



---

# The University of Georgia

---

**Center for Agribusiness and Economic Development**

**College of Agricultural and Environmental Sciences**

---

## **Economic Impact of the Green Industry in Barrow County**

---

**Prepared by:  
Archie Flanders and John McKissick  
Center Report: CR-08-06  
March 2008**

---



## **Economic Impact of the Green Industry in Barrow County**

### **Executive Summary**

The green industry in Barrow County is composed of three sectors. These sectors are nursery and greenhouse production, landscape services, and retail sales. Production of plant material, landscape services, as well as retail sales are a stimulus to the entire Barrow County economy. Purchases of inputs within the county create secondary economic activity, while wages earned by employees lead to spending in all sectors of the economy. Greenhouse and nursery production has a total economic output impact of \$112,825 in the Barrow County economy. A total of \$46,002 in wages and benefits are due to production. Local governments realize \$1,620 in tax revenues due to greenhouse and nursery production. Economic output impacts of landscape services total \$10.8 million. Wages and benefits are \$4.2 million for 172 jobs associated with landscape services. Local governments in Barrow County receive \$218,862 in tax revenues due to landscape services. Retail sales of greenhouse and nursery products, as well as related supplies result in \$141,745 of wages and benefits for 3 jobs, for each \$1.0 million of retail sales. In addition to the direct sales taxes associated with sales, each \$1.0 million of retail sales generates \$26,622 in local tax revenues.

## **Economic Impact of the Green Industry in Barrow County**

The green industry in Barrow County is composed of three sectors. These sectors are nursery and greenhouse production, landscape services, and retail sales. The 2006 farm gate value of production reported by the Center for Agribusiness and Economic Development (CAED) at the University of Georgia is \$89,811. Landscape services including installation and maintenance totaled \$7.7 million of sales in 2006. Production of plant material, landscape services, as well as retail sales are a stimulus to the entire Barrow County economy. Purchases of inputs within the county create secondary economic activity, while wages earned by employees lead to spending in all sectors of the economy.

### **Principles of Economic Impact Analysis**

Economic impacts can be estimated with input-output models (IMPLAN) that separate the economy into various industrial sectors such as agriculture, construction, manufacturing, trade, and services. An input-output model calculates how a change in one industry changes output, income, and employment in other industries. These changes, or impacts, are expressed in terms of direct and indirect effects. Impacts are interpreted as the contribution of the enterprise to the total economy. Direct effects represent the initial impact on the economy of either construction or operations of an enterprise. Indirect effects are changes in other industries caused by direct effects of an enterprise and include changes in household spending due to changes in economic activity generated by direct effects. Thus, the total economic impact is the sum of direct and indirect effects. Input-output analysis can interpret the effects of an enterprise in a number of ways including output (sales), labor income (employee compensation and proprietary income), employment (jobs), and tax revenue.

Economic impacts result from a multiplier effect that begins with expenditures of an enterprise stimulating business to business spending, personal income, employment, and tax revenue. IMPLAN models include a regional purchase coefficient (RPC) for each impact variable that represents percentage of demand that is satisfied by production within an impact area. Demand for inputs not satisfied within the impact area represent leakages that have no indirect impacts in the impact area. Enterprises vary in their multiplier effects due to differing expenditure levels, RPC's, and sectors in which their expenditures are directed. Impact analysis involves quantification of spending levels and proper allocation to impacted sectors.

Output impacts are a measure of economic activity that results from expenditures in a specific industrial sector. Output is equivalent to sales, and this multiplier determines how initial economic activity in one sector leads to sales in other sectors. Personal income impacts measure purchasing power that is created due to the output impacts. This impact provides the best measure of how standards of living are affected for residents in the impact area.

An enterprise involves a specified number of employees that is determined by the technology of the enterprise. Employment multipliers indicate the effect on employment resulting from the enterprise initiating economic activity. IMPLAN indirect employment includes both full-time and part-time jobs without any distinction. Jobs calculated within an IMPLAN industrial sector are not limited to whole numbers and fractional amounts represent additional hours worked

without an additional employee. With no measure of hours involved in employment impacts, IMPLAN summations for industrial sectors which include fractional employment represent both jobs and job equivalents. Since employment may result from some employees working additional hours in existing jobs, instead of terming indirect employment impacts as “creating” jobs, a more accurate term is “involving” jobs or job equivalents.

### **Economic Impacts of Greenhouse and Nursery Production**

Direct sales of \$89,811 in Table 1 create additional sales of \$23,014 for a total output impact of \$112,825 in Barrow County. There is one job or job equivalent directly involved in production earning a total of \$39,466 in wages and benefits. Indirect income is \$6,536. Total Georgia tax revenues generated by production in Barrow County are \$5,392. Local governments in Barrow County receive \$1,620 in tax revenues from nursery and greenhouse production. Appendix 1 shows the distribution of impacts by major industrial sectors.

Table 1. Economic Impacts of Green Industry Production, Barrow County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	89,811	23,014	112,825
Labor Income (\$)	39,466	6,536	46,002
Employment	1	0	1
State Taxes (\$)			3,772
Local Taxes (\$)			1,620

### **Economic Impacts of Landscape Services**

Residences and commercial developments create a demand for landscape services in Barrow County. Direct sales from installation and maintenance in Table 2 are \$7.7 million. Indirect sales related to landscape services are \$3.1 million for a total output impact of \$10.8 million. A total of 137 employees and proprietors directly involved in landscape services earn \$3.2 million in wages and benefits. Indirect employment for 35 jobs adds \$1.0 million of earned income. Total wages and benefits for 172 jobs related to landscape services are \$4.2 million. This averages \$24,635 per job. Local governments in Barrow County receive \$218,862 of the total tax revenues generated in Georgia due to landscape services in the county. Appendix 2 shows the distribution of impacts among the major sectors in the local economy.

