



A Cornerstone of Alachua County's Economy and Land Base: The Economic Impact of Agriculture and Natural Resources¹

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INTRODUCTION

This report provides a profile of agriculture and natural resource industries and an overview of their economic impacts in Alachua County, Florida. The report is based on data from the IMPLAN Pro database for Florida counties for 2006, data from the 2002 Census of Agriculture and data from reports by the Alachua County Property Appraiser. The format, structure, and wording for this report copies extensively from a guide developed by Rahmani, Hodges, and Mulkey to report economic impacts.

The IMPLAN Pro Economic Impact and Social Accounting software package, licensed to the University of Florida by the Minnesota IMPLAN Group, Inc., was used to generate multipliers for total industry output, total value added, total exports, total output impacts, and total value added impacts for each agricultural and natural resource sector of the economy to allow a more comprehensive assessment of impacts. In addition to direct sales of the industries in question, IMPLAN multipliers capture inter-industry purchases (indirect effects) and employee household spending (induced effects). No attempt was made to adjust for particular local conditions, and the analysis focused only on economic impacts resulting from operating revenues and employment created by agricultural and natural resource industries. All economic impacts generated from IMPLAN are reported in 2006 U.S. dollars.

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Data from the 2002 Census of Agriculture, the Alachua County Property Appraiser's Office and the State Department of Revenue were used to augment the economic impact analysis and to allow for a detailed description of agricultural and natural resource industries in Alachua County. The 2002 Census of Agriculture, conducted by the National Agricultural Statistics Service of the U.S. Department of Agriculture (USDA), provides information at the county level on farm numbers; land use; operator characteristics; the market values of land, buildings, and machinery; crop and livestock sales; farm expenses; and income from federal programs. A more recent Census of Agriculture was conducted in 2007, but data collected by USDA for Florida and Alachua County from that survey have not been publically reported and are not expected to be available for several months.

For informational purposes, a brief summary of the organization and definition of the agriculture and natural resource industry group in this report is provided. The early focus of the report is on production agriculture. This includes crops, all types of livestock, and forestry production in Alachua County. The focus then expands to a broader group of industry sectors. Included as part of the agriculture and natural resource group are agricultural inputs and services (veterinary, fertilizer, pest control, etc.), food and kindred products manufacturing (fruit and vegetable canning, bread and bakery products, seafood product preparation and packaging, etc.), forest products manufacturing (truss manufacturing, wood pallet manufacturing, etc.), and mining (stone, sand, gravel, etc.). However, nature-based recreation (golf, fishing, trapping, etc.) and food and kindred product distribution (food services, wholesale trade of food products, food and beverage stores, building materials and garden supplies, etc.) are not included as agriculture and natural resource industry sectors presented in this report.

ALACHUA COUNTY AGRICULTURE: A SNAPSHOT

According to the Census of Agriculture, in 2002, Alachua County agriculture can be summarized as follows (note how a farm is defined by the Census of Agriculture). Farms are "any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year." This definition was first used for the 1974 Census of Agriculture and has remained consistent since so that data are comparable across time periods since 1974. More detailed information on Alachua County agriculture is presented in Tables 1-8.

Farm Numbers

There were more than 1,493 farms in Alachua County (Table 1). Beef cattle ranching and farming comprise the largest number of farms (619), or more than 41 percent of all farms. Fruit and tree nuts ranked second (157 farms) and Nursery and greenhouse ranked third (118 farms). In total these three farm enterprises account for about 60 percent of all farms in the county.

Farm Size Distribution

The 1,493 farms identified in the Census consisted of 222,728 acres of land. The majority of farms were less than 100 acres (1,146 farms) and these farms totaled just over 31,100 acres. There were a total of 274 farms between 100 and 499 acres with total acreage for this size of operation at 55,343 acres. There were 73 farms of 500 acres or larger with a total acreage of

136,213. Farms less than 100 acres accounted for 77 percent of total farms and 14 percent of acreage. Farms between 100 and 499 acres represented 18 percent of total farms and about 25 percent of the total acreage. Farms over 500 acres represented 5 percent of total farms and 61 percent of total acreage. Farms greater than 500 acres are relatively small in number but dominate in acreage.

