



USDA Climate Change Program Office

December 5, 2013



WHO IS CCPO?

The Climate Change Program Office (CCPO) operates within the Office of the Chief Economist and functions as the Department-wide coordinator of agricultural, rural, and forestry-related climate change program and policy issues.

- Analysis, planning, research coordination;
- Development of climate change response strategies;
- Providing liaison with other Federal agencies;
- Informing Department leadership of related scientific developments and policy issues; and
- Ensuring climate change concerns are fully integrated into USDA's research, planning, and decision-making processes.



CCPO'S ROLE

CCPO functions as the Department-wide coordinator of agricultural, rural, and forestry-related climate change program and policy issues.

- Provides leadership, support and coordination across USDA agencies in helping the US agriculture and forestry sectors prepare for and adapt to changing climate
- Coordinates greenhouse gas (GHG) accounting and reporting for agriculture and forestry, publishes the USDA National GHG Inventory
- Develops tools for understanding and managing GHG emissions in the agriculture and forestry sectors
- US Global Change Research Program, and the 2013 National Climate Assessment, recently published input reports re. agriculture and forestry
- International climate negotiations and technical support to the Department of State on climate issues related to agriculture and forestry
- Mitigation, technology adoption, economic analysis
- Climate change impacts on national and global food security
- Coordinates with OEM on environmental markets and environmental services benefits



USDA GLOBAL CHANGE TASK FORCE

CCPO convenes the GCTF.

- Meets monthly to ensure communication and coordination across the agencies and mission areas.
- Provides review and input on issues related to GHG and climate policy.
- Made up of appointed climate leadership from agencies and mission areas across USDA, including:
 - AMS
 - APHIS
 - ARS
 - ERS
 - FAS
 - FSA
 - FS
 - GIPSA
 - NIFA
 - NRCS
 - NASS
 - OCE
 - OCS
 - OEM
 - RD
 - RMA
 - OGC
 - DM
 - OSEC
 - OBPA



ADAPTATION PLANNING

CCPO coordinated effort by the GCTF agencies to develop USDA's first Adaptation Plan.

- Completed in late 2012, included agency plans for 11 of the USDA agencies, underwent public comment
- CEQ has commended USDA on their effort
- Revisions are now underway for spring submission of an updated plan to CEQ, we anticipate that the document will be updated regularly



CLIMATE HUBS

The hubs will be regional USDA centers that will play a role in coordinating the gathering and dissemination of information for mitigation and adaptation planning.

- Proposals have been reviewed and evaluated
- Site selection announcement is forthcoming, pending some final determinations and other details.
- The hubs will coordinate with NOAA's climate science centers
- The hubs will network with USDA agencies, Universities, industry, land managers and other stakeholders.



Developing Science-Based Methods and Technical Guidelines for Quantifying Greenhouse Gas Sources and Sinks in the Forest and Agriculture Sectors

