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**International Agricultural Trade and Policy Center**

**REGIONAL ECONOMIC IMPACTS OF FLORIDA'S  
AGRICULTURAL AND NATURAL RESOURCE INDUSTRIES**

By

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## **INTERNATIONAL AGRICULTURAL TRADE AND POLICY CENTER**

**MISSION AND SCOPE:** The International Agricultural Trade and Policy Center (IATPC) was established in 1990 in the Food and Resource Economics Department (FRED) of the Institute of Food and Agricultural Sciences (IFAS) at the University of Florida. Its mission is to provide information, education, and research directed to immediate and long-term enhancement and sustainability of international trade and natural resource use. Its scope includes not only trade and related policy issues, but also agricultural, rural, resource, environmental, food, state, national and international policies, regulations, and issues that influence trade and development.

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The Center's objectives are to:

- Serve as a university-wide focal point and resource base for research on international agricultural trade and trade policy issues
- Facilitate dissemination of agricultural trade related research results and publications
- Encourage interaction between researchers, business and industry groups, state and federal agencies, and policymakers in the examination and discussion of agricultural trade policy questions
- Provide support to initiatives that enable a better understanding of trade and policy issues that impact the competitiveness of Florida and southeastern agriculture specialty crops and livestock in the U.S. and international markets

## Abstract

The state of Florida has large industries producing fruits and vegetables, sugar, livestock, dairy and meat products, seafood, ornamental plants, forest products, phosphate rock, and an array of associated industries that provide supporting inputs and services, and conduct processing and manufacturing. There are distinct differences in the regional distribution of Florida's agricultural and natural resource industries. Economic characteristics and impacts were evaluated for the state of Florida and for eight separate regions of Florida. Each region is comprised of a core metropolitan area and a number of surrounding counties, as defined by the US Commerce Department, Bureau of Economic Analysis, based on employee commuting patterns and other factors. The *Implan* input-output analysis and social accounting software and associated databases for Florida counties were used to create economic models for each region and to estimate the total economic impacts of over 100 industry sectors in agriculture, natural resource and associated value-added manufacturing. Statewide economic impacts in the year 2000, expressed in year 2002 dollars, included industry output (sales) of \$35.2 billion (Bn), with sales to markets outside the state (export shipments) of \$19.4Bn, personal and business net income (value added) of \$14.8Bn, and employment of 338,253 persons. The value added represented 3.1 percent of Florida's gross regional product. When the multiplier effects of export final demand on interindustry purchases and employee household spending are considered, the total economic impacts were estimated at \$62.0Bn in output, \$31.0Bn in value added, and 648,550 jobs. Regionally, total value added impacts of the agriculture and natural resource industries were greatest in the Orlando area (\$4.31Bn), followed by Miami-Ft. Lauderdale (\$3.61Bn), Tampa-St. Petersburg-Clearwater (\$2.20Bn), Jacksonville (\$1.47Bn), Sarasota-Bradenton (\$1.10Bn), Tallahassee (\$782 million), Ft. Myers-Cape Coral (\$701 million), and Pensacola (\$597 million). The largest industry groups in terms of total value added impacts were fruits and vegetables (\$2.9Bn), environmental horticulture (\$2.8Bn), forest products (\$2.0Bn), agricultural inputs and services (\$1.4Bn), and other food and fiber manufacturing (\$1.7Bn), with lesser impacts for dairy products, field crops, livestock and meat products, mining, seafood products, sugar and confectionary products, and tobacco products. The total value added impact was \$1,929 per capita, and the total employment impact was 40 jobs per 1000 residents. Economic impacts per capita and share of gross regional product indicated that the agriculture and natural resource industries were relatively more important in the Sarasota-Bradenton, Orlando, Jacksonville, and Tallahassee regions than for the state as a whole.

**Keywords:** Florida, agriculture and natural resource industries, economic impact, functional economic region, output, value added, employment, input-output models, multiplier, *Implan*.

# Regional Economic Impacts of Florida's Agricultural and Natural Resource Industries

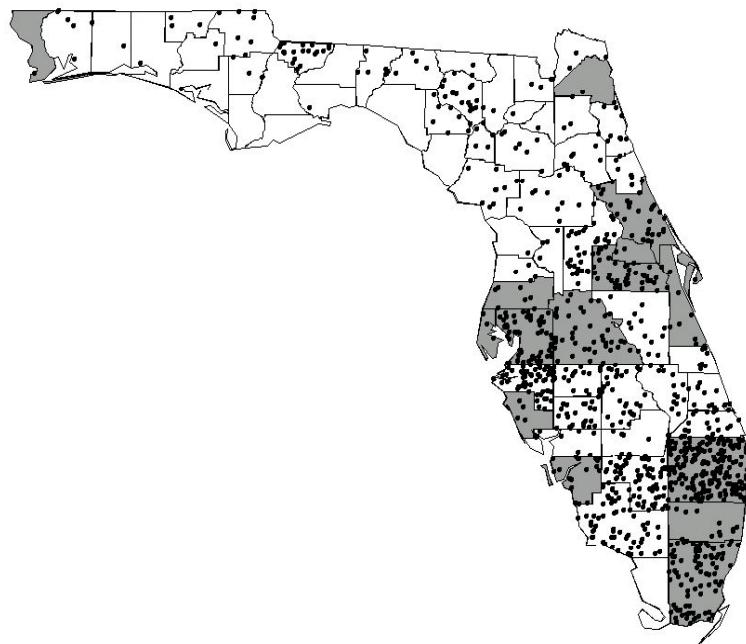
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## Introduction

The agricultural and natural resource industries are important to the economy of Florida. These industries are comprised of a set of interlinked enterprises associated with production, processing and service activities for food, fiber, and mineral products. The state has over 16,000 square miles in agricultural or forestry land use, which represents approximately 70 percent of the land area. Florida's subtropical climate and abundant water resources provide a comparative advantage for production of high-valued products such as citrus, sugar, vegetables, and ornamental plants, and the state also is a leading producer of forest products, seafood, livestock and animal products, and phosphatic fertilizers. The distribution of agricultural production across the state and its proximity to the human population is indicated in Figure 1, where each dot represents \$1.5 million in net agricultural sales in 1997 and the shaded areas represent counties with population exceeding 250,000 persons. These 14 largest counties contain 67 percent of the state's population and account for a majority of agricultural production (Florida Statistical Abstract, 1998). The composition and extent of the agricultural and natural resource industries differs quite dramatically across the state. The fruit, vegetable, and ornamental plant industries are concentrated in the southern half of peninsular Florida, where mostly frost-free winters provide a comparative advantage for production of cold-sensitive crops. The northern part of the state is dominated by industrial forestry plantations and traditional agronomic crops that can provide a reasonable return for lands that have very low native fertility. The interior portion of the peninsula has

1. Distribution of agricultural sales and the most populous counties of Florida.



extensive beef and dairy cattle herds, and large phosphate mining operations. The coastal areas have important natural fisheries and aquaculture businesses.

In any regional economic analysis, a crucial question is what constitutes a meaningful area? Functional economic regions are a preferred regional definition for economic analysis because they represent a cohesive socio-economic entity. In contrast, counties are artificially designated political regions that may not necessarily represent a unified economic entity. This paper examines the economic impacts of the agricultural and natural resource industries with respect to regions that are functionally integrated through social associations, transportation, and communication patterns. The US Department of Commerce, Bureau of Economic Analysis (BEA) has defined 172 economic areas for the United States (Johnson, 1995). Each region is comprised of a core metropolitan area and a number of surrounding counties. The procedure used to define these economic regions is based on commuting-to-work patterns established from the 1990 US Census, readership of newspapers, and other indicators. Florida's functional economic regions, as defined by the BEA, are shown in Figure 2, and table 1 lists the counties comprising each of the eight regions. Note that the Pensacola region was modified by excluding several Alabama counties and by incorporating the adjacent Florida counties of Holmes and Washington from the Dothan, Alabama BEA region, in order to restrict the analysis to the state of Florida.

## 2. Economic regions of Florida.



**Table 1.** Counties comprising the economic regions of Florida.

| BEA Region | Region Name, Central Place        | Counties Included  |
|------------|-----------------------------------|--|
| 31         | Miami, Ft. Lauderdale             | Indian River, St. Lucie, Okeechobee, Glades, Hendry, Palm Beach, Broward, Dade, Monroe, Martin   |
| 32         | Ft. Meyers, Cape Coral            | Lee, Collier   |
| 34         | Tampa, St. Petersburg, Clearwater | Hernando, Pasco, Pinellas, Hillsborough,   |
| 33         | Sarasota, Bradenton               | Sarasota, Manatee, Charlotte, Desoto   |
| 30         | Orlando                           | Flagler, Marion, Citrus, Sumter, Lake, Polk, Hardee, Highlands, Osceola, Orange, Seminole, Brevard, Volusia                              |
| 29         | Jacksonville                      | Hamilton, Suwannee, Lafayette, Dixie, Levy, Gilchrist, Columbia, Alachua, Baker, Union, Bradford, Nassau, Duval, Clay, Putnam, St. Johns |
| 35         | Tallahassee                       | Bay, Jackson, Calhoun, Gulf, Liberty, Franklin, Gadsden, Leon, Wakulla, Jefferson, Madison, Taylor                                       |
| 81         | Pensacola                         | Escambia, Santa Rosa, Okaloosa, Walton, Holmes*, Washington*   |

\* Counties from adjacent Dothan, Alabama economic region

Source: US Department of Commerce, Bureau of Economic Analysis

## Economic Impact Analysis Methods

Industrial activity stimulates a regional economy both directly and through purchases of inputs supplied from other industries (indirect effects), and personal consumption expenditures made by industry employees (induced effects). Exports of goods and services outside the region have a secondary impact by introducing new money into the local economy, which is then recirculated and is subject to the multiplier effect of the indirect and induced activities. Also, inputs that are obtained from local firms rather than imported from outside the region are associated with greater economic impact because the money is retained within the region for additional rounds of spending.

An input-output (I-O) framework was utilized to estimate the direct, indirect and induced economic impacts of the agricultural and natural resource industries in the functional economic regions of Florida. Input-output analysis is a technique that captures the regional economic interdependence between different industries, households and government institutions (Miller and Blair, 1985). The premise of input-output analysis is that the structure of the economy is technologically fixed, such that for a given level or change in final demand, output or employment for a particular industry or region there will be predictable changes in other linked sectors of the economy. These changes are measured by estimating the regional economic

multipliers associated with the particular industry using a matrix inversion procedure applied to the matrix of inter-industry transactions.