Market Value of Agricultural Products Sold and Net Farm Cash Income

Table 4 reports the market value of agricultural products (all crops and livestock) sold in Alachua County. According to the 2002 Census of Agriculture, "market value of agricultural products sold represents the gross market value before taxes and production expenses of all agricultural products sold or removed from the place in 2002 regardless of who received the payment." Market value is equivalent to total sales, but does not include payments received for participation in other federal farm programs nor income from farm-related sources such as custom-work, other agricultural services, or income from non-farm sources.

The total market value of agricultural products sold in Alachua County was \$58.7 million in 2002 (Table 4). This represents an average market value of \$39,293 per farm. The total market value was 14 percent higher than in 1997 and on a per farm basis was 9 percent higher than the 1997 Census.

Net Farm Cash Income

Net farm cash income in the county from agricultural production in 2002 was estimated in the Census at \$3.14 million. This implies gross farm income from agriculture in the county is in the range of \$64.5 million. This represents a relatively thin margin of income exceeding expenses.

Value of Agricultural Products by Commodity Group

Crops, including nursery and greenhouse production, account for 64 percent of agricultural sales in Alachua County (\$37.6 million). Livestock, including poultry and dairy production and their products, represent the other 36 percent of sales. It should be noted that timber sales are not reported by the Census of Agriculture because they are not considered part of the agricultural industry by the North American Industry Classification system. This will be discussed later in more detail. The largest individual sector in terms of sales is vegetables, melons, and potato with reported sales of \$12.9 million. This is followed by the nursery, greenhouse, floriculture, and sod sector with sales of \$11.1 million and the cattle and calves sector with \$9.4 million.

Farm Operator and Farm Organization Characteristics

There are 2,252 farm operators in Alachua County. These operators represent nine-tenths (0.9) of one percent of the county's total population. About 32 percent of the operators consider agriculture (farming) as their primary occupation. The remainder of the operators (68 percent) considers something other than farming as their primary occupation. The vast major of the farms in Alachua County (about 91 percent) are organized as individual or family farm businesses.

Individuals interested in more detail about Alachua County agriculture based on data from the 2002 Census of Agriculture should review the information presented in Tables 1–8.

OTHER IMPORTANT AGRICULTURE AND NATURAL RESOURCE DATA

While Census of Agriculture data is helpful in understanding the industry it is not the sole source of information and has certain short-comings. As presented earlier, the timber land sales sector is not reported in the Census because the North American Industry Classification system does not classify it as part of the agricultural sector. It needs to be noted that the Census data are self-reported by the producer or landowner and that other data may be available from professional sources that provide reliable information.

Land Use Information

Census of Agriculture data reported 222,728 acres of land in agriculture in Alachua County based on the Census definition of a farm and with the knowledge that land in timber is not fully reported. A more reliable source of information for land use is often available from local property appraiser's offices. Information presented here is from the Alachua County Property Appraiser's Office and is based on the 2007 preliminary property tax roll. This information reveals there were 7,404 parcels with agricultural use in Alachua County. These parcels totaled 341,536 acres in 2007 and represented about 55 percent of Alachua County's land base. This is down about 8 percent from 2002 when 371,752 acres were reported on 7,416 parcels. The number of parcels and the decline in acreage is consistent over the five-year period and is a more accurate representation of land in agriculture and natural resource use in the county.

Land Value Information

Data from the State Department of Revenue collected from the County Property Appraiser's Office indicates the market or just market value of agricultural land in Alachua County in 2006 was valued at \$861.3 million. This equates to a per acre value of about \$2500 per acre. However, agricultural land in Florida is taxed at its use value. That value in Alachua County in 2006 was reported as \$97.3 million, or about 11 percent of market value.

Property Tax Payments

Property tax payments in Alachua County vary based on taxes levied by various units of government, including special districts. In 2006, it is estimated the millage rate paid by Alachua County property owners varied between 20 and 24 mills (tax rate per \$1000 dollars of value). This calculates to a property tax payment on agricultural lands in the county that is estimated to range between \$1.95 and \$2.3 million.

ECONOMIC IMPACT RESULTS

As noted earlier, the IMPLAN software package and associated databases allow the estimation of multipliers to capture the total economic impact of agricultural and natural resource industries within the local economy. This section reports the results of impact estimations for Alachua

County. Estimates are based only on the IMPLAN data set with no attempt to adjust for particular local situations. For each measure, the impacts reported include the direct impacts of output of the agricultural sector in question, the indirect impacts associated with inter-industry purchases of inputs by agriculture and its supplying industries, and the induced impacts of spending by employees and owners of agricultural and supplying industries.