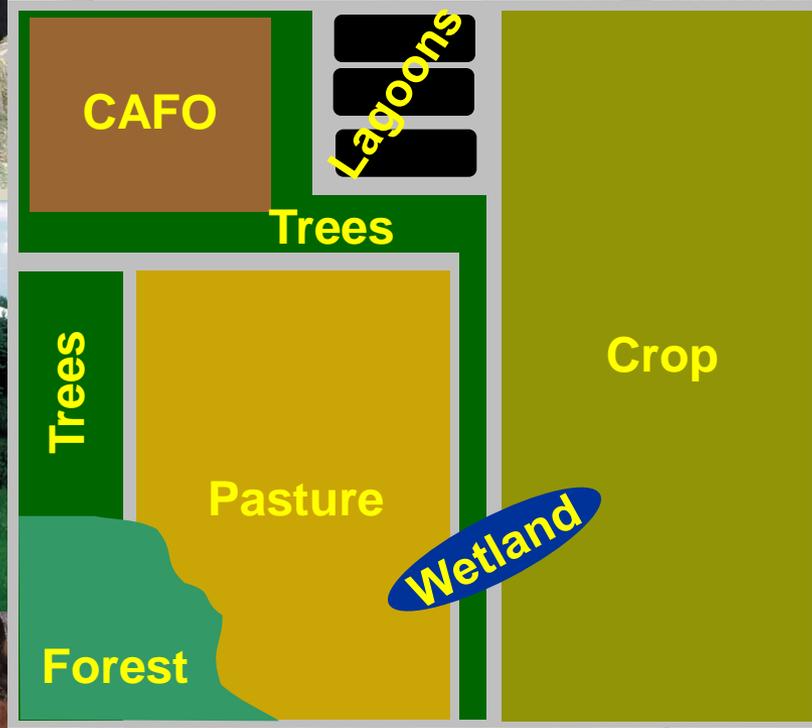
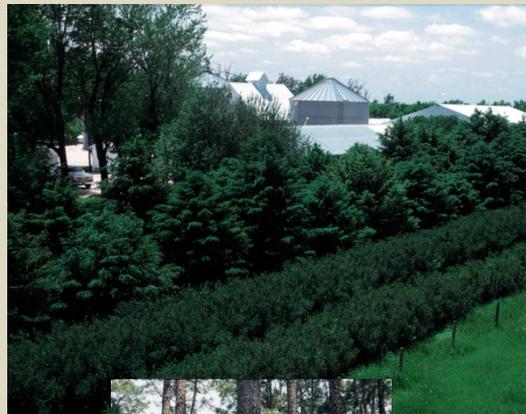
In accordance with Section 2709 of the 2008 Farm Bill:

“The Secretary shall establish technical guidelines that outline science-based methods to measure the environmental services benefits from conservation and land management activities in order to facilitate the participation of farmers, ranchers, and forest landowners in emerging environmental services markets” with priority given to carbon (GHG) markets.

Goal: To create a standard set of GHG quantification methods and tools for landowners, USDA, and other stakeholders.

- Phase 1: Report outlining comprehensive science-based methods for entity-scale GHG estimation.
- Phase 2: Develop a user-friendly tool that follows the methods report to provide land owners and managers with reliable and understandable estimates of GHG emissions and C sequestration.

The entity - combining a landowner's crop, livestock and forestry activities into one seamless GHG estimate.





KEY CONSIDERATIONS

- 1. Transparency***
- 2. Consistency***
- 3. Comparability***
- 4. Completeness***
- 5. Accuracy***
- 6. Cost effectiveness***
- 7. Ease of use***

BALANCING ACT

- ✓ Maximize accuracy ... but maintain ease of use
- ✓ Complete ... but cost effective
- ✓ Stand alone ... but consistent and comparable
- ✓ Transparent ... but with scientific rigor ... and user-friendly



INTENDED USES

- USDA will use these methods to provide a transparent, standardized approach to entity-scale GHG estimation.
- Farm, ranch and forest land owners will use tools following these methods to better understand the GHG impact of their management decisions.
- The methods and related tools will provide land owners and managers with knowledge and understanding to facilitate their entry into state or private registries or markets.
- USDA will use the methods to assess local (GHG) performance of conservation programs, practices and initiatives.
- The methods will likely be useful for or adaptable to the needs of other stakeholders such as NGOs, state or local registries, industry sustainability initiatives, etc.



METHODS REVIEW

Science-Based Methods

CCPO

USDA Tech.
Rev.
Oct 2011

Inter-Agency
Tech. Rev.
May 2012

Scientific Experts
Feb – March 2013

Public Comment,
Final Inter-Agency
and USDA Review
Sept - Oct 2013

Final Report Release
February 2014



CURRENT STATUS

- Comments from the first inter-agency review have been addressed
- Expert review has been completed – over 900 technical comments from 30 reviewers
- Notable within the Methods Report:
 - ✓ A new N₂O method
 - ✓ A model-based forest methodology
 - ✓ Uncertainty assessment
 - ✓ Research and data gaps



REPORT LAYOUT AND CONTENT

- Executive Summary
- Introduction
- Considerations
- Crop and Grazing Lands
- Wetlands
- Animal Systems
- Forest lands
- Land Use Change
- Uncertainty Assessment

Public Review
Draft

Contract No.
GS-23F-8182H

August 2013

Science-Based Methods for Entity-Scale Quantification of Greenhouse Gas Sources and Sinks from Agriculture and Forestry Practices





WHAT IS NOT COVERED IN THE REPORT?

