

Economic Contributions of Agribusiness and Food Industries in Hillsborough County, Florida

**Sponsored Project Report to
Hillsborough County Economic Development Department**

Alan W. Hodges, Ph.D., Extension Scientist

Thomas J. Stevens, Ph.D., Research Associate

University of Florida-IFAS, Food and Resource Economics Department

Gainesville, Florida

February 18, 2016



Contents

Contents	1
Executive Summary	2
Introduction	4
Methods and Data Sources	4
Hillsborough County Overview	6
Hillsborough County Demographics	8
Hillsborough County Industry Profile	11
Characteristics of Agriculture in Hillsborough County	15
Direct Output and Employment by Agriculture, Natural Resources and Food Industries	19
Industry Group Results for 2013	19
Trends in Industry Group Activity.....	21
Total Economic Contributions of Agriculture, Natural Resources and Food Industries	27
Summary of Economic Contributions by Industry Groups	27
Economic Contributions by Individual Industry Sectors.....	30
Trends in Industry Sector Contributions.....	35
Economic Contributions of Food and Fiber Commodity Groups	40
Commodity Based Summary Contributions	40
Trends in Food and Fiber Commodity Group Contributions.....	42
Imputed Multipliers.....	47
Discussion and Conclusions.....	49
Literature and Information Sources Cited.....	50
Appendix A: Glossary of Regional Economic Terminology	52

Economic Contributions of Agribusiness and Food Industries in Hillsborough County, Florida

Executive Summary

This report presents the findings of an assessment of the economic contributions of agribusiness and food industries in Hillsborough County, Florida, commissioned by the Hillsborough County Economic Development Department. The county has a long heritage of agriculture and related industries dating back to the 1800s. In recent years, the county experienced rapid population growth and development, with population reaching 1.23 million persons, representing a 2.5 fold increase since 1970. The economy of Hillsborough County is closely tied to the national and global economies through its transportation infrastructure and trade, tourism, and finance sectors.

Hillsborough County is noted for production of fruits and berries, nursery and greenhouse products, vegetables and ornamental fish. The county ranked first in the state in strawberry production, valued at \$120 million (2012 Census of Agriculture). The county currently has around 215,000 acres of farmland.

The total economic contributions of Agriculture, Natural Resources and Food (ANRF) industries were evaluated using the IMPLAN regional economic impact modeling software and associated data (Implan Group, LLC), which allows estimation of the indirect and induced multiplier effects of economic activity. A summary of the estimated contributions of ANRF industries in 2013, including multiplier effects, is shown in Table ES1. Total employment contributions were estimated at 168,654 fulltime and part-time jobs, representing 20.7 percent of the county workforce. The total output or revenue contributions were estimated at \$22.46 billion, and value added contributions were estimated at \$11.28 billion, representing 16.0 percent of county Gross Domestic Product (GDP). Labor income contributions (employee wages, salaries, benefits and proprietor income) were \$7.11 billion, and contributions to local, state and federal taxes on production and imports were \$1.05 billion.

The ANRF industries were classified into seven groups: Agricultural Inputs and Services; Crop, Livestock, Forestry and Fisheries Production; Food and Kindred Products Manufacturing; Forest Products Manufacturing; Food and Kindred Products Distribution; Mining; Nature based Recreation. Among these industries, Food and Kindred Products Distribution was by the largest, representing over half of total economic contributions. Food and Kindred Products Manufacturing and Agricultural Inputs and Services were the second and third largest groups, respectively, in terms of output and GDP contributions. Crop, Livestock, Forestry and Fisheries production, generally recognized as production agriculture, contributed 17,525 jobs, \$1.01 billion in output, and \$665 million in GDP. Excluding the Food and Kindred Product Distribution industry group, and certain food manufacturing sectors that do not have a strong linkage to commodity production in the county, total economic contributions were 49,976 jobs, \$7.91 billion in industry output, \$3.43 billion in GDP, and \$199 million in business taxes (subtotal line in Table ES1).

Between 2001 and 2013, employment contributions by ARNF industries peaked in 2006-07, then declined during the global recession due to reduced domestic and international exports, and recovered strongly in 2012-13 (Figure ES1).

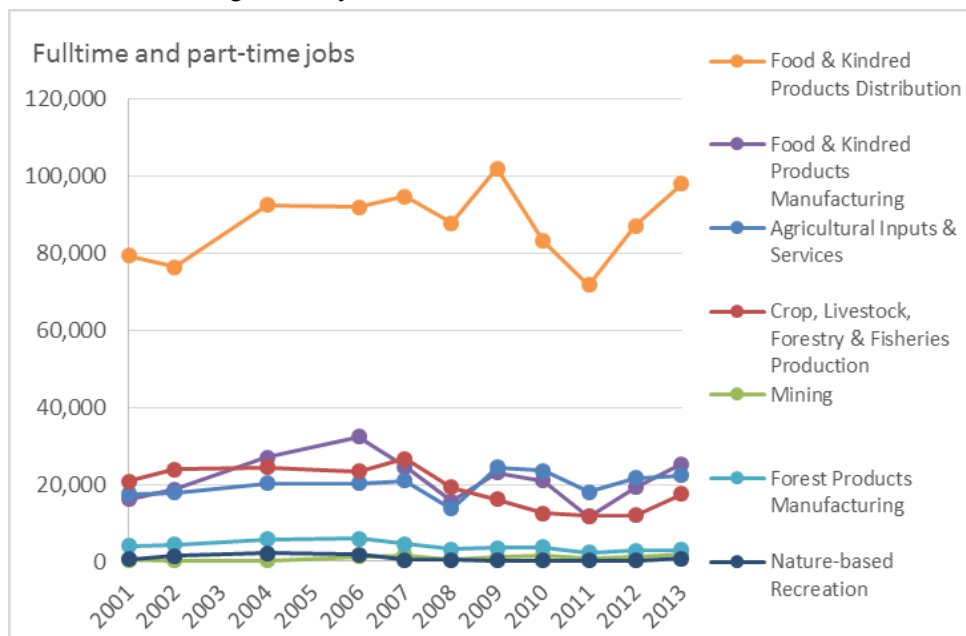
While production agriculture itself no longer constitutes a large share of the county’s economy, it still serves as the basis for a much larger industry for food products and related services through the food manufacturing and distribution sectors.

Table ES1. Summary of total economic contributions of agriculture, natural resources, and food industries in Hillsborough County, Florida, 2013

Industry Group / Sector	Employment (Jobs)	Industry Output (\$M)	Value Added (\$M)	Labor Income (\$M)	Other Property Income (\$M)	Business Taxes (\$M)
Crop, Livestock, Forestry & Fisheries Production	17,526	1,005	665	455	182	28
Agricultural Inputs & Services	22,299	4,789	1,910	1,158	638	114
Forest Products Manufacturing	2,972	644	262	174	70	18
Food & Kindred Products Manufacturing: Core Sectors	4,579	1,111	391	238	125	29
Mining	1,799	311	174	92	72	10
Nature-based Recreation	803	47	26	19	6	1
Subtotal	<u>49,976</u>	<u>7,906</u>	<u>3,429</u>	<u>2,137</u>	<u>1,093</u>	<u>199</u>
Food & Kindred Products Manufacturing: All Sectors	25,342	6,484	2,476	1,369	915	191
Food & Kindred Products Distribution	97,913	9,176	5,764	3,846	1,231	687
Total	<u>168,654</u>	<u>22,456</u>	<u>11,278</u>	<u>7,114</u>	<u>3,114</u>	<u>1,049</u>

Employment represent fulltime and part-time jobs; values are denominated in million dollars; estimates include regional multiplier effects.

Figure ES1. Trend in employment contributions of agriculture, natural resources, and food industries in Hillsborough County, Florida, 2001-13



Note: data not available for 2003 and 2005.

Economic Contributions of Agribusiness and Food Industries in Hillsborough County, Florida

Introduction

The findings of an economic analysis of agriculture, natural resources, and food industries in Hillsborough County, Florida are presented in this report. Hillsborough County has a long heritage of economic activity associated with agriculture and natural resources, dating back to the late 1800s – most notably in cattle, citrus, phosphate, timber, strawberries, vegetables, and aquaculture. Like many counties in Florida, it has undergone rapid residential and commercial development since the 1950s. In more recent years this growth has come partly at the expense of agricultural activities. From 1970 to 2010, the county’s population increased from about 490,000 to 1.23 million, or by 151 percent (Census Bureau). At the same time, farmland in the county declined from 374,767 acres in 1969 to 214,940 acres in 2012, or -43 percent (Census of Agriculture). This assessment provides an up-to-date profile on how agriculture, natural resources, and food industries continue to fit into the Hillsborough County economy, in support of informed choices for public policy.

Methods and Data Sources

Numerous sources of public and proprietary data were compiled to develop a profile of Hillsborough County’s economy and population, focusing on those industries related to agriculture and food. Trends in population, industry revenues and employment were evaluated using historical data for 2000 to 2013. The economic contributions of these industries in the county were estimated using data on direct revenues and employment, together with a regional input-output/social accounting matrix (I-O/SAM) model of the county developed with the IMPLAN® software package and accompanying county data for 2013 (IMPLAN Group, LLC). I-O/SAM analysis is a mathematical procedure for estimating economic impacts using equations that describe the relationships between the industries and institutions that make up a regional economy in a specified geographic area (Miller and Blair, 2009). The IMPLAN database contains information on output, employment, income, imports, exports, margins and deflators for 536 industries, along with consumption data for 10 household income groups, and spending and transfers by local, state and federal government institutions.

Economic impacts estimated using I-O models are comprised of three types of economic multiplier effects: direct, indirect, and induced. Direct economic effects represent the initial sales, income, and employment for local businesses and institutions for a given industry. When locally produced goods and services are sold as exports outside the local area, or when local production substitutes for goods and services that would otherwise have been imported from outside the local economy, then indirect and induced multiplier effects occur as these dollars are respent within the economy. These ripple effects extend the impacts of the original activity. Indirect multiplier effects represent the purchases of locally produced goods or services as inputs to economic activities, sometimes

referred to as the supply chain. Induced multiplier effects occur when households of owners and employees of both directly and indirectly affected local businesses and government entities spend their earnings at other local businesses in the area. The total economic impacts of an event or activity that brings in new dollars to a regional economy equals the sum of the direct, indirect, and induced effects. More detailed definitions of these terms are given in the Glossary (Appendix A).

For economic transactions between Hillsborough County residents, only the direct multiplier effects are counted as impacts, since these dollars are just being transferred between different accounts within the same local economy. Also, business or consumer purchases of goods and services from outside the local economy constitute “leakages” and do not generate any local economic impacts.

The IMPLAN model used for this analysis was constructed with econometrically estimated local purchase coefficients that estimate the share of locally produced goods and services that fulfill business and consumer demand. This model included social accounts for households, and, local, state, and federal governments that incorporate consumer and government spending into the estimated economic multipliers. Multipliers were estimated for industry output or gross revenues, value added (equivalent to GDP), employment (fulltime and part-time jobs), labor income, other property income, and business taxes. The magnitude of multipliers for a particular industry within a regional economy depends on the mix of industries and institutions in that economy, the share of business inputs from different sectors that are sourced locally, and the share of employee and proprietor spending that occurs locally. Estimates of the proportion of exported outputs and imported inputs are provided by the IMPLAN software and database. With these data the analysis can show how agriculture, natural resources and food industry activities impact all other industries and institutions within the overall county economy.

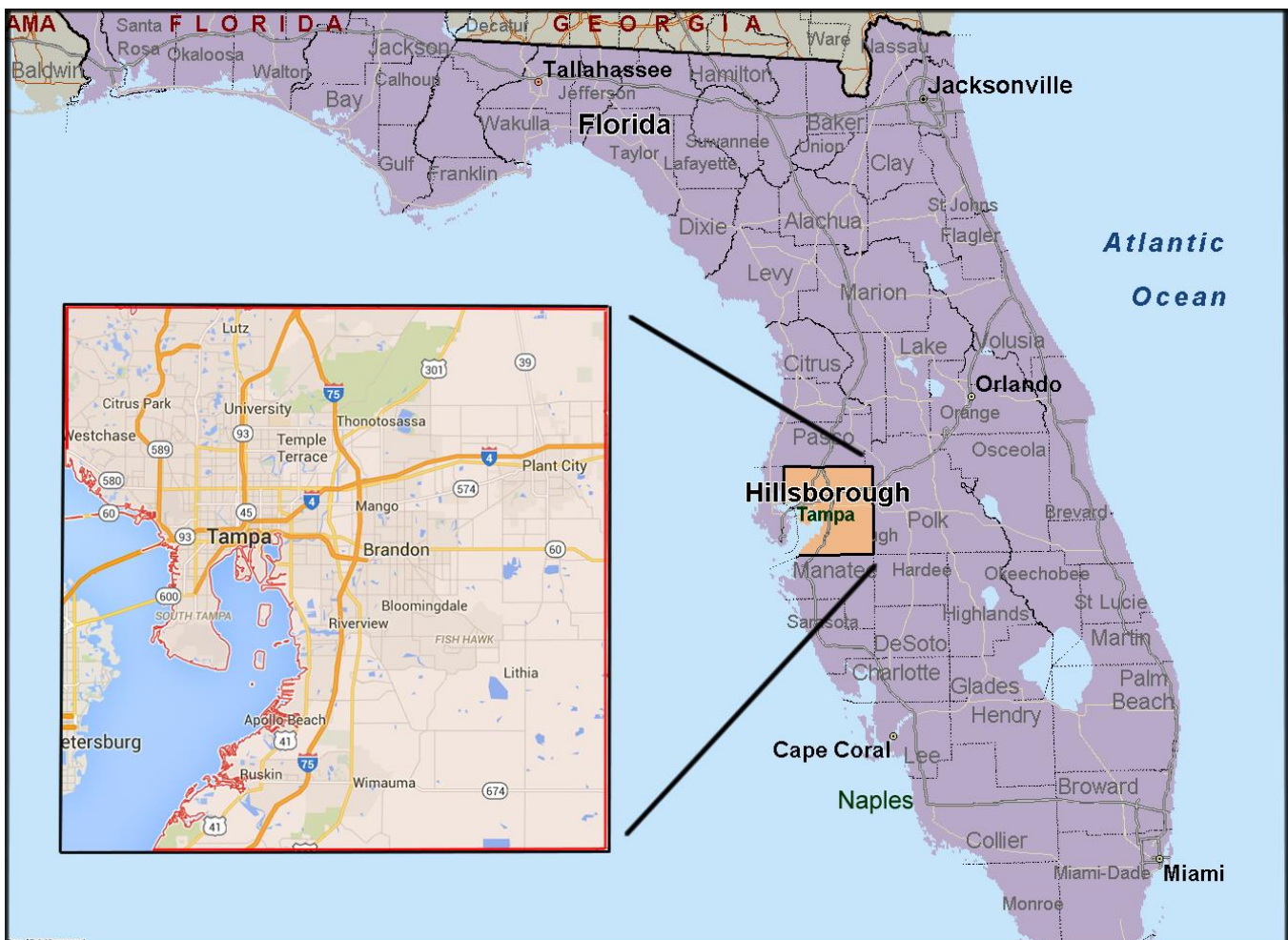
The agriculture, natural resources and food industries were defined based on the North American Industry Classification System.

Hillsborough County Overview

Hillsborough County is located on the west coast of central Florida, approximately 85 miles southwest of Orlando and 280 miles northwest of Miami at the intersection of Interstate 75 and Interstate 4 (Figure 1). The geography and economy of Hillsborough County is distinguished by the large natural harbors collectively known as the Tampa Bay area. These natural features and infrastructure are integral to the county being a major land, water and air transportation hub for the southeastern United States.

In 2013, Hillsborough was the fourth largest county in the Florida, both in terms of population and employment, while being the twelfth largest in terms of land area. The county's climate is sub-tropical and humid. Average annual precipitation is 46.3 inches, with nearly 28 inches (60%) occurring during the months of June, July, August, and September. Average annual mean, maximum, and minimum daily temperatures are 73.4, 81.6, and 65.1 degrees Fahrenheit, respectively (Florida Climate Center). Freezing temperatures can occur once or twice per year, with damaging freezes occurring once every three to four years on average (Hillsborough County Public Works, Hazards Analysis). The geology of the area includes flat wetlands and sloping sandy hills, with elevations ranging from sea-level to 160 feet.

Figure 1. Map of Florida and Hillsborough County



Sources: Microsoft MapPoint and Google Maps

Hillsborough County was formally established in 1834, by the U.S. Legislative Council for the Territory of Florida. At that time it was much larger geographically, covering much of the land area between the Kissimmee River and the Gulf of Mexico (HCBCC). Prior to the 1880s there was little economic development in the county due to challenges associated with transportation, Indian wars, yellow fever, hurricanes and the Civil War (Frazier, Grismer, Robinson).

The early economy of Hillsborough County in the late 1800s was driven largely by agriculture, timber, fishing, mining and transportation. Agriculture then consisted mainly of citrus, cotton, vegetables, cattle and hogs, which were shipped out of Tampa Bay to New Orleans or Cuba. A major boost to the economy occurred when Henry Plant established the first railroad line to reach Tampa, and developed a port and hotel facilities on Tampa Bay. During the same decade, substantial phosphate mineral deposits were discovered to the south and east of Tampa Bay, and a prominent cigar manufacturer, Vicente Martinez-Ybor, moved operations to the area. The convergence of these industries combined with the advent of regular steam-powered land and ocean transportation services to create an economic boom for the region.

During the twentieth century, the county evolved into a modern and diversified hub of economic and cultural activities. While strawberries, fresh vegetables, aquaculture and citrus are still significant industries for Hillsborough County, wholesale trade, real estate, public education, and food distribution now lead the economy. Port Tampa Bay is the largest cargo port facility in Florida, and has terminals for three major cruise ship lines. Hillsborough County has also become an important tourist destination. Popular attractions and cultural centers in the county include Busch Gardens, Lowry Park Zoo, The Florida Aquarium, The Museum of Science and Industry, The Tampa Museum of Art, The Straz Center for the Performing Arts, and The Tampa Bay History Center (GTCC). Major employers in the County include Hillsborough County School District (Public Education), BayCare Health System and HCA (healthcare), University of South Florida (public education), Wellcare (Insurance), Verizon (communications), and JP Morgan Chase (banking and finance) (source: Tampa Bay Partnership).

Hillsborough County Demographics

In 2013, Hillsborough County had an estimated population of 1,291,578, ranking fourth in the State of Florida (U.S. Census Bureau). The population increased 28.7 percent during the 2000-13 period, representing an average annual growth rate of 1.82 percent (Table 1, Figures 2-3). This growth rate was higher than the state as a whole (1.6%), and significantly higher than the national average (0.86%). In 2010, the largest cities in Hillsborough County by population were Tampa (352,957), Plant City (36,097), and Temple Terrace (25,179).

Like the rest of Florida, job growth in Hillsborough County did not keep pace with population during the last 14 years. This is partly due to the recession following the 2008 financial crisis, where the number of jobs in the county declined from 819,262 in 2007 to 744,186 in 2010, while the County's population continued to increase (Table 1, Figure 3). Since 2010, employment in Hillsborough County has resumed growing, reaching 831,564 jobs in 2014. Compared to Florida, the county continues to attract a higher proportion of residents under 65 years of age (Figure 4).

Hillsborough County serves as a work center for surrounding counties, particularly Pasco County to the north. According to the most recent American Community Survey, between 2009 and 2013, the county had, on average, 127,006 nonresidents commuting into the county for work, while 64,539 residents commuted to other counties for their work, or a net of 62,467 in-commuters to work in Hillsborough County during this period (Table 2).

In 2013, total personal income (TPI) in Hillsborough County was \$52.50 billion, which ranked 4th in the state and accounted for 6.5 percent of TPI for Florida as a whole (BEA). Recently released data for 2014 showed that TPI for the county increased by 5.1 percent to \$55.16 billion. Total personal income includes net earnings by place of residence, dividends, interest, rent, and transfer receipts (such as Social Security and retirement benefits).

