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Economic Contributions of Florida Agriculture, Natural Resources, Food and Kindred Product Manufacturing and Distribution, and Service Industries in 2006[1]

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Introduction

The agricultural and natural resource industries in Florida that produce food, fiber, and mineral commodities are linked to a broad range of other economic sectors for food and kindred products manufacturing, wholesale and retail distribution, input suppliers, support services, and nature-based recreation. In addition to farms, forests, and fisheries, this includes activities such as mining, fertilizer manufacturing, sawmills, fruit and vegetable processing, landscaping, food stores, restaurants, building material and garden stores, pest control, golf courses, and recreational fishing. This report provides estimates of these industries' contribution to the economy of Florida in 2006, updating a previous study for 2004 (Hodges, Rahmani, and Mulkey, 2006), and supercedes a recent report by the same authors (January 2008). Here the scope of analysis is expanded to include food and kindred product distribution activities, such as wholesale food distributors, retail food stores, restaurants/other food service establishments, and building material/garden stores.

Methods

Data for this analysis were obtained from the IMPLAN Professional database for Florida counties for 2001-2004 and 2006 (Minnesota IMPLAN Group). These data were not available for 2005. IMPLAN data were derived from the National Income and Product Accounts and employment data for the United States (U.S. Department of Commerce). More than 110 individual industry sectors in Florida were identified as related to agriculture and natural resource commodity production, input supply and supporting services, food and kindred product manufacturing, food distribution, and nature-based recreation. A list of industry groups and individual sectors included in the analysis is shown in Table 1. Economic contributions were also evaluated for several recognizable industry commodity groups that have linkages between production and processing/manufacturing sectors, including environmental horticulture (nursery and greenhouse production; landscape services); fruit and vegetable farms and processing; forestry, logging, and forest product manufacturing; sugarcane and refined

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sugar manufacturing; livestock and animal products manufacturing; and fishing and seafood products.

The total regional economic impacts for each sector were estimated using regional input-output multipliers developed from IMPLAN. Multipliers capture the indirect and induced effects of sales outside Florida (exports) that bring new money into the region and generate further economic activity as these dollars circulate through the economy (Miller and Blair, 1985). Indirect effects represent the economic activity generated by businesses that furnish inputs to the agricultural, food manufacturing and natural resource industries, while induced effects represent the impacts of industry employee household spending. The total economic impacts are the sum of direct, indirect, and induced effects. A brief glossary of economic impact analysis terminology is provided in the Appendix.

Regional input-output models were developed with IMPLAN for the state of Florida for nine economic regions and for all 67 counties in the state. The nine regions were defined based on metropolitan areas, employee commuting patterns, and other economic data from the 2000 Census (Johnson and Kort, 2004). It should be noted that some Georgia counties included in the north Florida regions were not evaluated in this analysis, and that there were slight discrepancies in the results of the analysis at the state, region, and county levels due to differences in trade flows and accounting adjustments. The models were constructed with default parameters and trade flow assumptions. Adjustments made to the data were for exports by the Forestry, Fruit farming, Vegetable and melon farming, and Greenhouse and nursery sectors, based on information from primary surveys for previous studies (Hodges, et al., 2002, 2005, 2006). Values for some activities were estimated as a share of their parent sector based on past studies and other economic data: landscape services and pest control services (70% and 10%, respectively, of services to buildings), wholesale food distribution (27.5% of wholesale trade), and golf courses and recreational fishing (30% and 10%, respectively, of amusement and recreation services).

Values for 2001 through 2006 were expressed in 2007 dollars using the mid-year (July) indices for the Gross Domestic Product Implicit Price Deflator (U.S. Dept. of Commerce), which is a broad measure that accounts for effects of price changes in the measurement of GDP.

Results

Total Statewide Impacts

Total industry output or sales of the agriculture, natural resources, and food-related industries in Florida in 2006 were about $137 billion (Bn) in 2007 dollars (Table 1, Figure 1). Total exports of goods and services outside the state and sales to Florida visitors amounted to $46 Bn. As a result of the indirect and induced multipler effects from these exports, the total output impacts were estimated at nearly $200 Bn. Direct employment in the industry was nearly 1.5 million full-time and part-time jobs, and total employment impacts were estimated at almost 2 million jobs (Table 1). The direct value added contribution of these industries was $66 Bn, and total value added impacts from multiplier effects were $102 Bn. 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. The labor (earned) income impact of employee wages and benefits and business proprietor income was estimated to be $65 Bn. Indirect business tax impacts to local, state, and federal governments were $11.4 Bn.

Impacts by Industry Groups and Sectors

Economic contributions by major industry groups and specific industry sectors in Florida in 2006 are given in Table 1. The largest valued added impacts in the industry were from Food and Kindred Products Distribution ($53.2 Bn), followed by Food and Kindred Products Manufacturing ($13.7 Bn), Agricultural Inputs and Services ($10.4 Bn), Crop, Livestock, Forestry, and Fisheries Production ($10.3 Bn), Forest Product Manufacturing ($6.3 Bn), Nature-based Recreation ($6.0 Bn), and Mining ($1.9 Bn) (Figure 2). In terms of employment impacts, the highest impacts occurred for Food and

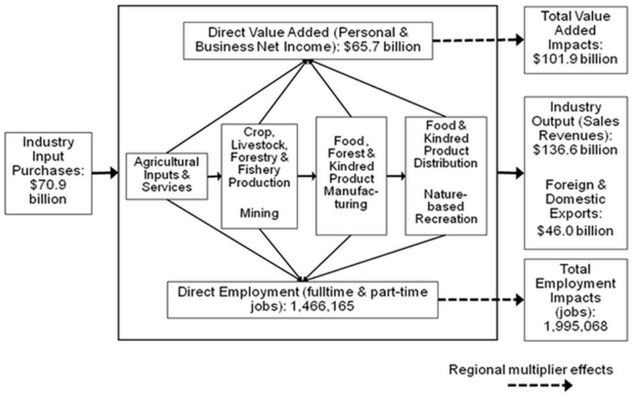

Figure 1. Structure of economic activity in Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006. Source: IMPLAN Professional Data.

Kindred Products Distribution (1,160,790 jobs), followed by Crop, Livestock, Forestry, and Fisheries Production (238,237 jobs), Agricultural Inputs and Services (234,575), Food and Kindred Products Manufacturing (165,8499), Nature-based Recreation (96,535 jobs), Forest Product Manufacturing (77,345 jobs), and Mining (21,737 jobs) (Figure 3).

