# The 2007 Census of Agriculture: **Demographics and Farm Typology in Maryland**

#### Introduction

The operators of Maryland's farms in 2007 were generally white, male, and over 55, according to data from the USDA's Agricultural Census of 2007, released in February 2009. While the average age of principal farm operators has increased from 54.9 years in 1997 to 57.3 in 2007, the average age in other parts of the nation has increased at a faster rate, making Maryland the 21st oldest state in 2007, down from the 15<sup>th</sup> oldest in 1997. The vast majority (97.1%) of principal operators were white, and 82.7 percent were male in 2007, though this percentage has decreased slightly since 2002.

Most principal farm operators lived on their farms (82.5%) in 2007, though this percentage decreased slightly from 2002 (83.8%). Only 48 percent of all principal operators reported their primary occupation to be farming, down significantly from the 57.2 percent in 2002. Related to this is a significant decline in the percentage of principal operators who earned their living entirely from work on the farm (from 48.0% in 2002 to 35.4% in 2007).

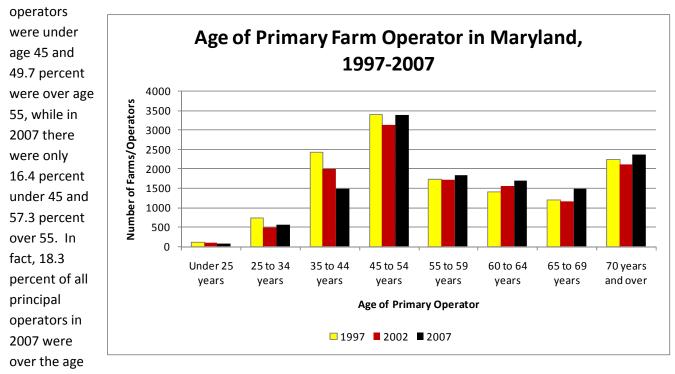
The vast majority (70.4%) of all farm operations owned all of the farmland that they worked, though 62.9 percent of all farmland was controlled by part-owners or renters of farmland. Most farms in Maryland in 2007 were what would be considered "family farms," as 82.7 percent were owned by families or individuals and an additional 6.6 percent were controlled by family-held corporations. Only 1,353 farms (10.5%) had reported sales of over \$250,000 per year, the USDA's threshold for a large farm operation. Fully 84.1 percent of all farms in Maryland in 2007 were considered "small family farms" in 2007, but controlled 50.3 percent of all acreage. Of all farms, 12.9 percent of all farms were considered "limited resource" farms with both low sales and low income operators, and 20 percent were considered "retirement" farms with a principal operator age 65 or older.

Overall, farms in Maryland earned \$350.6 million in income in 2007, a 47.4 percent increase in income from 2002 when adjusted for inflation. Even with this increase, the majority of farm operations (55.4%) in Maryland lost money in 2007 (though this is an improvement over the 58.1 percent that lost money in 2002).

## **Age of Principal Operator**

Maryland's farm operators are aging, following a national trend towards a higher average age for principal farm operators. In 1997, the average age of a principal farm operator in Maryland was 54.9 years old, ranking it as the 15<sup>th</sup> oldest state for principal operators in that year. In 1997, the average age nationally was 54.0, the state with the lowest average age was Minnesota (average age 51, ranked 48<sup>th</sup>), and the state with the highest average age was Florida (56.3, ranked 1<sup>st</sup>). By 2007, the average age of principal operators in Maryland was 57.3, but the average for the nation was 57.1, ranking Maryland 21<sup>st</sup>, with Indiana and Wisconsin tied for lowest average age at 55 (tied at 47<sup>th</sup>) and New Mexico having the highest average age for principal operators (59.6, ranked 1<sup>st</sup>). In effect, farmers were aging in Maryland, but not as quickly as in the nation as a whole.

Even so, the majority of principal farm operators in Maryland are over the age of 55, and there are many fewer principal operators under the age of 45 in the state. In 1997, 24.8 percent of all principal



of 70, an age when most workers have already retired.

Of the 23 jurisdictions with farms in Maryland, the only decreases in the average age of principal operators from 1997 to 2007 were in Somerset (-0.1 years, from 54.3 to 54.2 years) and Allegany (-1 year, from 57.7 to 56.7 years). Somerset, by virtue of its essentially unchanged average age, became the jurisdiction with the lowest average age in 2007, while Montgomery had the highest average age, at 60 (See Table 1).

