.4	.4	8.3	.5
1980	1.9	.4	.1	6.0	.3
1990	1.6	.6	.1	4.8	.3
Farm laborers:					
1950	20.8	3.5	1.0	41.0	1.5
1960	22.6	4.6	1.4	46.6	1.9
1970	18.5	6.4	2.5	38.7	1.9
1980	9.8	1.9	.8	26.0	1.1
1990	7.0	2.4	.8	18.9	.6
Hispanic origin					
1970	5.7	1.2	.4	5.4	21.5
1980	8.7	2.0	.5	7.5	30.8
1990	14.3	3.6	1.0	12.3	42.0
Farmers and farm managers:					
1970	1.0	.1	.1	1.2	5.1
1980	1.4	.4	.2	1.9	5.2
1990	3.1	1.0	.2	3.8	11.4
Farm laborers:					
1970	12.8	2.6	1.4	9.9	33.3
1980	19.7	4.0	1.3	14.8	47.9
1990	30.6	7.7	3.1	22.9	62.5

NOTE: Data for 1970 forward refer to persons aged 16 years and older; 14 years and older for prior years.
SOURCE: Bureau of the Census, Census of the Population.

It is worth noting that data for 1994 showed that women accounted for a far higher share of self-employed farm operators and managers (26.0 percent) than in earlier years and that the estimated number self-employed (331,000) was twice that posted in 1993. These differences probably reflect several questionnaire changes to the CPS beginning in January 1994 rather than an acceleration of the underlying trend. Many of the revisions to the new questionnaire were made to capture labor force activity more completely. To this end, key questions on work activity were reworded. For example, the new questionnaire has a direct question related to employment in family businesses and farms; it is likely that inclusion of this question resulted in a larger number of women identifying themselves as farmers and managers than had been the case in the previous years. In addition, the old survey began with a question on a person's "major activity" during the survey reference week. Analysts have hypothesized that this question led some respondents to focus on their major activity (such as keeping house or family responsibilities) rather than on their (perhaps marginal) work activity. It is the work activity, however, that the CPS is primarily designed to capture.[17]

Education. Higher education has become more of a necessity in recent years, as farmers cope with the changing technology and the complexities of marketing and managing their product. The U.S. Department of Agriculture has reported that larger farms, whether measured by acreage or sales, are operated by individuals with higher levels of education.[18]

Although the skills and knowledge of farmers and the technical nature of modern agriculture are not often recognized, today's farm operator is twice as likely to have some college education as his or her predecessor of the mid-70's. (See table 8.) In fact, more than four-fifths of farm operators and managers in 1993 had at least a high school education, compared to just over half in 1976. To a large extent, this reflects a changing of the generations, whereby an older generation, for whom a high school degree was the exception (see data for farmers 55 years and older

in 1976 in table 8) was replaced by a generation for whom a high school degree, and even more education, is common.

Interestingly, the "age of education" among farmers appears to have been in the 1970's, when nearly 20 percent of the young (25- to 34-year-olds) farmers had college degrees. Now mostly in the 45- to 54-year-old category, that cohort continues to have the highest college graduation rate. Subsequent cohorts of young farmers have had lower college graduation rates, although they still are more likely to have higher levels of education than farmers of the past.

Farming as a second job. Part-time farming still remains a viable option for some who wish either to maintain a family tradition of farming or to supplement off-farm incomes. But it has declined in importance as the requirements to be competitive, in terms of farm size and capital investment, have risen. Since 1973, the number of persons who have a secondary job as a farm operator or manager has been falling, and the decline has occurred at a faster pace than it has among those whose primary employment is as a farm operator or manager. The number of these "second job" farmers declined by 38 percent from 1973 through 1991 (1991 is the last year for which multiple jobholding data are available on a comparable basis), versus a 25-percent decline for those whose primary occupation is farming. During the 1960's and early 1970's, as many as 16 percent of multiple jobholders had a secondary occupation as a farmer or manager. That proportion had declined substantially by the early 1990's, when only 6 percent of all secondary jobs were of that vocation, even as the overall number of multiple jobholders continued to rise.

IN SUMMARY, while agricultural employment has essentially flattened out in recent years, employment directly associated with farming has continued its long-term downward trend. This has been punctuated by a number of important changes that have dramatically altered the face of agriculture. The need to achieve economies of scale and apply technological developments in order to compete have been the driving force behind these changes. Farm size grew and farm numbers declined as many less efficient farms exited agriculture. Improved technology associated with production agriculture dramatically changed the demand for labor. Lastly, competing demands for farmland resulted in a substantial decline in total farm acreage.

