

# C-AGG Meeting Summary

November 2-3, 2011

## *Executive Summary*

The Coalition on Agricultural Greenhouse Gases (C-AGG) held a meeting in Washington, DC, on November 2-3, 2011. This document provides a summary of the meeting and its outcomes.

Debbie Reed, C-AGG Executive Director began the meeting by reviewing C-AGG's goals and past and current activities, and initiating a round of introductions among participants. Throughout the course of the meeting, participants heard about and discussed a diverse range of topics, including:

- USDA's development of new tools and other relevant activities (*page 1*);
- The Global Research Alliance on Agricultural Greenhouse Gases (*page 4*);
- Carbon Disclosure Project's Agriculture Supply Chain Pilot 2011 (*page 5*);
- National Cattlemen's Beef Association Sustainability Initiative Program (*page 7*);
- Approaches to additionality in agricultural offset protocols, as outlined in a new C-AGG White Paper (*page 8*);
- Current activities and future plans at the Verified Carbon Standard, American Carbon Registry, and Climate Action Reserve (*page 9*);
- Approaches to capturing uncertainty in biogeochemical process models, as discussed in the latest draft of a C-AGG White Paper (*page 12*);
- Challenges and opportunities facing the USDA Conservation Innovation Grant GHG Projects (*page 13*); and
- Next steps for C-AGG (*page 16*).

The meeting agenda and PowerPoint presentations from the meeting can be accessed at <http://c-agg.org/resources.html>. For questions about the meeting, or further information on C-AGG, please contact Debbie Reed, C-AGG Executive Director, at: [dreed@drdassociates.org](mailto:dreed@drdassociates.org).

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## Update from USDA on Relevant GHG and Environmental Services Activities

Bill Hohenstein, Director of the USDA Global Change Program Office, began the meeting with an overview of the challenges that USDA is facing related to climate change and environmental services. He noted that, given fiscal realities, his office needs to work more efficiently and be able to justify the investments they are making in conservation programs. Simplifying the contracting process with farmers and improving information management

are both critical to meeting these challenges. Hohenstein also mentioned a few challenges related to the tools his office is developing. While USDA has clear direction from Congress to support and facilitate the emergence of environmental markets, there are still challenges ensuring that the tools to support producer participation in these markets are reliable, quick, easy to use, consistent, and incentivize the correct benefits. In particular, Hohenstein noted the need for an inter-operable data input system across multiple tools so that farmers only need to enter baseline data once.

Hohenstein introduced two of his colleagues to discuss the tools USDA is developing in more depth. Adam Chambers, a Physical Scientist in USDA's Natural Resource Conservation Service (NRCS), provided an overview of the COMET-Farm tool. This tool, currently under development, aims to support GHG reductions as a part of both current and future USDA programs. It includes separate components for the whole farm, livestock, and energy emissions in the soil carbon and nitrogen cycles. While the tool is architecturally flexible, it is consistent with the U.S. GHG Inventory and relies on NRCS data. Public beta testing will begin for COMET-Farm in March or April, 2012, with the release of the first version anticipated the following summer.

Next, Hohenstein introduced Carl Lucero, Deputy Director of the USDA Office of Environment Markets to discuss the Nutrient Tracking Tool (NTT). This online tool, originally developed for credit trading, serves as a decision support tool for farmers. It utilizes a Google Maps-like geo navigator that allows you to zoom into a specific field that has climatic and soils data pre-loaded. The Agricultural Policy Environmental Extender (APEX) model is used to compare the baseline and practice change impacts to quantify changes in carbon, nitrogen, phosphorus, nitrous oxide, and sediment. In addition to running scenarios based on input changes, the NTT can calculate yield changes based on practice change, including nutrient management, tillage, and buffers. Lucero noted that NTT is still a prototype, currently being pilot tested in the Chesapeake Bay as the first step towards crediting under the management program there.