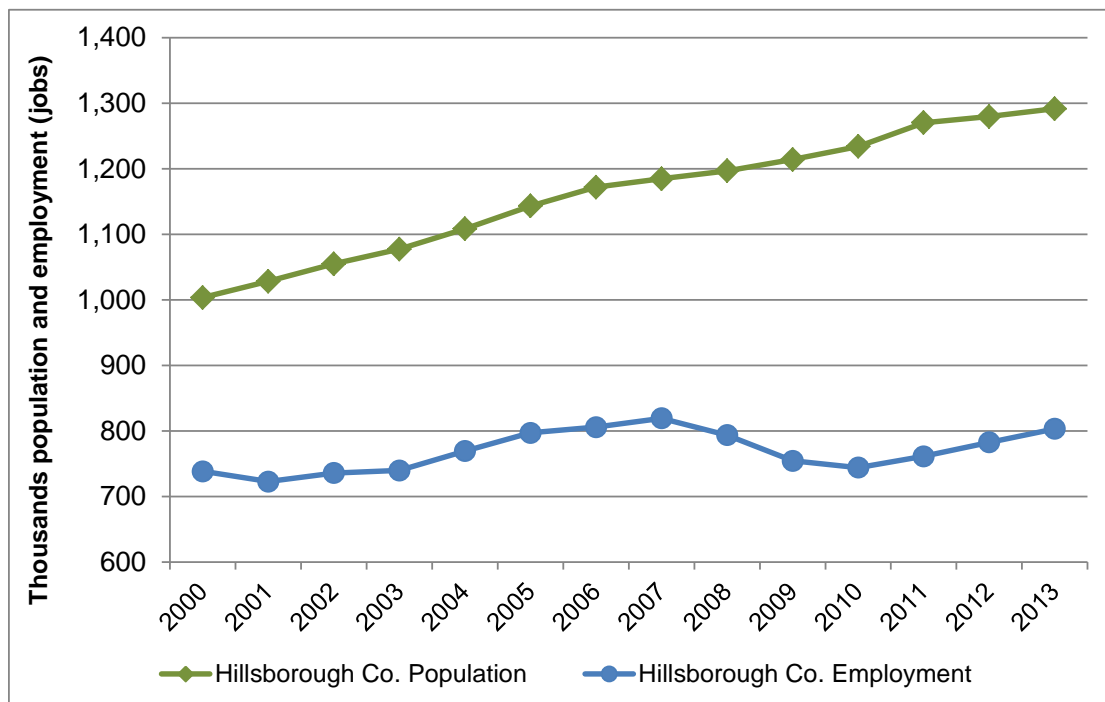
Hillsborough County had a per capita personal income (PCPI) of \$40,568 in 2013, which ranked 14th in the state, and just below the state average of \$42,737 (BEA). The county has relatively low costs of living. According to CNN Money, the cost of living in the Tampa area are 5 to 10 percent less than in similar large cities in the southern U.S., such as Miami, Orlando, Atlanta, New Orleans and Houston.

Table 1. Population and employment in the State of Florida and Hillsborough County, 2000-13

Year	Population & Population Change				Employment & Employment Change (Fulltime and Part-time Jobs)			
	Florida	Percent change	Hillsborough Co.	Percent change	Florida	Percent change	Hillsborough Co.	Percent change
2000	16,047,515		1,003,435		8,918,234		738,291	
2001	16,356,966	1.93%	1,028,385	2.49%	8,988,214	0.78%	722,768	-2.10%
2002	16,689,370	2.03%	1,054,860	2.57%	9,108,639	1.34%	735,755	1.80%
2003	17,004,085	1.89%	1,077,462	2.14%	9,330,887	2.44%	739,838	0.55%
2004	17,415,318	2.42%	1,108,225	2.86%	9,714,274	4.11%	769,411	4.00%
2005	17,842,038	2.45%	1,143,154	3.15%	10,140,161	4.38%	796,991	3.58%
2006	18,166,990	1.82%	1,171,826	2.51%	10,470,808	3.26%	805,733	1.10%
2007	18,367,842	1.11%	1,184,686	1.10%	10,625,952	1.48%	819,262	1.68%
2008	18,527,305	0.87%	1,196,773	1.02%	10,358,947	-2.51%	793,604	-3.13%
2009	18,652,644	0.68%	1,214,050	1.44%	9,937,573	-4.07%	754,385	-4.94%
2010	18,846,054	1.04%	1,233,908	1.64%	9,880,909	-0.57%	744,186	-1.35%
2011	19,083,482	1.26%	1,270,293	2.95%	10,128,594	2.51%	761,308	2.30%
2012	19,320,749	1.24%	1,279,737	0.74%	10,359,941	2.28%	782,612	2.80%
2013	19,552,860	1.20%	1,291,578	0.93%	10,556,082	1.89%	803,298	2.64%
2000-13		21.84%		28.72%		18.37%		8.81%

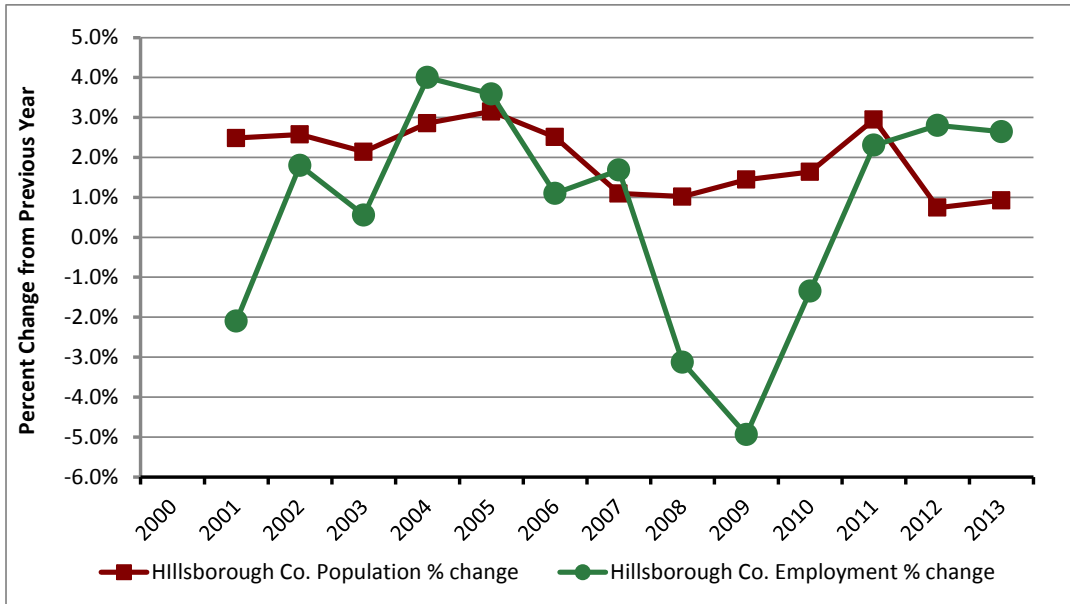
Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Economic Profile table CA30. <http://www.bea.gov/>

Figure 2. Chart of Hillsborough County population and employment, 2000-13



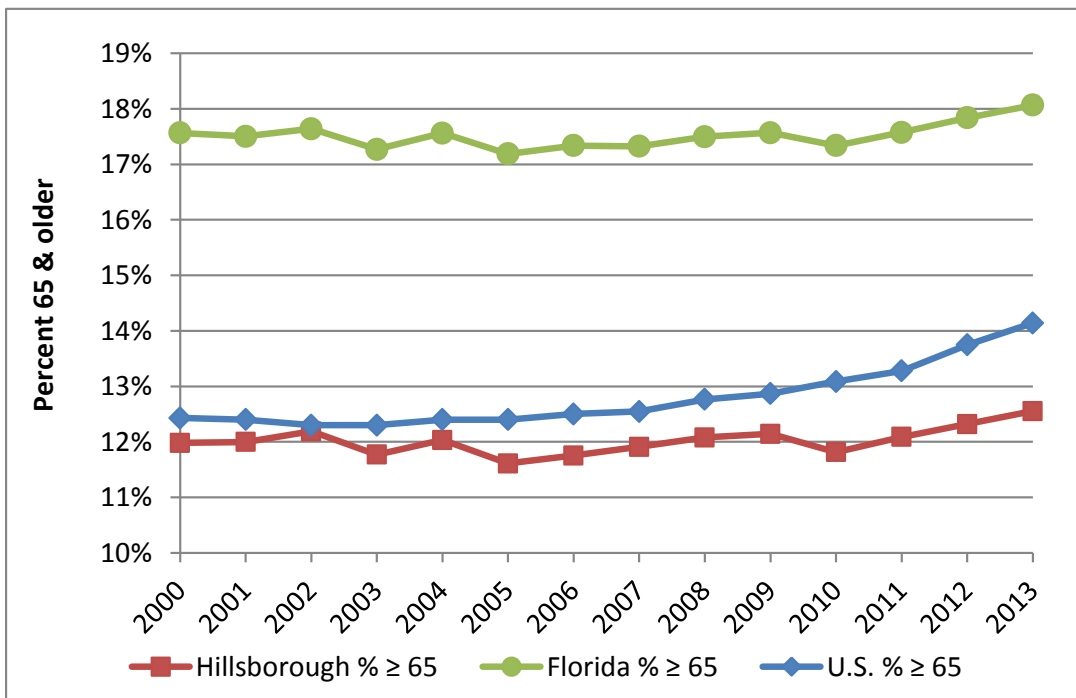
Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Economic Profile. Employment includes both full-time and part-time jobs.

Figure 3. Chart of Hillsborough County population and employment annual percent change, 2000-13



Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, Regional Economic Profile table CA30. Employment includes both full-time and part-time jobs

Figure 4. Share of population 65 years of age and older in Hillsborough County, the state of Florida, and the U.S., 2000-13



Source: University of Florida, Bureau of Economic and Business Research, and the U.S. Dept. of Health and Human Services, Administration on Aging.

Table 2. Number of workers commuting to and from Hillsborough County, Florida, 2009–2013

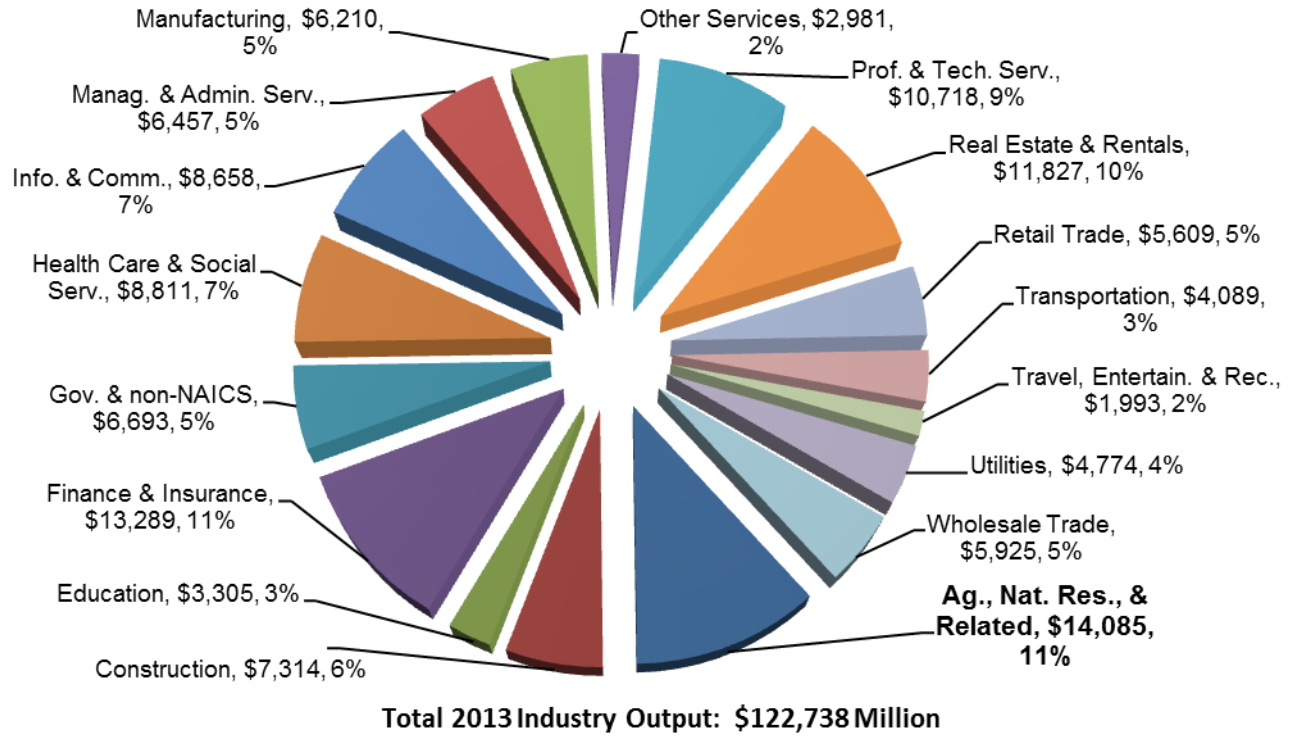
<u>From Hillsborough County to workplace county</u>	
Pinellas County	32,626
Polk County	11,135
Pasco County	9,601
Manatee County	3,885
Orange County	1,765
Other Florida Counties	5,527
Total Out-commuting	<u>64,539</u>
<u>From neighboring counties to Hillsborough County workplace</u>	
Pasco County	51,525
Pinellas County	42,366
Polk County	12,273
Hernando County	6,902
Manatee County	4,269
Other Florida Counties	9,671
Total In-commuting	<u>127,006</u>

Source: U.S. Census, American Community Survey, Commuting Flows, 2009-2013, 5-Year averages.

Hillsborough County Industry Profile

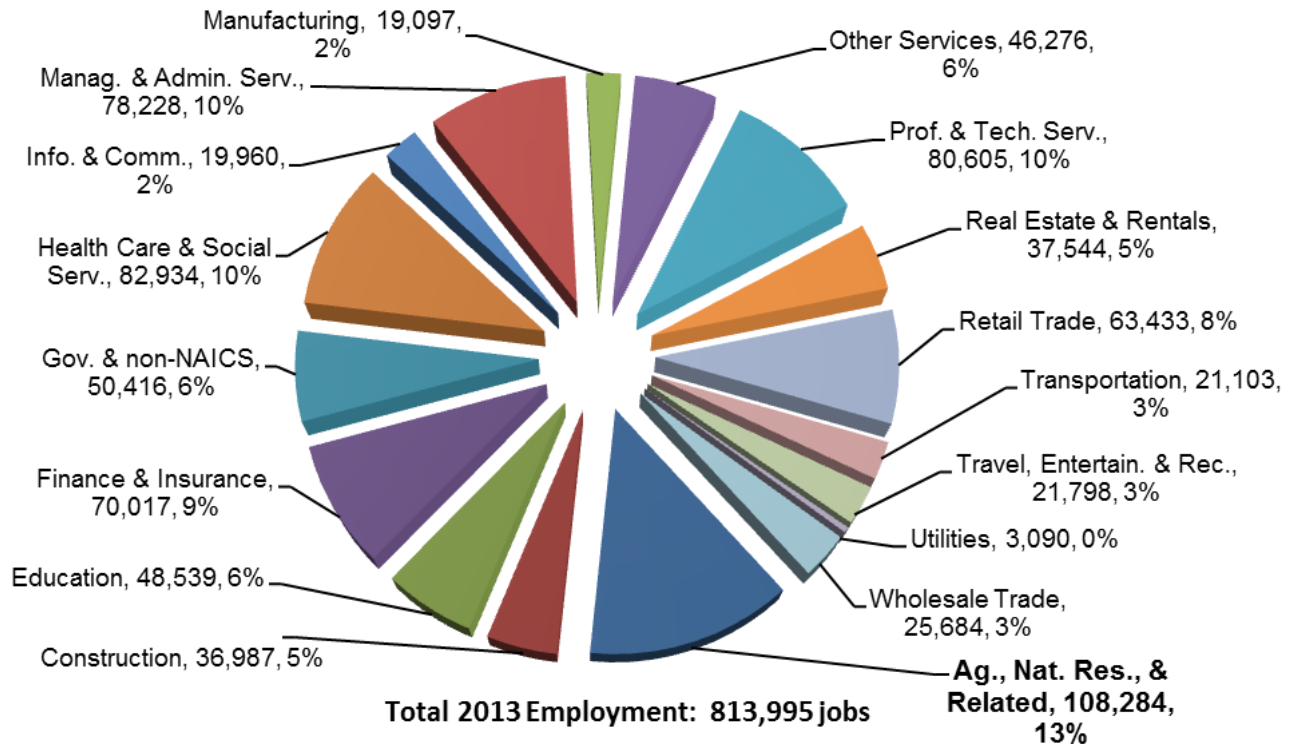
The distribution of output and employment among the major industry groups in Hillsborough County in 2013 are shown in Figures 5 and 6 respectively. These data are based on IMPLAN databases for 2013, which are derived from published information by the U.S. Departments of Agriculture, Commerce and Labor (IMPLAN Group, LLC). Agriculture, Natural Resources, and Food (ANRF) industries comprised the largest major industry group in the county in 2013, with \$14.1 billion in output, representing 11.5 percent of the county total, and employment of 108,284 jobs, or 13.3 percent of all jobs. Other industry groups that are relatively important in generating revenues included Finance and Insurance, Real Estate and Rentals, Professional and Technical Services, Healthcare and Social Services, and, Information and Communications Services. The Agriculture, Natural Resources and Food industries led in terms of employment because of the labor-intensive nature of specialty crop agriculture and the food service sector. Other industry groups that were responsible for significant shares of employment in the county included Health and Social Services, Professional and Technical Services, Management and Administration, and, Finance and Insurance.

Figure 5. Direct industry output by major industry groups in Hillsborough County, Florida, 2013 (\$1,000)



Source: IMPLAN Group, LLC.

Figure 6. Direct employment by major industry groups in Hillsborough County, Florida, 2013



Source: IMPLAN Group, LLC.

