4. Results for Production and Manufacturing Sectors

Production and manufacturing activity in the Green Industry includes the sectors for nursery and greenhouse, lawn and garden equipment manufacturers, and greenhouse manufacturers (prefabricated metal buildings). The activities included within each sector are indicated in Table 4-1.

Nursery, Greenhouse and Floriculture Production (NAICS 1114). This sector is comprised of establishments primarily engaged in growing nursery products, nursery stock, shrubbery, bulbs, fruit stock, sod, and so forth, under cover or in open fields and/or growing short rotation woody trees with a growth and harvest cycle of 10 years or less for pulp or tree stock. As a cross reference to other related industry sectors, establishments primarily engaged in growing vegetable and melon bedding plants are classified under Vegetable and Melon Farming (NAICS 11121); establishments primarily engaged in operating timber tracts (i.e., growing cycle greater than 10 years) are classified under Timber Tract Operations (113110); establishments primarily engaged in producing seedling trees for planting for commercial timber production are classified under Forest Nurseries and Gathering of Forest Products (113210); establishments primarily engaged in retailing nursery, tree stock, and floriculture products primarily purchased from others are classified under Nursery, Garden Center, and Farm Supply Stores (NAICS 444220).

Lawn and Garden Equipment Manufacturing (NAICS 333112). This sector is comprised of establishments primarily engaged in manufacturing of powered lawn mowers, lawn and garden tractors, and other home lawn and garden equipment such as tillers, shredders, and yard vacuums and blowers. As a cross reference to other related industry sectors, establishments primarily engaged in manufacturing commercial mowing and other turf and grounds care equipment are classified under Farm Machinery And Equipment Manufacturing (NAICS 333111); establishments primarily engaged in manufacturing non-powered lawn and garden shears, edgers, pruners, and lawnmowers are classified under Cutlery and Handtool Manufacturing (NAICS 33221).

Table 4-1. Products Included in the Production and Manufacturing Sectors of the Green Industry

Industry Sector/Subsector (NAICS code)		Products
Nursery & Greenhouse (1114)	Nursery and Tree Production (111421)	Nursery products, nursery stock, shrubbery, bulbs, fruit stock, sod grown under cover or in open fields, short rotation woody trees with a growing and harvesting cycle of ten years or less.
	Floriculture Production (111422)	Cut flowers, roses, cut cultivated greens, potted flowering plants, foliage plants, and flower seeds grown under cover and in open fields.
Lawn & garden tractor and home lawn and garden equipment manufacturing (333112)		Manufacturing of powered lawn mowers, lawn and garden tractors, and other home lawn and garden equipment such as tillers, shredder and yard vacuums and blowers.
Greenhouse manufacturing (Prefab. metal building and component manufacturing, 332311)		Manufacturing prefabricated metal buildings, panels and sections.

The number of establishments, employment, payroll, and sales receipts for the production and manufacturing sectors of the Green Industry in 2002 are shown in Table 4-2. There were a total of 56,233 business establishments involved in these sectors of the industry, mostly as nursery and greenhouse producers, with a relatively small number of lawn and garden equipment and greenhouse manufacturing firms (145 and 18, respectively). Total sales receipts in 2002 were $23.0 billion (Bn), including $16.4 Bn for nurseries, $6.5 Bn for lawn & garden equipment manufacturers, and $121 Mn for greenhouse manufacturers. The production and manufacturing sectors represented about 16 percent of the overall Green Industry sales receipts. Nursery and greenhouse firms are typically rather small, with average annual sales of $291,800, compared to average sales of $44.9 Mn for lawn and garden equipment manufacturers and $5.7 Mn for greenhouse manufacturers. For lawn and garden equipment manufacturers, total reported employment was 22,201 employees and total payroll was $681 million (Mn). Employment and payroll for greenhouse manufacturers were estimated in proportion to the sales of greenhouses within the larger industry group of Prefabricated Building Manufacturers. Employment for the nursery and greenhouse sector totaled 150,543 employees, with an annual payroll amounting to $4.5 Bn.