Key points from the questions and discussion included:

- Several participants asked how these tools take into account innovation. If, for example, new or best practices, including enhancements to practices, are not included in the NRCS field guides, participants asked if the tools would be flexible enough to include these. Hohenstein recognized this concern and noted that USDA does not want a tool with limited practice choices to create de facto standards and deter innovation. He mentioned that USDA is working to address this challenge while developing the tools. Hohenstein also clarified that the practices included in these tools now have more flexibility than the list in the NRCS handbook. Proprietary nitrogen management technology was also recognized as a challenge to incorporate in the tools.
- The potential relationship between these tools and the voluntary GHG registries was explored by several participants. Participants noted that using the work USDA is

doing as the quantification core and user interface for their tools and protocols within voluntary registries would be very appealing. It was noted that the system COMET-Farm is based on was originally developed for the Department of Energy's voluntary GHG reporting 1605(b) program. Hohenstein stated that USDA hopes that these systems will eventually be good enough for use in offset market protocols. Key challenges, however, include verification and uncertainty. Since USDA does not plan to include model verification in their work, the voluntary market would need to do this. Additionally, Hohenstein noted that they do not view uncertainty as something that is conservative or liberal in estimation. USDA aims to produce as accurate a model as possible. This approach to uncertainty would need to be reconciled with the voluntary market's approach to uncertainty estimates.

- Participants asked whether USDA has chosen the CENTURY model and COMET as their preferred tools. While NRCS has invested in COMET for its conservation programs, USDA has not made a department-wide decision on this. Hohenstein noted that there may be a third choice besides the COMET and the DeNitrification-DeComposition (DNDC) model in the future that is completely different. He also reiterated that USDA's goal is to meet the needs of farmers. It was suggested that there might be a role for C-AGG teasing out the differences between the models.
- For these tools, USDA is utilizing a three round review process to ensure environmental integrity of the outputs. This process includes expert review, public review, and an internal USDA review.
- Participants noted that in the past, tools such as COMET have had a limited crop database, reducing the tools' applicability. USDA noted that they have already made progress expanding the data and keeping it current, particularly by integrating specialty crops. It was noted, however, that there just is not enough research on some cropping systems.
- In the COMET-Farm livestock module, enteric emissions will be included. Whether the relationship between livestock grazing management and cropping is included is still to be decided. Chambers noted the critical need to be transparent in what is included in the model.
- It was suggested that the COMET-Farm tool include ranching in its name to reflect the livestock module (e.g. **Farm And Ranch Management**). Ranchers, it was noted, do not like to be called farmers.
- NRCS would like to make their tools accessible via smartphone by a farmer in a field. They envision these tools could be used for marketing as well as for internal purposes.
- While the NTT is an edge of field model, USDA is working with EPA and the World Resources Institute to expand the model to work farther upstream within a watershed.

- The NTT has been tested in the Chesapeake Bay, Ohio, Mississippi, and the Upper Northwest. COMET-Farm is not far enough along in development to be tested on the ground.
- The NTT is a field scale model, which sets it apart from the watershed scale models that the EPA uses to compute Total Maximum Daily Loads. However, USDA would like the NTT to translate into these watershed scale models.
- One participant cautioned USDA to keep in mind all of the complementary initiatives in the private sector. A list of 80 to 90 different tools and indicators has been collected for USDA as a part of the on-farm GHG quantification project already and USDA will soon share this list with C-AGG and publicly.

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## The Global Research Alliance on Agricultural Greenhouse Gases

Steven Shafer, Deputy Administrator of USDA's Agricultural Research Service, provided an overview of the Global Research Alliance on Agricultural Greenhouse Gases. This group, proposed by New Zealand in 2009, is an effort to leverage member countries' investments in research on agriculture and GHG mitigation in order to reduce global emissions in the agriculture sector. Thirty developed and developing countries are members. The Alliance is divided into three research groups – Livestock, Croplands, and Paddy Rice – and two cross-cutting groups - Inventory and Measurement and Soil Carbon and Nitrogen Cycling. Each of the research groups began by conducting a research inventory, called a "stock take", and then developed an action plan and short-term goals. Shafer noted several challenges for the Alliance, including organizing a large, international group and ensuring participation. Since all country participation is voluntary and based on the country's interest, capacity, and resources, there are few incentives for participation and no punishment for failing to meet goals and targets.

Key points from the questions and discussion included:

- The stock take is a method to understand the amount of research that governments are currently doing and which issues are being researched.
- The Alliance's research groups identify research gaps to some extent. For example, the inclusion of wetlands and peatlands in the Croplands group's action plan is in direct response to a research gap. However, addressing gaps relies on people within the Alliance to drive the work.
- The cross-cutting groups play a different role than the research groups. These two groups are tasked with calibrating the work of the Alliance. While they will not sponsor research themselves, they will draw from existing research and work done in the research groups.
- The Alliance Council, comprised of high-level government representatives, is the body most focused on impact of the Alliance's work. This would be the most likely body to conduct a policy-relevant knowledge assessment for the Intergovernmental

Panel on Climate Change (IPCC), as one participant suggested. At the Council level, the Alliance can provide the best science available for policy decision-making. Shafer, at the research group level, is more focused on pairing research with education and outreach to farmers.