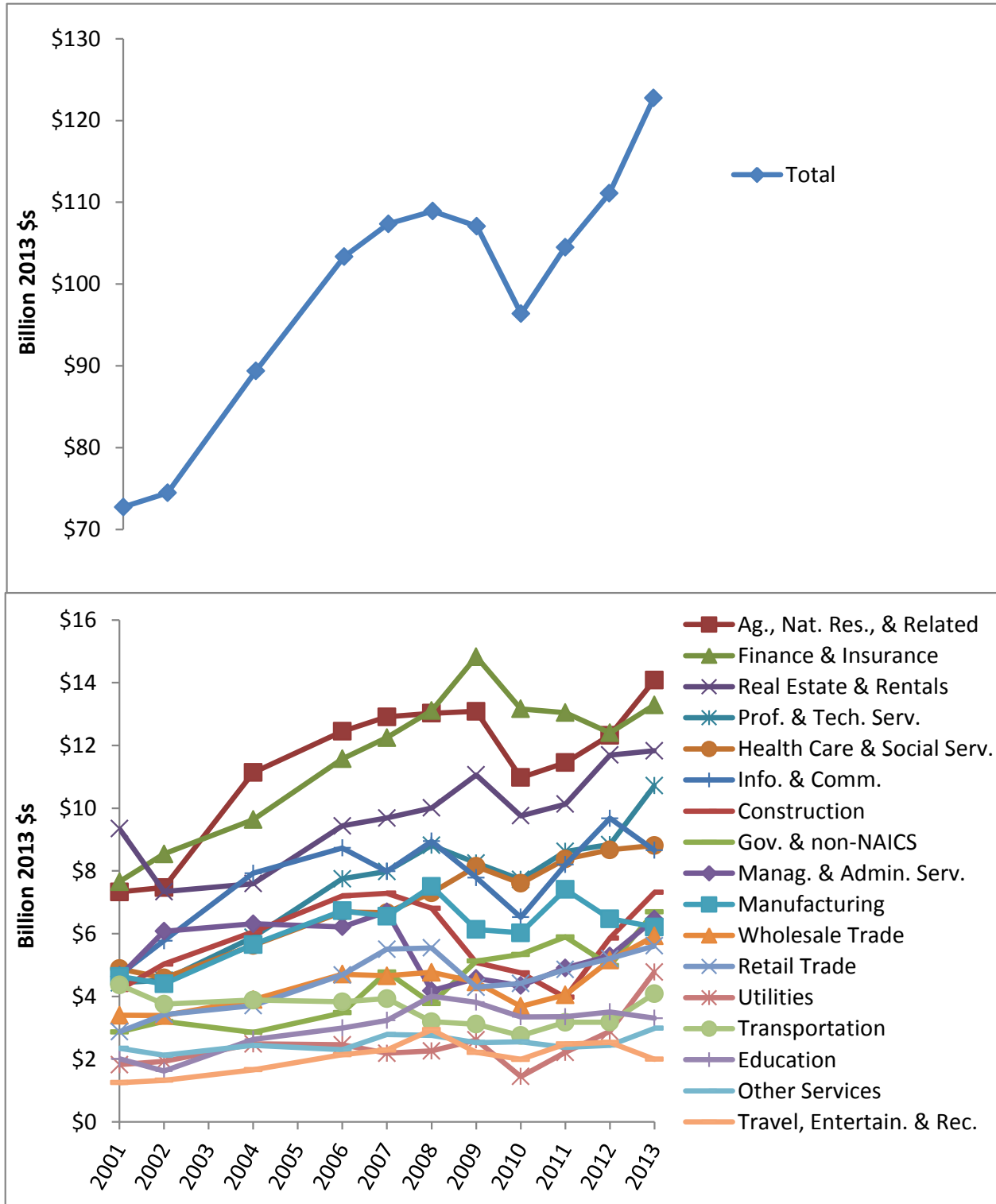
Looking at trends in the size and share of output (revenues) for the various industry groups in the county between 2001 and 2013, the ANRF industry share of revenues increased from 10.1 to 11.5 percent, just ahead of Finance and Insurance in 2013 with 10.8 percent (Table 3). The other top five industry groups in terms of output were Real Estate and Rentals (9.6%), Professional and Technical Services (8.7%), and Health Care and Social Services (7.2%). With the exception of Government and Other Services, all industry groups in the county experienced reductions in revenues at some point during 2009-12, associated with the global economic downturn. Since 2012, most industry groups have experienced a healthy recovery with the exceptions of Travel, Entertainment and Recreation, Education, and Manufacturing (Figure 7). Over the entire 13-year period, output by ANRF industries grew by 92 percent, which was greater than other major industry groups, except Professional and Technical Services, Government, Retail Trade and Utilities (right hand column of Table 3).

Table 3. Share of total industry output and percent change by major industry groups in Hillsborough County, Florida, 2001-13

Industry Group	2001	2002	2004	2006	2007	2008	2009	2010	2011	2012	2013	Output change 2001-13 (percent)
	Percent of Total Output											
Agriculture, Natural Resources & Food	10.07	10.03	12.46	12.04	12.02	11.96	12.22	11.39	10.96	11.09	11.48	92.24
Finance & Insurance	10.53	11.47	10.78	11.20	11.41	12.04	13.85	13.66	12.48	11.16	10.83	73.60
Real Estate & Rentals	12.85	9.86	8.50	9.13	9.02	9.19	10.33	10.12	9.69	10.53	9.64	26.58
Professional & Technical Services	6.09	6.06	6.59	7.50	7.43	8.09	7.70	8.01	8.25	7.96	8.73	141.88
Health Care & Social Services	6.71	6.16	6.29	6.47	6.21	6.70	7.61	7.89	8.01	7.80	7.18	80.45
Information & Communication	6.44	7.75	8.87	8.45	7.44	8.21	7.27	6.77	7.85	8.71	7.05	84.71
Construction	5.79	6.75	6.77	6.97	6.79	6.25	4.74	4.93	3.80	5.27	5.96	73.71
Government & non-NAICS	3.94	4.30	3.19	3.36	4.45	3.46	4.78	5.53	5.64	4.48	5.45	133.39
Management & Administrative Services	6.37	8.16	7.06	6.02	6.24	3.84	4.27	4.51	4.69	4.76	5.26	39.40
Manufacturing	6.37	5.90	6.33	6.51	6.11	6.89	5.73	6.25	7.09	5.83	5.06	33.95
Wholesale Trade	4.67	4.55	4.36	4.55	4.33	4.38	4.16	3.82	3.88	4.64	4.83	74.45
Retail Trade	3.95	4.59	4.14	4.53	5.13	5.09	4.01	4.58	4.65	4.68	4.57	95.42
Utilities	2.51	2.59	2.78	2.38	2.04	2.07	2.44	1.50	2.12	2.60	3.89	161.73
Transportation	6.00	5.04	4.35	3.70	3.66	2.93	2.91	2.85	3.04	2.86	3.33	-6.33
Education	2.77	2.17	2.94	2.90	3.01	3.67	3.56	3.47	3.20	3.15	2.69	64.36
Other Services.	3.22	2.85	2.73	2.23	2.59	2.53	2.36	2.65	2.27	2.20	2.43	27.17
Travel, Entertainment & Recreation	1.72	1.78	1.86	2.07	2.13	2.69	2.07	2.07	2.37	2.28	1.62	59.57

Source: IMPLAN Group, LLC. Data not available for 2003 and 2005.

Figure 7. Trend in output by major industry groups in Hillsborough County, Florida, 2001-13



Source: IMPLAN Group, LLC.

Characteristics of Agriculture in Hillsborough County

Characteristics of agricultural production in Hillsborough County are presented in this section, based on the Census of Agriculture (USDA-NASS, 2012). Some 214,940 acres, or about one-third of the total land area, was in farmland in 2012 (Table 4). Total farm area declined by 4,860 acres since the 2007 Ag. Census, and by 69,970 acres since the 2002 Census, or by 24.6 percent over 10 years. In 2012, there were 75,764 acres (35.2%) of farm cropland, 97,584 acres (45.4%) of pasture and rangeland, and 30,010 acres (14.0%) of farm woodlands associated with agriculture in the county, with the remainder comprised of roads, buildings and other nonproductive areas.

In 2012, there were 2,466 farms in the county, which was down by 16.9 percent from 2,969 farms in 2002. During the same period, the number of farm operators declined by 569, or 12.9 percent. Since the number of farms declined less than the land area in farms, the average farm size decreased from 96 acres in 2002 to 87 acres in 2012.

Total sales of agricultural products in Hillsborough County reported by the Ag Census in 2012 were \$378 million, the fourth highest in the state (Table 5). Sales decreased from \$488 million in 2007, and \$392 million in 2002, representing a 3.7 percent reduction over the 10 year period. Average agricultural sales per acre in 2002, 2007, and 2012 went from \$1,377 to \$2,221 to \$1,759, increasing by 27.7 percent over ten years. Some 84.2 percent of 2012 farm revenues came from crops, with the remaining 15.8 percent from livestock and animal products (Table 6, Figure 8). Notable types of crops grown in the county include fruits and berries, nursery and greenhouse products, and vegetables, melons and potatoes. Over 78 percent of Florida's strawberry acreage in 2012 was located in Hillsborough County. Ag Census data on strawberry sales were not available for Florida and Hillsborough County in 2012, but sales for all types of berries in the county were reported at \$120 million, representing nearly 32 percent of the county's total agricultural sales, and over 51 percent of Florida's berry sales. Notable types animal production in the county included aquaculture, hogs and pigs, and horses, ponies, mules, and donkeys. In 2012, the county ranked first in the state in the production of hogs and pigs (undisclosed), and aquaculture products (\$30.46 million), and fourth in the state for horses, ponies, mules and donkeys (undisclosed) (Tables 5-6, Figure 8). In 2012, Hillsborough County was responsible for over 34 percent of all aquacultural product sales in the State of Florida

Table 4. Farm numbers, land area, income, demographics, and assets, Hillsborough County, Florida, 2002, 2007, and 2012

	2012	2007	2002	2007-12 % change	2002-07 % change
Farm Numbers, Land, Income and Government Payments					
Number of Farms	2,466	2,843	2,969	-15.29%	-4.24%
Land in Farms (acres)	214,940	219,800	284,910	-2.26%	-22.85%
Percent County Land in Farms	32.92%	33.67%	43.64%	-0.74%	-9.97%
Average Size of Farm (acres)	87	77	96	11.49%	-19.79%
Total Cropland (acres)	75,764	86,367	126,158	-12.28%	-31.54%
Permanent Pasture and Rangeland (acres)	97,584	95,831	92,497	1.83%	3.60%
Total Woodland (acres)	30,010	24,864	33,131	20.70%	-24.95%
Market Value of Products Sold (\$1,000)	\$378,077	\$488,220	\$392,432	-22.56%	24.41%
Average Value of Products Sold Per Farm (\$)	\$153,316	\$171,727	\$132,176	-10.72%	29.92%
Government subsidies & payments (\$1,000)*	\$2,088	\$2,942	\$4,533	-29.05%	-35.10%
Demographic Characteristics of Farm Operators					
Principal Operators – Average Age (years)	59.5	58.6	56.8	1.54%	3.17%
Farm Operators (number)	3,841	4,410	4,412	-12.90%	-0.05%
Female Operators (number)	1,325	1,655	1,449	-19.94%	14.22%
Female Operators (percent)	34.5	37.5	32.8	-8.00%	14.33%
Value of Selected Farm Assets					
Ag. Land, Incl. Bldgs., average asset value per farm	\$788,988	\$787,847	\$454,871	0.14%	73.20%
Machinery – Average asset value per farm	\$54,052	\$52,850	\$42,898	2.22%	23.20%

Source: USDA-NASS, 2012, 2007, and 2002 Census of Agriculture, Volume 1, Geographic Area Series, County Profiles.

*As reported by the Environmental Working Group, Washington, DC, <http://farm.ewg.org/regionsummary.php?fips=12105>

Table 5. Production or inventory of agricultural commodities in Hillsborough County, Florida: value or number, and rank among producing counties in the state and U.S., 2012

Item	Value or number	State Rank	National Rank
Market Value of Agricultural Products Sold (\$1,000)	\$378,077	4	189
Value crops sold (\$1,000)	\$318,507	4	73
Fruits, tree nuts, & berries	\$139,292	4	65
Vegetables, melons, & potatoes	\$94,444	5	64
Nursery, greenhouse, floriculture, & sod	\$53,875	5	64
Cut Christmas trees & other short rotation woody crops	\$47	9	484
Value of livestock, poultry, & their products sold (\$1,000)	\$59,570	9	796
Aquaculture	\$30,456	1	850
Hogs & pigs	(D)	1	(D)
Horses, ponies, mules, burros, and donkeys	(D)	4	(D)
Sheep, goats, wool, mohair, & milk	\$188	10	64
Cattle & calves	\$14,083	12	67
Top Crop Items (Acres)			
Vegetables harvested, all	14,686	5	62
Berries, all	9,641	1	6
Strawberries	8,397	1	3
Oranges, all	7,017	15	18
Forage-land for hay and hay-like products	8,238	19	1,814
Top Livestock Inventory Items (Number)			
Layer chickens	(D)	5	(D)
Pullets	(D)	7	(D)
Quail	(D)	8	(D)
Broilers and other meat-type chickens	3,904	14	682
Cattle and Calves	37,419	16	755

Source: USDA-NASS, 2012 Census of Agriculture, Volume 1, Geographic Area Series, County Profiles.

(D) = Withheld to avoid disclosing data for individual farms.

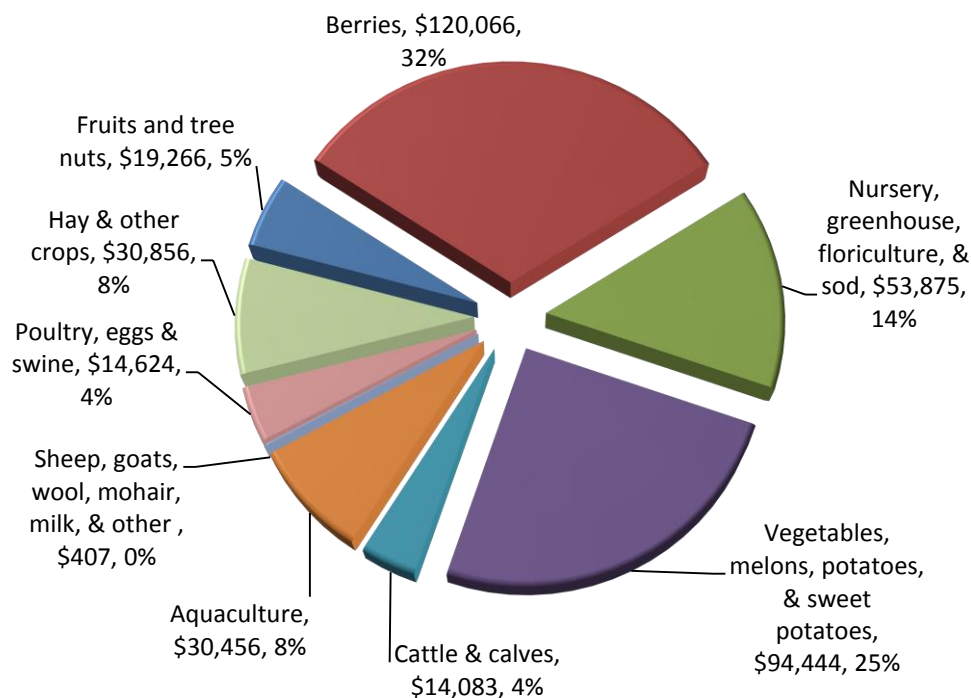
Commodities not produced in Hillsborough County or not disclosed by State rank are not shown.

Table 6. Market value and share of agricultural products sold in Hillsborough County and Florida, 2012

Product	Florida sales (\$1,000)	Hillsborough County Sales (\$1,000)	Hillsborough County share of Florida (%)	Commodity share of county total (%)
Fruits and tree nuts	1,614,649	19,266	1.19	5.10
Berries	233,156	120,066	51.50	31.76
Nursery, greenhouse, floriculture, & sod	1,716,531	53,875	3.14	14.25
Vegetables, melons, potatoes, & sweet potatoes	1,348,961	94,444	7.00	24.98
Other crops and hay	902,985	(D)	(D)	(D)
<u>Crops Subtotal</u>	<u>5,969,399</u>	<u>318,507</u>	<u>5.34</u>	<u>84.24</u>
Cattle & calves	531,869	14,083	2.65	3.72
Aquaculture	88,463	30,456	34.43	8.06
Poultry & eggs	378,453	(D)	(D)	(D)
Sheep, goats, wool, mohair, & milk	4,978	188	3.78	0.05
Hogs & pigs	2,158	(D)	(D)	(D)
Other	55,043	219	0.40	0.06
<u>Livestock and animal products subtotal</u>	<u>1,732,133</u>	<u>59,570</u>	<u>3.44</u>	<u>15.76</u>
Other or Unreported	824,286	45,480	NA	12.03
<u>Total crops, livestock and animal products</u>	<u>7,701,532</u>	<u>378,077</u>	<u>4.91</u>	<u>100.00</u>

Source: USDA-NASS, 2012 Census of Agriculture

Figure 8. Distribution of farm product sales for Hillsborough County, Florida, 2012 (\$1,000 dollars)



Total 2012 Crop & Livestock Sales: \$378.1 million

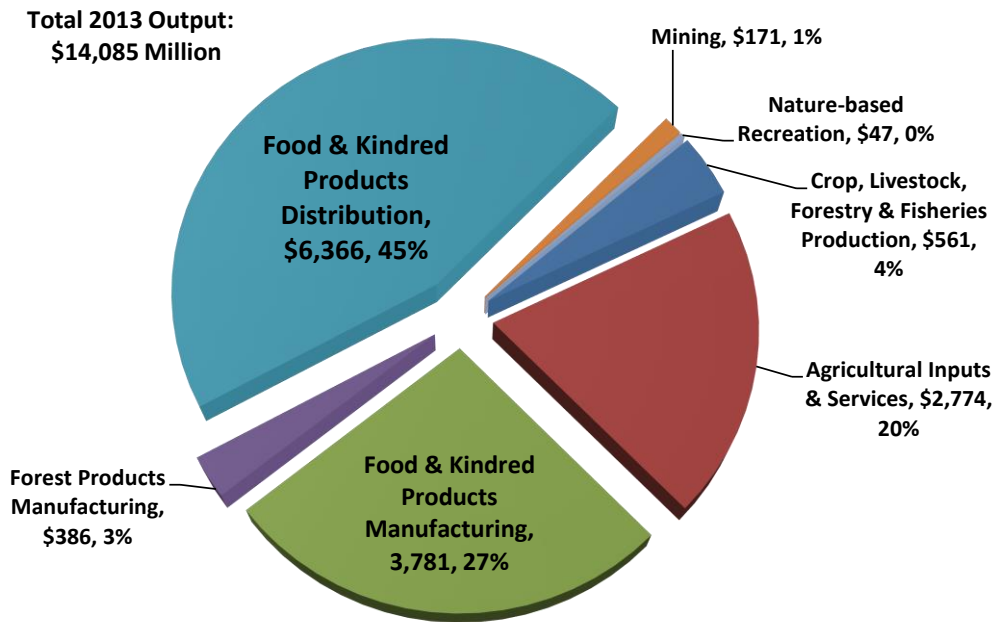
Direct Output and Employment by Agriculture, Natural Resources and Food Industries

This section of the report presents the direct output (sales revenues) and employment of Agricultural, Natural Resource and Food (ANRF) industries in Hillsborough County in 2013, and trends during the 2000-13 period. The industries were classified into seven major groups: Agricultural Inputs and Services; Crop, Livestock, Forestry and Fisheries Production; Food and Kindred Products Distribution; Food and Kindred Products Manufacturing; Forests Product Manufacturing; Mining; Nature-based Recreation.

Industry Group Results for 2013

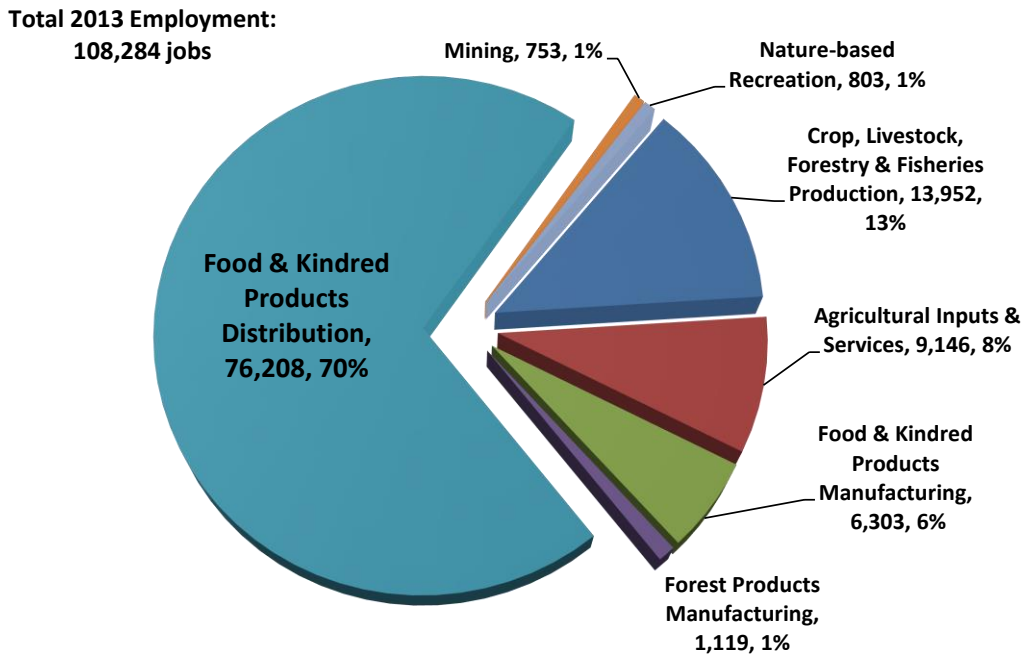
Output and employment for the major ANRF industry groups in Hillsborough County in 2013 are presented in Figures 9 and 10, respectively. In terms of output and employment, the largest group was Food and Kindred Products Distribution, with \$6.37 billion in output and 76,208 jobs, which represented 70 percent of total ANRF employment and 45 percent of total output. This group was dominated by the Food Services and Drinking Places sector, including restaurants and other food service establishments. The second largest group in terms of output was Food and Kindred Products Manufacturing (\$3.78 billion). This group was led by the Soft Drink and Ice Manufacturing sector. The Agricultural Inputs and Services group had output of \$2.77 billion and employment of 9,146 jobs in 2013, accounting for almost 20 percent of ANRF revenues and eight percent of jobs. The Fertilizer Manufacturing sector led this group in output, while the Landscape Services sector was the biggest employer. Crop, Livestock, Forestry and Fisheries Production was the second largest employer group among ANRF industries, at 13,952 jobs, or 13 percent of the total employment, although it ranked fourth in terms of output at \$561 million (Figures 9 and 10).

