



COTTON: SUSTAINABILITY INDICATORS

Understanding Cotton Trends in Field to Market’s 2021 National Indicators Report

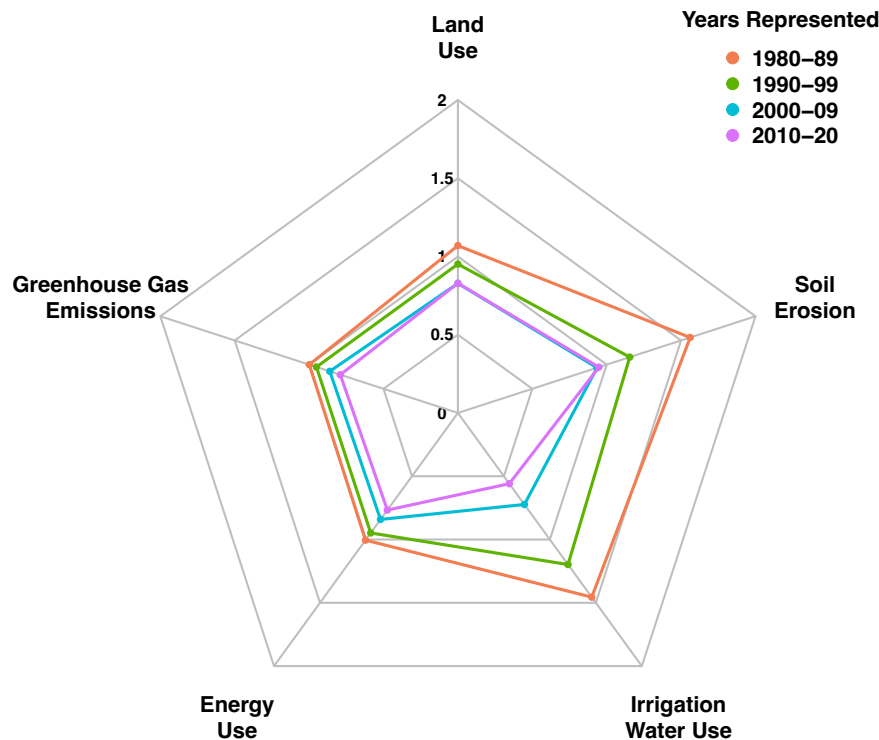
Field to Market’s 2021 National Indicators Report – *Environmental Outcomes from On Farm Agricultural Production in the United States* – analyzes sustainability trends from 1980-2020 at the national scale for 11 commodity crops. Released every five years since 2009, the fourth edition of this peer-reviewed report analyzes trends over time in sustainability performance for U.S. commodity crop systems, providing a critical assessment of where U.S. agriculture has made progress in driving improved environmental outcomes, and where additional efforts are needed to advance industry-wide sustainability goals.

Use this factsheet to explore key findings from the report for Cotton, identifying trends in Land Use, Irrigation Water Use, Energy Use, Greenhouse Gas Emissions (GHG) and Soil Erosion. Explore the full findings and learn how to properly cite the 2021 National Indicators Report at www.fieldtomarket.org/Report.

KEY FINDINGS FOR COTTON

Cotton is predominantly grown throughout the southern U.S., with the most acreage historically in Texas. Cotton is grown primarily to produce lint used as fiber, with cottonseed as an important co-product that can be used in a number of ways, including animal feed. Results presented here are expressed in terms of pounds of cotton lint produced.

This figure illustrates the difference in the average indicator value for each decade and demonstrates clear improvement over time in Irrigation Water Use with moderate improvement in Energy Use, Greenhouse Gas Emissions and Land Use between 1980 and 2020. Soil Erosion improved primarily in the period from 1980-2000.



Indicator averages for 1998-2002 used to scale data for display on radar chart

Indicator	Value	Units
Land Use	0.0018	Planted Acres Per lb. of Lint
Irrigation Water Use	0.0421	Acre-inches Per lb. of Lint
Soil Erosion	11.2	Tons Soil Loss Per Acre
Energy Use	7,780	BTU Per lb. of Lint
Greenhouse Gas Emissions	1.79	Pounds of CO ₂ Eq. Per lb. of Lint

The table below provides the value for each indicator at the beginning of each decade (estimated from a fitted trend line).

Year	Land Use Planted Acres Per lb. of Lint	Irrigation Water Use Acre Inches Per lb. of Lint	Energy Use BTU Per lb. of Lint	Greenhouse Gas Emissions Pounds of CO ₂ e Per lb. of Lint	Soil Erosion Tons of Soil Loss Per Acre
1980	0.0023	0.0629	9,022	2	19.5
1990	0.0017	0.0566	7,185	1.7	14.7
2000	0.0016	0.0406	7,271	1.7	11.2
2010	0.0014	0.0233	5,983	1.4	10.3
2020	0.0016	0.0262	6,259	1.5	10.7

- The Land Use indicator for cotton shows increased yield in the 1980s and 2000s with reduced yield through the 1990s and a leveling off in the 2010s.
- Irrigation Water Use efficiency for cotton showed consistent improvement from 1980 through 2010, but has been largely unchanged since 2010.
- Energy use efficiency for cotton production has improved through the study period, with a slight increase in the most recent decade as a result of increased crop chemical and fertilizer inputs.
- Trends for GHG Emissions from cotton production follow energy use efficiency, with some reductions followed by a leveling off in the past decade
- The Soil Erosion trend for cotton is very similar to that for corn, showing clear improvement for the period 1980-2010 but increasing since then.

While substantial progress has been made since 1980 in the sustainability of cotton production, the National Indicators Report highlights some areas to focus on to encourage and incentivize adoption of conservation practices that will lead to continuous improvement in these environmental outcomes.

Field to Market: The Alliance for Sustainable Agriculture brings together a diverse group of grower organizations; agribusinesses; food, beverage, restaurant, and retail companies; conservation groups; universities; and public sector partners to create opportunities across the agricultural supply chain for continuous improvement in sustainable agriculture. Field to Market offers America's food and agriculture industries an essential tool for unlocking shared value for all stakeholders—a common framework for sustainability measurement that farmers and the supply chain can use to better understand and assess environmental performance. Together, Field to Market and its members work to collectively meet the challenge of producing enough food, feed, fiber and fuel for a rapidly growing population while conserving natural resources and improving the ability of future generations to meet their own needs.



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