- Including awareness of farmer profitability is important to the Alliance's success. For example, land use change and related GHG emission are economically driven, rather than driven by a need to feed the world. While the Alliance cannot incentivize sustainable practices, it can provide information to member governments to inform their decision-making.
- Not all countries have resources to commit to scientific research. However, countries that are members of the Alliance can provide study sites, data, and outreach models to researchers abroad. Additionally, partnerships created through the Alliance can provide training to scientists and decision support to policy makers.
- The Alliance has a very specific focus on agriculture and climate change. It is not addressing sustainability writ large.
- The link between sustainable agricultural development and Reducing Emissions from Deforestation and Forest Degradation (REDD) has not been discussed within the Alliance. Shafer, however, noted his desire to work with organizations in the U.S. on developing incentives.
- Conducting research in different languages makes dissemination particularly difficult. For example, there has been research in Brazil that was never recognized because it was only published in Portuguese. While the Alliance has no specific budget for this, if a country proposed funding for translation work, the Alliance would take advantage of it.
- The Alliance is very open to working with the private sector on disseminating research on the ground.

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### **Carbon Disclosure Project (CDP) Report on CDP Agriculture Supply Chain Pilot 2011, and Future Plans**

Betty Cremmins, Supply Chain Officer for the CDP, and Ryan Meinke, Project Manager for Common Fields, provided a summary of the recently completed Agriculture Supply Chain Pilot at the CDP. The final report on this project will be released soon. The pilot focused on tomatoes and potatoes grown for ConAgra Foods, HJ Heinz, PepsiCo, and Wal-Mart. Of the 11 suppliers targeted to participate in this pilot, only two successfully completed CDP's survey and only eight suppliers responded at all. Of the responses received, CDP learned that most of the growers do not consider climate change in their business plans or have GHG emissions reduction targets. Several are reducing GHG emissions as a secondary benefit of other activities, however, and many example initiatives were documented. Based on the completeness of responses, CDP has a low level of confidence in the accuracy of the GHG emissions data that was reported.

Through the pilot program process, CDP gleaned many lessons learned. Clear, simple data requests and questions that growers can understand are critical to survey design. Additionally, growers find it much easier to provide primary data than GHG emissions data. Standardization is important between different organizations' data requests in order to prevent survey fatigue. CDP found that the benefits of GHG measurement and reporting need to be better explained to producers, and there is a need for demonstrated benefits or incentives, including subsidizing the reporting process. In order to maximize response rates, the survey should not be sent during planting or harvest seasons, when farmers are busy in the field. CDP also found that it is particularly important to feed the survey results back to the growers, along with benchmarks based on the grower's region and crop, to provide them with comparative results.

Key points from the questions and discussion included:

- CDP began the pilot with the assumption that the agriculture sector should be able to provide the same data as any other sector within the supply chain. Participants noted the importance of asking for intermediary data, rather than GHG emissions data, since it is unrealistic to ask growers to calculate these numbers, which are not used in day-to-day management. While CDP doesn't calculate emissions, it does have partners who do this.
- As a part of the survey process, there were several opportunities for outreach with growers. HJ Heinz and ConAgra Foods met with all of their growers in the pilot and webinars were scheduled as well. However, grower participation at these events was low. One participant suggested using local groups that have a pre-existing relationship with the growers as an intermediary in the future. While Cremmins agreed with this suggestion, she also noted the value in using the companies as intermediaries as well, since they are the ones who can provide incentives and enforcement. She also noted that the agriculture sector required more coaching through the survey process than other sectors, likely due to the less apparent business case for reducing GHG emissions.
- Several participants mentioned the need for incentives for growers to participate. Participants noted that the information requested in the survey is proprietary so there is an inherent competitive risk in its distribution and this type of program shifts the balance of power further away from the producer in an already biased system. Money, policy, tools, and logistics were suggested as potential forms of incentives.
- Cremmins repeated that the agriculture sector, like all other sectors should be held accountable for its GHG emissions and should have the opportunity to demonstrate emissions reduction strategies under way. She challenged participants to examine how agriculture is different from other sectors.
- In CDP's view, answering the survey provides as much value as the data that it generates. Getting companies and growers to begin to think about their GHG emissions is an important benefit of the process. While several participants suggested

collecting information in the aggregate, this does not meet the self-reflective goal of the survey.