Figure 9. Direct output of agriculture, natural resources and food industry groups in Hillsborough County, Florida, 2013 (million dollars)



Source: IMPLAN Group, LLC.

Figure 10. Direct employment by agriculture, natural resources and food Industry groups in Hillsborough County, Florida, 2013 (fulltime and part-time jobs)



Source: IMPLAN Group, LLC.

Trends in Industry Group Activity

Trends in employment, output and domestic/international exports for ANRF industry groups over the 2001-13 period are presented in Figures 11-13 and Table 7. Note that data are missing for time series for two years (2003, 2005). Overall, the total number of fulltime and part-time jobs in these industry groups increased from 96,405 to 108,284 during this period, and increase of 12.3 percent, while output grew from \$9.33 in 2001 to \$14.09 billion in 2013, a 92 percent increase, in inflation-adjusted terms. This growth in output reflects substantial gains in worker productivity. Total domestic and international exports, which represent new final demand to the region and are important in generating economic impacts, grew from \$3.29 billion to \$8.05 billion, an increase of 69 percent. Thus, over 57 percent of Hillsborough County agricultural-related revenues came from markets outside the county. A common trend across these industries was the decline in economic activity associated with the financial crisis of 2008. The exception to this trend was in Agricultural Inputs and Services. In Hillsborough County this group is dominated by fertilizer manufacturing. U.S. and world fertilizer prices experienced unprecedented volatility between 2006 and 2011 due to higher energy prices, the imposition of export tariffs by China, and rising grain prices (Wen-yuan Huang and Kenkel). The changing markets for phosphatic fertilizers was reflected to some extent by employment and output in mining.

Total employment by the ANRF industry groups peaked at 116,766 jobs in 2007, then dropped to 91,870 jobs in 2010 in the wake of the U.S. recession, and recovered to 108,284 jobs in 2013 (Table 7 and Figure 11). Food and Kindred Products Distribution was responsible for about two-thirds of jobs, in part due to the labor intensive nature of retail food stores and restaurants. This industry group also saw the largest absolute growth in output during this period (\$1.84 billion in 2013 dollars), followed by Forest Products Manufacturing (\$1.83 billion), and Agricultural Inputs and Services (\$1.48 billion). Mining had the largest percentage growth in output (197%), representing a \$113 million increase. Agricultural Inputs and Services output increased by 115 percent, followed by Food and Kindred Products Manufacturing at 94 percent. In contrast, output declined by \$425 million or 43 percent for Crop, Livestock, Forestry and Fisheries Production, and by \$75 million (16.4%) for Forest Products Manufacturing.

Historical data on the value of domestic and international exports by ANRF industries in Hillsborough County are shown in Figure 13 and Table 7. Exports are important to a regional economy because they generate indirect and induced multiplier effects as these “new dollars” are respent through the local supply chain, employee and proprietor households, and local government taxes. Food and Kindred Products Manufacturing generated the largest exports for the county, at \$3.02 billion in 2013, representing 38 percent of all ANRF exports. Exports by this group increased by 115 percent since 2001. Agricultural Inputs and Services increased exports by \$1.31 billion, or 145 percent, over the period, reaching \$2.21 billion in 2013. The Mining industry group had the largest percentage gain in exports over the period (861%), although its share of total ANRF exports was less than two percent in 2013. Since most mining in the county is for phosphate, the large export growth for both Mining and Agricultural Inputs (phosphorus fertilizer) is likely related to the sharp rise in fertilizer prices from 2007 to 2011.

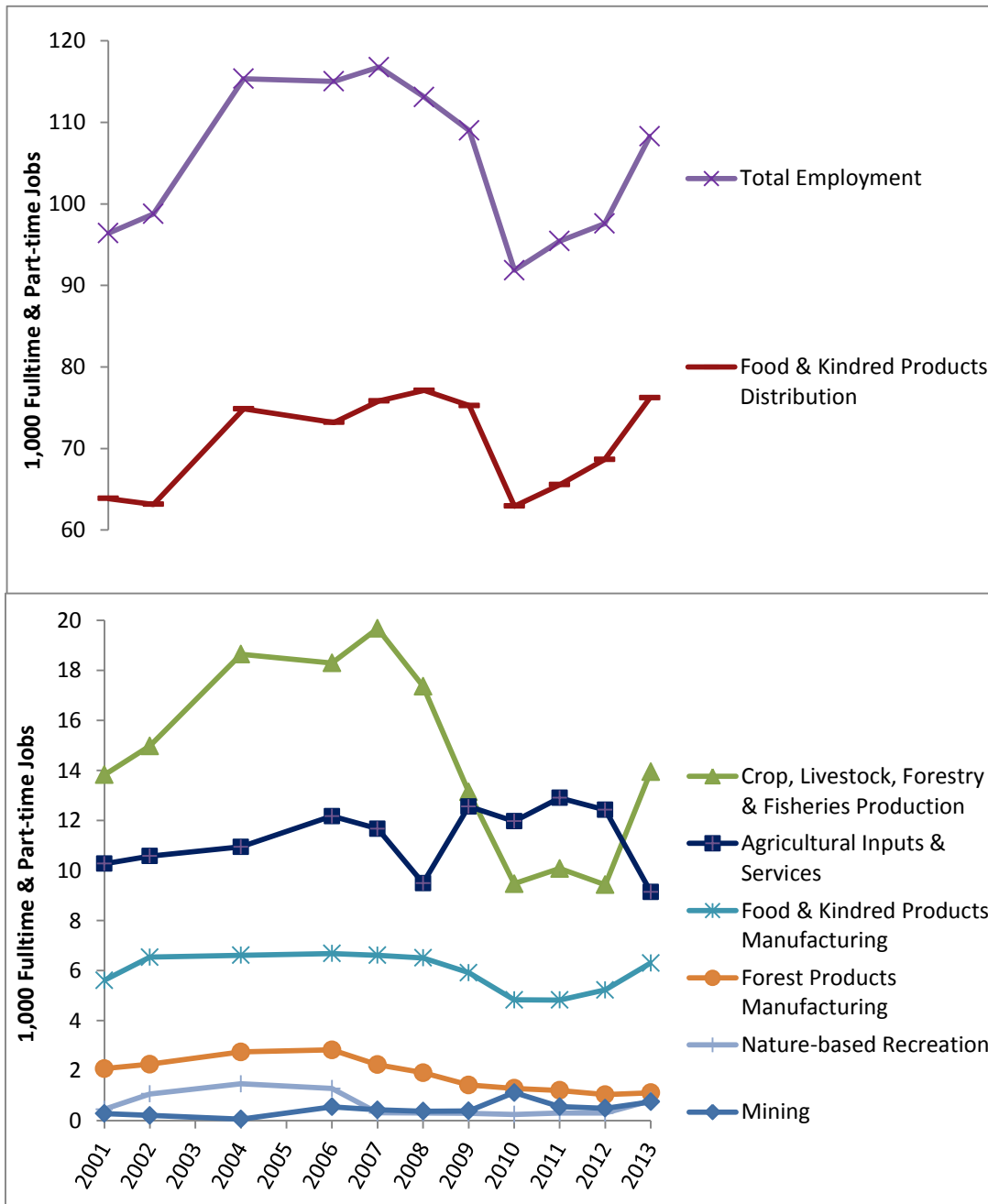
Exports by Food and Kindred Products Manufacturing grew from \$1.40 billion in 2001 to \$2.03 billion in 2013, or 46 percent. In 2013 this group accounted for 38 percent of all ANRF exports. Agricultural Inputs and Services had the second highest exports in 2013 at \$2.21 billion, and the second highest increase during 2001-13 (145%) among all groups. On the other hand, exports for Crop, Livestock, Forestry and Fisheries Production declined by nearly half, from \$712 million in 2001 to \$359 million in 2013. A significant share of this reduction is due to decreased production in the fruit farming and greenhouse, nursery and floriculture sectors. Nature Based Recreation did not generate any exports in 2013, although it exported \$68 million in 2004, thus resulting in a 100 percent decline over the period.

Table 7. Direct employment, industry output and exports by agriculture, natural resources and food industry groups in Hillsborough County, Florida, 2001–13

Industry Group	2001	2002	2004	2006	2007	2008	2009	2010	2011	2012	2013	Percent change 2001-13
Direct Employment (full-time and part-time jobs)												
Agricultural Inputs & Services	10,276	10,580	10,949	12,175	11,674	9,494	12,564	11,971	12,905	12,428	9,146	-11.0%
Crop, Livestock, Forestry & Fisheries Production	13,830	14,983	18,647	18,295	19,677	17,368	13,143	9,472	10,082	9,433	13,952	0.9%
Food & Kindred Products Distribution	63,858	63,134	74,850	73,196	75,818	77,121	75,250	62,929	65,541	68,644	76,208	19.3%
Food & Kindred Products Manufacturing	5,615	6,536	6,612	6,687	6,613	6,507	5,921	4,829	4,827	5,231	6,303	12.3%
Forest Products Manufacturing	2,081	2,259	2,752	2,834	2,238	1,919	1,426	1,292	1,212	1,044	1,119	-46.2%
Mining	288	209	63	559	432	381	391	1,121	563	499	753	161.2%
Nature-based Recreation	456	1,073	1,476	1,286	314	311	299	255	310	303	803	76.1%
Total	96,405	98,774	115,349	115,031	116,766	113,102	108,993	91,870	95,440	97,583	108,284	12.3%
Direct Industry Output (million dollars)												
Agricultural Inputs & Services	1,014	979	1,730	1,753	1,927	2,014	2,725	2,142	2,141	2,236	2,774	173.6%
Crop, Livestock, Forestry & Fisheries Production	774	859	703	686	754	514	437	443	460	468	561	-27.6%
Food & Kindred Products Distribution	3,552	3,441	4,665	5,114	5,367	5,702	5,839	4,664	4,979	5,551	6,366	79.2%
Food & Kindred Products Manufacturing	1,533	1,719	3,292	3,973	4,087	4,141	3,509	3,165	3,303	3,570	3,781	146.7%
Forest Products Manufacturing	362	387	635	686	606	492	421	391	398	357	386	6.5%
Mining	45	19	17	155	154	130	140	155	154	124	171	278.7%
Nature-based Recreation	47	64	94	80	15	35	14	16	16	14	47	0.9%
Total	9,329	9,372	13,315	13,974	14,153	13,975	14,008	11,571	11,799	12,496	14,085	92.2%
Domestic and International Exports (million dollars)												
Agricultural Inputs & Services	904	850	1,456	1,296	1,431	1,463	1,948	1,521	1,514	1,592	2,211	144.5%
Crop, Livestock, Forestry & Fisheries Production	712	818	586	544	539	316	251	253	263	268	359	-49.6%
Food & Kindred Products Distribution	1,396	1,212	1,886	2,015	1,937	2,268	2,538	1,626	1,369	1,743	2,031	45.5%
Food & Kindred Products Manufacturing	1,404	1,583	3,117	3,601	3,349	3,207	2,829	2,569	2,666	2,779	3,023	115.3%
Forest Products Manufacturing	312	333	503	524	372	363	336	333	323	296	306	-1.9%
Mining	12	15	18	108	127	90	99	57	55	90	119	861.5%
Nature-based Recreation	18	37	68	52	3	9	0	3	3	1	0	-100%
Total	4,759	4,848	7,634	8,141	7,757	7,716	8,002	6,363	6,193	6,768	8,050	69.1%

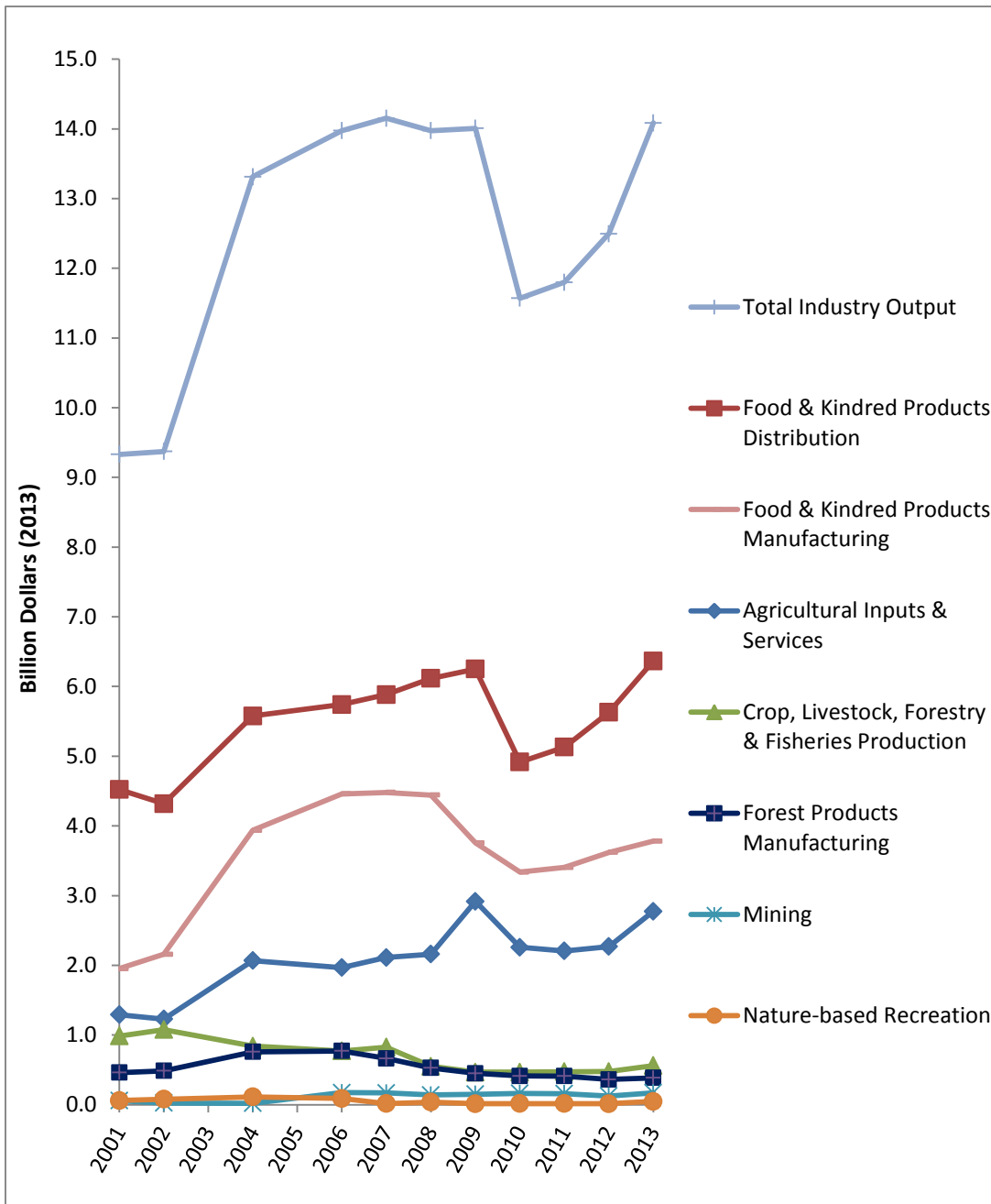
Source: IMPLAN Group, LLC. Values adjusted to 2013 dollars using GDP implicit price deflator. Note: data were not available for 2003 and 2005.

Figure 11. Trends in direct employment by agriculture, natural resources, and food industries in Hillsborough County, Florida, 2001-13



Source: IMPLAN Group, LLC, Note: data were not available for 2003 and 2005

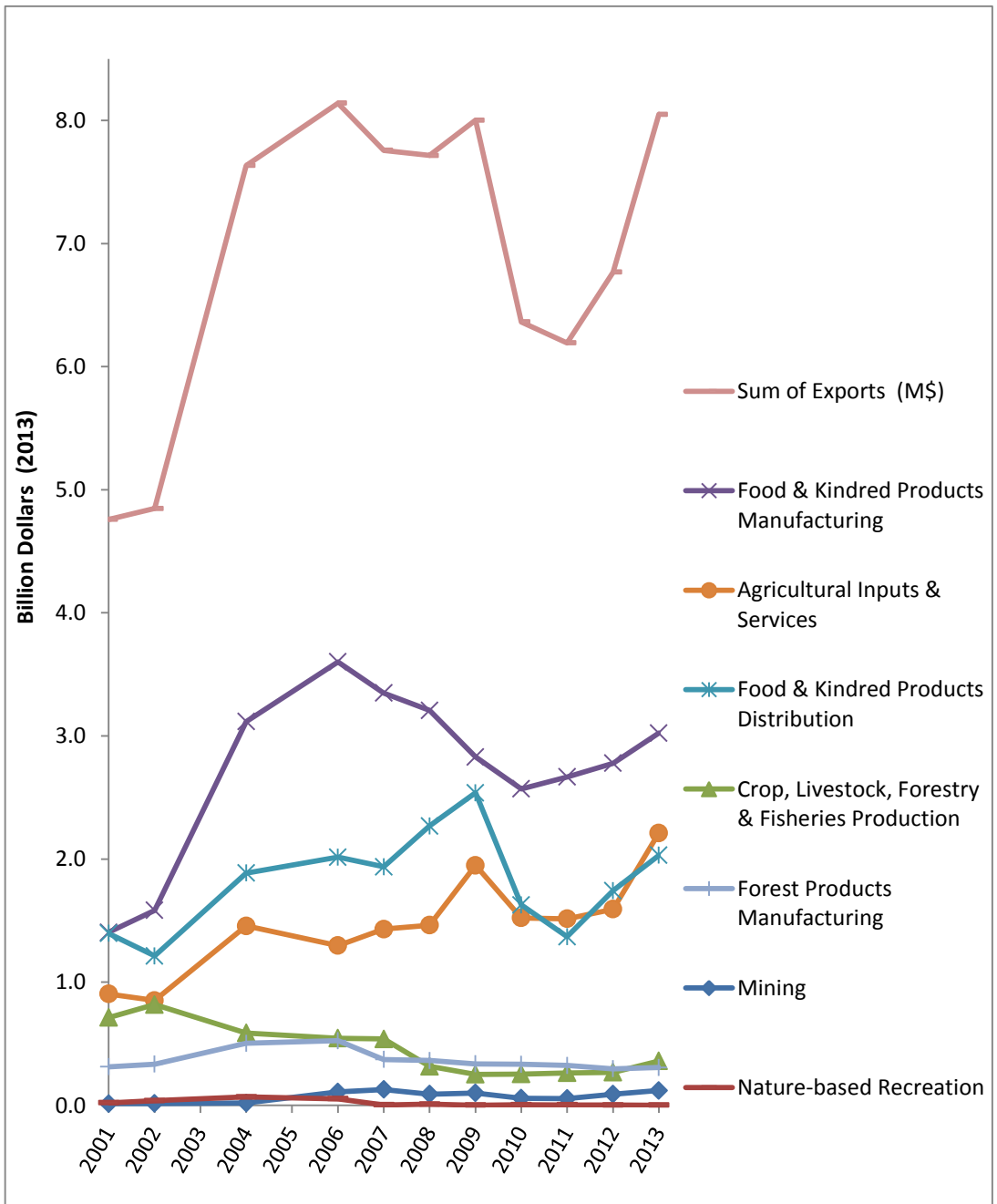
Figure 12. Trends in direct output by agriculture, natural resources, and food industries in Hillsborough County, Florida, 2001-13 (2013 dollars)



Source: IMPLAN Group, LLC, Note: data were not available for 2003 and 2005

Values adjusted to 2013 dollars using GDP implicit price deflator

Figure 13. Trends in domestic and international exports by agriculture, natural resource, and food industry groups in Hillsborough County, Florida, 2001-13



Source: IMPLAN Group, LLC. Note, data not available for 2003 and 2005. Values adjusted to 2013 dollars using GDP implicit price deflator

Total Economic Contributions of Agriculture, Natural Resources and Food Industries

Summary of Economic Contributions by Industry Groups

The estimated economic contribution or impacts, including regional multiplier effects, of agriculture, natural resources and food (ANRF) industries in Hillsborough County in 2013 are summarized in Table 8 and Figures 14-16. Measures of economic contribution include employment (fulltime and part-time jobs), industry output (sales revenues or gross margin on sales), value-added or Gross Domestic Product (GDP), labor income, other property type income, and business taxes on production and imports. The industry output contribution is the total revenues to local businesses. Value-added contribution represents revenues minus the costs of intermediate inputs, and is equivalent to the sum of labor income, other property income, and taxes on production and imports. More detailed definitions of these terms are given in the Glossary in Appendix A.