- Emissions related to on-farm energy use
- Indirect emissions due to the manufacture or transport of management inputs (ie fertilizer, pesticides, etc.)
- Policy-specific framework such as additionality and leakage

GHG QUANTIFICATION METHODS

	IPCC Tier 1	IPCC Tier 2	Modified IPCC or Empirical Model	Processed-Based Model
Croplands/Grazing Lands	<ul style="list-style-type: none"> • Indirect N₂O Emissions • CO₂ from Urea Fertilizer Application • CH₄ Emissions from Rice Cultivation 	<ul style="list-style-type: none"> • Direct N₂O Emissions from Drainage of Organic Soils • Soil Organic C Stocks for Organic Soils • CO₂ from Liming • N₂O Emissions from Rice Cultivation • Non-CO₂ Emissions from Biomass Burning 	<ul style="list-style-type: none"> • CH₄ Uptake by Soils • Direct N₂O Emissions from Mineral Soils 	<ul style="list-style-type: none"> • Biomass Carbon Stock Changes • Soil Organic C Stocks for Mineral Soils
Wet-lands				<ul style="list-style-type: none"> • Biomass C • Soil C, N₂O, and CH₄
Animal Production Systems	<ul style="list-style-type: none"> • Swine • Other Animals (Goats, American Bison) 	<ul style="list-style-type: none"> • Poultry • Poultry-Manure • Aerobic Lagoon- CH₄, N₂O • Temporary Stack and Long-Term Stockpile- CH₄ • Composting 	<ul style="list-style-type: none"> • Dairy Cattle, Sheep, Cow-Calf, Stockers, Feedlot Cattle • Temporary Stack and Long-Term Stockpile- N₂O, NH₃ • Aerobic Lagoon- NH₃ • Anaerobic Lagoon, Runoff Holding Pond, Storage Tanks • Combined Aerobic Treatment Systems • Anaerobic Digester- CH₄ 	
Forestry			<ul style="list-style-type: none"> • Establishing, Re-establishing, and Clearing Forest • Harvested Wood Products 	<ul style="list-style-type: none"> • Forest Carbon • Forest Management • Urban Forestry • Emissions from Natural Disturbances



THE USDA GHG METHODS

The Methods Report is designed to be:

- A scientifically vetted means for USDA to provide local-scale, standardized and transparent estimation of GHG fluxes
- Consistent with the USDA and EPA national GHG inventories
- Aligned with NRCS's COMET Farm and other USDA GHG tools.
- Coordinated with water quality or other tools to assess environmental services benefits

USDA Scientifically Vetted and Transparent Entity-Scale GHG Methods

ARS Tools like DairyGEM, the work of Rotz and others

CAFO

Lagoons

Trees

Other equations, emission factors, or new hybrid approaches.

Crop

Pasture

NRCS Tools like COMET and Daycent

Wetland

Forest

USFS Tools like FVS, FOFEM, and iTree





PROJECT TIMELINE AND KEY DATES

- ✓ Selected Lead Authors
- ✓ Formed Inter-Agency Tech Advisory Group (Jan 2011)
- ✓ Published FR Notice for public technical input (Feb 2011)
- ✓ Invited key experts to join author teams (Jan 2011)
- ✓ First draft completed (Sept 2011)
- ✓ USDA initial review and contractor initial editorial review (Oct 2011)
- ✓ Tool Development Commences (Feb 2012)
- ✓ Inter-Agency Tech. Adv Group review of second draft of methods (May 2012)
- ✓ Expert Peer Review of third draft of methods (Feb-Mar 2013)
- ✓ Full USDA and Inter-Agency review and public comment (Sep – Oct 2013)
- Release of Final Methods Report (Feb 2014)
- Integration of the Methods into User-Friendly Tools





CONTACT INFORMATION

Thank you!

Marlen Eve, USDA
Climate Change Program Office
meve@oce.usda.gov
(202) 401-0979

www.usda.gov/oce/climate_change