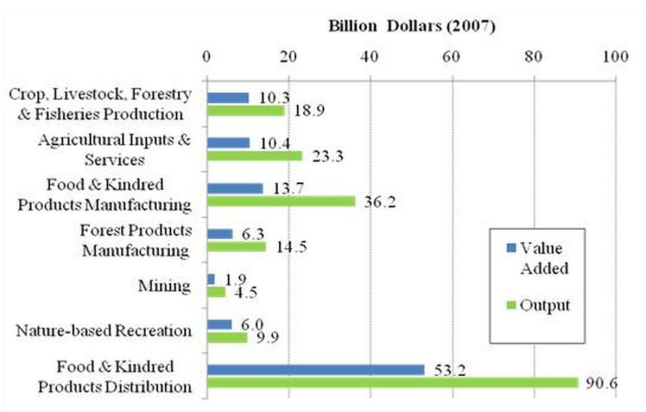

Figure 2. Output and value added impacts of agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006. Source: IMPLAN Professional Data.

Among agricultural commodity groups with market chain linkages between producers, manufacturers, and service sectors, the largest value-added impacts were for Environmental Horticulture ($7.7 Bn), which includes nursery and greenhouse production and landscape services, followed by Forestry and Forest Products ($7.0 Bn), Fruit and Vegetable Farming and Processing ($6.5 Bn), Tobacco Farming and Manufacturing ($2.9 Bn), Sugarcane Farming and Refined Sugar

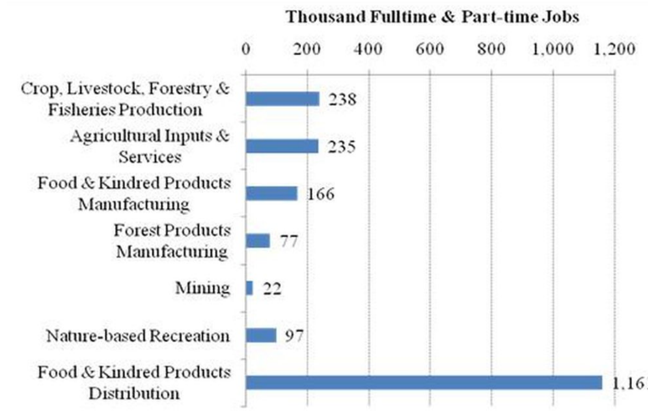

Figure 3. Employment impacts of agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in Florida in 2006. Source: IMPLAN Professional Data.

Manufacturing ($1.4 Bn), Livestock and Dairy Farming and Animal Products Manufacturing ($1.1 Bn), and Fishing and Seafood Products ($220 Mn) (Figure 4). In terms of employment impacts, the largest industry groups were Environmental Horticulture (172,395 jobs), Fruit and Vegetable Farming and Processing (93,389 jobs), and Forestry and Forest Products Manufacturing (89,012 jobs) (Figure 5).

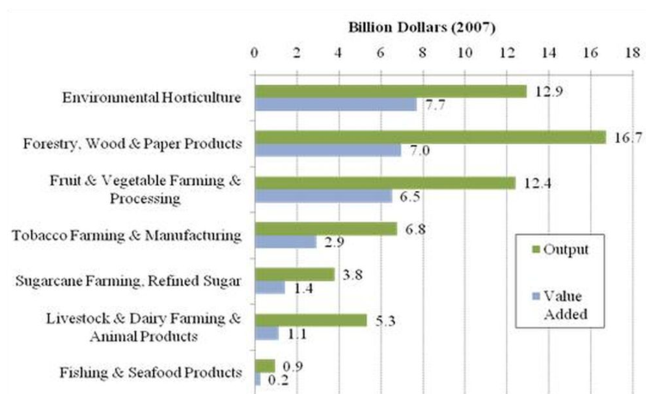

Figure 4. Output and value added impacts of food and fiber commodity groups in Florida in 2006. Source: IMPLAN Professional Data.

Individual industry sectors that generated the largest value added impacts were Food Services (restaurants and drinking places, $21.4 Bn), Wholesale Trade in Food and Kindred Products ($17.4 Bn), Food and Beverage Stores ($7.6 Bn), Building Material and Garden Stores ($6.8 Bn), Landscape Services ($5.45 Bn), Golf Courses ($4.4 Bn), Soft Drink and Ice Manufacturing ($3.51 Bn), Other Tobacco Product Manufacturing ($2.71 Bn),

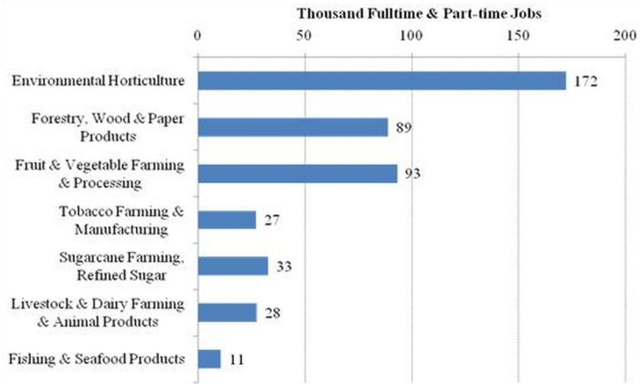

Figure 5. Employment impacts of food and fiber commodity groups in Florida in 2006. Source: IMPLAN Professional Data.

Greenhouse and Nursery Production ($2.23 Bn), Vegetable and Melon Farming ($2.37 Bn), Agriculture and Forestry Support Activities ($2.30 Bn), Phosphatic Fertilizer Manufacturing ($2.20 Bn), Fruit and Vegetable Canning and Drying ($1.70 Bn), Paper and Paperboard Mills ($1.62 Bn), Recreational Fishing ($1.5 Bn), Veterinary Services ($1.05 Bn), and Engineered Wood and Truss Manufacturing ($1.03 Bn) (Table 1). In terms of employment impacts, the largest sectors were Food Services (661,961 jobs), Food Stores (209,344 jobs), Food Wholesalers (178,153 jobs), Building Material/Garden Stores (111,332 jobs), Landscape Services (144,380 jobs), Agriculture/Forestry Support Services (91,772 jobs), Golf Courses (70,723 jobs), Soft Drink/Ice Manufacturing (42,934 jobs), Veterinary Services (31,651 jobs), Fruit Farming (31,050 jobs), Vegetable/Melon Farming (30,359 jobs), Phosphatic Fertilizer Manufacturing (28,399 jobs), and Greenhouse/Nursery Production (28,015 jobs).

Impacts in Florida Regions and Counties

Regional impacts of agricultural, food manufacturing, and natural resource industries were evaluated for nine economic regions of Florida (Figure 6). Total value added impacts in these regions, ranked in descending order, were Miami-Ft. Lauderdale ($32.3 Bn), Orlando ($25.4 Bn), Tampa-St. Petersburg-Clearwater ($15.8 Bn), Jacksonville ($11.0 Bn), Sarasota-Bradenton ($9.6 Bn), Pensacola ($2.6 Bn), Gainesville ($2.2 Bn), Tallahassee ($1.9 Bn), and Panama City ($1.1 Bn) (Table 2, Figure 7). Employment impacts followed in this same order among regions (Figure 8).

