

Land Use

2030 Goal

U.S. corn farmers are committed to increasing land use efficiency by 12 percent from 2020 to 2030.

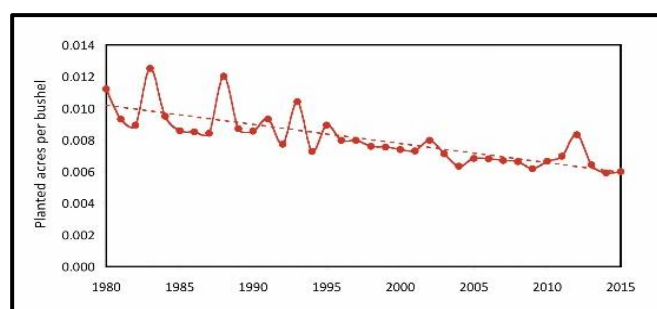
Background

The land use measure calculates the efficiency of producing a bushel of corn per acre of land, with an improvement in yields leading to an improvement in land-use efficiency. A key assumption moving forward is that corn acres will remain the same with roughly the same geographical distribution. Given this assumption, as yields continue to increase, the land use indicator will continue to improve.

NCGA has set a goal to reduce the amount of land required to produce a bushel of corn 12% by 2030. Advances in technology, when combined with increasingly efficient use of inputs, means that farmers can maintain or even grow their production while using less.

Improvements from 1980 - 2015

As cited in the 2016 Field to Market National Indicators Report, over the 36 years from 1980 – 2015, corn for grain improved resource efficiency with a per bushel decline in land use of 41%.



Land Use for corn for grain.

While total planted area increased over the study period by 33%, land use (planted acres per bushel) improved 41%. This represents improvements in crop yield of 61% over the period, with average yield in 2015 of 166.5 bushels per planted acre, compared to 89.1 bushels per planted acre in 1980.

Land use efficiency had little increase from 2001-05 to 2011-15.

Sustainability Outcomes

Land use efficiency informs an understanding of the sustainability of productivity and is closely tied to crop yields, which are key to achieving an economically sustainable farming operation. In addition, cropland in the U.S. today covers about 19% of land area and encompasses the most suitable agricultural regions of the country. Expanding agriculture onto previously uncultivated land may bring less productive lands into cultivation, requiring greater resource use to produce marketable yields. Land expansion for agriculture would also come at the expense of land currently valued for habitat and for other ecosystem services. Thus, maintaining and improving yields on existing cropland are critical both to maintaining economic sustainability and to producing other sustainability outcomes.

Getting to Goal

The historical U.S. corn yield increase of 1.9 bushels per acre is consistent with a continued 10% land used improvement. A 12% improvement will require an increase of 1.95 bushels per acre, which NCGA believes can be achieved through farmer adoption of existing and new technologies, which, when combined with increasingly efficient use of inputs, means that farmers can maintain or even grow their production while using less.

Alignment with UNSDGs



Progress made on the NCGA environmental sustainability goals will support multiple United Nations Sustainable Development Goals (SDGs). The 17 SDGs and 169 targets established by the UN in October 2015 “stimulate action over the next 15 years in areas of critical importance for humanity and the planet.”

These 2030 goals are interrelated, and actions taken specifically towards one goal or target may also address another area of concern.

The NCGA Land Use Environmental Sustainability Goal is most closely aligned with the following SDGs and targets:



UNSDG 2: Zero Hunger

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.



UNSDG 12: Responsible Consumption

12.2 By 2030, achieve the sustainable management and efficient use of natural resources.



UNSDG 15: Life on Land

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

Prepared for NCGA in part by Strategic Conservation Solutions, LLC (May 2021) – Information obtained from:

- Field to Market: The Alliance for Sustainable Agriculture, 2016. Environmental and Socioeconomic Indicators for Measuring Outcomes of On Farm Agricultural Production in the United States (Third Edition). ISBN: 978-0-692-81902-9.
- integrated Financial Analytics & Research (iFAR), LLP, January 2021. *Sustainability Goals for NCGA* Trendline Report.
- NCGA “Corn Sustainability Report,” 2021.
- United Nations, 21 October 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development*.