



ECONOMIC FORECAST PROJECT

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

July 8, 2019

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Estimated impacts of the cannabis industry

Non-payroll expenses

Using detailed expenditure and vendor data from multiple growers in Santa Barbara County, we estimate that cannabis growers in the county make approximately 51% of their expenses locally. That is, out of their expenses, approximately 51% goes to vendors in Santa Barbara County. On a per-acre basis, we estimate that local growers spend about \$785,000 per year. This amount is direct spending on local goods and services, and does not include payroll-related expenses, taxes, licensing and other fees.

Currently in Santa Barbara County, an estimated 156 acres are legally cultivated.¹ Based on our estimated annual cost per acre cultivated, this represents industry-wide expenses of \$122.5 million per year (and again, does not include payroll-related expenses, taxes, licensing and other fees).

Payroll expenses

Based on information from multiple growers in Santa Barbara County, we estimate that cannabis growers in the county currently employ approximately 16 people per cultivated acre. Average wages are around \$65,000 per year. That is, the annual cost per cultivated acre is about \$1.0 million. For the 156 legally-cultivated acres, this would imply 2,458 jobs with annual compensation of \$161.0 million.

Preliminary economic impact estimates

As indicated above, we estimate that the cannabis industry buys locally (in Santa Barbara County) goods and services (output) worth \$785,000 per year per cultivated acre. With an estimated 156 acres legally cultivated in the county, this amounts to direct purchases from the local economy of \$122.5 million, which

¹Board of Supervisors Draft Agenda Letter for July 9, 2019

directly supports approximately 2,400 jobs across a large number of industries in the county.

In addition, each cultivated acre in the county requires about 16 (full-time equivalent) jobs.² With an estimated 156 acres legally cultivated in the county, this amounts to direct employment of 2,458 jobs per year. These jobs lead to an estimated \$215.8 million worth of output produced by the cannabis industry.

In describing the economic impact associated with the cannabis industry, we consider three separate channels: the direct impact, the indirect impact, and the induced impact; these sum to represent the total economic impact. The **direct impact** represents initial expenditures, such as a payment to a local company for raw materials. The entity receiving the payment of that initial expenditure is expected to buy some of its inputs locally. Those purchases by the impacted entity attributable to the increase in business generated by the initial expenditure are referred to as an **indirect impact**. Finally, employees of the firms that are impacted both directly and indirectly are expected to spend a large fraction of their income locally. The additional local spending by these employees generated through this mechanism is referred to as the **induced impact**. Lastly, all the expenditures (direct, indirect, and induced) also generate federal, state, and local tax payments.

The modeling software used for the economic analysis was IMPLAN ProTM, an input-output model first developed by the U.S. Forest Service, the Bureau of Land Management and the Federal Emergency Management Agency for use in land planning and resource management. Input-output models are accounting tables tracing the linkages of interindustry purchases and sales in a specific study area, and they are used to calculate the effects per dollar of spending on jobs, income, and additional expenditures in that specific area. These models produce estimates of local spending impacts (referred to as multipliers) using these inter-industry linkages.

IMPLAN uses information about the types and amounts of production factors - raw materials, labor, and intermediate goods - needed to produce any given output. IMPLAN uses dollar valuations of these inputs, and traces the currency flows from the original purchases of goods as they work their way through the study area economy. Table 1 below presents our preliminary estimated impacts on employment and output for Santa Barbara County for 2018.³

Table 1: Economic Impact Summary

	Employment	Output
Direct	4,889	\$291,797,827
Indirect	181	\$27,218,800
Induced	942	\$139,298,571
Total	6,012	\$458,315,198

Key preliminary findings of our analysis include

- We estimate that the legal cannabis industry spent approximately \$122 million in 2018 in purchases of goods and services from local (Santa Barbara County) vendors, and generated approximately \$169.3 worth of output, for a total direct output impact of \$291.8 million.

²The estimated 16 jobs per acre is an average based on data available and may not fully reflect the fact that greenhouse cultivation generally requires more workers per acre than outdoor cultivation annually, but greenhouse operations in the county tend to be smaller (fewer acres). The 16 jobs per acre estimate is based on all jobs in the industry, not only cultivation.

³These economic impacts are calculated without any consideration of potential costs, such as complaints about odor, law enforcement expenditures, judicial costs, etc.

- The total economic impact of the industry is estimated at \$458.3 million. Of this total impact, \$291.8 million (63.7 percent of total impact) is from the direct effect and \$27.2 million (5.9 percent of total impact) from the indirect effect. The induced effect accounts for \$139.3 million (30.4 percent of total impact). The associated output multiplier is roughly 1.6. That is, for every dollar directly contributed by the cannabis industry, another 60 cents would be generated by the activity of suppliers and employees directly impacted.
- We estimate that the legal cannabis industry generates approximately 2,500 jobs within the industry, while purchases by the industry from local vendors supports an additional 2,400 jobs, for a total direct employment impact of 4,889 jobs.
- The total impact of the cannabis on employment is 6,012 jobs. Of this total impact, 4,889 jobs (81.3 percent of total impact) is from the direct effect and 181 jobs (3.0 percent of total impact) from the indirect effect. The induced effect accounts for 942 jobs (15.7 percent of total impact). The associated employment multiplier is roughly 1.2. That is, for every job directly supported by the cannabis industry, a fifth of an additional job is supported by the activity of suppliers and employees directly impacted.

Analysis of demand estimates for cannabis have suggested that the amount of acres needed to satisfy the demand are consistent with county-wide cultivation of approximately 1,100 acres, roughly seven times more than the estimated current legal cultivation in Santa Barbara County. The inputs for the industry can be directly scalable, with the exception of employment, which may benefit from economies of scale (administrative employment required for the cultivation of seven times as many acres may not require seven times as many employees, for example).

VERY PRELIMINARY