#### Race, Ethnicity and Gender of Principal Operator

In Maryland in 2007, the vast majority of principal farm operators were White, non-Hispanic, and male. Over 97 percent (12,466) principal farm operators were White, while 1.5 percent were Black or African-American and 1.4 percent were of any other race. White principal operators worked 99.4 percent of all farm acreage in Maryland in 2007 (See Table 2). The Lower Eastern Shore region had the largest number of farms operated by minority principal operators (99, or 6.4% of farms in the region), followed by the Washington Suburban region (89, or 3.7%). The Lower Eastern Shore also had the majority of all farms operated by Asian principal operators (50, or 59.5% of all farms operated by Asian farmers).

Only a small amount of principal operators were of Hispanic ethnicity in Maryland in 2007, with 93 out of 12,834 farms (0.7%) and 9,232 out of 2 million acres (0.5%). The average farm size for farms run by Hispanic principal operators in 2007 was 99 acres, 62 percent of the non-Hispanic average of 160 acres. The Baltimore Region had the largest number of farms run by Hispanic operators (23) but the Washington Suburban region had the largest percentage (0.9%) (See Tables 2A and 2B).

#### Race of Principal Farm Operators in Maryland, 2007

	Farms		Acre	Average	
Race of Principal Operator	Number	Percent	Number	Percent	Size
White	12,466	97.1%	2,024,497	99.4%	162
Black or African-American	193	1.5%	(D)	(D)	(D)
Asian	84	0.7%	5,859	0.3%	70
American Indian or Alaska Native	41	0.3%	2,045	0.1%	50
Native Hawaiian or Other Pacific Islander	6	0.0%	(D)	(D)	(D)
More than one race	44	0.3%	3,426	0.2%	78
Total	12,834	100.0%	2,051,756	100.0%	160

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

The number of female principal operators increased 15.6 percent (299 operators) between 2002 and 2007, from 1,917 to 2,216 principal operators. In 2007, female principal operators made up 17.3 percent of all principal operators but worked only 6.6 percent of all farmland in Maryland. However, the number of acres worked by women principal operators increased 1.4 percent (1,896 acres) from 2002 to 2007, while the number of acres worked by male principal operators decreased 1.4 percent (-27,770 acres). On average, farms run by female principal operators were 61 acres in size, while those run by male principal operators averaged 181 acres in size (See Table 2). The Baltimore Region had the largest number and percentage of woman operators (717 operators running 21.6% of the Region's farms) while Western Maryland had the lowest percentage (178 operators running 9.8% of farms) (See Tables 2A and 2B).

Gender of Principal Farm Operators in Maryland, 2002 and 2007

Year	Data	Female	Male	Total	Female	Male
2002	Farms	1,917	10,281	12,198	15.7%	84.3%
	Acres	133,102	1,944,528	2,077,630	6.4%	93.6%
	Average	69	189	170		
2007	Farms	2,216	10,618	12,834	17.3%	82.7%
	Acres	134,998	1,916,758	2,051,756	6.6%	93.4%
	Average	61	181	160		
Change	Farms	15.6%	3.3%	5.2%		
	Acres	1.4%	-1.4%	-1.2%		
	Average	-12.3%	-4.6%	-6.1%		

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

#### **Residence on Farms**

Almost 83 percent (10,589) of principal operators of farms in Maryland live on their farms, an increase of 3.6 percent (364 farms) over 2002. However, the number of farms whose principal operators earn their livings primarily from farming has decreased over that time period, from 6,977 in 2002 to 6,269 in 2007 (a 10.1% decrease). In 2007, only 48.8 percent of all farms were run by principal operators whose primary occupation was farming. The number of principal operators who worked off the farm to

supplement their incomes increased 30.8 percent from 2002 to 2007, while the number who made their livings solely from farming decreased 22.4 percent (See Tables 3A and 3B).

Most farmland in Maryland is fully owned by the farm operations that work them, and most farmers live on the farms that they operate. However, most principal operators of farms spend time working in jobs that are not farm-related and claim that their primary occupation is not farming.