Table 4-2. Establishments, Employment, Payroll and Sales in Production and Manufacturing Sectors of the U.S. Green Industry, 2002

Industry Sector	Establish-ments	Paid Employees	Annual Payroll ($Mn)	Sales Receipts ($Mn)
Nursery & Greenhouse	56,070	150,543	4,459	16,362
Lawn & Garden Equipment Manufacturing	145	22,201	681	6,517
Greenhouse Manufacturing*	18	659	21,756	121
Total Production/Manufacturing	56,233	173,043	26,839	23,000

* Payroll and employment estimated proportional to merchandise or product line sales as share of total sales.
Sources: 2002 Economic Census (US Census Bureau), and 2002 Census of Agriculture (USDA).

Economic impact estimates for the production and manufacturing sectors are summarized in Table 4-3. Total impacts for this industry group included output of $34.6 billion (Bn), employment impacts of 300,677 jobs, value added of $20.8 Bn, labor income of $11.0 Bn, and indirect business taxes of $784 Mn. The nursery and greenhouse sector was the largest in this group by all measures, with $26.1 Bn in output impacts, 261,408 jobs, $18.1 Bn in value added, $9.6 Bn in labor income, and $647 Mn in indirect business taxes. The lawn and garden equipment manufacturing sector had total impacts of $8.3 Bn in output, 37,343 jobs, $2.6 Bn in value added, $1.3 Bn in labor income, and $129 Mn in indirect business taxes. Greenhouse manufacturing had total output impacts of $244 Mn, employment impacts of 1,927 jobs, value added impacts of $110 Mn, labor income impacts of $78 Mn, and indirect business tax impacts of $7 Mn. Collectively, the production and manufacturing sectors represented 23 percent of overall Green Industry output impacts, 15 percent of employment impacts, and 22 percent of value added impacts.

Table 4-3. Economic Impacts of the Production and Manufacturing Sectors of the U.S. Green Industry, 2002

Industry Sector	Output ($Mn)*	Employ-ment (jobs)	Value Added ($Mn)*	Labor Income ($Mn)*	Indirect Business Taxes ($Mn)*
Nursery & Greenhouse	26,053	261,408	18,076	9,612	647
Lawn & Garden Equipment Manufacturing.	8,281	37,343	2,610	1,346	129
Greenhouse Manufacturing	244	1,927	110	78	7
Total Production & Manufacturing	34,578	300,677	20,796	11,037	784

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce)

Nursery and Greenhouse Sector

Total economic impacts and other characteristics of the nursery and greenhouse industry sector are summarized by state in Table 4-4. For the nursery and greenhouse sector, the top five individual states in terms of output impacts were California ($4.47 Bn), Florida ($3.01 Bn), Texas ($2.28 Bn), Oregon ($1.69 Bn), and North Carolina ($1.64 Bn). Collectively, these top five states accounted for 30 percent of farms, 50 percent of industry output impacts, 49 percent of employment impacts, and 51 percent of value added impacts. The second tier of states with large output impacts included Pennsylvania ($1.32 Bn), Michigan ($910 Mn), Ohio ($756 Mn), Washington ($630 Mn), and Maryland ($602 Mn). Combined, these top 10 states represented 66 percent of total industry output impacts, while the top 20 states represented 86 percent. The two top states of California and Florida both had over 4,000 nursery and greenhouse farms, while Oregon and Pennsylvania had over 3,000 farms, and Texas, North Carolina, Michigan, Ohio, Tennessee and New York all had over 2,000 farms. The states of California and Florida had value added impacts of $3.08 Bn and $2.46 Bn, respectively. The employment impacts represented an average of 15.4 jobs per million dollars output by the nursery and greenhouse sector, and the value added impacts amounted to 69 percent of total output impacts. Total economic impacts are influenced by the proportion of output sold outside the region ("export share"), which varied from a high of 93 percent for Hawaii to less than 5 percent for Colorado.

