



The Economic Contribution of the Indiana Green Industry

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The green industry remains an important contributor to the U.S. economy. The green industry is extremely broad-based. Businesses in the green industry are those producing and using landscape and floral crops and related supplies and equipment. Businesses may also engage in the design, installation, and maintenance of landscapes.

This publication categorizes the green industry in six sectors based on main revenue activity: greenhouse and nursery production; lawn and garden equipment manufacturing; farm, garden equipment, nursery, and florist wholesalers; lawn and garden equipment and supplies stores; florists; and landscape architecture and services.

Using the North American Industry Classification System (NAICS, US Department of Commerce 2018a), the green industry's production and manufacturing group includes businesses engaged in nursery, greenhouse, and floriculture production (NAICS 11142) and lawn and garden equipment manufacturing (NAICS 333112). The group of landscape design, installation, and maintenance services includes businesses in landscaping services and landscape

architectural services (NAICS 56173 and 54132). The wholesale and retail distribution groups include farm, garden equipment, nursery, and florist merchant wholesalers (NAICS 423820 and 42493), lawn and garden equipment and supplies stores (NAICS 4442), and florists (NAICS 4531).

Along with many other industries, the green industry experienced changes in the last few years. The 2008-2009 recession reduced disposable income, home values, and homeownership rates, and the green industry was not immune to those significantly negative impacts. Since then, the industry has shown signs of recovery, especially for some sectors (Hall et al., 2020). To illustrate, the Indiana green industry ranked as the 6th agricultural commodity in the state in 2013 (Torres and Hodges, 2017). The economic contribution of the industry to the state included \$3.5

billion in direct output, 39,260 full- and part-time jobs, and more than \$2 billion in value-added impact. Table 1 describes the variables that measure the economic contribution of the green industry.

More recently, mitigation measures due to COVID-19 and mandatory business shutdowns are expected to contract revenues from landscaping services slightly until 2021; yet revenues are expected to rise in 2022 (IBISWorld, 2021a). In addition, nurseries and garden stores reported increased revenue in 2020, despite the pandemic effect (IBISWorld, 2021b).

The industry benefits from customers (residential and commercial) looking to make aesthetic upgrades to homes, yards, and spaces. Put simply, when homeowners and companies have more income, they will purchase more plants, services, and equipment from the green industry. These trends present important economic opportunities for the environmental horticulture, or green, industry.

This publication characterizes the economic contributions of Indiana's green industry and compares it to regional and national estimates. The findings in this report can help industry stakeholders, policymakers, and researchers and Extension personnel understand the structural and performance issues faced by businesses in the green industry. Findings can also help policymakers inform incentives and policies to have a more efficient allocation of resources.

Data

Data for this publication comes from the Impact Analysis for Planning (IMPLAN) economic model and databases for 2018 (Implan Group LLC, 2015) and the National Green Industry survey. The IMPLAN model uses data available from a variety of sources, including the Census of Agriculture, the Economic Census, the Quarterly Census of Employment and Wages, and state and national gross domestic product (GDP) and personal income statistics. IMPLAN aggregates the data to estimate the industry-specific effect on the local economy of changes in activity or existing activities for a given year. The National Green Industry surveys are conducted every five years by the Green Industry Research Consortium of economists and horticulturalists. The consortium is a multi-state project that has tracked nursery and greenhouse industry businesses since 1989. More information about the green industry impact assessment is available in "Economic Contributions of the Green Industry in the United States in 2018" (Hall et al., 2020).

Findings

At the national level, the U.S. green industry had a total of 163,912 businesses in 2018 (Hall et al., 2020). The total (direct, indirect, and induced) sales revenue for all sectors in the industry was \$349.08 billion, of which \$159.57 billion was direct sales. The total U.S. employment contribution (including direct and indirect employment) was calculated at 2,315,357 jobs; 1,286,135 were direct full- and part-time jobs generated in the green industry, and the rest were in related industries. The value-added impact calculates the value of sales (output) minus the value of intermediate purchases of goods and services from other sectors in the overall economy. Value added is comparable to the Gross Domestic Product (GDP). The total value-added impact summed up to \$190.98 billion. Table 1 describes the variables that measure the economic impact of the green industry. For more information on national economic impact, see Hall et al. (2020) "Economic Contributions of the Green Industry in the United States in 2018".

Since the latest green industry survey in 2013, the economic contributions of the U.S. green industry have increased by 17.3% for sales revenue, 16.2% for employment, and 19.8% for GDP. These values were adjusted for inflation using the GDP Implicit Price Deflator (U.S. Commerce Department, 2018b). At the regional level, the Midwest led the way, generating 465,263 jobs and \$73.8 billion in sales revenue. Among individual states, the top state in contributions was California with \$38.6 billion in sales revenue, 264,913 jobs, and \$21.6 billion in value-added.

