Potatoes
From the 2016 Environmental and Socioeconomic Indicators for Measuring Outcomes of On-Farm Agricultural Production in the United States

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 productivity, environmental quality, and human well-being. 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 performance at the field, local, state, and national levels. The group provides collaborative leadership that is engaged in industry-wide dialogue, grounded in science and open to the full range of technology choices.

Field to Market is developing and piloting science and outcomes-based sustainability metrics, and tools at a variety of scales, to help measure and advance continuous improvement. The Field to Market 2016 Environmental and Socioeconomic Indicators Report analyzes sustainability trends over time at the national scale for six crops previously assessed: U.S. corn for grain, cotton, potatoes, rice, soybeans, and wheat, as well as four new crops: barley, corn for silage, peanuts, and sugar beets. Using publicly available data, the report evaluates performance over three decades.

Environmental Results
Over the study period (1980-2015), total production of potatoes has increased, while planted area has declined; however, the Land Use indicator has remained relatively flat since 2000. While all four of the other resource efficiency indicators have improved over time on a per-hundredweight (cwt.) basis, Energy Use and Greenhouse Gas Emissions have increased on a per-acre basis. Irrigation Water Use has declined consistently both per cwt. and per acre. These indicators all continue trends past the year 2000, indicating that the trends are driven by factors other than yield.

The total change in 2015 when compared to 1980 for U.S. potatoes production were as follows:

- **Production Trends:** Total potato production increased (+28%) and total planted acres decreased (-20%) while crop yield increased (+65%).
- **Resource Efficiency:** Potatoes improved resource efficiency on the indicators with decreases in per cwt land use (-25%), irrigation water use (-43%), energy use (-20%), and greenhouse gas emissions (-28%) and per acre improvements in soil conservation (-25%).
- **Per Acre and Total Resource Impact:** Potatoes improved (decreased) on irrigation water use (-6%) per acre, but increased the per acre energy use (+30%), and greenhouse gas emissions (+18%). Total resource use for potatoes for soil conservation improved with a 39% decrease in total soil loss and improved (decreased) for greenhouse gas emissions (-6%), but increased for irrigation water use (+17%) and energy use (+3%).

Learn more at www.fieldtomarket.org/report
Figure 1. Index of resource use to produce potatoes over time. Data are presented in index form, where the year 2000 = 1 and a 0.1-point change is equal to a 10 percent difference. Index values allow for comparison of change across multiple dimensions with differing units of measure. Year 2000 values are provided in the table.

Figure 2: Percentage change for potatoes in each of the five primary indicators across four equal eight-year periods representing the full time series of this study. Percentage changes are calculated based on the difference between the two end-point years (e.g., percentage change in 2015 as compared to the value in 2007). See the full report for more details on the trends over time.