- Cremmins noted that while the crops chosen for the pilot do not account for a large percentage of agriculture's GHG emissions, they stand to make the biggest reductions quickly. The model developed in the pilot will need to be adapted for commodities, which are not grown under contract.
- When surveying the supply chain in other sectors, suppliers themselves proposed emissions reduction solutions. This was not the case in agriculture.

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## National Cattlemen's Beef Association Sustainability Initiative Program

Tamara McCann Thies, Chief Counsel for Environment and Sustainability at the National Cattlemen's Beef Association (NCBA), presented a summary of NCBA's newly launched sustainability program. This program, Thies noted, is in response to consumer demand for beef that is safer, more humane, and raised with a smaller environmental impact. For its sustainability work, NCBA has partnered with BASF Corporation to develop a beef-specific definition of sustainability and perform a five part assessment of the industry. This assessment includes a hot-spot analysis; a baseline sustainability and eco-efficiency analysis; development of an online tool for individual producers; whole chain traceability for food safety; and certification of the assessment. The program will conclude with a sustainability summit in 2012 and the establishment of a national sustainability center within NCBA to oversee and support the online producer tool.

Key points from the questions and discussion included:

- Thies noted that she has no doubt that producers will use this as a marketing tool. At the association level, however, they will not be marketing sustainable beef since this is an anti-trust issue. The NCBA plans to provide as much information as they can to producers - including methods for reducing net GHG emissions - and allow producers decide how to use it. If there is verification in place for sustainable beef, this will be done by a third party.
- The baseline for this analysis will be data from USDA's Meat Animal Research Center. Asked whether this data is typical for the industry, Thies noted that it was selected because it is carefully controlled.
- The assessment will be "cradle to grave" for beef production and will allocate emissions where appropriate. All U.S. production, including production for export will be included.
- While the assessment will likely show that the North American model for beef production is very efficient, Thies noted that there is always room for improvement.

- The NCBA has consulted with the dairy industry in designing their sustainability program, though they have chosen a different approach. They plan to continue to exchange information with the dairy industry as the project continues.
- While some groups, such as the winegrape growers, have collected data anonymously from producers in order to create an industry baseline, this is very difficult. Research shows that often producers do not answer all survey questions, or they misinterpret them. This is why the NCBA decided to choose the archetype approach.
- The NCBA does not see comparing practices within the industry on the basis of sustainability as productive, and would much rather help all producers improve their own sustainability as much as possible.

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### **Presentation and Discussion of C-AGG White Paper: *Additionality in Agricultural Offset Protocols***

Rob Janzen, Vice President of ClimateCHECK, presented the C-AGG White Paper he has co-authored, entitled *Additionality in Agricultural Offset Protocols*. The paper is based off the premise that agriculture is different from other sectors and, as a result, typical approaches to additionality, designed for industrial point source pollution, are not the most effective way to meet the sector's needs. After conducting a literature review and consulting program guidance, the authors found several opinions on testing additionality, as well as an emerging consensus on standardization and simplifying criteria. When assessing additionality, the authors urged the inclusion of agriculture experts as well as program personnel in the assessment. The authors also suggest considering whether new infrastructure, in terms of personnel, capital, training, etc, is needed to create practice change; whether there is an agent of change, such as a project developer, involved; and whether standardized approaches, such as positive lists and benchmarks, are met.

Key points from the questions and discussion included:

- Additionality tests add transaction costs to a project, which affects the additionality itself. The projects that are lower cost for farmers are the most likely to be implemented and have the greatest additionality concern as well. Projects on the margin are the most expensive and most in need of incentives. High cost additionality tests will make farmers even less likely to undertake these on-the-margin projects. Some farmers are uninterested in these projects because of the paperwork alone.
- The difference in GHG emissions between different agriculture systems is a key challenge. Those systems that are performing the worst have the most to benefit in a crediting scheme. However, at some point, the scheme needs to stop favoring the poorly performing systems, since it creates the wrong incentives. Farmers generally



favor a scheme that “lets all the boats rise.” Janzen noted that this is a regulatory issue seen occasionally in other sectors as well.