In 2018, Indiana placed 20th in output contributions (\$6.9 billion), 19th in job contribution (45,701 jobs), and 19th in value-added (\$3.8 billion) in the U.S. Figure 1 illustrates the total and direct job contributions by sector. Landscape architecture and services generated most of the total (27,510) and direct (15,393) jobs in 2018, followed by stores (7,544 total and 4,052 direct jobs), wholesalers (5,030 total and 3,905 direct jobs), florists (2,272 total and 1,469 direct jobs), producers (1,947 total and 1,388 direct jobs), and manufacturers (1,398 total and 323 direct jobs). When comparing job contributions between wholesale and retail sectors, estimates show retail generated more total and direct employment at 9,816 and 5,521 jobs, respectively.

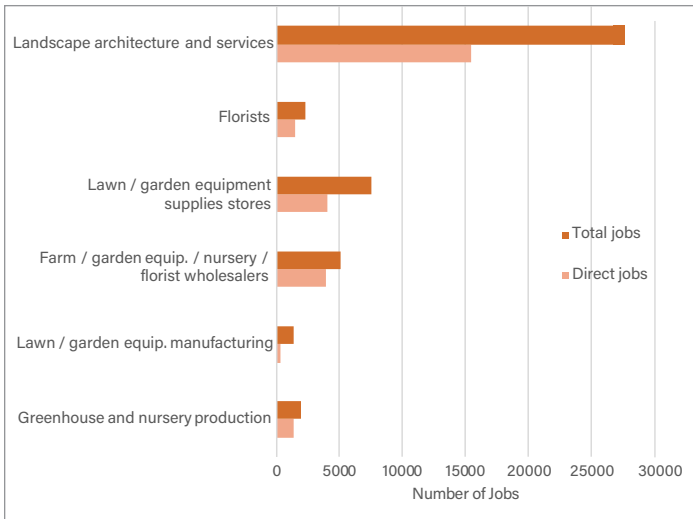


Figure 1. Indiana green industry employment contributions, 2018.

Figure 2 illustrates the labor income contributions of the Indiana green industry by group of business. Labor income represents employee wages and benefits and business owner income. Landscape architecture and services generated 63% of labor income contributions, estimated at \$1.5 billion, followed by stores (\$344 million, 14%), wholesalers (\$274 million, 11%), producers (\$96 million, 4%), florists (\$91 million, 4%), and manufacturers (\$86 million, 4%).

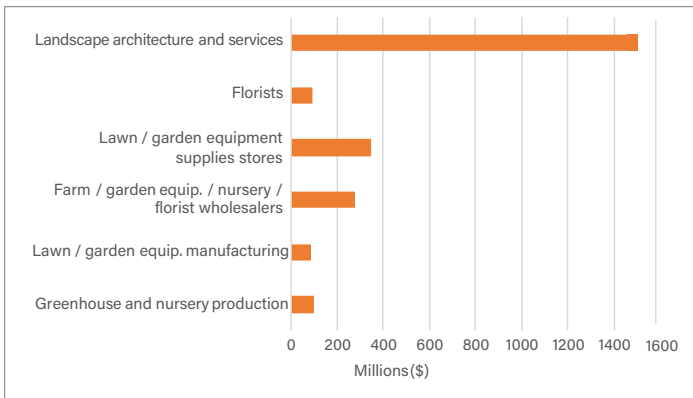


Figure 2. Indiana green industry labor income contributions, 2018.

Figure 3 shows the total and direct output contributions, as well as value-added contributions of the Indiana green industry in 2018. Output is equivalent to business sales revenue, and value-added is equivalent to Gross Domestic Product (GDP), including labor income, other property income (interest, rents, royalties, and corporate benefits) and business taxes. Similar to other contributions, the landscape architecture and services group generated the highest contribution in terms of output and value-added. To illustrate, the landscape architecture and services generated 61% and 65% of the total and

direct sales estimated for the Indiana green industry in 2018. The other groups: stores (16% total and 13% of direct sales), wholesalers (9% total and 6% of direct sales), manufacturers (7% total and 6% of direct sales), producers (4% total and 9% of direct sales), and florists (3% total and 2% of direct sales). Similarly, landscape architecture and services generated the most value-added contributions at \$2.2 billion, which represents 59% of all industry contributions in Indiana in 2018.