Lawn and Garden Equipment and Greenhouse Manufacturing Sectors

Total economic impacts of the lawn and garden equipment manufacturing industry sector are summarized by state in Table 4-5. For the this sector, the top five individual states in terms of output impacts were Wisconsin ($1.27 Bn), South Carolina ($1.20 Bn), Tennessee ($1.18 Bn), Georgia ($565 Mn) and Arkansas ($549 Mn). These top five states accounted for 19 percent of industry firms, 58 percent of output impacts, 61 percent of employment impacts, and 59 percent of value added impacts. The second tier of states with large output impacts included Ohio ($539 Mn), Illinois ($511 Mn), Minnesota ($245 Mn), California ($244 Mn) and Indiana ($238 Mn). These top 10 states represented 79 percent of total industry output impacts, while the top 20 states represented 98 percent. These results indicate that this sector is more concentrated than the nursery and greenhouse sector. The top three states of Wisconsin, South Carolina and Tennessee each had employment impacts in excess of 5,000 jobs from this industry, and value added impacts exceeding $300 Mn. The employment impacts represented an average of 5.5 jobs per million dollars output by this sector, and the value added impacts amounted to 32 percent of total output impacts. The share of output exported from the state varied from a high of 57 percent (Iowa) to less than 10 percent for more than half of the states estimated.

Total economic impacts of the greenhouse manufacturing industry sector are summarized by state in Table 4-6. For the this sector, the top five individual states in terms of output impacts were Texas ($38 Mn), California ($21 Mn), Nebraska ($15 Mn), Illinois ($15 Mn) and Georgia ($12 Mn). These top five states accounted for 29 percent of industry firms, 42 percent of output impacts, 40 percent of employment impacts, and 43 percent of value added impacts. A second tier of states with large output impacts included North Carlina ($12 Mn), Tennessee ($10 Mn), Florida ($10 Mn), Alabama ($9 Mn) and Indiana ($8 Mn). These top 10 states represented 62 percent of total industry output impacts, while the top 20 states represented 84 percent. The top two states of Texas and California each had employment impacts in excess of 150 jobs from this industry, and value added impacts exceeding $10 Mn. The employment impacts represented an average of 15.3 jobs per million dollars output by this sector, and the value added impacts amounted to 45 percent of total output impacts. The share of output exported from the state was typically over 90 percent, and one states exported all (100%) of production.

Table 4-4. Economic Impacts of the U.S. Nursery and Greenhouse Sector by State, 2002