In this study the input-output analysis was conducted with the *Implan Pro*™ software package, which was originally developed by the USDA Forest Service in 1979 and was subsequently privatized in 1993 by the Minnesota Implan Group (MIG, Inc.). The *Implan* system consists of database and software components. The database portion offers economic and sociodemographic profiles for all United States counties across 528 economic sectors. The categorization of sectors relies on the US Standard Industrial Classification (SIC) system at the four-digit level of detail. The software component of the *Implan* modeling system performs calculations for a pre-defined study area to assess economic impacts to the region. U.S. national level data is used in *Implan* together with region-specific data to develop the complete inter-industry structural tables and coefficients. Regional models were constructed for each of the eight functional economic regions, as well as the state of Florida. Multipliers are available from *Implan* for the economic measures of output, total value added, employment, employee compensation, personal income, other proprietary income, and indirect business taxes. The multipliers are provided for direct, indirect and induced impact effects. Data from the *Implan* database for years 1995 and 2000 were used in this study, to enable consistent comparison of results for industry groups across regions and across time. Monetary values were converted to year 2002 dollars using the U.S. Gross Domestic Product (GDP) Implicit Price Deflator (U.S. Department of Commerce).

The total economic impacts of Florida's agricultural and natural resource industries were derived by multiplying the value of output against the direct effects multiplier and multiplying export values against the indirect and induced effects multipliers, as follows:

$$T_i = Y_i * D_i + E_i * IND_i + E_i * INDU_i$$

where  $T_i$  is total impact of the  $i$ th sector,  $Y_i$  is output of the  $i$ th sector,  $E_i$  is sales outside the region (exports),  $D_i$  is the direct effects multiplier of the  $i$ th sector,  $IND_i$  is the indirect effects multiplier, and  $INDU_i$  is the induced effects multiplier.

## Results

Results are reported for the socioeconomic and economic indicators of Florida's functional economic regions, including population, output, employment, value added, exports, and total output, employment, and value added economic impacts. Also, economic impacts are given on a per capita basis, and gross regional product of the agricultural and natural resource sector are compared to all economic sectors in the state of Florida. These results are given for eleven major industry groups of the agricultural and natural resource sector: fruits and

vegetables, field crops, ornamental horticulture and landscape services, forest products, seafood products, agricultural inputs and services, dairy products, livestock and meat products, sugar and confectionary products, mining, and other food and tobacco products. A listing of the individual sectors included within these groups is given in the Appendix.

### **Population, Households, Area and Per Capita-Income**

In 2000, the population of Florida was 16.0 million persons. The population of each economic region of Florida is given in Table 2. Regions with population over one million were Miami-Ft. Lauderdale with 5.6 million, Orlando, 3.6 million, Tampa-St. Petersburg-Clearwater, 2.4 million, and Jacksonville, 1.6 million. There were a total of 6.3 million households in Florida. The area of Florida is nearly 54 thousand square miles. The Orlando region was the largest in terms of area at 12,349 square miles. Average per-capita income in the state of Florida was \$27,889 in 2000. The southern portions of the state had above-average per capita incomes (Sarasota-Bradenton, Ft. Myers-Cape Coral, Miami-Ft. Lauderdale, and Tampa-St. Petersburg-Clearwater), while regions in the central, northern and Panhandle of Florida had below-average incomes (Orlando, Tallahassee, Jacksonville, and Pensacola). The highest and lowest per capita incomes were in Sarasota-Bradenton (\$32,195) and Pensacola (\$23,288), respectively.

| <b>Table 2.</b> Regional population, households, area and per-capita income in Florida, 2000 |            |            |               |                        |
|--|------------|------------|---------------|------------------------|
| Region   | Population | Households | Area (sq.mi.) | Per-Capita Income (\$) |
| Jacksonville   | 1,625,078  | 624,985    | 10,064        | 25,988                 |
| Orlando  | 3,624,540  | 1,442,688  | 12,349        | 24,736                 |
| Miami, Ft. Lauderdale  | 5,602,222  | 2,150,388  | 10,456        | 30,292                 |
| Ft. Myers, Cape Coral  | 692,265    | 291,881    | 2,830         | 31,824                 |
| Sarasota, Bradenton  | 763,795    | 337,324    | 2,644         | 32,195                 |
| Tampa, St. Petersburg, Clearwater  | 2,395,997  | 1,009,792  | 2,554         | 28,307                 |
| Tallahassee  | 597,692    | 231,378    | 8,304         | 23,125                 |
| Pensacola  | 662,789    | 252,685    | 4,736         | 23,288                 |
| Total or Average   | 15,982,378 | 6,341,121  | 53,937        | 27,889                 |

Source: Census Bureau, Regional Economic Information System, MIG, Inc.

## **Industry Output, Employment and Value Added**

Output, employment and value added are three principal measures of economic activity. These indicators are summarized in Table 3 for the regional agricultural and natural resource industry groups in Florida in year 2000, with monetary values expressed in year 2002 dollars.

Industry output represents total income or sales plus inventory change. Output of the agricultural and natural resource industries in Florida totaled \$35.0 billion. The largest industry groups were Fruits and Vegetables (\$6.5Bn), Forest Products (\$5.2Bn), Other Manufactured Food and Fiber Products (\$4.9Bn), and Environmental Horticulture (\$4.2Bn). Among other industry groups output was \$3.6Bn for Agricultural Inputs and Services, \$2.5Bn for Mining, \$2.4Bn for Livestock and Meat Products, \$1.9Bn for Sugar & Confectionary Products, \$1.7Bn for Tobacco Products, \$1.2Bn for Dairy Products, \$645 million (Mn) for Seafood Products, and \$330Mn for Field Crops. Across economic regions, the Orlando area had the largest output (\$9.6Bn), followed closely by Miami-Fort Lauderdale (\$9.2Bn). A second tier of regional industries was in Tampa-St. Petersburg-Clearwater and Jacksonville areas, with output of \$5.3Bn and \$4.4Bn, respectively. The third tier of regions was Sarasota-Bradenton (\$2.2Bn), Tallahassee (\$1.6Bn), Pensacola (\$1.4Bn), and Ft. Myers-Cape Coral (\$1.3Bn). Within regions, certain industry groups stand out prominently. In the Orlando area, five of the industry groups had output between one and two billion dollars, including agricultural inputs and services, environmental horticulture, fruits and vegetables, mining, and other food and fiber manufacturing. In the Miami area, there was a similar set of large industries: environmental horticulture, fruits and vegetables, sugar and confectionary products, and other food and fiber manufacturing. In the Jacksonville region, only forest products exceeded one billion dollars in value, and this was also the largest group in the Tallahassee and Pensacola regions. In the Sarasota-Bradenton area, fruits and vegetables were the largest industry group (\$1.4Bn). In the Tampa-St. Petersburg-Clearwater area, tobacco products were the largest group (\$1.1Bn), but several other sectors were also important.

Employment in the agricultural and natural resource industries of Florida in 2000 represented a total of 336,296 jobs, including both fulltime and part-time or seasonal positions (Table 3). The largest industry groups in terms of employment were Environmental Horticulture (98,312 jobs), Agricultural Inputs and Services (70,773 jobs), and Fruits and Vegetables (49,829). There were also at least 20,000 jobs in forest products and livestock and meat products. The majority of jobs were concentrated in the southern and central portions of the state, in the Miami-Ft. Lauderdale region (97,587 jobs), Orlando (86,352 jobs), and Tampa-St. Petersburg-Clearwater (41,340). In the Miami-Ft. Lauderdale region, there were 33,682 jobs in environmental horticulture, 25,326 in agricultural inputs and services, and 11,884 in fruits and vegetables. In the Orlando region, there were about 23,000 jobs in both environmental

horticulture and agricultural inputs and services. Also, the Tampa-St. Petersburg-Clearwater area had 12,688 jobs in environmental horticulture.

Value added represents the value of output less the value of purchased inputs used in the production of goods or services for final consumption. It is a measure of personal and business net income, and includes the value of employee labor, management and owner's compensation (proprietor's income), and indirect business taxes paid. Value added avoids the double counting of expenditures on intermediate and final demand inherent in output, and as such represents the net contribution to the regional economy. Value added in Florida's agricultural and natural resource industries in 2000 totaled \$14.7 billion (Table 3). Among industry groups, value added was highest for Fruits and Vegetables (\$2.9Bn), closely followed by Environmental Horticulture (\$2.8Bn), then Forest Products (\$2.0Bn), Other Food and Fiber Manufacturing (\$1.6Bn), Agricultural Inputs and Services (\$1.4Bn), and Mining (\$1.2Bn). Value added was highest in the Orlando and Miami-Ft. Lauderdale regions, at \$4.3Bn and \$3.6Bn, respectively. In the second tier of regions, value added was \$2.2Bn in Tampa-St. Petersburg-Clearwater, \$1.5Bn in Jacksonville, and \$1.1Bn in Sarasota-Bradenton. The Tallahassee and Ft. Meyers-Cape Coral regions each had approximately \$700 Mn in value added. Within the Miami-Ft. Lauderdale region, environmental horticulture, fruits and vegetables, sugar and confectionary products, and other food and fiber manufacturing all contributed in excess of \$500Mn in value added. In the Orlando region, these same industries, with the exception of sugar, and the addition of mining, had over \$500Mn in value added.