Residences and Work Places of Principal Farm Operators in Maryland, 2002 and 2007

Duin single Output and Change to visting	2007		2002		Change	
Principal Operator Characteristics	Number	Percent	Number	Percent	Number	Percent
Place of residence: On farm	10,589	82.5%	10,225	83.8%	364	3.6%
Place of residence: Not on farm	2,245	17.5%	1,973	16.2%	272	13.8%
Primary occupation: Farming	6,269	48.8%	6,977	57.2%	-708	-10.1%
Primary occupation: Other	6,565	51.2%	5,221	42.8%	1,344	25.7%
Days worked off farm: Any	8,286	64.6%	6,337	52.0%	1,949	30.8%
Days worked off farm: None	4,548	35.4%	5,861	48.0%	-1,313	-22.4%
Total	12,834	100.0%	12,198	100.0%	636	5.2%

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

The Baltimore region had the highest percentage of principal operators residing on their farms (86.5%), while the Lower Eastern Shore had the lowest (72.6%). These percentages were reversed for principal operators who reported farming as their principal occupation, as the Lower Eastern Shire had the largest percentage (54.3%), while the Baltimore region had the lowest (46.4%). The Upper Eastern Shore region had the largest number of principal operators who made their sole living from farming (41.6%, or 981 out of 2,360 operators), while Southern Maryland had the lowest (28.5%, or 374 out of 1,313).

**Tenure of Farmers** 

Farms and Farmland by Tenure of Farm Operator in Maryland, 2002 and 2007

Tenure	Farı	ms	Acres		Average Acreage	
	2002	2007	2002	2002 2007		2007
Full owners	8,479	9,035	758,901	760,358	90	84
Part owners	2,704	2,763	1,067,489	1,053,640	395	381
Owned land in farms			449,016	425,706		
Rented land in farms			618,473	627,934		
Tenants	1,015	1,036	251,240	237,758	248	229
Total	12,198	12,834	2,077,630	2,051,756	170	160

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

The number of farms of all ownership types increased from 2002 to 2007, while the amount of acres in those farms declined. Farms operated by full owners were by far the most numerous in 2007 (9,035 farms, or 70.4% of all farms) and the amount of farmland they worked increased by 1,457 acres (0.2%) from 2002, but these farms accounted for only 37.1 percent of all farmland in Maryland and had the smallest average acreage (84 acres). Farms operated by part owners (operators who both own and rent land) ran only 21.5 percent of farms but controlled 51.4 percent of all farmland in the state and had the largest average farm size. Interestingly, the number of acres rented by part owners increased from 2002 to 2007, while the number of acres owned decreased. Tenant farmers (those who rent all the farmland they farm) operated the smallest number of farms and worked the fewest acres of farmland (See Tables 3A and **3B**).

The Lower Eastern Shore had the highest percentage of farms controlled by full owners (73.5%) while the Upper Eastern Shore had the lowest (69.2%). The highest percentage of tenant farmers were in Southern Maryland (10.7%).

#### Type of Farm Organization

Most farms in Maryland (82.7%) were owned by families or individuals in 2007. While these farms controlled the largest amount of acreage (an estimated 1.375 million acres), they had the least average acreage (130 acres per farm). While the number of family/individually owned farms increased slightly by 0.3 percent (32 farms), the estimated number of acres worked decreased by 7.9 percent (-117,727 acres) (See Tables 3A and 3B).

#### Ownership Type of Farms in Maryland, 2002 and 2007

		2002		2007			
Type of Organization	Farms	Acres	Average	Farms	Acres <sup>1</sup>	Average	
Family or Individual	10,577	1,493,644	141	10,609	1,375,917	130	
Partnership	763	275,994	362	1,038	314,514	303	
Corporation: Family-Held	642	244,323	381	846	297,895	352	
Corporation: Other than Family-Held	84	19,064	227	131	21,960	168	
Other - Cooperative, Estate or Trust, Institutional, Etc.	132	44,605	338	210	41,470	197	
Total	12,198	2,077,630	170	12,834	2,051,756	160	

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

There was significant growth in the number of farms controlled by other types of organizations in Maryland in 2007. The number of partnerships grew by 36 percent (275 farms), and the number of acres worked by partnerships grew by 14 percent (38,520 acres). Family-held corporations grew by 31.8 percent (204 farms) and an estimated 53,572 acres (21.9 percent). Non-family corporations grew by 56 percent (47 farms) and their acreage grew an estimated 15.2 percent (2,896 acres), and other types of ownership grew by 78 farms (59.1%) but the number acres worked by these farms shrunk an estimated 3,135 acres (-7.0%) (See Tables 3A and 3B).

Southern Maryland had the largest percentage of farms owned by families or individuals (89.4%), though Allegany County in Western Maryland had the highest percentage for any single jurisdiction

<sup>&</sup>lt;sup>1</sup> Most acreage totals for 2007 for type of organization were suppressed to protect confidentiality, the exception being for partnership farms. All other acreage totals for 2007 were estimated using unsuppressed state total data from 2002 and whatever unsuppressed county data was available for 2007.

