Economic Contributions of Agriculture, Natural Resources, and Related Industries in Florida for 2010[1]

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Executive Summary

Agriculture, natural resources, and related industries remain a significant force in the economy of Florida, and it is important to recognize their economic contributions for informed public policy. The economic contributions of these industries were evaluated for 2010 to update previous reports and provide further information on economic trends in the wake of the historic global recession of 2007–2009. This analysis was conducted using the *IMPLAN* regional economic modeling system and associated state and county databases (MIG, Inc. 2012) to estimate economic multipliers that capture the additional economic activity generated by re-spending of income in the local economy arising from new final demand. The set of industry sectors included in this analysis was selected to represent a broad array of linked activities for commodity production, manufacturing, distribution, and supporting services.

Economic contribution results for 2010 included:

- Industry output or sales revenues of $121.24 billion, and total output contribution of $196.96 billion, including indirect/induced multiplier effects arising from foreign and domestic exports of $47.80 billion

- Direct employment through the creation of 1.35 million full-time and part-time jobs, representing 13.8 percent of all jobs in the state, and total employment impacts (including multiplier effects) of 2.01 million full-time and part-time jobs

- Direct value added of $60.66 billion, representing 8.5 percent of Florida's Gross State Product, and total value-added impacts (including multiplier effects) of $108.74 billion, representing 10.3 percent of Gross State Product

- Total labor income impacts of $67.31 billion for employee wages and benefits and business proprietor income, and total property income impacts of $29.56 billion for rents, interest, royalties, and dividends

- Total indirect business tax impacts of $11.87 billion paid to local, state, and federal governments

Across the various groups of agriculture and natural resource related sectors, total employment impacts and value-added impacts were largest for the *Food and Kindred Products Distribution* industry group (1.21 million jobs; $58.59 billion), followed by *Agricultural Inputs and Services* (295,956 jobs; $14.17 billion); *Crop, Livestock, Forestry, and Fisheries Production* (228,537 jobs; $12.25 billion); *Food and Kindred Product Manufacturing* (138,024 jobs; $13.53 billion); *Forest Product Manufacturing* (72,783 jobs; $5.99

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billion); *Mining* (53,245 jobs; $3.49 billion); and *Nature-Based Recreation* (11,913 jobs; $724 million). Excluding the *Food and Kindred Products Distribution* industry group, which includes food service establishments (restaurants and bars) and retail food stores, total economic impacts represented 6.3 percent of Gross State Product and 4.8 percent of total state employment.

Economic contributions were also evaluated for several commodity groups that have close linkages between production and processing/manufacturing sectors. The total value-added impacts and employment contributions were highest for the *Environmental Horticulture* group ($10.06 billion; 218,898 jobs), followed by *Fruit and Vegetable Farming and Processing* ($7.65 billion; 100,951 jobs); *Forestry and Forest Products* ($7.11 billion; 89,993 jobs); *Other Food Products Manufacturing* ($9.15 billion; 81,370 jobs); *Mining* ($3.49 billion; 53,245 jobs); *Sugarcane Farming and Refined Sugar Manufacturing* ($1.33 billion; 32,770 jobs); *Livestock and Dairy Farming and Animal Products Manufacturing* ($1.12 billion; 22,699 jobs); *Fishing and Seafood Products* ($330 million; 11,089 jobs); and *Grain and Oilseed Farming and Processing* ($335 million; 3,841 jobs).

Geographically, the size and composition of agriculture, natural resources, and related industries vary dramatically across the state of Florida due to differences in climate, natural resource endowments, population, and settlement patterns. The largest economic contributions occurred in the major metro areas such as Miami–Ft. Lauderdale, Orlando, Tampa–St. Petersburg, Sarasota–Bradenton, and Jacksonville, where there are large demands for food and kindred products and a large workforce available for the industry. The seven largest individual counties in terms of total value-added impacts and employment impacts were Miami–Dade ($13.57 billion; 230,789 jobs), Hillsborough ($9.92 billion; 155,130 jobs), Orange ($8.67 billion; 159,556 jobs), Duval ($8.55 billion; 114,409), Broward ($8.06 billion; 156,451 jobs), Palm Beach ($7.85 billion; 146,714 jobs), and Polk ($6.42 billion; 96,926 jobs). However, the economic contributions of agriculture and related industries are also relatively important in many rural areas, where these industries may represent a higher share of total economic activity. Additional detailed information on economic contributions in individual Florida counties is available at http://www.fred.ifas.ufl.edu/economic-impact-analysis/Florida-county-profiles-2010.pdf.

Direct employment in Florida's agriculture, natural resources, and related industries grew from 1.252 million jobs in 2001 to 1.382 million jobs in 2008, and then declined to 1.305 million jobs in 2009 as a result of the lingering effects of the global recession. In 2010, however, direct employment in Florida agriculture reached 1.384 million, which was higher than 2009 by more than 6 percent. This represented a much higher annual job growth compared to the previous nine-year (2001–2009) average of 0.5 percent and even higher than the 1.5 percent average for the 2001–2007 period preceding the recession. Total employment impacts increased to the highest level ever in 2010, reflecting a dramatic increase in exports of Florida products to domestic and world markets. Total value-added impacts grew from $80.27 billion in 2001 to $108.74 billion in 2010, at a 2.8 percent average annual rate in inflation-adjusted terms. In 2010, these value-added impacts represented 10.3 percent of Florida's Gross State Product. Among the agriculture, natural resources, and related industry groups, average annual growth in value-added impacts during 2001–2010 was highest for *Mining* (8.5%), followed by *Agricultural Inputs and Services* (6.2%) and *Food and Kindred Products Distribution* (4.6%).

Introduction

Agriculture, natural resources, and related industries represent a major industry group in terms of generating employment and income, and producing goods and services that contribute to economic growth and development in Florida and the United States. These industries utilize natural resources provided by Florida's 24 million acres (36,000 square miles) of forests, croplands, and ranches to produce basic food, fiber, and mineral commodities. Unrefined commodities are converted into finished products by the food and kindred product manufacturing industries. Finished goods then move through the wholesale and retail distribution chain to final consumers or to other industry sectors as intermediate goods for further value added processing. These industries are also linked to a broad array of allied suppliers that provide production inputs and supporting services. In addition, natural landscapes and other open or undeveloped lands provide an array of opportunities for nature-based recreation and eco-tourism. Thus, the chain of agricultural and related industry activities encompasses the "from farm to table" spectrum.

Assessment of the economic contributions of an industry group to a regional economy like Florida is important to making informed public policy decisions regarding future economic and community development, job creation, environmental regulation, labor and human resources, and taxation, among other issues. This report provides estimates of the economic contributions to the state of Florida in 2010 by a set of broadly defined industries comprising agriculture, natural resources, and related activities. It updates and continues a series of annual studies similarly conducted for the years 2006, 2007, 2008, and 2009 (Hodges, Rahmani, and Stevens 2011; Hodges and Rahmani 2010, 2009; Hodges, Rahmani, and Mulkey 2008).

Methods

Data for this analysis were obtained from the *IMPLAN-3* database for the state of Florida and its counties for 2001–2010 (MIG, Inc. 2012), which were derived from the National Income and Product Accounts for the United States (United States Department of Commerce, Bureau of Economic Analysis), the *Quarterly Census of Employment and Wages* (United States Bureau of Labor Statistics), and other sources. Over 90 individual industry sectors in the *IMPLAN* system were identified as related to agriculture and natural resource commodity production, including input supply and supporting services, food and kindred product manufacturing, forest product manufacturing, food and kindred product distribution, and nature-based recreation. A complete list of industry groups and individual sectors included in the analysis is shown in **Table 1**. Note that some industry sectors in this analysis were reclassified from their original major industry group designation under the *North American Industry Classification System* (NAICS) to be included as part of the broadly defined agriculture-related industries. The rationale for including processing/manufacturing industries in this analysis is that they share a common dependence upon the natural resource base and would not exist in the state if not for basic production activities. Food and kindred product distribution sectors, such as wholesalers, food stores, and restaurants, although not strictly dependent upon natural resources, are the endpoint of the market chain for the delivery of these products to final consumers.

Economic contributions were also evaluated for several recognizable commodity groups that have linkages between production and processing/manufacturing sectors. These included environmental horticulture (nursery and greenhouse production, landscape services, and retail lawn-and-garden centers); fruit and vegetable farming and processing; forestry, logging, and forest product manufacturing; sugarcane and refined sugar manufacturing; livestock and animal products manufacturing; and fishing and seafood products.

The total regional economic impacts for each sector were estimated using models developed with the *IMPLAN-3* software for social accounting and impact analysis (MIG, Inc. 2012). This system enables construction of input–output (I–O) models and social accounting matrices that represent the structure of a regional economy in terms of transactions among industry sectors, households, and governments. The *IMPLAN* model includes accounts for industrial commodity production; employment; labor and property income; household and institutional consumption; domestic and international trade (imports, exports); government taxes; transfer payments, such as welfare and retirement; and capital investment. Economic multipliers are calculated for each industry to estimate the secondary effects of new final demand that generates further economic activity as it is re-spent in the local economy (Miller and Blair 2009). Indirect effects multipliers represent the economic activity generated in the supply chain through the purchase of intermediate inputs from vendor firms, while induced effects multipliers represent the impacts of spending by industry employee households and governments. The indirect and induced multipliers were applied only to foreign and domestic exports, or sales to customers visiting from outside the state of Florida, which represent new money flowing into the regional economy. The total economic impacts are calculated as the sum of direct effects, plus indirect and induced effects. Therefore, while the estimates of this analysis are referred to as “economic impacts,” these values may be better understood as “economic contributions” because they represent the ongoing economic activity of existing industries, rather than a net change in activity resulting from external influences (Watson et al. 2007).

Measures of economic impacts reported here include output or revenue; value added; employment (including full-time, part-time, and seasonal positions); labor income; property income; and indirect business taxes paid to local, state, and federal governments. Value added is a broad measure of net economic activity that is comparable to the Gross Domestic Product (GDP), and represents the sum of labor and other property income, indirect business taxes, and capital consumption (depreciation). Value added also is equivalent to the difference between industry revenues and intermediate inputs purchased from other sectors. A glossary of economic impact analysis terminology is provided in the **Appendix**.

Regional economic models were developed for the state of Florida and for all 67 counties in the state using the *IMPLAN-3* software and the *IMPLAN* Florida state/county data package for 2010 (MIG, Inc. 2012). Models were constructed with econometrically estimated Regional Purchase Coefficients representing the share of commodities purchased from local sources, and social/institutional accounts for households, local/state/federal governments, and capital investment were included internally (treated as endogenous) within the models.

Summary information was developed for the state of Florida, all 67 counties, and nine multi-county regions as shown in Figure 6. These functional economic areas represent core metropolitan areas and adjacent nonmetropolitan counties linked by employee commuting patterns as defined by the United States Bureau of Economic Analysis (Johnson and Kort 2004). It should be noted that some Georgia counties included by *IMPLAN* in the north Florida region data were not evaluated in this analysis. Due to differences in trade flows and accounting adjustments at the state and county levels, slight discrepancies in regional results were reconciled by forcing county and regional estimates to match with state totals.

For some activities that were not specifically identified in *IMPLAN*, values were estimated as shares of their parent sector based on data from the 2007 Economic Census and previous special studies. *Landscape services* and *Pest control services,* therefore, were 68.7 percent and 14.5 percent, respectively, of *Services to buildings* (sector 388); *Wholesale food distribution* was 24.0 percent of *Wholesale trade* (sector 319); *Retail lawn-and-garden centers* were 12.3 percent of *Building materials and garden stores* (sector 323); and *Golf courses* and *Recreational fishing* were 14.8 percent and 0.10 percent, respectively, of *Amusement and recreation services* (sector 410).

Reported employment figures represent all full-time, part-time, and temporary or seasonal jobs, rather than full-time equivalents employees. All monetary values were expressed in 2010 US dollars using the mid-year (July) indices for the Gross Domestic Product (GDP) Implicit Price Deflator, which accounts for the effects of price changes in the measurement of GDP (United States Department of Commerce). Note that *IMPLAN* data were not available for 2005. Also, note that results for 2001–2008 were revised in light of new information, so findings presented here do not necessarily match those previously reported (Hodges, Rahmani, and Stevens 2011; Hodges and Rahmani 2010, 2009; Hodges, Rahmani, and Mulkey 2008).