Table 2. Economic Impacts of Landscape Services, Barrow County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	7,670,478	3,129,841	10,800,319
Labor Income (\$)	3,230,259	1,007,005	4,237,265
Employment	137	35	172
State Taxes (\$)			330,593
Local Taxes (\$)			218,862

### Economic Impacts of Retail Sales

Aggregated data for a combination of building materials, garden equipment, and garden supplies indicates 2006 sales in Barrow County of \$59.6 million (The Georgia County Guide, CAED). Data is not available for the value of retail sales of garden supplies in Barrow County. Table 3 presents the economic impacts attributable to the retail margins associated with each \$1.0 million in garden supply sales. The total output impact is \$374,916. Total employee and proprietor wages and benefits are \$141,745 for 3 total jobs. Tax revenues in Table 3 include only those associated with the impacts of retail margins. Tax revenues associated with direct sales taxes are calculated by multiplying total retail sales by the applicable tax rate.

Table 3. Economic Impacts of Garden Supply Sales, Retail Margins for \$1,000,000 in Sales, Barrow County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	281,000	93,916	374,916
Labor Income (\$)	114,565	27,180	141,745
Employment	2	1	3
<sup>1</sup> State Taxes (\$)			25,411
<sup>1</sup> Local Taxes (\$)			26,622

<sup>1</sup>Does not include direct sales taxes on retail purchases. Multiply \$1,000,000 by applicable tax rate for direct sales taxes.

### Summary

Greenhouse and nursery production has a total economic output impact of \$112,825 in the Barrow County economy. A total of one job or job equivalent related to the production industry leads to \$46,002 in wages and benefits. Local governments realize \$1,620 in tax revenues due to greenhouse and nursery production. Economic output impacts of landscape services total \$10.8 million. Wages and benefits are \$4.2 million for 172 jobs associated with landscape services.

Local governments in Barrow County receive \$218,862 in tax revenues due to landscape services. Retail sales of greenhouse and nursery products, as well as related supplies result in \$141,745 of wages and benefits for 3 jobs, for each \$1.0 million of retail sales. In addition to the direct sales taxes associated with sales, each \$1.0 million of retail sales generates \$26,622 in local tax revenues.

Appendix 1. Green Industry Production, Economic Impacts to Major Sectors,  
Barrow County, 2006

Sector	Labor		
	Output (\$)	Income (\$)	Employment
Agriculture	90,360	39,750	1
MC <sup>1</sup>	257	99	0
Utilities	1,082	245	0
Manufacturing	1,216	225	0
Transportation, Warehousing	632	243	0
Trade	5,273	2,095	0
FIRE <sup>2</sup>	3,262	693	0
Services	6,109	2,535	0
Government & Non NAIC's	4,634	116	0
Total	112,825	46,002	1

<sup>1</sup>Mining and Construction

<sup>2</sup>Finance, Insurance, and Real Estate

Appendix 2. Landscape Services, Economic Impacts to Major Sectors,  
Barrow County, 2006

Sector	Labor		
	Output (\$)	Income (\$)	Employment
Agriculture	16,999	3,839	0
MC <sup>1</sup>	28,494	11,024	0
Utilities	73,630	16,932	0
Manufacturing	129,664	24,625	1
Transportation, Warehousing	116,291	47,956	1
Trade	984,370	395,282	11
FIRE <sup>2</sup>	401,282	87,673	3
Services	8,627,832	3,635,020	155
Government & Non NAIC's	421,757	14,915	0
Total	10,800,319	4,237,265	172

<sup>1</sup>Mining and Construction

<sup>2</sup>Finance, Insurance, and Real Estate

# **The Center for Agribusiness & Economic Development**



The Center for Agribusiness and Economic Development is a unit of the College of Agricultural and Environmental Sciences of the University of Georgia, combining the missions of research and extension. The Center has among its objectives:

To provide feasibility and other short term studies for current or potential Georgia agribusiness firms and/or emerging food and fiber industries.

To provide agricultural, natural resource, and demographic data for private and public decision makers.

To find out more, visit our Web site at: <http://www.caed.uga.edu>

## **Or contact:**

**John McKissick, Director**  
**Center for Agribusiness and Economic Development**  
**Lumpkin House**  
**The University of Georgia**  
**Athens, Georgia 30602-7509**  
**Phone (706)542-0760**  
**caed@agecon.uga.edu**

The University of Georgia and Fort Valley State University, and the U.S. Department of Agriculture and counties of the state cooperating. The Cooperative Extension Service offers educational programs, assistance and materials to all people without regard to race, color, national origin, age, sex or disability.

An equal opportunity/affirmative action organization committed to a diverse work force.

---

**Report Number: CR-08-06**

**March 2008**

---

Issued in furtherance of Cooperation Extension Acts of May 8 and June 30, 1914, the University of Georgia College of Agricultural and Environmental Sciences, and the U.S. Department of Agriculture cooperating.

**J. Scott Angle, Dean and Director**