The estimated total employment contribution of ANRF industry groups in Hillsborough County were 168,653 fulltime and part-time jobs in 2013. This includes the indirect and induced multiplier effects arising from export sales of goods and services to markets outside the county. The employment contribution represented 20.7 percent of total county employment in 2013 (813,995 jobs), as reported by IMPLAN.

The total output contribution of ANRF industries in Hillsborough County in 2013 was estimated at \$22.46 billion, and the total value added contribution was estimated at \$11.28 billion. The GDP of Hillsborough County in 2013 was \$70.67 billion (IMPLAN), thus the value added contributions of ANRF industries represented nearly 16 percent of county GDP. The total labor income contribution, including employee compensation and proprietor income, was estimated at \$7.11 billion. The other property income contribution, including dividends, interest payments, rents and corporate profits, totaled \$3.11 billion. The contribution to taxes on production and imports was estimated at \$1.05 billion.

Among the ANRF industry groups, the largest contributions were generated by the Food and Kindred Products Distribution group, with 97,913 jobs, \$9.18 billion in output, \$5.76 billion in value added, \$3.85 billion in labor income, \$1.23 billion in other property type income, and \$1.05 billion in taxes on production and imports (Table 8). This represented over 40 or 50 percent of total ANRF contributions. Within the Food and Kindred Products Distribution group, the Food Services and Drinking Places (restaurants) sector was responsible for over two-thirds of the employment contributions and over half of the output and value added contributions.

The Food and Kindred Product Manufacturing group had the greatest value of exports (\$3.02 billion) and generated the second largest ANRF industry contributions to the county in 2013 at 25,342 jobs, \$6.48 billion in output, \$2.48 billion in value added, and \$191 million in taxes. Agricultural Inputs and Services made the third largest contributions, generating 25,299 jobs, \$4.79 billion in output, \$1.91 billion in value added, and \$114 million in business taxes, driven by \$2.21 billion in exports, the second largest among the groups. The Crop,

Livestock, Forestry and Fisheries Products group, generally recognized as production agriculture, generated 17,526 jobs, \$1.01 billion in output, \$665 million in value added and \$28 million in business taxes. The remaining three groups (Forest Products Manufacturing, Mining, and Nature-based Recreation), were collectively responsible for less than five percent of the total ANRF contributions in 2013.

Excluding the Food and Kindred Product Distribution industry group, and certain food manufacturing sectors that do not have a strong linkage to commodity production in the county, total economic contributions were 49,976 jobs, \$7.91 billion in industry output, \$3.43 billion in GDP, \$2.14 billion in labor income, \$1.09 billion in other property income, and \$199 million in business taxes (subtotal line in Table 8). The Food Manufacturing sectors included in this tabulation are indicted in the next section of the report.

Table 8. Summary of economic contributions of agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2013

Industry Group / Sector	Employment (Jobs)	Industry Output (\$M)	Value Added (\$M)	Labor Income (\$M)	Other Property Income (\$M)	Business Taxes (\$M)
Crop, Livestock, Forestry & Fisheries Production	17,526	1,005	665	455	182	28
Agricultural Inputs & Services	22,299	4,789	1,910	1,158	638	114
Forest Products Manufacturing	2,972	644	262	174	70	18
Food & Kindred Products Manufacturing: Core Sectors	4,579	1,111	391	238	125	29
Mining	1,799	311	174	92	72	10
Nature-based Recreation	803	47	26	19	6	1
Subtotal	<u>49,976</u>	<u>7,906</u>	<u>3,429</u>	<u>2,137</u>	<u>1,093</u>	<u>199</u>
Food & Kindred Products Manufacturing: All Sectors	25,342	6,484	2,476	1,369	915	191
Food & Kindred Products Distribution	97,913	9,176	5,764	3,846	1,231	687
Total	<u>168,654</u>	<u>22,456</u>	<u>11,278</u>	<u>7,114</u>	<u>3,114</u>	<u>1,049</u>

Figure 14. Employment contributions of agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2013

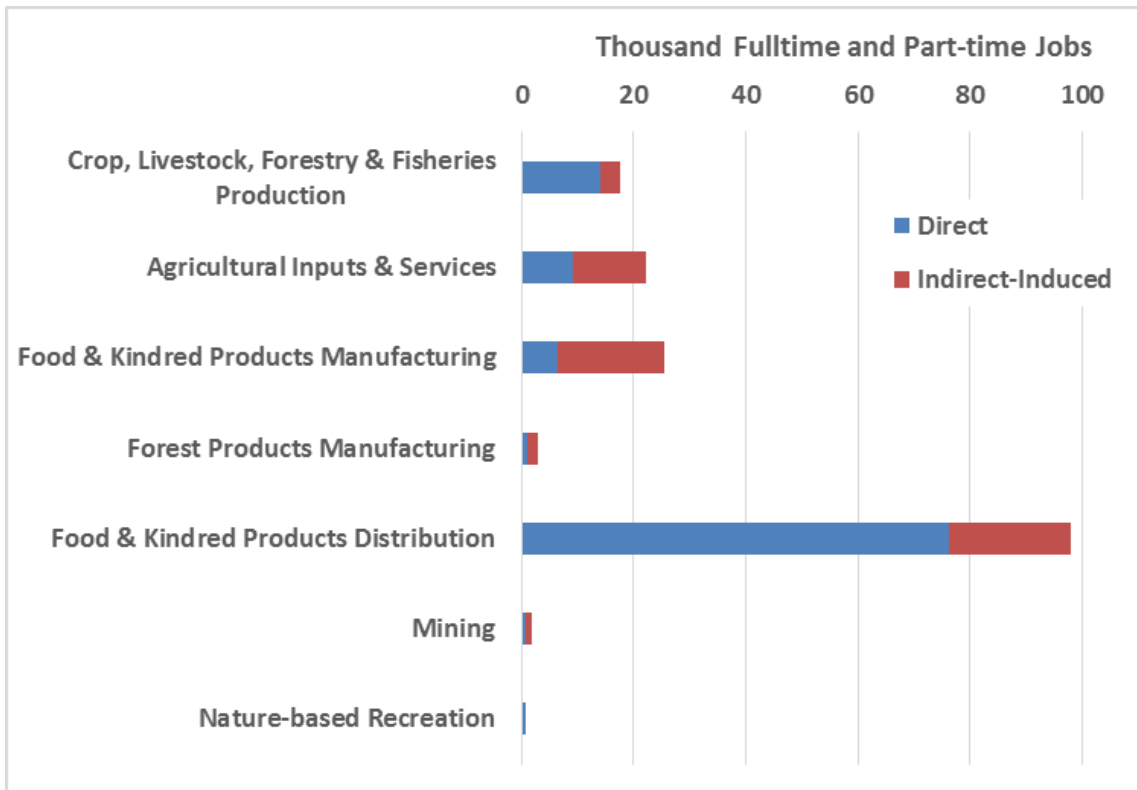


Figure 15. Industry output (revenue) contributions of agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2013

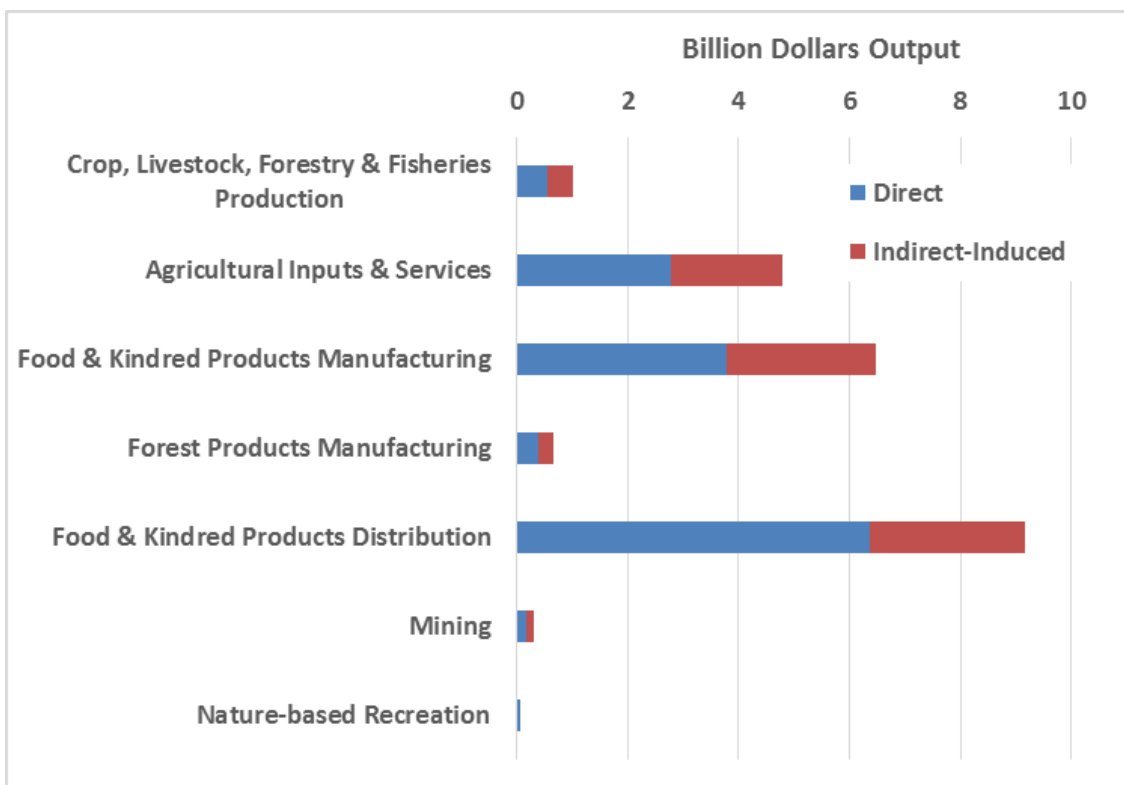
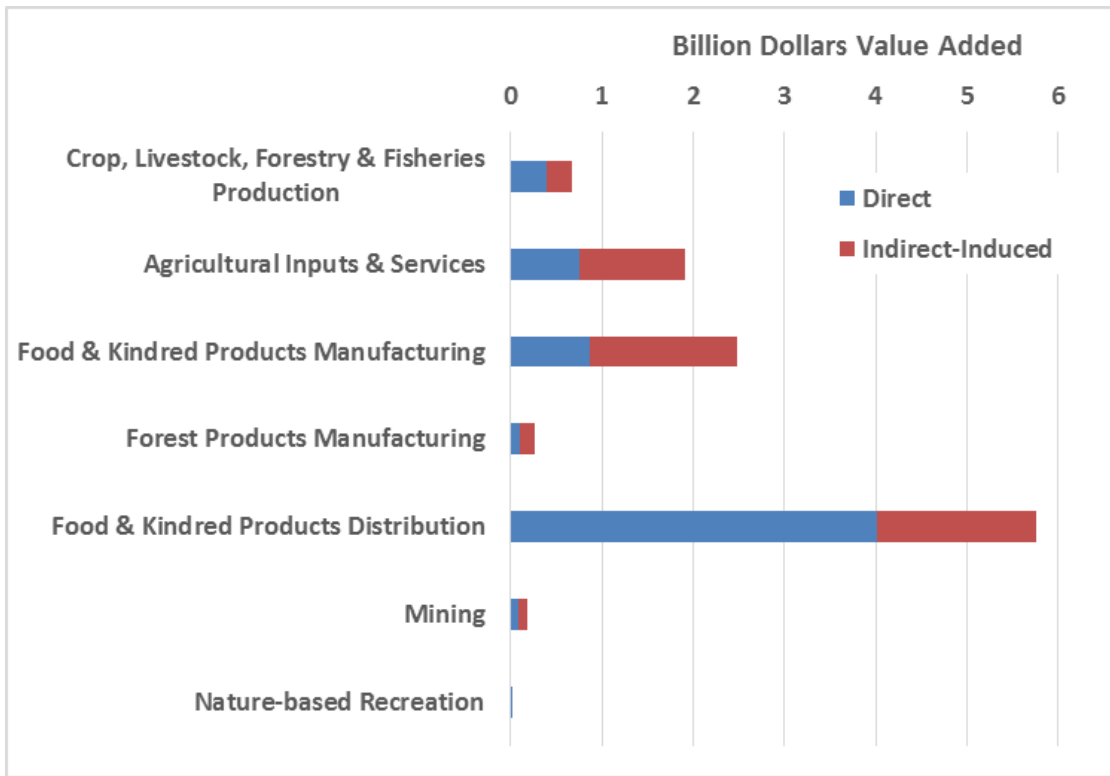


Figure 16. Value added (GDP) contributions of agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2013



Economic Contributions by Individual Industry Sectors

Estimates of economic contributions for individual industry sectors within the ANRF groups are presented in Table 9. Within the Crop, Livestock, Forestry and Fisheries Production group, the leading sectors in Hillsborough County in 2013 in term of total employment contributions were Fruit Farming (8,011 jobs, includes strawberries as well as tree fruits), Support Activities for Agriculture and Forestry (4,253 jobs), Vegetable and Melon Farming (2,146 jobs), and Greenhouse, Nursery, and Floriculture Production (1,564 jobs). Vegetable and Melon Farming had the largest employment multiplier among the larger sectors in this group.

Total output contributions for these same four leading sectors in the Crop, Livestock, Forestry, and Fishery group were estimated at \$291 M for Fruit farming, \$247 M for Support activities, \$195 M for Vegetable and Melon Farming, and \$114 M for Greenhouse, Nursery and Floriculture Production. Among the leading sectors, Support Activities had the largest output multiplier of 2.17. The output multiplier was highest for Commercial Fishing (2.39). Value added contributions for the four leading sectors in the Production group were \$207 M for Fruit Farming, \$163 M for Support Activities, \$142 M for Vegetable and Melon Farming, and \$76 M for Greenhouse and Nursery Production. Among the remaining six sectors in this group, Beef and Dairy Cattle had employment impacts of 615 jobs, followed by Poultry and Egg Production (378 jobs), Animal Production Except Cattle and Poultry (252 jobs), and All Other Crop Farming (197 jobs), as shown in Table 9.

Within the Agricultural Inputs and Services group, Fertilizer Manufacturing generated the largest employment contribution (13,007 jobs) and output contribution (\$4.06 billion) in 2013. This industry has a large multiplier effect because almost ninety percent of the output was exported from the county. Landscape Services was the next largest sector in this group, with 4,851 jobs and \$403 M output impacts. Veterinary Services and Pest Control Services generated employment contributions of 1,685 and 1,436 jobs, respectively, and output contributions of \$130 and \$87 M. The remaining three sectors in this group, Farm Machinery Manufacturing, Lawn and Garden Equipment Manufacturing, and Pesticide and Agrichemical Manufacturing--generated relatively small economic contributions (Table 9).

Food and Kindred Products Manufacturing was notable among ANRF industry groups for generating the greatest value of exports, at \$3.02 billion in 2013. By far the largest sector was Soft Drink and Ice Manufacturing, with exports of \$1.87 billion, generating employment contributions of 12,728 jobs and output contributions of \$3.40 billion, or over half of the total contributions for the group. The next largest sectors were Tobacco Product Manufacturing (2,947 jobs, \$985 M output), and Seafood Preparation and Packaging (1,789 jobs, \$372 M output). Food manufacturing sectors that have source raw food commodities from within the county or region are indicated in Table 9 under the subtotal for core food manufacturing, including Seafood Products, Animal Slaughtering, Breweries, Wineries, Distilleries, Frozen Food, Fruit and Vegetable Canning, Ice Cream and Frozen Desserts, Fluid Milk and Butter, Cheese, and All Other Food Manufacturing. This restricted set of food manufacturing sectors had total contributions of 4,579 jobs, \$1.11 billion in output, and \$391 million in GDP.

The Forest Products Manufacturing group was dominated by the Paperboard Container Manufacturing sector, which accounted for 1,916 jobs, \$425 M in output, and \$170 M in value added. The dominance of this sector was due to \$234 M in exports, or 99 percent of its total output. The Sawmills and Wood Preservation sector had employment contributions of 237 jobs, and All Other Converted Paper Product Manufacturing contributed 207 jobs.

Within the Food and Kindred Products Distribution group, the Food Services and Drinking Places sector generated 65,386 jobs, \$4.96 billion output, and \$3.05 billion in value added, although this sector is largely for local services, with a low share of exports (to county visitors). The sector Wholesale Trade in Food and Kindred Products had contributed 17,863 jobs, and \$3.12 billion in output. This sector is much less labor intensive, generating only 4.3 jobs per million dollars of revenues, compared to 15.4 jobs per million in the Food Services sector, but having a significantly bigger share of output exported outside the county. Retail Food and Beverage stores generated 13,929 jobs and \$1.02 billion in output. Retail Lawn and Garden Centers generated 736 jobs and \$71 M in output (Table 9).

The Mining group is comprised primarily of sectors for Minerals Mining, Oil and Gas Extraction, and Mining Support Services. The sector for Mining and Quarrying of Other Nonmetallic Minerals sector, which includes phosphate mining, had employment contributions of 688 jobs, output contributions of \$138 M, and value added contributions of 94 M in 2013. The sector for Extraction of Oil and Gas had greater direct employment of 392

jobs, but total employment contribution was only 396 jobs, due to a low level of exports. In comparison, Mining and Quarrying of Sand and Gravel, had direct employment of 95 jobs, but generated 541 total jobs, \$111 M in output and \$78 million in value added.

The Nature-based Recreation Group in Hillsborough County included Golf Courses, which contributed 803 jobs, \$47 M in output, and \$26 million in value added for the county in 2013. Possibly due to growing urbanization of the county and the high volume of commercial shipping in Tampa Bay, Recreational Fishing and Hunting Guides had very little officially reported business activity in the county in 2013.