Figure 6. Economic regions in Florida in 2006. Source: U.S. Department of Commerce.

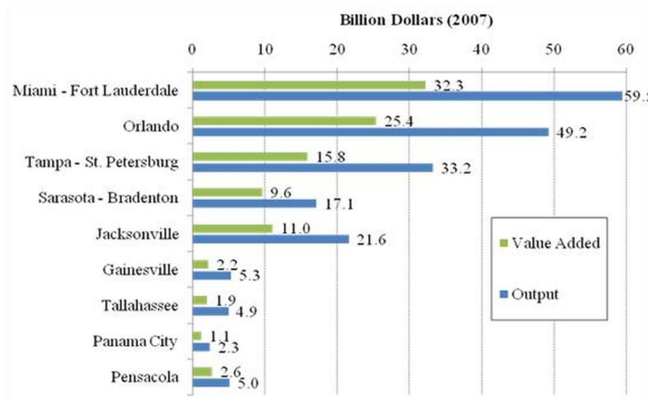

Figure 7. Output and value added impacts in Florida region by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006. Source: IMPLAN Professional Data.

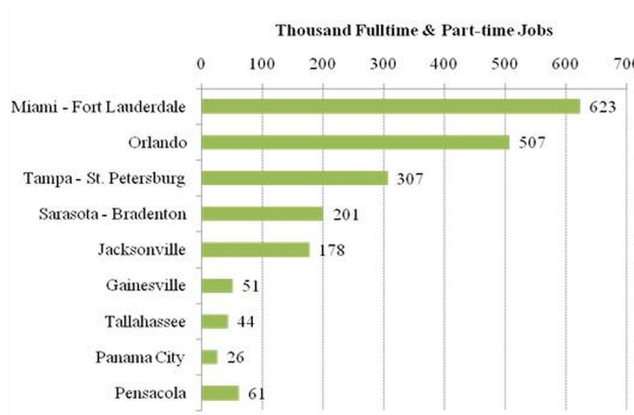

Figure 8. Employment impacts in Florida regions by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006. Source: IMPLAN Professional Data.

Industry economic impacts were also evaluated for all 67 counties in Florida as shown in Table 3. The largest counties in terms of value added impacts were Miami-Dade ($12.3 Bn), Hillsborough ($10.5 Bn), and Orange ($10.2 Bn), followed by a second tier of counties including Duval ($8.0 Bn), Broward ($7.9 Bn), and Palm Beach ($7.2 Bn) (Figure 9). Other counties with value added impacts exceeding $2 billion included Polk ($4.9 Bn), Pinellas ($4.0 Bn), Lee ($2.7 Bn), Collier ($2.4 Bn), Manatee ($2.1 Bn), and Seminole ($2.0 Bn). The first six counties all had employment impacts of at least 150,000 jobs, while the next six counties had employment impacts of at least 40,000 jobs.

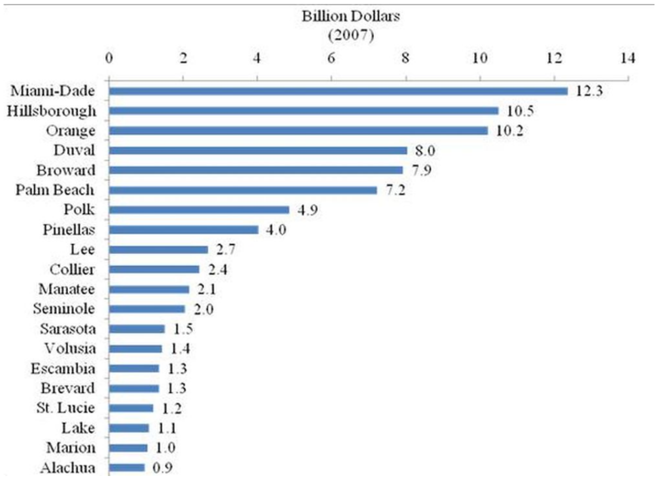

Figure 9. Value added impacts in the twenty largest Florida counties by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006. Source: IMPLAN Professional Data.

Impact Trends from 2001 to 2006

In addition to the economic contributions in the most recent year, it is important to understand how these values have changed over time. Trends in economic impacts of these industries between 2001 and 2006 are shown in Table 4 and Figures 10-11. Note that all values were adjusted for inflation to express in constant 2007 dollars. Total value added impacts grew from $85 Bn in 2001 to $102 Bn in 2006, representing an average annual growth of 3.9 percent (Figure 10). Total output impacts grew by an average of 5.5 percent annually, and total employment impacts increased by 1.2 percent annually. For the recent period of 2004-06, however, there was a more modest average annual growth in value added impacts (0.7%) and output impacts (0.5%), while employment impacts actually declined slightly (-0.5%). Note that these trends may reflect changes in the structure of the Florida economy as well as changes in industry activity and commodity prices.

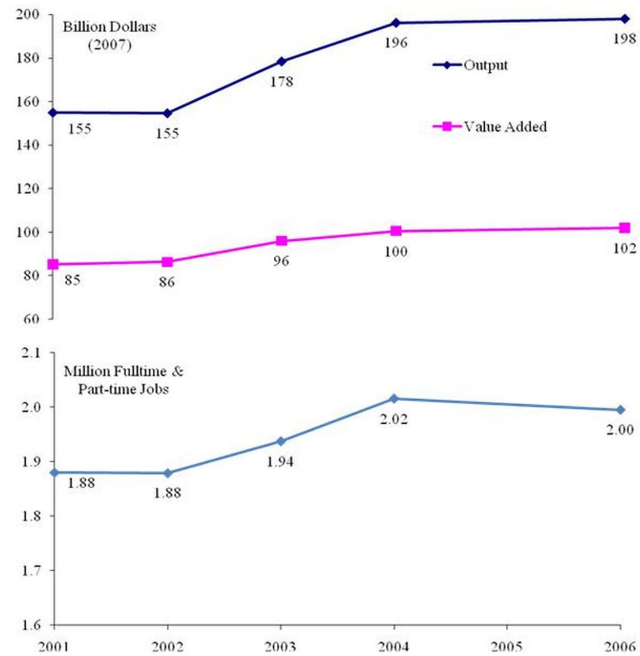

Figure 10. Trends in economic impacts during 2001-2006 for Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries. Source: IMPLAN Professional Data.

Among industry groups, average annual growth in value added impacts during the period 2001-06 was highest for Forest Products Manufacturing (12.9%) and Agricultural Inputs and Services (12.5%), followed by Food and Kindred Products Distribution (7.9%); Food and Kindred Products Manufacturing (6.8%); Mining (5.1%); Crop, Livestock, Forestry, and Fisheries Production (1.3% each); and Nature-based Recreation (0.4%) (Figure 11).