Reported impacts include activities within production agriculture, natural resource industries (forestry, mining, and fishing), food and forest products manufacturing, agricultural input supply, and agricultural services.

Table 9 presents estimates of economic impacts for Alachua County’s agriculture and natural resource industries. Additional detail for specific agriculture and natural resource industry groups are presented in Table 10.

- Total industry output for all agricultural and natural resource industries was \$390 million dollars in the county. In economic terms, the agriculture and natural resource industries accounted for 2.8 percent of the county’s total output.
- Total value added to production for agriculture and natural resource industries was \$155 million. This represents 1.8 percent of the total value added by Alachua County industry groups.
- Total exports from Alachua County’s agriculture and natural resource based industries were \$267 million. This represents 6.1 percent of the total exports by all industry in Alachua County

The total output impacts for agriculture and natural resource industries in Alachua County were estimated at \$592 million. This represents 3.3 percent of total industry output for all sectors of Alachua County’s economy. The largest total output impacts were from the following agriculture and natural resource industry groups:

Forestry, Wood and Paper Product Manufacturing	\$132 million (M)
Food Product Manufacturing	\$115.6 M
Nursery and Greenhouse and Landscape Services	\$ 86.2 M
Agricultural Inputs and Services	\$ 72.9 M
Livestock & Dairy Farming and Animal Products Manufacturing	\$ 54.5 M

Total value-added impacts are the market value of a firm’s output less the value of the inputs which it has purchased from others. It can be viewed as a net economic contribution by the industry sector after direct costs have been subtracted from gross sales. Value-added is the difference between the value of goods as they leave a particular stage of production and the costs of the goods as they entered that stage. Value-added includes payments made by industries to workers, interest, profits, and indirect business taxes.

The total value-added impacts of agriculture and natural resource industries in Alachua County were \$280 million and represented 2.6 percent of the county's total valued added impacts. Value added is a broad measure of economic contribution that is comparable to the Gross Domestic Product at the national level, and represents the net income created by an industry, or the difference between industry revenues and input purchases from other sectors; it includes personal and business net income, and capital consumption (Hodges 2008)

CONCLUSION

Agriculture and natural resource based industry is a large and diverse component of the Alachua County economy. Total industry output for all agricultural and natural resource industries was \$390 million dollars in the county. In economic terms, the agriculture and natural resource industries accounted for 2.8 percent of the county's total output. The total output impacts for agriculture and natural resource industries in Alachua County were estimated at \$592 million. This represents 3.3 percent of total industry output for all sectors of Alachua County's economy. The total value-added impacts of agriculture and natural resource industries in Alachua County were \$280 million and represented 2.6 percent of the county's total valued added impacts.

What makes this more impressive is that this economic activity is generated from less than 1 percent of the county's population. The agriculture and natural resource sector also accounts for at least 55 percent of the land ownership and use in Alachua County. Over 90 percent of this land use is in individual and family farms. Property taxes from this land generates between \$1.95 to \$2.3 million dollars in tax revenue each year. Additionally, the land use generates other benefits such as water recharge, wildlife habitat, open space, locally grown food products, and scenic beauty. The agriculture and natural resource sector also generates more than 6 percent of export value of all Alachua County economic sectors. The implication of this export activity is that Alachua County agriculture and natural resource industries not only serve local markets, but regional and national markets as well. Without the contributions of the agriculture and natural resource sectors in Alachua County, a "major hole" would need to be filled in the county's economy and land use.

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Source for Tables 1–8: 2002 Census of Agriculture, Florida, State and County data, Volume 1, Geographic area Series, Part 9, AC-02-A-9, Issued June 2004, National Statistics Service, U.S. Department of Agriculture.

