



ECONOMIC
Impact
of Arkansas Agriculture

2010

UofA UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE



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University of Arkansas Division of Agriculture
2404 N. University Avenue
Little Rock, Arkansas 72207
501-686-2540

division.uaex.edu

\$16,338,000,000

Agriculture accounted for \$16.3 billion of value added to the Arkansas economy in 2008.

That's 17 cents of every \$1 of value added.*

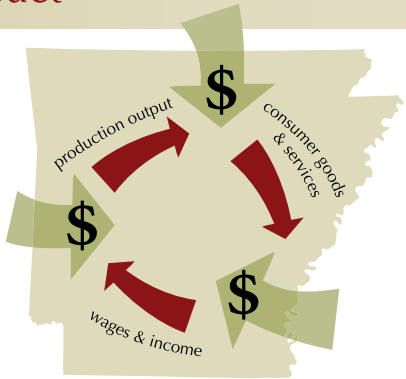
*Value added is the sum of employee compensation, proprietary income and indirect business taxes.

Source: "Economic Contribution of the Agricultural Sector on the Arkansas Economy in 2008," by J. Popp, N. Kemper, W. Miller, K. McGraw and K. Karr. Research Report 989. Arkansas Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville. Forthcoming 2010.

Computed using 2008 Arkansas database from Minnesota Implan Group, Inc. (Latest year for which relevant data were available.)

Total Impact

The total economic impact of the Agriculture Sector includes three areas of wealth and job generation.



- **Direct Impacts** are generated by farm production and processing of crops, poultry, livestock and forest products.
- **Indirect Impacts** result when agricultural firms purchase materials and services from other Arkansas businesses — a very important part of the economy in many communities.
- **Induced Impacts** result when employees of agricultural firms and their suppliers spend a portion of their income within Arkansas.

These impacts are reported in terms of Employment, Labor Income and Value Added.

- **Employment** includes all wage and salary employees, as well as self-employed workers in a given sector.
- **Labor Income** consists of two parts. First is proprietary income, which includes all income received by self-employed individuals. Second is wages, which includes all payments to workers including benefits.
- **Value Added** includes labor income plus indirect taxes and other property-type income such as payments for rents, royalties and dividends. Value added and Gross Domestic Product (GDP) are equivalent measures in theory but are estimated using different methods and data sources.

Government payments — payments made directly to some recipients in the farm sector — are included in the impact analysis. The economic activity of Food Services and Drinking Places is included in the GDP figures on pages 8 and 9, but not in the computation of direct agriculture impacts reported elsewhere in this publication. Some of the economic activity of this industry and other retail stores (lawn and garden centers, etc.) and input providers (fertilizer, pesticide and equipment manufacturers) is picked up as indirect and induced effects and included in the total impacts.



Aggregate of Value Added by the Agriculture Sector in Arkansas, 2008

Impact Area	Million \$	% Total Impact	% State Total
Production	3,339	20.4	3.5
Processing	5,088	31.1	5.3
Ag-Related	250	1.5	0.3
Total Direct	8,677	53.1	9.0
Indirect	4,338	26.6	4.5
Induced	3,323	20.3	3.5
TOTAL	16,338	100.0	17.0

Agriculture Provides

- 261,101 jobs, which is more than one in every six jobs in Arkansas.
- \$9.57 billion in labor income, or more than 15% of the state's total labor income.

Arkansas Counts on Agriculture

The contribution of the Agriculture Sector as a percentage of the Gross Domestic Product (GDP) by State in Arkansas is greater than in any contiguous state as well as the averages for the Southeast region and the United States.

Agriculture Sector as a percentage of Gross Domestic Product by State, 2007*

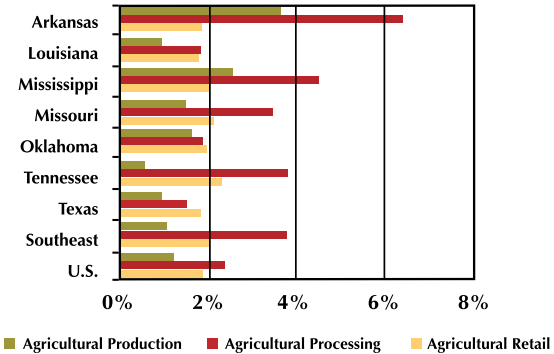
<u>State/Region</u>	<u>Percent of GDP by State</u>
Arkansas	12.03
Louisiana	4.55
Mississippi	9.19
Missouri	7.09
Oklahoma	5.46
Tennessee	6.68
Texas	4.28
Southeast	6.94
U.S.	5.50

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, 2009

Agriculture Sector includes production, processing and retail.

*Values for 2008 will be released by BEA in November 2010.