Among commodity groups, Environmental Horticulture sustained a high average growth rate in value added impacts throughout this period (4.6%), and during 2004-06 (8.4%). Very strong overall growth occurred for Tobacco Farming and Processing (26.5%); however, this group shrank (-4.1%) from 2004-06. A similar pattern is evident for Forestry and Forest Products Manufacturing, with good overall growth (6.5%), but then slowing (2.2%) during the

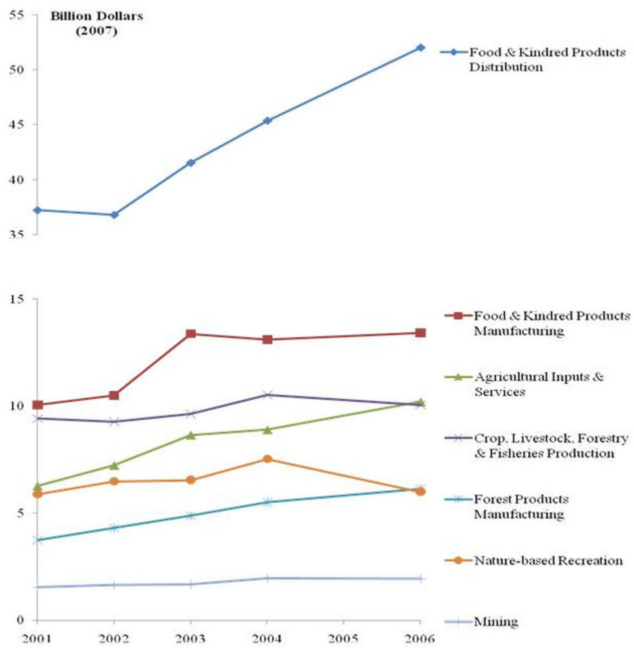

Figure 11. Trends in value added impacts during 2001-2006 for industry groups of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries. Source: IMPLAN Professional Data (data unavailable for 2005).

latter period. Other commodity groups that experienced a decline during 2004-06 were Livestock, Dairy Farming, and Animal Products Manufacturing (-10%); Sugarcane Farming, Refined Sugar, and Confections (-11.7%); and Fishing and Seafood Products (-22.6%).

Among individual industry sectors with a significant change between 2001 and 2006, the highest increase in value added impacts over the recent period were for Landscape Services ($924 Mn), and Soft Drink/Ice Manufacturing ($675 Mn). Other tobacco product manufacturing had substantial growth ($1.78 Bn, or 25% average annually) during 2001-04, but then decreased (-$297 Mn,or -5% annually) during 2004-06. Veterinary services, Greenhouse and nursery products, and Forest Nurseries/Timber recorded significant annual growth of 16 percent, 5 percent, and 4 percent, respectively, during 2004-2006. Phosphatic fertilizer manufacturing had the highest decrease of $706 Mn (-12% annually) during the recent period. Other sectors with significant decreases in value added impacts during 2004-2006 period were Fruit/Vegetable Canning/Drying (-$452 Mn, -10%), Agricultural/Forestry Support Activities (-$289 Mn, -6%), Sugar Refining (-$265 Mn, -11%), and Frozen Foods (-$217 Mn, -9%).

Share of Gross State Product

The relative importance of the agriculture, natural resources, food, and kindred product manufacturing, distribution, and nature-based recreation industries in Florida can be gauged by their share of overall economic activity in the state. The Gross State Product in 2006, which is equivalent to the sum of value added for all industries in the state, was $704 Bn in 2007 dollars, and the total employment in the state was 10.3 million jobs. The direct value added contributed by agriculture, natural resource, and related food industries ($65.6 Bn) represented 9.3 percent of Florida's Gross State Product (Figure 12), ranking third among all major industry groups. Direct employment in these industries represented 14.2 percent of all jobs in the state, ranking second among major industry groups (Figure 13). It is important to note that in this analysis, some industry sectors were reclassified from their original designation under the North American Industry Classification System (NAICS) to be included as part of the broadly defined agriculture and related industries.

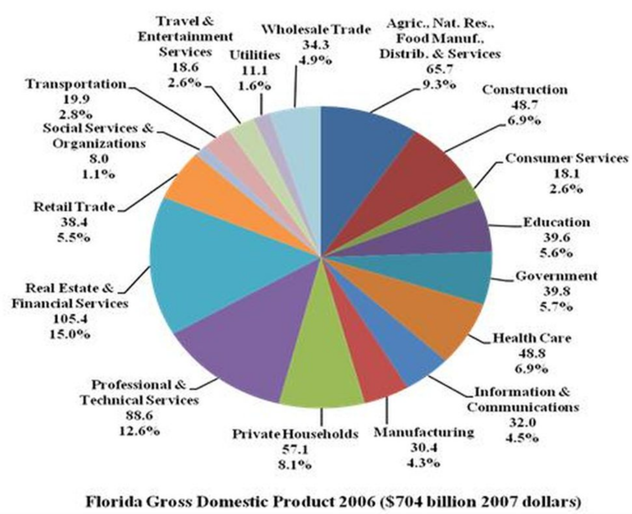

Figure 12. Contribution to Gross State Product (GSP) of Florida by major industry groups in 2006. Source: IMPLAN Professional Data.

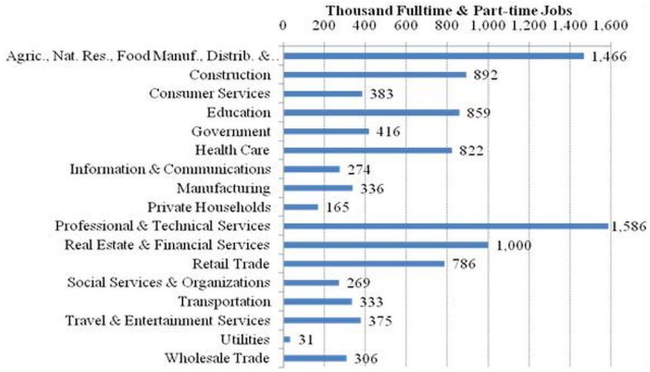

Figure 13. Direct employment by major industry groups in Florida in 2006. Source: IMPLAN Professional Data.

Conclusions

This analysis showed that agriculture and natural resources are very diverse industries, with linkages to food and kindred product manufacturing, distribution, and related service activities. These industries collectively have a significant economic impact on the Florida economy, accounting for about 9 percent of Gross State Product and 14 percent of total employment, which is ranked second among major industry groups These industries are present throughout the state, with major activity in urbanized metro areas as well as rural counties, where it may be relatively more important as a share of total economic activity. The industries have grown substantially since 2001, with average annual growth rates roughly matching the overall Florida economy (4%), however, growth significantly slowed during the recent 2004-06 period. Finally, in addition to these economic impacts, agriculture and related industries managed nearly 24 million acres (36,000 square miles) in forests, crops, and pasture land uses, or about two-thirds of the land area of the state. These lands provide valuable non-marketed environmental services for water supply, water quality improvement, pollution abatement, erosion control and shoreline protection, carbon sequestration and climate stabilization, wildlife habitat, and open space for community buffers and outdoor recreation.