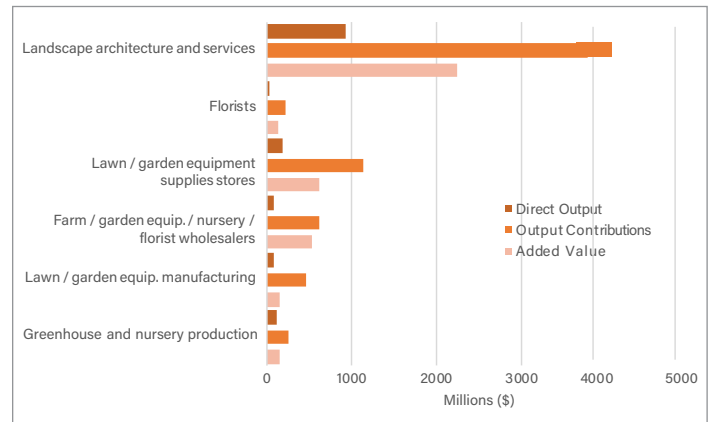


Figure 3. Indiana green industry output and value-added contributions, 2018.

Figure 4 illustrates the federal and state-local tax contributions of the Indiana green industry by groups of businesses. As expected, similar trends occurred for federal and state tax contributions, with landscape architecture and services generating the largest amount of contributions (61% of federal and 44% of state tax), followed by stores (14% of federal and 23% of state tax), wholesalers (13% of federal and 23% of state tax), florists (4% of federal and 5% of state tax), manufacturers of equipment (4% of federal and 3% of state tax), and producers (4% of federal and 2% of state tax).

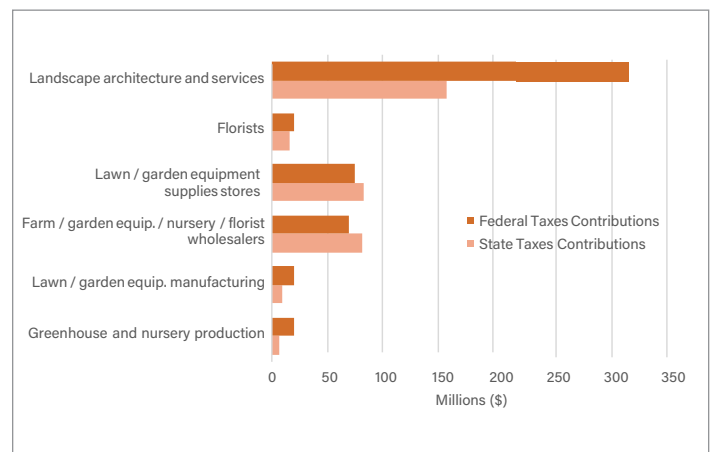


Figure 4. Indiana green industry federal and state-local tax contributions, 2018.

This information provides evidence of the green industry’s linkages with other industries within the state. Green industry businesses bring money to the state, create new jobs, and help diversify the economic base of Indiana. As the economy keeps recovering from the latest recession, the impacts of COVID-19 lessen, and new opportunities arise for green industry businesses,

data from this publication can be used to design policies that promote the development of the green industry and increase its contribution to the Indiana economy. Businesses, industry leaders, Extension personnel, researchers, and government officials can use this information to understand the contribution of the industry to the overall Indiana economy.

Table 2. Number of establishments, total employment, and wages contributions in principal sectors of the Indiana green industry in 2018^z.

Industry Sector	Jobs	Labor Income (M\$) ^y	Value-Added (M\$)	Output ^x (M\$)	State-Local Taxes (M\$)	Federal Taxes (M\$)	Direct Output (M\$)
Greenhouse and nursery production	1,947	96	143	257	7	20	122
Lawn / garden equipment manufacturing	1,398	86	155	455	9	20	85
Farm / garden equip. / nursery / florist wholesalers	5,030	274	522	616	79	67	85
Lawn / garden equipment and supplies stores	7,544	344	613	1,129	81	73	181
Florists	2,272	91	132	219	16	19	32
Landscape architecture and services	27,510	1,499	2,243	4,179	153	313	923
Total	45,701	2,388	3,807	6,855	344	511	1,428

^zSource: U.S. Department of Labor (2019), Quarterly census of employment and wages.

^yValues are given in millions of dollars. Jobs represent full- and part-time jobs.

^xOutput is equivalent to business sales revenue. Labor income represents employee wages and benefits and business owner income. Value-added is equivalent to Gross Domestic Product (GDP), including labor income, other property income (interest, rents, royalties, and corporate benefits), and business taxes. State-local and federal taxes represent all forms of taxation at prevailing U.S. rates. Economic measures are independent and should not be added together.

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The 2017 version of this publication is here: <https://www.extension.purdue.edu/extmedia/HO/HO-256-W.pdf>