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# Farm Operators - A Century of Demographic Data

Ginger Harris  
Agricultural Outlook Forum  
February 20, 2008



United States Department of Agriculture  
National Agricultural Statistics Service

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# NASS: National Agricultural Statistics Service

- ❖ NASS is an agency of the US Department of Agriculture
- ❖ We produce 450 reports a year- weekly, monthly, quarterly, annual, and the census (5 year cycle)
- ❖ Reports on crops, livestock, farms, farm economics and operator characteristics
- ❖ NASS works from its headquarters in Washington, DC and its 45 field offices (FOs)



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# Sources of data on farm households

- ❖ Primary sources of data for analysis of operator and operation characteristics:
  - ❖ Census of Agriculture
    - ❖ County level data- conducted every five years
    - ❖ Starting with the 1900 Census (for operator data)
  - ❖ ARMS (Agricultural Resource Management Survey), yearly, mostly national level data (some major farm states)
  - ❖ Reimbursable surveys conducted by NASS



# Farm Definition

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- Any place from which \$1,000 or more of agricultural products were produced or normally would have been during the year.
- Definition established for the 1974 Census of Agriculture



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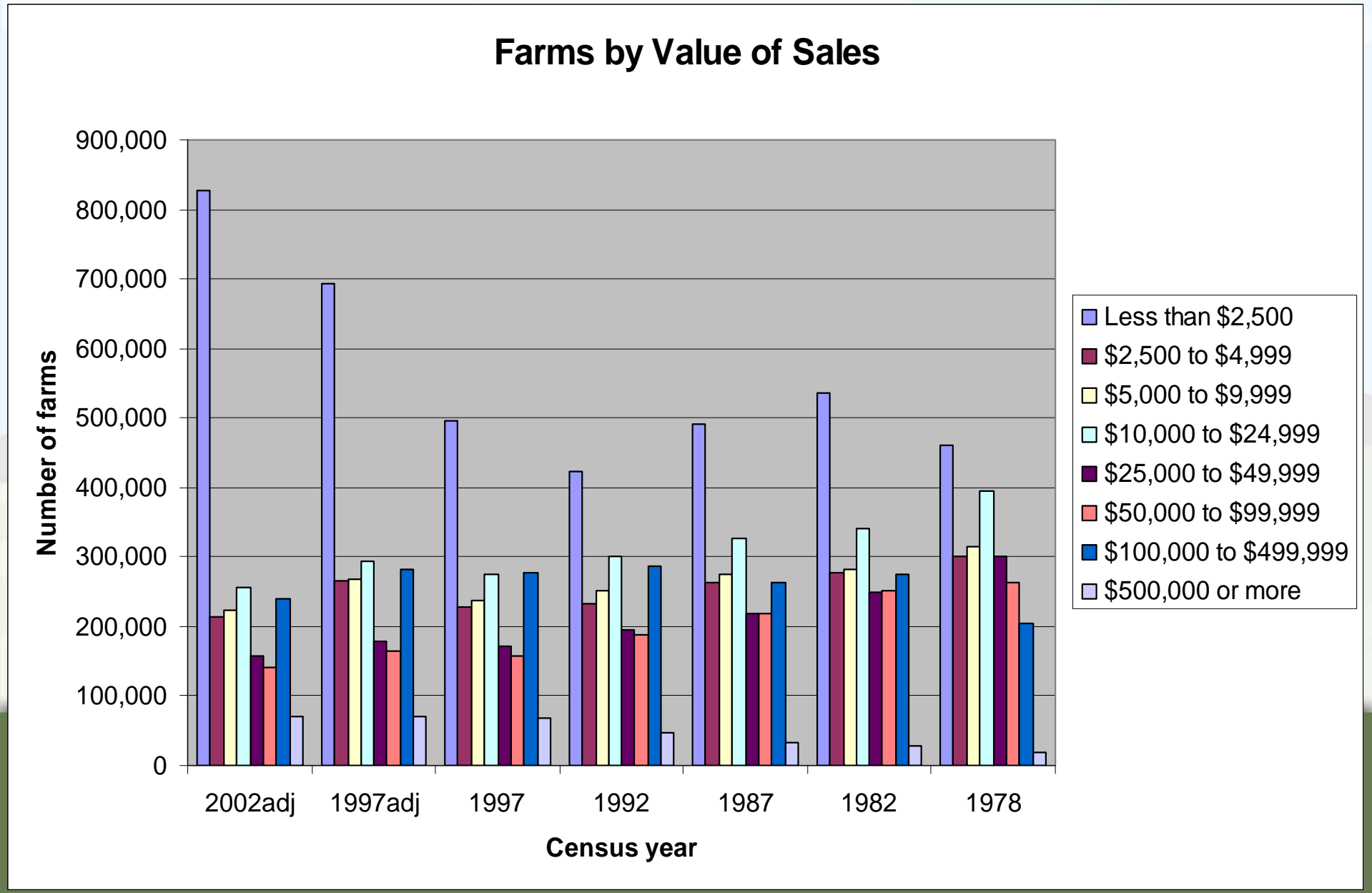
# Changes in Farm Definition

