Soil Conservation

2030 Goal

U.S. corn farmers are committed to reducing soil erosion by 13 percent from 2020 to 2030.

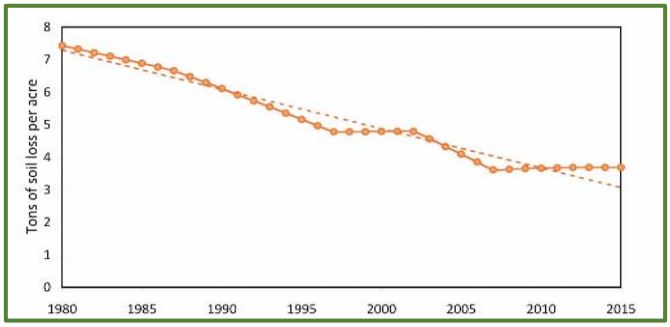
Background

Since 1980, farmers have made huge strides in reducing soil erosion, with a 58% reduction in erosion per acre from 1980 – 2015. Corn farmers are committed to building on their previous successes by reducing soil erosion an additional 13% by 2030 through increased adoption of tillage-reduction technologies and cover cropping.

NCGA tracks soil erosion from corn fields through Field to Market's soil conservation indicator, which is fundamentally a measure of wind and water erosion. As such, it relies heavily on soil erosion indicators from the NRCS Natural Resources Inventory (NRI). NRI values are fundamentally model-based values based on estimates of practices. It is likely that soil erosion will be reduced over the next several years with increased farmer adoption of advanced tillage practices, cover crops and precision technologies.

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 made improvements in soil conservation with a 58% decrease in tons of soil loss per acre.



Soil Conservation for corn (grain and silage).

Soil conservation improved (decreased) to 3.68 tons per acre in 2015 compared with 7.43 tons per acre in 1980. While the trend since 1980 shows significant improvement in per-acre soil erosion, most changes occurred before the mid-1990s, attributable in large part to implementation of conservation tillage practices, particularly on highly erodible lands. Since the late 1990s, per-acre erosion for corn has remained relatively constant (near five tons per acre).

Sustainability Outcomes

Soil is a key resource for crop production that is constantly forming and evolving based on land management and environmental conditions. Soils are highly variable throughout the country, having been formed over millennia by natural geologic and climatic processes. Some areas of the U.S., such as the Corn Belt, are renowned for deep and highly fertile topsoil. Soil erosion occurs when the soil surface is exposed to water and wind, and while soil does continue to form, the rate of formation is much slower than typical rates of soil loss to erosion in agricultural systems. Soil conservation involves improving soil quantity and quality by avoiding erosion, nutrient depletion and salinization, and maintaining soil organic matter. Conservation strategies preserve and protect the soil to maintain and increase productivity to ensure generations of productivity.

Getting to Goal

Based on Field to Market analysis, a normal trend yield would be expected to decrease erosion by 10%. A soil conservation goal of 13% will require additional adoption of advanced tillage practices. Modest increases in strip-till, cover crops and other technologies will contribute to achieving a 13% reduction in soil erosion by 2030.

As carbon becomes a greater focus throughout the world, U.S. corn farmers are also investigating ways to be part of the solution. Several programs are in place to identify production practices and new technologies that could help farmers quantify carbon from existing and new practices. Cover crops, no-till and strip tillage are all practices that have proven to keep soil in the field and carbon in the soil, but research continues to expand those capabilities and identify other practices with measurable results.

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 Soil Conservation 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

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

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*.