State	Number Farms	Output ($Mn)	Output Impacts ($Mn)*	Employ-ment Impacts (jobs)	Value Added Impacts ($Mn)*	Labor Income Impacts ($Mn)*	Indirect Business Tax Impacts ($Mn)*	Export Share
California	4,423	3,286.6	4,470.3	35,268	3,079.0	1,733.1	87.7	20.7%
Florida	4,718	1,844.1	3,006.2	32,821	2,456.3	1,230.3	86.3	41.3%
Texas	2,137	1,381.4	2,275.6	25,038	1,340.0	771.0	57.4	39.1%
Oregon	3,039	806.9	1,692.6	21,554	1,042.6	700.7	49.4	77.7%
North Carolina	2,587	937.4	1,637.9	12,478	1,346.7	574.5	50.9	62.0%
Pennsylvania	3,073	732.7	1,321.3	13,562	904.1	541.3	36.5	56.7%
Michigan	2,185	628.7	910.1	8,526	479.4	15.6	16.3	34.3%
Ohio	2,678	562.7	755.9	7,676	435.7	236.0	12.1	28.6%
Washington	1,883	391.9	629.9	6,616	480.1	304.1	14.9	46.9%
Maryland	769	318.0	601.5	5,650	477.1	255.2	17.3	58.7%
Arizona	367	284.5	595.7	4,781	434.7	255.3	18.6	83.5%
Georgia	1,199	315.3	566.8	4,690	467.6	206.7	18.4	57.8%
New Jersey	1,828	356.9	562.0	6,968	430.3	231.2	14.9	51.5%
Tennessee	2,323	282.8	548.0	10,757	301.1	175.5	14.7	66.9%
New York	2,552	344.3	533.9	4,525	373.8	218.6	13.7	50.0%
Connecticut	685	245.8	452.7	4,796	374.7	208.1	13.9	76.1%
South Carolina	771	321.7	445.2	4,882	394.3	118.7	11.5	33.5%
Illinois	1,108	357.5	431.8	2,555	268.2	138.8	6.7	11.6%
Oklahoma	578	222.6	428.9	5,405	240.9	142.7	11.5	66.7%
Wisconsin	1,487	234.5	423.8	3,774	238.2	150.2	10.7	67.6%
Alabama	797	251.5	411.0	4,384	344.8	142.1	12.1	58.4%
Virginia	1,241	218.7	372.6	4,956	248.0	143.3	9.4	52.5%
Minnesota	983	224.4	310.2	1,983	153.6	91.2	5.6	24.9%
Colorado	535	261.4	289.5	1,529	176.6	103.0	3.1	4.5%
Indiana	1,117	187.5	276.2	2,192	155.9	85.7	5.8	38.0%
Hawaii	1,386	110.3	254.4	3,394	200.1	132.8	7.7	93.4%
Massachusetts	902	153.5	198.9	3,406	122.0	82.6	3.1	20.3%
Utah	275	119.4	160.0	1,583	128.4	74.9	3.1	20.2%
Louisiana	665	87.8	149.3	1,712	97.5	55.9	3.8	59.6%
Missouri	932	101.3	142.1	1,639	76.7	44.2	2.7	27.7%
Kentucky	1,193	96.1	132.4	1,911	109.7	54.2	3.1	35.4%
Kansas	369	57.6	113.6	851	54.6	33.6	3.1	80.1%
Idaho	458	66.3	107.0	919	90.6	55.7	2.7	52.4%
Iowa	554	77.6	106.3	646	52.6	27.9	1.9	33.1%
New Hampshire	337	53.7	101.1	1,444	61.1	39.8	2.7	70.4%
New Mexico	223	60.3	86.7	656	71.6	42.3	1.9	35.5%
Arkansas	330	47.0	72.8	733	57.5	27.5	1.9	52.9%
Rhode Island	225	37.6	67.0	895	41.5	25.6	1.7	80.5%
Montana	318	33.8	56.8	491	31.2	19.2	1.3	69.0%
Mississippi	390	47.3	55.6	657	52.0	21.7	1.2	14.3%
Delaware	129	33.3	53.4	375	44.4	18.5	1.5	62.4%
Maine	769	37.3	51.7	642	38.2	22.4	1.0	32.7%
Nebraska	355	34.3	40.0	159	18.5	10.5	0.4	12.5%
West Virginia	371	26.8	39.7	1,087	12.7	8.5	0.6	45.8%
Vermont	418	22.8	33.8	310	24.0	14.4	0.7	43.0%
South Dakota	119	18.4	22.8	109	11.7	6.1	0.3	22.0%
Alaska	111	12.7	18.0	143	10.2	5.5	0.4	41.9%
North Dakota	78	11.0	17.8	119	7.8	4.7	0.4	71.7%
Nevada	50	10.1	14.5	110	12.8	8.2	0.3	32.5%
Wyoming	50	6.4	7.8	49	4.4	2.7	0.1	20.2%
Total	56,070	16,362.4	26,052.9	261,408	18,075.9	9,612.4	647.1	

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce).

Table 4-5. Economic Impacts of the U.S. Lawn & Garden Equipment Manufacturing Sector by State, 2002