(93.7%). The Upper Eastern Shore had the lowest family ownership rate of farms (78.1%), with Kent County in that Region having the lowest rate of any jurisdiction (68.7%).

## Farm Typology

To assist in analyzing farms to create farm policy nationwide, the USDA's Economic Research Service (ERS) created a farm typology system that "categorizes farms into fairly homogeneous groups for policy development and evaluation purposes. The typology is based on the occupation of operators and the sales class of farms." This farm typology system was used for the first time in a Census of Agriculture in 2007, so there is no previous data for Maryland for comparison purposes (See Tables 4A and 4B).

**USDA Farm Typology in Maryland, 2007** 

Farm Typology	Farms	%	Acres	%	Average
Small Family Farms: Sales Less Than \$250,000	10,790	84.1%	1,031,508	50.3%	96
Limited-Resource Farms	1,652	12.9%	119,879	5.8%	73
Retirement Farms	2,566	20.0%	222,234	10.8%	87
Residential/Lifestyle Farms	4,341	33.8%	309,126	15.1%	71
Farming Occupation, Sales Under \$100,000	1,717	13.4%	199,828	9.7%	116
Farming Occupation: Sales \$100,000 to \$249,999	514	4.0%	180,441	8.8%	351
"Other" Farms	2,044	15.9%	1,020,248	49.7%	499
Large Family Farms: Sales \$250,000 to \$499,999	498	3.9%	265,386	12.9%	533
Very Large Family Farms: Sales \$500,000 and Over	855	6.7%	546,163	26.6%	639
Nonfamily Farms: All Sales	691	5.4%	208,699	10.2%	302
Total	12,834	100.0%	2,051,756	100.0%	160

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

The new farm typology system has eight farm typology categories with two major groupings. The first grouping, small family farms, covers all family-owned farms that sell less than \$250,000 worth of products per year and contains five typology categories: limited-resource farms; retirement farms; residential/lifestyle farms; farming occupation/lower sales farms; and farming occupation/higher sales farms. The second grouping, other farms, covers family farms selling \$250,000 or more in goods and all non-family farms and contains three typologies: large family farms selling \$250,000 to \$499,999 in goods; very large family farms selling \$500,000 or more in goods, and non-family farms.

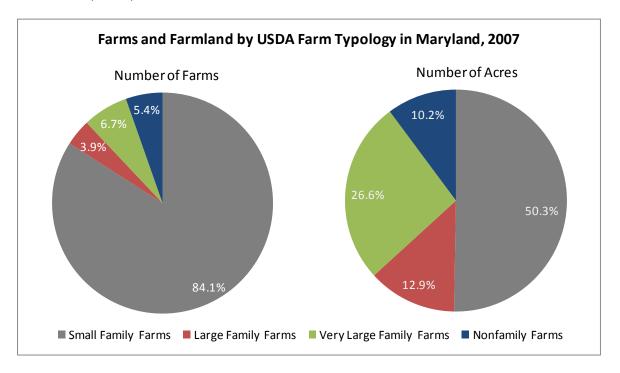
The majority of farms in Maryland in 2007 (84.1%) were small family farms. These farms worked over 1 million acres of land (50.3% of the total) and averaged 96 acres in size.

• Limited-resource farms: Almost 13 percent of all farms in Maryland (1,652) were of this type in 2007, but they worked only 5.8 percent of all farmland (119,879 acres). These farms have low sales volumes (gross sales of less than \$100,000) and a total principal operator household income of less

<sup>&</sup>lt;sup>2</sup> America's Diverse Family Farms: Assorted Sizes, Types, and Situations. United States Department of Agriculture, Economic Research Service, Agriculture Information Bulletin Number 769, May 2001, p. 2.

than \$20,000 per year. According to previous USDA research, these farms usually have much higher expenses than revenues.<sup>3</sup> Western Maryland has the largest proportion of these types of farms (15.6%, or 485 out of 3,315 farms), while the Lower Eastern Shore has the lowest proportion (9.7%, or 160 out of 1,645 farms).

Retirement farms: Twenty percent (2,566) of all farms were of this type in 2007, and they worked 10.8 percent of all farmland (222,234 acres). These farms generated sales of less than \$250,000 in 2007, and are run by a principal operator who reports being retired. Like limited-resource farms, retirement farms generally report expenses that are higher than revenues. Southern Maryland has the largest proportion of these farms (24.8%, or 325 of 1,313), while the Lower Eastern Shore has the lowest (15.7%).