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Table 1. Economic contributions of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industry groups and sectors in 2006.

Industry Group or Sector	Industry Output	Foreign & Domestic Exports	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment Impacts	Total Employment Impacts
	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Crop, Livestock, Forestry & Fisheries Production	**12,135**	**5,410**	**18,909**	**6,240**	**10,290**	**172,518**	**238,237**
Fruit Farming	2,128	532	2,763	1,092	1,475	24,584	31,050
Agriculture & forestry support activities	2,044	1,131	3,577	1,378	2,301	78,331	91,772
Greenhouse & nursery production	1,947	818	3,038	1,570	2,231	18,083	28,015
Vegetable & melon farming	1,885	1,508	3,808	1,212	2,367	11,854	30,359
Forest nurseries, forest products & timber	975	195	1,283	190	382	1,562	6,974
Cattle ranching & farming	944	403	1,332	95	307	7,660	11,296
Logging	773	148	933	196	283	3,136	4,692
Sugarcane & sugar beet farming	427	190	641	164	292	11,852	13,925
Poultry & egg production	309	179	483	138	239	645	2,130
Animal (except cattle & poultry) production	244	41	278	30	49	5,704	6,011
Fishing	226	67	315	54	106	7,647	8,384
All other crop farming	178	144	340	91	187	985	2,483
Cotton farming	32	32	70	14	37	180	602
Tobacco farming	12	10	25	10	19	139	260
Grain farming	8	9	18	4	10	125	218
Oilseed farming	2	2	4	1	3	22	43
Tree nut farming	1	1	2	1	1	9	21

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	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Agricultural Inputs & Services	**14,709**	**7,044**	**23,349**	**5,516**	**10,438**	**163,880**	**234,575**
Landscape services	6,510	2,234	9,883	3,391	5,451	113,609	144,380
Phosphatic fertilizer manufacturing	3,369	3,203	6,753	407	2,195	3,666	28,399
Veterinary services	1,980	360	2,406	791	1,046	27,962	31,651
Pest control services	930	319	1,412	484	779	16,230	20,626
Nitrogenous fertilizer manufacturing	641	437	1,057	85	291	515	3,225
Pesticide & other agricultural chemical manufacturing	599	427	1,092	198	477	346	4,210
Fertilizer (mixing only) manufacturing	422	0	422	90	90	781	781
Farm machinery & equipment manufacturing	157	31	186	33	51	377	615
Food product machinery manufacturing	63	20	88	28	43	250	458
Lawn & garden equipment manufacturing	18	3	20	3	4	42	60
Paper industry machinery manufacturing	12	6	19	4	8	55	110
Sawmill & woodworking machinery	9	2	11	3	4	48	62

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	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Food & Kindred Products Manufacturing	**20,952**	**11,311**	**36,220**	**4,966**	**13,748**	**42,693**	**165,849**
Soft drink & ice manufacturing	4,698	3,922	9,488	812	3,515	7,107	42,934
Other tobacco product manufacturing	2,997	2,038	6,314	811	2,711	2,133	26,685
Fruit & vegetable canning & drying	1,693	1,590	3,721	504	1,701	3,254	19,766
Bread & bakery products (except frozen)	1,174	15	1,193	473	484	8,011	8,166
Fluid milk manufacturing	1,145	3	1,148	137	138	1,880	1,907
Sugar manufacturing	1,121	828	2,513	181	915	1,806	16,246
Frozen food manufacturing	968	892	2,087	291	956	2,963	12,213
Breweries	740	561	1,483	294	743	823	7,197
Seafood product preparation & packaging	564	33	606	90	114	1,926	2,346
Meat processed from carcasses	561	57	624	61	94	1,262	1,767
Distilleries	481	502	1,257	288	795	439	7,886
Animal slaughtering (except poultry)	447	15	464	64	71	1,102	1,271
Poultry processing	431	18	449	71	81	1,853	1,987
Cigarette manufacturing	401	11	418	159	170	134	279

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	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Other snack food manufacturing	361	6	369	95	100	631	699
All other food manufacturing	358	62	435	62	106	1,375	2,002
Coffee & tea manufacturing	338	31	383	47	73	598	952
Other animal food manufacturing	329	308	581	25	164	461	2,319
Spice & extract manufacturing	315	6	323	87	92	711	775
Ice cream & frozen dessert manufacturing	295	2	297	57	58	614	631
Cookie & cracker manufacturing	287	0	287	84	84	746	746
Nonchocolate confectionery manufacturing	198	76	302	56	116	606	1,439
Confectionery manufacturing (purchased chocolate)	173	67	260	31	80	560	1,250
Mayonnaise, dressing & sauce manufacturing	160	12	175	36	44	411	522
Rendering & meat byproduct processing	108	27	152	28	50	196	507
Flavoring syrup & concentrate manufacturing	103	4	108	31	34	167	209
Flour milling	96	74	200	20	85	108	946
Wineries	72	58	139	15	55	216	772

Table 1. Economic contributions of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industry groups and sectors in 2006.

Industry Group or Sector	Industry Output	Foreign & Domestic Exports	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment Impacts	Total Employment Impacts
	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Dog & cat food manufacturing	72	26	94	8	20	68	231
Cheese manufacturing	50	0	51	6	6	63	67
Confectionery manufacturing (cacao beans)	43	8	53	7	12	85	159
Rice milling	41	36	91	8	39	61	460
Dry, condensed & evaporated dairy products	36	7	44	8	12	45	110
Dry pasta manufacturing	23	1	24	5	6	67	73
Roasted nuts & peanut butter manufacturing	23	9	32	4	9	67	114
Fats & oils refining & blending	20	6	24	3	6	13	46
Frozen cakes & other pastries manufacturing	18	1	20	5	6	115	130
Mixes & dough (purchased flour)	7	0	7	3	3	12	15
Tortilla manufacturing	4	0	4	1	1	24	24
Forest Products Manufacturing	**8,590**	**5,320**	**14,471**	**2,922**	**6,288**	**30,125**	**77,345**
Paper & paperboard mills	1,466	1,650	3,474	487	1,620	2,300	18,180
Engineered wood member & truss manufacturing	1,419	559	2,107	630	1,026	8,245	13,851

Table 1. Economic contributions of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industry groups and sectors in 2006.