- Incentives, it was noted, are not needed to induce producers to take an action that they would not otherwise consider. They are needed to promote new practices or to accelerate the adoption of innovative practices before they become the status quo.
- The time value of an action with respect to additionality is an important consideration. This relationship is much grayer than represented in the white paper. A conservative start date for a program can have the effect of punishing early adopters. One participant noted that the program in Alberta was particularly proactive in ensuring farmers didn’t revert practices to take advantage of credits.
- Stacking, particularly with EQIP funding, was an issue raised by several participants. Some participants believed that if a carbon market is supporting a practice change, then EQIP funding cannot be used in addition. USDA officials stated that it is their policy to allow both. Participants noted the importance of providing financial incentives from both carbon markets and EQIP, since incentives from either generally do not cover the costs of the practice change.
- Standardization creates risks, including increasing opportunities to game the system.
- One participant noted that standardized approaches should be addressed within each protocol, rather than sectorally.
- The Verified Carbon Standard (VCS) has convened a steering committee to address standardized approaches for additionality and has just drafted requirements.
- The best additionality test is examining whether a project is common practice. However, there are widely divergent opinions on what constitutes the penetration point for the common practice test. VCS uses 5% while the system in Alberta uses 40%. One participant suggested that rather than thinking of common practice as a threshold, it can be used to quantify credits – so called proportional additionality.
- Participants were reminded that there is a difference between the baseline set for measuring performance and for measuring additionality. Just because a project is additional does not guarantee it will generate emissions reduction credits.

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## Overview of November 4 EPRI Workshop on N<sub>2</sub>O Emissions Offsets

Adam Diamant, Senior Project Manager at the Electric Power Research Institute (EPRI) presented a preview of the November 4<sup>th</sup> workshop EPRI is hosting on *Creating Nitrous Oxide Emissions Offsets in U.S. Agriculture Policy*. This workshop, consisting of a series of panels with discussion, will provide the opportunity to explore technical issues in depth.

## **Agricultural Protocol Development: Update from Voluntary Carbon Registries ACR, CAR, and VCS**

An overview of current activities and new protocol development was provided by:

- Carolyn Ching, Senior Program Officer, Verified Carbon Standard (VCS)
- Nick Martin, Chief Technical Officer, American Carbon Registry (ACR)
- Kathryn Goldman, Senior Policy Manager, Climate Action Reserve (CAR)

### **Verified Carbon Standard (VCS)**

Carolyn Ching began by providing an overview of VCS, including recent requirement changes, and its latest strategic initiatives. VCS recently introduced significant changes to its Agriculture, Forestry, and Other Land Use (AFOLU) project type, which already contains 10 protocols and 21 registered projects. Included in the update are two new AFOLU project categories – Peatland Rewetting and Conservation and Avoided Conversion of Grasslands and Shrublands. Additionally, requirements for grouped projects were changed to better match the Clean Development Mechanism (CDM) and the AFOLU Non-Permanence Risk Tool was updated to create a more streamlined and user-friendly experience.

VCS, Ching explained, has also started several strategic initiatives. A technical working group has been formed to develop wetlands restoration and conservation requirements. VCS has also formed a Steering Committee on Standardized Approaches. This group is examining whether activity methods or performance methods should be used. Finally, VCS has launched a Jurisdictional and Nested REDD Initiative, in order to ensure that projects developed in a group can be nested into regional programs.

### **American Carbon Registry (ACR)**

Nick Martin gave an overview of several of ACR's agriculture related protocols and provided thoughts on the direction of agricultural carbon markets generally. He noted that several of these protocols, such as ACR's N<sub>2</sub>O Emissions Reductions through Changes in Fertilizer Management protocol and Rice Emission Reduction protocol, have been identified by the California Air Resources Board (ARB) as up for early action and compliance under the California cap-and-trade regime. ARB is very interested in agriculture as a source of offsets, which Martin noted will be in short supply under the regime. This is a critical time, he emphasized, for capturing the attention of farmers and the California market. Additionally, Martin urged a more nuanced view of standardized approaches to additionality. While performance-based standards can be a great thing, they can also narrow the scope of a protocol.

### **Climate Action Reserve (CAR)**

Kathryn Goldman presented an update on CAR's Rice Cultivation Project Protocol and lessons learned during its development. The protocol, based off the work that Environmental Defense Fund, Terra Global Capital, and the California Rice Commission have done, is currently out for public comment following the CAR workgroup process. What is particularly unique to this protocol, Goldman noted, is the aggregation system. Aggregation makes the protocol scalable, cost-effective, and more accurate. Each field registered has a unique start date and crediting period and fields even have limited opportunities to switch aggregates. While there is a maximum field size, there is no maximum size for aggregates and the larger the aggregate, the fewer individual fields within the aggregate need to be sampled. The aggregator holds the account with CAR, receives the credits, hires a verifier, and ensures that they have exclusive claim to the credits generated. Goldman also noted that this protocol does not allow for credit stacking for other ecosystem services, though there is a limited potential to stack with EQIP payments for straw baling. This stacking is permitted only because the use of EQIP funds is so low for this practice that it demonstrates this funding is not enough to incentivize practice change and, therefore, does not compromise additionality.