**Table 3. Industry output of Florida agricultural and natural resource industry groups, by economic region 2000**

| Ag. & Natural Resource Industry Group | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota-Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|---------------------------------------|-----------------------|------------------------|--------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| <b>Output (Million \$)*</b>           |                       |                        |                    |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services      | 579.6                 | 90.1                   | 161.3              | 710.1                             | 1,944.1 | 67.7         | 38.1        | 11.0      | 3,602.0          |
| Dairy Products                        | 460.6                 | 8.1                    | 21.0               | 125.1                             | 267.9   | 328.2        | 21.3        | 13.2      | 1,245.4          |
| Environmental Horticulture            | 1,472.7               | 289.0                  | 215.0              | 481.9                             | 1,134.9 | 335.4        | 132.4       | 91.8      | 4,153.2          |
| Field Crops                           | 54.2                  | 1.4                    | 3.0                | 24.2                              | 35.2    | 88.4         | 54.1        | 69.2      | 329.7            |
| Forest Products                       | 620.7                 | 62.1                   | 143.3              | 538.8                             | 788.5   | 1,699.4      | 919.1       | 398.4     | 5,170.3          |
| Fruits & Vegetables                   | 1,691.2               | 248.7                  | 1,405.6            | 727.2                             | 1,985.5 | 238.7        | 127.3       | 35.5      | 6,459.5          |
| Livestock and Meat Products           | 353.5                 | 11.4                   | 56.0               | 470.3                             | 458.6   | 664.9        | 74.3        | 268.8     | 2,357.8          |
| Mining                                | 334.9                 | 384.5                  | 91.3               | 158.0                             | 1,030.3 | 229.9        | 111.6       | 135.2     | 2,475.6          |
| Other Food & Fiber Manufacturing      | 1,479.5               | 212.0                  | 54.6               | 733.4                             | 1,624.5 | 672.5        | 69.8        | 102.3     | 4,948.8          |
| Seafood Products                      | 139.7                 | 23.1                   | 9.1                | 229.9                             | 141.4   | 48.9         | 44.6        | 8.4       | 645.1            |
| Sugar & Confectionary Products        | 1,666.5               | 0.0                    | 1.6                | 20.5                              | 147.5   | 5.0          | 16.3        | 9.2       | 1,866.7          |
| Tobacco Products                      | 330.1                 | 0.0                    | 0.6                | 1,081.4                           | 0.1     | 26.3         | 3.7         | 282.8     | 1,725.0          |
| Total All Groups                      | 9,183.1               | 1,330.4                | 2,162.5            | 5,300.9                           | 9,558.4 | 4,405.3      | 1,612.5     | 1,425.8   | 34,979.0         |
| <b>Employment (jobs)</b>              |                       |                        |                    |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services      | 25,326                | 3,929                  | 7,646              | 6,306                             | 23,497  | 2,092        | 1,604       | 375       | 70,773           |
| Dairy Products                        | 1,540                 | 43                     | 168                | 633                               | 838     | 1,457        | 138         | 119       | 4,936            |
| Environmental Horticulture            | 33,682                | 7,712                  | 6,566              | 12,688                            | 23,252  | 8,531        | 3,211       | 2,670     | 98,312           |
| Field Crops                           | 575                   | 39                     | 102                | 676                               | 1,219   | 2,062        | 1,360       | 1,380     | 7,414            |
| Forest Products                       | 4,385                 | 459                    | 1,170              | 2,658                             | 4,989   | 7,630        | 5,032       | 1,750     | 28,073           |
| Fruits & Vegetables                   | 11,884                | 4,400                  | 8,983              | 6,063                             | 14,329  | 2,413        | 1,336       | 419       | 49,829           |
| Livestock and Meat Products           | 2,643                 | 385                    | 924                | 5,851                             | 6,456   | 5,879        | 1,089       | 1,783     | 25,009           |
| Mining                                | 2,338                 | 2,312                  | 614                | 1,390                             | 3,802   | 1,083        | 762         | 947       | 13,249           |
| Other Food & Fiber Manufacturing      | 4,438                 | 963                    | 364                | 1,885                             | 4,462   | 3,579        | 284         | 543       | 16,518           |
| Seafood Products                      | 3,165                 | 625                    | 423                | 1,841                             | 2,983   | 780          | 1,316       | 396       | 11,529           |
| Sugar & Confectionary Products        | 7,121                 | 0                      | 8                  | 79                                | 522     | 15           | 55          | 168       | 7,968            |
| Tobacco Products                      | 490                   | 0                      | 1                  | 1,271                             | 2       | 481          | 107         | 332       | 2,685            |
| Total All Groups                      | 97,587                | 20,866                 | 26,970             | 41,340                            | 86,352  | 36,002       | 16,294      | 10,884    | 336,296          |
| <b>Value Added (Million \$)*</b>      |                       |                        |                    |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services      | 314.7                 | 45.8                   | 85.5               | 191.3                             | 701.3   | 30.1         | 16.6        | 6.0       | 1,391.4          |
| Dairy Products                        | 114.7                 | 2.6                    | 16.0               | 58.0                              | 94.1    | 102.4        | 13.5        | 11.9      | 413.2            |
| Environmental Horticulture            | 897.5                 | 203.1                  | 147.4              | 353.6                             | 773.5   | 227.8        | 104.8       | 61.1      | 2,768.8          |
| Field Crops                           | 17.5                  | 0.8                    | 2.1                | 15.2                              | 25.0    | 44.2         | 45.2        | 46.1      | 196.2            |
| Forest Products                       | 206.8                 | 22.9                   | 108.5              | 179.1                             | 346.1   | 582.6        | 386.9       | 155.5     | 1,988.3          |
| Fruits & Vegetables                   | 625.9                 | 194.6                  | 641.7              | 385.0                             | 774.6   | 143.4        | 86.2        | 27.3      | 2,878.7          |
| Livestock and Meat Products           | 71.6                  | 7.5                    | 24.3               | 140.9                             | 177.1   | 154.7        | 28.3        | 70.3      | 674.6            |
| Mining                                | 99.7                  | 142.9                  | 46.2               | 32.6                              | 644.5   | 122.0        | 49.7        | 33.9      | 1,171.6          |
| Other Food & Fiber Manufacturing      | 504.4                 | 67.1                   | 14.3               | 293.1                             | 655.5   | 38.3         | 23.4        | 45.4      | 1,641.5          |
| Seafood Products                      | 75.8                  | 12.8                   | 8.6                | 79.2                              | 70.5    | 10.2         | 23.5        | 7.9       | 288.4            |
| Sugar & Confectionary Products        | 507.2                 | 0.0                    | 0.2                | 5.3                               | 44.5    | 0.7          | 2.3         | 9.1       | 569.3            |
| Tobacco Products                      | 117.2                 | 0.0                    | 0.2                | 467.7                             | 0.0     | 10.8         | 2.0         | 122.3     | 720.2            |
| Total All Groups                      | 3,553.0               | 700.1                  | 1,095.0            | 2,201.0                           | 4,306.7 | 1,467.1      | 782.4       | 596.8     | 14,702.2         |

Source: Implan data for Florida, MIG, Inc., Stillwater MN

\* Expressed in year 2002 values using US GDP Implicit Price Deflator

## **Industry Growth and Change**

It is important to understand not only the overall value of industries to a regional economy, but also how the economy is changing over time. Table 4 summarizes the change in output of the agricultural and natural resource industries in Florida between 1995 and 2000, expressed in common year 2002 dollars, and as a percentage change. Total output of these industries grew by \$1.61billion (Bn), which represented a 5 percent increase. The greatest growth occurred in the Tobacco products sector, which increased output by \$1.46Bn (544%), There was also significant growth in environmental horticulture (\$1.44Bn or 53%), which was distributed across all regions, and in the mining industry (\$689Mn, 39%). Industry output declined in real economic terms for agricultural inputs and services (-25%), field crops (-21%), forest products (-18%), seafood products (-12%), and other food and fiber manufacturing (-5%). The remaining industry groups, including dairy products, fruits and vegetables, livestock and meat products, and sugar and confectionary products, had moderate growth (6-9%). Regionally, growth was highest in the Ft. Myers-Cape Coral area (58%), due to a large increase in mining, environmental horticulture, and other food and fiber manufacturing. Growth was also strong in the Sarasota-Bradenton area (33%) due to an increase in fruits and vegetables, and in the Tampa-St. Petersburg-Clearwater area, due to increased output of tobacco products, environmental horticulture, and forest products. Total output declined by 26 to 30 percent in the Jacksonville and Tallahassee regions, respectively. In the Miami, Orlando, and Pensacola regions, overall growth was moderate, 8 to 13 percent, with large increases in environmental horticulture and certain other sectors such as tobacco and other food and fiber manufacturing, but was offset by decreases in mining or agricultural inputs and services.

| <b>Table 4. Change in Output of Florida's Agricultural and Natural Resource Industries, 1995 to 2000, by Region and Industry Group</b> |                       |                        |                     |                                   |         |              |             |           |                  |
|--|-----------------------|------------------------|---------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| Industry Group   | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota, Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
| <b>Change (Million \$)</b>   |                       |                        |                     |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services   | -163.3                | -57.8                  | 4.7                 | -169.6                            | -63.4   | -794.6       | 16.4        | 0.7       | -1227.0          |
| Dairy Products   | 55.0                  | 4.0                    | 4.9                 | -64.0                             | 39.2    | 43.2         | 0.7         | -2.5      | 82.1             |
| Environmental Horticulture   | 458.7                 | 123.5                  | 68.2                | 196.5                             | 369.4   | 93.3         | 42.1        | 37.2      | 1437.9           |
| Field Crops  | -36.4                 | -13.2                  | 0.2                 | -14.4                             | 3.8     | 0.8          | -22.3       | -14.9     | -89.3            |
| Forest Products  | 70.3                  | 8.5                    | 65.7                | 139.5                             | -56.2   | -155.5       | -710.4      | -482.5    | -1121.1          |
| Fruits & Vegetables  | -30.8                 | -11.4                  | 294.4               | 88.2                              | 12.7    | 5.2          | 18.3        | 12.5      | 418.2            |
| Livestock and Meat Products  | -3.6                  | -4.4                   | 19.4                | -36.6                             | 153.7   | 21.4         | -133.8      | 113.2     | 128.8            |
| Mining   | 60.1                  | 322.5                  | 51.2                | 61.7                              | -155.4  | 172.9        | 57.3        | 119.1     | 689.3            |
| Other Food & Fiber Manufacturing   | -83.2                 | 138.2                  | 21.8                | -53.6                             | 441.2   | -853.8       | 61.5        | 90.8      | -237.1           |
| Seafood Products   | 36.9                  | -23.9                  | 3.1                 | -74.1                             | 36.7    | -19.1        | -45.5       | -4.5      | -90.4            |
| Sugar & Confectionary Products   | 44.3                  | 0.0                    | 1.6                 | -13.4                             | 97.5    | 5.0          | 14.3        | 9.2       | 158.6            |
| Tobacco Products   | 288.0                 | 0.0                    | 0.6                 | 979.2                             | 0.1     | -92.7        | -1.1        | 282.8     | 1457.0           |
| Total All Groups   | 696.2                 | 485.9                  | 535.9               | 1039.4                            | 879.3   | -1573.9      | -702.6      | 161.2     | 1607.1           |
| <b>Percent Change</b>  |                       |                        |                     |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services   | -22                   | -39                    | 3                   | -19                               | -3      | -92          | 75          | 7         | -25              |
| Dairy Products   | 14                    | 99                     | 30                  | -34                               | 17      | 15           | 3           | -16       | 7                |
| Environmental Horticulture   | 45                    | 75                     | 46                  | 69                                | 48      | 39           | 47          | 68        | 53               |
| Field Crops  | -40                   | -90                    | 7                   | -37                               | 12      | 1            | -29         | -18       | -21              |
| Forest Products  | 13                    | 16                     | 85                  | 35                                | -7      | -8           | -44         | -55       | -18              |
| Fruits & Vegetables  | -2                    | -4                     | 26                  | 14                                | 1       | 2            | 17          | 54        | 7                |
| Livestock and Meat Products  | -1                    | -28                    | 53                  | -7                                | 50      | 3            | -64         | 73        | 6                |
| Mining   | 22                    | 520                    | 127                 | 64                                | -13     | 303          | 105         | 741       | 39               |
| Other Food & Fiber Manufacturing   | -5                    | 187                    | 67                  | -7                                | 37      | -56          | 734         | 788       | -5               |
| Seafood Products   | 36                    | -51                    | 52                  | -24                               | 35      | -28          | -51         | -35       | -12              |
| Sugar & Confectionary Products   | 3                     | na                     | na                  | -39                               | 195     | na           | 695         | na        | 9                |
| Tobacco Products   | 684                   | na                     | na                  | 958                               | na      | -78          | -23         | na        | 544              |
| Total All Groups   | 8                     | 58                     | 33                  | 24                                | 10      | -26          | -30         | 13        | 5                |