Table 1. Farms by North American Industry Classification System: Alachua County, Florida, 2002

Total farms	Oilseed and grain farming	Vegetable and melon farming	Fruit and tree nut farming	Greenhouse, nursery, and floriculture	Other crop farming	Tobacco farming	Cotton farming	Sugarcane, hay, and other crop	Beef cattle ranching and farming	Dairy cattle and milk production	Hog and pig farming	Poultry and egg production	Sheep and goat farming	Animal aquaculture and other animal production
	(1111)	(1112)	(1113)	(1114)	(1119)	(11191)	(11192)	(11193, 11194, 11199)	(112111)	(11212)	(1122)	(1123)	(1124)	(1125, 1129)
1,493	12	87	157	118	108	10	–	98	619	17	38	8	41	288

Table 2. Farm Size Distribution, and Investment in Land & Building, Machinery: Alachua County, Florida, 2002 and percent change 1997- 2002

Farms				Average size of farm		Farms Less than 100 acres		Farms 100 to 499 acres		Farms 500 acres or more		Estimated asset value of land and buildings				Estimated asset value, machinery & equipment
(Number)	(% chg)	(Acres)	(% chg)	(Acre/farm)	(% chg)	(Number)	(Acres)	(Number)	(Acres)	(Number)	(Acres)	(\$1000)	(% chg)	(\$/farm)	(\$/acre)	(\$/farm)
1,493	4	222,728	9	149	5	1,146	31,172	274	55,343	73	136,213	726,734	67	486,109	3,222	23,887

Table 3A. Farm Land Use: Alachua County, Florida, 2002 and percent change 1997- 2002

All cropland		Harvested cropland		Cropland used only for pasture or grazing		Cropland in cultivated summer fallow		Nursery, Greenhouse, Floriculture (1), Under glass or other protection	Nursery, Greenhouse, Floriculture(1), In the open
(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Sq. ft.)	(Acres)
80,269	10	39,281	28	6,446	-15	441	-14	511,580	1,001

(1) Aquatic Plants, Mushrooms, Flower & Vegetable seeds and Sod Harvested

Table 3B. Farm Land Use: Alachua County, Florida, 2002 and percent change 1997- 2002

Pasture and rangeland, other than cropland & woodland pastured		Pastureland, all types		Woodland		Woodland pastured		Woodland not pastured		Land in Conservation or Wetlands Reserve Programs		Certified organically produced crop lands	Land enrolled in federal or other crop insurance programs
(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(% chg)	(Acres)	(Acres)
86,289	25	145,229	11	44,207	-15	24,398	-9	19,809	-21	1,726	-50	135	9,025

Table 4. Market Value of Agricultural Products Sold, Value of Government Payments, Production Expenses, and Net Farm Cash income from Operation: Alachua County, Florida, 2002 and percent change 1997- 2002

Market value of all agricultural products sold				Value of government payments	Total farm production expenses		Net farm cash income from operation	
(\$1000)	(% chg)	(\$/farm)	(% chg)	(\$1000)	(\$1000)	(\$/farm)	(\$1000)	(\$/farm)
58,665	14	39,293	9	567	61,274	40,986	3,141	2,101

Table 5. Value of Agricultural Products by Commodity Group: Alachua County, Florida, 2002 and percent change 1997- 2002

Market value of all Livestock & Poultry agricultural products sold	All crop including nursery and greenhouse	Vegetables, melons, potatoes, & sweet potatoes	Fruits, tree nuts, and berries	Nursery, greenhouse, floriculture, & sod	Other crops and hay	Livestock, poultry, and their products	Poultry and eggs	Cattle and calves	Milk and other dairy products from cows	Hogs and pigs	Sheep, goats, and their products	Horses, ponies, mules, burros, & donkeys	Aquaculture
(\$1000)	(\$1000) (% chg)	(\$1000)	(\$1000) (% chg)	(\$1000)	(\$1000)	(\$1000) (% chg)	(\$1000) (% chg)	(\$1000) (% chg)	(\$1000) (% chg)	(\$1000) (% chg)	(\$1000)	(\$1000)	(\$1000)
58,665	37,620 17	12,859	8,113 290	11,122	2,748	21,044 7		9,402 10	5,579 -32	78 -76	76	878	183

Table 6. Characteristics of Principal Operator, and Primary Occupation of Farmers: Alachua County, Florida, 2002 and percent change 1997-2002

Total operators	Total women operators	Primary occupation: Farming		Primary occupation: Other		Female farms			
(Number)	(Number)	(Number)	(% chg)	(Number)	(% chg)	(Number)	(% chg)	(Acres)	(% chg)
2,252	819	728	36	765	-15	359	38	26,358	83