Industry Group or Sector	Industry Output	Foreign & Domestic Exports	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment Impacts	Total Employment Impacts
	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Sanitary paper product manufacturing	1,270	990	2,303	393	989	1,895	10,222
Paperboard container manufacturing	1,179	1,156	2,157	320	904	3,641	11,730
Wood windows & door manufacturing	793	9	805	363	369	3,952	4,050
Sawmills	651	51	721	188	224	2,397	2,940
Pulp mills	360	424	926	96	400	499	4,903
Other millwork (includes flooring)	344	10	357	97	104	2,012	2,112
Veneer & plywood manufacturing	208	17	233	58	71	1,096	1,288
Coated & laminated paper & packaging	192	220	425	58	195	514	2,405
Wood preservation	184	4	189	43	46	622	664
Wood container & pallet manufacturing	172	4	177	64	67	1,466	1,506
Coated & uncoated paper bag manufacturing	135	125	264	36	112	443	1,488
All other converted paper product manufacturing	85	92	191	31	95	309	1,190
Miscellaneous wood product manufacturing	72	6	80	34	38	479	543
Reconstituted wood product manufacturing	36	2	38	19	21	84	101

Table 1. Economic contributions of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industry groups and sectors in 2006.

Industry Group or Sector	Industry Output	Foreign & Domestic Exports	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment Impacts	Total Employment Impacts
	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Cut stock, resawing lumber & planing	22	0	22	5	5	162	162
Surface-coated paperboard manufacturing	3	0	3	0	1	9	11
Mining	**3,149**	**1,110**	**4,503**	**1,118**	**1,928**	**10,188**	**21,737**
Oil & gas extraction	1,872	32	1,912	443	464	5,377	5,645
Other nonmetallic mineral mining	463	258	777	247	435	1,743	4,413
Stone mining & quarrying	299	311	675	177	404	1,210	4,474
Sand, gravel, clay & refractory mining	219	266	540	136	330	1,142	3,897
Drilling oil & gas wells	196	161	391	46	160	373	1,992
Gold, silver & other metal ores mining	38	19	61	22	36	48	246
Support activities for oil & gas operations	36	37	87	34	65	196	650
Support activities for other mining	23	24	55	13	32	95	393
Iron ore mining	2	2	5	1	3	4	27
Nature-based Recreation	**4,927**	**3,258**	**9,874**	**2,988**	**6,003**	**51,346**	**96,535**
Golf courses	3,565	2,415	7,229	2,208	4,441	37,591	70,723
Recreational fishing	1,188	805	2,410	736	1,480	12,530	23,574
Hunting & trapping	173	39	235	43	81	1,224	2,238

Table 1. Economic contributions of Florida agriculture, natural resources, food and kindred product manufacturing and distribution, and service industry groups and sectors in 2006.

Industry Group or Sector	Industry Output	Foreign & Domestic Exports	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment Impacts	Total Employment Impacts
	Million Dollars (2007)			Million Dollars (2007)		Full-time & Part-time Jobs	
Food & Kindred Products Distribution	**72,133**	**12,531**	**90,613**	**41,909**	**53,210**	**995,415**	**1,160,790**
Food services & drinking places	33,306	5,642	40,930	16,823	21,381	595,622	661,961
Wholesale trade, food & kindred products	18,399	5,125	26,447	12,408	17,404	104,496	178,153
Food & beverage stores	11,398	593	12,341	7,020	7,605	200,881	209,344
Building material & garden supply stores	9,030	1,171	10,896	5,657	6,820	94,416	111,332
Total	**136,595**	**45,985**	**197,941**	**65,659**	**101,904**	**1,466,165**	**1,995,068**

Source: *IMPLAN* data for Florida (MIG, Inc., 2007).
Impact estimates include regional multiplier effects.
Values expressed in millions 2007 dollars using GDP implicit price deflator (U.S. Department of Commerce).

Table 2. Economic impacts in Florida regions by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006.

Industry Group	Miami – Ft Lauderdale	Orlando	Tampa – St. Petersburg–Clearwater	Sarasota – Bradenton	Jacksonville	Gainesville	Tallahassee	Panama City	Pensacola
Output Impacts (*million dollars*)	**59,465**	**49,249**	**33,234**	**17,060**	**21,578**	**5,292**	**4,904**	**2,328**	**5,027**
Agriucltural Inputs & Services	4,458	7,801	4,260	2,490	1,196	205	1,380	156	344
Crop, Livestock, Forestry & Fisheries Production	6,681	3,899	1,406	3,112	890	1,449	583	405	325
Mining	501	923	3,050	314	101	79	92	10	98
Food & Kindred Products Manufacturing	9,619	7,135	9,195	1,794	8,596	1,303	337	31	138
Forest Products Manufacturing	3,066	2,823	1,477	471	3,077	649	1,047	657	824
Food & Kindred Products Distribution	33,733	20,573	13,348	7,697	7,601	1,595	1,426	1,011	3,253
Nature-based Recreation	1,407	6,094	498	1,182	118	12	39	58	46
Employment Impacts (*Jobs*)	**623,312**	**506,670**	**306,568**	**201,226**	**177,724**	**51,484**	**44,202**	**26,294**	**61,374**
Agricultural Inputs & Services	61,792	65,139	36,592	29,202	15,694	3,301	7,444	2,733	5,656
Crop, Livestock, Forestry & Fisheries Production	82,905	53,661	25,675	43,557	6,297	10,398	5,709	3,269	2,679
Mining	2,950	5,614	13,010	1,690	663	522	666	64	490
Food & Kindred Products Manufacturing	46,681	34,844	41,388	9,059	41,742	6,775	1,254	132	648
Forest Products Manufacturing	15,855	16,157	8,227	2,498	15,988	4,022	4,947	3,390	4,283

Table 2. Economic impacts in Florida regions by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in 2006.

Industry Group	Miami – Ft Lauderdale	Orlando	Tampa – St. Petersburg–Clearwater	Sarasota – Bradenton	Jacksonville	Gainesville	Tallahassee	Panama City	Pensacola
Food & Kindred Products Distribution	398,653	272,323	175,210	104,252	95,947	26,288	23,672	15,963	46,937
Nature-based Recreation	14,476	58,931	6,467	10,967	1,392	178	511	744	682
Value Added Impacts (*million dollars*)	**32,254**	**25,384**	**15,847**	**9,552**	**11,023**	**2,157**	**1,906**	**1,123**	**2,639**
Agricultural Inputs & Services	2,194	3,175	1,851	1,310	617	98	353	77	171
Crop, Livestock, Forestry & Fisheries Production	3,860	2,127	776	1,815	444	514	227	170	131
Mining	275	502	1,089	148	61	45	56	4	53
Food & Kindred Products Manufacturing	3,391	2,773	3,436	795	3,966	376	86	8	31
Forest Products Manufacturing	1,313	1,230	650	224	1,388	251	399	269	364
Food & Kindred Products Distribution	20,364	11,895	7,752	4,522	4,482	869	769	565	1,862
Nature-based Recreation	857	3,683	292	738	65	5	15	29	27

Source: *IMPLAN* data for Florida (MIG, Inc., 20007).
Impact estimates include regional multiplier effects.
* Values expressed in millions 2007 dollars using GDP implicit price deflator (U.S. Department of Commerce).