Source: Implan data for Florida counties, MIG, Inc., Stillwater, MN.

Note: All values adjusted to year 2002 using US GDP Implicit Price Deflator (U.S. Commerce Dept).

## Industry Exports or Sales Outside the Region

Exports, or shipments of goods and services to customers outside the state or region, are a primary driver of local economic development because these revenues and earnings stimulate an increase in overall economic activity in associated businesses and employee household spending. Exports by the agricultural and natural resource industries of Florida are summarized in Table 5. Total exports from Florida were \$20.7 billion (Bn). The largest exporting industry sectors were fruits and vegetables (\$4.9Bn), other manufactured food and fiber products (\$2.9Bn), forest products (\$2.8Bn), and agricultural inputs and services (\$2.7Bn). Industries with export values exceeding one billion dollars included environmental horticulture, mining, sugar and confectionary products, and tobacco products. Exports were highest for the Orlando and Miami-Fort Lauderdale economic regions, at \$6.7 and \$5.5Bn, respectively, followed by Tampa-St. Petersburg-Clearwater (\$3.3Bn) and Jacksonville (\$2.8Bn). Exports also exceeded one billion dollars for the Sarasota-Bradenton (\$2.8Bn) and Tallahassee areas. Note that the value of exports for the state of Florida may differ from the sum of exports for all regions because the balance of trade is computed independently for each region, and there is extensive trade among the regions of Florida that does not appear in the trade for the state as a whole.

**Table 5. Exports by agricultural and natural resource industries in Florida, by industry group and region, 2000\***

| Ag. & Natural Resource Industry Group | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota-Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|---------------------------------------|-----------------------|------------------------|--------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| <i>Million Dollars</i>                |                       |                        |                    |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services      | 320.1                 | 74.0                   | 100.3              | 638.8                             | 1,557.3 | 38.0         | 32.3        | 11.4      | 2,679.9          |
| Dairy Products                        | 89.5                  | 1.4                    | 18.7               | 58.5                              | 64.0    | 176.4        | 14.9        | 12.8      | 266.9            |
| Environmental Horticulture            | 678.0                 | 141.8                  | 82.9               | 219.4                             | 634.1   | 148.0        | 47.2        | 31.3      | 1,959.5          |
| Field Crops                           | 78.7                  | 1.7                    | 2.8                | 36.4                              | 80.0    | 75.9         | 53.0        | 69.4      | 366.9            |
| Forest Products                       | 244.6                 | 17.1                   | 125.0              | 135.9                             | 366.1   | 1,141.5      | 737.9       | 319.4     | 2,830.7          |
| Fruits & Vegetables                   | 1,321.4               | 194.9                  | 1,252.4            | 584.3                             | 1,613.4 | 179.4        | 83.2        | 22.4      | 4,926.7          |
| Livestock and Meat Products           | 72.6                  | 7.4                    | 34.5               | 76.9                              | 245.9   | 206.1        | 28.4        | 30.3      | 457.1            |
| Mining                                | 277.6                 | 303.1                  | 76.5               | 72.8                              | 607.7   | 193.8        | 63.1        | 88.0      | 1,549.2          |
| Other Food & Fiber Manufacturing      | 899.3                 | 129.2                  | 35.3               | 527.8                             | 1,230.8 | 550.0        | 35.5        | 28.5      | 2,889.7          |
| Seafood Products                      | 130.3                 | 21.5                   | 8.3                | 224.8                             | 131.8   | 46.0         | 41.1        | 7.4       | 592.4            |
| Sugar & Confectionary Products        | 1,269.3               | 0.3                    | 3.3                | 20.7                              | 132.7   | 5.8          | 16.5        | 9.5       | 1,153.7          |
| Tobacco Products                      | 121.8                 | 0.0                    | 0.0                | 736.7                             | 0.1     | 21.6         | 3.7         | 193.1     | 1,025.9          |
| Total All Groups                      | 5,503.1               | 892.3                  | 1,740.1            | 3,332.9                           | 6,663.9 | 2,782.5      | 1,156.8     | 823.4     | 20,698.7         |

Source: Implan data for Florida, MIG, Inc., Stillwater MN

\* Expressed in 2002 year dollars based on US GDP Implicit Price Deflator

## Total Economic Impacts

The total economic impacts of the agricultural and natural resource industries in Florida were estimated by using the previously presented data on output, value added, employment and exports, together with input-output multipliers from regional models constructed with *Implan*. These results are summarized in Table 6. The total impacts reflect the indirect effect of increased purchases from other industries to meet export demand, and the induced effects of employee household spending. Total output impacts for the state of Florida in 2000 were \$61.57 billion (Bn), expressed in year 2002 dollars. The largest industry group, by far, was fruits and vegetables, with a total output impact of \$13.01Bn. A second tier of industry groups in terms of total output impacts were forest products at \$8.61Bn, other manufactured food and fiber products at \$8.25Bn, agricultural inputs and services at \$7.00Bn, and environmental horticulture at \$6.90Bn. The third tier of industries included mining (\$4.25Bn), sugar and confectionary products (\$3.68Bn), tobacco products (\$3.44Bn), and livestock and meat products (\$2.86Bn). The fourth tier of industries was seafood products (\$1.20Bn), dairy products (\$1.56Bn), and field crops (\$814Mn).

Total output impacts were largest in the Orlando region at \$16.92Bn and Miami-Fort Lauderdale at \$15.82Bn, followed by Tampa-St. Petersburg-Clearwater area (\$9.46Bn), and Jacksonville (\$7.60Bn). The remaining regions had total output impacts of \$3.69Bn in the Sarasota-Bradenton area, \$2.64Bn in Tallahassee, and \$2.38Bn in the Pensacola area. Again, note that these results for the state of Florida and for each region were derived independently, so the sum of total economic impact estimates across regions may not equal the value for the state.

Employment impacts of Florida's agricultural and natural resource industries, including both direct employment in these industries, plus jobs in other related businesses that provide inputs and serve industry employees, totaled 644,673 jobs (Table 6). The largest industry groups in terms of employment impacts were fruits and vegetables (133,189), environmental horticulture (131,748), and agricultural inputs and services (107,595). Other sectors with total employment impacts exceeding 20,000 jobs were forest products (67,153), other food and fiber manufacturing (52,730), mining (32,739), livestock and meat products (31,383), and sugar and confectionary products (27,581). Regionally, the largest employment impacts were in Miami-Ft. Lauderdale (173,914), Orlando (170,686), followed by Tampa-St. Petersburg-Clearwater (88,709), Jacksonville (78,111), and Sarasota-Bradenton (48,470).

As noted previously, value added is a preferred measure of the net contribution to a local economy, because it represents an increase in value generated at each stage of complex market supply chains. Total value added impacts for the agriculture and natural resource industries of Florida in 2000 were \$30.83 Bn (Table 6). Again, the fruits and vegetables sector was the largest, accounting for \$6.90Bn in value added impacts, followed by environmental horticulture

(\$4.50Bn), forest products (\$4.07Bn), other food and fiber manufactured products (3.64Bn), agricultural inputs and services (\$3.37Bn), and mining (\$2.25Bn). The Orlando, and Miami-Ft. Lauderdale regions had total value added impacts of \$8.75Bn and \$7.61Bn, respectively, while Tampa-St. Petersburg-Clearwater and Jacksonville had value added impacts of \$4.64Bn and \$3.32Bn. The remaining regions had value added impacts ranging from \$2.03Bn in Sarasota-Bradenton, to \$1.22Bn in Pensacola.

Labor income is the portion of value added that represents employee wages and salaries and business owners or “proprietors” net income. Estimates of labor income impacts are also provided in Table 6 for the agricultural and natural resource industries of Florida. Total labor income impacts in Florida in year 2000 were \$19.28Bn, including \$4.50Bn in fruits and vegetables, \$2.88Bn in environmental horticulture, \$2.58Bn in forest products, \$2.27Bn in agricultural inputs and services, and \$2.09Bn in other food and fiber manufacturing. Regionally, labor income impacts included \$5.37Bn in Orlando, \$4.84Bn in Miami-Ft. Lauderdale, \$2.79Bn in Tampa-St. Petersburg-Clearwater, and \$2.18Bn in Jacksonville.

Another important measure of economic impacts is the taxes paid by businesses and households, which support local, state, and federal governments. *Implan* provides estimates of indirect business taxes paid, such as property, sales, income, excise, and motor fuels taxes, based on state and county fiscal account data, and also indirect business tax multipliers. Total indirect business tax impacts of agricultural and natural resource industries of Florida in year 2000 were an estimated \$2.76Bn, including \$725 million (Mn) by tobacco products, \$458Mn by fruits and vegetables, \$409Mn by other food and fiber products manufacturing, \$276Mn by forest products, \$217Mn by agricultural inputs and services, and \$214Mn by environmental horticulture (Table 6). Total indirect business tax impacts were \$680Mn in the Orlando area, and \$615Mn in Miami-Ft. Lauderdale.