Table 9. Summary of economic contributions of agriculture, natural resources and food industry groups and sectors in Hillsborough County, Florida, 2013

Industry Group / Sector	Direct Employment (Jobs)	Employment Impacts (Jobs)	Direct Output (\$M)	Output Impacts (M\$)	Exports Total (\$M)	Value Added Impacts (M\$)	Labor Income Impacts (M\$)	Other Property Income Impacts (M\$)	Business Tax Impacts (M\$)
Crop, Livestock, Forestry & Fisheries Production	13,952	17,525	561	1,005	359	665	455	182	28
Fruit farming	6,887	8,011	156	291	102	207	146	53	9
Support activities for agriculture & forestry	3,232	4,253	114	247	110	163	124	30	8
Vegetable & melon farming	1,465	2,146	110	195	66	142	79	58	5
Greenhouse, nursery, & floriculture production	1,228	1,564	74	114	29	76	60	13	2
Beef & dairy cattle ranching & farming	479	615	24	38	13	18	9	8	2
Animal production, except cattle & poultry & eggs	247	252	12	13	0	11	4	7	0
Poultry & egg production	209	378	61	85	30	34	21	11	1
All other crop farming	166	197	3	7	3	4	3	1	0
Commercial fishing	34	84	5	11	5	8	6	1	1
Forestry, forest products, & timber tract production	4	25	2	4	2	3	2	1	0
Agricultural Inputs & Services	9,146	22,299	2,774	4,789	2,211	1,910	1,158	638	114
Landscape services	4,851	5,772	282	403	96	254	193	54	8
Veterinary services	1,601	1,685	119	130	9	72	69	1	2
Fertilizer manufacturing	1,301	13,007	2,244	4,065	2,034	1,496	835	562	100
Pest control services	1,278	1,436	67	87	15	57	41	15	1
Farm machinery & equipment manufacturing	101	360	54	91	53	28	19	6	3
Lawn & garden equipment manufacturing	12	12	5	5	0	0	0	0	0
Pesticide & other agricultural chemical manufacturing	4	29	4	8	4	3	2	1	0
Food & Kindred Products Manufacturing	6,303	25,342	3,781	6,484	3,023	2,476	1,369	915	191
Subtotal Core Food Manufacturing	1,492	4,579	676	143	452	1,111	391	238	125
Seafood product preparation and packaging	689	1,789	224	49	175	372	137	89	41
Breweries	153	1,083	145	49	141	279	128	65	49
Animal (except poultry) slaughtering, rendering, and processing	136	513	80	9	44	142	38	27	9
Frozen food manufacturing	114	412	40	7	40	80	31	21	8
Fruit and vegetable canning, pickling, and drying	60	209	24	3	22	45	14	9	4
Ice cream and frozen dessert manufacturing	113	205	39	8	14	53	15	9	5
All other food manufacturing	98	172	31	4	7	39	9	6	2
Fluid milk and butter manufacturing	117	139	87	12	3	90	14	9	4
Wineries	9	35	3	0	2	5	2	1	1
Distilleries	2	20	2	1	2	5	3	1	1
Cheese manufacturing	1	1	1	0	0	1	0	0	0
Subtotal Ancillary Food Manufacturing	4,811	20,763	3,106	732	2,571	5,373	2,084	1,131	790
Soft drink & ice manufacturing	2,424	12,728	1,907	3,400	1,869	1,244	745	412	87
Bread & bakery product manufacturing	1,274	1,298	131	135	3	44	36	6	3
Seafood product preparation & packaging	689	1,789	224	372	175	137	89	41	7
Cookie, cracker, & pasta manufacturing	256	486	93	127	35	46	28	15	2
Tobacco product manufacturing	254	2,947	568	985	336	494	168	271	55
Coffee & tea manufacturing	183	1,468	134	241	89	89	53	30	5

Industry Group / Sector	Direct Employment (Jobs)	Employment Impacts (Jobs)	Direct Output (\$M)	Output Impacts (M\$)	Exports Total (\$M)	Value Added Impacts (M\$)	Labor Income Impacts (M\$)	Other Property Income Impacts (M\$)	Business Tax Impacts (M\$)
Nonchocolate confectionery manufacturing	180	554	66	124	64	44	28	14	3
Tortilla manufacturing	90	112	18	21	4	7	5	2	0
Flour milling & malt manufacturing	61	663	97	186	88	68	41	22	5
Other animal food manufacturing	46	360	65	113	65	34	21	11	3
Snack food manufacturing	24	122	17	31	17	12	7	5	1
Seasoning & dressing manufacturing	16	19	9	10	1	2	1	1	0
Confectionery manufacturing from purchased chocolate	1	4	0	1	0	0	0	0	0
Forest Products Manufacturing	1,119	2,972	386	644	306	262	174	70	18
Paperboard container manufacturing	543	1,916	236	425	234	170	118	39	13
Wood container & pallet manufacturing	131	136	18	19	1	8	5	3	0
Engineered wood member & truss manufacturing	117	161	21	28	5	11	9	1	1
Sawmills & wood preservation	98	237	42	62	18	28	14	12	1
Wood windows & doors & millwork manufacturing	88	90	19	19	0	8	4	3	0
All other converted paper product manufacturing	69	207	23	42	22	18	12	5	1
Stationery product manufacturing	48	153	18	33	17	14	9	4	1
Paper bag & coated & treated paper manufacturing	18	62	8	15	8	6	4	2	0
All other miscellaneous wood product manufacturing	8	11	2	2	0	1	0	1	0
Food & Kindred Products Distribution	76,208	97,913	6,366	9,176	2,031	5,764	3,846	1,231	687
Food services & drinking places	55,019	65,386	3,609	4,964	1,030	3,052	2,245	526	281
Retail Stores - Food & beverage	12,411	13,929	823	1,017	139	654	439	125	90
Wholesale trade, food & kindred products	8,111	17,863	1,871	3,125	855	2,014	1,133	572	309
Retail lawn & garden centers	668	736	62	71	6	44	29	8	7
Mining	753	1,799	171	311	119	174	92	72	10
Extraction of oil & natural gas	392	396	41	42	2	-6	5	-12	0
Mining & quarrying other nonmetallic minerals	137	688	64	138	62	94	49	40	4
Mining & quarrying s&, gravel, clay, & ceramic & refractory minerals	95	541	51	111	51	78	32	42	4
Support activities for oil & gas operations	58	82	6	9	3	5	4	1	0
Drilling oil & gas wells	48	48	6	6	0	1	1	0	0
Support activities for other mining	24	44	2	5	2	3	2	1	0
Nature-based Recreation	803	803	47	47	0	26	19	6	1
Golf courses	801	801	47	47	0	26	19	6	1
Recreational fishing & hunting guides	2	2	0	0	0	0	0	0	0
Total all groups / sectors	108,284	168,654	14,085	22,456	8,050	11,278	7,114	3,114	1,049

Trends in Industry Sector Contributions

Historical employment, output and value added contributions of Agriculture, Natural Resources, and Food Industry groups in Hillsborough County over the period 2001-13 are provided in Table 10 and Figures 17-19. In general, the magnitude of the changes in ANRF contributions over time is greater than comparable changes in direct values due to the greater volatility of exports compared to direct output, and the fact that contribution multipliers will tend to become larger as a regional economy grows and becomes more diversified, as has been the case for Hillsborough County.

Overall, employment contributions grew by 32,120 jobs, or 23.2 percent, from 2001 to 2013 (Table 10, Figure 17). This is 1.9 times faster than the 12.3 percent growth in direct jobs. Mining sectors had an increase of 1,420 jobs, representing a 375 percent increase. Employment contributions also increased for Food and Kindred Product Manufacturing (9,216 jobs, 57.2%), Agricultural Inputs and Services (4,480 jobs, 42.3%), Food and Kindred Products Distribution (18,695 jobs, 23.6%), and Nature-based Recreation (153 jobs, 23.5%), while employment contributions declined for Forest Products Manufacturing (-1,002 jobs, -25.2%), and Crop, Livestock, Forestry and Fisheries Products (-3,213 jobs, -15.5%). For Agricultural inputs and services, direct employment actually declined while total job contributions increased due to growth in exports. On the other hand, direct jobs increased for both Forest Products Manufacturing and Nature-based recreation, but total job contributions declined due to reduced exports.

Overall output contributions increased by \$8.33 billion or 58 percent between 2001 and 2013 in constant dollar terms (Table 10, Figure 18). The largest absolute gain in output contributions was in Food & Kindred Products Manufacturing, with an additional \$3.21 billion, or a 98 percent increase. Food and Kindred Products Distribution had a gain in output contribution of \$2.95 billion (47%), followed by Agricultural Inputs and Services (\$2.59 billion, 118%). Although mining output contributions grew by \$243 million, this represented a 355 percent gain for that smaller industry. Output contributions from Crop, Livestock, Forestry and Fisheries declined by -\$710 million, or -41 percent. Forest products manufacturing output contributions declined by -\$46 million (-6.7%). Nature based recreation experienced a percentage decline in output contributions of -41 percent, although this represented a decrease of only \$34 M. The relative magnitudes of these changes can be more easily appreciated from the chart of output contributions in Figure 15, keeping in mind that the vertical axis scale is larger in the upper panel.

Value added contributions by ANRF groups grew by \$3.82 billion, or 51 percent, over the 13 year period (Table 10, Figure 19). As with employment and output, this growth was dominated by Food and Kindred Products Distribution, capturing 56 percent, or \$2.08 billion, of total ANRF growth for this measure. Value added contributions by agricultural Inputs and Services nearly doubled (increase of 99%), to \$1.91 billion in 2013, a gain of over \$948 million. Food and Kindred Product Manufacturing increased by 60 percent, or \$930 million. Crop, Livestock, Forestry and Fisheries, declined in value added contributions by \$348 million (-34%). Mining value added increase over 10 fold during the period, although this only represented only 1.5 percent of total

ANRF value added contributions. Finally, Nature-based Recreation decreased by 49 percent to only \$26 million in 2013.

Table 10. Trends in total employment, industry output, and value added contributions of agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2001-13

Industry Group	2001	2002	2004	2006	2007	2008	2009	2010	2011	2012	2013	Percent change 2001-13
<u>Employment (Fulltime and Part-Time Jobs)</u>												
Food & Kindred Products Distribution	79,218	76,276	92,308	91,925	94,679	87,709	101,866	83,145	71,637	87,063	97,913	23.6%
Food & Kindred Products Manufacturing	16,126	18,637	26,947	32,416	24,510	15,558	23,052	20,882	11,587	19,316	25,342	57.2%
Agricultural Inputs & Services	17,459	17,833	20,296	20,332	21,014	13,662	24,422	23,489	17,940	21,630	22,299	27.7%
Crop, Livestock, Forestry & Fisheries Production	20,739	23,887	24,329	23,343	26,669	19,247	16,169	12,515	11,764	12,066	17,526	-15.5%
Forest Products Manufacturing	3,974	4,350	5,690	5,990	4,627	3,221	3,546	3,639	2,264	2,876	2,972	-25.2%
Mining	379	334	201	1,352	1,558	677	1,177	1,704	774	1,286	1,799	374.8%
Nature-based Recreation	650	1,488	2,161	1,815	344	361	303	293	321	318	803	23.5%
Total	138,545	142,805	171,934	177,172	173,401	140,436	170,536	145,667	116,286	144,556	168,654	21.7%
<u>Industry Output or Revenues (Million 2013 dollars)</u>												
Food & Kindred Products Distribution	6,230	5,776	7,727	8,124	8,359	7,596	9,732	7,374	5,949	8,036	9,176	47.3%
Food & Kindred Products Manufacturing	3,271	3,660	6,819	8,326	7,128	5,934	6,166	5,490	4,445	5,717	6,484	98.2%
Agricultural Inputs & Services	2,197	2,111	3,363	3,124	3,565	2,958	4,893	3,956	3,157	3,758	4,789	118.0%
Crop, Livestock, Forestry & Fisheries Production	1,715	1,984	1,446	1,312	1,449	743	797	813	665	798	1,005	-41.4%
Forest Products Manufacturing	690	740	1,154	1,210	1,004	722	748	720	567	621	644	-6.7%
Mining	68	39	37	279	324	184	258	237	189	241	311	354.7%
Nature-based Recreation	81	126	194	156	21	45	16	21	18	17	47	-41.4%
Total	14,252	14,437	20,742	22,531	21,850	18,181	22,609	18,612	14,990	19,188	22,456	58.4%
<u>Value Added or Gross Domestic Product (Million 2013 dollars)</u>												
Food & Kindred Products Distribution	3,680	3,514	4,454	4,756	4,871	4,400	6,144	4,943	3,846	5,254	5,764	56.6%
Food & Kindred Products Manufacturing	1,546	1,705	2,608	3,079	2,269	1,642	2,414	2,213	1,416	2,006	2,476	60.2%
Agricultural Inputs & Services	962	979	1,273	1,264	1,422	921	1,729	1,553	1,030	1,398	1,910	98.5%
Crop, Livestock, Forestry & Fisheries Production	1,013	1,153	866	752	855	468	451	474	374	481	665	-34.3%
Forest Products Manufacturing	272	305	499	549	408	264	325	311	207	271	262	-3.5%
Mining	15	24	22	164	197	105	146	109	67	134	174	1102.1%
Nature-based Recreation	51	70	123	92	13	17	10	13	12	11	26	-49.0%
Total	7,538	7,750	9,845	10,656	10,034	7,817	11,220	9,616	6,950	9,556	11,277	50.7%

Note: Estimates include regional multiplier effects. Data was not available for 2003 and 2005.

Figure 17. Trends in employment contributions by agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2001-13

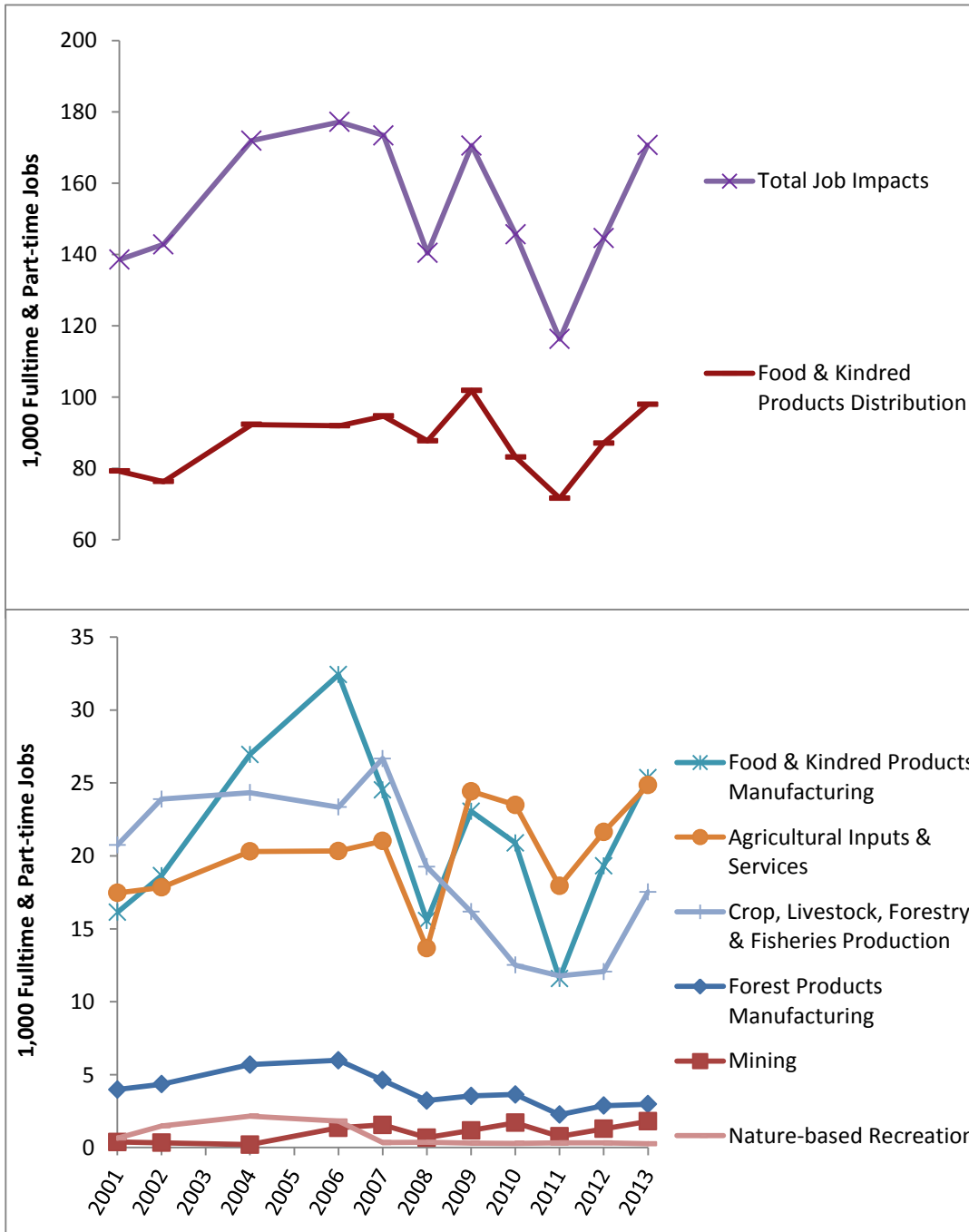


Figure 18. Trends in output contributions by agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2001-13

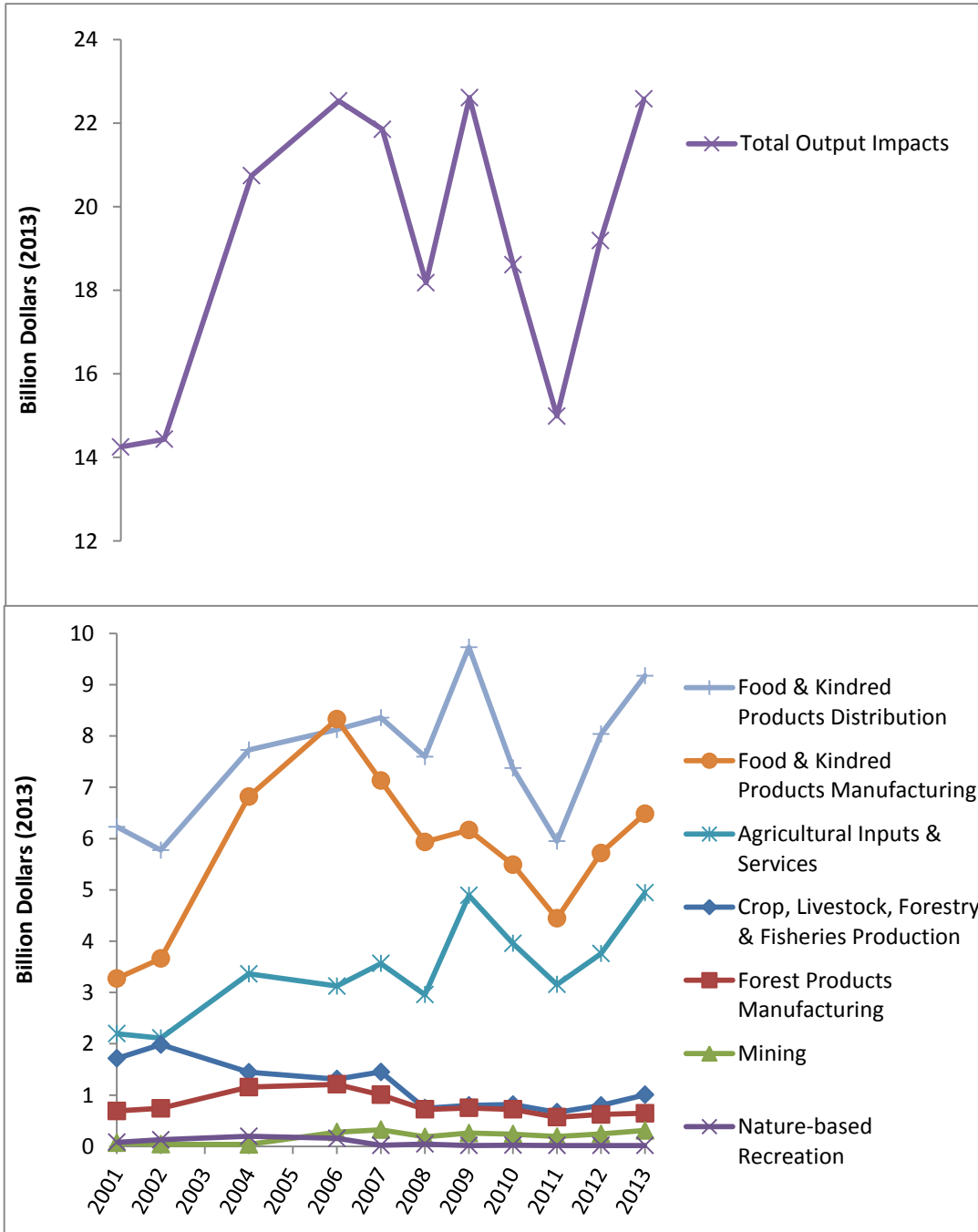
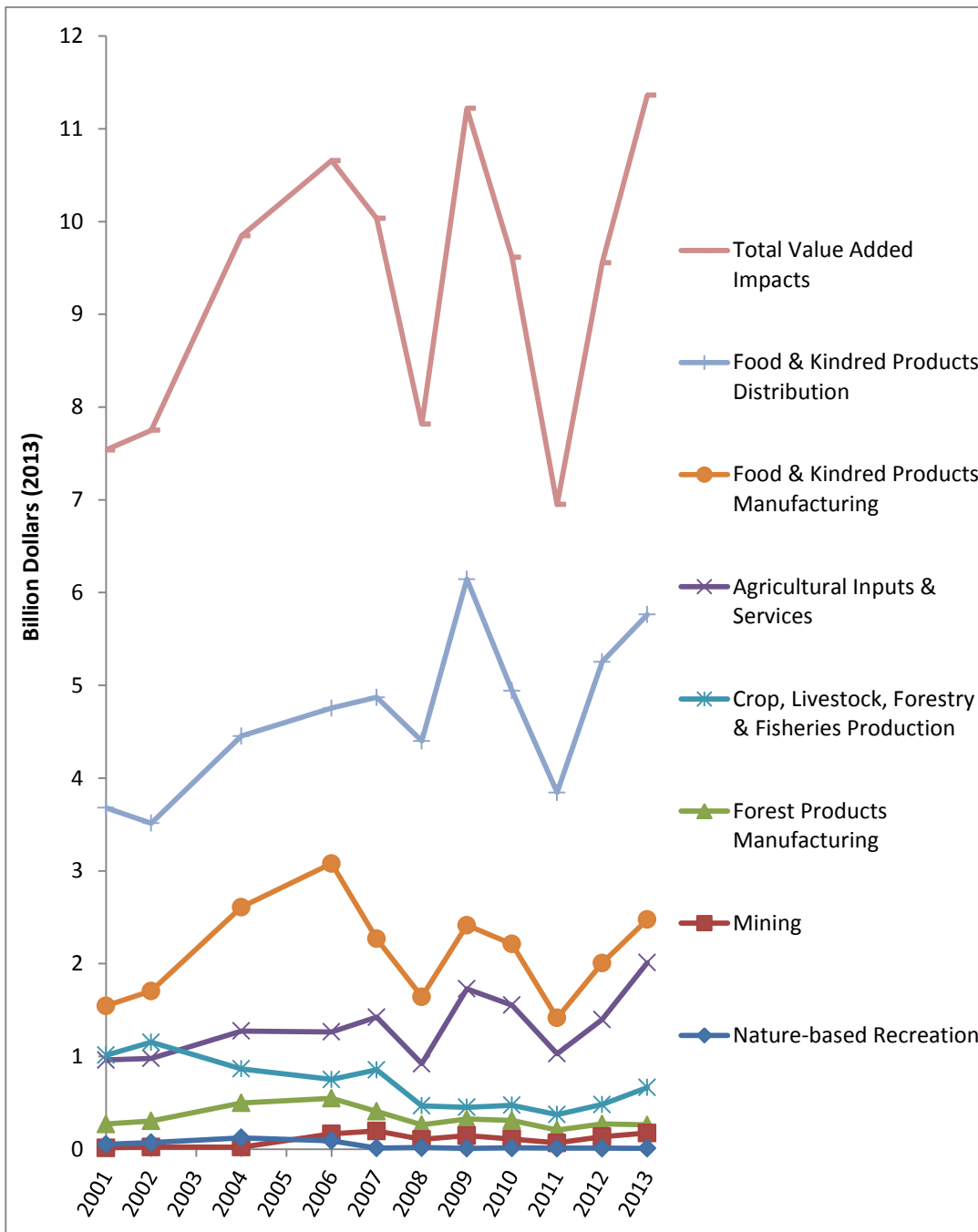