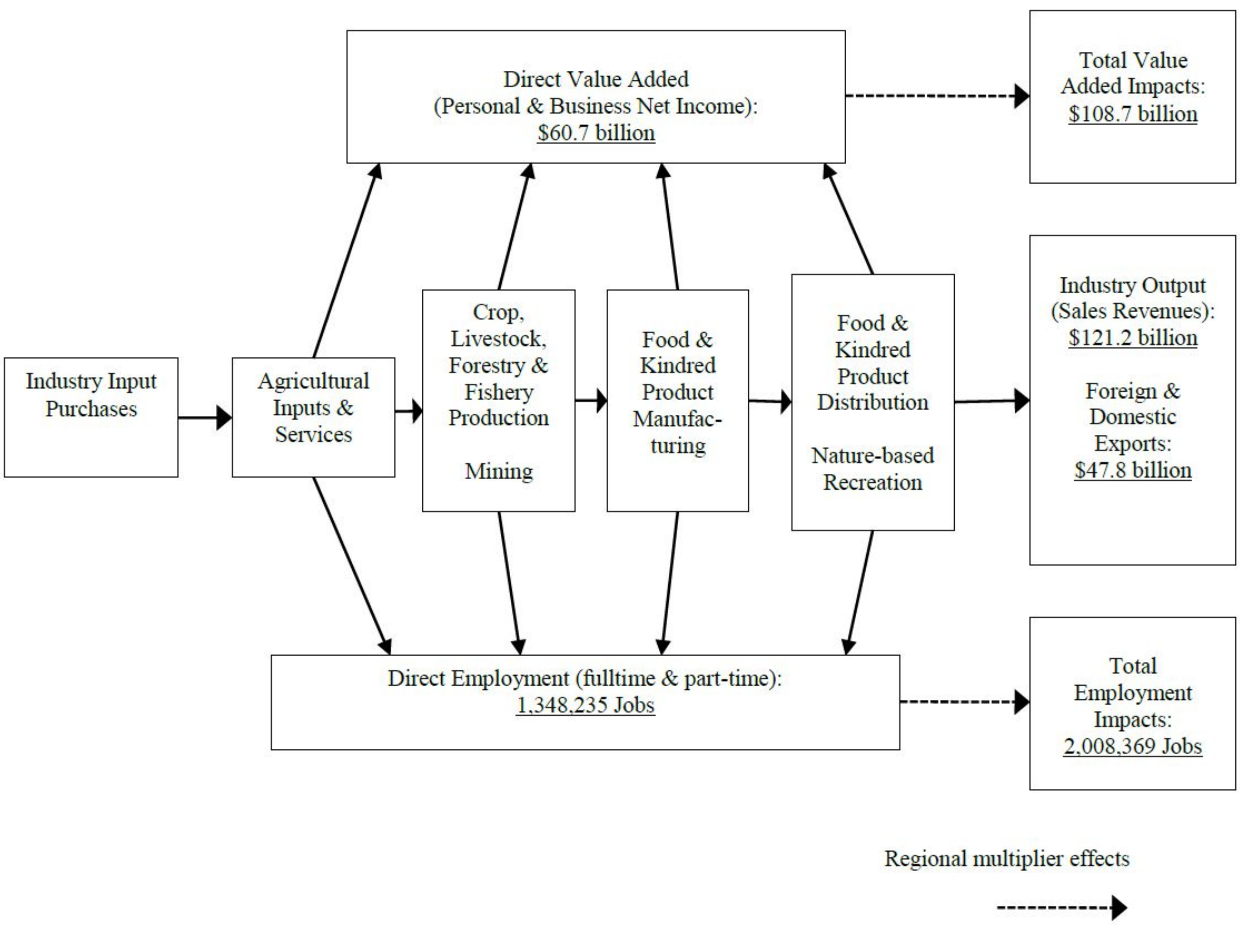

Figure 1. Structure of economic activity of agriculture, natural resources, and related industries in Florida in 2010 (values in billion dollars). Source: IMPLAN-3 (MIG, Inc. 2012).

Results

Economic Contributions by Industry Groups and Sectors

Economic contributions by major industry groups and specific industry sectors in Florida for 2010 are shown in **Table 1** and summarized in **Figures 1–3**. The industries are categorized in seven major groups: *Crop, Livestock, Forestry, and Fisheries Production*; *Agricultural Inputs and Services*; *Food and Kindred Products Manufacturing*; *Forest Products Manufacturing*; *Mining*; *Nature-based Recreation*; and *Food and Kindred Products Distribution*. Results are reported below for each major group; each sector; all groups combined; and for all groups, excluding *Food and Kindred Products Distribution*.

Direct industry output or sales in 2010 were $121.24 billion. Foreign and domestic exports of goods and services to customers outside of Florida totaled $47.80 billion. As a result of the indirect and induced multiplier effects arising from exports, an additional $76 billion in output was generated in the economy, mostly in other economic sectors. Total output impacts, including direct, indirect, and induced effects, were estimated at $196.96 billion. Direct employment in these industries was 1,348,235 full-time and part-time jobs, and total employment impacts (including multiplier effects) were estimated at 2,008,369 jobs. Direct value-added impacts of these industries were $60.66 billion, and total value-added impacts were $108.74 billion. Total labor (earned) income impacts of employee wages and benefits and of business proprietor income were $67.31 billion. Total property income impacts, such as rents, interest, royalties, and dividends, amounted to $29.56 billion. Total indirect business tax impacts (paid to local, state, and federal governments) were $11.87 billion (**Table 1**).

The ***Crop, Livestock, Forestry, and Fisheries Production*** group includes sectors for the production of basic unrefined food and fiber commodities. In 2010, total output of these sectors was $10.45 billion, exports were $6.61 billion, and output impacts were $21.33 billion (**Table 1**; **Figure 2**). Direct value added was $5.29 billion and value-added impacts were $12.25 billion. Direct employment was 124,283 jobs and total employment impacts were 228,537 jobs (**Figure 3**). Labor income impacts were $7.75 billion, other property income impacts were $3.78 billion, and indirect business tax impacts were $719 million. Among individual industry sectors in this group, the highest value-added impacts were for *Greenhouse, nursery, and floriculture production* ($2.53 billion); *Fruit farming* ($2.40 billion); *Vegetable and melon farming* ($2.33 billion); and *Support activities for agriculture and forestry* (1.93 billion). The highest employment impacts were for *Support activities for agriculture and forestry* (57,475 jobs); *Sugarcane farming* (35,156 jobs); *Greenhouse, nursery, and floriculture production* (34,679 jobs); *Vegetable and melon farming* (31,268 jobs); and *Fruit farming* (21,252 jobs). Large value-added impacts and employment impacts

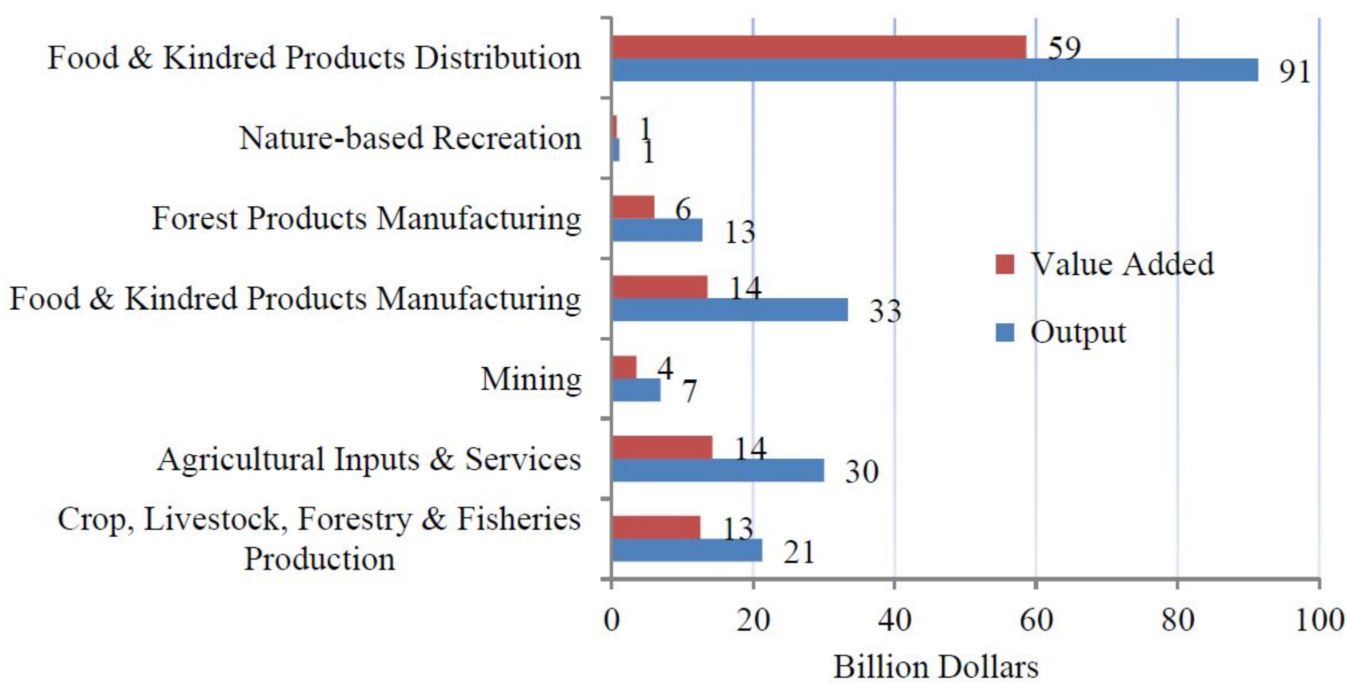

Figure 2. Output and value added contributions of agriculture, natural resources, and related industries in Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

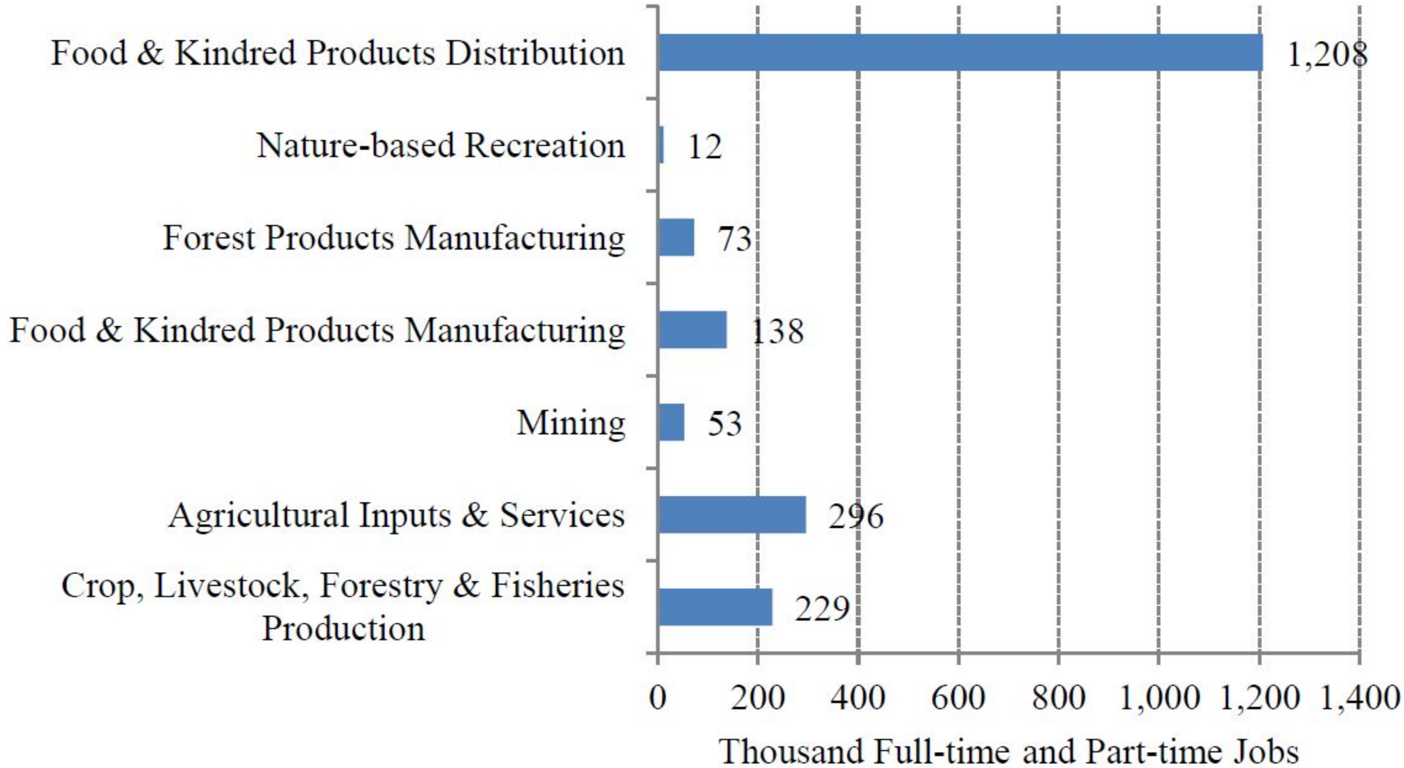

Figure 3. Employment contributions of agriculture, natural resources, and related industries in Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

were also realized for the sectors of *Forestry and timber tracts* ($948 million; 13,510 jobs); *Commercial fishing* ($245 million; 9,600 jobs); and *Commercial logging* ($290 million; 7,431 jobs). Value-added impacts of more than $100 million were observed for *Cattle ranching and farming*, *Poultry and egg production*, *Dairy cattle and milk production,* and *All other crop farming*.