**Table 6.** Total economic impacts of Florida agricultural and natural resource industry groups, by region 2000

| Ag. & Natural Resource Industry Group     | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota-Bradenton | Tampa, St. Petersburg, Clearwater | Orlando  | Jacksonville | Tallahassee | Pensacola | State of Florida |
|---|-----------------------|------------------------|--------------------|-----------------------------------|----------|--------------|-------------|-----------|------------------|
| <b>Output Impacts (Million \$)*</b>       |                       |                        |                    |                                   |          |              |             |           |                  |
| Agricultural Inputs and Services          | 939.6                 | 145.8                  | 251.4              | 1,445.1                           | 3,688.8  | 108.2        | 66.4        | 22.9      | 6,990.7          |
| Dairy Products                            | 555.9                 | 9.3                    | 38.5               | 197.5                             | 337.9    | 502.5        | 35.2        | 28.5      | 1,558.3          |
| Environmental Horticulture                | 2,355.4               | 442.5                  | 302.3              | 770.2                             | 1,945.5  | 527.6        | 176.9       | 127.2     | 6,902.1          |
| Field Crops                               | 147.8                 | 2.6                    | 5.4                | 67.3                              | 131.9    | 175.9        | 106.3       | 148.5     | 814.1            |
| Forest Products                           | 875.8                 | 76.3                   | 268.2              | 673.4                             | 1,179.6  | 3,054.4      | 1,584.9     | 726.8     | 8,612.7          |
| Fruits & Vegetables                       | 3,292.5               | 444.3                  | 2,507.3            | 1,461.9                           | 3,933.2  | 459.5        | 201.0       | 58.0      | 13,013.1         |
| Livestock and Meat Products               | 418.8                 | 18.4                   | 86.5               | 538.5                             | 704.2    | 958.3        | 97.8        | 297.5     | 2,859.2          |
| Mining                                    | 628.7                 | 661.5                  | 155.3              | 232.9                             | 1,565.8  | 397.6        | 158.6       | 240.2     | 4,254.8          |
| Other Food & Fiber Manufacturing          | 2,370.2               | 308.5                  | 57.9               | 1,328.0                           | 2,892.6  | 1,280.0      | 98.4        | 128.2     | 8,251.3          |
| Seafood Products                          | 256.9                 | 38.9                   | 17.3               | 417.0                             | 258.8    | 80.1         | 75.6        | 17.5      | 1,203.1          |
| Sugar & Confectionary Products            | 3,458.1               | 0.0                    | 3.3                | 41.2                              | 277.0    | 9.4          | 27.2        | 20.3      | 3,675.9          |
| Tobacco Products                          | 523.6                 | 0.0                    | 0.6                | 2,283.4                           | 0.1      | 49.5         | 6.7         | 569.2     | 3,436.9          |
| Total All Groups                          | 15,823.3              | 2,148.1                | 3,694.0            | 9,456.3                           | 16,915.4 | 7,603.0      | 2,635.0     | 2,384.8   | 61,572.1         |
| <b>Employment Impacts (jobs)</b>          |                       |                        |                    |                                   |          |              |             |           |                  |
| Agricultural Inputs and Services          | 29,398                | 4,647                  | 8,889              | 14,489                            | 41,517   | 2,626        | 1,971       | 513       | 107,595          |
| Dairy Products                            | 2,599                 | 59                     | 411                | 1,507                             | 1,681    | 3,829        | 324         | 302       | 8,791            |
| Environmental Horticulture                | 43,972                | 9,614                  | 7,752              | 16,245                            | 33,099   | 11,238       | 3,818       | 3,083     | 131,748          |
| Field Crops                               | 1,663                 | 61                     | 141                | 1,207                             | 2,415    | 3,227        | 2,092       | 2,307     | 13,297           |
| Forest Products                           | 7,138                 | 636                    | 3,022              | 4,277                             | 9,553    | 25,128       | 12,976      | 5,302     | 67,153           |
| Fruits & Vegetables                       | 34,271                | 7,129                  | 24,498             | 14,674                            | 38,527   | 5,643        | 2,355       | 683       | 133,189          |
| Livestock and Meat Products               | 3,414                 | 479                    | 1,367              | 6,786                             | 9,529    | 9,418        | 1,449       | 2,120     | 31,383           |
| Mining                                    | 5,255                 | 5,201                  | 1,422              | 2,226                             | 9,552    | 3,406        | 1,340       | 1,957     | 32,739           |
| Other Food & Fiber Manufacturing          | 13,730                | 2,059                  | 408                | 8,656                             | 18,453   | 11,445       | 662         | 836       | 52,730           |
| Seafood Products                          | 4,548                 | 840                    | 531                | 4,702                             | 4,469    | 1,277        | 1,820       | 503       | 18,868           |
| Sugar & Confectionary Products            | 25,797                | 0                      | 28                 | 315                               | 1,888    | 74           | 186         | 299       | 27,581           |
| Tobacco Products                          | 2,130                 | 0                      | 1                  | 13,625                            | 3        | 800          | 150         | 3,285     | 19,599           |
| Total All Groups                          | 173,914               | 30,723                 | 48,470             | 88,709                            | 170,686  | 78,111       | 29,144      | 21,191    | 644,673          |
| <b>Value Added Impacts (Million \$)*</b>  |                       |                        |                    |                                   |          |              |             |           |                  |
| Agricultural Inputs and Services          | 538.0                 | 80.6                   | 140.0              | 595.7                             | 1,708.0  | 53.5         | 34.7        | 14.0      | 3,365.0          |
| Dairy Products                            | 173.1                 | 3.4                    | 26.9               | 101.6                             | 138.0    | 208.5        | 23.0        | 22.4      | 610.8            |
| Environmental Horticulture                | 1,451.2               | 300.4                  | 202.2              | 529.8                             | 1,275.9  | 348.2        | 135.6       | 85.6      | 4,495.8          |
| Field Crops                               | 75.7                  | 1.6                    | 3.6                | 40.6                              | 84.9     | 96.3         | 81.2        | 100.7     | 497.4            |
| Forest Products                           | 363.1                 | 31.5                   | 184.4              | 259.2                             | 584.9    | 1,370.8      | 801.1       | 368.7     | 4,074.3          |
| Fruits & Vegetables                       | 1,618.5               | 315.2                  | 1,309.4            | 823.1                             | 1,960.8  | 277.2        | 136.3       | 42.7      | 6,897.5          |
| Livestock and Meat Products               | 111.2                 | 11.9                   | 42.9               | 183.0                             | 328.2    | 300.6        | 44.0        | 87.7      | 982.4            |
| Mining                                    | 276.5                 | 297.9                  | 84.7               | 75.7                              | 967.5    | 227.4        | 80.3        | 97.7      | 2,252.0          |
| Other Food & Fiber Manufacturing          | 1,052.2               | 124.7                  | 16.3               | 638.0                             | 1,435.1  | 379.0        | 42.8        | 62.6      | 3,641.9          |
| Seafood Products                          | 149.9                 | 22.6                   | 13.5               | 196.3                             | 143.5    | 28.8         | 44.9        | 14.1      | 639.1            |
| Sugar & Confectionary Products            | 1,572.0               | 0.0                    | 1.2                | 17.3                              | 122.6    | 3.2          | 9.1         | 16.8      | 1,624.9          |
| Tobacco Products                          | 220.2                 | 0.0                    | 0.2                | 1,182.9                           | 0.1      | 25.0         | 4.1         | 311.0     | 1,751.2          |
| Total All Groups                          | 7,601.7               | 1,189.8                | 2,025.4            | 4,643.2                           | 8,749.4  | 3,318.4      | 1,437.0     | 1,224.1   | 30,832.3         |
| <b>Labor Income Impacts (Million \$)*</b> |                       |                        |                    |                                   |          |              |             |           |                  |
| Agricultural Inputs and Services          | 388.5                 | 57.4                   | 101.2              | 392.1                             | 1,129.1  | 38.5         | 24.6        | 9.8       | 2,274.6          |
| Dairy Products                            | 128.8                 | 2.5                    | 21.4               | 75.7                              | 104.9    | 160.2        | 18.3        | 17.6      | 472.1            |
| Environmental Horticulture                | 929.0                 | 191.0                  | 128.2              | 338.9                             | 816.4    | 223.7        | 86.6        | 54.6      | 2,881.9          |
| Field Crops                               | 50.2                  | 1.1                    | 2.4                | 27.2                              | 56.3     | 63.6         | 54.2        | 67.7      | 332.0            |
| Forest Products                           | 246.0                 | 21.1                   | 94.6               | 181.4                             | 390.0    | 843.7        | 505.4       | 228.8     | 2,583.3          |
| Fruits & Vegetables                       | 1,072.9               | 215.9                  | 810.5              | 536.9                             | 1,266.2  | 191.7        | 89.5        | 28.7      | 4,498.5          |