Table 7. Type of Business Organization: Alachua County, Florida, 2002 and percent change 1997- 2002

Family or individual farms				Partnership farms				Corporation: Family-held farms				Corporation: Other than family held farms			Other-cooperative, estate or trust, institutional, etc.		
(Number)	(% chg)	(Acres)	(% chg)	(Number)	(% chg)	(Acres)	(% chg)	(Number)	(% chg)	(Acres)	(% chg)	(Number)	(% chg)	(Acres)	(Number)	(% chg)	(Acres)
1,352	7	148,139	39	77	-18	25,483	-29	39	-32	40,874	132	10	-9	3,656	15		4,576

Table 8. Ethnicity of Farm Operators: Alachua County, Florida, 2002

White			Black or African American			Spanish, Hispanic, or Latino Origin			Other ethnic groups *		
(Farm Numbers)	(Operator Number)	(Acres)	(Farm Number)	(Operator Number)	(Acres)	(Farm Number)	(Operator Number)	(Acres)	(Farm Number)	(Operator Number)	(Acres)
1,365	1,983	211,166	127	174	11,932	57	70	7,019	39	43	2,580

Table 9. Alachua County, Florida, Economic Impacts, Industry Groups, 2006 Data

Industry Groups	Total Industry Output (\$M)	Total Value Added (\$M)	Total Exports (\$M)	Total Output Impacts (\$M)	Total Value Added Impacts (\$M)
Agriculture, Natural Resources, Related Manufacturing & Services	390	155	267	592	280
Construction	982	390	16	998	400
Consumer Services	339	163	83	421	216
Education	1,834	1,789	100	1,942	1,858
Government	688	609	8	695	613
Health Care	1,869	1,059	1,181	3,059	1,817
Information and Communications	516	240	197	714	364
Manufacturing	1,292	377	930	1,849	719
Miscellaneous Residual Accounts	-5	-5	113	-5	-5
Private Households	720	644	0	720	644
Professional and Technical Services	1,156	611	276	1,468	807
Real Estate and Financial Services	1,448	819	372	1,861	1,102
Retail Trade	921	588	133	1,066	685
Social Services & Organizations	199	94	91	289	151
Transportation	283	182	129	405	261
Travel, Food and Entertainment Services	697	350	280	956	519
Utilities	292	110	133	332	137
Wholesale Trade	425	287	36	463	312
Grand Total	14,046	8,462	4,346	17,823	10,880

Source: IMPLAN Professional Data, Minnesota IMPLAN group Inc., Stillwater, Minnesota 55082

Table 10. Alachua County, Florida, Economic Impacts, Agriculture and Natural Resources Industry Group, 2006 Data

Agriculture and Natural Resources Industry Group	Industry Output (\$M)	Total Value Added (\$M)	Total Exports (\$M)	Output Impacts (\$M)	Total Value Added Impacts (\$M)
Agricultural Inputs & Services (fertilizers, pesticides, veterinary, support activities, equipment manufacturing)	48.91	21.58	30.77	72.90	36.86
Environmental Horticulture (nursery & greenhouse, landscape services)	68.36	38.78	17.88	86.15	50.44
Forestry, Wood & Paper Product Manufacturing	88.82	33.28	62.61	132.19	60.84
Fruit & Vegetable Farming & Processing	49.24	28.30	38.84	80.00	48.66
Grain & Oilseed Farming & Processing	0.07	0.03	0.07	0.12	0.07
Livestock & Dairy Farming & Animal Products Manufacturing	32.05	9.08	26.45	54.48	21.73
Mining	10.12	5.60	10.48	17.25	10.28
Other Crop Farming	9.79	5.05	7.80	15.80	9.04
Other Food Product Manufacturing	71.53	10.72	64.04	115.62	35.74
Sugarcane Farming, Refined Sugar & Confections	4.96	0.27	4.79	7.90	2.07
Tobacco Farming & Manufacturing	1.75	1.59	1.71	3.47	2.75
Wildlife (hunting)	0.00	0.00	0.00	0.00	0.00
Grand Total	390.20	155.38	266.81	591.71	280.32

Source: IMPLAN Professional Data, Minnesota IMPLAN group Inc., Stillwater, Minnesota 55082