

White Paper

Quantify Your Environmental Impacts with IMPLAN



Huntersville, NC

IMPLAN

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Introduction

As a stand-alone data set, IMPLAN's Environmental Data provide powerful insights. For example, the environmental data can help a region understand how its emissions have fallen over time as its industry mix has changed over time. Or they can help a company illustrate how its emissions are lower than the industry-average due to the company's ESG stewardship practices.

But these data become especially valuable when combined and used within IMPLAN's impact modeling tool. Regulators are pressing for accountability for harmful emissions, with the Securities and Exchange Commission proposing rigorous audits that would require recording direct and indirect carbon emissions, and listing climate risks across supply chains (Baldwin, 2022).



Environmental Data

IMPLAN's environmental data come from the U.S. Environmental Protection Agency (EPA) and consist of ratios representing physical units per dollar of industry output, with the physical unit depending on the environmental factor under consideration. The environmental ratios are organized into 8 broad categories, each of which has additional detailed sub-categories. For example, the broad category of Greenhouse Gas Emissions has 15 sub-categories including carbon dioxide, methane, etc. The 8 broad categories are as follows:

- Criteria pollutants
- Greenhouse gas emissions
- Land use
- Mineral use
- Nitrogen and phosphorous releases to water
- Pesticide emissions
- Toxic chemical releases
- Water use



Indirect Environmental Impacts

IMPLAN is the leading provider of Input-Output (I-O) data and models in the U.S., providing data and models for the nation, as well as all states, counties, zip-codes, and Congressional Districts, spanning from 2001 onward. The primary purpose of I-O models is to demonstrate the indirect economic effects that an industry or activity has on all the other industries in the economy of interest and in neighboring economies (if desired), due to supply chain spending (input purchases) and household spending (the spending of labor income generated by the industry and its suppliers). In order to do this, I-O models contain data on industry spending patterns, household spending patterns, tax payments, commuting rates, foreign and domestic trade, savings rates, employment by industry, and more.

IMPLAN has incorporated the EPA's industry-specific environmental data into its I-O framework to automatically estimate the direct and indirect environmental impacts associated with the industry or company being analyzed. With a subscription to the Environmental Data, it is as easy as running an Industry Contribution Analysis (which can be done without any user-supplied information) or an Impact Analysis using user-provided details on the specific company. The results provided by IMPLAN not only include the usual economic categories (employment, labor income, GDP, etc.) but also the associated environmental impacts by industry and environmental category.

For example, running an Industry Contribution Analysis on the Breweries industry in Colorado using 2019 IMPLAN data, which required no outside data and took less than 5 minutes, resulted in the following environmental impacts, which are just a sub-set of the full result set.

Industry Environmental Summary							
Environment Satellite	Criteria Pollutants	Greenhouse Gases	Land Use	Mineral Use	Nitrogen and Pho...	Pesticide Emissions	
Environment Unit	kg	kg	m2*a	kg	kg	kg	
Industry	Unit Value	Unit Value	Unit Value	Unit Value	Unit Value	Unit Value	
1 - Oilseed farming	331.84	2,901.35			24.95	3.48	
2 - Grain farming	5,134,279.90	79,926,620.67	1,924.51		2,569,318.03	52,018.76	
3 - Vegetable and melon farming	5,034.11	55,006.38	171.17		2,614.14	422.22	
4 - Fruit farming	560.42	8,901.31	27.75		0.80	16.70	
5 - Tree nut farming	0.94	14.99	0.05		0.00	0.03	
6 - Greenhouse, nursery, and floriculture pr...	2,598.91	324,934.28	376.03				
7 - Tobacco farming	0.00	0.00	0.00		0.00	0.00	
8 - Cotton farming	0.00	0.00	0.00		0.00	0.00	
9 - Sugarcane and sugar beet farming	1,080.50	7,083.12	8.22		71.36	3.24	
10 - All other crop farming	162,992.44	1,068,487.00	1,239.49		10,763.95	489.02	
11 - Beef cattle ranching and farming, inclu...	20,227.30	574,411.73	25,522,528.05		421.21		
12 - Dairy cattle and milk production	9,709.81	180,146.45	1,201,304.78		213.23		
Totals	11,671,379.00	656,530,747.99	58,497,962.40	51,405,272.59	2,800,445.10	52,953.46	

Learn More

- For a custom demo, please submit a request [here](#) or call (800) 507-9426.
- To watch a recording of a live IMPLAN Link & Learn: [Never too Small To Make a Difference: Environmental Impacts!](#)
- To learn how to view the Environmental Data in IMPLAN: [Environmental Data Dashboard & Explore](#)
- For details about the data: [Environmental Data from the Data Team](#)



References

Baldwin, Garrett. "Lack of capital is preventing the petroleum industry from satisfying the public's desire for abundant oil and natural gas." Lockbox, May 2022, pp. 18-23.



IMPLAN has been redefining the field of economics for over 40 years. Created by academics to serve the needs of the United States Forest Service, it has been transformed today to serve as a solution-provider for anyone interested in understanding their economy.