**Table 6.** Total economic impacts of Florida agricultural and natural resource industry groups, by region 2000

| Ag. & Natural Resource Industry Group              | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota-Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|--|-----------------------|------------------------|--------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| Livestock and Meat Products                        | 85.1                  | 9.2                    | 32.8               | 143.8                             | 246.9   | 228.3        | 33.9        | 69.3      | 762.8            |
| Mining   | 160.1                 | 161.0                  | 51.0               | 40.8                              | 400.0   | 153.6        | 41.0        | 51.4      | 1,161.0          |
| Other Food & Fiber Manufacturing                   | 606.9                 | 78.3                   | 9.8                | 376.4                             | 794.3   | 242.0        | 21.7        | 39.6      | 2,089.7          |
| Seafood Products                                   | 101.1                 | 15.0                   | 8.6                | 139.0                             | 96.6    | 19.3         | 29.5        | 9.1       | 435.2            |
| Sugar & Confectionary Products                     | 984.7                 | 0.0                    | 0.7                | 10.2                              | 71.4    | 2.2          | 6.0         | 9.5       | 1,009.5          |
| Tobacco Products                                   | 84.8                  | 0.0                    | 0.0                | 530.8                             | 0.0     | 14.3         | 2.4         | 139.9     | 775.6            |
| Total All Groups                                   | 4,838.1               | 752.6                  | 1,261.3            | 2,793.2                           | 5,372.2 | 2,181.2      | 913.1       | 726.0     | 19,276.4         |
| <b>Indirect Business Tax Impacts (Million \$)*</b> |                       |                        |                    |                                   |         |              |             |           |                  |
| Agricultural Inputs and Services                   | 32.4                  | 4.9                    | 8.3                | 41.6                              | 110.9   | 3.0          | 2.1         | 0.8       | 216.5            |
| Dairy Products                                     | 8.3                   | 0.1                    | 1.1                | 4.7                               | 6.0     | 9.1          | 0.8         | 0.8       | 24.5             |
| Environmental Horticulture                         | 72.9                  | 14.0                   | 8.8                | 24.0                              | 59.9    | 15.2         | 4.5         | 3.6       | 214.4            |
| Field Crops  | 6.1                   | 0.1                    | 0.3                | 3.0                               | 6.6     | 6.6          | 6.1         | 7.1       | 38.1             |
| Forest Products                                    | 23.0                  | 2.0                    | 20.4               | 14.5                              | 39.7    | 89.5         | 46.0        | 19.0      | 276.8            |
| Fruits & Vegetables                                | 115.6                 | 19.3                   | 79.7               | 53.9                              | 138.2   | 14.8         | 6.4         | 1.9       | 458.0            |
| Livestock and Meat Products                        | 6.8                   | 0.8                    | 2.9                | 9.6                               | 19.9    | 14.3         | 2.4         | 3.7       | 52.0             |
| Mining   | 24.0                  | 25.5                   | 6.8                | 6.5                               | 71.6    | 26.0         | 5.5         | 8.0       | 184.8            |
| Other Food & Fiber Manufacturing                   | 94.6                  | 6.6                    | 0.8                | 54.0                              | 210.9   | 42.5         | 8.7         | 1.9       | 409.1            |
| Seafood Products                                   | 8.9                   | 1.3                    | 0.7                | 12.9                              | 8.7     | 1.8          | 2.3         | 0.6       | 39.2             |
| Sugar & Confectionary Products                     | 119.6                 | 0.0                    | 0.1                | 1.2                               | 7.9     | 0.2          | 0.7         | 1.1       | 118.7            |
| Tobacco Products                                   | 102.6                 | 0.0                    | 0.2                | 492.2                             | 0.0     | 3.5          | 0.4         | 126.1     | 724.9            |
| Total All Groups                                   | 614.9                 | 74.6                   | 130.0              | 718.0                             | 680.3   | 226.5        | 85.9        | 174.5     | 2,757.1          |

Source: Implan data for Florida, MIG, Inc., Stillwater MN

\* Values expressed in year 2002 dollars (millions) based on US GDP Implicit Price Deflator.

Total impacts represent direct impacts plus indirect and induced multiplier effects of export sales (shipments outside region)

## Per-Capita Impacts

Due to differences in overall area and varying populations across regions, it is meaningful to analyze economic impacts of the agricultural and natural resource industries in Florida on a per-capita basis. Average per-capita total output impacts for the state of Florida in 2000 were \$3,853, expressed in year 2002 dollars (Table 7). Regionally, per-capita output impacts were above average for the Jacksonville area (\$4,679), Tallahassee (\$4,409), Sarasota-Bradenton (\$4,836), Orlando (\$4,667) and Tampa-St. Petersburg-Clearwater (\$3,947), while per capita output impacts were below average for Miami-Ft. Lauderdale (\$2,824), Fort Meyers-Cape Coral (\$3,103), and Pensacola (\$3,598).

Total employment impacts of the agricultural and natural resource industries were expressed on the basis of jobs per 1000 population (Table 7). The overall statewide average was 40 jobs per 1000 population. Again, employment impacts were above average for the regions of Jacksonville (48), Sarasota-Bradenton (63), Tallahassee (49), Orlando (47), and Ft. Myers-Cape Coral (44), while they were below average for Miami-Ft. Lauderdale (31), Tampa-St. Petersburg-Clearwater (33), and Pensacola (32).

Value added impacts per-capita averaged \$1,929 statewide in 2000 (Table 7). Sarasota-Bradenton had the highest per capita value added impact at \$2,652. Other regions with above-average value added impacts were Jacksonville (\$2,042), Tallahassee (\$2,404), and Orlando (\$2,414). The Miami-Ft. Lauderdale region exhibited the lowest per-capita value added impacts with at \$1,357, and other regions with below-state-average impacts were Ft. Myers-Cape Coral (\$1,719), and Pensacola (\$1,847), while the Tampa-St. Petersburg-Clearwater region had per capita value added impacts close to the statewide average (\$1,938). It is interesting to note that more than a two-fold difference in per-capita value added impacts exists between the regions with the highest (Sarasota-Bradenton) and lowest (Miami-Ft. Lauderdale) values. In general, the agricultural and natural resource industries are much larger in the urbanized areas of central and south Florida, however, their relative importance is greater in the regions of north Florida.

**Table 7.** Per-capita impacts of agricultural and natural resource industry groups in Florida, by region, 2000

| Region                            | Output Impacts Per Capita (\$*) | Employment Impacts Per 1000 Population (jobs) | Value Added Impacts Per Capita (\$*) |
|-----------------------------------|---------------------------------|---|--------------------------------------|
| Miami, Ft. Lauderdale             | 2,824                           | 31  | 1,357                                |
| Ft. Myers, Cape Coral             | 3,103                           | 44  | 1,719                                |
| Sarasota, Bradenton               | 4,836                           | 63  | 2,652                                |
| Tampa, St. Petersburg, Clearwater | 3,947                           | 37  | 1,938                                |
| Orlando                           | 4,667                           | 47  | 2,414                                |
| Jacksonville                      | 4,679                           | 48  | 2,042                                |
| Tallahassee                       | 4,409                           | 49  | 2,404                                |
| Pensacola                         | 3,598                           | 32  | 1,847                                |
| Florida                           | 3,853                           | 40  | 1,929                                |

\* Values expressed in year 2002 dollars based on US GDP Implicit Price Deflator.

### Share of Gross Regional Product

Another useful indicator of the importance of the agricultural and natural resource industries in Florida is their share of the Gross Regional Product (GRP), or sum of direct value added for all industries in the region. For the state of Florida in 2000, gross regional product was \$484 billion (year 2002 dollars), and the \$14.7 in value added by agriculture and natural resources represents 3.0 percent of this (Table 8). The GRP was \$181Bn in the Miami-Ft. Lauderdale region, \$107Bn in Orlando, \$72Bn in Tampa-St. Petersburg-Clearwater, \$44Bn in Jacksonville, and \$19Bn to \$20Bn in the remaining regions. The regions with the highest share of GRP in agriculture and nature resources were Sarasota-Bradenton (5.4%), Tallahassee (4.2%), Orlando (4.0%), and Ft. Meyers-Cape Coral (3.5%), while the major urbanized region of Miami-Ft. Lauderdale had a significantly lower share of GRP (2.0%), and the remaining regions were close to the overall state average (Tampa-St. Petersburg-Clearwater, Jacksonville, Pensacola).

**Table 8.** Gross Regional Product of Florida Agricultural & Natural Resource Industries and All Industries, by Economic Region, 2000

| Region                            | Gross Regional Product (Bill. \$*) | Agricultural & Natural Resource Industry Value Added (Mill. \$*) | Share of Gross Regional Product |
|-----------------------------------|------------------------------------|--|---------------------------------|
| Miami, Ft. Lauderdale             | 180.6                              | 3,553.0  | 2.0%                            |
| Ft. Myers, Cape Coral             | 20.0                               | 700.1  | 3.5%                            |
| Sarasota, Bradenton               | 20.1                               | 1,095.0  | 5.4%                            |
| Tampa, St. Petersburg, Clearwater | 72.4                               | 2,201.0  | 3.0%                            |
| Orlando                           | 107.2                              | 4,306.7  | 4.0%                            |
| Jacksonville                      | 44.2                               | 1,467.1  | 3.3%                            |
| Tallahassee                       | 18.6                               | 782.4  | 4.2%                            |
| Pensacola                         | 21.2                               | 596.8  | 2.8%                            |
| Florida                           | 484.2                              | 14,702.2   | 3.0%                            |

Source: Implan data for Florida, MIG, Inc., Stillwater MN  
 \* Year 2002 dollars, US GDP Implicit Price Deflator.  
 Gross regional product represents sum of value added for all industries.

## Conclusions

This study examined the regional impacts of Florida's agricultural and natural resource industries across eight functional economic regions as defined by the Bureau of Economic Analysis. Florida's agricultural and natural resource industries had total output of \$35.0 billion (Bn), employment of over 336,000 persons, value added of \$14.7 billion in value added, and exports of \$20.7 Bn in 2000. Output grew by 5 percent between 1995 and 2000, in inflation-adjusted terms. Economic activity generated due to the indirect and induced multiplier effects of export earnings brought about total impacts of \$61.6Bn in output, 645,000 jobs, \$30.8Bn in total value added, \$19.3Bn in labor income, and \$2.8Bn in indirect business taxes paid to governments. Statewide, the agricultural and natural resource industries accounted for 3.0 percent of state Gross Regional Product in 2000. The state's largest region for agriculture and natural resources was Orlando, with \$8.7Bn in value added impacts, followed by Miami-Fort Lauderdale (\$7.6Bn), Tampa-St. Petersburg-Clearwater (\$4.6Bn) Jacksonville (\$3.3Bn), Sarasota-Bradenton (\$2.0Bn), Tallahassee (\$1.4Bn), Ft. Myers-Cape Coral (\$1.2Bn), and Pensacola (\$1.2Bn). The Jacksonville, Tallahassee, Sarasota-Bradenton, and Orlando regions had greater economic impacts per-capita than the state as a whole, with a two-fold difference existing between the regions with highest and lowest per-capita value added impacts.

## **Literature and Information Sources Cited**

Bureau of Economic Analysis. Gross Domestic Product Implicit Price Deflator. United States Department of Commerce, Washington, DC.

Hodges, Alan W., W. David Mulkey, and Effie Philippakos. Economic impact of Florida's agricultural and natural resource industries. *Economic Information Report EI 00-4*, University of Florida, Food & Resource Economics Department, 35 p., 2000

*Implan Professional*, Version 2.0, Social Accounting and Impact Analysis Software, User's Guide, Analysis Guide and Data Guide, 1999. MIG, Inc., Stillwater, MN.

*Implan* data for Florida counties (2000). MIG, Inc., Stillwater, MN, 2003.