The ***Agricultural Inputs and Services*** group includes a variety of sectors providing inputs or supporting services for agricultural operations or landscape management. Output impacts in 2010 by this industry group totaled $30.03 billion, including exports of $9.01 billion (**Table 1**; **Figure 2**). Direct value added was $6.06 billion and value-added impacts were $14.17 billion. Direct employment was 186,588 jobs and employment impacts were 295,956 jobs (**Figure 3**). Labor income impacts were $9.64 billion, other property income impacts were $3.70 billion, and indirect business tax impacts were $832 million. Among the leading sectors in this group, *Landscape services* had value-added impacts of $7.04 billion and employment impacts of 175,080 jobs, followed by *Fertilizer manufacturing* ($4.36 billion; 52,041 jobs); *Pest control services* ($1.49 billion; 36,953 jobs); *Veterinary services* ($1.13 billion; 30,277 jobs); and *Lawn and garden equipment manufacturing* ($107 million; 1,085 jobs). Other minor sectors in this group included *Farm machinery and equipment manufacturing,* and *Pesticide and other agricultural chemical manufacturing*.

Food and Kindred Products Manufacturing industries convert unrefined agricultural commodities to food products for final consumption or for use as ingredients in other products. In 2010, this group of industries in Florida had a direct output of $21.25 billion; exports of $9.79 billion; output impacts of $33.40 billion; direct employment of 37,728 jobs; total employment impacts of 138,024 jobs; direct value added of $6.05 billion; value-added impacts of $13.53 billion; labor income impacts of $6.80 billion; other property income impacts of $5.08 billion; and indirect business tax impacts of $1.66 billion (**Table 1**; **Figures 2 and 3**). This large industry group included 33 individual sectors, of which the highest value-added impacts and employment impacts were *Soft drink and ice manufacturing* ($2.86 billion; 34,661 jobs); *Tobacco product manufacturing* ($2.84 billion; 8,534 jobs); *Fruit and vegetable canning, pickling, and drying* ($1.79 billion; 20,248 jobs); *Breweries* ($1.13 billion; 10,506 jobs); *Frozen food manufacturing* ($1.11 billion; 14,074 jobs); *Sugarcane mills and refining* ($712 million; 11,518 jobs); and *Distilleries* ($585 million; 5,335 jobs). Other sectors with significant value-added impacts included *Other animal food manufacturing* ($368 million); *Bread and bakery product manufacturing* ($347 million); *All other food manufacturing* ($260 million); *Flour milling and malt manufacturing* ($253 million); *Fluid milk and butter manufacturing* ($161 million); *Snack food manufacturing* ($143 million); and *Coffee and tea manufacturing* ($124 million).

Forest Products Manufacturing is a group of industries for the processing of raw timber or wood into finished wood and paper products. In 2010, this industry group had direct output valued at $6.27 billion; exports of $4.78 billion; output impacts of $12.80 billion; direct employment of 17,885 jobs; employment impacts of 72,783 jobs; direct value added of $1.91 billion; value-added impacts of $5.97 billion; labor income impacts of $3.65 billion; other property income impacts of $1.96 billion; and indirect business tax impacts of $377 million (**Table 1; Figures 2 and 3**). Leading sectors within this group in terms of value added and employment impacts were *Paper mills* ($1.37 billion; 16,014 jobs); *Paperboard container manufacturing* ($1.01 billion; 12,826 jobs); *Sanitary paper products manufacturing* ($938 million; 8,170 jobs); *Paperboard mills* ($817 million; 9,450 jobs); *Pulp mills* ($685 million; 8,263 jobs); and *Stationary product manufacturing* ($279 million; 3,572 jobs). Other sectors with significant value-added impacts included *Coated and laminated paper packaging paper and plastics film manufacturing* ($166 million); *Engineered wood member and truss manufacturing* ($141 million); *Sawmills and wood preservation* ($126 million); and *Wood window and door manufacturing* ($125 million).

Mining is a natural-resource based activity for the extraction of basic mineral commodities such as oil, natural gas, stone, sand, gravel, clay, phosphate, and a variety of metals. In 2010, the Mining industries in Florida collectively had direct output of $3.43 billion; exports of $2.09 billion; output impacts of $6.89 billion; direct employment of 24,581 jobs; employment impacts of 53,245 jobs; direct value added of $1.27 billion; value-added impacts of $3.49 billion; labor income impacts of $1.98 billion; other property income impacts of $1.25 billion; and indirect business tax impacts of $265 million (**Table 1**; **Figures 2 and 3**). This industry group's largest individual sector was *Extraction of oil and natural gas*, which generated value-added impacts of $1.68 billion and employment impacts of 34,812 jobs. Other individual sectors with significant value-added impacts and employment impacts included *Mining and quarrying of other nonmetallic minerals* ($614 million; 5,816 jobs); *Mining and quarrying stone* ($560 million; 5,592 jobs); *Mining and quarrying of sand, gravel, and clay* ($262 million; 3,299 jobs); and *Drilling of oil and gas wells* ($171 million; 1,782 jobs). Other minor sectors in this industry group were *Support activities for oil and gas operations*; *Mining gold, silver, and other metal ore*; and *Support activities for other mining*.

Nature-Based Recreation includes recreational activities generally tied to natural resources or managed landscapes such as golf, recreational fishing, and hunting and trapping. In 2010, this industry group in Florida had total output of $609 million; exports or sales to Florida visitors of $260 million; output impacts of $1.10 billion; direct employment of 7,455 jobs; employment impacts of 11,913 jobs; direct value added of $401 million; value-added impacts of $724 million; labor income impacts of $364 million; other property income impacts of $287 million; and indirect business tax impacts of $73 million (**Table 1**; **Figures 2 and 3**). Among individual sectors, *Golf courses* had value-added impacts of $588 million and employment impacts of 10,564 jobs, followed by *Commercial hunting and trapping* ($132 million; 1,277 jobs). Due to the BP oil spill in the Gulf of Mexico, value-added impacts and employment impacts for the *Recreational fishing* sector were significantly lower in 2010 ($4 million; 71 jobs).

Food and Kindred Products Distribution includes activities for wholesale and retail trade in agricultural and related products. This large group of industry sectors is only indirectly related to agriculture and natural resources because it serves to deliver products to final consumers, but it is included here for a perspective on the scope of the complex market chain for food and kindred products. In 2010, this industry group in Florida had a total output of $62.60 billion; exports of $15.25 billion; output impacts of $91.40 billion; direct employment of 949,716 jobs; employment impacts of 1,207,912 jobs; direct value added of $39.67 billion; value-added impacts of $58.59 billion; labor income impacts of $37.14 billion; other property income impacts of $13.51 billion; and indirect business tax impacts of $7.95 billion (**Table 1**; **Figures 2 and 3**). Collectively, this group represented about 54 percent of total value-added impacts and 60 percent of employment impacts for all industries included in this report. Among individual sectors within this group, *Food service establishments and drinking places* (restaurants and bars) had by far the greatest value-added impacts ($33.19 billion) and employment impacts (821,906 jobs), followed by *Wholesale trade in food and kindred products* ($15.56 billion; 157,769 jobs); *Food and beverage* *stores* ($9.36 billion; 219,098 jobs); and *Retail lawn-and-garden centers* ($487 million; 9,139 jobs).

Excluding sectors for *Food and Kindred Products Distribution*, the remaining total economic values for agriculture, natural resources, and related industries were $58.64 billion in direct output (which included exports of $32.55 billion); output impacts of $105.56 billion; direct employment of 398,520 jobs; employment impacts of 800,457 jobs; direct value added of $20.99 billion; value-added impacts of $50.19 billion; labor income impacts of $30.18 billion; property income impacts of $16.05 billion; and indirect business tax impacts of $3.92 billion (subtotal in **Table 1**).

Economic Contributions by Agriculture and Natural Resource Commodity Groups

In addition to the industry groups noted above, economic contributions were also evaluated for groups of food, fiber, and mineral commodities having identifiable market-chain linkages between producers, manufacturers, and service sectors. In this section, some sectors are regrouped to reflect these linkages, with results summarized in **Figures 4 and 5**. ***Environmental Horticulture***, which includes the sectors *Nursery and greenhouse production*, *Landscape services*, and *Retail lawn- and garden-centers*, had combined value-added impacts of $10.05 billion and employment impacts of 218,898 jobs. ***Fruit and Vegetable Farming and Processing***, including sectors for *Fruit farming*; *Vegetable and melon farming*; *Frozen food manufacturing*; and *Fruit and vegetable canning, pickling, and drying*, had combined value-added impacts of $7.64 billion and employment impacts of 100,951 jobs. ***Forestry and Forest Products***, including the sectors *Forestry and timber tracts,* and *Logging*, as well as sixteen forest product manufacturing sectors, had combined value-added impacts of $7.11 billion and employment impacts of 89,993 jobs. Production sectors for ***Livestock and Dairy Farming, and Animal Products Manufacturing***, which includes *Beef cattle ranching and farming*; *Dairy cattle and milk production*; *Poultry and egg production*; *Animal production, except cattle and poultry*; *Animal slaughtering*; *Poultry processing*; *Cheese manufacturing*; and *Ice cream manufacturing,* had combined value-added impacts of $1.12 billion and employment impacts of 22,699 jobs. Sectors within the ***Sugarcane Farming and Refined Sugar Manufacturing*** group had combined value-added impacts of $1.33 billion and employment impacts of 32,770 jobs, and those of ***Fishing and Seafood Products*** had combined value-added impacts of $330 million and employment impacts of 11,089 jobs. The group ***Grain and Oilseed Farming and Processing*** had combined value-added impacts and employment impacts of $335 million and 3,841 jobs, respectively.