Agricultural Production, Processing and Retail as a percentage of Gross Domestic Product by State, 2007*



Source: USDC, BEA, 2009

For comparison among states, only the direct impacts of agricultural production, processing and retail are used as a percentage of Gross Domestic Product (GDP) by State and GDP for the United States.

GDP and Value Added are similar measures of wealth created by an economy; however, different data sources and methodologies are used to calculate these measures.

*Values for 2008 will be released by BEA in November 2010.

Total Impact

The Natural State

Agriculture and forestry are vital to the diverse, interactive economy of Arkansas as well as to our very identity as “The Natural State.”

National Ranking

- **No. 12 in total farm receipts**, with 49,100 farms on 13,600,000 acres in 2009. (USDA: NASS, 2010)
- **No. 4 in saw-log production in the South***, with about 18,500,000 acres of forest land representing approximately 54% of the total land base.

(Johnson, T.G., J.W. Bentley and M. Howell, 2009 and Arkansas Forestry Commission, Forest Survey/Forest Inventory and Analysis, 2007)

*Includes 13 states: OK, TX, AR, LA, KY, TN, MS, AL, GA, FL, SC, NC and VA



Arkansas is in the top 25 states in the production of 24 agricultural commodities.

- **No. 1 in Rice**
- **No. 2 in Broilers**
- **No. 3 in Cotton (upland)**
- **No. 3 in Cottonseed**
- **No. 3 in Catfish (foodsize)**
- **No. 3 in Turkeys**
- **No. 5 in Sweet Potatoes**
- **No. 9 in Chicken Eggs**
- **No. 10 in Soybeans**
- **No. 10 in Grain Sorghum**
- **No. 11 in Pecans**
- **No. 12 in Beef Cows**
- **No. 12 in Blueberries**
- **No. 13 in Grapes**
- **No. 14 in Watermelons**
- **No. 16 in Tomatoes**
- **No. 16 in Sod Production Acreage***
- **No. 20 in Hay**
- **No. 20 in Cattle and Calves**
- **No. 22 in Hogs and Pigs**
- **No. 22 in Oats**
- **No. 23 in Corn for Grain**
- **No. 23 in Wheat**
- **No. 23 in Peaches**

National Agricultural Statistics Service, data for 2009

*Census of Agriculture, data for 2007

Highlights of Arkansas' Agriculture 2005-2009

	Year	Production (thousands)
Rice	2005	108,792 cwt.
Broilers	2008	6,380,000 lbs.
Cotton (upland)	2006	2,525 bales
Cottonseed	2006	861 tons
Catfish (foodsize)	2005	104,100 lbs.
Turkeys	2008	610,700 lbs.
Sweet Potatoes	2009	463 cwt.
Chicken Eggs	2005	3,416,000 eggs
Soybeans	2008	123,500 bushels
Grain Sorghum	2007	20,640 bushels
Pecans	2009	2,300 lbs.
Beef Cows	2005	964 head
Blueberries	2006	1,600 lbs.



<i>(Continued)</i>	Year	Production (thousands)
Grapes	2006	4,400 lbs.
Watermelons	2007	418 cwt.
Tomatoes	2005	414 cwt.
Turfgrass*	2007	8.276 acres
Hay	2009	3,131 tons
Cattle and Calves	2007	562,426 lbs.
Hogs and Pigs	2008	141,380 lbs.
Oats	2009	640 bu.
Corn for Grain	2007	99,710 bushels
Wheat	2008	55,860 bushels
Peaches	2005	9,300 lbs.
Timber	2005	25,220 tons

Highest commodity production levels for the years 2005-2009.
 National Agricultural Statistics Service, various dates, and Arkansas
 Forestry Commission 2010

*Census of Agriculture, data for 2007



Direct Impact

Crops Sector

The crops sector includes all enterprises engaged in the production and processing of cotton, food and feed grains, hay and pasture, fruits, nuts, vegetables and oil bearing crops.

Direct impact of crops

Employment	56,051 jobs
Wages	\$910 Million
Labor Income	\$1.38 Billion
Value Added	\$3.26 Billion



Cash receipts for Arkansas from all commodities totaled \$8.35 billion for the 2008 calendar year, which was an increase of \$1.01 billion over 2007.

The cash receipts total for 2008 was the largest in Arkansas history. The state ranked 12th in the nation in agricultural cash receipts. Peaches claimed the largest percentage increase in cash receipts from 2007 to 2008. Due to freezing temperatures in 2007 that devastated the crop, peach cash receipts increased from \$13,000 in 2007 to \$4.66 million in 2008 (an increase of \$4.65 million).