Figure 19. Trends in value added contributions by agriculture, natural resources, and food industry groups in Hillsborough County, Florida, 2001-13



Economic Contributions of Food and Fiber Commodity Groups

Commodity Based Summary Contributions

This section of the report focuses on the economic contributions for various food and fiber commodity groups in Hillsborough County that represent integrated market chains of production and processing activities, and in some cases also distribution. These commodity groups include Fruit and Vegetable Farming and Processing, Environmental Horticulture, Livestock Farming and Animal Products Manufacturing, Forestry and Forest Product Manufacturing, and Fishing and Seafood Products. A summary of the economic contributions of the commodity groups and their component sectors in 2013 is presented in Table 11.

Among these commodity groups, the largest employment contributions in 2013 were generated by Fruit and Vegetable Farming and Processing (10,354 jobs), followed by Environmental Horticulture (8,071 jobs), Forestry and Forest Products Manufacturing (2,997 jobs), Grain and Oilseed Farming and Processing (2,560 jobs), Livestock Farming and Animal Products (2,104), and Fishing and Seafood Products (1,873 jobs). Within the Fruit and Vegetable Farming and Processing group, the largest employment contributions were for Fruit Farming (8,011 jobs) and Vegetable and Melon Farming (2,146 jobs). Within the Environmental Horticulture group, the largest employment contributions were for Landscape Services (5,772 jobs) and Greenhouse, Nursery and Floriculture Production (1,564 jobs). Within the Livestock Farming and Animal Products Manufacturing, employment contributions were largest for Beef and Dairy Cattle Ranching and Farming (615 jobs) and Animal Slaughtering and Processing (513 jobs). Within Forestry and Forest Product Manufacturing, Paperboard Container Manufacturing generated 1,916 jobs. Within the Fishing and Seafood Products group, Seafood Product Preparation generated 1,789 jobs.

Output contributions among the commodity groups were more evenly distributed, with the biggest group being Forestry and Forest Products Manufacturing (\$648 M), followed by Environmental Horticulture (\$588 M), Fruit and Vegetable Farming and Processing (\$521), Grain and Oilseeds (\$469 M), Livestock and Animal Products (\$421 M), and Fishing and Seafood (\$383 M).

The Environmental Horticulture and Fruit and Vegetable commodity groups produced the largest value-added contributions at \$374 and \$364 million, respectively. Labor Income represents employee and proprietor earnings and is typically the largest component of value added, thus, the ranking among the groups for this measure was identical. Forestry and Forest Products Manufacturing generated the greatest tax contributions among the commodity groups, followed closely by Environmental Horticulture and Fruit and Vegetables.

Table 11. Summary of economic contributions of food and fiber commodity groups and sectors in Hillsborough County, Florida, 2013

Commodity Group / Sector	Employment (jobs)	Employment Impacts (Jobs)	Industry Output (\$M)	Domestic and International Exports (M\$)	Output Impacts (M\$)	Value Added Impacts (M\$)	Labor Income Impacts (M\$)	Other Property Income Impacts (M\$)	Business Tax Impacts (M\$)
Fruit & Vegetable Farming & Processing	8,389	10,354	281	184	521	364	235	115	14
Fruit farming	6,887	8,011	156	102	291	207	146	53	9
Vegetable and melon farming	1,465	2,146	110	66	195	142	79	58	5
Frozen food manufacturing	36	198	16	16	35	15	10	4	1
Environmental Horticulture	6,747	8,071	419	132	588	374	282	75	17
Landscape services	4,851	5,772	282	96	403	254	193	54	8
Greenhouse, nursery, and floriculture production	1,228	1,564	74	29	114	76	60	13	2
Retail lawn and garden centers	668	736	62	6	71	44	29	8	7
Livestock Farming & Animal Products Manufacturing	1,302	2,104	305	105	421	130	79	44	6
Beef and dairy cattle ranching and farming	479	615	24	13	38	18	9	8	2
Animal production, except cattle and poultry and eggs	247	252	12	0	13	11	4	7	0
Poultry and egg production	209	378	61	30	85	34	21	11	1
Animal (except poultry) slaughtering, rendering, and processing	136	513	80	44	142	38	27	9	2
Fluid milk and butter manufacturing	117	139	87	3	90	14	9	4	0
Ice cream and frozen dessert manufacturing	113	205	39	14	53	15	9	5	1
Cheese manufacturing	1	1	1	0	1	0	0	0	0
Forestry & Forest Product Manufacturing	1,123	2,997	387	308	648	265	176	71	18
Paperboard container manufacturing	543	1,916	236	234	425	170	118	39	13
Wood container and pallet manufacturing	131	136	18	1	19	8	5	3	0
Engineered wood member and truss manufacturing	117	161	21	5	28	11	9	1	1
Sawmills and wood preservation	98	237	42	18	62	28	14	12	1
Wood windows and doors and millwork manufacturing	88	90	19	0	19	8	4	3	0
All other converted paper product manufacturing	69	207	23	22	42	18	12	5	1
Stationery product manufacturing	48	153	18	17	33	14	9	4	1
Paper bag and coated and treated paper manufacturing	18	62	8	8	15	6	4	2	0
All other miscellaneous wood product manufacturing	8	11	2	0	2	1	0	1	0
Forestry, forest products, and timber tract production	4	25	2	2	4	3	2	1	0
Fishing & Seafood Products	723	1,873	228	180	383	145	95	42	8
Seafood product preparation and packaging	689	1,789	224	175	372	137	89	41	7
Commercial fishing	34	84	5	5	11	8	6	1	1
Total	18,284	25,400	1,620	908	2,561	1,277	867	347	64

Trends in Food and Fiber Commodity Group Contributions

Trends in employment, output, and value added contributions for the food and fiber commodity groups in Hillsborough County during 2001-13 are presented in Table 12 and Figures 20-22. Commodity groups are sorted in the table by the magnitude of their 2013 contributions. Nearly all commodity groups suffered a significant drop in economic activity during 2008 due to the global financial crisis and recession.

Two groups experienced growth in employment contributions over the period: Fruit and Vegetable Farming and Processing (3,831 jobs, 58.7%), and Grain and Oilseed Farming and Processing (290 jobs, 12.8%). The largest absolute and percentage reduction in employment contributions occurred in Livestock Farming and Animal Products Manufacturing (-3,617 jobs, -63%). Environmental Horticulture contributions decreased by 2,980 jobs (-27%), and Fishing and Seafood Products lost 1,038 jobs (-36%).

In terms of output contributions, Livestock Farming and Animal Products Manufacturing shrank by \$260 M (-35%), Environmental Horticulture lost \$215 M (-29%), and Fruits and Vegetables declined by \$206 M (-28%). Grain and Oilseeds were the one group that increased, by \$36 M (8%) over the 13 years.

For value added contributions, the Environmental Horticulture group dropped by \$218 M (37%). Fruits and Vegetables lost \$101 M (22%) over the entire period, although it recovered \$139 M in 2013. Forestry and Forest Products decline in value added contributions by an insignificant amount (\$10 M).

Table 12. Employment, output and value added contributions by food and fiber commodity groups in Hillsborough County, Florida, 2001–13

Commodity Group	2001	2002	2004	2006	2007	2008	2009	2010	2011	2012	2013	Percent change 2001-13
<u>Employment (fulltime and part-time jobs)</u>												
Fruit & Vegetable Farming & Processing	6,523	13,123	11,287	11,927	14,895	6,669	6,009	5,409	4,380	3,866	10,354	58.7%
Environmental Horticulture	11,051	12,352	11,717	12,808	12,182	9,798	14,263	13,046	12,555	12,500	8,071	-27.0%
Forestry & Forest Product Manufacturing	4,022	4,447	5,759	6,025	4,672	3,342	3,648	3,679	2,289	2,892	2,997	-25.5%
Grain & Oilseed Farming & Processing	2,270	2,553	1,852	1,409	1,062	979	1,377	2,003	996	1,254	2,560	12.8%
Livestock Farm. & Animal Products Manufacturing	5,722	3,271	3,650	4,015	4,571	4,429	2,945	1,755	1,694	1,817	2,104	-63.2%
Fishing & Seafood Products	2,911	3,594	2,961	2,202	1,947	1,410	1,679	1,507	1,147	2,140	1,873	-35.7%
<u>Value Added (million 2013 dollars)</u>												
Forestry & Forest Product Manufacturing	695	751	1,161	1,214	1,009	732	760	726	571	624	648	-6.8%
Environmental Horticulture	803	864	889	1,031	926	587	994	916	791	827	588	-26.8%
Fruit & Vegetable Farming & Processing	727	1,287	875	905	1,115	441	434	515	375	420	521	-28.3%
Grain & Oilseed Farming & Processing	433	463	388	312	227	250	332	490	251	339	469	8.3%
Livestock Farm. & Animal Products Manuf.	681	565	584	810	912	855	567	334	363	355	421	-38.1%
Fishing & Seafood Products	429	541	543	421	386	321	335	309	269	454	383	-10.8%
<u>Value Added (million 2013 dollars)</u>												
Environmental Horticulture	592	583	532	625	541	373	590	540	449	498	374	-36.8%
Fruit and Vegetable Farming & Processing	465	714	534	505	610	243	229	277	191	225	364	-21.8%
Forestry and Forest Product Manufacturing	274	310	502	550	411	268	331	315	209	273	265	-3.5%
Grain & Oilseed Farming & Processing	207	221	151	116	60	78	95	179	74	102	165	-20.4%
Fishing & Seafood Products	162	213	183	138	128	85	119	104	70	161	145	-10.7%
Livestock Farm. & Animal Products Manufacturing	172	154	142	160	180	145	109	75	68	73	130	-24.6%

Source: IMPLAN Group, LLC. Note: data not available for 2003 and 2005

Figure 20. Trends in employment contributions by food and fiber commodity groups in Hillsborough County, Florida, 2001-13

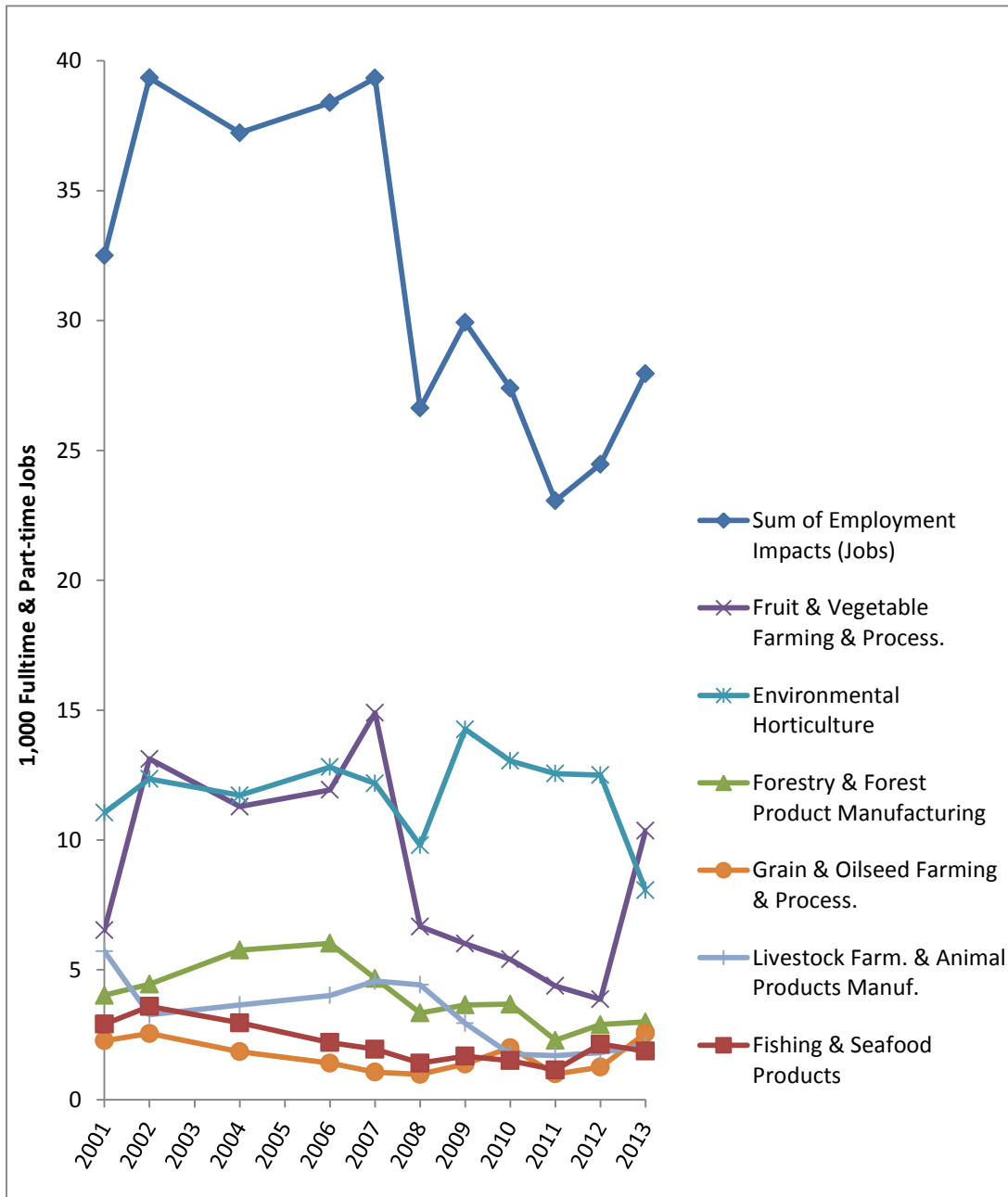


Figure 21. Trends in output (revenue) contributions by food and fiber commodity groups in Hillsborough County, Florida, 2001-13