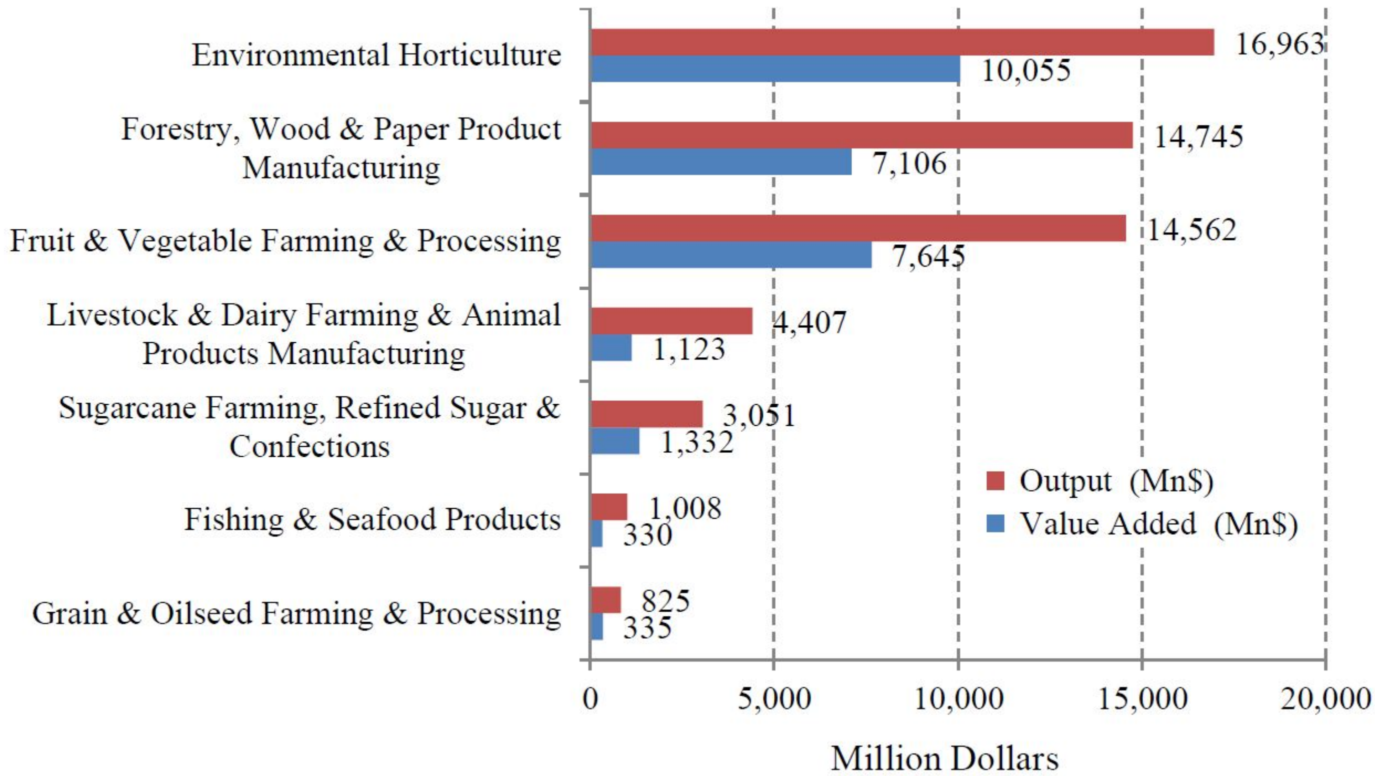

Figure 4. Output and value added contributions of food and fiber commodity groups in Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

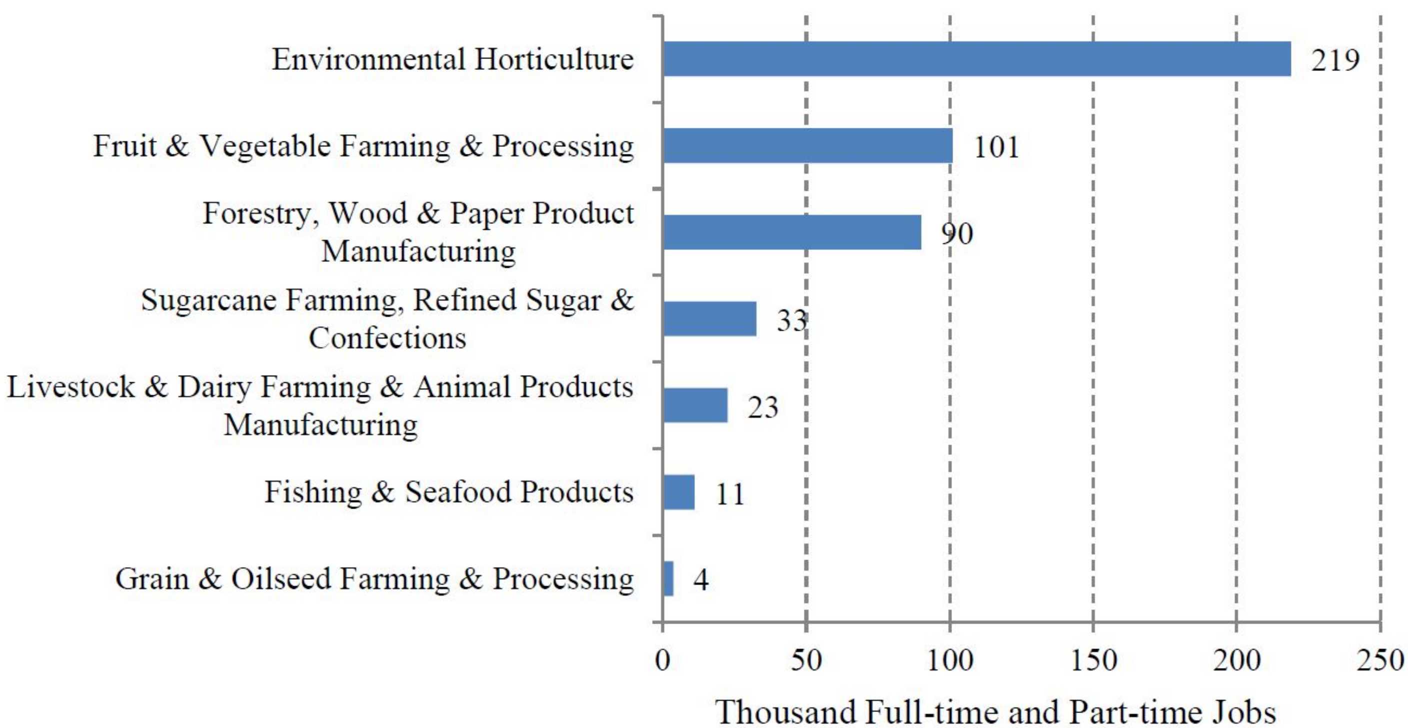

Figure 5. Employment contributions of food and fiber commodity groups in Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

Economic Contributions in Florida Regions and Counties

Regional impacts of agriculture, natural resources, and related manufacturing, distribution, and service industries in 2010 were evaluated for all 67 Florida counties and 9 multi-county economic regions as indicated in **Figure 6**, with results summarized in **Table 2** and **Figures 7 and 8**. The region with the highest value-added impacts and employment impacts was that of Miami–Ft. Lauderdale ($34.78 billion; 634,739 jobs), followed by the Orlando region ($26.47 billion; 503,658 jobs), Tampa–St. Petersburg ($15.16 billion; 274,229 jobs), Jacksonville ($11.86 billion; 173,694 jobs), Sarasota–Bradenton ($10.13 billion; 205,785 jobs), Gainesville ($2.89 billion; 62,171 jobs), Pensacola ($3.02 billion; 66,304 jobs), Tallahassee ($2.69 billion; 53,405 jobs), and Panama City ($1.73 billion; 34,383 jobs).

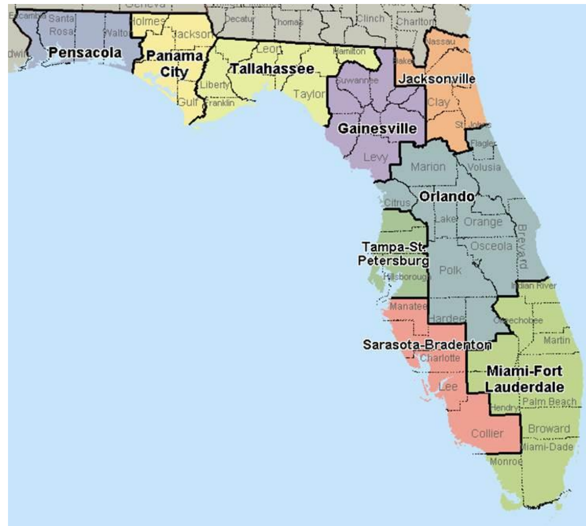

Figure 6. Functional economic regions of Florida. Source: Adapted from US Commerce Department, Bureau of Economic Analysis (Johnson and Kort 2004).

Among individual Florida counties, the seven largest counties in terms of value-added impacts and employment impacts in 2010 were Miami–Dade ($13.57 billion; 230,789 jobs), followed by Hillsborough ($9.92 billion; 155,130 jobs), Orange ($8.67 billion; 159,556 jobs), Duval ($8.55 billion; 114,409 jobs), Broward ($8.06 billion; 156,451 jobs), Palm Beach ($7.85 billion; 146,714 jobs), and Polk ($6.42 billion; 96,926 jobs). Eighteen other counties with value-added impacts exceeding $1 billion were Pinellas ($3.61 billion), Lee ($2.80 billion), Manatee ($2.46 billion), Collier ($2.29 billion), Seminole ($2.03 billion), Volusia ($1.93 billion), Alachua ($1.67 billion), Sarasota ($1.65 billion), Brevard ($1.48 billion), Escambia ($1.43 billion), Lake ($1.35 billion), Bay ($1.30 billion), Osceola ($1.28 billion), Leon ($1.21 billion), Marion ($1.18 billion), St. Lucie ($1.17 billion), Pasco ($1.10 billion), and Putnam ($1.00 billion).

Additional detailed information on economic contributions by each Florida county is available at http://www.fred.ifas.ufl.edu/economic-impact-analysis/Florida-county-profiles-2010.pdf.

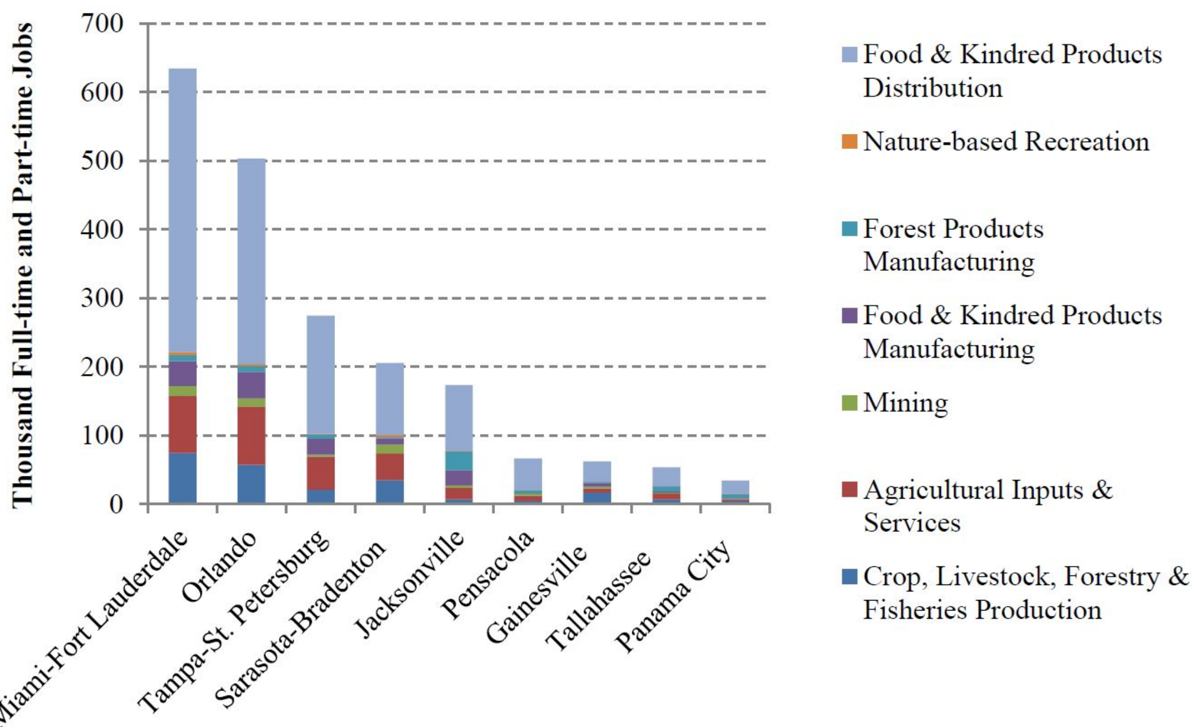

Figure 7. Employment contributions in Florida regions by agriculture, natural resources, and related industries in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