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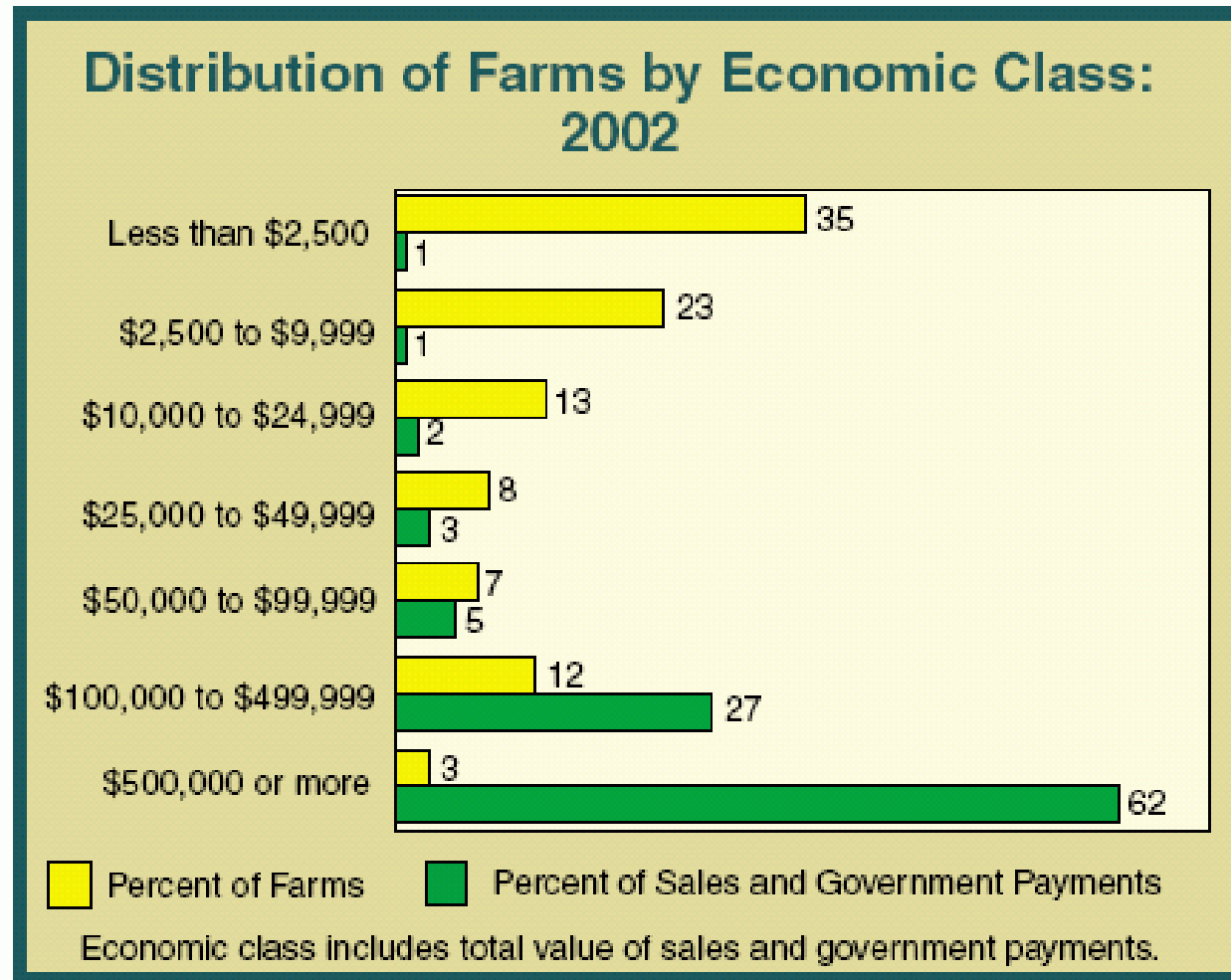
- When comparing data over a century, it is important to realize that the farm definition has changed over that period a number of times
- Whatever the definition, very small places have always counted as farms
- Current definition used from 1974 to present