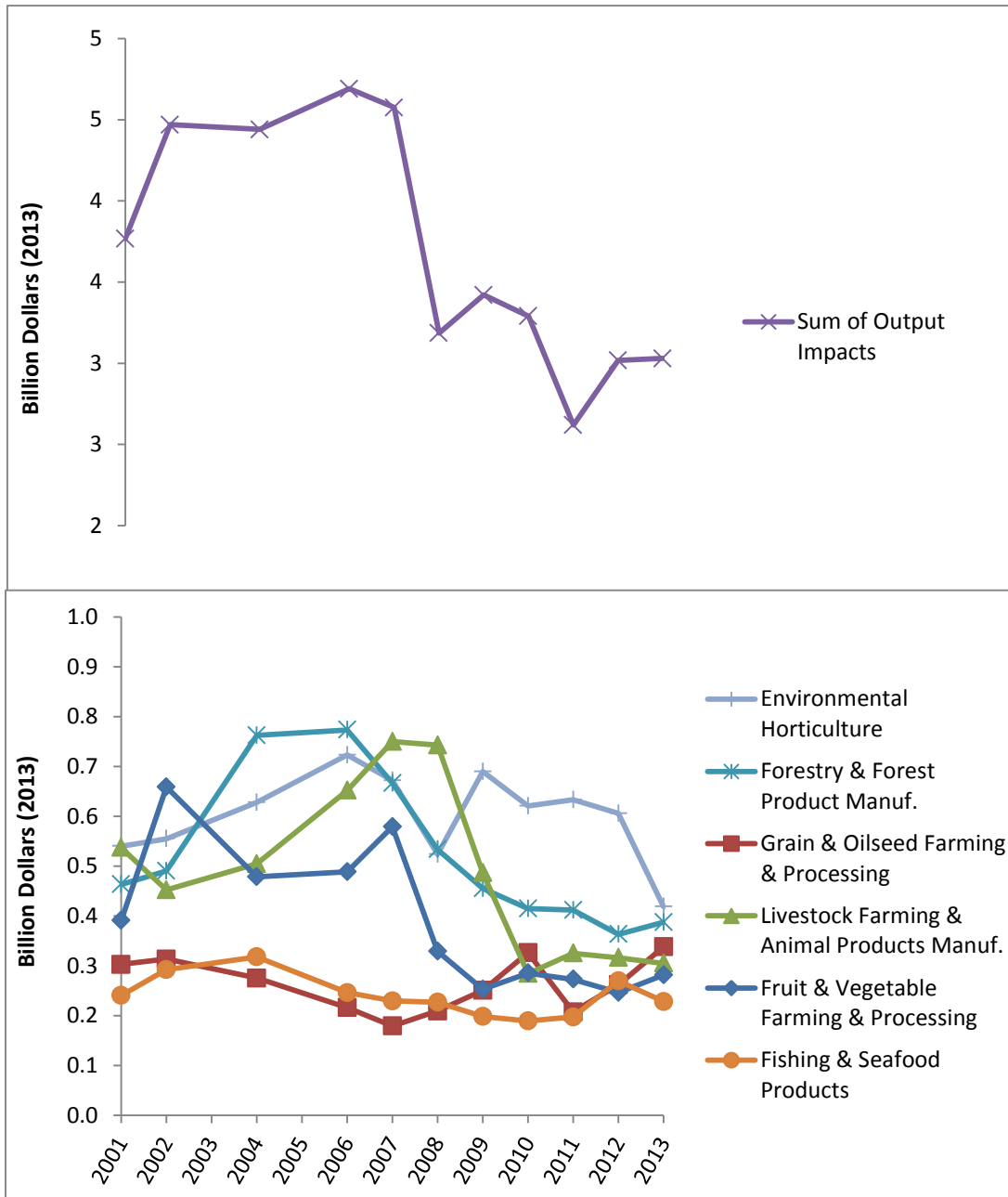
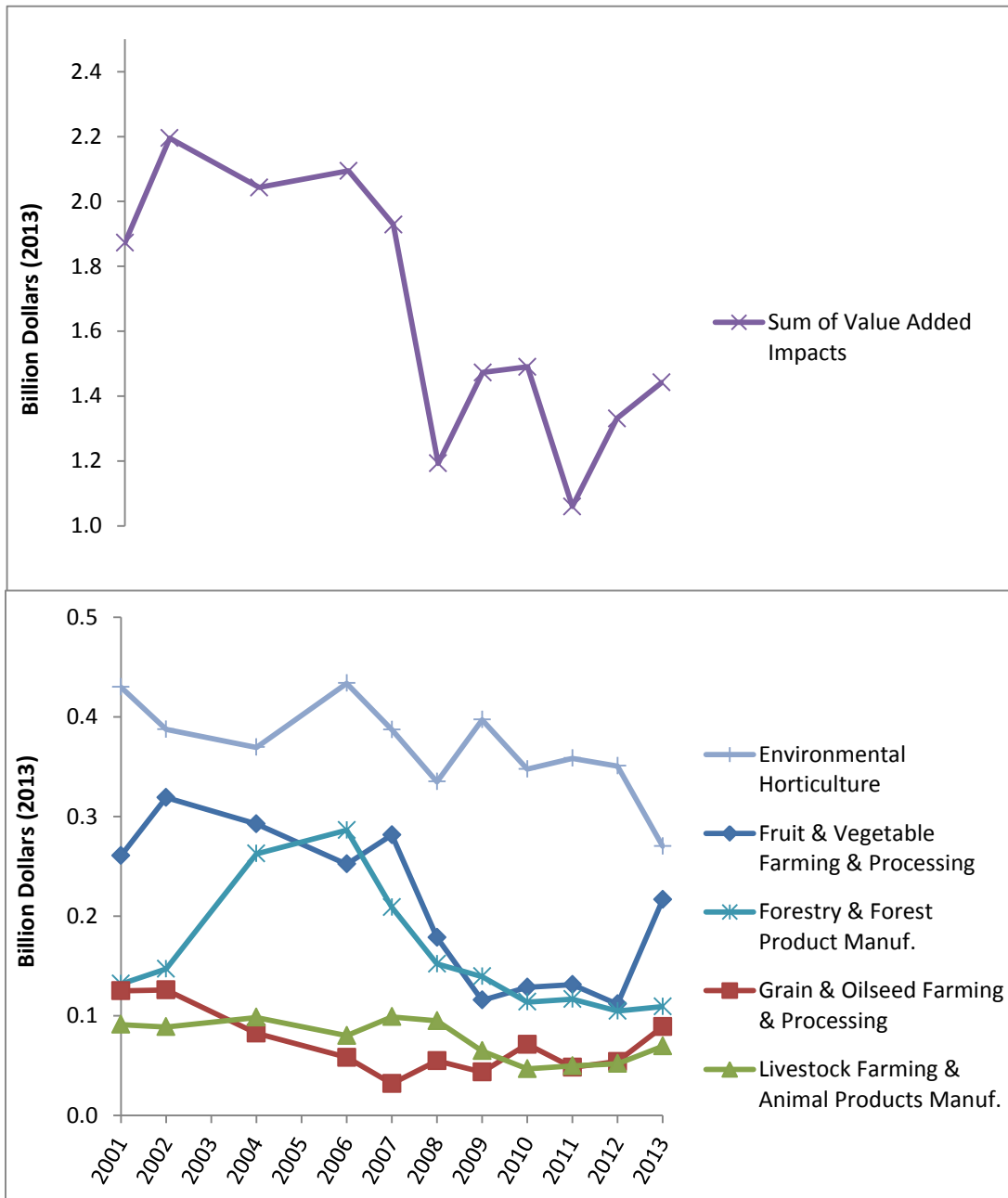


Figure 22. Trends in value added (GDP) contributions by food and fiber commodity groups in Hillsborough County, Florida, 2001-13



Imputed Multipliers

An indication of the level of economic development benefits provided by different agriculture, natural resources and food industry sectors can be gauged by the magnitude of imputed regional economic multipliers, as shown in Table 13. These imputed multipliers represent the ratio of estimated direct to total contributions. Higher numbers indicate greater multiplier effects. Sectors in the table are sorted in descending order of the imputed employment multiplier. For example, the Tobacco Product Manufacturing sector had an imputed employment multiplier of 11.59, meaning that for every direct job in this industry, a total of 11.59 jobs were contributed in the county economy. In general, manufacturing sectors tend to have very high imputed multipliers, while basic commodity production and service sectors have relatively lower multipliers.

Table 13. Imputed regional economic multipliers for employment, industry output and value added in agriculture, natural resource and food industry sectors in Hillsborough County, Florida in 2013

Industry Group / Sector	Employment	Industry Output	Value Added
Tobacco product manufacturing	11.59	1.73	2.00
Flour milling and malt manufacturing	10.87	1.93	4.30
Distilleries	10.68	2.07	2.39
Fertilizer manufacturing	10.00	1.81	3.33
Coffee and tea manufacturing	8.01	1.81	4.15
Pesticide and other agricultural chemical manufacturing	7.81	1.93	4.12
Other animal food manufacturing	7.77	1.72	5.29
Breweries	7.10	1.93	2.63
Forestry, forest products, and timber tract production	5.97	2.33	2.17
Mining and quarrying sand, gravel, clay, and ceramic and refractory minerals	5.71	2.17	1.89
Soft drink and ice manufacturing	5.25	1.78	3.54
Snack food manufacturing	5.09	1.83	2.98
Mining and quarrying other nonmetallic minerals	5.01	2.15	1.91
Animal (except poultry) slaughtering, rendering, and processing	3.77	1.77	4.02
Wineries	3.74	2.04	6.10
Frozen food manufacturing	3.62	1.98	4.26
Farm machinery and equipment manufacturing	3.58	1.70	4.77
Paperboard container manufacturing	3.53	1.81	3.01
Fruit and vegetable canning, pickling, and drying	3.47	1.90	4.98
Paper bag and coated and treated paper manufacturing	3.42	1.81	2.92
Stationery product manufacturing	3.18	1.85	2.85
Nonchocolate confectionery manufacturing	3.07	1.86	3.89
All other converted paper product manufacturing	3.02	1.86	2.91
Seafood product preparation and packaging	2.60	1.66	2.78
Confectionery manufacturing from purchased chocolate	2.56	1.84	4.21
Commercial fishing	2.45	2.39	2.04
Sawmills and wood preservation	2.43	1.49	1.77
Wholesale trade, food & kindred products	2.20	1.67	1.64
Cookie, cracker, and pasta manufacturing	1.90	1.36	1.75

Industry Group / Sector	Employment	Industry Output	Value Added
Support activities for other mining	1.86	2.26	2.48
Ice cream and frozen dessert manufacturing	1.82	1.35	1.98
Poultry and egg production	1.81	1.39	1.70
All other food manufacturing	1.75	1.25	2.14
Vegetable and melon farming	1.46	1.78	1.58
Support activities for oil and gas operations	1.41	1.49	1.57
Engineered wood member and truss manufacturing	1.38	1.29	1.50
All other miscellaneous wood product manufacturing	1.33	1.21	1.27
Support activities for agriculture and forestry	1.32	2.17	2.01
Beef and dairy cattle ranching and farming	1.29	1.56	1.79
Greenhouse, nursery, and floriculture production	1.27	1.53	1.48
Tortilla manufacturing	1.25	1.18	1.38
Seasoning and dressing manufacturing	1.20	1.05	1.17
Landscape services	1.19	1.43	1.41
All other crop farming	1.19	2.24	2.27
Food services and drinking places	1.19	1.38	1.38
Fluid milk and butter manufacturing	1.19	1.04	1.15
Cheese manufacturing	1.18	1.03	1.38
Fruit farming	1.16	1.87	1.67
Pest control services	1.12	1.31	1.28
Retail Stores - Food and beverage	1.12	1.24	1.23
Retail lawn and garden centers	1.10	1.14	1.14
Veterinary services	1.05	1.09	1.10
Wood container and pallet manufacturing	1.03	1.03	1.05
Wood windows and doors and millwork manufacturing	1.02	1.01	1.02
Animal production, except cattle and poultry and eggs	1.02	1.05	1.04
Bread and bakery product manufacturing	1.02	1.03	1.05
Extraction of oil and natural gas	1.01	1.01	0.95
Drilling oil and gas wells	1.00	1.00	1.00
Lawn and garden equipment manufacturing	1.00	1.00	1.00
Golf courses	1.00	1.00	1.00
Recreational fishing and hunting guides	1.00	1.00	1.00

Discussion and Conclusions

From this review of Agriculture, Natural Resource and Food Industries in Hillsborough County, Florida, it appears that the main drivers of its economic activity are: 1) the cycle of the national economy, 2) population growth, 3) real estate prices, 4) growth in value-added services, and 5) economies of scale in the food manufacturing and food distribution industry sectors.

The economy of Hillsborough County is closely tied to that of the nation and world through its significant infrastructure in trade, transportation, manufacturing, tourism, and finance. Therefore, it will continue to be subject to cycles in the wider economy. Diversification of the local economy offers some protection from these broader forces, and agriculture and related industries serve this purpose well. The county's rapid population growth is expected to continue into the foreseeable future, with population projected to reach nearly 1.8 million by 2035, a 35 percent increase from today. While this trend will stimulate further growth in local demand for food and kindred products, it poses a threat to the county's production agriculture, especially land extensive types such as row crops, fruit groves, and cattle ranching. Protecting farmland areas is vitally important to preserving these types of agriculture, and maintaining a distinctive identity for the agricultural community.

For Hillsborough County to retain its basic agricultural industries and accompanying open spaces, it must enact measures to protect these lands from the pressures of residential and commercial development. Such measures can result in a loss of potential development value for some agricultural land owners. Policy makers will have to devise programs to compensate stakeholders who are adversely affected.

Literature and Information Sources Cited

- CNN Money. Cost of Living Calculator, <http://money.cnn.com/calculator/pf/cost-of-living/>
- Erickson, Chris. Tampa Bay Business Journal. Publix Tops the List of Tampa Bay's Largest Employers. <http://www.bizjournals.com/tampabay/subscriber-only/2015/07/31/employers.html>
- Florida State Climate Center, Florida State University. 1981-2010 Normal data, Tampa International Airport. <http://climatecenter.fsu.edu/products-services/data/1981-2010-normals/tampa>
- Frazier, Norma Goolsby. Pioneering On The Lower Alafia and The Early Settlement Of Peru. Southwest Florida Water Management District. https://www.swfwmd.state.fl.us/education/watersheds/afia/img/settlement_citation.pdf.
- Gran, Stephen. Hillsborough County Agriculture Trends. Hillsborough County Economic Development Department. http://www.tbrpc.org/council_members/council_presentations/2011/050911/Gran_HillsboroughCo_AgTrends_05092011.pdf
- Greater Tampa Chamber of Commerce (GTCC). Arts and Attractions. <https://www.tampachamber.com/About-Tampa/Arts-and-Attractions.aspx>.
- Grismer, Karl. Tampa, A History of the City of Tampa and the Tampa Bay Region of Florida. 1950. <http://digital.lib.usf.edu/SFS0036422/00001>.
- Hammett, Yvette C. Mosaic near mining out Hillsborough, Commissioner Sandy Murman, Hillsborough County, District 1. Tampa Tribune, Sept. 28, 2014. <http://www.sandymurman.com/2015/01/2381/>.
- Hillsborough County Board of County Commissioners. About the County-Hillsborough County History. <http://www.hillsboroughcounty.org/index.aspx?nid=2578>.
- Hillsborough County Board of County Commissioners. Future of Hillsborough, Comprehensive Plan for Unincorporated Hillsborough County Florida Future Land Use, June 5, 2008. http://www.planhillsborough.org/wp-content/uploads/2012/10/FUTURE-LAND-USE_6_20141.pdf
- Hillsborough County Board of County Commissioners. Hillsborough County History. <http://www.hillsboroughcounty.org/index.aspx?nid=2578>
- Hillsborough County Public Works Department. Local Mitigation Strategy Document, 2009, Section II, Profile of Hillsborough County, Natural Features and Topography, <http://www.hillsboroughcounty.org/DocumentCenter/Home/View/1132>. Section III, Hazards Analysis, <http://www.hillsboroughcounty.org/DocumentCenter/Home/View/1130>. Section III, Hazards Analysis, <http://www.hillsboroughcounty.org/documentcenter/view/15815>
- Hillsborough County. Urban Service Area Capacity Study. http://www.planhillsborough.org/wp-content/uploads/2012/12/usa_final_combined_20120511.pdf
- IMPLAN Group, LLC. IMPLAN System data and software, 16740 Birkdale Commons Parkway, Suite 206, Huntersville, NC 28078. <http://www.IMPLAN.com>
- Index Mundi. DAP fertilizer monthly prices. <http://www.indexmundi.com/commodities/?commodity=dap-fertilizer&months=180>
- Index Mundi. Oranges monthly prices. <http://www.indexmundi.com/commodities/?commodity=oranges&months=360>
- Index Mundi. Rock phosphate monthly prices. <http://www.indexmundi.com/commodities/?commodity=rock-phosphate&months=180>

Kenkel, Phil. Causes of Fertilizer Price Volatility, Oklahoma Cooperative Extension Fact Sheet, AGECE-261 <http://agecon.okstate.edu/coops/files/agece-261.pdf>

Kite-Powell, R. and E.L. Dunham. Brief History of Hillsborough County, Florida. Tampa Bay History Center <http://tampabayhistorycenter.org/wp-content/uploads/2013/04/hillsborough-history-essay.pdf>

Miller, R. E. and P.D. Blair. 2009. Input-Output Analysis: Foundations and Extensions, Second Edition. Cambridge University Press, Cambridge, UK.

Port of Tampa Bay. <http://www.tampaport.com/about-port-tampa-bay.aspx>

Robinson, E.L. History of Hillsborough County Florida. 1928. <http://digital.lib.usf.edu/SFS0036431/00001>

Ruder, Jon and Edwin Bennion. Growing demand for fertilizer keeps prices high. U.S. Bureau of Labor Statistics, May 2013. <http://www.bls.gov/opub/btn/volume-2/pdf/growing-demand-for-fertilizer-keeps-prices-high.pdf>

Smith, Stanley K. Florida Population Growth: Past, Present and Future. Bureau of Economic and Business Research, University of Florida, 2005. https://www.bebr.ufl.edu/sites/default/files/Research%20Reports/FloridaPop2005_0.pdf

Smith, Stanley K. and Scott Cody. Trends in Florida's Population Growth, 2000 to 2012. Bureau of Economic and Business Research, University of Florida, <https://www.bebr.ufl.edu/content/trends-floridas-population-growth-2000-2012>

State of Florida, Office of Economic and Demographic Research. Florida Population Estimates for Counties. <http://edr.state.fl.us/Content/population-demographics/data/>

Tampa Bay Partnership. <http://www.tampabay.org/>

U.S. Bureau of Labor Statistics (BLS). Consumer Price Index Inflation Calculator . http://www.bls.gov/data/inflation_calculator.htm

U.S. Department of Agriculture, National Agricultural Statistics Service. Florida Citrus Statistics, 2012-2013. March, 2014. http://www.nass.usda.gov/Statistics_by_State/Florida/Publications/Citrus/fcs/2012-13/fcs1213.pdf

U.S. Department of Agriculture, Soil Conservation Service. Soil Survey of Hillsborough County. May, 1989, http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/florida/FL057/0/hillsborough.pdf

U.S. Department of Commerce, Bureau of Economic Analysis (BEA). Regional economic profiles. <http://www.bea.gov/regional/bearfacts/countybf.cfm>

U.S. Census Bureau, State and County QuickFacts. <http://quickfacts.census.gov/qfd/states/12/1238250.html>

U.S. Census Bureau, American Community Survey. Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2009-2013. <http://www.census.gov/population/metro/data/other.html>

U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration. NCEI. <http://www.ncdc.noaa.gov/cdo-web/datatools/normals>

U.S. Department Health and Human Services, Administration on Aging, Aging Integrated Database. <http://www.agid.acl.gov/CustomTables/>

U.S. Department of Labor, Bureau of Labor Statistics. <http://www.bls.gov/opub/btn/volume-2/growing-demand-for-fertilizer-keeps-prices-high.htm>

University of Florida, Bureau of Economic and Business Research (BEBR). <http://www.bebr.ufl.edu>

Wen-yuan Huang. Factors Contributing to the Recent Increase in U.S. Fertilizer Prices, 2002-08. Economic Research Service/USDA, AR-33. www.ers.usda.gov/media/184258/ar33.pdf

Appendix A: Glossary of Regional Economic Terminology

Direct effects/impacts: Direct impacts represent the initial revenues, value-added, income, or jobs that result directly from an economic activity within a regional economy.

Employment or Jobs: Represents the total numbers of wage and salaried employees as well as self-employed jobs. This includes full-time, part-time and seasonal workers measured in annual average jobs.

Indirect effects/impacts: Indirect effects occur when businesses use new revenues originating from outside the region (or reduced import leakages), to purchase inputs (goods and services) from local suppliers. This secondary, or indirect business, generates additional revenues, income, jobs and taxes for the area economy.

Induced effects/impacts: Induced effects or impacts occur when new dollars from outside the study area (either from increased export sales or reduced expenditures), are introduced into the local economy. Induced economic impacts occur as the households of business owners and employees spend their earnings from these enterprises to purchase consumer goods and services from other businesses within the region. This induced effect generates additional revenues, income, jobs and taxes for the area economy.

Input-Output (I-O) Analysis: The use of input-output models to estimate how revenues or employment for one or more particular industries, businesses or activities in a regional economy impact other businesses and institutions in that region, and the regional as a whole.

Input-Output (I-O) Models: A mathematical representation of economic activity within a defined region using industry transaction tables or matrices where the outputs of various industries and institutions are used as inputs by other or the same industries.

Labor Income: All forms of employment compensation, including employee wages and salaries, and proprietor income or profits.

Local revenues/expenditures: Local revenues or spending represent simple transfers between individuals or businesses within a regional economy. These transactions do not generate economic spin-off or multiplier (indirect and induced) effects.

Margins: Represent the differences between retail, wholesale, distributor and producers prices. IMPLAN I-O models are calibrated in producer prices. Thus, retail merchandise sales are generally margined to accurately reflect net revenues for the local economy.

Non-local or "New" revenues/expenditures: When outside or new revenues flow into a local economy either from the sale of locally produced goods and services to points outside the study area, or from expenditures by non-local visitors to the study area, additional economic repercussions occur through indirect and induced (multiplier) effects.

Other Property Type Income: Income in the form of rents, royalties, interest, dividends, and corporate profits.

Output: Revenues or sales associated with an industry or economic activity.

Taxes on Production & Imports or Indirect Business Taxes: Include sales, excise, and property taxes as well as fees and licenses paid by businesses during normal operations. It does not include taxes on profits or income.

Total Impacts: The sum of direct, indirect and induced effects or economic impacts.

Value added: Includes wages and salaries, interest, rent, profits, and indirect taxes paid by businesses. Total Value-added across all industries is equivalent to Gross Regional Product.