State	Establish-ments	Employ-ment (jobs)	Annual Wages ($1000)*	Output ($Mn)*	Output Impacts ($Mn)*	Employ-ment Impacts (jobs)	Value Added Impacts ($Mn)*	Labor Income Impacts ($Mn)*	Indirect Business Tax Impacts ($Mn)*	Export Share
Wisconsin	8	3,157	101	964	1,274	6,308	490	258	24	29.7%
South Carolina	3	3,157	101	964	1,196	5,585	352	213	18	27.6%
Tennessee	8	3,033	95	908	1,183	5,768	383	203	21	27.8%
Georgia	7	1,473	47	450	565	2,573	171	91	10	22.1%
Arkansas	3	1,473	47	450	549	2,572	135	72	7	28.7%
Ohio	9	1,473	47	450	539	2,340	168	87	7	23.0%
Illinois	7	1,473	47	450	511	2,006	155	78	7	9.5%
Minnesota	6	631	20	193	245	1,151	83	44	5	24.6%
California	8	591	23	220	244	813	75	38	3	9.5%
Indiana	12	778	21	199	238	1,149	69	36	3	17.9%
Mississippi	3	631	20	193	235	1,090	66	34	3	26.8%
Arizona	3	631	20	193	225	974	69	35	3	18.1%
Missouri	4	631	20	193	215	851	55	28	2	9.5%
New York	3	631	20	193	212	788	61	30	3	9.5%
Virginia	1	631	20	193	210	803	59	29	2	9.5%
Michigan	6	534	20	188	206	707	83	3	3	9.5%
Kansas	5	316	10	96	116	531	38	18	2	23.4%
North Carolina	3	316	10	96	106	413	35	17	1	9.5%
Pennsylvania	10	147	5	45	50	195	17	8	1	9.5%
Iowa	1	51	2	15	23	135	8	4	0	56.8%
Nebraska	2	51	2	15	20	99	7	4	0	29.6%
Alabama	3	51	2	15	17	65	5	2	0	9.5%
New Jersey	3	51	2	15	17	62	5	3	0	9.5%
Oklahoma	1	51	2	15	17	67	5	2	0	9.5%
Oregon	1	51	2	15	17	65	4	2	0	9.5%
Texas	5	29	1	9	10	39	2	1	0	9.5%
Florida	5	52	1	8	9	60	2	1	0	9.5%
Washington	4	16	0	5	5	19	2	1	0	9.5%
Total	145	22,201	709	6,782	8,281	37,343	2,610	1,346	129	

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce).

Results shown for states with at least 10 employees.

Table 4.6. Economic Impacts of the U.S. Greenhouse Manufacturing Sector by State, 2002

State	Employ-ment	Annual Wages ($1000)*	Output ($Mn)*	Output Impacts ($Mn)*	Employ-ment Impacts (jobs)	Value Added Impacts ($Mn)*	Labor Income Impacts ($Mn)*	Indirect Business Tax Impacts ($Mn)*	Export Share
Texas	89	3,291	18	38	283	18	13	1	95.1%
California	46	1,790	10	21	155	10	7	1	97.8%
Illinois	29	1,174	7	15	105	7	5	0	98.6%
Nebraska	43	1,479	8	15	128	6	5	0	96.3%
Georgia	39	1,059	6	12	99	5	4	0	96.5%
North Carolina	36	1,194	7	12	100	5	4	0	96.8%
Florida	29	888	5	10	84	5	3	0	98.3%
Tennessee	25	941	5	10	79	5	3	0	98.2%
Alabama	25	892	5	9	72	4	3	0	97.5%
Indiana	23	754	4	8	65	4	3	0	99.5%
Ohio	26	737	4	7	61	3	2	0	99.6%
Arkansas	16	576	3	6	44	2	2	0	97.0%
Missouri	15	548	3	6	49	3	2	0	97.5%
Pennsylvania	15	501	3	6	46	3	2	0	99.9%
Wisconsin	15	592	3	6	48	3	2	0	98.7%
Arizona	16	449	2	5	41	2	2	0	97.3%
Iowa	17	502	3	5	42	2	1	0	98.5%
Louisiana	15	478	3	5	39	2	1	0	96.4%
Michigan	12	467	3	5	36	2	0	0	100.0%
Mississippi	16	582	3	5	42	2	2	0	97.1%
New York	11	449	2	5	31	2	2	0	99.1%
Oklahoma	10	294	2	3	27	1	1	0	97.1%
Total	659	22,642	126	244	1,927	110	78	7	

* Values expressed in 2004 dollars (GDP Implicit Price Deflator, US Dept. Commerce).

Results shown for states with at least 10 employees.