In outward appearance, extensive pivot irrigation sprinkler systems now dot the landscape from the upper Midwest to the heartland, to the South, and to the West. Larger, seemingly oversized, mechanized equipment capable of tilling, seeding, or harvesting acres of land in minutes, instead of hours, has replaced the smaller, more labor-intensive devices of the past. Production specialization (in terms of individual farms and even particular areas), profit-maximization (as opposed to output maximization), and environmental concerns have become the ideology by which farmers now manage their businesses.

The same technological advances that allowed some farmers to produce more in a competitive environment, concurrently forced an even greater number to abandon agriculture altogether. These forces affected the economically disadvantaged farmer, particularly blacks in the South, to a greater extent than others employed in farming. As labor resources were attracted away from agriculture by relatively higher nonfarm wages, many rural residents moved into the cities of the Midwest, East, and Northeast in search of nonagricultural employment. The result is a farm sector with fewer operators and still fewer laborers and the role of farming in small-town America has become much less significant. The remaining farm operators and managers today are even more likely to be white, increasingly likely to be women, are more highly educated, and are much more apt to operate larger, capital-intensive farms on a full-time basis. ❑

Table 7. **Employed married male farmers and farm managers by ocupation and class of worker of spouse, annual averages, selected years, 1976–93**

[Numbers in thousands]

Year	Employed married men	Employment status of wife										
		Employed		Farmers and farm managers				Farm laborers				Other employment
		Number	Percent	Total	Wage-and-salary workers	Self employed workers	Unpaid family workers	Total	Wage-and-salary workers	Self employed workers	Unpaid family workers	
1976	1,207	491	40.7	30	—	30	—	169	4	—	165	292
1983	1,061	564	53.2	95	—	94	1	115	14	2	100	354
1993	803	506	63.0	100	1	96	2	48	10	2	36	358

NOTE: Dash indicates data not available.

Table 8. **Percent distribution of employed farmers and farm managers by age and educational attainment, annual averages, selected years, 1976–93**

Year and age	Total	Less than 4 years high school	4 years of high school	1 to 3 years of college	4 years of college or more
1976					
Total, 20 years and older	100.0	43.6	37.7	10.4	8.3
20 to 24 years	100.0	11.4	55.7	22.8	10.1
25 to 34 years	100.0	13.2	46.1	21.0	19.6
35 to 44 years	100.0	25.7	52.2	11.4	10.6
45 to 54 years	100.0	48.6	37.8	8.3	5.2
55 to 64 years	100.0	58.1	32.5	5.7	3.7
65 years and older	100.0	69.8	17.6	6.3	6.3
1983					
Total, 20 years and older	100.0	28.8	44.4	15.1	11.7
20 to 24 years	100.0	13.0	59.7	20.8	6.5
25 to 34 years	100.0	7.6	53.1	23.3	16.0
35 to 44 years	100.0	13.6	47.6	18.3	20.5
45 to 54 years	100.0	32.7	46.9	13.1	7.3
55 to 64 years	100.0	40.4	40.4	10.6	8.7
65 years and older	100.0	58.0	26.9	7.3	7.8
	Total	**Less than a high school diploma**	**High school graduates, no college**	**Some college or associate degree**	**College graduates, total**
1993					
Total, 20 years and older	100.0	17.8	46.9	21.3	14.1
20 to 24 years	100.0	9.4	46.9	34.4	9.4
25 to 34 years	100.0	9.1	51.9	26.2	12.8
35 to 44 years	100.0	7.2	46.4	29.3	17.0
45 to 54 years	100.0	13.3	46.0	22.1	18.6
55 to 64 years	100.0	23.0	50.6	12.8	13.6
65 years and older	100.0	39.2	39.2	13.9	7.7

NOTE: Beginning in 1992, data on educational attainment are based on the "highest diploma or degree received" rather than the "number of years of school completed."

Footnotes

[1] According to the Department of Agriculture, no existing definition of a family farm is completely satisfactory for policy purposes. The Census of Agriculture first defined a farm in 1850. Since then, it has changed its criteria nine times. The current definition, used since 1974, is "any place from which $1,000 or more of agricultural products were produced and sold or normally would have been sold during the census year." For a discussion of this issue, see "Baseline Projections of Farm Income," *The Outlook for Farm Commodity Program Spending, Fiscal Years 1990–1995*, April 1990, p. 71. See also *Report of the Commission on Agricultural Workers*, November 1992, p. 3.