Key points from the questions and discussion included:

- VCS has no specific prohibition for its AFOLU protocols as a whole to prevent yield loss. This is a requirement made for each protocol individually, in order to not preempt the development of protocols for reverting agricultural to natural land.
- While VCS's AFOLU group does not have any farmers involved currently, it would welcome farmer engagement and issues an open call when looking for Steering Committee members.
- VCS uses a 5% threshold when determining common practice. This determination was made by its Steering Committee and the rationale is included in the draft requirements.
- When VCS protocols utilize a biogeochemical model, the choice of model and instructions for its use are contained in the protocol itself. VCS ensures that the methodology is replicable and validated.
- VCS would allow bundling ecosystem services credits under the new standardized approach. ACR allows stacking under their nutrient management protocol, as long as the project can still make the case that it is additional. Within CAR's rice cultivation protocol, any stacking, if allowed, must start at the same time as the crediting period. It cannot start either before or after, since that might call additionality into question.
- With credit stacking, it is critical to ensure that the various incentives complement each other, rather than compete with one another.
- One participant cautioned that more on-farm factors, such as the amortization period for equipment, should be taken into consideration when determining additionality and crediting periods.

- Additionality is important if you are mitigating someone else's activities, regardless of whether the benefit is related to carbon or another environmental benefit. Payments for other environmental benefits are important to carbon markets, since the carbon market considers these payments a part of the business as usual baseline.
- For some practices, such as dry seeding of rice, the largest barriers to change are cultural. Even if a new practice might be cheaper, farmers still fear a yield loss.
- If additionality can be called into question after the initial approval, such as at the end of a crediting period, it disconnects the financing required to complete the project and the carbon revenue received, which increases risk.

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### **Presentation and Discussion of C-AGG White Paper (final draft): *The Role of Biogeochemical Process Models for Agricultural Offset Projects: An Approach to Capturing Uncertainty***

Bill Salas, President and Chief Scientist at Applied GeoSolutions, LLC, presented the latest draft of a white paper he has co-authored for C-AGG, entitled *The Role of Biogeochemical Process Models for Agricultural Offset Projects: An Approach to Capturing Uncertainty*. He noted that the goals of this white paper include initiating a discussion on how to assess agricultural offset projects, discussing the sources of uncertainty, presenting statistical approaches, and putting all of these together into a document that can evolve over time. Salas began by clarifying that scientific structural uncertainty and input uncertainty are the two main sources of uncertainty in process models. The white paper delves into four questions surrounding these sources of uncertainty:

- How does one demonstrate that a model is sufficiently calibrated?
- How does one quantitatively estimate structural uncertainty in a model?
- What is the impact of uncertainty in model inputs on GHG emission reduction outputs?
- How does one account for both types of uncertainty?

Salas noted several next steps for this white paper. He is still looking for input from the C-AGG community in order to finalize the paper. He suggested a workgroup could be formed around this topic or a proposal written for a project to examine these issues in more detail. Finally, Salas noted that C-AGG could examine how the approach in the white paper fits with the work USDA is doing.

Key points from the questions and discussion included:

- It would be interesting to examine whether this approach creates any uncertainty or risk in the verification process.
- Deciding when a model is appropriately calibrated is a tricky question and there is no hard and fast rule on this.

- This approach creates an incentive to use as much aggregation as possible. It was suggested that, in this case, if a registry has enough individual projects it is essentially a large aggregation pool. This is the basic approach taken by the Chicago Climate Exchange (CCX). However, registries work incrementally and will not know the total number of project when they first launch a protocol.
- The more data one requests from a farmer, the more likely there is to be an error in the data provided. One of the drawbacks to the DNDC and other process models is the large quantity of data required. While project developers could choose to use fewer key inputs in the model, this would potentially increase uncertainty as well.
- Clear, low transaction costs are important in protocols.
- A section on where models are headed and trade-offs between process models and other, simpler models could be added to the white paper.
- The approach to uncertainty presented in the white paper will evolve over time. For example, there are already technology improvements, such as remote sensing, that are making verification of inputs and practices easier and cheaper.

