

Contribution of On-Farm Agriculture and Agribusiness to the Pinal County Economy

An Economic Contribution Analysis for 2016

Ashley Kerna Bickel, Dari Duval, George Frisvold
Department of Agricultural & Resource Economics, University of Arizona Cooperative Extension
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What is the Issue?

Pinal County ranks in the top 2% of all U.S. counties in the total value of agricultural sales and the top 1% in cotton and cottonseed sales, milk sales, and inventories of cattle and calves. Supporting large dairy and beef industries, Pinal County ranks in the top 4% of all counties in barley acreage, corn acreage, and forage crop acreage.

Agriculture's contributions to Pinal County's economy goes beyond on-farm production and jobs. A "ripple" of economic activity is stimulated in other industries to meet the demands of agricultural producers for inputs (*indirect multiplier effects*) and for consumer goods and services by households that derive their income from agriculture (*induced multiplier effects*). These *multiplier effects* mean the total economic contribution of on-farm agriculture is considerably greater

than indicated by farm gate sales. On-farm agriculture is just one part of an entire system of agribusiness industries, such as milk processing and dairy product manufacturing.

This study provides a snapshot of existing agricultural activity in Pinal County and conducts county-level economic contribution analyses for: (1) **on-farm agriculture** and (2) **on-farm agriculture and agribusiness combined** in 2016. Finally, as the availability of irrigation water is of utmost importance to crop production in the region, this study considers the economic consequences of a hypothetical water cutback. It estimates not only direct on-farm effects of reduced acreage, crop sales, and hired farm labor. It also estimates, through multiplier effects, the negative effects of reduced agricultural production on the broader economy of Pinal County.

What Did the Study Find?

Profile of Pinal County Agriculture and Agribusiness

On-Farm Agriculture

Crop, livestock, and agricultural support service industries

Pinal County accounts for:

- 45%** ... of Arizona's cattle and calf sales
- 42%** ... of Arizona's cotton and cottonseed sales
- 39%** ... of Arizona's milk sales
- 22%** ... of Arizona's other crops and hay sales

Pinal County is an important supplier of milk and other dairy products to the Phoenix and Tucson metro areas

Agribusiness

Agricultural input manufacturing, and food & fiber processing industries

Food manufacturing is the largest manufacturing sector in the county, providing more than...

- 25%** of manufacturing jobs, 18% from dairy products alone
- 33%** of manufacturing wages

Agriculture-related wholesale trade accounts for **23%** of county wholesale trade jobs and **19%** of wholesale wages

Economic Contribution Analyses

Economic Contribution of:

On-Farm Agriculture

The total contribution, including multiplier effects, of **on-farm agriculture** to the Pinal County economy in 2016 was approximately...

- * **\$1.1 billion in sales** (\$875.1 million on-farm direct)
- * **\$372.8 million in value added** (\$273 million on-farm direct)
- * Nearly **5,200 full- and part-time jobs** (3,800 on-farm direct)

On-Farm Agriculture & Agribusiness

The total contribution of **agriculture and agribusiness combined** to the Pinal County economy in 2016, including multiplier effects, was...

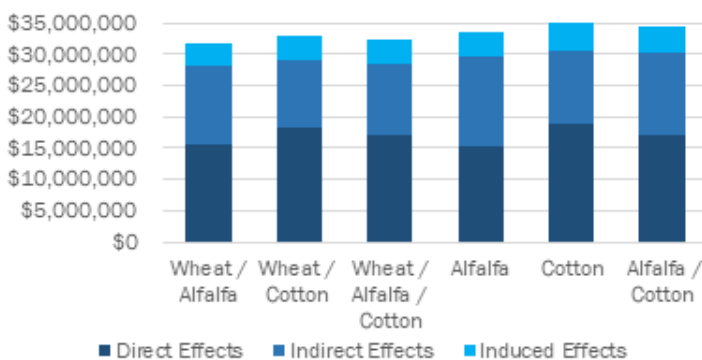
- * **\$2.3 billion in sales** (\$875.1 million on-farm direct, \$908.1 direct agribusiness)
- * **\$611.1 million in value added** (\$273 million on-farm direct, \$160.4 million agribusiness direct)
- * More than **7,500 jobs** (3,800 on-farm direct; 1,346 agribusiness direct)

Potential Effects of Reduced Agricultural Production

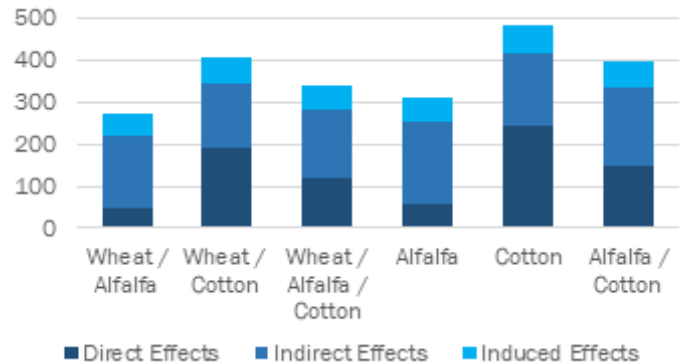
This study estimates the economic impacts of changes in wheat, alfalfa, and cotton acreage resulting from a hypothetical reduction of 300,000 acre-feet of irrigation water for Pinal County agriculture. Changes in acreage, agricultural production, and broader impacts to the Pinal County economy were estimated under different following scenarios. A hypothetical 300,000 AF water cutback (based on 2016 data), could lead to the following losses in Pinal County:

- * **\$63.5 million - \$66.7 million loss in gross farm-gate sales** (~7% of on-farm agricultural sales)
- * **\$94 million - \$104 million loss in total county sales** (farm and non-farm sales)
- * **\$31.7 million - \$35 million loss in county value added** (value added combines net farm income, profits in other industries, employee compensation, and tax revenues)
- * **270 - 480 full-and part-time jobs lost**

Reduced Pinal County Value Added from Reduced Crop Production



Pinal County Job Losses from Reduced Crop Production



How was the study conducted?

The IMPLAN 3.1 input-output software and data was used to estimate the total economic contribution of agriculture and agribusiness to the Pinal County economy, including multiplier effects.

The model was customized using the best available, most recent data to more accurately reflect the production practices and economic conditions in Pinal County in 2016. Reductions in agricultural production resulting from a hypothetical irrigation water cutback of 300,000 acre-feet (AF) are estimated using water application rates, yield, and price data for six hypothetical, simplified following scenarios of various wheat, alfalfa, and cotton crop-fallowing mixes. Each scenario assumes land is fallowed (taken out of production) and does not allow for substitution of groundwater to irrigate crops, which could potentially mitigate the economic impacts of water cutbacks. Reductions in agricultural sales were then modeled in IMPLAN to estimate the resulting decreased regional economic activity.