



The University of Georgia

Center for Agribusiness and Economic Development

College of Agricultural and Environmental Sciences

Economic Impact of the Green Industry in Clarke County

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Executive Summary

The green industry in Clarke 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 Clarke 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 \$33.5 million in the Clarke County economy. A total of 351 jobs related to the production industry lead to \$20.1 million in wages and benefits. Local governments realize \$528,977 in tax revenues due to greenhouse and nursery production. Economic output impacts of landscape services total \$22.5 million. Wages and benefits are \$9.3 million for 336 jobs associated with landscape services. Local governments in Clarke County receive \$419,816 in tax revenues due to landscape services. Retail sales of greenhouse and nursery products, as well as related supplies result in \$142,447 of wages and benefits for 4 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 \$23,879 in local tax revenues.

Economic Impact of the Green Industry in Clarke County

The green industry in Clarke 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 \$23.7 million. Landscape services including installation and maintenance totaled \$15.7 million of sales in 2006. Production of plant material, landscape services, as well as retail sales are a stimulus to the entire Clarke 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 \$23.7 million in Table 1 create additional sales of \$9.9 million for a total output impact of \$33.5 million in Clarke County. There are 255 employees and proprietors directly employed in production earning a total of \$17.0 million in wages and benefits. Indirect employment for 96 jobs totals \$3.1 million in wages and benefits. The average income for all jobs related to greenhouse and nursery production is \$57,165. Total Georgia tax revenues generated by production in Clarke County are \$1.5 million. Local governments in Clarke County receive \$528,977 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, Clarke County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	23,651,125	9,857,680	33,508,805
Labor Income (\$)	16,961,548	3,103,490	20,065,038
Employment	255	96	351
State Taxes (\$)			989,756
Local Taxes (\$)			528,977

Economic Impacts of Landscape Services

Residences and commercial developments create a demand for landscape services in Clarke County. Direct sales from installation and maintenance in Table 2 are \$15.7 million. Indirect sales related to landscape services are \$6.8 million for a total output impact of \$22.5 million. A total of 259 employees and proprietors directly involved in landscape services earn \$6.9 million in wages and benefits. Indirect employment for 77 jobs adds \$2.4 million of earned income. Total wages and benefits for 336 jobs related to landscape services are \$9.3 million. This averages \$27,747 per job. Local governments in Clarke County receive \$419,816 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, Clarke County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	15,672,600	6,814,678	22,487,278
Labor Income (\$)	6,943,106	2,379,778	9,322,884
Employment	259	77	336
State Taxes (\$)			561,161
Local Taxes (\$)			419,816

Economic Impacts of Retail Sales

Aggregated data for a combination of building materials, garden equipment, and garden supplies indicates 2006 sales in Clarke County of \$189.0 million (The Georgia County Guide, CAED). Data is not available for the value of retail sales of garden supplies in Clarke 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 \$383,691. Total employee and proprietor wages and benefits are \$142,447 for 4 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 Stores, Retail Margins for \$1,000,000 in Sales, Clarke County, 2006

	Direct Impact	Indirect Impact	Total Impact
Output (\$)	281,000	102,691	383,691
Labor Income (\$)	109,711	32,736	142,447
Employment	3	1	4
¹ State Taxes (\$)			21,615
¹ Local Taxes (\$)			23,879

¹Does 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 \$33.5 million in the Clarke County economy. A total of 351 jobs related to the production industry lead to \$20.1 million in wages and benefits. Local governments realize \$528,977 in tax revenues due to greenhouse and nursery production. Economic output impacts of landscape services total \$22.5 million. Wages and benefits are \$9.3 million for 336 jobs associated with landscape services.

Local governments in Clarke County receive \$419,816 in tax revenues due to landscape services. Retail sales of greenhouse and nursery products, as well as related supplies result in \$142,447 of wages and benefits for 4 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 \$23,879 in local tax revenues.

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

Sector	Labor		
	Output (\$)	Income (\$)	Employment
Agriculture	23,765,484	17,041,698	256
MC ¹	46,718	19,997	0
Utilities	397,636	82,275	1
Manufacturing	553,414	102,301	2
Transportation, Warehousing	237,970	116,664	3
Trade	2,039,071	807,849	27
FIRE ²	1,540,429	344,481	10
Services	3,384,881	1,503,774	51
Government & Non NAIC's	1,543,202	46,000	1
Total	33,508,805	20,065,038	351

¹Mining and Construction

²Finance, Insurance, and Real Estate

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

Sector	Labor		
	Output (\$)	Income (\$)	Employment
Agriculture	1,778	419	0
MC ¹	28,261	12,140	0
Utilities	148,821	30,091	0
Manufacturing	262,767	53,192	1
Transportation, Warehousing	233,617	115,288	2
Trade	2,129,875	849,196	30
FIRE ²	1,005,961	221,897	6
Services	18,087,549	8,012,350	295
Government & Non NAIC's	588,650	28,311	1
Total	22,487,278	9,322,884	336

¹Mining and Construction

²Finance, 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>

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J. Scott Angle, Dean and Director