USDA Investment in Improved GHG Measurement, Monitoring, Reporting and Verification for Agriculture and Forestry through the Inflation Reduction Act

Overview

Agricultural producers, ranchers, and forest landowners play a critical role in environmental stewardship through management. The Inflation Reduction Act (IRA) includes historic investments to support producers in adopting climate-smart practices that can sequester carbon and reduce key GHG emissions like nitrous oxide and methane. These include practices such as nutrient management practices, cover crops, tillage practices, tree planting, and livestock management practices.

To better understand and measure the climate impacts of these practices and improve greenhouse gas estimates, the Inflation Reduction Act invests $300 million over eight years to support USDA's broader Measuring, Monitoring, Reporting and Verification (MMRV) efforts. These funds will support a comprehensive strategy to improve data, models and tools needed for quantifying the impact of conservation practices on GHG emissions and carbon sequestration.

Key Work Areas

After receiving stakeholder feedback through a Request for Information in early 2023, USDA identified two main work areas: 1) Data collection and management, and 2) Models and tools.

Data Collection and Management

Data collected will support metrics for Natural Resources Conservation Service (NRCS) programs, strengthen models and tools, and support GHG assessment at multiple scales.

- **Establish and advance a Soil Carbon Monitoring and Research Network with a perennial biomass component**
  USDA will collect field-based data for carbon sequestration and practices with a focus on soil carbon but also including perennial biomass like trees.

- **Establish and advance a Greenhouse Gas Research Network**
  A strategic network of sites will collect data on greenhouse gases (nitrous oxide and methane) from major agricultural sources such as beef and dairy cattle production in confined and grazing operations, livestock housing, and land emissions associated with fertilizer and crop production practices.

- **Improve temporal and spatial coverage of national conservation practice data**
  USDA will accelerate the collection and release of regional and national conservation trend data, provide improved and updated data for use in national GHG inventories, and fill existing and future data gaps.

- **Improve NRCS conservation practice standards and implementation data to reflect GHG mitigation opportunities**
  The goal is to improve NRCS conservation practice standards, implementation data, and training and technical guidance to increase the GHG mitigation potential of practices and NRCS ability to estimate outcomes.

The Inflation Reduction Act (IRA)

The Inflation Reduction Act represents the single largest investment in climate and clean energy solutions in American history. This is a historic, once-in-a-generation investment and opportunity for this country and for the rural and agricultural communities that USDA serves. It provided an additional $19.5 billion over five years for climate smart agriculture through several NRCS-implemented conservation programs. **Learn more: nrcs.usda.gov/inflation-reduction-act.**

More Information

Additional information about USDA's efforts to assess and measure GHG emissions from the agriculture and forestry sectors can be found at: **usda.gov/oce/energy-and-environment/climate/mitigation.**

◆ **Expand data management infrastructure and capacity**
To best utilize the improved data collected, USDA will set standards for data collection, metadata, processing, quality control, security, and aggregations. USDA will strengthen IT-related infrastructure to enable data interoperability.

Models and Tools

Collected data will be used to improve the accuracy of models and tools to improve USDA efforts to support climate smart agriculture and forestry efforts to reduce GHG emissions.

◆ **Advance options for models and tools to improve assessment of outcomes**
This action area will improve and update current models and tools, while also supporting multi-model comparisons to interpret results of independent models, determine areas for improvement, evaluate options, and stay current in a quickly advancing field of science.

◆ **Advance Greenhouse Gas Inventory and Assessment Program of USDA**
The goals are to integrate improved data, science, and models into USDA GHG reporting efforts, and link improvements in National GHG quantification to improvements in other models and tools.

Collaboration

The work areas are a collaboration among USDA agencies, including NRCS, the Agricultural Research Service (ARS), the Economic Research Service (ERS), the National Agricultural Statistics Service (NASS) and the Office of the Chief Economist's Office of Energy and Environmental Policy (OCE/OEEP).

Figure 1 shows how these work streams fit together:

Data Collection & Management	Using Data to Improve Models/Tools	Generating Better Estimates
Soil Carbon Monitoring & Research Network with perennial biomass component	Models and Tools for assessing outcomes	Improved conservation mitigation outcomes at program level
Greenhouse Gas Research Network		
Conservation Practice Standards and implementation of GHG mitigation opportunities	Greenhouse Gas Inventory and Assessment Program of USDA	Improved GHG estimates in national inventory
Temporal and spatial coverage of national conservation activity data		
Data management infrastructure & capacity		