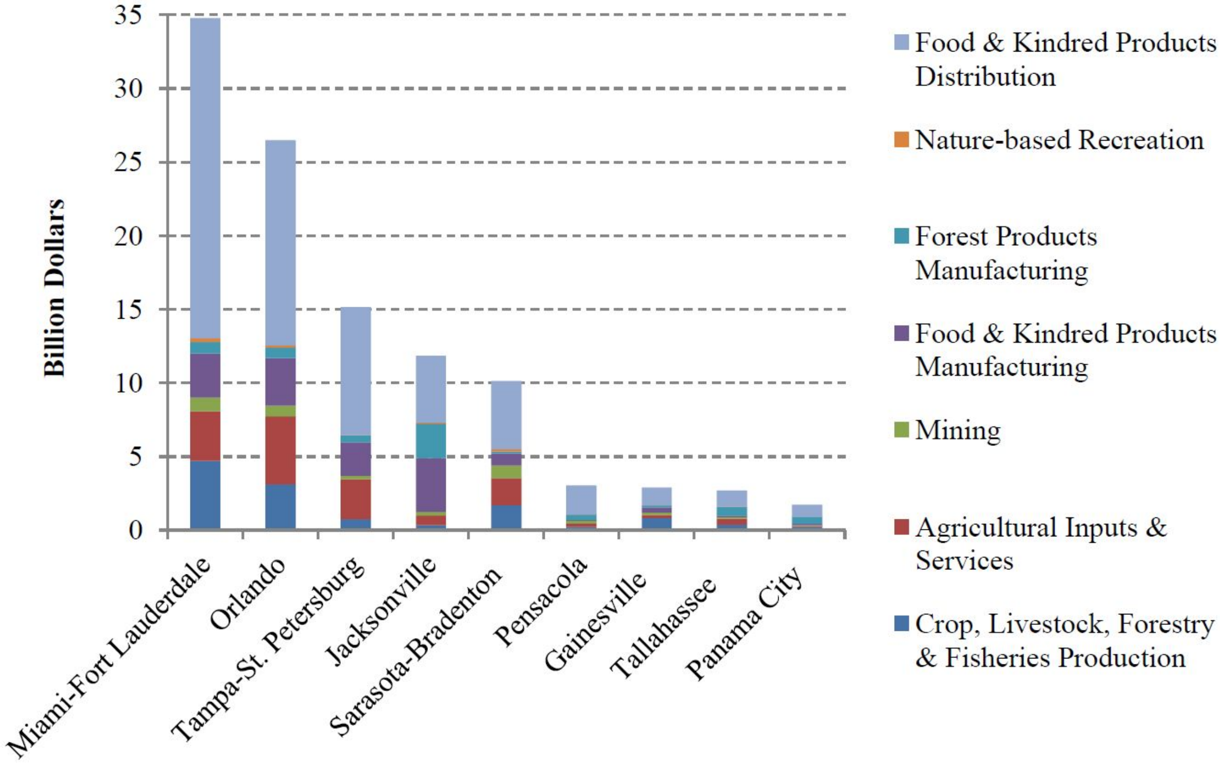

Figure 8. Value added contributions to Gross Regional Product in Florida regions by agriculture, natural resources, and related industries in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Estimates include regional multiplier effects.

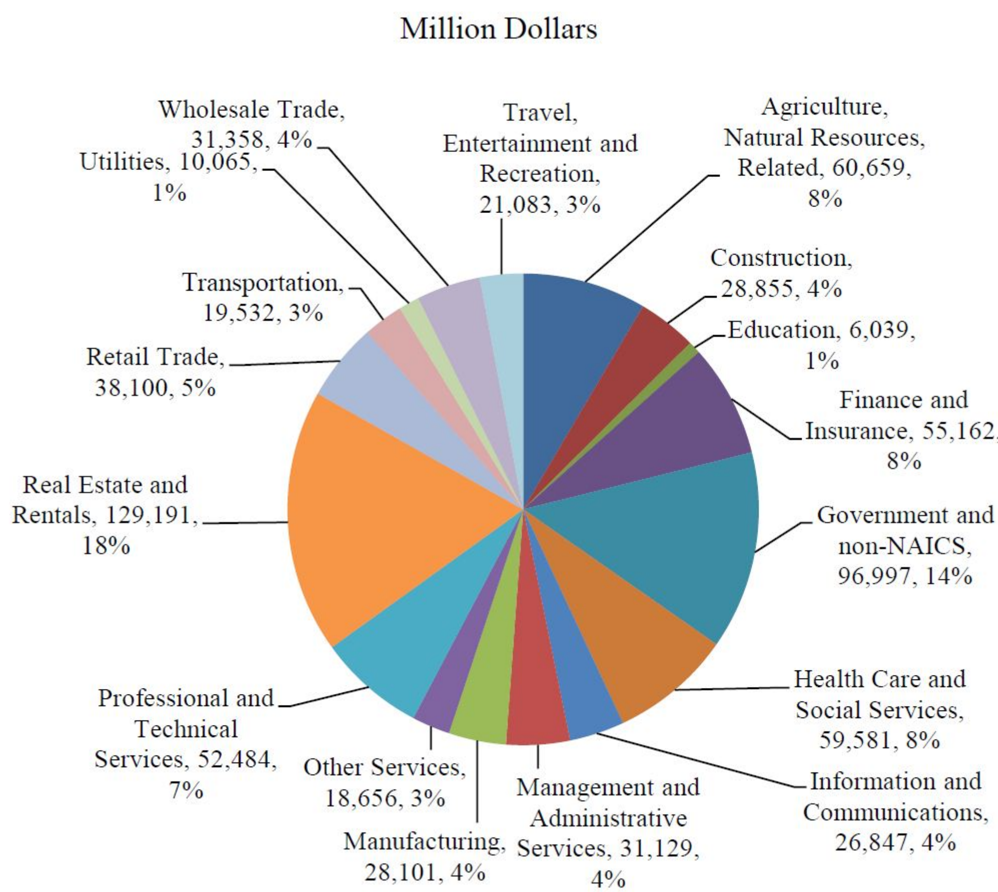

Figure 9. Direct value added by major industry groups as a share of Gross State Product of Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Impact estimates include regional multiplier effects.

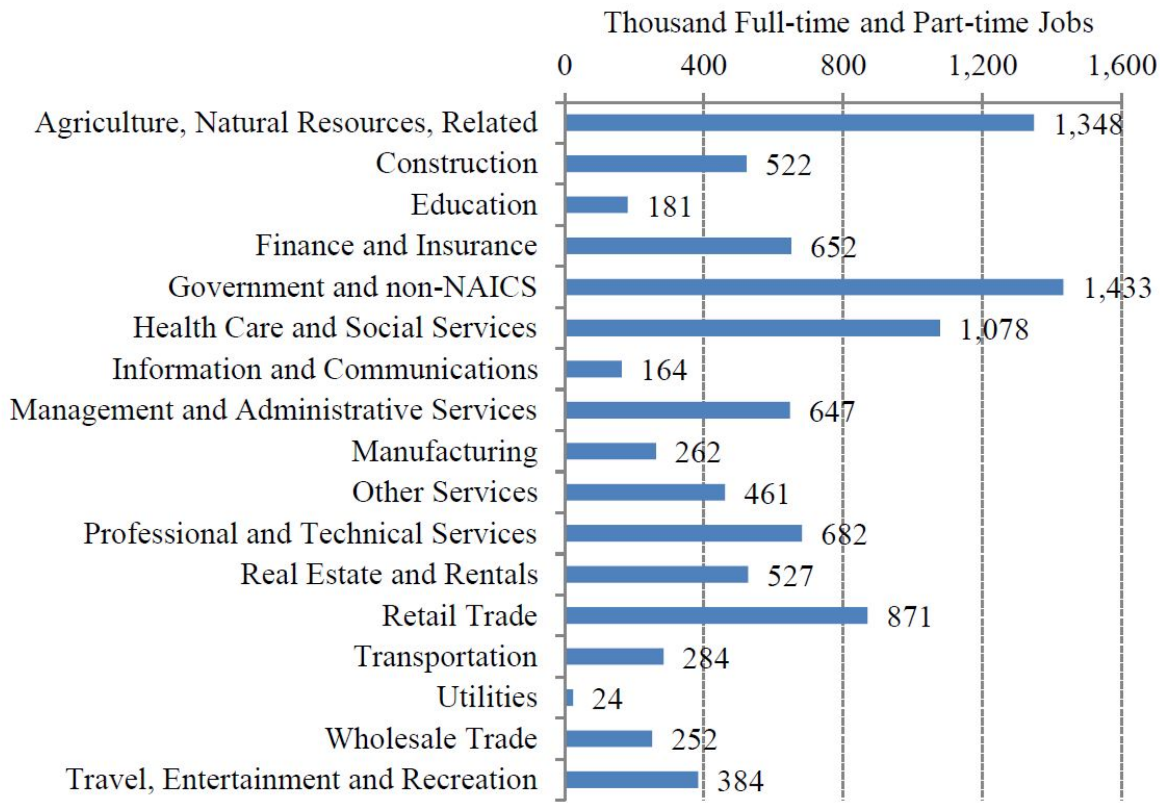

Figure 10. Direct employment by major industry groups in Florida in 2010. Source: IMPLAN-3 (MIG, Inc. 2012). Impact estimates include regional multiplier effects.

Share of Gross State Product and Employment

The relative importance of agriculture, natural resources, and related manufacturing, distribution, and service industries in Florida can be gauged by their share of overall economic activity in the state. The Gross State Product of Florida in 2010 was $714 billion (equivalent to the sum of direct value added for all industries), and total employment in the state was 9,773,730 million jobs. The direct value added contributed by agriculture, natural resources, and related industries ($60.66 billion) represented 8.5 percent of Florida's Gross State Product in 2010 (**Figure 9**), while the total value-added impact, including regional multiplier effects, ($108.74 billion) represented 10.3 percent of Gross State Product that year. Direct employment by agricultural, natural resources, and related industries (1.35 million full-time and part-time jobs) represented 13.8 percent of all jobs in the state in 2010 (**Figure 10**), while total employment impacts (2.01 million jobs) comprised 13.9 percent of all jobs that year. Excluding *Food and Kindred Products Distribution*, agriculture, natural resources, and related industries represented 2.9 percent of Gross State Product and 4.1 percent of total state employment.

The share of Florida's Gross Regional Product and Employment contributed by agriculture and natural resources sectors (or sector-groups) for each county in 2010 are shown in **Figures 11 and 12**, respectively.

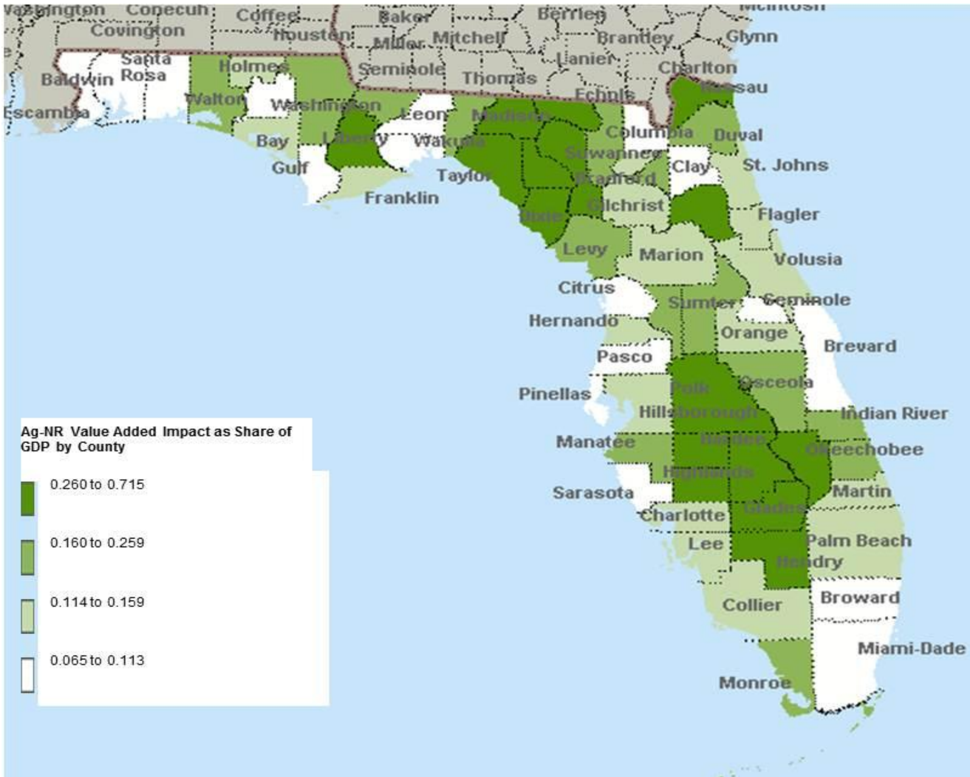

Figure 11. Map of total value added contributions by agriculture, natural resources, and related industries as a share of Gross Regional Product in Florida counties in 2010.