# Figure 1: Farms by Value of Sales: 1974 - 2002



# Figure 2: Farms by Value of Sales: 2002



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# Availability of Historic Data on Farm Operators

- ❖ In the past few years, historic census of agriculture data has been made available online in PDF form
- ❖ Data must be manually input into programs, and careful consideration of data collection changes are important



# Historical Data Analysis

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- Changes in farm definition
  - Each census with a change in the farm definition includes tables that shows farms dropped/added because of new definition
- Census of Agriculture went from personal enumeration to mailout/mailback with the 1969 Census



# Availability of Historic Data on Farm Operators

- ❖ Link to historic census of agriculture data
- ❖ More recent years have queryable databases online



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## Historical Census Publications

### Historic Census of Agriculture Reports

The 1840 Census was the first to include statistics on agriculture. Since then, each subsequent census has continued to gauge the overall picture of U.S. agriculture. Many of these are available on-line through the U.S. Census Bureau [website](#) or, here as PDFs:

[1840](#) | [1850](#) | [1860](#) | [1870](#) | [1880](#) | [1890](#) | [1900](#) | [1910](#) |  
[1920](#) | [1930](#) | [1940](#) | [1950](#) |

[1840 Census of Agriculture](#)

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[1860 Census of Agriculture](#)

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# Availability of Historic Data on Farm Operators

- ❖ Oldest data series
  - ❖ Age of farm operators
  - ❖ Available starting in the 1890 census
- ❖ Race data was first collected in the 1890 census, but was not published for that census
- ❖ First census with details of the race of farm operators was in 1900



# Historic Data on Race - 1900

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- ❖ In 1900, there were 5.7 million farms
- ❖ 86.6% of all farmers were white
- ❖ 13.4% were Negro and other races
- ❖ Almost all of the nonwhite farmers were Black farmers in the South
  - ❖ 0.5% were other races, excluding the South (Hispanic, Asian, American Indian)



# Historic Data on Race - 1950

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- ❖ In 1950, there were 5.4 million farms
- ❖ 89.1% of all farmers were white
- ❖ 10.9% were Negro and other races
- ❖ Almost all of the nonwhite farmers were Black farmers in the South
  - ❖ 0.5% were other races, excluding the South (Hispanic, Asian, American Indian)





# Historic Data on Race - 2002

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- ❖ In 2002, there were 2.1 million farms
- ❖ 97.1% of all principal operators were white
- ❖ 2.9% were Black and other races (not including Hispanic origin farmers)





# Historic Data on Ethnicity and Gender

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- ❖ Until the 1978 Census, Hispanic origin was considered a racial classification
- ❖ The 1978 Census was also the first to collect data on the sex of the operator
- ❖ In 1978, 0.9% of operators were Hispanic, and 5.2% were female
- ❖ In 2002, 2.4% were Hispanic, and 11.2% were women



# Historic Data on Race - 2002

- ❖ 2002 Census of Agriculture first to adopt OMB (Office of Management and Budget) standards which permitted respondents to report more than one race (0.4% of principal operators)
- ❖ Also first to count American Indian operators on reservations in 3 test states in pilot project
- ❖ 2007 Census will count individual American Indian operators on reservations in all states



# Historic Data on Operators

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- ❖ Until the 2002 Census of Agriculture, data on the characteristics of the farm operator was collected for only one person per farm
- ❖ Instructions said if there were multiple operators, data should be given for the senior partner, or the oldest in age if operators considered themselves equal partners



# Long Term Trends in Operator Characteristics

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- ❖ Farmers older
- ❖ Farmers have been on their farm for a long time (few beginning farmers)
- ❖ Farmers more likely to work off the farm
- ❖ Farmers less likely to live on the farm operation



# Long Term Trends in Operator Characteristics - Age

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- ❖ In 2002, fewer than 6% of all principal operators were under 35 years old (and 16.9% were 70 and over)
- ❖ In 1950, 18% of farmers were under 35 years old
- ❖ In 1900, 25% of farmers were under 35 years old