U.S. net farm income set a new record in 2008 at \$87.1 billion, up \$16.2 billion from 2007. U.S. net farm income was also over \$22.6 billion above its 10-year average of \$64.5 billion. U.S. cash receipts for both crops and livestock (valued at \$183.1 billion and \$141.1 billion, respectively) were also at record levels in 2008.

The gain in 2008 U.S. farm income was primarily the result of comparably strong, but highly variable, commodity prices during the year. In the livestock sector, prices for cattle and milk remained considerably above their 10-year average. Prices for corn, wheat, soybeans and milk rose throughout 2008 to unexpectedly high levels. The higher prices were predominantly driven by strong demand from the domestic biofuels industry and foreign buyers. The culmination of these factors was farmers' receiving high prices in spite of harvests approaching record levels. (USDA NASS, 2009 and USDA ERS, 2009 and 2010)

Direct Impact

Strength in Diversity

Soybeans, rice, wheat, corn, grain sorghum and cotton accounted for 54% of value added and 63% of jobs in the crops sector in 2008.

The other 46% of value added was from a variety of locally important crops. This diversity is a major asset in weathering downturns in a given commodity. Other crops are hay and forage, melons, fruits, vegetables, pecans, turfgrass and ornamental plants.



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2009 Commodity Production

Commodity	Acres Harvested (thousands)	Production (thousands)	Value (thousand \$)
Rice	1,470	99,924 cwt.	1,338,982
Cotton (upland)	500	830 bales	243,024
Cottonseed		287 tons	49,938
Soybeans	3,270	122,625 bushels	1,177,200
Hay	1,415	3,131 tons	229,012
Wheat	390	17,160 bushels	83,226
Corn for Grain	410	60,680 bushels	227,550
Grain Sorghum	37	2,923 bushels	9,658
Oats	8	640 bushels	1,472
Sweet Potatoes	2.5	463 cwt.	6,112
Broilers		5,780,000 lbs.	2,641,460
Chicken Eggs		2,935,000 eggs	362,727
Turkeys		568,400 lbs.	284,200
Cattle and Calves		536,083 lbs.	412,649
Catfish (foodsize)		58,100 lbs.	42,994
Hogs and Pigs		109,779 lbs.	75,542
Pecans		2,300 lbs.	2,274
Blueberries	0.3	500 lbs.	860
Grapes	0.6	3,580 lbs.	1,844
Watermelon	1.4	280 cwt.	2,128
Tomatoes	1	64 cwt.	3,584
Peaches	1.2	2,240 lbs.	1,568
Timber		16,525 tons	299,769
Turfgrass*	5.47	8.276 acres	16,392
Total	7,512.47		7,514,165

Source: National Agricultural Statistics Service, 2010 and Arkansas Forestry Commission, 2010

*Census of Agriculture, data for 2007

Direct Impact

Animal Agriculture Sector

The animal agriculture sector includes production and processing of poultry, eggs, beef and dairy products, hogs and pigs and other animals.

Beef cattle and poultry are companion enterprises on many farms, with poultry providing cash flow and fertilizer for pastures.

Aquaculture is a major enterprise and is often a companion to row crop farming in the Delta region.



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USDA, David Nance



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Direct impact of animal agriculture

Employment	57,601 jobs
Wages	\$1.55 Billion
Labor Income	\$1.83 Billion
Value Added	\$2.55 Billion

Protein Power

Arkansas is a leading producer, processor and marketer of protein products.

Poultry and egg production and processing is the leading industry, with direct impacts of:

- 1 in 4 agricultural jobs; and
- \$1 in every \$4 of agricultural wages and income.

Cattle are raised in every county, with a January 1, 2010, inventory of 1,890,000 head. The swine inventory for December 1, 2009, was 200,000 head. Foodsize catfish numbered 31,890,000 on January 1, 2010. (National Agricultural Statistics Service, 2010)





Direct impact of poultry

Employment	42,595 jobs
Wages	\$1.24 Billion
Labor Income	\$1.52 Billion
Value Added	\$1.92 Billion

Forestry Sector

The forestry sector includes forest products, furniture and wood and paper processing.

Timber acreage standing includes the following forest-type groups: 41% oak and hickory, 29% loblolly and shortleaf pine, 11% oak and pine, 10% oak, gum and cypress and 5% elm, ash and cottonwood. (Arkansas Forest Resources Center 2007)





Direct impact of forestry

Employment	34,065 jobs
Wages	\$1.56 Billion
Labor Income	\$1.73 Billion
Value Added	\$2.62 Billion

Economic Engine

Forestry is the leading employer in South Arkansas — one of the nation's leading timber-producing regions.


Sawmills, logging, paper and paperboard mills contribute:

- 47% of forestry jobs;
- nearly half of wages and income; and
- 52% of value added.

A Multifaceted Resource

Forest-based tourism, recreation, watershed protection, wildlife habitat and aesthetic values are vital to the economy, environmental health, culture and identity of Arkansas.