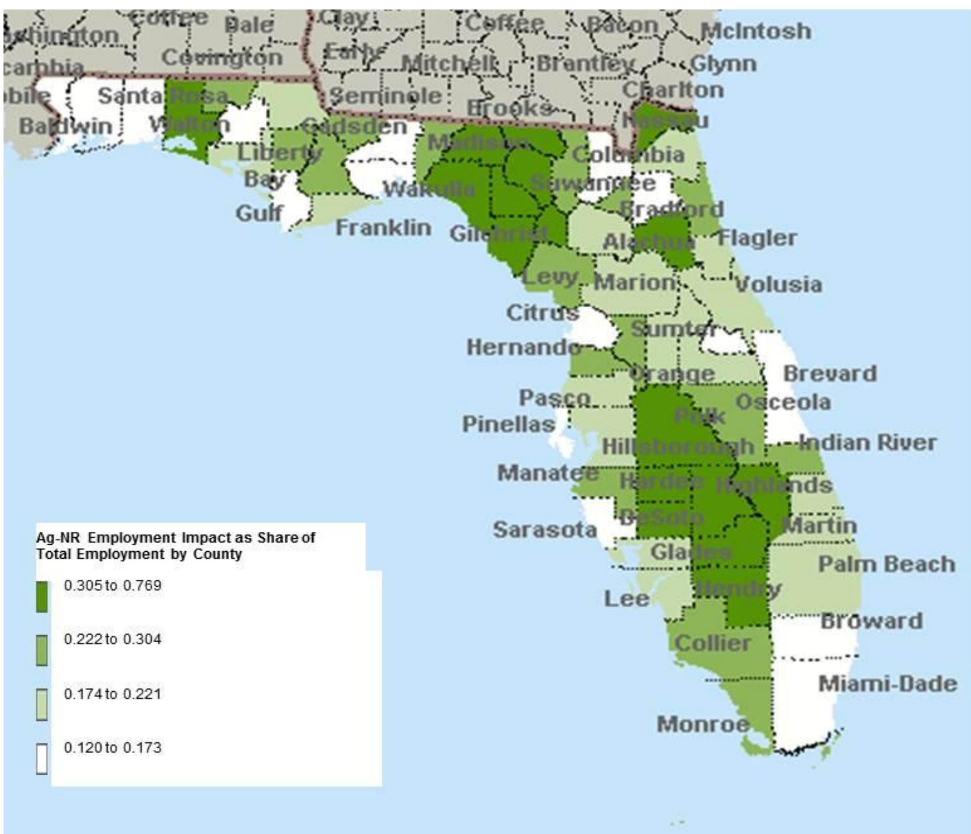

Figure 12. Map of total employment contributions by agriculture, natural resources, and related industries as a share of total employment in Florida counties in 2010.

Trends

In addition to the status of economic contributions made by agriculture and natural resource related industries to Florida in 2010, it is important to understand how these values have changed over time. Trends in the economic contributions of agriculture, natural resources, and related industries between 2001 and 2010 are shown in **Figures 13–15**, with all monetary values adjusted for inflation and expressed in constant 2010 US dollars. Note that these trends may also reflect changes in commodity prices, the structure of Florida's economy, and the cycle of the national and global economy.

Direct employment in Florida's agriculture, natural resources, and related industries grew from 1.281 million jobs in 2001 to 1.382 million jobs in 2008. Employment by these sectors then declined to 1.305 million jobs in 2009 as a result of the lingering effects of the global recession, which reduced export demand for most agricultural commodities, but then recovered to 1.348 million in 2010. Despite the effects of the recession, annual job growth in agriculture, natural resources, and related industries averaged 0.7 percent over the entire ten-year period from 2001 through 2010. Total employment impacts increased to the highest level ever in 2010, reflecting a dramatic increase in exports of Florida products to domestic and world markets, and representing a 1.2 percent average annual growth during 2001–2010.

Total value added contributions grew from \$80.27 billion in 2001 to \$108.74 billion in 2010, equivalent to a 2.8 percent average annual rate in inflation-adjusted terms (**Figure 14**). Among industry groups, average annual growth in value-added impacts during 2001–2010 was highest for *Mining* (8.5%), followed by *Agricultural Inputs and Services* (6.2%) and *Food and Kindred Products Distribution* (4.6%), while groups with low or negative growth during this time period included *Forest Products Manufacturing* (0.0%); *Crop, Livestock, Fisheries, and Forestry Production* (–0.4%); *Food and Kindred Product Manufacturing* (–1.3%); and *Nature-based recreation* (–14.9%).

Trends in employment contributions among Florida's food and fiber commodity groups are shown in **Figure 15**. Between 2001 and 2010, the *Mining* commodity group showed the highest increase in employment impacts at 133 percent, followed by *Environmental Horticulture* (48 percent); *Other Food Product Manufacturing* (16 percent); *Fruit and Vegetable Farming and Processing* (14 percent); and *Forestry, Wood, and Paper Products Manufacturing* (4 percent). Several commodity groups experienced significant impacts growth in employment, value added, and output in 2010, compared to 2009. Growth in employment

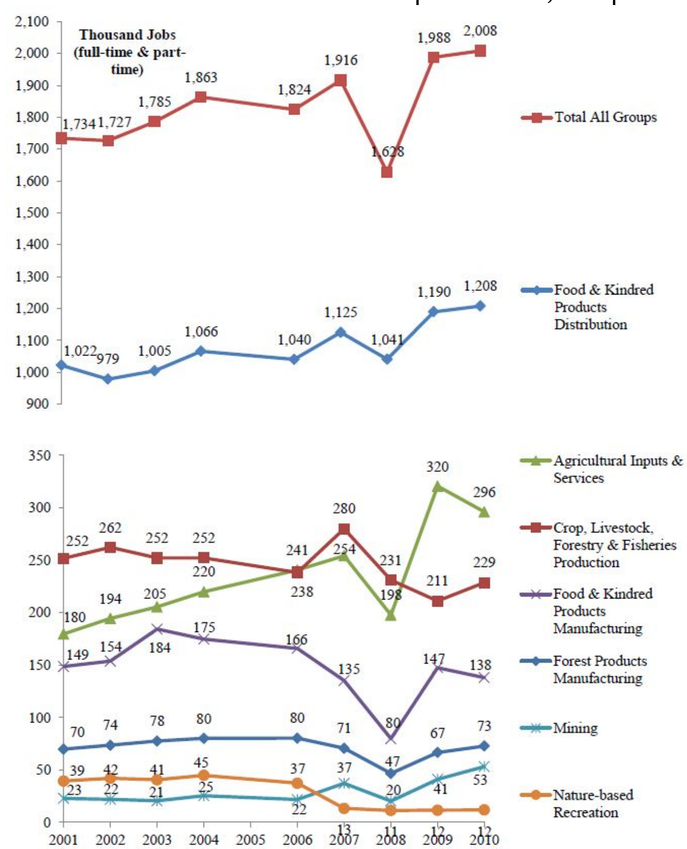

Figure 13. Trends in employment contributions by agriculture, natural resources, and related industries in Florida in 2001–2010. Source: IMPLAN-3 (MIG, Inc. 2012). Data not available for 2005. Estimates include regional multiplier effects.

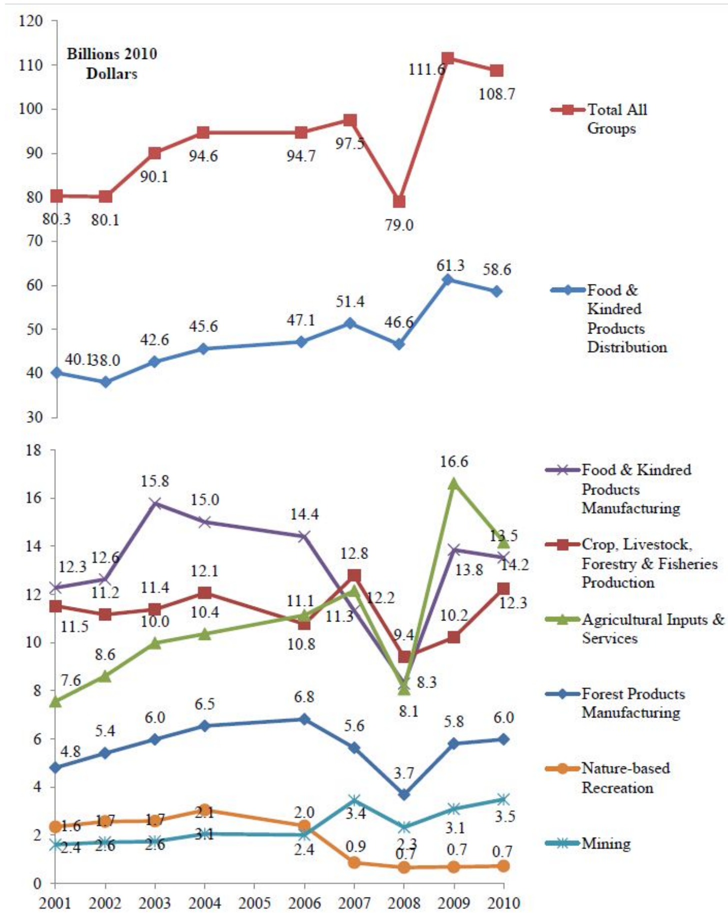

Figure 14. Trends in value added contributions by agriculture, natural resources, and related industries in Florida in 2001–2010 (values in billion dollars). Source: IMPLAN-3 (MIG, Inc. 2012). Data not available for 2005. Estimates include regional multiplier effects.

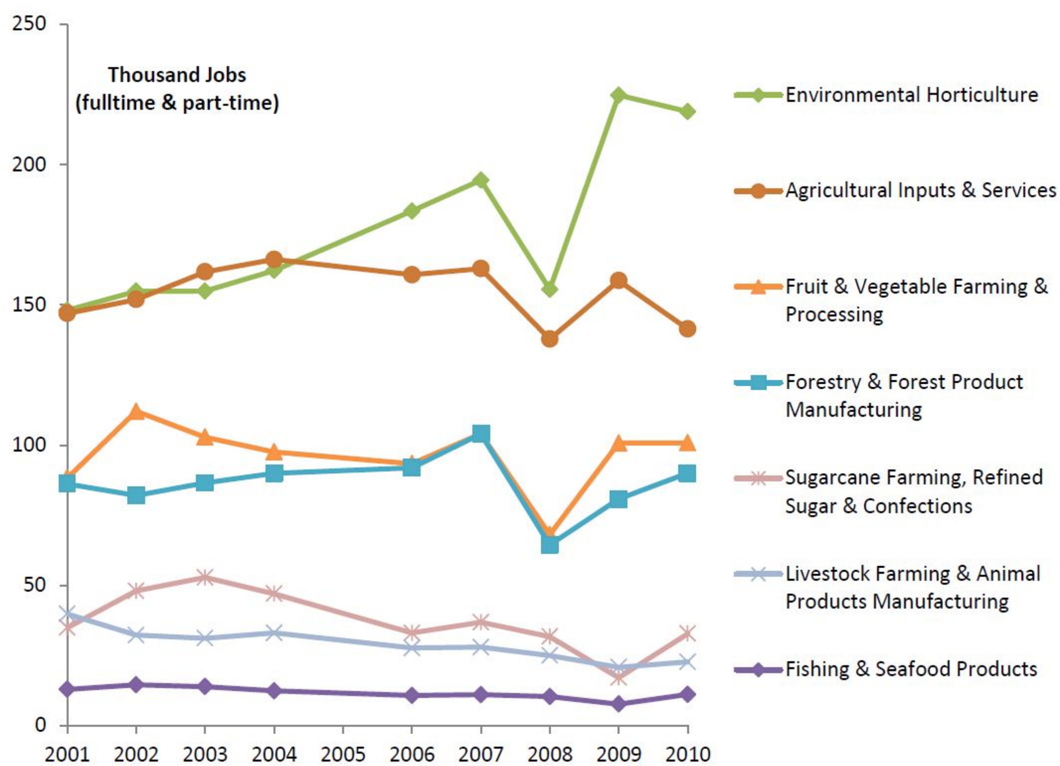

Figure 15. Trends in employment contributions by food and fiber commodity groups in Florida in 20012010. Source: IMPLAN-3 (MIG, Inc. 2012). Data not available for 2006. Estimates include regional effects.

impacts and value-added impacts, from 2009 to 2010, were highest for *Sugarcane Farming, Refined Sugar, and Confections* (92% and 160% respectively); *Fishing and Seafood Products* (45% and 17%); *Other Crop Farming* (39% and 52%); *Mining* (30% and 13%); and *Grain and Oilseed Farming, and Processing* (27% and 43%). Commodity groups with declines in employment impacts and value-added impacts during the 2009–2010 period included *Other Food Product Manufacturing* (–18% and –10%, respectively), and *Agricultural Inputs and Services* (–11% and –15%). While the effects of the recession from 2007 to 2009 varied widely, economic impact results for 2010 show that most of the agricultural and natural resources sectors have since recovered (**Figures 13–15**).