# Long Term Trends - Years on Operation

- ❖ In 2002, 72.1% of farmers had been on present operation for 10 years or more
- ❖ In 1950, 40.7% of farmers had been on present operation for 10 years or more
- ❖ In 1910, 28.3% of farmers had been on present operation for 10 years or more (first year data collected)





# Long Term Trends

## - Work off the farm

- ❖ In 2002, 46% of farmers worked off the farm 100 days or more
- ❖ In 1950, 23.3% of farmers worked off the farm 100 days or more
- ❖ In 1930, 11.5% of farmers worked off the farm 100 days or more (first time data was collected)



# Long Term Trends

## - Residence on the farm operation

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- ❖ In 2002, 78.9% of farmers lived on farm operation
- ❖ In 1950, 92.6% of farmers lived on farm operation
- ❖ In 1940, 90.2% of farmers lived on farm operation (first year data collected)





# Multiple operator data available for the first time in 2002

- ❖ The 2002 Ag Census was the first to collect information on more than one operator per farm
- ❖ Operators are defined as being responsible for day-to-day management decisions
- ❖ Most farms (62.3%) have only one operator



# Who are the additional operators we collected data on?

- ❖ Analysis of data shows that the second operators on the farm are principally women
  - ❖ Other data indicate that the women are likely spouses
- ❖ Second and third operators are usually younger
- ❖ Second and third operators more likely to report other as primary occupation



# Who are the additional operators we collected data on?

- ❖ Because of the aging of the farm population, one of the questions of interest is whether there are younger people available to take over the running of existing farm operations
- ❖ The following slides shows the percent of farms with multiple operators and different generations (20 year or greater difference in age between operators)



# Most multiple operator farms have only one generation

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There are 803,127 farms with multiple operators



Only 148,336 farms had two or more different generations



Only 24.1% of multiple operator farms and 9.1% of all farms have succession evidence



# Percent of all farms with different generations, by sales class 2002



	% with multiple operators	% with different generations	
		w/multiple operators	All farms
< \$100k	36.6	21.4	7.8
\$100k to \$249k	39.9	34.3	13.7
\$250 k & over	48.1	38.8	18.7
All farms	37.7	24.1	9.1



# Looking forward to the 2007 Census Results

- ❖ What will farmers do as they approach normal retirement age?
- ❖ Can average age of farm operators keep increasing?
- ❖ Will older farm operators sell farm assets or keep them?
- ❖ If farm operators keep assets, will they rent them out, or operate themselves?
  - ❖ Implications for the ability of young and beginning farmers to acquire assets





# Looking forward to the 2007 Census Results

- ❖ What will future farmers look like?
- ❖ Majority of US farmers are white, middle aged men
- ❖ Last census showed increasing share of women, Hispanic, Black, and American Indian farmers
- ❖ Will there be an increase in multigenerational farms?



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# How does farm income compare to average US household income?

- ❖ In 2002, median US household income was \$62,732
- ❖ Average net income from farming was \$19,032
- ❖ For farms with net gains, the average net income was \$56,679
- ❖ To reach the median US income, farms had to have sales of more than \$100,000 in agricultural products





# What size of farm can provide a household with an average income?



Year	Median household income (all households)	Net Income from farming (farms with gains)	
		Farms with sales of \$100,000 to \$249,999	Farms with sales of \$50,000 to \$99,999
1987	\$36,812	\$48,726	\$25,145
1992	\$44,615	\$50,550	\$25,626
1997	\$53,350	\$53,686	\$26,324
2002	\$62,732	\$63,085	\$31,395



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# Farm Income and Total Household Income

- ❖ Even large farms don't provide all the income for the household
- ❖ Other income comes from wages, investments, and retirement benefits
- ❖ 18.1% of operators of large farms (more than \$100,000 in sales) reported working off the farm 100 days or more
- ❖ 40% of large farms reported receiving less than 75% of their household income from the farm operation
  - ❖ 22% received less than half their income from the farm operation



# Changes in US agriculture

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- ❖ More big and more small farms
  - ❖ Middle sized farms disappearing
- ❖ More contracting
  - ❖ Production contracts
  - ❖ Marketing contracts
- ❖ Falling share of farm income in total household income
  - ❖ Farm income accounts for only about 10% of total household income on average



# The Next Census - 2007

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- 2007 Census of Agriculture mailed out end of December 2007
- Currently collecting data from farmers
- Data collection through May
- Analysis through end of 2008
- Results published February 2009



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# Contact Information

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