Johnson, K.P. Redefinition of the BEA Economic Areas. *Survey of Current Business*. Feb. 1995, pp. 75-81.

Miller, R.E. and P.D. Blair. *Input-Output Analysis: Foundations and Extensions*. Prentice-Hall, Englewood Cliffs, New Jersey, 464 p., 1985.

Mulkey, W.D. and A.W. Hodges. Using IMPLAN to assess local economic impacts. University of Florida Extension Electronic Document FE168, 2000. Available at <http://edis.ifas.ufl.edu>.

**Appendix Table**  
**Output of Agricultural and Natural Resource Industries in Florida, by Sector and Region, 2000**

| Industry                                 | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota, Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|--|-----------------------|------------------------|---------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| <b>Agricultural Inputs and Services</b>  |                       |                        |                     |                                   |         |              |             |           |                  |
| Agricultural, Forestry, Fishery Services | 494.8                 | 70.4                   | 142.0               | 76.5                              | 375.1   | 42.7         | 27.1        | 8.4       | 1,236.9          |
| Nitrogenous and Phosphatic Fertilizers   | 12.0                  | 0.0                    | 4.5                 | 553.5                             | 1,209.1 | 10.6         | 5.4         | 1.6       | 1,796.7          |
| Fertilizers, Mixing Only                 | 46.7                  | 13.9                   | 8.4                 | 47.2                              | 215.2   | 10.4         | 4.2         | 0.5       | 346.5            |
| Agricultural Chemicals, N.E.C            | 5.4                   | 2.6                    | 0.7                 | 7.7                               | 75.6    | 1.6          | 0.1         | 0.1       | 94.0             |
| <b>Dairy Products</b>                    |                       |                        |                     |                                   |         |              |             |           |                  |
| Dairy Farm Products                      | 87.5                  | 1.2                    | 18.5                | 37.2                              | 70.0    | 141.5        | 14.9        | 12.7      | 383.6            |
| Creamery Butter                          | 47.4                  | 0.0                    | 0.0                 | 0.0                               | 3.4     | 9.2          | 2.0         | 0.0       | 62.0             |
| Cheese, Natural and Processed            | 13.2                  | 0.0                    | 0.0                 | 0.0                               | 6.8     | 0.0          | 0.0         | 0.0       | 19.9             |
| Condensed and Evaporated Milk            | 0.0                   | 0.0                    | 1.5                 | 6.3                               | 0.0     | 0.0          | 0.0         | 0.0       | 7.8              |
| Ice Cream and Frozen Desserts            | 6.6                   | 6.5                    | 0.2                 | 59.8                              | 0.7     | 0.2          | 0.3         | 0.0       | 74.3             |
| Fluid Milk                               | 289.6                 | 0.0                    | 0.0                 | 17.3                              | 177.5   | 165.7        | 3.4         | 0.0       | 653.5            |
| <b>Environmental Horticulture</b>        |                       |                        |                     |                                   |         |              |             |           |                  |
| Greenhouse and Nursery Products          | 548.8                 | 76.3                   | 64.1                | 183.3                             | 628.6   | 93.9         | 73.9        | 15.9      | 1,684.6          |
| Landscape and Horticultural Services     | 871.6                 | 202.5                  | 143.4               | 281.5                             | 466.1   | 229.6        | 53.8        | 72.7      | 2,321.1          |
| <b>Field Crops</b>                       |                       |                        |                     |                                   |         |              |             |           |                  |
| Cotton                                   | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 2.1          | 10.3        | 15.5      | 27.9             |
| Food Grains                              | 0.6                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.2         | 0.1       | 1.0              |
| Feed Grains                              | 0.1                   | 0.0                    | 0.3                 | 0.0                               | 0.3     | 6.7          | 8.3         | 4.4       | 20.2             |
| Hay and Pasture                          | 3.1                   | 0.1                    | 1.2                 | 6.8                               | 13.3    | 19.0         | 6.8         | 7.5       | 57.8             |
| Grass Seeds                              | 0.0                   | 0.0                    | 0.0                 | 1.8                               | 6.4     | 3.3          | 0.1         | 0.0       | 11.5             |
| Miscellaneous Crops                      | 10.3                  | 1.3                    | 1.4                 | 4.5                               | 6.7     | 2.7          | 0.8         | 1.1       | 28.7             |
| Oil Bearing Crops                        | 0.1                   | 0.0                    | 0.0                 | 0.0                               | 1.9     | 9.5          | 25.0        | 19.1      | 55.5             |
| Flour and Other Grain Mill Products      | 12.1                  | 0.0                    | 0.0                 | 4.6                               | 2.2     | 9.5          | 0.4         | 17.6      | 46.4             |
| Cereal Preparations                      | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 0.0       | 0.0              |
| Rice Milling                             | 4.4                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 0.0       | 4.4              |
| Blended and Prepared Flour               | 10.8                  | 0.0                    | 0.0                 | 0.0                               | 1.8     | 0.0          | 0.0         | 1.4       | 14.0             |
| Animal and Marine Fats and Oils          | 5.8                   | 0.0                    | 0.0                 | 5.7                               | 1.0     | 32.4         | 0.2         | 0.0       | 45.1             |
| Shortening and Cooking Oils              | 5.0                   | 0.0                    | 0.0                 | 0.0                               | 0.3     | 0.0          | 0.0         | 0.0       | 5.3              |
| <b>Forest Products</b>                   |                       |                        |                     |                                   |         |              |             |           |                  |
| Forest Products                          | 2.5                   | 0.1                    | 1.3                 | 2.6                               | 11.4    | 18.5         | 17.9        | 11.5      | 65.7             |
| Forestry Products                        | 34.6                  | 4.9                    | 93.7                | 11.4                              | 76.0    | 119.9        | 43.5        | 5.8       | 389.8            |
| Logging Camps and Logging Contractors    | 32.4                  | 6.7                    | 0.3                 | 2.6                               | 26.6    | 159.8        | 124.0       | 28.5      | 380.9            |
| Sawmills and Planing Mills, General      | 33.6                  | 1.5                    | 0.0                 | 6.3                               | 29.8    | 218.4        | 73.6        | 12.4      | 375.5            |
| Hardwood Dimension and Flooring Mills    | 16.8                  | 0.8                    | 0.1                 | 0.0                               | 0.2     | 0.7          | 0.5         | 0.0       | 19.2             |
| Special Product Sawmills, N.E.C          | 13.1                  | 0.0                    | 0.0                 | 0.0                               | 0.3     | 2.1          | 0.0         | 0.0       | 15.5             |
| Veneer and Plywood                       | 7.1                   | 0.0                    | 0.0                 | 0.0                               | 6.0     | 25.4         | 110.2       | 0.0       | 148.8            |
| Structural Wood Members, N.E.C           | 177.5                 | 31.1                   | 10.0                | 51.4                              | 185.5   | 90.5         | 85.4        | 18.8      | 650.3            |
| Wood Containers                          | 3.6                   | 0.0                    | 0.2                 | 4.3                               | 14.0    | 13.1         | 0.8         | 0.0       | 35.9             |
| Wood Pallets and Skids                   | 8.4                   | 0.2                    | 0.2                 | 6.3                               | 39.2    | 6.8          | 0.2         | 3.0       | 64.4             |