Table 3. Economic impacts in Florida counties in 2006.

County	Industry Output	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment	Total Employment Impacts
	Million Dollars (2007)		Million Dollars (2007)		Full-time & Part-time Jobs	
Alachua	1318.5	1780.8	645.4	941.3	19,920	24,838
Baker	114.9	141.0	50.7	66.1	1,183	1,491
Bay	1,153.0	1,615.3	543.0	834.4	13,680	18,317
Bradford	206.0	274.6	74.2	106.4	14,30	1,997
Brevard	2,239.6	2,507.0	1,173.6	1,332.9	32,441	35,172
Broward	10,701.3	14,215.4	5,748.6	7,915.2	122,686	153,099
Calhoun	120.7	161.8	45.4	66.5	1,499	1,916
Charlotte	644.9	774.5	348.1	429.5	9,823	11,284
Citrus	478.6	555.8	229.1	274.0	6,463	7,235
Clay	639.6	747.4	303.1	363.9	9,468	10,559
Collier	2,876.7	4,156.9	1,649.7	2,431.8	35,456	47,027
Columbia	595.5	779.7	180.8	274.6	4,611	6,300
DeSoto	587.8	812.0	244.2	373.3	7,366	10,720
Dixie	242.2	311.0	75.2	106.6	1,873	2,495
Duval	9,454.6	15,702.5	4,215.1	8,025.6	72,048	122,316
Escambia	1,867.5	2,594.1	881.6	1,342.4	20,877	28,130
Flagler	323.5	412.9	172.7	228.7	4,557	5,469
Franklin	63.3	83.1	28.8	39.8	1,084	1,334
Gadsden	273.2	353.9	135.8	184.3	4,051	5,078
Gilchrist	165.7	205.8	42.8	62.4	1,101	1,602
Glades	107.2	142.0	44.0	64.2	894	1,327
Gulf	69.2	83.3	31.5	39.8	712	842
Hamilton	838.4	994.8	93.7	137.8	1,303	2,039
Hardee	469.9	647.6	218.1	3226.5	6,182	8,570
Hendry	1,273.1	1,796.7	534.1	831.8	11,112	18,517
Hernando	582.6	675.9	295.3	352.0	9,231	10,301
Highlands	930.5	1,309.7	414.4	637.5	11,030	16,579
Hillsborough	13,581.4	21,736.5	5,676.0	10,481.9	123,318	188,622
Holmes	105.7	128.9	36.7	47.9	915	1,144
Indian River	1,033.2	1,352.8	529.4	725.1	15,109	18,544
Jackson	232.2	291.6	97.4	131.2	2,808	3,479
Jefferson	70.6	92.6	32.8	45.2	978	1,243
Lafayette	91.7	120.7	29.2	43.0	644	949
Lake	1,561.5	2,018.3	792.3	1,070.3	18,505	23,452
Lee	3,461.2	4,606.9	1,929.2	2,650.1	43,635	54,354
Leon	1,241.9	1,462.3	639.0	781.3	21,273	23,531

Table 3. Economic impacts in Florida counties in 2006.

County	Industry Output	Total Output Impacts	Direct Value Added	Total Value Added Impacts	Direct Employment	Total Employment Impacts
	Million Dollars (2007)		Million Dollars (2007)		Full-time & Part-time Jobs	
Levy	269.4	350.2	88.8	130.2	2,636	3,565
Liberty	202.2	253.5	53.2	74.8	707	1,048
Madison	378.1	474.7	84.3	131.4	1,219	2,096
Manatee	2,762.0	3,975.8	1,419.2	2,145.6	31,492	43,727
Marion	1,758.5	2,234.8	742.6	1,020.3	22,263	27,999
Martin	1,201.9	1,652.6	612.8	891.3	15,303	19,851
Miami-Dade	15,963.7	22,471.6	8,332.5	12,342.4	162,185	218,569
Monroe	684.3	968.5	377.1	562.9	9,568	12,294
Nassau	774.9	1,041.8	327.7	479.8	5,112	7,677
Okaloosa	1,016.0	1,305.6	533.6	725.7	16,204	19,184
Okeechobee	407.7	545.2	129.9	197.9	3,818	5,369
Orange	11,523.0	18,023.5	6,272.3	10,191.9	125,859	181,474
Osceola	1,237.3	1,674.4	624.8	894.2	16,366	20,780
Palm Beach	9,806.6	13,407.9	5,060.9	7,220.1	117,706	152,201
Pasco	1,564.8	1,827.5	715.9	869.1	21,125	23,730
Pinellas	6,637.9	8,769.1	2,38.5	4,014.8	66,653	81,399
Polk	7,278.5	11,428.0	2,569.0	4,850.8	49,523	87,143
Putnam	957.9	1,299.1	352.4	549.7	4,965	8,197
Santa Rosa	462.4	534.2	225.1	268.7	6,623	7,274
Sarasota	2,243.3	2,707.1	1,217.6	1,501.6	31,037	35,326
Seminole	2,733.6	3,639.4	1,499.6	2,044.3	33,904	42,382
St. Johns	1,042.4	1,289.0	572.3	729.4	13,853	16,295
St. Lucie	1,638.6	2,291.3	775.8	1,191.5	18,105	26,152
Sumter	385.5	467.2	147.4	185.4	3,988	4,893
Suwannee	869.5	1,189.1	221.9	368.7	5,001	7,532
Taylor	558.9	723.9	166.2	250.1	1,990	3,523
Union	56.7	65.9	22.3	27.1	656	757
Volusia	2,145.8	2,616.2	1,139.1	1,423.9	31,703	36,606
Wakulla	106.4	120.2	40.1	48.0	1,275	1,427
Walton	403.1	544.8	192.4	272.7	5,149	6,451
Washington	59.1	69.5	22.5	27.6	899	1,026

Source: IMPLAN data for Florida (MIG, Inc., 2007).
Impact estimates include regional multiplier effects.
Values expressed in millions 2007 dollars using GDP implicit price deflator (U.S. Department of Commerce).

Table 4. Economic impacts during 2001-06 by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in Florida.