Direct impact of sawmills, logging, paper and paperboard mills

Employment	15,938 jobs
Wages	\$746.32 Million
Labor Income	\$878.08 Million
Value Added	\$1.36 Billion

Across the Board

Arkansas agriculture generates jobs in all 20 industries in the North American Industry Classification System (NAICS) used for economic analysis.

Employment generated by agriculture in top five NAICS industries

Manufacturing	86,033 jobs
Agriculture, Forestry, Fishing and Hunting	75,425 jobs
Retail Trade	12,785 jobs
Health and Social Services	11,808 jobs
Wholesale Trade	10,216 jobs
Top Five Total	196,268 jobs
(75% of all jobs generated by agriculture)	

Based on 2-Digit NAICS Aggregation (U.S. Census Bureau, 2006)



The far-reaching impacts of agriculture are seen in the distribution of value added throughout the economy.

Value Added generated by agriculture in top five NAICS industries

Manufacturing	\$5.44 Billion
Agriculture, Forestry, Fishing and Hunting	\$3.59 Billion
Wholesale Trade	\$1.13 Billion
Real Estate and Rental	\$1.13 Billion
Transportation and Warehousing	\$826.47 Million
Top Five Total	\$12.11 Billion
(74% of all value added generated by agriculture)	

Based on 2-Digit NAICS Aggregation (U.S. Census Bureau, 2006)

Promoting Sustainable Farming Systems

Site-specific Nitrogen Soil Test

Division of Agriculture scientists have developed the first soil test that will accurately predict the amount of nitrogen (N) fertilizer needed to maximize crop yields and minimize excess N that can run off in surface water.

This breakthrough technology resulted from solving the mystery of how to distinguish “mineralizable N,” which is the form available to plants, in a soil profile where N exists in many forms in a constant state of change. The researchers identified measurable soil N fractions (parts of the molecule) and proper soil sampling procedures that reliably predicts the amount of N available to rice.

The N-Soil Test for Rice (N-ST*R) will help farmers:

- Optimize yields and N fertilizer rates
- Minimize N runoff or loss
- Avoid excess plant residue or lodging
- Reduce excess N as a nutrient for fungal diseases

Laboratory and sampling protocols are being developed to make the test available to Arkansas producers of rice and other crops.

The Center for Agricultural and Rural Sustainability

The mission of the Division of Agriculture's **Center for Agricultural and Rural Sustainability (CARS)** is to increase prosperity for rural Arkansas through sustainable practices. The Center has identified three major focus areas:

- **Sustainability Indices** — measure key impact areas and trends over time, foster productive dialogue and promote progress toward sustainability.
- **Life Cycle Analysis** — quantify the environmental and social impacts of a product by measuring the inputs and outputs associated with its supply chain.
- **Food Industry Program** — research, education and outreach focused on strengthening farm to retailer connections and promoting locally produced foods.

CARS has worked closely with the Field to Market Alliance for Sustainable Agriculture to analyze national water quality and stream biodiversity trends in agricultural watersheds. This work will be published in 2010 and is a collaboration among the USGS, USEPA, USDA, Field to Market and CARS.

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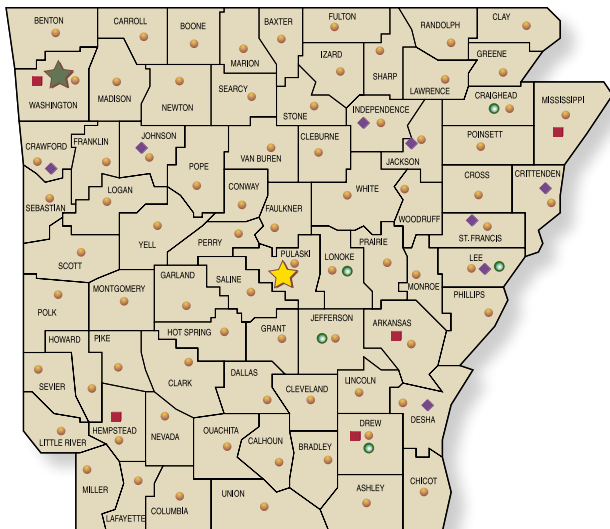
The University of Arkansas System's Division of Agriculture conducts research and extension programs to support Arkansas agriculture in its broadest definition.

Our employees include Cooperative Extension Service faculty in all 75 counties, Agricultural Experiment Station scientists and Extension specialists on five university campuses and at five research and extension centers, and support personnel at eight research stations and five other units.



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Locations



- Division & CES Headquarters, Little Rock
- AAES Headquarters, Fayetteville
- Research & Extension Centers
- Research Stations
- Other Locations
- County Extension Offices



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