- Residential/lifestyle farms: Farms run by a principal operator who reported in 2007 that his or her primary occupation was not farming and that sold less than \$250,000 in agricultural products are considered to be residential/lifestyle farms. Like most other small farms, they lose money, but it is more likely that this does not affect overall household income as most of these farms generate offfarm income. This was the largest single farm type in Maryland, with 4,341 farms (33.8 percent), but these farms covered only 309,126 acres, for an average farm size of 71 acres, the lowest average farm size of all farm typology classifications. The Baltimore Region has the largest share of these farms (38%, or 1,259 out of 3,315), while the Lower Eastern Shore again has the lowest (25.3%).
- Farming occupation/lower-sales farms: While these farm types report having principal operators who farm full-time, they only have agricultural products sales of less than \$100,000. The difference between these farms and limited resource farms is that the principal operator reports income of

<sup>&</sup>lt;sup>3</sup> Ibid., p. 4.

\$20,000 a year or more. Even so, these farms often lose money on their farming operations. There were 1,717 of these farm type in Maryland in 2007 (13.4%) operating on 199,828 acres (9.7% of all acres), for an average of 116 acres per farm. Southern Maryland has the largest proportion of these farms (18.8%, or 247), while, again, the lower eastern shore has the lowest proportion (8.4%).

Farming occupation/higher-sales farms: These farm types also reported having principal operators who farm full-time and reported agricultural products sales of between \$100,000 and \$250,000. Unlike other small farm types, these farms are more likely to have positive farm income. While there were only 514 of this type of farm in Maryland (4.0%), they controlled 180,441 acres of land (8.8% of the total) and averaged 351 acres, much larger than all other small farm types. Western Maryland has the highest proportion of these types of farms (6.3%, or 114), while Southern Maryland has the lowest (2.3%, or 30).

While only 15.9 percent of farms in Maryland in 2007 were "other farms", they operated on almost half (49.7%) of all farm acres in the State, or over 1 million acres of farmland, averaging 499 acres per farm. Unlike small family farms, these farm types are much more likely to be profitable and rely much less on earnings from non-farm sources. The USDA classifies large family farms, very large family farms, and nonfamily farms as "other" farms.

- Large family farms: In Maryland, these farms operated on 265,386 acres of land (12.9% of the total) and accounted for 498 (3.9%) of the state's farm operations. Large family farms sell between \$250,000 and \$499,999 in agricultural products. The Lower Eastern Shore has the highest proportion of large family farms (8.1%) while Southern Maryland has the lowest (1.0%).
- Very large family farms: These farms sell at least \$500,000 in agricultural goods per year. There were 855 vary large family farms (6.7%) in Maryland in 2007, covering 546,163 acres, or 26.6 percent of all farmland, for an average size of 639 acres. The Lower Eastern Shore has by far the largest proportion of farms in this category (22.9%), while the Southern Maryland has the lowest (0.5%).
- Nonfamily farms: This is a catch-all category that covers all farms organized as nonfamily corporations or partnerships. There were 691 of these farms in 2007 (5.4%) covering 208,699 acres (10.2% of all farmland). Again, the Upper Eastern Shore has the highest proportion of these farm types (7.4%) and Southern Maryland has the lowest (3.1%).

## Farm Income

Data on overall profits and losses of farms show that the majority of farms (7,109) posted net losses in both 2002 and 2007. However, the average value of losses for these farms decreased in real dollars from 2002 to 2007 and the percentage of farms that lost money decreased from 58 percent to 55 percent of all farms (See Table 5).

Farms with net gains in income saw the average net gain grow from \$74,369 to \$83,765 in real dollars from 2002 to 2007, an increase of \$9,393 or 12.6 percent. The number of farms with gains in net income increased by 12.3 percent in that same time period.

# Net Gain and Loss for Farm Operations in Maryland, 2002 and 2007 (In Constant 2000 Dollars)

Net cash farm income of the operations	2002	2007	Change	Percentage Change
Net Cash Farm Income	\$237,954,646	\$350,696,291	\$112,741,645	47.4%
Average Income Per Farm	\$19,538	\$27,326	\$7,788	39.9%
Number of Farms with Net Gains	5,097	5,725	628	12.3%
Farms with Net Gains: Average Per Farm	\$74,369	\$83,765	\$9,396	12.6%
Number of Farms with Net Losses	7,082	7,109	27	0.4%
Farms with Net Losses: Average Per Farm	(\$19,924)	(\$18,126)	\$1,799	-9.0%

Source: Census of Agriculture, National Agricultural Statistics Service, USDA, 2007

Overall, the average income per farm increased 39.9 percent from 2002 to 2007, and overall net cash farm income increased 47.4 percent, or \$112.7 million after adjusting for inflation.