Industry Group	2001	2002	2003	2004	2006	Average Annual Percent Change 2001-06	Average Annual Percent Change 2004-06
Output Impacts (*million dollars*)	**154,977**	**154,690**	**178,431**	**196,131**	**197,941**	**5.5%**	**0.5%**
Agricultural Inputs & Services	13,894	16,320	21,5113	22,506	23,349	13.6%	1.9%
Crop, Livestock, Forestry & Fisheries Production	17,907	19,001	17,219	20,508	18,909	1.1%	–3.9%
Food & Kindred Products Manufacturing	25,866	26,094	36,447	36,401	36,220	8.0%	–0.2%
Forest Products Manufacturing	9,947	10,830	12,757	14,013	14,471	9.1%	1.6%
Food & Kindred Products Distribution	74,252	68,993	76,328	85,809	90,613	4.4%	2.8%
Mining	3,617	2,680	3,710	4,872	4,503	4.9%	–3.8%
Nature-based Recreation	8,141	9,385	9,311	11,023	9,650	3.7%	–6.2%
Value Added Impacts (*million dollars*)	**85,254**	**86,316**	**95,958**	**100,488**	**101,904**	**3.9%**	**0.7%**
Agricultural Inputs & Services	6,275	7,236	8,654	8,899	10,201	12.5%	7.3%
Crop, Livestock, Forestry & Fisheries Production	9,427	9,277	9,653	10,538	10,056	1.3%	–2.3%
Food & Kindred Products Manufacturing	10,043	10,490	13,388	13,109	13,436	6.8%	1.2%
Forest Products Manufacturing	3,739	4,308	4,881	5,517	6,145	12.9%	5.7%

Table 4. Economic impacts during 2001-06 by agriculture, natural resources, food and kindred product manufacturing and distribution, and service industries in Florida.

Industry Group	2001	2002	2003	2004	2006	Average Annual Percent Change 2001-06	Average Annual Percent Change 2004-06
Food & Kindred Products Distribution	37,251	36,822	41,543	45,367	52,003	7.9%	7.3%
Mining	1,538	1,631	1,665	1,964	1,928	5.1%	–0.9%
Nature-based Recreation	5,889	6,488	6,553	7,535	6,003	0.4%	–10.2%
Employment Impacts (*full-time & part-time jobs*)	**1,880,282**	**1,879,193**	**1,937,635**	**2,015,587**	**1,995,068**	**1.2%**	**–0.5%**
Agricultural Inputs and Services	180,014	194,299	205,074	214,671	234,575	6.1%	4.6%
Crop, Livestock, Forestry & Fisheries Production	251,691	262,253	252,062	252,074	238,237	–1.1%	–2.7%
Food & Kindred Products Manufacturing	148,588	153,751	184,244	174,727	165,849	2.3%	–2.5%
Forest Products Manufacturing	66,166	79,303	74,394	77,087	77,345	3.4%	0.2%
Food & Kindred Products Distribution	1,109,030	1,066,625	1,095,682	1,156,433	1,160,790	0.9%	0.2%
Mining	22,866	22,043	20,590	25,444	21,737	–1.0%	–7.3%
Nature-based Recreation	101,927	109,919	105,589	115,151	96,535	–1.1%	–8.1%

Source: *IMPLAN* data for Florida (MIG, Inc., 2007).
Note: *IMPLAN* data were not available for 2005. Impact estimates include regional multiplier effects.
Values expressed in millions 2007 dollars using GDP implicit price deflator (U.S. Department of Commerce).

Appendix.

Glossary of Economic Impact Terms

Terms are presented in groups within a logical rather than alphabetical order

Region defines the geographic area for which impacts are estimated. Regions are generally an aggregation of one or more counties. Economic regions identified in this paper were defined based on worker commuting patterns.

Sector is a grouping of industries that produce similar products or services, or production processes. Most economic reporting and models in the United States are based on the Standard Industrial Classification system (SIC code) or the North American Industrial Classification System (NAICS).

Impact analysis estimates the impact of a change in output or employment resulting from a change in final demand to households, governments, or exports.

Input-output (I-O) model. An input-output model is a representation of the flows of economic activity between industry sectors within a region. The model captures what each business or sector must purchase from every other sector to produce its output of goods or services. Using such a model, flows of economic activity associated with any change in spending may be traced backwards (e.g., purchases of plants that lead growers to purchase additional inputs, such as fertilizers, containers, etc.). Multipliers for a region may be derived from an input-output model of the region's economy.

IMPLAN is a micro-computer-based input output modeling system and Social Accounting Matrix (SAM). With IMPLAN, one can estimate I-O models of up to 528 sectors for any region consisting of one or more counties. IMPLAN includes procedures for generating multipliers and estimating impacts by applying final demand changes to the model. The current version of the software is *IMPLAN Pro* 2.0.

Direct effects are changes in economic activity during the first round of spending. **Secondary effects** are changes in economic activity from subsequent rounds of re-spending. There are two types of secondary effects: indirect and induced. **Indirect effects** are changes in sales, income, or employment within the region in backward-linked industries supplying goods and services to businesses (e.g., increased sales in input supply firms resulting from more nursery industry sales). **Induced effects** are increased sales within the region from household spending of the income earned in the direct and supporting industries. Employees in direct and supporting industries spend their incomes on housing, utilities, groceries, and other consumer goods and services. This generates sales, income, and employment throughout a regions economy. **Total effects** are the sum of direct, indirect, and induced effects.

Multipliers capture the total effects, both direct and secondary, in a given region, generally as a ratio of the total change in economic activity in the region relative to the direct change**.** Multipliers may be expressed as ratios of sales, income, or employment, or as ratios of total income or employment changes relative to direct sales. Multipliers express the degree of interdependency between sectors in a regions economy, and therefore vary considerably across regions and sectors. **Type I** multipliers include only direct and indirect effects. **Type II** multipliers also include induced effects. **Type SAM** multipliers used by IMPLAN additionally account for capital investments and transfer payments such as welfare and retirement income. A **sector-specific multiplier** gives the total changes to a economy associated with a unit change in output or employment in a given sector**.**

Purchaser prices are prices paid by the final consumer of a good or service. **Producer prices** are prices of goods at the factory or production point. For manufactured goods, the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, producer and purchaser prices are equivalent.

Margins. The retail, wholesale, and transportation margins are the portions of the purchaser price accruing to the retailer, wholesaler, and grower, respectively. Only the retail margins of many goods purchased by consumers accrue to the local region, as wholesalers, shippers, and manufacturers often lie outside the local area.

Measures of economic activity. Sales or output is the dollar volume of a good or service produced or sold. **Final demand** is sales to final consumers, including households, governments, and exports. **Intermediate sales** are sales to other industrial sectors. **Income** is the money earned within the region from production and sales. Total income includes personal income (wage and salary income, including income of sole proprietors profits and rents). **Jobs** or employment is a measure of the number of jobs required to produce a given volume of sales/production, usually expressed as full-time equivalents, or as the total number, including part-time and seasonal positions. **Value added** is the sum of total income and indirect business taxes. Value added is the most commonly used measure of the contribution of a region to the national economy, as it avoids double counting of intermediate sales and captures only the “value added” by the region to final products.