[2] For a discussion of this issue, see Walter W. Wilcox, Willard W. Cochrane, and Robert W. Herdt, "PART ONE: The production of farm products." *Economics of American Agriculture, Third Edition* (Prentice-Hall, Inc., 1974), pp. 3–90.

[3] The total number of acres of farmland actually declined over the period, falling by 15 percent between 1963 and 1993. The source of these data is the U.S. Department of Agriculture, National Agricultural Statistics Service, Economic Statistics Branch.

[4] Several forces combined during the decades of the 1970's and 1980's to produce a boom and bust cycle in the U.S. farm economy. For a complete discussion of this topic, see Donn A. Reimund and Fred Gale, "Structural Change in the U.S. Farm Sector, 1974–87," *13th Annual Family Farm Report to Congress*, Agriculture Information Bulletin 647 (U.S. Department of Agriculture, May 1992).

[5] The source of farm employment data is the Current Population Survey (CPS), a monthly survey of nearly 60,000 households, conducted by the Bureau of the Census for the Bureau of Labor Statistics. Due to the implementation in January 1994 of a major redesign of the survey and the introduction of 1990 population controls, adjusted for the estimated undercount, 1994 data are not strictly comparable to data from earlier years and were not incorporated into this analysis. Data for 1994 show that the estimated number of employed farm operators and managers and farmworkers (2,274,000) was higher than in previous years. Much of the difference is related to changes in the survey that caused an increase in self-employment among women.

[6] The United States, as designated by the U.S. Bureau of the Census, is divided into four main areas: the Northeast, North Central, South, and the West.

[7] The source of these data is the U.S. Bureau of the Census, Characteristics of the Population, Detailed Population Characteristics. Regional data from the decennial census were used because the sample size of the CPS would be insufficient for this regional analysis.

[8] John Cogan, "The decline in black teenage employment: 1950–1970," *The American Economic Review*, September 1982, pp. 621–35.

[9] The Census of Agriculture defines three classes of farm operators: full owners, part owners, and tenants. Full owners operate only the land they own; part owners operate both land they own as well as land they rent from others; tenants operate only the land they rent from others. See Denise M. Rogers, *Leasing Farmland in the United States*, AGES–9159 (U.S. Department of Agriculture, Economic Research Service, Resources and Technology Division, 1992), p. 2.

[10] Thomas T. Williams, "Interdependence of agriculture and rural development," *Human Resources Development in Rural America. . . . . Myth or Reality* (Library Of Congress Catalog Number 86–050568, Copyright 1986), pp. 1–16.

[11] Wilcox and others, *Economics of American Agriculture*, pp. 3–90.

[12] Williams, *Human Resources Development in Rural America. . . . . Myth or Reality*, p. 12.

[13] Source: *1970 Census of Population, Characteristics of the Population, U.S. Bureau of the Census, General Social and Economic Characteristics*, Table 94, United States Summary 1–399.

[14] See Ray Marshall and Allen Thompson, "The status and prospects of small farmers in the south," *Status and Prospects of Small Farmers in the South* (Atlanta, Southern Regional Council, Inc., 1979), pp. 48–72; and "The Decline of Black Farming in America," A Report of the United States Commission on Civil Rights, February 1982, pp. 14–71.

[15] See Victor J. Oliveira, Anne B.W. Effland, Jack L. Runyan, and Shannon Hamm, *Hired Farm Labor Use on Fruit, Vegetable, and Horticultural Specialty Farms*, Agricultural Economic Report no. 676 (U.S. Department of Agriculture, Economic Research Service, December 1993), p. 1.

[16] See, for example, Philip L. Martin, "Immigration and Agriculture," *National Forum, The Phi Kappa Phi Journal*, vol. 74, no. 3, pp. 23–28; and, Philip L. Martin, *Harvest of Confusion: Migrant Workers in U.S. Agriculture* (Boulder, San Francisco, & London, Westview Press, 1988).

[17] For a more detailed discussion of questionnaire changes and their impact on employment, see Sharon R. Cohany, Anne E. Polivka, and Jennifer M. Rothgeb, "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings*, February 1994, pp. 13–37.

[18] Judith Z. Kalbacher, Susan E. Bentley, and Donn A. Reimund, *Structural and Financial Characteristics of U.S. Farms, 1990*, 15th Annual Family Farm Report to Congress, Agriculture Information Bulletin No. 690 (U.S. Department of Agriculture, Economic Research Service), pp. 10–14.