On average, the most profitable farms are located in the Lower Eastern Shore Region, earning an average of \$102,667 per farm in 2007, \$75,342 more than the state average per farm (in \$2000 constant dollars). Overall, net income for farms in this region was almost \$169 million in 2007, meaning that these farms earned 48.2 percent of all net income for farms in Maryland that year even though they accounted for only 12.8 percent of all farms statewide and 19.4 percent of all acres. Almost 67 percent of all farms in this region were profitable, versus 44.6 percent of all farms statewide. Farm profitability varied somewhat within this region, however, as 60.8 percent of farms in Wicomico County reported net profits to a high of 72.9 percent of Worcester County's farms, the highest percentage of any jurisdiction in Maryland that year.

Overall, farms in the Washington Suburban Region were the least profitable, as only 34.3 percent (815) reported net earnings. However, farms in Howard County (a part of the Baltimore Region) had the lowest levels of profitability, as only 22.7 percent (76) reported net earnings. In aggregate, farms in Howard County lost 2.2 million dollars in 2007, and the average farm reported a loss of \$6,683. This is mostly due to the higher percentage of "lifestyle" and "lower sales" small family farms and lower percentage of large and very large family farms in the County.

#### **About the Census of Agriculture**

The Census of Agriculture is conducted every five years by the National Agricultural Statistics Service (NASS), a branch of the United States Department of Agriculture (USDA). NASS has conducted the Census since 1997. Previously, the Census was conducted by the U.S. Bureau of the Census. In one form or another, there has been an agricultural census conducted periodically in the U.S. since 1840.

According to NASS, the Census of Agriculture "is a complete count of U.S. farms and ranches and the people who operate them. The Census looks at land use and ownership, operator characteristics, production practices, income and expenditures and many other areas."<sup>4</sup> Data is published for the nation, states, certain territories, and all U.S. counties.

<sup>&</sup>lt;sup>4</sup> http://www.agcensus.usda.gov/Help/FAQs/General\_FAQs/index1.asp

#### **About Principal Operators**

According to the 2007 Census of Agriculture, a principal operator is "the person primarily responsible for the on-site, day-to-day operation of the farm or ranch business. This person may be a hired manager or business manager." More generally, an operator is "a person who operates a farm, either doing the work or making day-to-day decisions about such things as planting, harvesting, feeding, and marketing. The operator may be the owner, a member of the owner's household, a hired manager, a tenant, a renter, or a sharecropper. If a person rents land to others or has land worked on shares by others, he/she is considered the operator only of the land which is retained for his/her own operation."5

#### **Farm Definitions**

The USDA defines a farm as any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the relevant census year. This definition has changed nine times since 1840. From 1959 to 1974, the definition included farm size, with different sales volumes based on size. The current definition was adopted after 1974 and has no farm size requirement. Inflation has changed the definition over time, as the table below shows.

	Current Dollars			Constant Dollars (\$2000) *		
Year	10 Acres+	Less than 10 Acres	All Acres	10 Acres+	Less than 10 Acres	All Acres
2007			\$1,000			\$850
2002			\$1,000			\$966
1997			\$1,000			\$1,051
1992			\$1,000			\$1,165
1987			\$1,000			\$1,410
1982			\$1,000			\$1,671
1978			\$1,000			\$2,312
1974	\$50	\$250		\$151	\$753	
1969	\$50	\$250		\$198	\$990	
1964	\$50	\$250		\$230	\$1,148	
1959	\$50	\$250		\$245	\$1,224	

<sup>\*</sup> Dollar values adjusted using the Personal Consumption Expenditure (PCE) index from the Bureau of Economic Analysis' National Income and Products Accounts System (NIPA)

Source: 2002 Census of Agriculture: History, Appendix B

<sup>&</sup>lt;sup>5</sup> 2007 Census of Agriculture, United States Summary and State Data, Volume 1, Geographic Area Series, Part 51, Appendix B, P. B-17.

<sup>&</sup>lt;sup>6</sup> http://www.agcensus.usda.gov/Publications/2007/Full Report/usv1.pdf