**Appendix Table**  
**Output of Agricultural and Natural Resource Industries in Florida, by Sector and Region, 2000**

| Industry                             | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota, Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|--------------------------------------|-----------------------|------------------------|---------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| Wood Preserving                      | 12.9                  | 12.5                   | 0.0                 | 65.4                              | 39.2    | 58.6         | 4.6         | 0.4       | 193.6            |
| Reconstituted Wood Products          | 17.9                  | 0.0                    | 3.2                 | 10.7                              | 0.0     | 3.4          | 0.0         | 0.0       | 35.2             |
| Wood Products, N.E.C.                | 29.7                  | 1.8                    | 10.8                | 13.1                              | 18.4    | 5.9          | 1.7         | 0.5       | 81.8             |
| Pulp Mills                           | 0.2                   | 0.0                    | 0.0                 | 0.0                               | 2.1     | 2.0          | 158.2       | 0.6       | 163.2            |
| Paper Mills, Except Building Paper   | 23.4                  | 0.0                    | 1.8                 | 3.6                               | 22.9    | 44.4         | 258.7       | 230.9     | 585.8            |
| Paperboard Mills                     | 5.9                   | 0.0                    | 0.4                 | 0.0                               | 16.0    | 583.5        | 3.9         | 0.5       | 610.2            |
| Paperboard Containers and Boxes      | 150.4                 | 0.4                    | 10.2                | 294.7                             | 226.6   | 233.9        | 2.3         | 4.0       | 922.6            |
| Paper Coated & Laminated Packaging   | 1.0                   | 0.0                    | 0.0                 | 35.5                              | 32.1    | 4.2          | 0.4         | 4.6       | 77.7             |
| Paper Coated & Laminated N.E.C.      | 8.0                   | 0.0                    | 5.8                 | 0.9                               | 0.8     | 4.0          | 0.0         | 0.0       | 19.4             |
| Bags, Paper                          | 1.1                   | 0.0                    | 0.1                 | 9.8                               | 2.9     | 42.4         | 0.3         | 27.5      | 84.1             |
| Die-cut Paper and Board              | 16.8                  | 0.0                    | 0.0                 | 1.1                               | 10.6    | 1.7          | 0.2         | 0.1       | 30.6             |
| Gum and Wood Chemicals               | 1.5                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 35.1      | 36.6             |
| <b>Fruits &amp; Vegetables</b>       |                       |                        |                     |                                   |         |              |             |           |                  |
| Fruits                               | 729.7                 | 92.8                   | 259.5               | 115.2                             | 646.6   | 9.3          | 3.6         | 2.1       | 1,858.9          |
| Tree Nuts                            | 2.6                   | 0.0                    | 0.0                 | 0.5                               | 2.2     | 23.8         | 19.4        | 8.9       | 57.5             |
| Vegetables                           | 587.6                 | 145.7                  | 172.1               | 92.4                              | 203.5   | 186.2        | 53.7        | 14.1      | 1,455.2          |
| Canned Specialties                   | 4.6                   | 0.0                    | 0.4                 | 0.3                               | 5.2     | 0.0          | 0.0         | 0.0       | 10.5             |
| Canned Fruits and Vegetables         | 91.0                  | 0.0                    | 880.7               | 80.6                              | 169.9   | 3.0          | 3.8         | 0.0       | 1,229.0          |
| Dehydrated Food Products             | 1.4                   | 0.0                    | 0.0                 | 29.9                              | 0.0     | 0.1          | 0.1         | 0.0       | 31.5             |
| Pickles, Sauces, and Salad Dressings | 79.4                  | 0.0                    | 0.0                 | 0.6                               | 61.6    | 2.4          | 10.7        | 8.7       | 163.4            |
| Frozen Fruits, Juices and Vegetables | 111.8                 | 1.3                    | 43.0                | 314.6                             | 625.0   | 3.1          | 4.7         | 0.0       | 1,103.6          |
| Frozen Specialties                   | 20.8                  | 0.0                    | 0.0                 | 52.1                              | 8.6     | 0.1          | 0.4         | 0.0       | 82.0             |
| Potato Chips & Similar Snacks        | 2.2                   | 0.0                    | 0.0                 | 15.3                              | 192.2   | 2.0          | 26.4        | 0.5       | 238.6            |
| <b>Livestock and Meat Products</b>   |                       |                        |                     |                                   |         |              |             |           |                  |
| Poultry and Eggs                     | 4.3                   | 0.9                    | 9.3                 | 39.1                              | 55.5    | 166.3        | 19.8        | 41.3      | 336.5            |
| Ranch Fed Cattle                     | 38.8                  | 4.2                    | 22.2                | 23.5                              | 80.6    | 49.9         | 17.6        | 12.7      | 249.5            |
| Range Fed Cattle                     | 35.3                  | 3.3                    | 12.2                | 5.1                               | 42.4    | 5.4          | 1.1         | 0.6       | 105.3            |
| Cattle Feedlots                      | 0.3                   | 0.0                    | 0.5                 | 0.7                               | 1.5     | 1.1          | 0.3         | 0.6       | 5.0              |
| Sheep, Lambs and Goats               | (0.0)                 | 0.0                    | 0.0                 | 0.0                               | 0.1     | 0.1          | 0.0         | 0.0       | 0.1              |
| Hogs, Pigs and Swine                 | 0.1                   | 0.0                    | 0.4                 | 1.1                               | 1.0     | 1.5          | 2.8         | 0.4       | 7.2              |
| Other Meat Animal Products           | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 0.0       | 0.0              |
| Miscellaneous Livestock              | 24.9                  | 2.6                    | 7.0                 | 53.9                              | 155.1   | 21.6         | 6.4         | 2.2       | 273.6            |
| Meat Packing Plants                  | 108.0                 | 0.0                    | 2.4                 | 295.7                             | 43.7    | 41.3         | 15.1        | 70.0      | 576.2            |
| Sausages and Other Prepared Meats    | 114.6                 | 0.0                    | 0.0                 | 34.3                              | 62.4    | 26.0         | 6.5         | 65.9      | 309.9            |
| Poultry Processing                   | 14.8                  | 0.0                    | 0.0                 | 0.3                               | 0.1     | 328.1        | 2.0         | 65.5      | 410.8            |
| <b>Mining</b>                        |                       |                        |                     |                                   |         |              |             |           |                  |
| Metal Mining Services                | 0.0                   | 0.0                    | 0.0                 | 0.4                               | 0.1     | 0.0          | 0.0         | 0.0       | 0.5              |
| Metal Ores, Not Elsewhere Classified | 1.5                   | 0.0                    | 0.0                 | 0.0                               | 16.9    | 52.9         | 0.0         | 0.1       | 71.4             |
| Coal Mining                          | 9.8                   | 5.4                    | 7.3                 | 0.2                               | 15.2    | 68.0         | 0.2         | 0.4       | 106.5            |
| Natural Gas & Crude Petroleum        | 237.2                 | 253.1                  | 22.4                | 128.0                             | 47.7    | 39.0         | 47.8        | 123.8     | 899.1            |

**Appendix Table**  
**Output of Agricultural and Natural Resource Industries in Florida, by Sector and Region, 2000**

| Industry                                    | Miami, Ft. Lauderdale | Ft. Meyers, Cape Coral | Sarasota, Bradenton | Tampa, St. Petersburg, Clearwater | Orlando | Jacksonville | Tallahassee | Pensacola | State of Florida |
|---|-----------------------|------------------------|---------------------|-----------------------------------|---------|--------------|-------------|-----------|------------------|
| Natural Gas Liquids                         | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 51.1    | 0.0          | 0.0         | 0.0       | 51.1             |
| Dimension Stone                             | 39.1                  | 110.2                  | 53.6                | 8.5                               | 26.4    | 39.2         | 4.9         | 0.1       | 281.9            |
| Sand and Gravel                             | 30.6                  | 0.8                    | 4.5                 | 8.9                               | 24.2    | 2.3          | 4.5         | 5.3       | 81.0             |
| Clay, Ceramic, Refractory Minerals          | 1.6                   | 0.0                    | 0.0                 | 0.0                               | 0.1     | 12.6         | 33.2        | 0.0       | 47.6             |
| Potash, Soda, and Borate Minerals           | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.4     | 0.0          | 0.0         | 0.0       | 0.4              |
| Phosphate Rock                              | 0.2                   | 0.0                    | 0.3                 | 4.9                               | 772.7   | 1.3          | 15.3        | 0.6       | 795.2            |
| Chemical, Fertilizer Mineral Mining         | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.5          | 0.0         | 0.0       | 0.5              |
| Nonmetallic Minerals (Exc. Fuels) Service   | 0.0                   | 0.2                    | 0.0                 | 0.0                               | 0.2     | 0.9          | 0.2         | 0.0       | 1.4              |
| Misc. Nonmetallic Minerals, N.E.C.          | 3.0                   | 1.2                    | 0.0                 | 1.5                               | 38.7    | 5.0          | 1.7         | 0.0       | 51.1             |
| <b>Other Food &amp; Fiber Manufacturing</b> |                       |                        |                     |                                   |         |              |             |           |                  |
| Dog, Cat, and Other Pet Food                | 10.6                  | 0.0                    | 0.0                 | 0.0                               | 8.1     | 0.0          | 0.0         | 0.0       | 18.7             |
| Prepared Feeds, N.E.C                       | 24.5                  | 0.0                    | 0.0                 | 9.4                               | 155.1   | 26.0         | 1.7         | 8.0       | 224.6            |
| Bread, Cake, and Related Products           | 268.9                 | 115.5                  | 46.7                | 66.1                              | 208.0   | 55.1         | 3.2         | 63.6      | 827.1            |
| Cookies and Crackers                        | 27.4                  | 0.0                    | 0.0                 | 41.4                              | 66.9    | 0.4          | 0.5         | 0.0       | 136.6            |
| Malt Beverages                              | 59.0                  | 0.0                    | 0.0                 | 84.8                              | 275.4   | 62.4         | 3.3         | 0.0       | 484.9            |
| Wines, Brandy, and Brandy Spirits           | 0.9                   | 0.0                    | 1.8                 | 0.0                               | 2.8     | 0.0          | 0.0         | 0.0       | 5.5              |
| Distilled Liquor, Except Brandy             | 41.3                  | 0.0                    | 0.0                 | 0.0                               | 146.9   | 15.1         | 11.6        | 0.0       | 214.9            |
| Bottled and Canned Soft Drinks & Water      | 703.4                 | 85.7                   | 0.0                 | 422.0                             | 514.0   | 261.0        | 10.7        | 0.0       | 1,996.7          |
| Flavoring Extracts and Syrups, N.E.C.       | 5.0                   | 0.0                    | 0.0                 | 6.5                               | 145.2   | 0.2          | 4.6         | 0.0       | 161.5            |
| Roasted Coffee                              | 206.0                 | 0.0                    | 0.0                 | 43.3                              | 2.5     | 198.6        | 2.5         | 0.0       | 453.0            |
| Manufactured Ice                            | 1.3                   | 0.8                    | 0.0                 | 3.3                               | 5.2     | 0.8          | 0.2         | 13.7      | 25.4             |
| Macaroni and Spaghetti                      | 8.1                   | 0.0                    | 0.0                 | 0.6                               | 0.0     | 0.0          | 0.1         | 0.0       | 8.7              |
| Food Preparations, N.E.C                    | 70.8                  | 2.5                    | 4.1                 | 29.9                              | 36.9    | 29.0         | 29.0        | 13.3      | 215.7            |
| <b>Seafood Products</b>                     |                       |                        |                     |                                   |         |              |             |           |                  |
| Commercial Fishing                          | 50.2                  | 10.6                   | 8.8                 | 17.0                              | 50.3    | 8.4          | 22.0        | 8.1       | 175.3            |
| Canned and Cured Sea Foods                  | 40.6                  | 0.0                    | 0.0                 | 0.9                               | 5.0     | 0.9          | 0.2         | 0.0       | 47.6             |
| Prepared Fresh Or Frozen Fish Or Seafood    | 44.0                  | 11.8                   | 0.0                 | 203.8                             | 81.1    | 38.0         | 20.8        | 0.0       | 399.4            |
| <b>Sugar &amp; Confectionary Products</b>   |                       |                        |                     |                                   |         |              |             |           |                  |
| Sugar Crops                                 | 430.5                 | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.1          | 0.3         | 8.9       | 439.9            |
| Sugar                                       | 1,171.7               | 0.0                    | 0.0                 | 0.0                               | 0.5     | 4.3          | 10.5        | 0.0       | 1,186.9          |
| Confectionery Products                      | 5.2                   | 0.0                    | 1.6                 | 19.8                              | 126.9   | 0.4          | 0.3         | 0.0       | 154.0            |
| Chocolate and Cocoa Products                | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 14.9    | 0.0          | 4.7         | 0.0       | 19.6             |
| <b>Tobacco Products</b>                     |                       |                        |                     |                                   |         |              |             |           |                  |
| Tobacco                                     | 0.0                   | 0.0                    | 0.0                 | 0.0                               | 0.1     | 21.2         | 3.5         | 0.0       | 24.8             |
| Cigarettes                                  | 85.7                  | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 0.0       | 85.7             |
| Cigars                                      | 225.8                 | 0.0                    | 0.6                 | 1,043.0                           | 0.0     | 4.2          | 0.0         | 272.7     | 1,546.3          |
| Chewing and Smoking Tobacco                 | 7.0                   | 0.0                    | 0.0                 | 0.0                               | 0.0     | 0.0          | 0.0         | 0.0       | 7.0              |

Source: Implan data for Florida Counties, MIG, Inc., Stillwater MN