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### **Moderated Roundtable Discussion: USDA Conservation Innovation Grant (CIG) GHG Project Representatives**

Jimmy Daukas, Director of Agriculture and Environment at the American Farmland Trust, moderated a roundtable featuring:

- Eliav Bitan, National Wildlife Federation, representing *Bringing Greenhouse Gas Benefits to Market: Nutrient Management for Nitrous Oxide Reductions*
- Rob Janzen, ClimateCHECK, representing *Smart Nitrogen Application Program (SNAP) Demonstration Project*
- Matt Sutton-Vermeulen, Unison Resource, representing *Bovine Innovative Greenhouse Gas Solutions (BIGGS)*
- Matt Welch, Innovation Center for U.S. Dairy, representing *Dairy Farm Stewardship Toolkit*
- Sheldon Zakreski, The Climate Trust, representing *Ducks Unlimited Avoided Grassland Conversion Carbon Project*
- David Tepper, Applied Ecological Services, representing *Agricultural Soil Carbon in the Palouse Region: Developing a Large-scale Agricultural Soil Carbon Transaction in the Palouse Region*
- Belinda Morris, Environmental Defense Fund, representing *Demonstrating Greenhouse Gas Emissions Reductions in California and Midsouth Rice Production*
- Beth McGee, Chesapeake Bay Foundation, representing *Estimating N<sub>2</sub>O Reductions from Nutrient Management in the Chesapeake Watershed*

In preparation for the roundtable, panelists were given the opportunity to submit questions for discussion. These questions, once combined and synthesized, formed the basis of the roundtable discussion. A complete list of the questions can be found [here](#).

### **Producer Recruitment**

Nearly all of the panelists cited producer recruitment as a key challenge in implementing their projects. In the Chesapeake Bay area, for example, farmers are particularly antagonistic toward the introduction of new people on their land. While different projects are addressing this challenge in different ways, panelists noted the importance of working through trusted networks to reach farmers. Suppliers, crop and nutrient management consultants, local NRCS offices, livestock nutritionists, producer associations, and local nonprofits were all suggested as possible trusted advisors for producers, though panelists stressed the importance of working with whoever has the most respect and influence given the individual situation. The biggest practice change in these projects is changing the way that farmers collect data. Trusted local partners need to be able to collect data in a concrete way that can be used in the verification process, whereas in the past they only provided strategic advice. One panelist noted the importance of selecting partners with a high level of competency and an ability to deliver.

Additionally, panelists reflected that farmers are concerned that GHG mitigation will change from a voluntary action to another government regulation. While some producers are enthusiastic about benefiting as much as possible before regulation is put in place, others are distrustful because of previous experiences with EPA. One panelist noted he has engaged producers in voluntary practice change as a way to show that producers are doing “what is right” following and building on a lawsuit with the EPA.

USDA, it was noted, has been working at the policy level on certainty programs, seeking a mechanism to offer indemnity from regulations for early action by farmers who are offering a public good via GHG emission reductions. Question was raised whether such indemnification under the Clean Air Act would be seen as a benefit by producers. Panelists generally found this approach interesting and worth further investigation. One panelist noted that incentives should be the focus of the discussion right now, rather than regulation or indemnification. Another participant noted how this type of approach could incentivize collaboration instead of litigation.

Other producer recruitment challenges cited by panelists included:

- Accommodating partners who want to make sure that all producers are able to benefit from the projects, including those who have already made the practice change.
- Balancing the flexibility farmers need and desire with the restrictions necessary under a protocol as a part of the projects.

- Identifying an appropriate aggregator, who can both collect data and catalyze practice change, especially when the carbon market offers low value and high requirements (as do current markets).
- While messaging around the value of GHG emissions reductions in the supply chain is a valuable engagement method, synchronization between supply chain initiatives and offset markets, particularly around data collection, is still needed.

### **Credit Stacking**

Many participants noted the importance of credit staking as a means of engaging farmers. While one source of credits, and therefore funding, may not be sufficient to create practice change, bundling several sources of credit together for a single project can better make the business case to farmers to participate. Additionally, one panelist noted the need for a clear and simple value proposition for farmers. Complicated rules surrounding stacking can jeopardize farmer's participation. Clear cost-benefit analysis of practice change, one participant suggested, could be transformative. Participants mentioned the need to stay focused on the ultimate goal, which is reduced GHG emissions.