Individual industry sectors with average yearly growth rates in value-added impacts greater than 20 percent between 2001 and 2010 include *Sugar cane mills and refining* (49%), *Paperboard mills* (49%), *Breakfast cereal manufacturing* (38%), *Soybean and other oilseed processing* (37%), *Wet corn milling* (31%), *Tortilla manufacturing* (27%), *Tree nut farming* (25%), *All other food manufacturing* (22%), and *Extraction of oil and natural gas* (21%).

Across all industry groups in Florida, *Agriculture, Natural Resources, and Related Industries* was among the major sectors that experienced above average growth in direct value added contributions between 2001 and 2010. Among 17 major industry groups, those with the highest average yearly direct value added growth rates were *Education* (5.8%); *Government and Non-NAICS* (4%); *Real Estate and Renting* (3.6%); *Professional and Technical Services* (3.5%); *Health Care and Social Services* (3.4%); *Travel, Entertainment, and Recreation* (3.2%); *Finance and Insurance* (2.4%); and *Agriculture, Natural Resources, and Related Industries* (2.3%).

Conclusions

Agriculture and natural resource industries in Florida are linked to a broad array of economic sectors for commodity production, food and kindred product manufacturing, distribution, and related service activities. These industries collectively had a significant economic impact on Florida's economy in 2010, with direct employment accounting for about 13.8 percent of total state employment and direct value added representing 8.5 percent of Gross State Product. *Food and Kindred Products Distribution* was by far the largest segment of the industry group, representing 46 percent of value-added impacts and 60 percent of employment impacts. These agriculture and natural resource related industries are present throughout the state, with major activity in urbanized metropolitan areas, as well as rural counties, generally being relatively more important as a share of total economic activity in rural counties, although less so in absolute magnitude. The agriculture, natural resources, and related industries have grown substantially since 2001, before being interrupted in 2009 by the global recession, and then recovering strongly in 2010, with total regional economic impacts increasing dramatically due to increased exports. Growth in economic activity of agriculture, natural resources, and related industries during the ten-year period of 2001 to 2010 was higher than many other major industry groups in terms of value added, thus entailing their integral contributions towards the sustainability of the Florida economy.

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Appendix: Glossary of Economic Impact Terms

Apparent consumption represents the consumption of any particular commodity in a region, and is calculated as the local output, plus imports minus exports.

Contribution (economic) represents the gross change in economic activity associated with an industry, event, or policy in an existing regional economy.

Employee compensation is comprised of wages, salaries, commissions, and benefits, such as health and life insurance, retirement, and other forms of cash or non-cash compensation.

Employment is a measure of the number of jobs involved, including full-time, part-time, and seasonal positions. It is not a measure of full-time equivalents (FTE).

Exports are sales of goods to customers outside the region in which they are produced, which represents a net inflow of money to the region. This also applies to sales of services to customers visiting from other regions.

Final Demand represents sales to final consumers, including households and governments, and exports from the region.

Gross Regional Product is a measure of total economic activity in a region, or total income generated by all goods and services. It represents the sum of total value added by all industries in that region, and is equivalent to Gross Domestic Product for the nation.

IMPLAN is a computer-based input–output modeling system (originally developed by the US Forest Service, in cooperation with the Federal Emergency Management Agency) that enables users to create regional economic models and multipliers for any region consisting of one or more counties or states in the United States. The current version of the *IMPLAN* software, version 3, accounts for commodity production and consumption for 440 industry sectors, 10 household income levels, taxes to local/state and federal governments, capital investment, imports and exports, transfer payments, and business inventories. Regional datasets for individual counties or states are purchased separately.

Impact or total impact is the change in total regional economic activity (e.g., output or employment), resulting from a change in final demand, direct industry output, or direct employment, estimated based on regional economic multipliers.

Imports are purchases of goods and services originating outside the region of analysis.

Income is the money earned within the region from production and sales. Total income includes labor income, such as wages, salaries, employee benefits, and business proprietor income, plus other property income.

Indirect business taxes are taxes paid to governments by individuals or businesses for property, excise, and sales taxes, but do not include income taxes.

Input-Output (I–O) model and Social Accounting Matrix (SAM) is a representation of the transactions between industry sectors within a region that captures what each sector purchases from every other sector in order 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 through the supply chain.

Intermediate sales are sales to other industrial sectors. The value of intermediate sales is netted-out of Total Value Added.

Local refers to good and services that are sourced from within the region, which may be defined as a county, multi-county cluster, or state. Non-local refers to economic activity originating outside the region.

Margins represent the portion of the purchaser price accruing to the retailer, wholesaler, and producer/manufacturer, in the supply chain. Typically, only the retail margins of many goods purchased by consumers accrue to the local region, as the wholesaler, shipper, and manufacturer often lie outside the local area.

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 are derived from an I–O model of the regional economy. 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 region's economy and therefore vary considerably across regions and sectors. A **sector-specific multiplier** gives the total changes to the economy associated with a unit change in output or employment in a given sector (i.e., the **direct economic effect**) being evaluated. **Indirect effects multipliers** represent the 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 multipliers** represent the increased sales within the region from household spending of the income earned in the direct and supporting industries for housing, utilities, food, etc. An **imputed multiplier** is calculated as the ratio of the total impact divided by direct effect for any given measure (e.g., output, employment).

Other property income represents income received from investments, such as corporate dividends, royalties, property rentals, or interest on loans.

Output is the dollar value of a good or service produced or sold, and is equivalent to sales revenues plus changes in business inventories.

Output-consumption ratio is the total industry output divided by the apparent consumption, for any given commodity or industry, and is a measure of the degree to which local demands are met by local production.

Producer prices are the prices paid for goods at the factory or point of production. For manufactured goods, the purchaser price equals the producer price plus a retail margin, a wholesale margin, and a transportation margin. For services, the producer and purchaser prices are equivalent.

Proprietor income is income received by non-incorporated private business owners or self-employed individuals.

Purchaser prices are the prices paid by the final consumer of a good or service.

Region defines the geographic area for which impacts are estimated, usually an aggregation of several counties defined on the basis of worker commuting patterns.

Sector is an individual industry or group of industries that produce similar products or services, or have similar production processes. Sectors are classified according to the North American Industrial Classification System (NAICS).

Value Added is a broad measure of income, representing the sum of employee compensation, proprietor income, other property income, indirect business taxes, and capital consumption (depreciation). Value added is a commonly used measure of the contribution of an industry to the regional economy because it avoids double counting of intermediate sales.

Table 1. Economic contributions of agriculture, natural resources, and related industry groups and sectors in Florida in 2010

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Crop, Livestock, Forestry & Fisheries Production	124,283	228,537	10,448	21,335	6,610	5,290	12,251	7,751	3,780	719
Support activities for agriculture and forestry	44,732	57,475	1,344	2,804	801	1,002	1,953	1,598	236	100
Greenhouse, nursery, and floriculture	15,626	34,679	1,872	3,955	1,188	1,189	2,529	1,661	753	115
Sugarcane and sugar beet farming	15,240	21,252	543	1,165	370	225	620	311	259	50
Fruit farming	13,230	35,156	1,982	4,164	1,289	1,002	2,404	1,439	820	145
Vegetable and melon farming	10,723	31,268	1,943	4,084	1,283	951	2,329	1,366	839	124
Commercial fishing	7,364	9,600	273	523	200	86	245	172	57	16
Cattle ranching and farming	4,251	7,431	501	869	301	83	290	146	117	27
Dairy cattle and milk production	3,349	4,954	449	630	156	164	279	89	176	14
Commercial logging	2,965	3,700	289	368	57	122	172	157	5	10
Animal production, except cattle, poultry, and eggs	2,680	2,718	101	106	3	50	52	13	36	3
Forestry, forest products, and timber tract production	1,770	13,510	542	1,576	595	272	948	545	321	82
All other crop farming	1,208	3,347	236	461	146	71	216	123	73	20
Poultry and egg production	605	1,265	304	383	101	55	102	52	45	5
Cotton farming	254	972	50	127	54	10	58	36	19	4
Tree nut farming	103	204	8	18	6	4	11	6	4	1
Oilseed farming	90	817	7	86	54	3	54	31	19	4
Tobacco farming	67	157	4	13	8	1	7	4	2	1
Grain farming	26	31	1	2	0	0	1	0	0	0
Agricultural Inputs & Services	186,588	295,956	16,626	30,033	9,012	6,063	14,166	9,638	3,697	832
Landscape services	128,329	176,080	7,069	12,295	3,122	3,666	7,040	4,861	1,805	373

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Pest control services	27,085	36,953	1,492	2,595	659	774	1,486	1,026	381	79
Veterinary services	25,911	30,277	1,359	1,855	272	807	1,127	999	67	60
Fertilizer manufacturing	4,841	52,041	6,439	12,865	4,841	758	4,364	2,671	1,380	312
Farm machinery and equipment	215	407	94	117	22	21	35	19	15	1
Lawn and garden equipment manufacturing	111	112	41	41	0	8	8	4	4	0
Pesticide and other agricultural chemical manufacturing	95	1,085	134	265	95	30	107	56	44	6
Mining	24,581	53,245	3,430	6,890	2,093	1,272	3,493	1,976	1,251	265
Extraction of oil and natural gas	19,921	34,812	2,173	4,054	1,113	474	1,682	961	572	150
Mining and quarrying other nonmetallic minerals	1,654	5,816	457	932	287	308	614	362	210	42
Mining and quarrying stone	996	5,592	349	877	329	223	560	285	244	32
Mining and quarrying sand, gravel, clay, and ceramic and refractory minerals	891	3,299	144	421	174	83	262	179	65	18
Drilling oil and gas wells	488	1,782	99	248	92	76	171	81	81	8
Support activities for oil and gas operations	378	929	61	126	41	18	59	43	12	4
Support activities for other mining	109	520	31	78	33	11	41	25	14	2
Mining gold, silver, and other metal ore	91	211	95	109	9	65	74	23	45	6
Mining coal	55	283	21	46	15	14	31	17	9	4
Food & Kindred Products Manufacturing	37,728	138,024	21,251	33,397	9,794	6,054	13,527	6,794	5,077	1,656
Bread and bakery product manufacturing	6,571	6,882	1,076	1,112	24	325	347	255	83	10

