



# ERS *Report Summary*

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## Characteristics and Production Costs of U.S. Cotton Farms, 2007

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### What Is the Issue?

This report provides a 1-year snapshot of U.S. cotton farms in 2007, the latest year for which detailed data were collected from a cotton version of USDA's Agricultural Resource Management Survey (ARMS). While aggregate estimates provide some clues about cotton production costs and practices and about the characteristics of cotton farm operations and their operators, aggregate data mask diversity among cotton operations. Our analysis is based on disaggregated data and offers additional perspective to a topic previously discussed in the ERS report, "Characteristics and Production Costs of U.S. Cotton Farms," which examined 1997 data.

### What Did the Study Find?

Cotton farms are not homogeneous. Operators have different characteristics and utilize different production practices. Cotton farm operators raise several varieties of cotton in different locations on enterprises that may vary from less than 200 acres of cotton per farm to more than 1,500 acres of cotton per farm. An enterprise refers to the production of one commodity on a farm, such as cotton, but a farm may include one or more enterprises. For our purposes, enterprise size is measured by the acres of the planted commodity, and farm size is measured by the value of annual gross sales from all commodities.

- The number of U.S. cotton farms fell by 41 percent between 1997 and 2007, while the average size of cotton farms rose and the share of U.S. cotton production in the Southwest (primarily Texas) increased.
- The Southwest is the major U.S. cotton production region, accounting for nearly half the cotton acreage and output in 2007. The Southwest also has more cotton farms than any other region. Southwest cotton producers are vulnerable to swings in cotton demand since they generally lack alternative crops and cotton accounts for a higher percentage of their farm production value. These farmers were more likely than cotton farmers in other regions to mitigate their risks by purchasing buy-up or revenue crop insurance.
- Low-cost producers' operating and ownership costs averaged \$0.44 per pound of cotton, compared with \$0.64 per pound for mid-cost producers and \$1.02 per pound for high-cost producers. Cotton producers with the lowest operating and ownership costs per pound of cotton had higher cotton yields and lower costs per planted acre than mid- and high-cost cotton producers. The lower per-acre costs stemmed mainly from lower application or usage rates of seed, gaso-

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line, diesel, fertilizer, and labor per planted acre. Low-cost producers made fewer trips across their fields, reducing machinery use and ownership costs per unit. Most low-cost producers in 2007 farmed in the Southwest, where favorable weather boosted their yields.

- Operating costs per acre did not vary significantly by the size of the cotton enterprise. Operators with larger cotton enterprises generally did not have lower costs per planted acre or per pound, despite economies of scale. Many operators with smaller cotton enterprises minimized their ownership costs by relying on custom work to avoid the purchase cost and maintenance of expensive cotton harvesters. Providers of custom work supply their own machinery as well as labor to accomplish a task.
- Most cotton production takes place on very large farm operations, with half of the cotton production occurring on farms with annual gross sales of \$1 million or more. Those farms had the highest average cotton yields per planted acre and the highest average per acre costs. They were more likely to irrigate their cotton acres than smaller cotton farms.
- Cotton farms vary considerably in the degree of reliance on cotton. Operators with the larger cotton enterprises often had less commodity diversification on their farms. They depended more on cotton compared with operators with smaller cotton enterprises. In contrast, operators of the largest U.S. farms who included cotton in their production mix had more commodity diversification and were less dependent on cotton than operators of smaller cotton farms, since many operators of the largest farms growing cotton had small- to mid-size cotton enterprises.

## **How Was the Study Conducted?**

Cotton producers were grouped by cotton production costs, region, cotton acreage, and typology to examine the variation in characteristics and production practices of U.S. cotton farms in 2007. Farms were ranked by the operating and ownership costs per pound of cotton lint to analyze the factors associated with low and high cotton production costs. We analyzed the characteristics of cotton farms by major cotton production areas to gain insights into regional shifts in cotton production. Cotton farms were grouped by the size of the cotton enterprise (planted acres) and size of the farm (gross farm sales) to determine whether size offers advantages or disadvantages.

The data we analyzed came from ERS's farm-level production cost estimates for cotton and the cotton version of the 2007 Agricultural Resource Management Survey (ARMS)—a joint effort conducted annually by USDA's National Agricultural Statistics Service (NASS) and ERS. These two data sources are tightly intertwined since the cotton version of ARMS is one of several data sources used by ERS to compute cotton production cost estimates. Several NASS reports provided secondary data for estimating cotton production costs.

For our purposes, a farm is considered a cotton farm if 1 or more cotton acres were planted with the intention of harvesting the cotton for lint, with cottonseed as a byproduct. Therefore, data from producers who planted cotton with the intention of harvesting the cotton for commercial seed are excluded from our analysis. In addition, yield and cost data per acre are based on planted acres rather than harvested acres.