The discussion of credit stacking, particularly with regards to USDA EQIP funding, demonstrated that there is a lot of confusion and misunderstanding surrounding these issues. In order to stack credits, both the source of the GHG emissions reduction credit, the registry, and the provider of the stacked credit, in this case USDA's EQIP, must allow for stacked credits. As participants heard throughout the meeting, different registries and different protocols have different rules about stacking. However, the largest source of confusion surrounded USDA's policy. In this session, USDA officials clarified that the Department's only concern is whether the obligations of the EQIP contract are fulfilled. If there are GHG emissions reductions completed as a byproduct of the contract, USDA does not hold any claim to them. USDA has, in fact, set aside EQIP funding specifically to help the CIG project grantees.

Panelists also discussed the challenges of registry rules related to stacking. Two panelists noted the role of the aggregator and project developer in managing these complexities. Ducks Unlimited, for example, pays farmers for practice change on high risk land regardless of whether they receive EQIP funding or not. It manages the risk that not all land will receive credits itself, rather than passing this risk onto farmers. Similarly, one panelist suggested a focus on project developers when mitigating this risk, rather than the farmers themselves.

### **Permanence**

Convincing farmers to commit to long-term practice change was the key challenge noted by panelists. While several of the projects have been successful initially engaging farmers, persuading them to become a part of a long-term program to receive credits is significantly

more difficult. Farmers who have previous experience with CCX are skeptical of the long-term value of the emissions reduction credits.

Different projects have had different experiences regarding farmer acceptance and permanence. One panelist has found that farmers are unwilling to enter into permanent easements at all. Another panelist has not had as much difficulty; however his project's easement is structured to continue to allow income generating uses of the land. One suggestion for gaining acceptance of permanent easements was to create a premium value for the product grown on the land under easement, such as no-till wheat.

### Measurement/Model Choice

Many of the CIG projects have chosen to use the DNDC model, while USDA continues to use the CENTURY model for much of its work. All of the panelists indicated that, regardless of the model chosen, they evaluated the work they are doing against the choices available and selected the model that best matched their project. Many panelists made their decision based on the data being used and existing model calibration. One participant noted that the DNDC model may be more popular because of the commercial structure built around it, since model developer support is often required for protocol development. One panelist noted that the *SNAP Demonstration Project* will compare protocols based on several of these models.

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## Wrap-up and Conclusions, and Input from Participants

To conclude the meeting, Debbie Reed, C-AGG Executive Director, led a wrap-up session focusing on the next steps for C-AGG. She noted that she had heard ideas for one or more workshops at this meeting and would like to get these scheduled as soon as possible. Data needs and collection, she mentioned, is a potential topic for a workshop.

Several participants showed interest in a workshop to follow the white paper on biogeochemical process models. In particular, increasing the usability of the DNDC model and creating a more simplified version of this model were suggested as challenges to be examined in the workshop. Model validation and understanding the variability of data on a national scale is another challenge in which many participants showed interest. One participant noted that validation becomes particularly important before models begin to be used on a regional or national scope. Farmer feedback has been illuminating in this area and should continue to be sought out.

Scale and farmer participation was suggested as another workshop topic. While years have been spent understanding the uncertainty in models, one participant noted that the tradeoffs between uncertainty discounts and participation have never been examined. Determining whether there are factors built into the system working against scale will be important moving forward.



Finally, credit stacking and additionality was identified by many participants as a topic of interest. While participants saw these two issues as intricately linked, the order and manner with which they are addressed was a topic of much debate. Participants noted the importance of understanding the work that has already been undertaken on these topics in order to avoid duplicating effort. It was suggested that approaching both of these through case studies based on the CIG projects might be a useful framework. Several participants noted the importance of bringing the California ARB into the workshop discussion. Participants also supported engaging USDA in this workshop in order to better understand the interaction with its program.

Participants noted the importance of releasing a C-AGG document or report, potentially before the next meeting in February. This could be as simple as binding the recent white papers into a publication or it could include revised C-AGG policies and principles as well as lessons learned from the CIG projects. Additionally a revised version of the original C-AGG report aimed at the California ARB could be useful as well. One participant recognized the importance of providing any input to them as soon as possible, since this is the critical moment. The California rice protocol, it was noted, could be a hook for the report.

Reed closed the meeting by thanking everyone for their participation and input. She will follow up by email on potential workshop topics to gauge interest and begin scheduling.



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July 20-21, 2011 | Chicago, IL

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