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Soft drink and ice manufacturing	6,379	34,661	4,576	8,389	3,797	622	2,864	1,822	863	179
Fruit and vegetable canning, pickling, and drying										
Frozen food manufacturing	3,036	14,074	1,066	2,385	1,010	281	1,115	703	342	70
All other food manufacturing	2,416	3,714	754	909	108	163	260	152	99	9
Fluid milk and butter manufacturing	1,651	1,748	987	999	8	155	161	98	60	3
Tobacco product manufacturing	1,569	8,534	3,340	4,160	452	2,287	2,838	487	1,653	699
Poultry processing	1,544	1,732	356	381	22	59	73	58	13	2
Animal (except poultry) slaughtering, rendering, and processing	1,465	2,039	648	713	55	69	104	81	19	4
Seafood product preparation and packaging	1,376	1,488	473	485	10	77	84	69	14	2
Seasoning and dressing manufacturing	1,276	1,494	701	729	23	104	120	81	36	4
Cookie, cracker, and pasta manufacturing	992	1,066	437	446	8	103	109	50	57	2
Sugarcane mills and refining	894	11,518	818	1,886	598	117	712	442	219	51
Breweries	773	10,506	929	2,027	732	410	1,133	563	323	247
Ice cream and frozen dessert manufacturing	751	775	301	304	2	55	57	33	24	1
Coffee and tea manufacturing	666	1,149	456	513	37	88	124	65	54	4
Snack food manufacturing	661	755	471	482	9	136	143	41	100	2
Other animal food manufacturing	602	4,338	708	1,172	602	79	368	210	132	25

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Confectionery manufacturing from purchased chocolate	414	926	125	190	57	23	62	34	25	3
Distilleries	342	5,335	305	812	235	226	585	271	106	208
Nonchocolate confectionery manufacturing	296	630	98	141	36	17	43	25	16	2
Flour milling and malt manufacturing	215	2,720	287	597	215	52	253	145	89	18
Wineries	206	767	77	145	45	15	58	36	15	8
Flavoring syrup and concentrate manufacturing	132	153	204	207	2	59	61	8	53	0
Chocolate and confectionery manufacturing from cacao beans	129	378	76	107	29	7	26	16	8	2
Tortilla manufacturing	55	55	11	11	0	3	3	2	1	0
Fats and oils refining and blending	36	209	59	80	36	7	20	11	8	1
Cheese manufacturing	18	21	14	14	9	1	1	1	0	0
Dog and cat food manufacturing	18	24	22	23	1	6	6	2	5	0
Soybean and other oilseed processing	12	64	52	58	12	3	8	4	3	0
Dry, condensed, and evaporated dairy product manufacturing	6	16	7	8	1	1	1	1	1	0
Wet corn milling	1	2	1	2	0	0	0	0	0	0
Forest Product Manufacturing	17,885	72,783	6,272	12,802	4,784	1,908	5,986	3,652	1,957	377
Paperboard container manufacturing	2,874	12,826	1,061	2,235	1,090	252	1,006	664	271	71
Wood windows and doors and millwork manufacturing	2,437	2,552	371	384	8	117	1125	107	14	3

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Sawmills and wood preservation	1,925	2,502	410	475	41	87	126	103	17	5
Engineered wood member and truss manufacturing	1,692	2,440	231	320	54	87	141	101	34	6
Sanitary paper product manufacturing	1,610	8,170	1,181	1,965	698	445	938	436	459	43
Wood container and pallet manufacturing	1,080	1,132	129	135	4	52	56	42	12	2
Veneer and plywood manufacturing	1,032	1,294	172	202	17	61	80	65	6	9
Paperboard mills	880	9,450	641	1,660	604	187	817	489	271	57
Stationery product manufacturing	832	3,572	268	590	257	72	279	180	82	18
Pulp mills	653	8,263	481	1,383	543	136	685	428	208	49
All other miscellaneous wood product manufacturing	591	745	95	113	10	40	51	32	18	1
Coated and laminated paper, packaging paper, and plastics film manufacturing	419	1,948	174	361	165	50	166	101	55	10
All other converted paper product manufacturing	363	1,476	101	232	98	26	110	70	33	7
All other paper bag and coated and treated paper manufacturing	190	256	69	77	7	19	24	18	6	1
Reconstituted wood product manufacturing	121	143	27	29	2	10	11	5	6	0
Nature-based Recreation	7,455	11,913	609	1,102	260	501	724	364	287	73
Golf courses	6,364	10,564	439	904	243	284	588	340	194	54
Commercial hunting and trapping	1,048	1,277	167	192	15	116	132	22	92	19

Industry Group / Sector	Employment		Output		Regional Exports	Total Value Added		Labor Income Impacts	Other Property Income Impacts	Indirect Business Tax Impacts
	Direct	Total Impacts	Direct	Total Impacts		Direct	Total Impacts			
	full-time & part-time jobs		million dollars							
Recreational fishing and hunting guides	43	71	3	6	2	2	4	2	1	0
Food & Kindred Products Distribution	949,716	1,207,912	52,604	91,399	15,249	39,672	58,594	37,137	13,511	7,946
Food services and drinking places	666,947	821,906	38,896	56,447	9,758	21,743	33,192	21,290	8,315	3,587
Retail stores – food and beverage	194,694	219,098	10,339	13,003	1,277	7,581	9,357	6,360	1,185	1,812
Wholesale trade, food & kindred products	79,496	157,769	12,718	21,236	4,184	9,902	15,559	9,154	3,966	2,439
Retail lawn-and-garden centers	8,579	9,139	651	712	29	446	487	335	45	108
Grand Total	1,348,235	2,008,369	121,240	196,959	47,802	66,659	108,742	67,313	29,560	11,869
Subtotal, excluding Food & Kindred Product Distribution	398,520	800,457	58,636	105,560	32,553	20,987	50,148	30,176	16,049	3,923

Source: IMPLAN-3, 2010 data for Florida (MIG, Inc. 2012). Total impact estimates include regional multiplier effects.

Table 2. Employment contributions by agriculture, natural resources, and related industries in Florida regions and counties in 2010

Region / County	Crop, Livestock, Forestry & Fisheries Production	Agricultural Inputs & Services	Mining	Food & Kindred Products Manufacturing	Forest Products Manufacturing	Nature-based Recreation	Food & Kindred Products Distribution	Grand Total
	full-time and part-time jobs							
Gainesville	16,792	5,826	2,865	5,257	2,107	93	29,230	62,171
Alachua	6,397	4,212	2,370	2,221	777	27	21,142	37,147
Bradford	661	214	184	92	174	13	1,107	2,444
Columbia	1,960	321	78	588	363	17	3,443	6,772
Dixie	795	20	50	25	568	3	393	1,854
Gilchrist	1,021	165	34	330	28	9	303	1,889
Lafayette	632	91	40	22	8	8	101	902
Levy	1,956	251	9	21	21	5	1,311	3,574
Suwannee	3,031	379	40	1,946	13	5	1,220	6,633
Union	341	175	59	12	154	6	211	957
Jacksonville	6,852	16,829	3,756	22,367	27,332	792	95,765	173,694
Baker	356	243	0	2	34	0	826	1,462
Clay	563	1,897	111	47	56	45	9,444	12,164
Duval	1,173	10,854	2,623	22,191	10,374	180	67,015	114,409
Nassau	1,034	998	63	33	6,780	48	3,339	112,295
Putnam	1,115	783	57	10	9,189	37	2,290	13,482
St. Johns	2,612	2,054	901	84	899	483	12,851	19,883
Miami–Fort Lauderdale	74,388	83,191	14,338	36,379	8,982	4,134	413,326	634,739
Broward	2,220	24,738	2,317	7,105	841	671	118,559	156,451
Glades	1,343	117	34	14	1	5	161	1,674
Hendry	11,538	380	22	1,277	16	5	1,645	14,883
Indian River	8,258	3,421	243	272	14	348	6,463	19,020
Martin	4,673	3,450	479	1,472	77	563	9,123	19,836
Miami–Dade	13,554	22,764	2,500	10,726	6,891	367	173,987	230,789
Monroe	2,736	1,437	1,281	124	17	98	12,136	17,830
Okeechobee	2,643	589	80	687	1	12	1,704	5,715
Palm Beach	22,588	22,995	6,791	12,931	928	1,907	78,574	146,714
St. Lucie	4,836	3,301	590	1,773	197	157	10,974	21,827
Orlando	57,498	84,967	11,289	38,873	8,894	2,464	299,673	503,658
Brevard	1,258	3,795	794	598	135	335	28,408	35,323
Citrus	732	1,066	342	79	262	155	4,964	7,600

Region / County	Crop, Livestock, Forestry & Fisheries Production	Agricultural Inputs & Services	Mining	Food & Kindred Products Manufacturing	Forest Products Manufacturing	Nature-based Recreation	Food & Kindred Products Distribution	Grand Total
	full-time and part-time jobs							
Flagler	812	1,319	30	236	36	58	3,165	5,656
Hardee	6,060	601	297	396	55	18	621	8,017
Highlands	9,995	1,197	58	45	69	190	3,636	15,190
Lake	4,386	5,516	745	3,281	140	100	13,226	27,393
Marion	6,737	4,212	646	1,464	276	308	13,873	27,515
Orange	4,563	18,745	1,590	7,665	1,438	345	125,210	159,556
Osceola	3,703	3,089	2,774	315	208	164	18,425	28,678
Polk	14,683	28,342	2,310	22,345	4,660	261	23,425	96,926
Seminole	540	9,583	299	538	1,284	108	27,674	40,026
Sumter	840	1,749	99	561	144	201	5,395	8,990
Volusia	3,219	5,752	406	1,353	187	222	31,651	42,789
Panama City	4,731	2,751	620	989	5,633	210	19,449	34,383
Bay	705	1,956	356	642	4,547	152	15,733	24,092
Calhoun	519	36	78	1	101	24	458	1,217
Gulf	151	276	26	0	23	3	571	1,048
Holmes	1,101	243	2	118	39	2	446	1,950
Jackson	1,711	145	110	49	847	11	1,615	4,488
Washington	545	95	47	180	77	17	626	1,587
Pensacola	4,886	7,157	3,310	539	4,190	300	45,924	66,304
Escambia	1,181	2,017	1,266	133	4,056	131	19,051	27,835
Okaloosa	658	2,329	1,004	30	0	124	15,816	19,961
Santa Rosa	716	1,517	978	265	43	29	5,328	8,878
Walton	2,331	1,294	62	110	90	14	5,729	9,630
Sarasota–Bradenton	35,160	38,614	12,740	9,185	1,861	2,793	105,431	205,785
Charlotte	1,626	2,209	619	25	87	190	7,891	12,548
Collier	7,286	8,883	4,809	205	320	1,023	20,154	42,681
De Soto	5,592	341	10	771	0	21	619	7,354
Lee	3,538	11,764	3,920	557	154	804	37,935	58,672
Manatee	16,404	5,867	943	7,504	894	328	17,160	49,099
Sarasota	714	9,549	2,439	123	406	427	21,772	35,431
Tallahassee	7,033	8,643	1,254	1,242	7,674	327	27,231	53,405
Franklin	67	145	14	57	263	9	896	1,441

Region / County	Crop, Livestock, Forestry & Fisheries Production	Agricultural Inputs & Services	Mining	Food & Kindred Products Manufacturing	Forest Products Manufacturing	Nature-based Recreation	Food & Kindred Products Distribution	Grand Total
	full-time and part-time jobs							
Gadsden	2,061	548	350	9	581	14	1,119	4,681
Hamilton	383	2,091	0	1	1	6	262	2,744
Jefferson	1,072	145	34	22	1	7	340	1,621
Leon	1,498	4,735	580	393	128	255	22,499	30,088
Liberty	165	91	118	39	458	5	134	1,010
Madison	1,110	18	6	479	116	19	551	2,300
Taylor	442	223	103	161	6,113	4	662	7,708
Wakulla	235	647	51	90	12	8	768	1,811
Tampa–St. Petersburg	21,196	47,977	3,071	23,192	6,111	800	171,882	274,229
Hernando	5,065	1,890	356	395	17	99	8,026	15,849
Hillsborough	13,190	28,762	1,963	19,558	4,669	335	86,654	155,130
Pasco	2,073	5,635	449	1,185	29	166	16,815	26,352
Pinellas	868	11,690	303	2,055	1,395	200	60,387	76,808
Grand Total	228,537	295,956	53,245	138,024	72,783	11,913	1,207,912	2,008,369

Source: *IMPLAN-3* 2010 data for Florida (MIG, Inc. 2012). Impact estimates include regional multiplier effects.